Post-trade made easy

CREST Reference Manual

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Contents

Introduction **6**
Section 1: The CREST Manual 6
Section 2: Contractual arrangements 7
Section 3: Issuers 7
Chapter 1: General **9**
Section 1: Changes to CREST documentation 9
Section 2: Practical limitations of the system 12
Section 3: The use of external data 17
Section 4: Directions 25
Section 5: Provision of information to central banks and the UK Debt Management Office 26
Section 6: Provision of information to EUI associates 28
Section 7: Provision of stock lending data and settlement fails 29
Section 8: Provision of information to an exchange, a clearing house, or an operator of a Multilateral Trading Facility or an Alternative Trading System 31
Section 9: Provision of information to settlement banks 31
Section 10: Personal data and data protection 31
Section 11: Provision of information to statistical agencies 32
Section 12: Provision of settlement information to subscribers 32
Section 13: Provision of information to NSS settlement participants 33
Section 14: Money laundering and prevention of financial crime 33
Section 15: Asset segregation and protection 33
Section 16: Provision of information to regulators in connection with settlement finality (or other laws) 37
Section 17: Call Recording 37
Chapter 2: Logical structures **38**
Section 1: Users 38
Section 2: Participants 40
Section 3: Operators 43
Section 4: Operator function groups 45
Section 5: Member accounts 47
Section 6: Securities and securities categories 49
Section 7: Enablement and disablement 56
Chapter 3: The paper interface **57**
Section 1: Stock deposits 57
Section 2: Stock withdrawals 60
Section 3: The residual service 61
Section 4: 'CCP' participants and cross-CCP members 65
Chapter 4: Settlement **66**
Section 1: Transactions 66
Section 2: Input of settlement instructions 70
Section 3: Matching of settlement instructions 79
Section 4: CREST central counterparty service, Clearing Support Arrangements, Collateral Support Arrangements and related services 80
Section 4A: Overview of the main features of the CREST central counterparty service, Clearing Support Arrangements, Collateral Support Arrangements and related services 83

Section 4B: CREST Clearing Support Arrangements 96
Section 4C: CREST Collateral Support Arrangements 106
Section 5: Tolerance matching 111
Section 6: Amendment of settlement instructions 112
Section 7: Deletion of settlement instructions 113
Section 8: Enquiry facilities 116
Section 9: Deliveries 123
Section 10: Own account transfers 124
Section 11: Queues and Failure Enquiries 125
Section 12: Settlement 128
Section 13: Sponsored members net settlement limit 132
Section 14: Splitting deliveries and other transactions 133
Section 15: Automatic splitting 134
Section 16: Broker disintermediation 135
Section 17: Trade venue identification 136
Chapter 5: Registration 138
Section 1: Registration 138
Section 2: Registrars Adjustments 142
Section 3: Receiving agents 144
Section 4: Nationality declarations 146
Section 5: Reconciliation 148
Section 6: Technical netting and linked transactions 149
Section 7: Bad delivery 152
Chapter 6: The CREST payment mechanism 153
Section 1: Introduction 153
Section 2: Cash Memorandum Accounts 156
Section 3: Caps 158
Section 4: The 'DvP Service' 166
Section 4A: US dollar payments mechanism 180
Section 5: Settlement banks 194
Section 6: The legal framework for CREST payments 199
Section 7: Realisation of a settlement bank's security 203
Section 8: Settlement banks with multiple participant IDs 233
Chapter 7: Other core functions 234
Section 1: Stock lending functionality (stock loans and repos) 234
Section 2: Deliveries by value 236
Section 2A: Overnight Deliveries by Value 249
Section 2B: Term Deliveries by Value 252
Section 3: Escrow balances 276
Section 4: Corporate actions 278
Section 5: Benefit claims 284
Section 6: Transformations 286
Section 7: Stripping and Reconstitution 290
Section 8: Auto-collateralisation arrangements 292
Section 9: The CREST voting service 305
Section 10: Repo functionality 314

Section 11: The issuance function and eligible debt securities 318
Section 12: Dividend Election Instructions and Dividend and Interest Payments 328
Section 13: Transaction Reporting 334
Chapter 8: Stamp duty 337
Section 1: Introduction 337
Section 2: Input 340
Section 3: Amendment of transactions 347
Section 4: Matched deletion of transactions 348
Section 5: Settlement 349
Section 6: Reliefs and exemptions automatically applied by the CREST system (independently of data flags applied at member account and transaction level) 350
Section 7: CREST generic transaction types eligible for exemption 352
Section 8: Statutory duty of Registrars 353
Section 9: Impact of the netting procedures and central sponsor services 354
Section 10: Stamp Duty Assessment Service 357
Chapter 9: External data view 363
Section 1: The participant view 363
Chapter 10: System Controller functions and business continuity 364
Section 1: Central intervention 364
Section 2: DvP Services 366
Section 2A: US dollar payments mechanism 373
Section 3: Procedures relating to the incapacity of users and participants 376
Section 4: Non Standard CREST Closure 378
Section 5: Regional Disaster Recovery 380
Chapter 11: Networks and system messages 382
Section 1: Accreditation 382
Section 2: Authentication procedures 384
Section 3: Attribution and addressing of system instructions 386
Chapter 12: Serving of notices 393
Section 1: Notices relating to restraints on the transferability of securities by members (e.g. stop notices, court orders) 393
Section 1A: Notices relating to the restraints on the ability of a participating issuer of eligible debt securities (or a CREST IPA on its behalf) from issuing or redeeming units etc. 393
Section 1B: Notices relating to the suspension, termination or withdrawal of a CREST sponsor's (including a CREST central sponsor's) authority to act and related matters 394
Section 1C: Notices relating to inaccurate or incomplete information held in relation to the SDAS 395
Section 2: Notices relating to incapacity of participants (e.g. insolvency) 396
Section 3: Incapacity of personal members and sponsored members (e.g. death, bankruptcy or mental incapacity) - additional provisions 398
Section 4: Procedures for serving notices under sections 1-3 399
Section 5: Notification of group companies which are CREST members 400
Section 6: Other notices 401
Chapter 13: Investment Funds Service 402
Section 1: Introduction 402
Section 2: Participants 406

Section 3: Securities 407
Section 4: Transactions 409
Section 5: Corporate actions 417
Section 6: The Euroclear Connections Client 418

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Introduction

Section 1: The CREST Manual

The CREST Manual referred to in the agreements entered into by users, participants and issuers consists of the following:

- CREST Reference Manual (this document);
- CREST Central Counterparty Service Manual;
- CREST International Manual;
- CREST Rules;
- CCSS Operations Manual;
- CREST Glossary of Terms; and
- any Operational Bulletin that states that it forms part of the CREST Manual.

The CREST Manual supersedes all documentation previously issued by EUI concerning the CREST relevant system.

Other CREST documentation (e.g. CREST Guidance, market norms papers etc) does not form part of the CREST Manual for the purpose of the CREST agreements.

This Reference Manual describes the CREST system supplied by EUI to users and participants pursuant to EUI's obligations under its agreements with those users and participants, subject to any limitations contained in those agreements.

The CREST system is made up of a number of component parts, links between those components and supporting procedures and services. So, for example, the components currently include:

- those parts of the system which communicate with participants, undertake pre and post-settlement processing and otherwise receive, manage and control the processing of messages (this is known by some as the 'core CREST system' and includes the CREST Applications Host);
- the CREST Settlement Processor, which receives messages from the core CREST system for settlement, positions the resource and undertakes the settlement process (this is known by some as the 'single settlement engine');
- the Local Record, which records title to or interests in securities held in dematerialised form within the CREST system, and which is itself made up of a number of parts including:
    - the Receiving Database, which receives stock and cash postings (per transaction) from the CREST Settlement Processor; and
    - the Ledger Database, which converts the stock and cash postings received from the Receiving Database into a form in which they can be more conveniently communicated to users and maintains the total holding balances per CREST member per security.

These components, and others, that form part of the CREST system and other EUI systems may be on separate sites, may be duplicated on the same or yet further sites (for business protection and other reasons) and communicate via a network of links.

For simplicity the CREST documentation does not generally explain the various components of the system or the resulting stages through which a message, transaction or process must pass before

the desired result is achieved. The necessary result is that there may be delays (often small) between the input of a message and the resulting step being achieved within the system. In this respect, particular reference should be made to Chapter 1, section 2 (Practical limitations of the system).

Section 2: Contractual arrangements

EUI's contractual arrangements with CREST participants set out the obligations accepted by EUI (and where relevant its Associates) and as envisaged by these arrangements the CREST Manual describes the principal features of the CREST system and CREST services. Where appropriate, in order to set the relevant context, the Manual refers to systems and services operated by third parties, for which neither EUI nor any Associate is responsible.

Neither EUI nor any Associate undertakes or assumes any responsibility towards any person other than those who are parties to contracts with it.

This Manual may only be relied on by persons who have entered into contracts to participate in the CREST system and in connection with their participation under such contracts. Under its contractual arrangements EUI undertakes (subject to the limitations and exemptions from liability contained in its contracts) to use reasonable care to cause the CREST system and the CREST services to operate in all material respects in the manner described in the CREST Manual and no description in this Manual which refers to EUI, the CREST system or CREST services or the performance or non-performance of any act or thing shall be construed as imposing on EUI or any other Associate any greater obligation than that assumed under the relevant contract.

Section 3: Issuers

As to the relationship between issuers and the CREST system, although issuers contract with EUI upon applying for admission of particular securities to the CREST system (or upon applying for permission to be a participating issuer of eligible debt securities or a participating investment fund in the Investment Funds Service), issuers are not, as such, CREST participants; instead, the issuer's CREST Registrar, CREST IPA or CREST Product Provider (which may be the issuer itself or an external registrar, issuing and paying agent or product provider) or, in the context of some corporate events, the issuer's receiving agent sends instructions to and receives instructions from the CREST system on behalf of the issuer. Insofar as EUI incurs any liability to issuers (which term includes participating investment funds in the Investment Funds Service), such liability is to be subject to the limitations of liability set out in the Manual. The following are the relevant limitations; terms used below which are defined or used in EUI's agreements with members and other relevant participants have the meaning given to them in those agreements.

(1) EUI accepts no liability to the issuer for any Liabilities which may be suffered or incurred by the issuer as a result of any interruption to EUI systems or EUI services, whether caused by EUI's negligence or otherwise howsoever, except where such interruption is caused by EUI's fraud or wilful default.

(2) Any liability of EUI to the issuer, whether such liability arises under any express or implied term, in tort, for misrepresentation, for breach of any other duty imposed by law, in respect of the maintenance of an Operator-register of securities or in any other way (and whether such liability is to make any payment of any kind or to deliver or reinstate property or is of any other kind), shall be limited as follows:

(i) EUI shall not incur any liability to the issuer save to the extent that such liability results from EUI's negligence, wilful default or fraud;

(ii) EUI shall not incur any liability for any indirect, special or consequential loss of any kind;

(iii) if it is the case that the total liability of EUI to the issuer and to all other claimants (if any) against EUI in relation to the CREST relevant system and/or the CREST services for amounts claimed in respect of Liabilities arising out of:

(a) any single act or omission, or related acts or omissions; or if there be no such acts or omissions,

(b) any one event or series of related events;

would otherwise exceed the amount of the Liability Cap, then the total liability of EUI to the issuer for such Liabilities suffered or incurred by the issuer shall be limited to a proportion of the Liability Cap corresponding to the proportion which the amount EUI would otherwise be liable to pay the issuer, or to meet a claim made by the issuer, bears to the aggregate of the amounts that EUI would otherwise be liable to pay to, or to meet claims made by, the issuer and all other claimants against EUI in relation to the CREST relevant system or CREST services or, if there are no such other claimants, to the amount of the Liability Cap.

Note: the Liability Cap is currently, in most circumstances, £40 million.

(3) In respect of the admission of Restricted Securities to the CREST system, the issuer acknowledges and agrees that:

(i) it has read and understood the arrangements for the admission, holding and transfer of Restricted Securities in the CREST system, as described in the CREST Manual and that EUI will not take any actions other than those set out in the CREST Manual;

(ii) upon applying for admission of securities to the CREST system, the issuer (or its CREST Registrar or receiving agent) must notify EUI if the securities are Restricted Securities and of the applicable restriction type;

(iii) it remains responsible at all times for ensuring that the holding and transfer of any Restricted Securities by means of the CREST system complies with any applicable US laws;

(iv) it remains responsible at all times to account for any applicable taxes in respect of Restricted Securities under US law;

(v) it remains responsible at all times for ensuring that any corporate actions processed by means of the CREST system in respect of any Restricted Securities comply with any applicable US laws; and

(vi) it will keep EUI informed of the applicable distribution compliance period (DCP) and promptly notify EUI when the DCP has come to an end for all securities under the applicable ISIN and the issuer intends that the security should no longer be treated as a Restricted Security in the CREST system.

Chapter 1: General

Section 1: Changes to CREST documentation

Changes to the CREST Manual; notification; consultation procedures

The CREST Manual is available on the Euroclear website (www.euroclear.com). The principal purpose of the CREST Manual is to describe the way in which the CREST system and CREST services operate and EUI may change the provisions of the CREST Manual (including any of its component parts) at any time. The change is formally made when a member of the EUI legal department authorises the change in writing and takes effect on the date of authorisation, or such later date as is stated in the authorisation. EUI will not normally consult on or separately notify changes to the CREST Manual which are of a clarificatory or relatively minor nature or which correct any inaccuracy; such changes will be made from time-to-time by updating the version available on the Euroclear website and notification to participants, for example by Operational Bulletin.

There are two types of change (other than minor changes) which may be made to the CREST Manual:

- the first type is changes which are made to reflect changes to the CREST system or CREST services which have an external impact. Where changes are to be made to the CREST Manual to reflect changes to the CREST system or CREST services then notification of changes and consultations (as described below) will be on the substance of the change to the CREST system/CREST services rather than on the literal text of the CREST Manual;
- the second type of change to the CREST Manual is one made for another reason which is usually to support part of the legal contractual structure. Such changes are notified as described below.

In accordance with the provisions of the agreements which EUI has entered into with participants, the introduction of material new functionality the use of which will not be optional and material changes to existing functionality will only be made after prior consultation. The consultation procedures adopted depend on the nature of the change, but involve one or more of the following:

- consultation by means of the Euroclear website and Operational Bulletin, describing the issue and inviting responses by a particular date;
- consultation by means of the publication of an EUI 'Green Book' or 'White Book'. These are distributed widely and are available on the Euroclear website; and
- consultation through the establishment of working parties and liaison groups involving CREST participants who, in EUI's view, fairly represent the principal types of participant likely to be affected by the issue concerned.

In determining the choice of timing for any particular change EUI aims to allow an appropriate period for implementation where the change will require users to amend their own systems or revise existing legal arrangements. Personal Members are not directly consulted; sponsors should be aware of consultations which may affect Personal Members and are expected to respond accordingly and/or to notify their clients (if they consider it appropriate).

Notification of the changes is given to users by Operational Bulletin, which should be regarded as a supplement/amendment to the text of the CREST Manual, and on the Euroclear website. This notification will detail the key elements of the change.

EUI aims (wherever practicable) to update the version of the CREST Manual on the website to show the full text on the effective date of the change.

Changes to the CREST Rules; notification; consultation procedures

For ease of reference the CREST Rules are set out in a separate section of the CREST Manual and accordingly are made available on the Euroclear website to all users and participants.

A Rule change is formally made when a member of the EUI legal department authorises the change in writing and takes effect on the date of authorisation or such later date as is stated in the authorisation; notification of any change is given as described below either prior to or contemporaneously with the change being made. EUI will endeavour to give as much advance notice of any changes as is practicable in the circumstances. Notification of the change is given to all relevant users and participants (other than Personal Members) through the Euroclear website and Operational Bulletin. The changes will come into effect on the date specified on the website (and in the Operational Bulletin) and the Operational Bulletin will contain sufficient detail for participants to understand the key elements of the change. EUI aims (wherever practicable) to update the version of the Rules on the website to show the full text on the effective date of the change.

Sponsors should notify Personal Members of relevant Rule changes.

EUI consults on major and permanent changes to the Rules. Where an urgent change is required to deal with an unforeseen situation it may not be practicable to consult, in which case we aim to introduce any such change on a temporary 'as necessary' basis until a consultation process has been followed.

The consultation procedures are the same as referred to in the section above on changes to the CREST Manual.

Changes to the CREST Terms and Conditions and other agreements between EUI and participants ('the CREST Agreements')

The CREST Agreements authorise EUI to make changes to them.

They provide that changes which restrict or exclude EUI's liability or which impose additional obligations or liabilities on the participant (other than changes to the terms for the International Links Service or changes which only relate to new services or new optional functionality) will be subject to prior consultation.

The Deed(s) Poll for the International Links Service also provide for consultation prior to the making of certain types of amendment to it/them.

Changes to the CREST Agreements are made by EUI giving notice of the change as provided for in the relevant CREST Agreement.

Changes which are the subject of consultation are consulted on by the issue of a consultation document, which is either issued separately to the participants directly affected by the proposals, or is contained in another EUI publication. There is no direct consultation with Personal Members.

Consultation on proposals for certain types of change to the Deed(s) Poll is by publication of a consultation document which is either issued separately or is included in another EUI publication.

EUI may change the CREST tariff without the need for consultation.

Timetable changes and suspension of functionality

The CREST system generally seeks to operate in accordance with a daily timetable and diary of events as separately published from time to time. However, there may be some circumstances when EUI needs to alter the daily timetable, or suspend a particular system function or security, without any prior notice where, in its opinion, the circumstances justify doing so. Such changes may only have effect for short periods of time or, in some circumstances, may need to apply for longer periods. Clearly it is not possible to predict all the possible circumstances which might arise but they could include:

- changing the timing of the technical netting process, where the system is experiencing irregular settlement volumes or unusual backlogs of unsettled instructions;
- extending the end of the business day, where there has been a material disruption in settlement during the day (assuming the availability of the payment system allows);
- extending the DBV-processing window to assist users with certain types of market-related difficulties;
- extending the EDS issuance deadline to assist CREST IPAs with certain types of market related difficulties;
- extending the unwind period for auto-collateralising repo;
- delaying opening the system in the morning, suspending the system during the day or closing the system earlier than the published close, where there has been a material disruption in the operation of the market;
- suspending the whole system or individual functions, securities, users or members, where there has been a material breach of the system's security procedures;
- suspending a security or securities where there is a concern about the ability of a registrar to register transfers in an orderly fashion; and
- making any change, where EUI is complying with a court order or a direction from a regulatory authority such as HM Treasury, the Bank of England or the Financial Conduct Authority.

EUI will notify file transfer users of changes to the daily timetable by means of the file changes mechanism. Interactive users must enquire of the diary.

Section 2: Practical limitations of the system

Introduction

In developing the CREST system, EUI has sought to protect against failure in order to provide an uninterrupted service. The precautions taken include the provision of standby power, a duplication of communication links, hot standby at a remote computer site, and physical standby arrangements for EUI. Despite the precautions taken, the service may be subject to interruption or suspension, for example in order to initiate some of the back-up facilities or to recover from failure.

The speed with which any message is processed by the CREST system and a reply is generated will be dependent upon:

- the available capacity of the CREST Applications Host;
- environmental factors affecting the CREST Applications Host;
- software factors;
- where relevant, the pre-settlement processes (e.g matching and stock, cash and liquidity checks);
- the availability of certain functions in particular circumstances;
- the operation by the Bank of England of 'stop settlement' functionality that is made available to it in respect of the Sterling DvP Service;
- factors connected with the networks; and
- in relation to those parts of the systems shared by other entities, factors related to those entities.

System capacity

The capacity of the central system has been configured to accommodate a reasonable estimation of the settlement and other processing volumes likely to be processed by the system (and, in relation to shared systems, the operating needs of those other entities making use of the shared systems) each day. However, in view of the expected fluctuations in processing volumes during the course of the day, processing times are likely to vary throughout the day. This will be particularly the case at the start of the business day, when all instructions which have been input and matched on previous days become eligible for settlement but will also be affected by levels of enquiries by users.

Likewise, at the level of an individual instruction, the speed with which a file is processed will depend upon the number of messages contained in the file and whether or not the user is using a single or multiple operators.

When central processing is resource constrained, the processing of interactive messages is given priority over the processing of file transfers.

Liquidity

Sterling and euro liquidity

Settlement in sterling and euro on the specified business day is dependent (where relevant) on RTGS settlement banks' provision of sterling liquidity at the Bank of England and euro liquidity in TARGET2 respectively.

The RTGS Liquidity Management System includes Liquidity Management Services which facilitate an RTGS settlement bank's management of liquidity to enable sterling and euro payments between CREST members. These services are described in Chapter 6, Section 4 and include: software for the maintenance and amendment of Liquidity Memorandum Accounts to record RTGS settlement bank liquidity and its allocation to individual transactions; the operation or use of systems and services for the receipt of notification of liquidity from the Bank of England or TARGET2 (T2) Ancillary System Interface and notification of CREST Settlement Notifications to the Bank of England or T2 Ancillary System Interface; and contingency procedures. Provision of adequate liquidity to permit CREST settlement remains a matter for individual RTGS settlement banks. These arrangements create a significant interdependency between EUI's systems and the RTGS processor at the Bank of England and between EUI's systems and TARGET2 and requires cooperation in their provision of the service and, in particular, in the event of service disruption for any reason. In certain cases, where there is a failure or malfunction in the EUI systems or the systems of the Bank of England or TARGET2 which could be prejudicial to the operation of the DvP Service or the Bank of England, its systems or TARGET2, EUI is under a contractual obligation to the Bank of England and/or the ECB as an Ancillary System Central Bank and the RTGS settlement banks to (i) take reasonable care to cease CREST settlement and (ii) not to re-commence CREST settlement without the prior approval of the Bank of England or ECB as appropriate.

If any interruption, relevant failure or malfunction occurs towards or otherwise affects the end of the normal CREST settlement day, the Bank of England has indicated that it would only be willing to approve re-commencement of settlement for sterling if certain "Non Standard Settlement Day Procedures" ("NSSDPs") are first followed by EUI in conjunction with it. Under the NSSDPs that may operate in this event, modifications may be made to normal CREST settlement procedures and certain settlement functionality may be unavailable until such time as normal settlement can re-commence with the approval of the Bank of England. In addition, a CREST settlement day may be treated as being extended into the next day or over a number of calendar days for certain purposes. The NSSDPs are described in further detail in Chapter 10, section 4.

US dollar liquidity

Settlement in US dollars on the specified business day is dependent (where relevant) on a USD settlement bank's Liquidity Use Limit, which is the lower of:

- its Pre-Funded USD Amount (being the USD value of its sterling pre-funding); and
- its NSS settlement participant limit (being the limit set by its NSS settlement participant).

The US Dollar LMS includes services which facilitate a USD settlement bank's management of liquidity and of the related exposures incurred by NSS settlement participants, in respect of payments between CREST members denominated in US dollars. These services are described in Chapter 6, Section 4A and include: the Payments Memorandum Account for each USD settlement bank; Liquidity Use Functionality (including the Liquidity Use Limit for each USD settlement bank); the Trust Entitlement Record; other relevant databases forming part of the US Dollar LMS; and contingency procedures. Provision of adequate liquidity to permit CREST settlement remains a matter for individual USD settlement banks.

For further details see Chapter 6, section 4A below.

Sterling DvP Service: 'Stop settlement' functionality

EUI makes available to the Bank of England 'stop settlement' functionality. This functionality enables the Bank of England unilaterally, and without any requirement for further co-operation or action from EUI, to disable all settlement in sterling. Use of the 'stop settlement' functionality by the Bank of England results in a message immediately being sent to the central system, which instructs it to stop the settlement of unsettled transactions (including 'on us' transactions) against CMAs in sterling. Settlement in sterling will only re-start in response to a further re-start message sent into the CREST system by the Bank of England.

This functionality is intended to be used by the Bank of England in limited circumstances, being essentially a mechanism to control or mitigate risks or issues connected with operational error, events that threaten the stability or efficiency of the financial system or similar events that have systemic consequences for EUI or the Bank of England. EUI has put in place arrangements with the Bank of England with a view to minimising the duration of the interruption to CREST settlement resulting from the Bank's use of the 'stop settlement' functionality. However, EUI is not responsible for the manner or the circumstances in which the Bank of England may in fact use the 'stop settlement' functionality; and EUI does not accept responsibility to any participant or user to monitor the Bank of England's use of the functionality, or to monitor or enforce compliance by the Bank of England with the arrangements put in place with EUI to minimise the duration of the resulting interruption to CREST settlement.

Euro DvP Service: Term

The ECB provides services to EUI in accordance with, and subject to the limitations set out in, the relevant contract between the ECB and EUI. In particular, that contract, and the services provided by the ECB pursuant to that contract, are scheduled to expire on 29 March 2021 and may also be terminated following the applicable notice period by the ECB prior to such date. Any such expiration or termination may result in termination or suspension of the Euro DvP service provided by EUI.

Environmental factors and local disaster recovery

The CREST system can operate from CREST Applications Hosts located on physically remote data centre sites (known as DC1 and DC2). The close proximity of these data centres allows for synchronous (real time) replication of data between the sites. If one data centre is impacted by an incident, the other data centre is able to continue processing without the risk of data loss. This is known as local disaster recovery (LDR) (in respect of regional disaster recovery following a regional incident at the main data centres, see Chapter 10, section 5). If an event occurs at the primary site which causes an interruption to the processing by the CREST Applications Host, EUI will decide whether there has been a complete failure of the Applications Host at one site and if so will aim to resume operations on the standby site, with a view to resuming communications to members within 1 hour of the decision. If the system is so disrupted, EUI will aim to ensure that it will be available for long enough to complete that day's settlement processing, subject to the availability of the payments system used for settling payment obligations arising from CREST settlement and to the cooperation of the CREST settlement banks. If circumstances affecting the standby site prevent the resumption of the system on the second site then the system at both sites will remain inactive until remedial action can be taken.

The structure of the CREST system includes various communication links between the various components of the CREST system, including those between the CREST Settlement Processor, the

Local Record and standby sites for these. It is possible that a failure may occur on these communication links.

In the event of disruption to the systems of the Bank of England or TARGET2 or the communications network used by them to send or receive liquidity messages to or from the RTGS Liquidity Management System, EUI and the Bank of England and/or the ECB may instigate contingency procedures to maintain the provision of liquidity to the CREST system and the CREST settlement process: see Chapter 10, section 2.

In the event of disruption to the systems of the NSS or the communications network used to send or receive messages to or from the US Dollar LMS, EUI and the Federal Reserve Banks may instigate contingency procedures: see Chapter 10, section 2.

Software factors

It is possible that during live operation, defects in the software which have not been revealed during trialling may become apparent and, depending on the nature of the fault, it may be necessary to interrupt the provision of the service. Such a fault may mean that it is not appropriate to move to the standby site. In such circumstances, members will, where possible, be notified by system message of the interruption and EUI will take all steps available to it to minimise the period of any interruption or suspension.

Pre-settlement processes

Settlement on the specified business day is dependent (where relevant) on the matching by the CREST system of correctly input and authenticated instructions by both of the parties and the successful completion of the pre-settlement checks on the parties' stock account balances and headroom, the priorities set by either or both of the parties, and the parties' settlement banks' liquidity. Matching may take time and stock account balances and headroom can change dynamically during the business day. Accordingly, these constraints may particularly affect the timeliness of settlement when instructions are being input on the intended business day itself.

Pre-settlement checks and other settlement activities occur at the CREST Settlement Processor. The CREST Settlement Processor utilises a settlement processor which is shared by other group CSDs and which interfaces with each CSD's non settlement related systems.

Shared systems

In relation to those parts of the systems which are shared with other entities, it is possible that the operational needs of one entity may temporarily require greater system capacity (to the exclusion of or otherwise affecting the services of other entities sharing the systems) or may otherwise require an interruption to or suspension of operations of the shared systems or part of them. This may result in an interruption to or suspension of the EUI systems and services. In such circumstances EUI may consent to an interruption or suspension and/or operate in accordance with appropriate escalation procedures to ensure resolution of the issue. If such an interruption to or suspension of the EUI systems or services occurs, where reasonably practicable members will be notified in advance by system message.

Availability of functions and securities for settlement

Access to functions is determined by operator function groups (see Chapter 2 section 4). In certain circumstances (such as a reconciliation failure) individual securities may also be disabled for settlement.

Network availability

EUI assumes no responsibility for the availability of the networks or performance levels of the network providers. It can only process instructions which are delivered to it by a network provider. In accrediting the network providers, EUI has set certain specifications intended to provide high levels of service for both the interactive and file transfer services. However, it is for users to agree the file transfer service levels most appropriate to the scale of their business and to monitor both these and interactive service levels. The effectiveness of each network provider's file transfer service will depend in part on the service levels chosen by each user when entering into an agreement with its chosen network provider and is therefore, to some extent, within the control of the user itself: there is a direct relationship between the size of a file being transferred and the time taken to transfer it.

The limitations affecting the networks will be similar to those affecting the CREST Applications Host itself.

Conclusion

Any one of the above factors, or a combination of these factors, could impact upon the timing of processing of individual instructions. Consequently, EUI does not guarantee that any instruction will be processed in a particular order or by a particular time. Users should take this in to account when inputting instructions the settlement or receipt of which is time-critical. In particular in the context of corporate action deadlines (such as the taking up of rights or the acceptance of a takeover offer), it is likely that the volumes of acceptance instructions will increase close to the deadline; the extra processing burden on the central system might have an impact on response times and users should take this into account when determining the time at which they input their instructions.

Section 3: The use of external data

Introduction

In Clause 5.1.2 of the Terms and Conditions (and the corresponding clauses in the other agreements entered into by users and participants), the member (or other user or participant) acknowledges, agrees and accepts that:

> *certain services provided by EUI are dependent upon the provision to EUI of information from third parties (the relevant services and information being specified in the CREST Manual) and EUI does not check the accuracy of any such information. The Member accordingly acknowledges and agrees that EUI shall not be liable to the Member for any Liabilities suffered or incurred by the Member as a result of any inaccuracy in any such information or as a result of any calculation made by EUI drawing on external information supplied to it as described in the CREST Manual which is inaccurate or incomplete, provided always that EUI has:*
>
> *(a) accurately reproduced the information supplied to it or (as the case may be) has not itself made an error in the calculation in question; and*
>
> *(b) taken reasonable care in its selection of the third party supplier.*

It should therefore be noted that the CREST system or EUI, as part of the provision of the CREST services:

- uses data supplied by participating issuers and/or their CREST Registrars, issuing agents, product providers and receiving agents and information from third party data vendors and the exchanges for the purposes of security details, corporate action data, meeting announcement and results announcement data;
- takes electronic feeds of data from a number of third party data vendors relating to security details for the purposes of security price data used (as more particularly described in the section headed security price data in this Chapter 1, section 3);
- takes an electronic feed of data from Euroclear Bank S.A/N.V (which may include data from third party data vendors) relating to credit ratings of EDS issuers[1] and which may, from time to time, be outsourced by Euroclear Bank S.A/N.V to third parties;
- uses data supplied by a third party in relation to the number of basis points by which the LIBOR rate has been varied for the valuation framework;
- uses data supplied by the Bank of England for determining the eligibility status of issuers of Bank Bills;
- uses data supplied by the Bank of England for determining the haircut rates to be applied in respect of security central bank categories (as explained further in Chapter 7, section 2 and Chapter 7, section 8);
- uses SEDOL information provided by the London Stock Exchange for the purposes of generating and allocating ISIN codes to EDS issues;
- uses information provided by other CSDs with whom a link with the CREST system has been established in particular for the purposes of security details and corporate action data;

[1] This feed includes credit ratings allocated by the Moodys and Standard & Poors ratings agencies.

- uses information provided by members, the relevant CCP and the relevant investment exchange for the purposes of the direct input services and the netting procedures (see Chapter 4, section 4 and Chapter 9, section 3 of the CREST Central Counterparty Service Manual);
- uses and relies on data supplied by a number of regulated markets, multi-lateral trading facilities, any other Trade System Managers (see further Chapter 4, section 17 of the CREST Reference Manual) and HMRC in order to calculate stamp duty relief to principal traders (as more fully described in Chapter 8 of the CREST Reference Manual);
- uses non-settling security information provided by Interactive Data Services (***IDS***);
- investment fund information provided by IDS;
- uses liquidity data provided by the Bank of England or through the Ancillary System Interface (as more fully described in Chapter 6, section 4 of the CREST Reference Manual);
- uses information provided by the Bank of England to set and operate central bank repo limits in the RTGS Liquidity Management System (as more fully described in Chapter 7, section 8 of the CREST Reference Manual);
- uses a foreign exchange rate provided by Bloomberg L.P. to calculate the Sterling Value of a USD Settlement Bank's obligations on a PMAP settlement day; and
- uses information provided by NSS settlement participants and by Federal Reserve Banks or the NSS (as more fully described in Chapter 6, section 4A of the CREST Reference Manual)
- uses CFI code information provided by Association of National Numbering Agencies (ANNA) to determine the CSDR Security Type of a security.

Restrictions on the use of external data

At the end of this Chapter 1, section 3 (under "Use of information") and as contemplated by Clause 17.11.2 of the Terms and Conditions (and the corresponding clauses in the other agreements entered into by users and participants), EUI sets out the requirements or restrictions imposed on the Member (or other user or participant) concerning the use (or otherwise) of data which has been provided by third parties to EUI and which is made available by EUI as part of or otherwise in connection with the services provided by it.

Security details

Security details describe the characteristics of each security which has been admitted to the CREST system. These details include, amongst other things, whether a particular security is or is not eligible for processing under the central sponsor services made available to members (other than a 'CCP' participant) by a particular CREST central sponsor or for processing under the netting procedures.

The CREST system also holds basic information relating to securities which are not admitted to the CREST system for settlement.

Restricted Securities

Restricted Securities (as described in Chapter 2, section 6) are identified on the basis of information provided by the issuer (or their CREST Registrar or receiving agent), either upon

application for the admission of securities to the CREST system, upon input of any corporate action or otherwise.

Corporate actions data

The corporate actions data is used to identify circumstances in which claims will need to be generated, securities disabled or deleted, instructions transformed and in identifying securities which require special treatment in the DBV process. The data is also used to determine whether a particular transaction is to be excluded from processing under the netting procedures (because transactions that have a special condition are not eligible for such processing). In the case of an eligible debt security, the CREST system will create the corporate action details from the IPA issuance message sent to it by the issuing agent in respect of that security (see further Chapter 7, section 11).

Meeting announcement data

A meeting announcement sets out summary details of a meeting which is to take place in respect of a participating security, including the identity of the issuer's agent (see Chapter 7, section 9). Meeting announcements are input directly into the system by the announcement agent identified in the security details.

Results announcement data

A results announcement states whether each resolution identified in an earlier meeting announcement was passed or not and may include details of the number of votes for or against each resolution or withheld. Results announcements are input directly into the system by the issuer's agent identified in the earlier meeting announcement.

Exchange rate data

The previous business day's IDS closing exchange rates are used:

- in calculating the value of securities settling in one currency, when they are held in a member account which is linked to a cap which is denominated in a different currency;
- in calculating the value of securities transferred in an auto-collateralising repo where the securities are priced in a currency other than sterling;
- in converting the designated currency of a cash memorandum account into the base currency of the cap (if different) associated with that CMA;
- in calculating the effect on a sponsored member's net settlement limit (referred to as the liability limit in the CREST GUI) of a transfer in a security settling in a designated currency other than sterling;
- in calculating the value of securities settling in one currency, when they are being allocated to a transfer of collateral in a DBV denominated in a different currency;
- in calculating stock loan revaluations, when the consideration of a stock loan is in a different currency to that in which the security being lent is traded;
- in calculating stamp duty payable, when no stampable consideration is input and the currency in which the stamp duty must be collected is different to that in which the security being transferred is traded;

- for the purposes of the US dollar payments mechanism, in calculating a USD settlement bank's Pre-Funded USD Amount (the USD value of its sterling pre-funding) and the Sterling Value of US dollar amounts when making distributions from the Trust Fund;
- uses liquidity data provided by the Bank of England or TARGET2 (as more fully described in Chapter 6, section 4 of the CREST Reference Manual), apart from for sterling settlement, during a NSSDPs period, where the provisions in Chapter 10, section 4 will apply.

The CREST system holds the following exchange rates against the euro:

- euro/sterling;
- euro/US dollar .

When calculating a conversion in the circumstances outlined above, from a currency other than the euro to a currency other than the euro, the CREST system uses the euro as the base currency. It will therefore convert from the first currency into euro and then apply the euro exchange rate for the second currency.

Security price data

The sources and specification of the security prices received by the CREST system in the IDS price feed are described below:

- for securities traded on the London Stock Exchange's electronic order book, SETS, the prices received by the CREST system are the best market maker bid and offer quotes at the official market close; and
- corporate fixed income securities are priced to include accrued interest and are priced per £100 nominal; the accrued interest is obtained from IDS.

For international securities held in the CREST system in the manner described in the CREST International Manual, prices are the best bid and offer orders or quote on the relevant exchange's trading system at the official market close (where this is not possible because of time differences, a time before the market close may be chosen). The primary source for international security prices is IDS and there is secondary source.

For non-British government fixed income securities the prices are the bid and offer quotes of a leading Gilt Edged Market Maker at the previous day's market close (priced per £100 nominal). Clean prices, accrued interest and dirty prices for British Government Stock and discount prices for EDS representing Treasury Bills are supplied by the Tradeweb Europe Limited (priced per £100 nominal). Updated prices for British Government stock will be available in the CREST system from late afternoon.

For EDS representing Certificates of Deposit, Commercial Paper, Bank Bills, Bank of England Bills and Local Authority Bills, prices are derived on a discount to maturity basis according to a framework incorporating credit rating data (data from Moodys and Standard & Poors, supplied by Euroclear Bank S.A./N.V.), discount rates (based on the number of basis points by which the LIBOR rate has been varied) and time to maturity. The reference prices are expressed per 100 nominal in the currency of the issue. Where the EDS is interest bearing, the value of the coupon payments will be included within the valuation process where possible, i.e. where the coupon is predictable (fixed rate) and the necessary details are loaded into the CREST system by the issuing agent at point of issue.

The security prices are used in calculating:

- the value of securities held in a member account linked to a cap (bid price);
- the effect on a sponsored member's net settlement limit (referred to as the liability limit in the CREST GUI) of a transfer of a security (offer price);
- the value of the consideration for an auto-collateralising repurchase transaction between a member and its settlement bank (bid price);
- the value of liquidity extended/re-paid on an auto-collateralising repurchase transaction between a settlement bank and the Bank of England (bid price);
- the value of securities being allocated to a transfer of collateral in a DBV (bid price);
- exposures between participants using repo, DBV or stock loan functionality;
- the quantity of the securities to be delivered under an RPS (repo substitution) transaction;
- stock loan revaluations (offer price);
- stamp duty payable when no stampable consideration is input (offer price); and
- certain CREST tariff charges.

It is important to note the effect of the previous day's closing price in some situations. In the context of some corporate actions (such as a consolidation or a bonus issue), the market value of a security can change overnight, sometimes significantly. In these circumstances, the security price data used by the CREST system may differ substantially from the current market price and this will impact upon, for example, collateralisation by settlement banks of their secured credit arrangements with CREST members who hold the securities affected.

In the specific cases of a capitalisation or sub-division, EUI takes into account the stock event by adjusting the previous day's reference price received in the IDS price feed (i.e. the price before the capitalisation has taken effect) by the benefit ratio, in order to approximate the new price prevailing on that business day. This adjustment takes place after the raising of stock loan revaluations in the overnight process but before the start of settlement.

In some circumstances there may not be a previous day's closing price available. In order to allow for DBV and payment collateralisation calculations to be performed, special arrangements are in place. Please refer to chapter 10, section 4 for a description of the use of security prices during a NSSDPs period.

New and further issues of securities (non-EDS)

Where:

- a new class of security (other than an eligible debt security) is issued; or
- a further tranche of an existing CREST security (other than an eligible debt security) is issued but is subject to some form of restriction (e.g. non-ranking for dividend purposes) and therefore settles under a separate ISIN,

on the start date EUI enters the lower of the Official 'Grey Market' price (generally as a result of a 'When Issued' market on the London Stock Exchange) or the price of issue. If neither of these is available, no price is entered and the system applies a price of zero (the securities therefore make no contribution to the value of any DBV or payment collateral calculation).

Further issues of securities identical in all respects to those already settled in the CREST system are automatically valued through the electronic data feed.

Entry of formerly residual securities

Where a security which was previously settled outside the CREST system (e.g. by a residual mechanism) enters the CREST system, on the first day of CREST settlement, EUI enters the closing bid and offer prices from the previous business day (where available). Where no such price is available, no price is entered and the system applies a price of zero.

Irish securities

In some circumstances it may not be possible for the Irish Stock Exchange to supply IDS with bid and offer prices for some securities. When only a one way quote is available this is used for both bid and offer purposes by the CREST system. Where only a closing trade price is available the price held in the CREST system is not updated.

Unlisted Securities

EUI does not receive prices for unlisted securities in the price feed from IDS.

In the case of some unlisted securities, reliable prices are not available from any source. In these circumstances, no price is entered and the system applies a price of zero (the securities therefore make no contribution to the calculation of secured credit limits or DBV collateral).

New issue of EDS

New issues of EDS are priced at the point of issuance using the EDS valuation framework for same day issues. Future dated issues are priced using the valuation framework from the security start date.

Failure of security price data feed

Where EUI's third party data vendor fails to supply security prices and exchange rates via the electronic data feed, EUI enters prices for those securities which are included in Security Categories 1-9 and 12 (see Chapter 2, section 6) using its contingency sources and applies the relevant exchange rates for any designated currency; in either case the data is ordinarily supplied by the same source as the electronic feed. In certain circumstances it may not be possible to use the same price specification as described earlier in this chapter. In the most extreme circumstances where EUI has not been able to obtain a price specification this may result in the prices last received by EUI being used. Securities in any other Security Category continue to be valued using the prices available from the most recent electronic data feed.

In certain circumstances, EUI may amend prices during the day. In this event, the revised price will be taken into account on the valuation of security held in any member account linked to a cap and the valuation of securities for DBV. Stock loan valuations will not be revised. Securities available for auto-collateralising repurchase transactions may not be subject to price amendment during the day.

Failure of credit rating data feed

Where EUI's third party data vendor fails to supply credit rating data via the electronic data feed, EUI enters credit rating data for Certificates of Deposit, Commercial Paper and Bank Bills using its

contingency sources (see Chapter 2 section 6) and applies the relevant exchange rates for any designated currency; in either case the data is ordinarily supplied by the same source as the electronic feed. In certain circumstances it may not be possible to use the same price specification as described earlier in this chapter. In the most extreme circumstances where EUI has not been able to obtain an updated credit rating for an EDS issuer this may result in the issuer becoming 'unrated'.

In certain circumstances, EUI may amend credit ratings during the day. In this event, the revised price will be taken into account on the valuation of security held in any member account linked to a cap and the valuation of securities for DBV. Stock loan valuations will not be revised. Securities available for auto-collateralising repurchase transactions may not be subject to price amendment during the day.

Use of information

Users and participants may only use the information provided by third parties to EUI for the purpose of using or otherwise participating in the services provided to them by EUI in reliance upon or otherwise in connection with that information.

Users and participants should also note that:

- ownership of the intellectual property rights in the information in the price feed is reserved to IDS or the source (including the London Stock Exchange or Irish Stock Exchange where appropriate) from which IDS or the relevant source obtains such information and no such rights are or will be transferred to the user or the participant;
- the use of the information in the price feed and any information obtained or derived from it is restricted to the user or participant and its employees and agents in the normal course of its business;
- users and participants are prohibited from communicating the information in the price feed and any information obtained or derived from either of them to any third party including any subsidiary or branch office of the user or participant's own organisation by any means whatsoever;
- IDS has agreed with EUI to use reasonable care and skill and to take reasonable steps to ensure the accuracy of the information which it provides to EUI. However, save as set out below, all conditions or warranties, express or implied, statutory or otherwise, including but not limited to any concerning the quality or fitness of the information in the price feed for any particular purpose are excluded. Save in respect of death or personal injury caused by its negligence, IDS's aggregate liability to any user or participant for any loss or damage arising out of or in connection with the use of the information in the price feed by the user or participant is further limited to the greater sum of either £100,000 per claim or the aggregate total of the charges paid to IDS in the 12 months prior to the date of default;
- Moodys has agreed with EUI to provide information from sources believed by it to be accurate and reliable. All credit rating data is provided on an 'as is' basis. No representation or warranty, express or implied, is made or given concerning the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such credit rating data or opinions contained in such information;

- the credit ratings and other opinions contained in the information are, and shall be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, hold or sell any securities;
- each credit rating or opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user or participant and a user or participant must make its own study and evaluation of each security, and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling;
- EUI has a number of different licences in place with third party data vendors; typically they contain restrictions on how the data can be used and any data sourced from a third party cannot generally be copied or otherwise reproduced, repackaged, further transmitted, transferred, disseminated, distributed, redistributed, sold, resold, leased, rented, licensed, sublicensed, altered, modified, adapted or stored for subsequent use for any purpose, in whole or part, in any form or manner or by any means whatsoever, without the data vendor's consent (which would need to be obtained through EUI), unless EUI has expressly permitted data to be used in a certain way within the CREST services being provided; and
- in the event that any EUI licence with a particular third party data vendor is terminated or suspended or the third party data vendor can no longer supply all or part of the data under the licence, EUI shall be entitled to obtain an appropriate licence with another third party data provider without notice.

Section 4: Directions

As envisaged in the CREST membership and other contracts entered into by EUI, EUI may from time to time need to give directions requiring particular action to be taken (or not taken). Such directions may be given either generally or to particular participants, users etc or groups of the same.

As a general rule directions are given to facilitate or ensure the efficient operation of the CREST system, to deal with particular issues relating to the operation or use of the CREST system that have arisen and to remedy or avoid a breach of any of the CREST Regulations or the contractual undertakings given to EUI. Directions may be given by Operational Bulletin which will be delivered by fax, e-mail or such other method as may be used at the relevant time for delivery of Operational Bulletins. EUI may also give such directions by letter or fax but this will generally only occur where the direction is given to a single participant, user etc or a small group of the same.

Section 5: Provision of information to central banks and the UK Debt Management Office

Bank of England

EUI will regularly provide (in written or electronic form) to the Bank of England information pursuant to CSDR. EUI will also from time to time provide information (including information relating to individual CREST members or other CREST participants) held by EUI which relates to the business or affairs of CREST members (or other CREST participants) and their accounts or activities in the CREST system and which is required by the Bank of England to enable or assist it to discharge any of its responsibilities as set out below.

For this purpose, the Bank of England's responsibilities comprise:

- ensuring the stability of the monetary system as part of its monetary policy functions;
- supervising financial market infrastructures with a view to protecting and enhancing the stability of the financial system in the UK;
- ensuring the smooth, efficient and effective running of the UK financial sector, including involving relevant market infrastructure providers and market participants in ways that ensure continuity of key services without systemic disruption and without recourse to public funds;
- collecting data from financial market infrastructures it supervises to inform its supervisory and systemic risk analysis;
- as part of its supervisory and regulatory responsibilities, advising on the implications for UK financial stability of developments in the domestic and international markets and financial market infrastructures, as well as assessing the impact on monetary conditions of events in the financial sector;
- being committed to effective information sharing, consultation and co-operation with other central banks and supervisory authorities in its supervision of UK-based financial market infrastructures;
- undertaking, in exceptional circumstances, official financial operations in order to limit the risk of problems in or affecting particular institutions spreading to other parts of the financial system,

in each case when carried out within the framework for co-operation between HM Treasury, the Bank of England, the Prudential Regulation Authority and the Financial Conduct Authority in the field of financial stability.

In addition, the Bank of England may require information in connection with functions performed by, or in relation to actions the Bank may take with, the DvP Service.

The Bank of England has confirmed to EUI that it will keep all such information received from EUI confidential, where it relates to the business or affairs of a particular CREST member or other CREST participant, except where the Bank of England is required to disclose such information by law or statute or by order of the court or decision of a public authority of competent jurisdiction, or where the Bank reasonably considers that such a disclosure is required to assist or enable it to discharge its responsibilities outlined above, or by reason of co-operation arrangements between the Bank and a supervisory or regulatory authority, including the Appropriate Regulator.

European Central Bank

EUI may from time to time provide (in written or electronic form) to the ECB certain information (including information relating to individual CREST members or other CREST participants) held by EUI which relates to the business or affairs of CREST members (or other CREST participants) and their accounts or activities in the CREST system and which is relevant to the performance by the ECB of its obligations and exercise of its rights relating to the provision of services by the ECB to EUI in connection with the Euro DvP Service.

The ECB has agreed with EUI that it will keep such data confidential, save that the ECB may disclose such data:

- where it relates to the suspension or termination of the services provided by the ECB to EUI in connection with the Euro DvP Service;
- to other Eurosystem CBs or third parties that are involved in the operation of TARGET2, to the extent that this is necessary for the efficient functioning of TARGET2;
- to other Eurosystem CBs in order to carry out the analysis necessary for market operations, monetary policy functions, financial stability or financial integration;
- to supervisory, resolution and oversight authorities of EU member states and the EU, including Eurosystem CBs, to the extent that this is necessary for the performance of their public tasks, and provided that such disclosure is not in conflict with applicable law;
- for statistical, historical, scientific or other purposes in the exercise of its public functions or of functions of other public entities to which the information is disclosed; and
- for purposes relating to the provision of services by the ECB to EUI in connection with the Euro DvP Service.

Central Bank of Ireland

When requested by the Central Bank of Ireland, EUI may from time to time provide (in written or electronic form) to the Central Bank of Ireland information held by EUI which relates to the business or affairs of CREST members (or other CREST participants) and their accounts or activities in the CREST system and which is required by the Central Bank of Ireland.

Federal Reserve System

When requested by a Federal Reserve Bank, EUI may from time to time provide (in written or electronic form) to a Federal Reserve Bank or another part of the Federal Reserve System information (including information relating to transactions giving rise to USD inter-bank payment obligations) held by EUI which relates to the business or affairs of CREST members (or other CREST participants) and their accounts or activities in the CREST system and which is required by the Federal Reserve System.

UK Debt Management Office

EUI does not currently operate arrangements for the provision of information relating to members or their activities to the UK Debt Management Office.

Section 6: Provision of information to EUI associates

Information held by EUI or within the EUI systems about a participant or user and its activities may be provided by EUI from time to time to (or EUI may permit access to the same from time to time by) any associate of EUI or any third party supplier of services to EUI (or to an associate of EUI) to be used and/or disclosed for such purposes and in the manner set out below.

In EUI's agreements with participants and users, such right of disclosure or access is made conditional upon the prior agreement of the relevant associate to receive and keep such information subject to substantially the same obligations, if any, that EUI itself is subject to in respect of such information.

Such disclosure may be made to the extent that it is necessary for the purpose of the analysis, development, testing, maintenance and operation of systems, equipment and networks and the offering, arranging, managing and provision of products and services of EUI and/or the relevant associate (the 'permitted purpose').

The relevant associate (or EUI) may further disclose or give access to such information to third parties (for example, suppliers of services, consultants and contractors) where:

- such disclosure or access is necessary for the performance of such third parties' obligations; and
- such disclosure or access is necessary for the permitted purpose; and
- such third parties have agreed in advance with EUI (or the relevant associate) that they shall receive and keep such information subject to substantially the same obligations, if any, that the relevant associate itself is subject to in respect of such information.

Section 7: Provision of stock lending data and settlement fails

EUI makes information relating to stock lending activity in the CREST system available over its website as follows:

- daily stock loan data for subscribers;
- monthly stock loan data to all; and
- monthly settlement backlog statistics.

Information is only ever made available on an aggregate basis. Individual CREST participants' positions are never disclosed (except as provided for under the CREST Terms and Conditions). In addition, periodic reviews to ensure that the aggregate figure does not inadvertently reveal an individual's position are maintained. These reviews seek to ensure that at least three firms are actively borrowing any stock included in the data published.

Daily provision of stock loan data for subscribers

At the end of each day on which the CREST system is open for settlement, the CREST System Controller extracts details of all unsettled stock loan return transactions (SLRs) in the CREST system, involving securities in the FTSE 350, FTSE Small Cap and Irish securities of equivalent capitalisation. Free of Payment Loans are included in these figures.

Transactions in each ISIN are then summed to produce the aggregate number of shares on loan for each relevant security. Only the aggregate of the net borrowing/lending totals for each participant within a particular line of stock is included. This is intended to remove the effect of intermediated loans from the figures. Once the net lending position for each party by ISIN has been established, the positive figures are then summed to produce the net open position for each ISIN.

Data available

The data contains the following information for each ISIN for the day in question:

- security name;
- security category;
- number of shares on loan; and
- total number of shares in the CREST system.

Following a delay, the data is made available to subscribers on the Euroclear website in a downloadable format from a secure area of the Euroclear website. That area is password protected, with access granted to those firms or individuals who have agreed to subscribe to the service.

Monthly provision of stock loan data to all

In order to ensure a degree of information is available to all, EUI publishes certain information relating to stock lending activity on its website. This may be viewed/downloaded by all registered website users free of charge.

The figures published consist of the monthly average number of shares on loan for each security in the FTSE 350, FTSE Small Cap and Irish securities of equivalent capitalisation. The data fields provided are as follows:

- ISIN;

- security abbreviation;
- average number of shares on loan for the previous month;
- average number of shares in the CREST system for the previous month; and
- percentage of stock on loan.

EUI aims to make this information available within the first week of each calendar month.

Monthly provision of settlement backlog statistics

EUI also publishes information on its website on settlement failures in order to provide a clearer picture of settlement problems in the UK market place. On each settlement day (excluding UK Bank Holidays) EUI records the number of failed transactions and the number of settled transactions in each ISIN in the F10, F25, I10 and I25 and OTH security categories. At the end of each calendar month the average number of fails, as a percentage of the average number of transactions, is calculated for each security. EUI publishes details on the fifty securities with the highest average failure rates for the previous month.

EUI aims to make these figures available over the Euroclear website within the first week of every calendar month.

Section 8: Provision of information to an exchange, a clearing house, or an operator of a Multilateral Trading Facility or an Alternative Trading System

Pursuant to Clause 4.1 of the CREST Terms and Conditions (general), EUI may from time to time provide (in written or electronic form) to an exchange, a clearing house, or an operator of a Multilateral Trading Facility or an Alternative Trading System, information (including information relating to individual CREST members) held by EUI which relates to the business, activities or affairs of the CREST members and their accounts in the CREST system and which is required by such exchange, clearing house or operator in order to enable it to meet its regulatory and supervisory obligations imposed on it by a supervisory or regulatory body, including the Bank of England, the Financial Conduct Authority and the Prudential Regulatory Authority.

Any information provided to an exchange, clearing house or operator of a Multilateral Trading Facility or an Alternative Trading System will be provided following confirmation by such exchange, clearing house or operator that it will keep all such information received from EUI confidential and will use it solely for the purposes of meeting its regulatory and supervisory obligations, except where such exchange, clearing house or operator is required to disclose such information by law or by order of the court or decision of a public authority of competent jurisdiction, or where such a disclosure is required by a supervisory or regulatory body.

Section 9: Provision of information to settlement banks

Pursuant to clause 4.1 of the CREST Terms and Conditions (general), EUI may from time to time provide (in written or electronic form) to the settlement bank appointed by the CREST member in respect of one or more designated currencies, information held by EUI or within the EUI systems which relates to the liquidity and liquidity arrangements of the CREST member to enable such settlement bank to assess and manage liquidity usage.

Section 10: Personal data and data protection

EUI may receive, collect and process personal data which relates to admitted and prospective users and participants, including any persons employed by or associated with such users and participants.

The contractual rights and obligations of each user and/or participant and EUI pursuant to Applicable Data Protection Law with respect to that personal data are set out in the CREST Rules and the relevant CREST bilateral agreement.

In respect of each user and participant, EUI is acting as controller under the GDPR with regards to the personal data processing activities outlined in the CREST Privacy Notice (Corporate Participant – General) and those outlined in the CREST Privacy Notice (Personal Members), whether provided to EUI by the relevant user and participant (as applicable) or directly by the relevant data subject identified in that Privacy Notice. EUI shall not be considered joint controllers with any such user or participant in respect of such processing of personal data. Each Privacy Notice, which is made available by EUI on the EUI section of Euroclear's website, details how EUI processes personal data together with a summary of the rights of the relevant data subject. Each corporate user and participant should make available a copy of the CREST Privacy Notice (Corporate Participant – General) to the relevant data subjects.

EUI is the processor for the purposes of the GDPR in respect of the processing of personal data input by a participant or user (either directly or via another user or participant) to non-mandatory fields in the CREST system.

In addition, EUI is the processor for the purposes of the GDPR in respect of the processing of the following personal data:

- **CREST Sponsor (in respect of a member or a personal member)** – any personal data input to the optional member account designation field in the CREST system on behalf of a sponsored member.

- **CREST Registrar, CREST Sponsored Registrar, CREST Sponsor (in respect of a Registrar)** – any personal data included in corporate action data input by such participants to the CREST system or otherwise provided to EUI.

- **Member, Sponsored Member, Joint Sponsored Member and Sponsored Member Nominee** - any personal data input by such participants to the optional member account designation field in the CREST system and/or any personal data input to the CREST system in connection with the underlying holder of securities in respect of a trade.

The purposes of processing such personal data by EUI (as described above), acting as a processor for the purposes of the GDPR, shall in each case be in accordance with EUI's role as operator of the CREST system and in connection with the CREST services, in the context of the relevant participant or user's participation in the CREST system.

For the purposes of this Chapter 1, section 10 the terms "controller", "data subject", "joint controllers", "personal data", "process", "processor" and "processing" shall have the meanings given in the GDPR.

EUI's processing of personal data, whether as controller or as processor, has been sub-contracted to Euroclear SA/NV and may be further sub-contracted to other EUI associates or to any third party supplier in each case in accordance with Chapter 1, section 6.

Users and participants (whether prospective or admitted) and any data subjects of personal data processed by EUI may contact EUI's data protection officer for further detail on EUI's approach to data privacy, either by email uk-compliance@euroclear.com or by post to: UK Compliance, Euroclear UK & Ireland Limited, Watling House, 33 Cannon Street, London, EC4M 5SB.

Section 11: Provision of information to statistical agencies

EUI may provide anonymised and aggregated information regarding stock balances, and member account classification to statistical agencies for the purpose of compiling economic statistics.

Section 12: Provision of settlement information to subscribers

Participants may subscribe to receive monthly reports from EUI under separate terms and conditions.

The reports are provided to subscribers only in respect of their participant ID and contain information regarding that specific particpants' settlement activity from the CREST system:

- settlement performance summary

- peer group benchmarking
- daily breakdown of settlement activity
- end of month asset values
- asset value trends over one year
- transaction volumes/values trends over one year
- end of month transaction backlog volumes/values

The reports are only to be used for internal business purposes only.

Peer group benchmarking

Information held by EUI or within the CREST system about participants' settlement activity will be used for peer group benchmarking.

Peer groups are assessed on the basis of the average number of transactions per day.

Subscriber reports will contain the full list and names of those participants who are in the same peer group, whether or not they are also subscribed to receive the reports or not.

Section 13: Provision of information to NSS settlement participants

Pursuant to clause 4.1 of the CREST Terms and Conditions (general) and clause 3.4 of the CREST Settlement Bank Agreement, EUI may from time to time provide (in written or electronic form) to the NSS settlement participant acting as Settler for any USD settlement bank appointed by the CREST member, information held by EUI or within the EUI systems which relates to the liquidity and liquidity arrangements of a CREST settlement bank to enable such NSS settlement participant to assess and manage liquidity usage.

Section 14: Money laundering and prevention of financial crime

Information held by EUI or within the EUI systems about a participant or user and its activities may be disclosed by EUI to certain licenced entities for the purposes of carrying out anti money laundering checks and/or the prevention of financial crime in compliance with requirements imposed on it by the Bank of England, or other regulatory body or by law, including under the laws of the United States of America.

Section 15: Asset segregation and protection

This section contains information concerning the measures put in place to protect the securities of CREST participants (including those that may be holding on behalf of their clients). This section relates to both:

(a) CREST securities (UK, Irish, Guernsey, Isle of Man and Jersey securities directly admitted to the CREST system); and

(b) International securities (securities held through EUI's international CSD links as described in the CREST International Manual in accordance with the CREST International Settlement Links Service).

EUI is the operator of the CREST securities settlement system and is supervised by the Bank of England. EUI is:

(a) as an operator of a relevant system under the UK Regulations;

(b) a recognised CSD under the UK Financial Services and Markets Act 2000;

(c) a recognised inter-bank payment system under the UK Banking Act 2009;

(d) authorised as an operator of systems in Ireland, Jersey, Guernsey and the Isle of Man in accordance with the relevant CREST Regulations in each jurisdiction.

The CREST UK system is a designated system in accordance with the Settlement Finality Directive (Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems) in the UK under the Financial Markets and Insolvency (Settlement Finality) Regulations 1999 and the CREST Irish system in Ireland under the European Communities (Settlement Finality) Regulations 2010.

Segregation of securities

The CREST system enables securities to be held with two levels of segregation: participants (one person may have one or more CREST participants) and member accounts (one CREST participant may be segregated into one or more member accounts). These options enable, at any time and without delay, the segregation in the CREST system of the securities of a participant from those of any other participant and from EUI's own assets and the segregation of the securities of a participant from those they may be holding on behalf of the participant's clients.

It is the responsibility of CREST participants to ensure the appropriate segregation where relevant of securities they hold on behalf of clients. Although EUI has an account structure which allows participants the ability to indicate whether an account will be either omnibus client, individual client or a proprietary account, EUI will not know the identity of any underlying clients.

A person may have one or more separate CREST participants. Each participant is functionally separate and securities of one participant cannot directly be used to meet obligations of another participant. In respect of participants, see further Chapter 2, section 2 below.

Within each participant, separate 'member accounts' may be opened. Securities are held in the CREST system in member accounts of a participant. Generally, transactions must identify the relevant member account of the participant. Securities in one member account cannot directly be used in respect of transactions relating to another member account. In respect of member accounts, see further Chapter 2, section 5 below.

Any participant that wishes to hold in one securities account the securities which they hold on behalf of different clients of that participant ('omnibus client segregation') may hold those securities using one (or more) CREST participant(s) and/or one (or more) member account(s).

Any participant that wishes to segregate the securities they may hold on behalf of any of the participant's clients ('individual client segregation') may segregate them by holding securities in two or more CREST participants (e.g. operating a separate participant in respect of each client)

and/or two or more member accounts within a participant (e.g. by operating separate member accounts in respect of each client).

The costs of opening participants and member accounts are set out in the CREST Tariff. The commercial terms of opening participants are the standard terms of CREST participation, as set out in the CREST Terms and Conditions for CREST members (and other relevant standard terms of participation for other participants). As described in Chapter 2, section 5 below, all CREST members are able to create additional member accounts as a standard feature of the CREST system.

Implications of segregation

Main legal implications

In relation to CREST securities, EUI is not a custodian or depository and does not hold the CREST securities itself or intermediate in the holding chain. CREST members are the legal owners themselves of CREST securities recorded in their name in the CREST system. Securities in the CREST system are fully dematerialised and are transferred as a result of electronic instructions sent by or on behalf of the holder of the security.

In relation to international securities (represented in the CREST system as CREST Depository Interests) these are kept in safe custody in the CSDs with which EUI has links in the name of wholly-owned nominee subsidiary companies of EUI (or their respective sub-depositories in another country) in accordance with the terms and conditions for holding securities in those CSDs. Details of the holding of international securities in the CREST system are set out in the CREST International Manual, Chapter 2, section 2 and section 7.

Regardless of which segregation option outlined above is used (i.e. omnibus client segregation or individual client segregation), CREST securities (including CREST Depository Interests) remain in the name of the CREST member.

Applicable insolvency law

As described in Chapter 5 below, title to units of a CREST security is recorded in the relevant register for that security in the name of the CREST member. The relevant governing law (UK, Irish, Jersey, Guernsey or Isle of Man) is dependent on the security concerned.

In respect of international securities, EUI, through its nominee subsidiaries, participates in each CSD with which EUI has a link and therefore is subject to the laws relevant to that CSD and to its rules. Consequently, different laws and rules will govern holdings of international securities in each jurisdiction of the CSDs with which EUI has links. These laws and rules (and the laws and rules relevant to rights in and transfers of the relevant international securities, which may include laws of jurisdictions other than that of the CSD) affect matters including the following: (i) the nature of the rights (or 'title') which EUI, through its nominees, has in relation to the securities which it holds; (ii) transfers of those securities; and (iii) the arrangements to be applied in the event of an insolvency, including the insolvency of a counterparty which is also a participant in the CSD. Relevant Swiss, New York and Belgian law matters are summarised in the CREST International Manual, Chapter 3, section 3.

As described in the CREST International Manual, Chapter 2, section 2, the CREST Nominee is a participant in other CSDs and holds rights to securities held within the other CSDs on behalf of the CREST Depository for the account of CREST members. The CREST Depository's relationship with CREST members is governed by the Deed Poll entered into under and governed by English law.

Risks of each option

As noted above, regardless of which segregation option outlined above is used, CREST securities (including CREST Depository Interests) remain in the name of the CREST member. In the event of the insolvency of the CREST member, interests in the CREST securities held by the CREST member will be determined in accordance with the insolvency process and laws of the relevant jurisdiction applicable to that CREST member.

Protections afforded to clients of the CREST member will be dependent on those laws. Such protections, and the speed at which assets are returned to clients, if at all, may vary based on whether the CREST member uses omnibus client segregation or individual client segregation.

International securities may be subject to custody and other risks associated with indirect holdings, including that rights attaching to such securities will only be available to members through the intermediation of third parties. Rights attaching to indirectly held securities may be affected by various factors including, but not be limited to: (i) the interest held by third parties in respect of such securities; (ii) the laws of the jurisdiction of the CSD in which the underlying security is held or of the issuer or which is otherwise applicable to the securities; (iii) the terms and conditions of any relevant CSD, custodian or sub-custodian; and (iv) the terms and conditions of the depository interests as set out in the CREST International Manual. A full description of the legal framework for the holding and settlement of international securities is set out in the CREST International Manual.

Use of securities

EUI has no security interest, lien, right of retention or any similar rights over CREST securities and does not use CREST securities that do not belong to it for its own purposes. EUI is not a custodian or depository and does not hold the CREST securities itself or intermediate in the holding chain.

CREST system rules and procedures in relation to rectification, amendment and correction of registers include:

(a) bad delivery procedures, set out in CREST Rule 12;

(b) rectification of registers by registrars, set out in CREST Rule 11;

(c) system controller functions in relation to central intervention, set out in the CREST Reference Manual, Chapter 10, section 1.

EUI and its subsidiaries have no charge or other security interest over international securities but have rights or powers reserved under the declaration of trust and terms and conditions under which international securities are held. In particular, EUI may make deductions from international securities (or income or capital arising from them) or sell international securities or take payment from CREST members in order to recover unpaid fees, charges, costs and expenses in connection with the member's holdings of international securities. Full details of these circumstances are set out in the CREST International Manual.

CREST members provide prior express consent to the circumstances referred to in this section in accordance with the CREST Terms and Conditions including in particular Schedule 1 to the Terms and Conditions, the Deed Poll and the CREST International Manual. CREST members are required to obtain any necessary prior consent from their clients.

Obligations of CREST participants

In accordance with CSDR, CREST participants shall:

(a) offer its clients at least the choice between omnibus client segregation and individual client segregation and inform them of the costs and risks associated with each option;

(b) publicly disclose the levels of protection and the costs associated with the different levels of segregation that they provide; and

(c) offer those services on reasonable commercial terms.

Details of the different levels of segregation offered by participants shall include a description of the main legal implications of the respective levels of segregation offered, including information on the insolvency law applicable in the relevant jurisdictions.

CREST participants must also obtain any necessary prior consent from their clients regarding use of securities.

Section 16: Provision of information to regulators in connection with settlement finality (or other laws)

EUI may provide information held by EUI or within the EUI systems related to a participant to a regulator (whether in the UK or elsewhere) in connection with the settlement finality protections afforded to the CREST UK system or the CREST Irish system or otherwise related to the CREST system.

Certain regulators may make available a list of those participants in the CREST system that are incorporated in such regulator's jurisdiction for the purposes of Directive 98/26/EC on settlement finality in payment and securities settlement systems (or such national laws which implement such directive or any other national laws in force in that regulator's jurisdiction which implements settlement finality protections to systems in that jurisdiction).

Section 17: Call Recording

EUI may record calls for training and monitoring purposes that are made or received to its client helplines.

Chapter 2: Logical structures

Section 1: Users

For processing purposes, the CREST system separates the logical functions of inputting instructions and being a party to transactions (including, in the case of a member (other than a CREST IPA), holding assets). The two functions may be shared by the same person or carried out by different persons. The *user* inputs instructions, but is not a party to any transactions; *participants* (including members who are party to transactions and who, unless they are CREST IPAs, hold assets) do not directly communicate with the CREST system. If the functions are shared, the combined user-participant enters into an agreement with EUI for both functions (as set out in the Application Procedures), but is known by two separate identities in the CREST system (a User ID and a Participant ID). If a participant opts to use the central sponsor services described or referred to in Chapter 4, section 4, instructions may be input centrally on their behalf by the relevant CREST central sponsor. If a participant of the type member (not being a CREST IPA) opts to use the services of one or more voting service providers as described in Chapter 7, section 9, proxy appointment instructions may be input on their behalf by the relevant voting service provider(s). Thus participants may have a number of users (the relevant CREST central sponsor(s), the relevant voting service provider(s) and the user appointed under their own arrangements).

A user can send instructions to the CREST system on behalf of one or many participants or participating issuers. And it can authorise one or many individuals within its organisation ('operators') to input instructions.

The user can access the CREST system using the file transfer interface (including an ISO15022 compliant interface), the interactive interface, or both interfaces. The user is supplied with a free copy of the CREST interactive software, the Graphical User Interface (GUI), use of which is subject to the terms of the software licence appended to the agreements entered into by users and participants.

The user contracts with one or more of the CREST network providers for connection to the network and the CREST system. The network provider supplies the user with one (or more) gateway computers, located in the user's office. On the gateway computer are located some elements of the secure communications infrastructure provided by the network providers and EUI (in particular the tamper-resistant hardware unit within which are stored the unique software 'keys' used to authenticate (separately) inbound and outbound messages). These keys are kept secret within the unit and are never made accessible to the user.

A gateway computer can only have one user in normal circumstances but a user can have one or many gateways. Each gateway computer is uniquely identifiable to the network provider and has its own unique set of security keys, and this unique identity is contained in all messages sent to the CREST system.

Users (with the exception of a CREST central sponsor) may, if they choose, allow the member on whose behalf they act to be an operator of the user, being given limited access to CREST system functionality (e.g. to specific functions, specific member accounts or to read only access); but the member in this case can only access the CREST network through a gateway of the user. The user therefore remains responsible for the security of communication across whatever network is used to transport data between the member and the user's gateway. It is for the user to determine to which member accounts and functions the member may have access.

The user (except for a CREST central sponsor) may choose to allocate an operator terminal to the member on whose behalf it acts for dedicated use by that member. The operator terminal may be located in the user's premises (access being by a LAN, and therefore the responsibility of the user) or in the member's office or more remotely (access being by a WAN, and therefore also the responsibility of the user).

Where a user sends and receives dematerialised instructions which, where permitted by applicable CREST Regulations, are authenticated in accordance with the specifications of a depository, clearing house or exchange, it will not maintain a gateway computer; or contract with one or more network providers accredited by EUI; or use the file transfer interface or interactive interface. In such circumstances, the description contained in this Chapter 2, section 1 and in Chapter 2, sections 3 and 4 is modified accordingly. At present, the only user to whom this applies is Eurex Clearing AG ('ECAG') in its capacity as CREST central sponsor for the central counterparty service for ISE trades. In this capacity and as a clearing house, ECAG operates or causes to operate authentication procedures (to which EUI has agreed) as part of the central sponsor services provided by it.

Section 2: Participants

The CREST participant types are:

- members, including the cross-CCP member (but for the purposes of this Chapter 2, section 2 only 'members' do *not* include CSD participants, 'CCP' participants or issuing and paying agents);
- 'CCP' participants (referred to as 'central counterparty' in the CREST DEX) ;
- central bank participants;
- CSD participants;
- settlement banks (referred to as 'payment bank' in the CREST DEX);
- CREST Registrars;
- voting service providers;
- information providers;
- issuing and paying agents (CREST IPAs);
- regulators (e.g. the Bank of England, FCA, PRA, London Stock Exchange, HM Revenue & Customs (HMRC), auditors, settlement banks etc);
- CREST service administration functions (e.g. System Controller, the CCSS and the network providers);
- product providers;
- Trade System Managers; and
- NSS settlement participants (referred to as 'correspondent bank' in the CREST DEX).

Many participant types may be 'sponsored' into the CREST system by a third-party user (this most commonly occurs in the context of sponsored members but EUI can accept sponsored settlement banks, registrars, CREST IPAs and regulators, subject to adequate contractual arrangements). The term 'sponsored member' does not however include a member who uses the services of a CREST central sponsor to create central sponsor transactions attributable to him or who uses the services of one or more voting service providers in relation to the CREST voting service, but who otherwise inputs his own instructions (and therefore acts as a user) in relation to other transactions and services.

Each participant can only be linked to a single user, except in the case of participants who opt to make use of a CREST central sponsor, as described or referred to in Chapter 4, section 4 and in the case of participants who have appointed one or more voting service providers, as described in Chapter 7, Section 9. Each user can operate many participants.

As described in Chapter 6, section 8, a settlement bank may operate in the CREST system with more than one participant of type 'settlement bank', each with a separate participant ID.

Certain participants have access to base data (e.g. security details, names and addresses of participants etc). Access to most CREST system functions is restricted depending on the participant type. Consequently:

- only members, sponsored members, receiving agents (all of whom are of participant type member), 'CCP' participants, CSD participants, issuing and paying agents and product providers have access to stock and cash functionality;
- issuing and paying agents only have access to functionality relating to the securities for which they act as issuing or paying agent, and only have access to such functionality to enable or facilitate the performance of their issuing agent and/or paying agent functions in respect of eligible debt securities. In particular, an issuing and paying agent is not permitted to use the relevant functionality for the purpose of holding, or transferring, title to securities. References in the other sections of this CREST Manual to a 'member' generally include an issuing and paying agent, unless expressly stated otherwise or if the relevant service or functionality which is being described contemplates the use of that service or functionality for the purpose of the holding, or transferring, title to units of a security;
- only members and sponsored members have access to the proxy appointment function;
- only settlement banks can enable members' caps, have certain access rights to their client members' data, and have sole access rights to certain payment functions in the EUI systems;
- only NSS settlement participants can enable USD settlement banks' Settler relationships, have certain access rights to their settlement banks' data, and have sole access rights to certain Liquidity Use Limit functions in the EUI systems;
- CREST Registrars are restricted to registrar and announcement agent functions. To have access to stock and cash and/or issuer's agent functions, CREST Registrars need a separate Participant ID - of type 'member' and must enter into an agreement as a receiving agent (see Chapter 5, section 3);
- voting service providers have access to live proxy appointment instructions input by or on behalf of any member in relation to a member account(s) in respect of which they have been appointed. They are also able to view stock balances for those member accounts for which they have been appointed as a voting service provider;
- regulators (e.g. an Appropriate Regulator, London Stock Exchange, HMRC, auditors, settlement banks etc) have read-only access to the CREST system but the right to view data relating to any participants or transactions which they regulate (or in the case of HMRC, to all participants);
- the System Controller has additional powers to 'impersonate' any user, to aid in problem resolution;
- the CCSS site has access only to the function for accepting stock deposits and 'housekeeping' functions;
- each securities price feed and exchange rate feed received by the CREST system relates to a specific information provider participant;
- a CREST participant which is a member, 'CCP' participant, CSD participant, issuing and paying agent or product provider has stock accounts in the CREST system. A person may have multiple CREST memberships, all in the same name and address but differentiated in the CREST system by different Participant IDs. At the participant's option, with the exception of issuing and paying agents, these different memberships may be distinguished by different designations on the register; where this is the case the designation may be applied by the

member to its Participant Details at member level or at member account level. Issuing and paying agents may only have one member account. A membership may comprise up to four joint holders; and

- a Trade System Manager has access to data comprising details of: (i) intermediaries, members and/or regularly traded ISINs that participate in a trading venue (or venues) operated by the trade system managed by that Trade System Manager and (ii) such other information which is required for the calculation of stamp duty or stamp duty reserve tax reliefs by the EUI systems in respect of trades executed via a trading venue (or venues) or otherwise.

US CREST members

As defined in the CREST Glossary, a US CREST member means either a CREST participant or prospective CREST participant which is (i) a natural person with a US residence; (ii) a company whose registered office, principal place of business or executive office is in the US (including non-US branches thereof); (iii) a US bank (and any non-US branches thereof); or (iv) a broker-dealer registered with the US Securities and Exchange Commission (SEC) (even if such broker-dealer does not have a US residence).

US CREST members are not permitted to hold and/or transfer any Restricted Securities by means of the CREST system.

Section 3: Operators

An operator is an individual who is authorised by a user to access the CREST system via that user's gateway computer. The operator may be a person, or a computer process. Operators are linked to users, and can access only data relevant to that specific user.

Each user must have at least one operator, who is allocated an Operator ID by EUI when the user is set up on the system (the master operator). Users may also choose to create additional operators and the CREST system does not restrict the number of operators which a user may have. The user allocates each operator an identity (e.g. a set of initials) which must be unique within that user's group of operators.

Each operator also has his own password, which he must use to gain access to the CREST system. The CREST system only allows the master operator to allocate a 'one time' password when creating an operator, so that the operator must change this to his own chosen password when he first logs on to the CREST system.

Each operator may have his activity restricted by the user:

- operators are restricted to using only interactive functions, or only file transfer functions, or only ISO functions; with the exception that file transfer and ISO operators may log into an interactive session in order to start or end their file transfer or ISO session (as the case may be);interactive operators may be granted access to sub-sets of CREST system functionality, for instance to input functions as well as enquiry functions, or to enquiry functions alone;
- interactive operators may be granted access to all, one or none of the participants for which that user acts; and
- interactive operators may be granted authority to input cash-only DEL transactions and may be assigned a daily limit to the cash-only DEL transactions they may input.

Master operators

The operator which the CREST system assigns to each user when setting up the user is the master operator. Each user can have only one master operator, who sets up (and removes) all other operators for that user.

The master operator also has the ability to change passwords for his operators (e.g. when an operator forgets his password) and to log his operators out from the CREST system if necessary.

Operators and participants

An operator needs to identify the participant he is operating for, before he can view that participant's data. He can only access data available to that participant unless and until he elects to act for a different participant, or just to access functions available to him in his role as an operator. The operator may change the participant he is operating for any number of times within a single period during which he is logged on to the CREST system, and thus carry out business for a range of participants without needing to log on and off repeatedly.

An operator may send a file transfer containing inputs or enquiries for a number of participants for whom he has been enabled to operate. The file sent in reply will contain data for all those participants. That is, the file response is directed to the requesting operator of the relevant user, not segregated by participant.

Records of operators

It is a requirement of Clause 3.1.9 of the Terms and Conditions (and the comparable clauses in the agreements entered in to by other users) that the member (or other user):

will create a record of the full names of the persons who, in respect of each business day, occupy a responsible position in relation to the supply of information to the Gateway and will maintain such record for the period prescribed in the CREST Manual and produce such record on request by EUI.

This record of operators' access to and use of the CREST system must be maintained for a period of one year.

Operator Enquiries

The CREST system maintains a log of operator activity in respect of:

- information about all operations performed by operators during their GUI sessions;
- information about all maintenance operations performed on transactions by means of the GUI and on the operators who performed them;
- information about all maintenance operations performed on participants by means of the GUI and on the operators who performed them;
- information about all maintenance operations performed on member accounts by means of the GUI and on the operators who performed them;
- information about all maintenance operations performed on caps by means of the GUI and on the operators who performed them;

CREST System enquiries are available to enable suitably-authorised operators to enquire on this information.

Section 4: Operator function groups

An integral part of the CREST system's security is controlling access to functions. There are functions which are only available to some operator types, such as each user's master operator, and there are functions only available to some participant types, such as the System Controller's unique ability to access system functions.

Precise control is provided by granting use of the various system functions to individual users or participants. The CREST system achieves this by grouping functions and granting users access to these function groups; though functions can also be assigned individually. Functions can appear in many function groups, and the System Controller may assign the same function to different groups of users in different function groups. The System Controller can thus allow some users to access the function, while others cannot, because it is enabled in one function group while disabled in another. The grouping of functions is fixed in the CREST system; there are no mechanisms for re-allocating functions or creating new groups.

Access to functions are assigned to users. Function groups differentiate between interactive and file transfer enquiries for most functions, but not for transaction input or amend, which must be assigned for both interactive and file transfer access within a function group, or not at all.

User function groups

A User Function Group is the set of Function Groups assigned to a user. Users need to be able to know what functions are available, and in what groups, and to understand what they have been assigned. These can be viewed via the CREST system's GUI.

As well as controlling users' access rights within the CREST system, system functions will be used to manage daily activity in the CREST system. For instance, at certain points in the day the System Controller will need to close down activities - e.g. preventing further input of instructions into the CREST system late in the evening. This is done simply by disabling the various input functions themselves rather than the access of users to them.

Within the functions available to a user through its User Function Group, a user can choose to restrict the access rights of their operators in two ways: operator-function restrictions and operator-participant restrictions.

Operator-function restrictions

A user's master operator can make available to his own operators all the functions assigned to the user by the System Controller, or he can assign a subset. These 'access controls' are managed through assigning operator-function access rights. For instance, the master operator could assign read-only functions, so preventing the operator from adding or changing data for that user's participants.

Functions are assigned in groups. The allocation of functions to operator function groups is pre-determined by EUI and cannot be altered. A group can either be assigned or not assigned in its entirety; you cannot allocate only some functions from a group. However, individual functions may in some cases be included in more than one group, allowing some flexibility in the way they are used.

Functions are assigned to operators via the CREST system's GUI. Only a master operator can assign functions; although other operators may view the functions which they have been assigned

by the master operator. An operator's access rights need to be assigned when the master operator creates the participant, but can also be subsequently amended by the master operator.

Operator-participant restrictions

In addition to restricting an operator to specific groups of functions within the CREST system, the master operator can restrict operators access to participants' data. An operator can be granted access to: all participants beneath the user; a single participant; or no participants beneath the user (i.e. access only to system data).

Operator-participant restrictions are assigned to operators via the CREST system's GUI. Only a master operator can assign them; although other operators may view the access rights to which they have been assigned by the master operator. An operator's access rights need to be assigned when the master operator creates the participant, but can also be subsequently deleted and re-input by the master operator.

Dual Control

It is possible to restrict access to certain functions for individual operators. Operators may be assigned to a profile, governing access to certain functions as specified by the master operator. For example an operator may have 'input only' access and such inputs will then need to be authorised by an operator with 'authorise access'.

Section 5: Member accounts

Member accounts are the mechanism for holding securities in the CREST system. Only participants of the CREST system which are members (including for these purposes receiving agents, product providers, 'CCP' participants, CSD participants and issuing and paying agents) have member accounts. Issuing and paying agents have only a single, undesignated member account, which may only be used in connection with the issue and redemption of units of an eligible debt security; and in particular, the member account cannot be used by a CREST IPA to hold, or transfer (as opposed to confer), title to units of a security. Before the CREST system can effect settlement, it must know the identity of the member accounts to and from which the securities are to be moved. Generally, each party to the transaction identifies the account it is using for that specific transaction; and where a settlement instruction attributable to a member is created under central sponsor services provided to that member, the member account will be identified in the instruction as part of the direct input services provided by EUI.

Issuing and paying agents excepted, a member may have one or more member accounts; EUI does not limit the number which a member can operate. Each separate account must be individually created by the member before it uses it. It can delete accounts which become redundant. The CREST system itself does not create member accounts if it does not recognise a reference to an account on a member's transaction input.

Before creating a member account, a member should ensure that any designation used would be acceptable to a registrar. A designation may be an alphanumeric but should not give any indication of the identity of any beneficial owner. A member account is the equivalent of a certificated shareholder's designated account on the register and is registered in the same way. Where a member (though not a member which is a receiving agent for an issuer) has more than one member account, each member account is reflected on the register (and, in the case of UK Securities other than eligible debt securities, the issuer's record). Member accounts can therefore be used to segregate one type of holding from another at the member's choice.

The registered name for each member account consists of the member's Participant ID coupled with the member account identifier, i.e. the designation which appears on the register and/or record in addition to the member's own name.

A member can use one account which has a blank identifier (an 'undesignated' account). The name which appears on the register and/or record for any holdings in this account is therefore that of the member alone, with no qualifying designation.

Stock accounts

Each member account can contain one or more stock accounts (one for each line of security as identified by a unique ISIN). If a transaction results in a new line of security being held in a member account, the CREST system creates a stock account automatically. If the balance on a stock account falls to zero on a particular day, the CREST system records the zero balance and shows a zero balance in response to an enquiry. If the balance remains at zero throughout a particular day, the CREST system deletes that stock account automatically at the end of that day. Members need take no specific action to create or delete stock accounts.

Each stock account's balance is segregated into three types of sub-balance as required by the member:

- the available balance, used for general settlement purposes for settlement of most transaction types;
- the deposit link balance (described in detail in Chapter 3, section 1); and
- the escrow balances (described in detail in Chapter 7, section 3).

The segregations are different for CSD participants, as explained in the CREST International Manual. The stock accounts of an issuing and paying agent cannot be used in connection with deposit link or escrow functionality, and therefore a stock account of an issuing and paying agent is not segregated into deposit link and escrow sub-balances.

Additionally, a fourth type of sub-balance exists for the receipt of stock through the auto-collateralisation arrangements. This balance type is only available in relation to nominated 'Bank repo memberships' maintained by the Bank of England (see Chapter 7, section 8).

Stock account balances

The CREST system enables members to enquire upon details of the balances on their stock accounts. An enquiry shows the balance in each of the sub-balances, as it stands at the time of the enquiry. Enquiries can also be made for past dates in which case the balances the CREST system returns are those applying at the close of business (see the daily timetable) on the specified date, or previous business day if the selected date was not a business day.

CREST members (and their regulators) can look at their own balances. Banks have facilities to view member accounts which are linked to a cap. Escrow agents can view balances on their escrow holding accounts, i.e. the accounts which contain records of securities credited to escrow balances for which they are the escrow agent. Registrars can obtain balances on stock accounts, to enable them to reconcile the holdings shown on their register with those recorded in the CREST system. In addition, as described in Chapter 7 Section 9, voting service providers can view certain stock balances in those member accounts for which they have been appointed as voting service provider.

Registrars can view the total of any holdings credited to a stock account balance but not any of the sub-balances.

Section 6: Securities and securities categories

Securities

EUI maintains a database of information relating to securities which have been admitted to the CREST system. This includes basic information on the security (its name, registrar or issuing and paying agent and announcement agent) as well as elements specific to the CREST system, e.g. the security's Start and End Date in the CREST system. The CREST system also retains data on the prices of securities. Both sets of data are taken from sources external to EUI (see Chapter 1, section 3). In the case of an eligible debt security, the CREST system will create the security details from the IPA issuance message sent to it by the issuing agent in respect of that security (see further Chapter 7, section 11).

In addition, as part of the direct input services provided by EUI, flags are included in the security details of each security which specify whether or not that security is eligible for processing under central sponsor services made available by a particular CREST central sponsor to members (other than a 'CCP' participant or the cross-CCP member) or for processing under the netting procedures. In respect of central sponsor securities, the CREST System Controller may set (and amend) these flags on the basis of information received from the relevant CCP, the relevant investment exchange or the relevant collateral management service provider.

Transactions in a security can be input to the CREST system as soon as the security has been enabled in the system. Each security carries a 'start date', which is the first date of settlement for that security in the CREST system. Therefore, any transactions input against a new security only settle once the start date has commenced. If a security has been suspended, no settlement of any transaction involving that security can take place except that a registrar may adjust balances by means of the registrars adjustment.

For EDSs, all the information pertinent to a given issue is available upon enquiry to CREST members with the exception of the total nominal and, in the case of EDSs representing Bank Bills, the identity of the secondary issuer. Only the CREST System Controller, the Bank of England and the issuing and paying agent for an EDS issue can view the nominal amount of an issue, and only the CREST System Controller, the Bank of England and the issuing and paying agent for an EDS issue and the holder of a unit of a Bank Bill can view the identity of the secondary issuer.

Securities categories

Securities, not of type EDS, which have been admitted to the CREST system (including, where relevant, CDIs and other depository interest representing securities) are arranged in a number of categories for the purposes of the valuation of securities held in an account linked to a cap and the assembly of Deliveries by Value. The same categories are used for both purposes and the bid price is used in the calculation. CDIs (and other depository interest representing securities) are categorised by reference to the securities which they represent, and are not referred to specifically below.

For corporate securities the categories are based on the components of the FTSE indices or, where appropriate, upon the recommendations of any relevant overseas stock exchanges, having regard to the methodology applied in the FTSE indices. The categories are revised quarterly, at the same time as the FTSE indices themselves are revised. Changes to individual components of the

categories may be made at other times, such as when an individual component of the FTSE index has been changed. For gilts, categories are based upon the nature of the issuer and the issue.

EDSs are categorised according to their type and credit rating. An EDS will change category if the credit rating of its issuer changes.

The security categories are as follows:

CATEGORY	DESCRIPTION
1 (F10)	ordinary shares and convertible shares issued by companies included in the FTSE 100 index.
1a (I10)	Irish Equivalent 100, being ordinary shares and convertible shares constituted under Irish law with an equivalent market value of FTSE 100 securities.
2 (F25)	ordinary shares and convertible shares issued by those companies included in the FTSE 250 index which are not in 1.
2a (I25)	Irish Equivalent 250, being ordinary shares and convertible shares constituted under Irish law with an equivalent market value of FTSE 250 securities.
3 (OTH)	all other CREST settleable securities not included in Categories 1, 1a, 2, 2a, 8, 9, 10, 14 and 15 and not being international securities represented by CDIs.
4 (E30)	Eurotop 300: this encompasses European securities that are classified in the Eurotop 300, excluding those in existing CREST system categories (e.g. the FTSE 100). Not all of these are currently settleable in the CREST system. The CREST International Manual (as updated from time to time) specifies the range of international securities that do settle in the CREST system.
5 (EGS)	European Tier 1 Collateral: this contains debt instruments issued by European governments (other than the British government) and may contain some high quality European corporate debt. The securities eligible for use as collateral are defined by the European Central Bank.
6 (USS)	United States Security (USS) this includes US companies included in the S&P 500 and NASDAQ 100 range of securities.
7 (OIS)	Other International Securities: International settling securities (equities, corporate and government instruments) not in the above categories.
There are three further categories for government issued debt securities:	
8 (SBG)	Stripped British Government Stock;
9 (UBG)	Unstripped British Government Stock; and
10 (NBG)	Non-British Government Stock issued by foreign governments, supranational organisations or UK municipal issuers.
Securities falling within categories 8, 9 and 10 are collectively referred to as 'gilts' throughout this manual.	
The CREST system also maintains securities details for the purpose of allowing users to report transactions to regulators. The EUI transaction reporting service terminated with effect from 3 January 2018. Such securities are not eligible for settlement through the CREST system and have no value in collateralised caps or the assembly of Deliveries by Value. These are split into separate categories to reflect UK and Irish securities which are not settleable in the CREST system and international securities not represented by CDIs which do not themselves settle in the CREST system and are solely maintained for transaction reporting purposes.	
11 (RES)	UK and Irish securities which are not settleable through the CREST system.
12 (FOR)	Reporting only: International securities which are only maintained to enable users to report transactions to regulators.
Unit trusts and OEICS have three security categories: one for reporting only securities; one for settling securities and one for investment funds participating in the Investment Funds Service:	

CATEGORY	DESCRIPTION
13 (UTO)	Unit Trusts and Open Ended Investment Company shares (OEICs) – non settling; and
14 (UTS)	Unit Trusts and Open Ended Investment Company shares (OEICs) – settling;
15 (UTF)	Unit Trust and Open Ended Investment Company shares (OEICs) – Investment Funds Service.
EDS security categories are as follows:	
16 (BB)	Eligible Bank Bills
17 (CD0)	Certificates of Deposit rated in CREST Credit Band 0 (i.e. those guaranteed under the Credit Guarantee Scheme)
18 (CD1)	Certificates of Deposit rated in CREST Credit Band 1
19 (CD2)	Certificates of Deposit rated in CREST Credit Band 2
20 (CD3)	Certificates of Deposit rated in CREST Credit Band 3
21 (CD4)	Certificates of Deposit rated in CREST Credit Band 4
22 (CP0)	Commercial Paper rated in CREST Credit Band 0 (i.e. that guaranteed under the Credit Guarantee Scheme)
23 (CP1)	Commercial Paper rated in CREST Credit Band 1
24 (CP2)	Commercial Paper rated in CREST Credit Band 2
25 (CP3)	Commercial Paper rated in CREST Credit Band 3
26 (CP4)	Commercial Paper rated in CREST Credit Band 4
27 (LAB)	Local Authority Bills
28 (OMM)	Other Bills including ineligible bank bills
29 (TSY)	Treasury Bills
30 (BEB)	Bank of England Bills
The category into which an EDS is placed is derived from the categorisation given to that EDS by the issuing agent in the relevant IPA issuance message (see further Chapter 7 section 11).	

Restricted Securities

As defined in the CREST Glossary, Restricted Securities mean:

- **Reg S Cat 3 securities:** equities offered and sold pursuant to and therefore subject to restrictions under Category 3 of Regulation S of the Securities Act; and/or
- **Reg S Cat 3/Rule 144A securities:** equities offered and sold pursuant to and therefore subject to restrictions under Category 3 of Regulation S and, if applicable in connection with any eligible resales, Rule 144A of the Securities Act.

Rules governing the holding and/or transfer of Restricted Securities

CREST members are not permitted to hold and/or transfer any Restricted Securities by means of the CREST system:

- where they are a US CREST member (as described in Chapter 2, section 2);
- where they are the issuer, or an affiliate of the issuer of such securities (as that term is used in Regulation S under the Securities Act);

- as nominee or agent on behalf of (directly or indirectly) the issuer, or an affiliate of the issuer (as that term is used in Regulation S under the Securities Act), of such securities; or
- as nominee or agent on behalf of (directly or indirectly) any person where such person is not permitted to hold or transfer such securities and the participant warrants, represents and undertakes to EUI that it has in place adequate procedures to comply with any holding or transfer restrictions applicable to the Restricted Securities in respect of any changes to the person it holds such securities on behalf of.

Where CREST members hold and/or transfer any Restricted Securities, they acknowledge and agree (pursuant to Clause 10.2 of the CREST Terms and Conditions (general) or equivalent provisions in the contracts of other stock holding participants) that:

- the CREST Manual describes the arrangements for the admission, holding and transfer of such securities in the CREST system;
- they remain responsible at all times for compliance with any applicable holding and transfer restrictions applicable to Restricted Securities under US law;
- they remain responsible at all times to account for any applicable taxes in respect of Restricted Securities under US law; and
- EUI will not take any actions in respect of holding or transfer restrictions applicable to Restricted Securities other than those set out in the CREST Manual.

Restricted Securities in the CREST system

In the CREST system Restricted Securities can be identified by their Restriction Type at individual ISIN level. There are two possible values held within the field "Restriction type":

- "Regulation S Cat 3 security" which will apply to all Restricted Securities; or
- "No Restriction" which will apply to all other securities by default.

The "Security Description" field will contain a short text description of the restriction classification (after the name of the company, type of shares in issuance and value of them) as provided by the issuer or CREST Registrar upon creation of the security as follows:

- "Regulation S Category 3 Security";

or if it is also eligible for resale pursuant to Rule 144A, then:

- "Regulation S Category 3/Rule 144A security".

Restricted Securities admitted into the CREST system will bear a legend in the form contained in Chapter 4, section 2.

Input of settlement instructions in respect of Restricted Securities are subject to certification requirements as described in Chapter 4, section 2.

Distribution Compliance Period (DCP)

As defined in the CREST Glossary, the DCP is the period within which offers and/or sales of Restricted Securities are restricted.

The Intended end-date of the DCP (IDCP), provided by the issuer or its CREST Registrar is recorded within the security description and is stored in the CREST system for information purposes only. When (i) the DCP has ended, (ii) the security is not otherwise subject to any other

transfer restrictions under the Securities Act (including, if applicable, as a result of Rule 144A) and (iii) the issuer has confirmed its intention to remove the restrictions from the securities, the move from restricted to unrestricted in the CREST system will only take place once the issuer, or its CREST Registrar, has confirmed the same via a standard form to be completed and submitted to EUI. Where such confirmation is received by EUI the security will cease to be a Restricted Security and the restrictions and the procedures described in the CREST Manual will no longer be applicable.

In CREST system terms, where the issuer or its CREST Registrar have provided the above confirmation, on the final day that the restrictions apply, EUI will amend the IDCP in the security description (if appropriate), and amend the "Next Restriction Type" field to "No Restriction", from "Regulation S Cat 3 Security". This change will then be applied overnight, and the following business day clients will be able to settle transactions in the security in the same manner as any other security and certification will no longer be required.

At this time the following changes will also occur to the security:

- the "Security abbreviation": the "REG S" suffix will be deleted;
- the "Security description": the description of the restriction applicable to the security will be removed, although the IDCP will remain to inform users when the DCP ended; and
- the "Restriction" tab on the security will no longer be available to view or retrieve.

Security Expiry

When a security, not of type EDS, reaches the end of its life (for example, it is replaced by a new line in a corporate action or EUI or the issuer withdraws its permission for such security to be a participating security in the CREST system), the participating issuer and/or EUI specifies an end date. This end date triggers the process of 'expiring' the security. The expiry period normally lasts for a total of 10 business days, after which all balances and any remaining transactions are removed.

The same actions are taken for securities of type EDS, but rather than expiring the security on the end date specified by the participating issuer, EUI will wait until the entire issue has been delivered back to the paying agent as part of the EDS maturity process before beginning the expiry process (and this is treated as the 'end date' of the EDS for the purposes of the following paragraphs of this section).

EUI can remove the end date from the security details at any point up to and including the end date. If the end date is removed on the end date, the 'DBV allowed' flag may be re-set manually. Registration and reconciliation functionality remain available and claims continue to be raised during this period.

Start of expiry period

On expiry of a security the following actions are taken.

As part of the overnight batch at the end of the end date, the security status is automatically set to 'expired'. If the end date was not notified to EUI in advance, or was notified after the date which would normally have been set as the end date then EUI is able to amend the Security Details intra-day to set the current working date as end date to start the expiry process.

The overnight status change to 'expired' generates a static file change. The change from 'enabled' to 'expired' marks the start of the standard 10 day 'expiry' period.

Securities (including eligible debt securities) which have reached the end date are excluded from DBVs. Gilts are excluded from DBVs on the business day prior to their 'Last date of Transfer' (see further below in this section); where no such date is specified exclusion is based on the end date. Where the end date has not been specified due to incomplete information, or where EUI believes a security may be nearing the end of its life, the 'DBV allowed' flag is removed manually before DBV settlement starts. If DBVs have already settled in that security on the end date because EUI was not informed of its expiry, and the security is therefore not available for the settlement of DBV returns, then members affected need to agree between themselves the procedure for returning alternative collateral.

Stock loan returns in the expired security are no longer revalued, and the security does not count towards the margined stock value. Members affected need to make arrangements to return the stock bilaterally.

All transactions (except TTE, TFE, MTM, REG, USE, SLRs, DBRs, RPRs, TDRs, unmatched DELs, unmatched RESs and settled but unregistered transactions) are set to a status of 'will not be actioned'. The security price is left at the closing price on the day before end date.

- CCSS accept remains possible on the end date, to allow for fast track deposits;
- registrars remain required to reconcile on the end date; and
- the expiry period will last 10 business days (2 working weeks).

During the expiry period

During the expiry period:

- price feeds for the security are rejected;
- CCSS accept for the security is disabled;
- there is no need to use non settling (NC) condition flag to prevent settlement;
- instructions forming part of the CREST voting service continue to be processed;
- members may perform normal enquires (e.g. historic balances, postings, transaction lists & details etc.) in the expired security; and
- in order to allow expired securities to settle in certain limited circumstances (principally in the context of corporate actions) and at the written request of a registrar or receiving agent, EUI may re-enable settlement of a specified transaction type in a security during its expiry period;

End of expiry period

At the end of the expiry period:

- reconciliation data are rejected for that security;
- instructions input in relation to that security are rejected;
- balances are set to zero by means of ADJ transactions;
- all remaining transactions are deleted; and
- the security status is changed to 'deleted' (but members can still enquire on historic postings for up to 60 days).

Last date of transfer for gilts

In the CREST system, the security end date of a gilt represents its maturity date. Prior to this date the gilt will go through a period where no transfers can be undertaken in that stock (although it will be included in the margined stock value). The start of this period is identified by the 'Last date of Transfer' on the security details. At the end of the 'Last date of Transfer' the security will become 'disabled'. No further transactions in the security will settle and the security will be excluded from DBV settlement. If any of the unsettled transactions are Strip or Reconstitution requests, then the transactions must be deleted and re-input. The CREST system will re-queue these for settlement without the 'disabled' stock included.

On the security end date the same process for any other CREST security is followed. Any open strip or reconstitution request that involves the security will be deleted. Any repo transactions that have an expired stock in them will require a substitution to be performed (see Chapter 7, section 10).

EDS maturity process

To assist paying agents in the administration of their EDS issues at maturity, the CREST system will (on the basis of the securities and corporate action data input into the system by the issuing agent) automatically create 'maturity deliveries' (of transaction type DEL) attributable to the holder of the unit or units of EDS back to the paying agent; a matching DEL transaction attributable to the paying agent will also be created. These deliveries will be created on the evening of the business day before maturity date as part of the CREST system overnight processing procedures. The process for creating these deliveries will take into account stock held as collateral under transaction types of RPR, DBR, SLR and TDR, creating the deliveries to deliver the issue to the IPA from the collateral giver. Where there is a chain of collateral transactions (e.g. an intermediated DBV, stock loan or repo) then the CREST system will 'track back' to the beginning of the chain to ensure the delivery is created for the participant who was the original collateral giver.

Maturity deliveries will have the following features:

- they will be created with a zero priority on the paying agent's side;
- they will be created with a zero priority on the stock holder's side, unless the stock is being returned on a DBR (only), when they will be created with a priority of 50;
- both sides will need to raise the priority to enable settlement;
- the maturity deliveries will be created against payment;
- maturity deliveries in issues denominated in non-settling CREST currencies will be created as non-settling deliveries;
- any final interest payments will be included within the consideration of the DEL transaction; and
- there is no automatic process for early maturities.

Section 7: Enablement and disablement

The CREST system enables users, participants, EDS issuers, securities and functions to be enabled or disabled by EUI. EUI has the ability to enable or disable any user, participant, EDS issuer, security or function in whole or, where relevant, in part.

Users

A user must be enabled in the system in order to be able to input instructions relating to participants for which it is the user and to make any enquiry. Disablement of the user prevents the input of any further instructions and the making of any enquiries but does not prevent the processing of any instructions which have already been input. In the event of the disablement (suspension) of a member, the CREST system has functionality which permits the settlement of a TFE to the escrow agent from the escrow balance without requiring the membership to be re-enabled. This might be utilised, for example, where a bank wishes to enforce its (fixed) charge over the stock held in the escrow balance. However, EUI will not permit the settlement of a TFE in these circumstances without being satisfied that the risk of a bad delivery or of a threat to the security, reputation or integrity of the system has been minimised. In the context of the realisation by a bank of its security over stock held in escrow under the membership of an insolvent member, EUI is likely to have regard to the procedures on enforcement where a membership is disabled set out in Chapter 6, section 7.

Participants

A participant must be enabled for the system to process any transactions or instructions relating to it. Certain amendments to participant details automatically disable the participant (see User Guide for details).

EDS issuers

A participating issuer of eligible debt securities must be enabled for the system to process any IPA issuance messages from the issuer's issuing agent or for the settlement of any transactions in an EDS issued by the issuer to occur.

Securities

A security must be enabled for the settlement of any security related transaction involving the security to occur. Cash-only transactions relating to a security (e.g. cash claims and stock loan revaluations) continue to be processed even if the security itself is disabled.

Chapter 3: The paper interface

Section 1: Stock deposits

Introduction

CREST stock deposit functionality enables investors to change the form in which securities (other than wholly dematerialised securities) are held from certificated to uncertificated, either as a result of a transfer from a certificated investor to a member or as a result of a member dematerialising part of his own certificated holding. This section describes the CREST system functionality relating to stock deposit details when entered into the CREST system. The distribution and central processing of the associated deposit sets (principally, the stock transfer form and certificates) are described in the CCSS Operations Manual. This chapter does not deal with stock deposits made other than through the CCSS (which is permitted under the CREST Rules in relation to dematerialisation forms and in certain other cases).

Wholly dematerialised securities, such as eligible debt securities, are not capable of being held in certificated form and, therefore, cannot be processed under the stock deposit or deposit linking functionality.

Input

Stock deposits require the unilateral input of instructions by the member to whose stock account the securities are to be credited. This facilitates the data capture of details from the physical deposit set. Each stock deposit relates to an individual deposit set. The details from the stock deposit enable the registrar to locate the register entry.

Settlement

Stock deposits do not have an intended settlement date unless the member intends to link it to a delivery (see 'deposit linking' below). They do not settle against the creation of a CREST payment.

The stock deposit is made available to the registrar once the CCSS Operator has successfully performed the CCSS Accept function. Upon receipt of the stock deposit and the physical deposit set, the registrar is able to compare the details on the deposit set with the details on the stock deposit and can either:

- in the case of dematerialisation involving a transfer of securities, register the transfer and credit the relevant stock account of the member which is the transferee on the transfer form;
- in the case of dematerialisation not involving a transfer of securities, credit the relevant stock account of the member; or
- reject the transfer (or dematerialisation) and return the deposit set to the CCSS Operator.

Securities are credited to the member's available balance within its stock account unless the member has utilised the deposit link facility, in which case they are credited to the deposit link balance.

Deposit Linking

The deposit link facility enables the securities relating to a specific stock deposit to be used only to settle a specified delivery (or own account transfer) from the stock account of the depositing

member to another member. The facility is most commonly used by brokers to ensure that one client's securities are not used in the market-side settlement of a different client's transaction.

One or more stock deposits may be linked to one or more deliveries, provided all the deposits and deliveries are for the same ISIN and all the deliveries are for the same intended settlement date, and are to be deposited into the same member account. Securities within a deposit link can only be used to settle a delivery or own account transfer. Securities cannot be rematerialised by the member while in a deposit link.

Members may create a deposit link either on the input of the delivery, or upon the input of the stock deposit. A link cannot be created using an own account transfer; such transfers must always reference a pre-existing link. A stock deposit that is to be linked to a delivery must have an intended settlement date input by the member. Each deposit link that is created by a member is given a unique number; this may be allocated by the member himself or by the system. Members may add a deposit link number to an unlinked delivery or an unlinked stock deposit which has already been input to the system.

Members can use an own account transfer to transfer stock from a deposit link balance to the available stock balance in the same member account or to credit stock from their available balance to an existing deposit link balance.

Securities held in a deposit link balance do not count towards a member's secured credit limit and are therefore not included in the calculation of the member's headroom.

Deletion of Deposit Links

A member may only delete a deposit link on a stock deposit when either:

- the specified deposit link balance is credited with no securities; or
- before the CCSS Operator has successfully performed the CCSS Accept function on the stock deposit.

A member may delete a deposit link on a delivery at any time before the stock deposit is made.

Members may amend a deposit link number on a stock deposit before the CCSS Operator has performed the CCSS Accept function on the stock deposit being amended.

EUI does not enforce deposit linking. Members can identify which deliveries are the result of a certificated sale and may link those to the appropriate stock deposits, or vice versa.

The Stock Deposit Reference Number

The Stock Deposit Reference Number (SDRN) is used to identify the stock deposit with the deposit set. This reference number is used by the CCSS Operator to identify the stock deposit and to release it to the registrar once the CCSS Operator has received the deposit set to which the stock deposit relates. The SDRN is also used by the registrar to identify the deposit set with the stock deposit.

EUI's agreements with members and (where relevant) other participants include a provision to the following effect:

> *The [Member] acknowledges, agrees and accepts… that any documentation which it deposits for delivery by the CCSS will be delivered by EUI (or by any other person operating the CCSS from time to time) as agent of the [Member] to any participating issuer or other person to*

whom the same is to be delivered. EUI shall have no responsibility, and has no duty, in respect of any inaccuracy or defect in, or omission from or in relation to, any such documentation as deposited with the CCSS from time to time.

Liability for CCSS

EUI's agreements with members and (where relevant) other participants include a provision to the following effect:

where the Liability suffered or incurred by the [Member] relates to or arises from or in connection with any facility or services provided by the CCSS… EUI's liability to the [Member] in respect of such Liability shall not exceed the relevant limitation(s) for the time being set out in the CREST Manual.

The following are the relevant limitations referred to. Terms used below which are defined or used in EUI's agreements with members and other relevant participants shall have the meanings given to them in those agreements.

Where the Liability suffered or incurred by a user or participant relates to or arises from or in connection with any facility or service provided by the CCSS (a 'CCSS Liability') then:

(a) where the CCSS Liability arises from the loss or destruction of a certificate, stock transfer form or dematerialisation form or any other document whatsoever other than a renounceable document of title, EUI's liability to the user or participant concerned in respect of such CCSS Liability is limited to the lower of £100 per item or £5,000 per package (or security satchel); and

(b) whether or not paragraph (a) applies, if it is the case that the total liability of EUI to the user or participant and to all other claimants (if any) against EUI for amounts claimed in respect of CCSS Liabilities arising out of:

(i) any single act or omission, or related acts or omissions; or if there be no such acts or omissions,

(i) any one event or series of related events;

would otherwise exceed the amount of the Liability Cap, then the total liability of EUI to the user or participant for such CCSS Liabilities suffered or incurred by the participant or user shall be limited to a proportion of the Liability Cap corresponding to the proportion which the amount EUI would otherwise be liable to pay to the user or participant, or to meet a claim made by the user or participant, bears to the aggregate of the amounts that EUI would otherwise be liable to pay to, or to meet claims made by, the user or participant and all other claimants against EUI in relation to the CREST relevant system or CREST services or, if there are no such other claimants, to the amount of the Liability Cap.

Notes:

(1) From 3 July 2000 the amount of the Liability Cap has generally been £40,000,000, although in some cases it is £20,000,000; reference should be made to the definition of 'Liability Cap' contained in EUI's agreements with its members and other relevant participants.

(2) Claims in respect of CCSS liabilities relating to the CGO Service (which operated until the time when gilts come into the CREST system) remain subject to the limitations specified in the CGO Manual.

Section 2: Stock withdrawals

Introduction

The CREST system's stock withdrawal functionality enables members to change the form in which securities (other than wholly dematerialised securities) are held from uncertificated to certificated, either as a result of a transfer to an investor who is to hold the securities in certificated form or as a result of recertificating part of its own uncertificated holding. Where the terms of issue so provide, some securities may only be held in the CREST system and thus cannot be converted into certificated form. In the case of wholly uncertificated gilts, the system will reject any STW input. STWs in other securities which may be held only in uncertificated form will be dealt with by the registrar in accordance with the terms of issue of that particular security.

EDS, being wholly dematerialised securities, cannot be processed under the stock withdrawal functionality.

Input

Stock withdrawals require the unilateral input of instructions by the member. A member is able to debit securities from a specified member account and to rematerialise the securities either into its own name or into the name of the transferee, by sending a stock withdrawal instruction to the CREST system. A stock withdrawal is comprised of the withdrawal details and the details relating to the name in which the certificate is to be produced (either its own name or that of the transferee).

Settlement

Stock withdrawals are subject to the normal pre-settlement checks and to queue management. Stock withdrawals do not result in the creation of a CREST payment.

Section 3: The residual service

The residual service provides a means of bringing a degree of co-ordination to the movement of physical stock outside the CREST system with the creation of a CREST payment. The service can be used to facilitate the transfer of securities held in certificated form, whether or not such securities are also participating securities in the CREST system. However, it is expected that the residual service will primarily be used by members wishing to settle transactions in securities which are not participating securities in the CREST system.

EUI loads security details from time to time and endeavours to load security details of all securities in which there has been some trading activity on a relevant exchange in a period prior to the load. If CREST members find that the ISIN they require is not present in the CREST system, they should contact the System Controller at EUI who will consult with the relevant exchange as to whether or not it is appropriate to load the ISIN onto the CREST system. Once EUI has details of the relevant ISIN (which may take longer in the case of a foreign security) it will load the details as soon as practicable, which can usually be expected to be within 24 hours of the receipt of the ISIN by EUI. The security category 'RES' (Security Category 11) is given to all UK, Irish, Isle of Man and Channel Islands registered securities loaded that are not eligible for settlement in the CREST system (and which are not participating in the Investment Funds Service). The security category 'Reporting Only' (Security Category 12) is used for all other securities not eligible for settlement in the CREST system. The security start date is set to the date the security is loaded into the CREST system. Reconciliation details and price data are not held against RES and Reporting Only securities.

The residuals process involves the utilisation of the CCSS (if the parties wish to do so) and the ability to make payment through the CREST system. The service is only suitable for use where both counterparties are CREST members.

Input

The transferor and transferee CREST members each input the RES transaction. The RES transaction requires, inter alia, each party to identify the security concerned as well as the consideration to be settled through the CREST payment mechanism and the intended settlement date. Although the security is identified, the security itself is not transferred through the CREST system, Once a RES transaction has matched it cannot be unilaterally deleted; to remove the transaction from the system, both parties must delete the transaction. Only non-matching fields can be amended. Broker ID, counter location and transaction reference cannot be amended. An unmatched RES transaction can be unilaterally deleted by the inputting member. Payment will not in any event be settled through the CREST payment mechanism until the intended settlement date is reached and will only then settle if all the standard CREST requirements for settlement have been satisfied and the CCSS Accept or Buyer Accept process has been effected.

RES transactions are subject to CREST tolerance matching if the relevant participants have opted into central tolerance matching.

Use of the CCSS

If the CCSS is being used to facilitate the delivery of documentation the transferor is responsible for depositing the documents relating to the securities being transferred (e.g. share certificate and stock transfer form) accompanied by a CREST residual delivery docket at the CCSS site. The CCSS site must be identified in the RES transaction input by the transferor. *Where members have their CCSS*

site currently set to a previous CCSS site in Leeds, Glasgow or Dublin and are unable to change to allege to the site in London, members can continue to allege their instructions to these sites. The CCSS Operator will automatically map any instructions lodged to these sites and default them to London. ***Members are only able to lodge deposit sets at the CCSS site in London as the sites in Leeds, Glasgow and Dublin are no longer operational.***

The residual delivery docket must be annotated with the Stock Deposit Reference Number (SDRN) which must be the same as the participant ID and CREST transaction reference allocated by the transferor CREST member when the RES instruction was input (or split). If the SDRN is not bar coded by the depositing member, then the CCSS will produce the bar code and charge the appropriate fee to the depositing member.

When the documents are delivered to the CCSS, the CCSS Operator will locate the transaction using the SDRN and match the SDRN on the matched RES instruction in the CREST system to the SDRN on the deposit set. If it is possible to match the SDRN with a matched RES instruction in the CREST system, then the CCSS Operator will perform CCSS Accept. The residual deposit will be available for collection by the transferee from the CCSS site.

If the CCSS Operator is unable to locate the RES transaction (which will be either because it has not yet matched or an incorrect SDRN has been given on the CREST residual delivery docket) then the deposit set will be rejected and made available for a collection in accordance with the normal CCSS procedures. The CCSS Operator does not have access to the transaction data but only the existence of the transaction by virtue of the SDRN. The only function which the CCSS Accept performs is to enable a degree of co-ordination of payment with the passage of documentation through the CCSS to be achieved: the documentation itself may be incorrect or incomplete as the CCSS does not check any of the documentation supplied to it by the transferor CREST member. All that the CCSS can confirm is that some documentation has been delivered to it by or on behalf of the transferor CREST member which contained the SDRN. If the CREST member transferee discovers that the incorrect or incomplete documentation has been supplied by the transferor, then it is for the transferee and transferor to take the necessary action to rectify the situation, adjust payments etc. It is not possible to delete the RES transaction once CCSS Accept or Buyer Accept has been performed, even if the transaction has not yet settled.

Inter-office delivery

It is possible for the transferor to deliver the documentation directly to the transferee CREST member 'inter office'. In such a case the CCSS does not perform the function of CCSS Accept. It is for the buyer to perform Buyer Accept. Buyer Accept is only possible where the buyer knows the SDRN: as this incorporates the seller's reference, this is accessible to the buyer only from the seller's CREST residual delivery docket (or directly from the seller). To achieve Buyer Accept the buyer will input a message into the CREST system which includes the SDRN. If the SDRN is not found within the CREST system, the message will be rejected by the CREST system. Once a RES transaction has been subject to Buyer Accept, it cannot be subject to CCSS Accept and vice versa.

Settlement

On settlement of the transaction in the CREST system only the CREST payment part of the transaction settles. The CREST transferee can freeze the cash side of the RES transaction by allocating it a zero priority. The RES transaction will then remain frozen until the zero priority is lifted by the CREST transferee. Delivery and registration of the transfer of the securities takes

place outside the CREST system and EUI has no responsibility for settlement of the securities aspect of the transaction.

Splitting

The transferor has the option of splitting the RES transaction up until the point that either CCSS Accept or Buyer Accept is performed. The buyer does not have the option of splitting the transaction at all (although he can request the transferor to split the transaction).

Stamp Duty and SDRT (Stamp Duty Reserve Tax)

Stamp duty is not collected on the residual transaction and it is a responsibility of the parties to account outside the system for any stamp duty which is payable.

SDRT is generally payable in respect of the transfer of securities represented by allotment letters. If the RES transaction is being used in connection with the delivery of allotment letters, then the accountable person must pay the SDRT through entry of a separate Own Account Transfer transaction (OAT). The participant note field of the OAT must be completed with the transaction ID of the associated RES transaction (not the transaction reference as this is not present on the datafeed supplied to HMRC). Details of the RES transactions and the OAT transactions will be available to HMRC through the data feed that EUI provides. Full details of the fields to complete for paying SDRT using an OAT transaction are given in the EUI document 'Market Practice for Stamp Duty'.

Unit Trusts and Open Ended Investment Companies

The residual service is used in much the same way to facilitate the settlement of the purchase and redemption of units in unit trusts and shares in open ended investment companies (OEICs), although one or two aspects of the service has been adapted to the particular requirements of that sector.

The relevant product provider is always a party to such residual transactions.

The Investment Funds Service, as described in Chapter 13, facilitates the settlement of investment funds transactions. The CREST residual service is not incorporated into the Investment Funds Service and is not affected by the Investment Funds Service.

Purchase

The product provider and the purchasing CREST member each enters a residual (RES) transaction into the CREST system. In addition, and after entering the RES transaction, the purchaser will enter the details required to register the transaction using the message 'Investor Accept' (HIAA). If the investor name on the HIAA is blank then the HIAA will be rejected by the CREST system; no other validation of investor details will be carried out by the CREST system.

The HIAA details will be capable of amendment from the point of input up to the point of settlement and will be capable of being viewed by the relevant product provider both before and after matching.

Completion of the investor registration details on the HIAA message by the purchaser will change the status of the transaction to facilitate settlement on the intended settlement date, subject to the normal pre-settlement checks being completed, in much the same way as completion of the Counter Accept and Buyer Accept functions.

If the product provider wishes to reject a transaction prior to settlement, the transaction will have to be match deleted. There is no means of utilising the CREST system to reject a RES transaction post settlement.

Redemption

The product provider and the redeeming CREST member enter a RES transaction into the CREST system. In addition, the CREST member completes the usual renunciation form, additionally including on the form its CREST participant ID and the RES transaction reference. The document should then be delivered by the CREST member to the product provider. Once the transaction has been Buyer Accepted by the product provider it proceeds in the normal way.

Section 4: 'CCP' participants and cross-CCP members

Stock deposit and stock withdrawal functionality is available to 'CCP' participants and the cross-CCP members only by special arrangement with EUI. 'CCP' participants and the cross-CCP members may not input STD or STW transactions into the CREST system without the prior written consent of EUI.

Residual service functionality is available to 'CCP' participants and the cross-CCP members (via the GUI), but is expected to be used infrequently, for example, where a corporate action results in the issue of a security which is not a CREST participating security.

Chapter 4: Settlement

Section 1: Transactions

Transaction types

There are 41 transaction types. These are:

TRANSACTION	DESCRIPTION	DETAILS
ADJ	system controller's adjustment	see Chapter 7, section 11 and Chapter 10, section 1
BDR	bad delivery reversal	see Chapter 5, section 7
BWR	bad withdrawal reversal	see Chapter 5, section 7
CLA	claims, or benefit claims	see Chapter 7, section 5
DBI	overnight DBV interest payment	see Chapter 7, section 2
DBR	overnight DBV returns	see Chapter 7, section 2
DBV	overnight DBV	see Chapter 7, section 2
DEL	deliveries[2]	see Chapter 4, section 9
ESA	escrow account adjustment	see Chapter 7, section 3
INT	interest payment	see the Settlement Discipline Rules
MTM	complex (or 'many-to-many') deliveries	see Chapter 7, section 4
OAT	own account transfers	see Chapter 4, section 10
PAY	dividend and interest payment	see Chapter 7, section 12
PFP	pre-funding payment	see Chapter 6, section 4A
RCN	strip reconstitution request	see Chapter 7, section 7
REG	registrars adjustment transaction	see Chapter 5, section 2
RES	residual settlement	see Chapter 3, section 3
RPO	repo transaction	see Chapter 7, section 10
RPR	repo returns	see Chapter 7, section 10
RPS	repo substitution	see Chapter 7, section 10
SCR	auto-collateralising repo	see Chapter 7, section 8
SLD	stock loan revaluations	see Chapter 7, section 1
SLO	stock loans	see Chapter 7, section 1
SLR	stock loan returns	see Chapter 7, section 1
STD	stock deposits	see Chapter 3, section 1
STP	stamp duty payments	see Chapter 8
STR	strip request	see Chapter 7, section 7
STW	stock withdrawals	see Chapter 3, section 2

[2] From time to time this Manual refers to 'gross' DELs (which are DEL transactions other than net DEL transactions) and 'net' DELs (which are those transactions which have been created as a result of the processing of gross DEL transactions under the netting procedures and central sponsor services provided under the central counterparty service, or which match by customer input the transactions so created), but unless the context otherwise requires, any reference to a DEL or delivery transaction includes either or both of a gross and a net DEL.

TRANSACTION	DESCRIPTION	DETAILS
TDA	term DBV adjustment	see Chapter 7, section 2B
TDE	term DBV eligibility substitution	see Chapter 7, section 2B
TDG	term DBV giver recall substitution	see Chapter 7, section 2B
TDI	term DBV interest payment	see Chapter 7, section 2B
TDM	term DBV mark-to-market transaction	see Chapter 7, section 2B
TDO	term DBV outbound	see Chapter 7, section 2
TDR	term DBV return	see Chapter 7, section 2B
TFE	transfers from escrow	see Chapter 7, section 3
TTE	transfers to escrow	see Chapter 7, section 3
USE	unmatched stock event transaction	see Chapter 7, section 4 and Chapter 7, section 11
XDC	cross-border delivery confirmation	see CREST International Manual
XDL	cross-border delivery	see CREST International Manual
XDR	cross border delivery reverse	see the CREST International Manual

Transaction identifiers

Format

All transactions in the CREST system are assigned a unique transaction identifier which is generated by the CREST system. The transaction identifier always follows a standard format; three letters, followed by seven numbers – YMDnnnnnnn.

The three letters represent the date (year, month, day) on which the transaction was successfully input to (or created in) the CREST system. The seven numbers are a counter, starting at 0000001 each day and incrementing by one for each new transaction. Where a transaction is split, the child transactions have longer transaction identifiers; the initial ten characters follow the same format but further digits are appended to the end of the transaction identifier of the parent transaction to allocate a unique identifier to the child transactions.

Date Codes

Any transactions with a transaction identifier allocated prior to 2019 (specifically between 1995-2018) are allocated as follows:

- the year code is one letter, A to Z (omitting I and O);
- the month code is one letter, A to M (omitting I);
- the day code is one character, 1 to 9 then A to X (omitting I and O);

Any transactions with a transaction identifier allocated from 2019 onwards (specifically between 2019-2042) are allocated as follows:

- the year code is one letter, A to Z (omitting I and O);
- the month code is one letter, N to Z (omitting O);
- the day code is one character, 1 to 9 then A to X (omitting I and O).

The month code can be used to determine whether the year is in the range 1995–2018 or 2019–2042.

YEAR CODE (MONTH CODE IN A-M)	YEAR	YEAR CODE (MONTH CODE IN N-Z)	YEAR
A	1995	A	2019
B	1996	B	2020
C	1997	C	2021
D	1998	D	2022
E	1999	E	2023
F	2000	F	2024
G	2001	G	2025
H	2002	H	2026
J	2003	J	2027
K	2004	K	2028
L	2005	L	2029
M	2006	M	2030
N	2007	N	2031
P	2008	P	2032
Q	2009	Q	2033
R	2010	R	2034
S	2011	S	2035
T	2012	T	2036
U	2013	U	2037
V	2014	V	2038
W	2015	W	2039
X	2016	X	2040
Y	2017	Y	2041
Z	2018	Z	2042

MONTH CODE	MONTH	MONTH CODE	MONTH
A	January	N	January
B	February	P	February
C	March	Q	March
D	April	R	April
E	May	S	May
F	June	T	June
G	July	U	July
H	August	V	August

MONTH CODE	MONTH	MONTH CODE	MONTH
J	September	W	September
K	October	X	October
L	November	Y	November
M	December	Z	December

DAY CODE	DAY	DAY CODE	DAY
1	1st	H	17th
2	2nd	J	18th
3	3rd	K	19th
4	4th	L	20th
5	5th	M	21st
6	6th	N	22nd
7	7th	P	23rd
8	8th	Q	24th
9	9th	R	25th
A	10th	S	26th
B	11th	T	27th
C	12th	U	28th
D	13th	V	29th
E	14th	W	30th
F	15th	X	31st
G	16th		

Section 2: Input of settlement instructions

Nine transaction types (deliveries, complex deliveries, stock loans, residuals, repo transactions, repo substitutions, overnight DBVs, term DBV outbounds and term DBV adjustments) require bilateral input of instructions by the two counterparty members. Such bilateral input is also required for cross border deliveries where the CREST member is receiving UK or Irish securities. When a member opts to make use of the central sponsor services provided by a particular CREST central sponsor (as described in Section 4 below), the CREST central sponsor concerned is treated as having input the relevant delivery transaction on behalf of the member (and without the need for any customer input); and this transaction 'automatically matches' the related delivery or DBV transaction created as a central sponsor transaction on behalf of the relevant CREST participant as settlement counterparty to the member. In addition, in connection with the maturity procedures operated in the CREST system in relation to EDSs, DEL transactions are automatically created by the system and are treated as having been sent to the CREST system by (and are therefore attributable to) the holder of the unit or units and the relevant paying agent (see further Chapter 2, section 6; and Chapter 11, section 3). DEL transactions may also be treated as having been sent by (and are therefore attributable to) a member (a Bank of England repo member and the settlement bank repo member or settlement bank linked member) in connection with the auto-collateralisation arrangements described in Chapter 7, section 8; and as part of corporate action processing (see Chapter 7, sections 2B and 6).

Twelve transaction types (own account transfers, registrars adjustments, unmatched stock events, dividend and interest payments, transfers to escrow, transfers from escrow, escrow account adjustments, strip requests, strip reconstitution requests, cross border deliveries (not involving receipt of UK or Irish securities), stock deposits and stock withdrawals) require single input. In connection with the payment of interim interest payments in respect of uncertificated units of an eligible debt security, the CREST system generates USE transactions which are treated as having been sent to the system by (and are therefore attributable to) the paying agent concerned (see further Chapter 7, section 11; Chapter 11, section 3).

Two transaction types (bad delivery reversals and system controller's adjustments) are input by the System Controller only. In certain limited circumstances, which are principally concerned with the procedures for the issue and cancellation of units of an eligible debt security, an ADJ transaction input by the System Controller is treated as having been sent to the CREST system by (and is therefore attributable to) the user whose User ID is input by the System Controller as sender and, if different, the relevant CREST IPA (see further Chapter 7, section 11; Chapter 10 section 1 and Chapter 11, section 3). The ADJ transaction may also be treated as having been sent by (and therefore attributable to) a CREST member in the circumstances relating to 'uninitiated transactions' which are described in Chapter 10, section 2.

One transaction type (auto-collateralising repo) is created automatically in response to other system processes. All data on the SCR transaction are created by reference to other transactions or static data.

Sixteen transaction types (bad withdrawal reversals, claims, overnight DBV returns, overnight DBV interest payments, term DBV returns, term DBV interest payments, term DBV giver recall substitutions, term DBV eligibility substitutions, term DBV mark-to-market transactions, interest payments, cross border confirmations, cross border reversals, stock loan revaluations, stock loan

returns, repo returns and stamp duty payments) are created automatically as the result of other system processes or in response to the settlement of other transaction types.

One transaction type (pre-funding payment) requires single input or is created automatically as the result of other system processes (see Chapter 6, section 4A).

In addition to any data required for the identification of the other counterparty, the intended settlement date, Trade Date, CSDR Transaction Type, Place of Trade MIC, the nature and quantity of the security being transferred, any relevant payment details, and (for stock deposits and withdrawals) any certificate details, the user has the opportunity to enter data to fulfil the following functions:

- to aid recognition and description of the trade for their own and their counterparty's internal purposes;
- to enable the calculation and collection of stamp duty and stamp duty reserve tax by the CREST system;
- to confirm understanding of the conditions of the trade with the counterparty by means of matching bargain conditions; and
- to make a nationality declaration to a registrar.

The CREST system does not mandate capture of this additional information. However, it may be the responsibility of a member to do so in order to fulfil its obligations to a regulator, a recognised investment exchange, the UK or Irish tax authorities, other UK or overseas authorities or the member's counterparty. Capture of such information may affect the system processing of the instruction with regard to: matching the instruction; calculation of stamp duty; or calculation of claims raised on an open trade.

Where a member has previously input deliveries, complex deliveries, own account transfers, transfers to escrow and/or unmatched stock event transactions, it is possible for those transactions to be amended and re-submitted as new transactions. This is achieved with the copy function via the Transaction Details screen which is enabled when these transactions have been input or retrieved. Transaction validation and matching rules will continue to apply, as described in this section and section 3 below.

Where a member has opted to use central sponsor services, relevant data is entered into the settlement instruction attributable to that member as part of the direct input services provided by EUI (either as CREST central sponsor or to a third party acting as a CREST central sponsor) as described further in section 4 below.

Input of instructions in respect of Restricted Securities

Certification

Where a CREST member inputs certain instructions in respect of Restricted Securities, positive certification is required by the CREST member in order for those instructions to be accepted by the CREST system. Certification is required upon inputting an instruction in the CREST system in the following scenarios:

- on input of a DEL, OAT, SLO or STD instruction in respect of a Restricted Security, the recipent of the stock (credit party) must provide the required certification; or

- on input of a STW instruction in respect of a Restricted Security, the transferor (debit party) must provide the required certification.

No other instruction types, other than the five listed above, require certification; however some instructions and transactions are not available in respect of Restricted Securities (as described later in this CREST Reference Manual).

There are separate certifications for Reg S Cat 3 securities and Reg S Cat 3/Rule 144A securities. The form of these certifications is as follows:

"For Securities identified as Regulation S Category 3 securities (identifier "REGS") the shares you are acquiring (the "Shares") have not been and will not be registered under the U.S. Securities Act of 1933, as amended (the "Securities Act") and may not be offered or sold within the United States or to, or for the account or benefit of, U.S. persons ("U.S. Persons") as defined in Regulation S ("Regulation S") of the Securities Act except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act.

You hereby certify, on your own behalf and on behalf of each person for which you acquire any Shares, that:

A. You are, and any such person is, neither the issuer nor an affiliate of the issuer of the Shares; and

B. You are not, and any such person is not, a U.S. Person, and you are not, and any such person is not, acquiring Shares for the account or benefit of a U.S. Person.

You hereby acknowledge and agree, on your own behalf and on behalf of each person for which you acquire any Shares, that:

1. (i) Unless the Shares are offered or sold pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act (a) the issuer of the Shares (the "Issuer") will not be required to accept for registration of transfer any Shares that are being transferred to a U.S. Person and (b) the Issuer may require any person who is required under this certification to be a non-U.S. Person, but is not, to transfer the Shares immediately in a manner consistent with the transfer restrictions set forth in the Restrictions Tab contained in the "Securities Details" of the Shares in the CREST system and the legends to the Shares contained therein, and (ii) the Issuer's bylaws, articles, charter or comparable document may contain additional provisions that further limit your, or any such person's rights relating to these Shares.

2. If you, or any such person, offer, resell, pledge or otherwise transfer the Shares, such Shares will be offered, resold, pledged or otherwise transferred only (i) to the Issuer, (ii) to a transferee that agrees to also comply with the restrictions set forth in this certification (either in electronic form or in a form otherwise acceptable to the Issuer) and who is also a non-U.S. Person in an offshore transaction in accordance with Regulation S of the Securities Act, or (iii) pursuant to registration, or an available exemption from registration, under the Securities Act.

3. You, and any such person, will not engage in hedging transactions with regard to the Shares unless in compliance with the Securities Act.

4. The Issuer and its affiliates and others may rely on the acknowledgments, representations and warranties contained in this certification as a basis for establishing the exemption of the

sale of the Shares under the Securities Act and under the securities laws of all applicable states, and for other purposes.

5. By completing the purchase your certifications and agreements contained herein may be relied on by the Issuer or any interested party in any administrative or legal proceeding or official inquiry with respect to the matters covered hereby.

6. If you are a broker dealer, your customer has been advised of and understands the contents of this certification and has authorized you to make the acknowledgements, representations, warranties and covenants contained herein on its behalf.

For securities identified as Regulation S Category 3/Rule 144A securities (identifier "S144"), the shares you are acquiring (the "Shares") have not been and will not be registered under the U.S. Securities Act of 1933, as amended (the "Securities Act") and may not be offered or sold within the United States or to, or for the account or benefit of, U.S. persons ("U.S. Persons") as defined in Regulation S ("Regulation S") of the Securities Act except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act.

You hereby certify, on your own behalf and on behalf of each person for which you acquire any Shares, that:

A. You are, and any such person is, neither the issuer nor an affiliate of the issuer of the Shares; and

B. Either:

you are, and/or any such person is, a qualified institutional buyer ("QIB") as defined in Rule 144A of the Securities Act; and/or

you are not, and/or any such person is not, a U.S. Person, and you are not, and/or any such person is not, acquiring Shares for the account or benefit of a U.S. Person.

You hereby acknowledge and agree, on your own behalf and on behalf of each person for which you acquire any Shares, that:

1. (i) Unless the Shares are offered or sold pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act (a) the issuer of the Shares (the "Issuer") will not be required to accept for registration of transfer any Shares that are being transferred to a U.S. Person and (b) the Issuer may require any person who is required under this certification to be a non-U.S. Person, but is not, to transfer the Shares immediately in a manner consistent with the transfer restrictions set forth in the Restrictions Tab contained in the "Securities Details" of the Shares in the CREST system and the legends to the Shares contained therein, and (ii) the Issuer's bylaws, articles, charter or comparable document may contain additional provisions that further limit your, or any such person's rights relating to these Shares.

2. If you, or any such person, offer, resell, pledge or otherwise transfer the Shares, such Shares will be offered, resold, pledged or otherwise transferred only (i) to the Issuer, (ii) to a transferee that agrees to also comply with the restrictions set forth in this certification (either in electronic form or in a form otherwise acceptable to the Issuer) and who is also (a) a non-U.S. Person in an offshore transaction in accordance with Regulation S of the Securities Act, or

(b) a QIB, or (iii) pursuant to registration, or an available exemption from registration, under the Securities Act.

3. You, and any such person, will not engage in hedging transactions with regard to the Shares unless in compliance with the Securities Act.

4. The Issuer and its affiliates and others may rely on the acknowledgments, representations and warranties contained in this certification as a basis for establishing the exemption of the sale of the Shares under the Securities Act and under the securities laws of all applicable states, and for other purposes.

5. By completing the purchase your certifications and agreements contained herein may be relied on by the Issuer or any interested party in any administrative or legal proceeding or official inquiry with respect to the matters covered hereby.

6. If you are a broker dealer, your customer has been advised of and understands the contents of this certification and has authorized you to make the acknowledgements, representations, warranties and covenants contained herein on its behalf."

Where certification is required, there will be two options, only one of which can be selected:

- I have reviewed the appropriate restrictions relevant to this security (e.g., Regulation S, Category 3 or Regulation S, Category 3/Rule 144A) and I agree with the foregoing and, in particular, confirm that I am neither a US Person nor making a purchase on behalf of a US Person, or in the case of a purchase of Regulation S/Rule 144A securities, I confirm that I am neither a US Person nor making a purchase on behalf of a US Person or that I am a QIB or purchasing on behalf of a QIB, as appropriate; or
- I do not agree.

The option is set by default to 'I do not agree'. This ensures that CREST members who wish to acquire Restricted Securities are obliged to certify positively that they are permitted to receive and hold the Restricted Security in question. If a CREST member does not provide certification where required, or provides certification where not required, then the instruction will be rejected and an error message will be generated to the inputting member informing them of the reason for the failure of their instruction.

Legend

During the DCP, Restricted Securities are required to bear an appropriate legend (whether in dematerialised or certificated form). The form of this legend is as follows:

"*Securities identified as Regulation S Category 3 securities or Regulation S Category 3/Rule 144A securities being offered or sold pursuant to Regulation S are subject to the following restrictions (please scroll down for additional alternative transfer restrictions available for securities identified as Regulation S Category 3/Rule 144A securities applicable to sales made pursuant to Rule 144A.)*

REGULATION S LEGEND

THE SHARES REPRESENTED HEREBY HAVE NOT BEEN, AND WILL NOT BE, REGISTERED UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND MAY NOT BE OFFERED OR SOLD IN THE UNITED STATES OR TO, OR FOR THE ACCOUNT OR BENEFIT OF, U.S. PERSONS (AS DEFINED IN REGULATION S UNDER THE SECURITIES ACT ("REGULATION S")). THE SHARES ARE BEING OFFERED ONLY TO NON-U.S. PERSONS OUTSIDE THE UNITED STATES IN

TRANSACTIONS EXEMPT FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT IN RELIANCE ON REGULATION S. THE SHARES ARE "RESTRICTED SECURITIES" AS DEFINED UNDER RULE 144 (A)(3) PROMULGATED UNDER THE SECURITIES ACT. THE SHARES MAY NOT BE TAKEN UP, OFFERED, SOLD, RESOLD, DELIVERED OR DISTRIBUTED, DIRECTLY OR INDIRECTLY WITHIN, INTO OR

FROM THE UNITED STATES OR TO, OR FOR THE ACCOUNT OR BENEFIT OF, U.S. PERSONS (AS DEFINED IN REGULATION S) EXCEPT: (A)(I) IN AN OFFSHORE TRANSACTION MEETING THE REQUIREMENTS OF REGULATION S, (II) PURSUANT TO AN AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT, OR (III) PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT.

RESALES OR REOFFERS OF SHARES MADE OFFSHORE IN RELIANCE ON REGULATION S MAY NOT BE SOLD TO, OR FOR THE ACCOUNT OR BENEFIT OF, ANY U.S. PERSON (AS DEFINED IN REGULATION S) DURING THE ONE YEAR DISTRIBUTION COMPLIANCE PERIOD UNDER REGULATION S. HEDGING TRANSACTIONS INVOLVING THESE SHARES MAY NOT BE CONDUCTED UNLESS IN COMPLIANCE WITH THE SECURITIES ACT.

BY ACCEPTING THESE SHARES, THE HOLDER REPRESENTS AND WARRANTS THAT IT (A) IS NOT A U.S. PERSON (AS DEFINED IN REGULATION S) AND (B) IS NOT HOLDING THE SHARES FOR THE ACCOUNT OR BENEFIT OF ANY U.S. PERSON.

Please note that the capitalized terms used below have the meanings as set forth in Rule 902 of the U.S. Securities Act of 1933, as amended (the "Securities Act").

- The offer or sale must be made in an Offshore Transaction;
- No Directed Selling Efforts may be made in the United States by, for purposes of Rule 903, the issuer, a Distributor, any of their respective affiliates, or any person acting on behalf of any of the foregoing, or, for the purposes of Rule 904, the seller, an affiliate, or any person acting on their behalf;
- Offering Restrictions must be implemented;
- The offer or sale, if made prior to the expiration of a one-year Distribution Compliance Period, may not be made to a U.S. Person or for the account or benefit of a U.S. Person (other than a Distributor); and
- The offer or sale, if made prior to the expiration of a one-year Distribution Compliance Period, must be made pursuant to the following conditions:
    - The purchaser of the securities (other than a Distributor) must certify that it is not a U.S. Person and is not acquiring the securities for the account or benefit of any U.S. Person or is a U.S. Person who purchased securities in a transaction that did not require registration under the Securities Act.
    - The purchaser of the securities must agree to resell such securities only in accordance with the provisions of Regulation S ("Regulation S") under the Securities Act, pursuant to registration under the Securities Act, or pursuant to an available exemption from registration; and must agree not to engage in hedging transactions with regard to such securities unless in compliance with the Securities Act.

- The securities of a Domestic Issuer must contain a legend to the effect that transfer is prohibited except in accordance with the provisions of Regulation S, pursuant to registration under the Securities Act, or pursuant to an available exemption from registration; and that hedging transactions involving those securities may not be conducted unless in accordance with the Securities Act;
- The issuer is required, either by contract or a provision in its bylaws, articles, charter or comparable document, to refuse to register any transfer of the securities not made in accordance with the provisions of Regulation S, pursuant to registration under the Securities Act, or pursuant to an available exemption from registration; provided however, that if the securities are in bearer form or foreign law prevents the issuer of the securities from refusing to register securities transfers, other reasonable procedures (such as a legend as described immediately above) are implemented to prevent any transfer of the securities not made in accordance with the provisions of Regulation S; and
- Each Distributor selling securities to a Distributor, a dealer (as defined in Section 2(a)(12) of the Securities Act), or a person receiving a selling concession, fee or other remuneration, prior to the expiration of the one-year Distribution Compliance Period, must send a confirmation or other notice to the purchaser stating that the purchaser is subject to the same restrictions on offers and sales that apply to a Distributor.

- In the case of an offer or sale of securities prior to the expiration of the one-year Distribution Compliance Period by a dealer (as defined in Section 2(a)(12) of the Securities Act), or a person receiving a selling concession, fee or other remuneration in respect of the securities offered or sold:
  - Neither the seller nor any person acting on its behalf may know that the offeree or buyer of the securities is a U.S. Person; and
  - If the seller or any person acting on the seller's behalf knows that the purchaser is a dealer (as defined in Section 2(a)(12) of the Securities Act) or is a person receiving a selling concession, fee or other remuneration in respect of the securities sold, the seller or a person acting on the seller's behalf must send to the purchaser a confirmation or other notice stating that the securities may be offered and sold during the one-year Distribution Compliance Period only in accordance with the provisions of Regulation S; pursuant to registration of the securities under the Securities Act; or pursuant to an available exemption from the registration requirements of the Securities Act.
- In the case of an offer or sale of securities by an officer or director of the issuer or a Distributor, who is an affiliate of the issuer or Distributor solely by virtue of holding such position, no selling concession, fee or other remuneration may be paid in connection with such offer or sale other than the usual and customary broker's commission that would be received by a person executing such transaction as agent.
- Equity securities of Domestic Issuers acquired from the issuer, a Distributor, or any of their respective affiliates in a transaction subject to the conditions of Rule 901 or Rule 903 are deemed to be "restricted securities" as defined in Rule 144 ("Rule 144") under the Securities Act. Resales of any of such restricted securities by the offshore purchaser must be made in accordance with Regulation S, the registration requirements of the Securities Act or an exemption therefrom. Any "restricted securities", as defined in Rule 144, that are equity

securities of a Domestic Issuer will continue to be deemed to be restricted securities, notwithstanding that they were acquired in a resale transaction made pursuant to Rule 901 or 904.

Securities identified as Regulation S Category 3/Rule 144A securities shall alternatively be subject to the following selling restrictions for offers or sales made in reliance on Rule 144A:

RULE 144A LEGEND

THE SHARES REPRESENTED HEREBY HAVE NOT BEEN, AND WILL NOT BE, REGISTERED UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT") OR UNDER ANY STATE SECURITIES LAWS, AND THE SHARES MAY NOT BE OFFERED OR SOLD IN THE UNITED STATES OR TO, OR FOR THE ACCOUNT OR BENEFIT OF, U.S. PERSONS (AS DEFINED IN REGULATION S PROMULGATED UNDER THE SECURITIES ACT ("REGULATION S")) EXCEPT TO "QUALIFIED INSTITUTIONAL BUYERS" AS DEFINED IN, AND IN RELIANCE ON, RULE 144A UNDER THE SECURITIES ACT ("RULE 144A") IN TRANSACTIONS EXEMPT FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT. THE SHARES MAY NOT BE TAKEN UP, OFFERED, SOLD, RESOLD, DELIVERED OR DISTRIBUTED, DIRECTLY OR INDIRECTLY WITHIN, INTO OR FROM THE UNITED STATES OR TO, OR FOR THE ACCOUNT OR BENEFIT OF, U.S. PERSONS (AS DEFINED IN REGULATION S) EXCEPT: (A)(I) IN AN OFFSHORE TRANSACTION MEETING THE REQUIREMENTS OF REGULATION S UNDER THE SECURITIES ACT, (II) PURSUANT TO AN AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT, OR (III) PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT;AND (B) IN ACCORDANCE WITH ALL APPLICABLE SECURITIES LAWS OF THE UNITED STATES. HEDGING TRANSACTIONS INVOLVING THESE SHARES MAY NOT BE CONDUCTED UNLESS IN COMPLIANCE WITH THE SECURITIES ACT. RESALES OR REOFFERS OF SHARES MADE OFFSHORE IN RELIANCE ON REGULATION S MAY NOT BE SOLD TO, OR FOR THE ACCOUNT OR BENEFIT OF, ANY U.S. PERSON (AS DEFINED IN REGULATION S) DURING THE ONE YEAR DISTRIBUTION COMPLIANCE PERIOD UNDER REGULATION S.

Please note that the capitalized terms used below have the meanings as set forth in Rule 902 of the U.S. Securities Act of 1933, as amended (the "Securities Act").

- The securities may be offered or sold only to a qualified institutional buyer (as that term is defined in Rule 144A, a "QIB") or to an offeree or purchaser that the seller and any person acting on behalf of the seller reasonably believe is a QIB.
- The seller and any person acting on its behalf must take reasonable steps to ensure that the purchaser is aware that the seller may rely on the exemption from the provisions of Section 5 of the Act provided by Rule 144A.
- The purchaser must understand that the shares have not been and will not be registered under the Securities Act and may not be offered, resold, pledged or otherwise transferred, except:
    - to a person who the purchaser and any person acting on its behalf reasonably believes is a QIB within the meaning of Rule 144A under the Securities Act purchasing for its own account or for the account of a QIB in a transaction meeting the requirements of Rule 144A,
    - in an offshore transaction complying with Regulation S, or

- pursuant to an exemption from registration under the Securities Act provided by Rule 144 (if available) under the Securities Act, in each case, in accordance with applicable securities laws of the states of the United States.

- The purchaser may not deposit or cause to be deposited shares into any unrestricted depositary receipt facility established or maintained by a depositary bank relating to the shares, unless or until the shares are no longer deemed restricted securities within the meaning of Rule 144(a)(3) under the Securities Act.
- No representation can be made as to the availability of the exemption provided by Rule 144 for resales of the shares."

Where a CREST member inputs a DEL, OAT, SLO, STD or STW instruction in respect of Restricted Securities it should ensure that it has read and understood the text of the applicable restrictions and legends and that it is permitted to receive the Restricted Securities in the circumstances of the particular transaction (or for a STW instruction that the intended recipient of the securities (if they are to be transferred to another holder on re-certification) is permitted to receive the securities in the circumstances of the particular transaction). It is for CREST members to satisfy themselves that they or any relevant other persons, are permitted to receive the securities given theapplicable restrictions and are capable of giving the certifications required in order for the transaction to settle.

These legends are in standard form and cannot be amended or tailored for different securities.

Certifications, restrictions and legends in the CREST system

CREST members using the CREST graphical user interface (GUI) can view the above certifications and legends in the 'Certification' and 'Restriction' tabs in the Transaction Details screen. Clicking on the applicable tab will display the applicable text (as above).

CREST members using File Transfer (FT) will not be able to retrieve this certification, restriction or legenging data via FT. The FT DEX includes the applicable text (as above) and explains the applicable certification codes. CREST members using FT should replicate the text of the necessary certifications and the standard form of restriction and legending applicable to Restricted Securities within their own back office systems.

CREST members communicating via ISO (SWIFT ISO15022 messages) are not be able to view the applicable certifications or the standard form of restriction and legending applicable to Restricted Securities, or to provide certification on settlement instructions, so they will need to use either the GUI or FT in order to do so (as described above).

Section 3: Matching of settlement instructions

Transaction matching is the process of matching input made, or treated as being made, independently by both principal participants to the delivery, before the transaction can proceed to settlement. Deliveries, complex deliveries, residuals, stock loans, repo transactions, repo substitutions, overnight DBVs, term DBVs, and term DBV adjustments are the only nine transaction types that require matched input. However, central sponsor transactions will not require any customer input from a member who has opted to make use of central sponsor services; and, in connection with the maturity procedures operated in the CREST system in relation to EDSs, DEL transactions are automatically created by the system and are treated as having been sent to the CREST system by (and are therefore attributable to) the holder of the unit or units and the relevant paying agent (see further Chapter 2, section 6; and Chapter 11, section 3). DEL transactions may also be automatically created by the CREST system as part of corporate action processing (see Chapter 7, sections 2B and 6) and in connection with the auto-collateralisation arrangements (see Chapter 7, section 8). Additionally, cross border deliveries involving receipt of UK or Irish securities must be matched.

Not all the transaction fields need to be completed for any single transaction, but are determined by the characteristics of the transaction itself. The CREST system requires perfect matching and does not include any degree of tolerance (other than matching to a blank field and in relation to consideration see section 5 below).

Section 4: CREST central counterparty service, Clearing Support Arrangements, Collateral Support Arrangements and related services

Introduction

EUI offers a range of settlement and related services that are designed to facilitate the provision of clearing, collateral and other services by third parties. These services may be provided by EUI as part of:

- the CREST central counterparty service;
- the CREST Clearing Support Arrangements;
- the CREST Collateral Support Arrangements; or
- certain other services or arrangements.

This Chapter 4 describes the CREST central counterparty service, clearing support arrangements, collateral support arrangements and related services that are provided by EUI. Section 4A contains an overview of the main features of these services.

Where these services are provided as part of the CREST central counterparty service, further reference should be made to the CREST Central Counterparty Service Manual. Section 4B of this Chapter 4 describes in more detail the services that operate as part of the CREST Clearing Support Arrangements. Section 4C describes in more detail the services that operate as part of the CREST Collateral Support Arrangements.

It is the responsibility of the operator of the relevant trading system, provider of the relevant clearing service or provider of the relevant collateral service (and not the responsibility of EUI), to satisfy itself that the rules and procedures of the trading system, clearing service or collateral service are and remain adequate, satisfactory and appropriate arrangements (as against or between the participants in that system or service) and provide a sound legal basis for:

- the formation of contracts to be settled through the central sponsor services to be provided by the central sponsor;
- the performance of such contracts by way of net settlement (whether under the netting procedures provided by EUI or otherwise);
- the taking of action in respect of such contracts where they remain unsettled by reason of the default of a participant in the trading system or clearing service;
- the respective rights and obligations in relation to corporate events affecting securities the subject of, and under, such contracts; and
- the relationship between a clearing member and a non-clearing member in respect of such contracts.

CREST central counterparty service

The CREST central counterparty service comprises arrangements with one or more CCPs involving services which, in combination, facilitate or otherwise relate to the performance by the CCP concerned of certain central counterparty functions. These arrangements involve the provision of services and facilities to 'CCP' participants and CREST central sponsors, including the provision of direct input services to enable or facilitate the creation of central sponsor transactions.

The distinctive feature of the CREST central counterparty service is that it is a collaborative arrangement between EUI and the particular CCP under which the parties provide to the market a service for the settlement (by EUI) and clearing (by the CCP) of trades cleared by the CCP. As a collaborative arrangement, the CREST central counterparty service is provided under 'framework arrangements' put in place between EUI and the relevant CCP governing their respective performance of, and responsibility for, the functions that each is to perform (for the benefit of the relevant market participants) as part of the service.

Key features of the CREST central counterparty service, reflecting the nature of the market offering, are:

- the requirement for a framework agreement between EUI and the relevant CCP;
- the provision of a system (known as the "CM system") by EUI, which at the option of the CCP may contain clearing and related data either sent to the system by the CCP and/or derived from transactions data held in the CREST system; and
- the making available (if requested by the CCP and/or its clearing members as "CM undertakings") of electronic facilities for the enquiry or retrieval of data held in the CM system (or part of it).

As noted above, where clearing support and related services are provided as part of the CREST central counterparty service, reference should be made to the CREST Central Counterparty Service Manual for a more detailed description of how they operate in that context.

CREST Clearing Support Arrangements

The settlement and related services provided by EUI as part of the Clearing Support Arrangements are materially the same or similar to those provided as part of the CREST central counterparty service.

However, these services are provided to a clearing house (or other third party or parties) solely to enable or facilitate its (or another third party's) provision of clearing or related services to the market. Consequently, under the CREST Clearing Support Arrangements, there is no 'collaborative' offering to the market of a settlement and clearing service; and there is, therefore, no 'framework agreement', nor provision of the CM system or participation of "CM undertakings".

Although forming part of the CREST Clearing Support Arrangements, the Repoclear Service is separately described in section 4B below due to its distinctive features.

CREST Collateral Support Arrangements

Euroclear Bank provides a securities inventory management service known as Open Inventory Sourcing (OIS), which enables Euroclear Bank to access on behalf of its participants securities those participants hold outside Euroclear Bank (for example, securities held by, or on behalf of, a Euroclear Bank participant in the CREST system).

The services provided by EUI as part of the Collateral Support Arrangements are provided to Euroclear Bank to enable or facilitate its provision of collateral services to Euroclear Bank participants. These arrangements involve the provision of services and facilities to Euroclear Bank, including the provision of direct input services to enable or facilitate the creation of central sponsor transactions.

These arrangements are described more fully in section 4C below.

Other services and arrangements

EUI may provide or use its clearing support and related services for certain other purposes (outside of the CREST central counterparty service, the CREST Clearing Support Arrangements and CREST Collateral Support Arrangements).

Contractual arrangements

Applicants who are permitted by EUI to use its clearing support and related services will be admitted to participation under the relevant contractual arrangements for the CREST central counterparty service, the CREST Clearing Support Arrangements, the CREST Collateral Support Arrangements or other arrangements. Any differences between the relevant contractual arrangements are designed solely to reflect the differences in the purpose and context in which EUI provides the relevant clearing support, collateral support and related services to the participant concerned; and do not adversely affect EUI's intention to deal with all of its participants on a non-discriminatory, transparent and objective basis.

Section 4A: Overview of the main features of the CREST central counterparty service, Clearing Support Arrangements, Collateral Support Arrangements and related services

This Section (4A) describes the main features of the central counterparty service clearing support arrangements, collateral support arrangements and related services, some or all of which a clearing house or other third party may use to enable or facilitate its provision of clearing, collateral or other services to market participants, whether as part of the CREST central counterparty service, the CREST Clearing Support Arrangements, the CREST Collateral Support Arrangements or otherwise.

'CCP' participants

'CCP' participants are used in connection with the CREST central counterparty service.

Introduction

Clearing houses may be set up in the CREST system as a participant type 'CCP' rather than, in system terms, as a 'member'. The distinction is a technical one to reflect the different range of functionality available to clearing houses as 'CCP' participants (it does not affect the legal status of a 'CCP' participant under the CREST Regulations as a 'system-member').

Where the 'CCP' participant is operated by a CCP under the CREST central counterparty service, special rules and provisions may apply to that participation as set out in the CREST Central Counterparty Service Manual.

A 'CCP' participant may have its own Gateway, or use the Gateway of a CREST sponsor, to communicate with the CREST system. Where a 'CCP' participant uses the Gateway of a CREST sponsor, that sponsor is referred to a 'relevant CREST sponsor' in the relevant contracts with EUI. A 'relevant CREST sponsor' may also act for a 'cross-CCP member' or other dedicated membership maintained by a clearing house or other third party in support of the services provided by it or other third party. The fact that a CREST sponsor which acts for a 'CCP' participant, a cross-CCP member or other such dedicated CREST membership is referred to as a 'relevant CREST sponsor' does not affect the nature of the functions or facilities that are made available to it, which are the same as for any other CREST sponsor. However, the term is used to reflect the fact that such a sponsor will (depending upon the purpose for which it or the relevant participant is using EUI's clearing support and related services) be invited to enter into the contractual arrangements for the CREST central counterparty service, the CREST Clearing Support Arrangements or other arrangements and, as such, will only be able to operate its user to create or receive transactions on behalf of a 'CCP' participant, a cross-CCP member or other dedicated membership that is participating in the CREST central counterparty service, CREST Clearing Support Arrangements or other such arrangements (as the case may be).

Counterparties to 'CCP' participant transactions are required to match by customer input the DELs alleged against them by the relevant 'CCP' participant in accordance with, amongst other things, the requirements of that CCP, unless they have opted to make use of the relevant central sponsor services described below (where the settlement instructions will 'automatically match'). If the counterparty has not opted to use central sponsor services, after the matching of the DEL in accordance with the normal matching procedures, the transactions will either proceed to settlement or (where the counterparty has opted into the CREST netting procedures) will be processed under the netting procedures. After such processing, a net DEL is created as a central sponsor transaction attributable to the relevant 'CCP' participant; and (where the counterparty has opted into central

sponsor services in relation to the net transaction) a net DEL is created as a central sponsor transaction attributable to that counterparty. If the relevant counterparty has not opted into central sponsor services for the net transaction which results from the netting procedures, it will be required to match by customer input the net DEL which is alleged against it in accordance with the normal matching procedures. Upon matching, the net DELs will proceed to settlement.

'CCP' participant transactions

The term "'CCP' participant transaction' refers to the 'DEL' transaction (whether gross or net) which is attributable to a 'CCP' participant and is created as a central sponsor transaction. The term also encompasses any related 'CLA' and 'INT' transactions, or other related centrally-generated transaction or transaction which is deemed by EUI to be a 'CCP' participant transaction for any purpose, as agreed with the relevant clearing house[3]. The term does not contemplate any other transaction type.

Where a 'CCP' participant transaction is attributable to a 'CCP' participant that is participating in the CREST central counterparty service, the CREST Manual and the relevant contractual arrangements with EUI may refer to the transaction as a 'central counterparty transaction'. This separate term is used in those parts of the CREST Manual (and the relevant contractual arrangements) that are required to distinguish between a 'CCP' participant transaction which is created within the CREST central counterparty service and one which is created outside the CREST central counterparty service.

This approach is consistent with the general position that, where a person operates its 'CCP' participation as part of the CREST central counterparty service, special rules and provisions may apply to that participation which do not apply where a 'CCP' participation is operated outside the service (see further the CREST Central Counterparty Service Manual).

'CCP' participant functionality

As a 'system-member', a 'CCP' participant will, as a general matter, have access to the functionality that is made available to a CREST member, but with some modifications and additions. The different functionality applicable to 'CCP' participants is described in the relevant sections of this Manual and includes differences in relation to the following:

- processing and allocation of buyers' instructions (see Chapter 7, section 4);
- treatment of benefit claims (see Chapter 7, section 5); and
- treatment of automatic transactions (see Chapter 7, section 6).

As a system-member and CREST user (or using the services of a CREST user), a 'CCP' participant may input the full range of settlement instructions available in the CREST system to a CREST member (although transaction types 'STW' and 'STD' may only be input into the CREST system by a 'CCP' participant with the prior consent of EUI). In addition, although residual service functionality is available to 'CCP' participants (via the GUI), it is expected to be used infrequently (for example, where a corporate action results in the issue of a security which is not a CREST

[3] The term encompasses transactions (including the RES transaction type) which are created pursuant to the automatic transformations software in relation to a security which is the subject of a 'CCP' participant transaction. In addition, in principle, where a transfer of title to central counterparty securities under a 'CCP' participant transaction cannot be effected (in accordance with regulation 23 of the UK Regulations), EUI will apply the Bad Delivery Rules set out in the *CREST Rules*. If so, a BDR transaction will be generated as a 'CCP' participant transaction for the purposes of this *CREST Reference Manual*.

participating security). In this capacity, stock loan and repo, DBV and escrow functionality are available to a 'CCP' participant in the manner described in Sections 1–3 and 10 of Chapter 7.

In principle, a 'CCP' participant could participate in the CREST voting service described in Chapter 7, Section 9, and in the dividend election/payment and interest payment functionality described in Chapter 7, Section 12. However, it is not anticipated that a 'CCP' participant will generally hold securities for sufficient periods to merit its use of the CREST proxy appointment, or the dividend election/payment and interest payment, functionality.

The stripping and reconstitution functionality described in Chapter 7, Section 7 is only available for use by GEMMs (as CREST members). Accordingly, this functionality is not available to a 'CCP' participant. Equally, certain specified securities are not eligible for processing under the auto-collateralisation arrangements described in Chapter 7, Section 8, or the functionality relating to eligible debt securities described in Chapter 7, Section 11.

The Investment Funds Service described in Chapter 13 is not available to a 'CCP' participant.

CREST central sponsors

Introduction

A CREST central sponsor is a CREST user which is permitted by EUI to act on behalf of participants (its own and of other users) who have opted to use the service(s) of such user, in relation to certain trades executed on a trading system, or cleared through a clearing service; certain operations of a collateral management service; or orders placed through an order routing system for which that user is designated by EUI as a CREST central sponsor. Central sponsor services provided by a CREST central sponsor are solely its responsibility.

Central sponsor services

Where the security, which is the subject of the transaction, is eligible for processing under the relevant central sponsor services and for processing under the netting procedures (where available), the settlement counterparty to the 'CCP' participant (or relevant member) may prefer to match the DEL or other relevant transaction by using the relevant central sponsor services.

Members may select which CREST central sponsors (by Central Sponsor ID) they will allow to create settlement instructions on their behalf. For the CREST central counterparty service, members may also specify whether the transaction created should solely be at the level of the gross DEL, net DEL or both types of DEL. When members elect for such services, they must specify the member account(s) they wish to use and where applicable to the service the default nationality declaration. These details will be held as static data as part of the direct input services and may be amended by the member. Any amendment will take effect immediately.

A DEL transaction (or other relevant transaction) attributable to the member is centrally created (which will 'automatically match' the related transaction attributable to the other relevant member concerned, e.g. 'CCP' participant in the case of the CREST central counterparty service).

As part of the direct input services provided by EUI, an 'eligible central sponsor securities database' is maintained which records which securities are or are not eligible for processing under the central sponsor services provided by a particular CREST central sponsor. As a default these fields will be set to 'yes' and may only be changed by the CREST System Controller. The CREST System Controller may set (and amend) these flags on the basis of information received from a relevant clearing house or operator of the relevant trading platform. For operational reasons, securities will

normally be added to or removed from eligibility for such processing only after the end of a settlement day. EUI will notify members of any changes to this database by means of Operational Bulletin or by other appropriate means.

Where a DEL transaction (or other relevant transaction) in a particular security is not eligible to be created as a central sponsor transaction attributable to a member (other than a 'CCP' participant), the member counterparty will need to match the transaction attributable to the 'CCP' participant or other relevant member concerned by separate customer input.

The relevant CREST central sponsor inputs the trade data received from the relevant trading platform or the instruction for the central sponsor transaction attributable to a member. EUI, as part of the direct input services provided by it, validates the data in the manner described in this Chapter 4 and, in relation to the CREST central counterparty service, in Chapter 9, Sections 2 and 3 of the CREST Central Counterparty Service Manual. Where applicable, additional validation (for example in relation to risk management for the CREST central counterparty) may be performed by a CREST central sponsor other than EUI on receipt of trade details from the relevant trading platform and in advance of the message being sent to the CREST system.

Transactions in respect of Restricted Securities are not capable of being created using central sponsor services.

Central sponsor services as part of the CREST central counterparty service

For a detailed description of the CREST central sponsor services which operate as part of the CREST central counterparty service, reference should be made to Chapter 9, section 2 of the CREST Central Counterparty Service Manual.

For the central counterparty service, members may or may not elect to use the central sponsor facility together with an election to opt into the netting procedures. If the member opts into the netting procedures, but does not elect to opt into central sponsor services in relation to the net transaction which results from those procedures, the member will be required to match by customer input the net DEL created as a central sponsor transaction attributable to the 'CCP' participant concerned. In the alternative, the member may choose to opt into the netting procedures and into central sponsor services in relation to the net transaction which results from the netting procedures (whether or not he has also elected to opt into using central sponsor services in relation to gross DEL transactions). In such a case, the net transaction which arises as a result of the netting procedures will (after enrichment under the direct input services) be centrally created as a central sponsor transaction attributable to the member concerned (and will 'automatically match' the related net central sponsor transaction attributable to the 'CCP' participant concerned).

Although all (DEL) 'CCP' participant transactions are created as central sponsor transactions attributable to the relevant 'CCP' participant, trades in certain securities may not be eligible for processing as part of the central sponsor services made available to members (other than the 'CCP' participant or the cross-CCP member) or for processing under the netting procedures.

Central sponsor services as part of CREST Clearing Support Arrangements, CREST Collateral Support Arrangements and other arrangements

For a detailed description of the CREST central sponsor services which operate as part of the CREST Clearing Support Arrangements, reference should be made to Section 4B below.

For a detailed description of the CREST central sponsor services which operate as part of the CREST Collateral Support Arrangements, reference should be made to Section 4C below.

Suspension/termination of CREST central sponsorship

Chapter 2, Section 7 of the CREST Reference Manual describes the procedures under which EUI enables or disables users, participants, securities and functions in the CREST system. The provisions of that section also describe the procedures under which EUI enables or disables a CREST central sponsor as user for one or more members. A member's appointment of a particular CREST central sponsor may only be suspended or terminated in the following circumstances:

- if EUI withdraws its permission for a particular person to act as a CREST central sponsor in relation to a particular trading system, clearing service, collateral management service or otherwise (including those cases where EUI has reason to believe that an event has occurred or is likely to occur in relation to the CREST central sponsor concerned which affects or may affect the CREST central sponsor's ability to create central sponsor transactions on behalf of members); or
- if EUI withdraws its permission for a particular member to use the central sponsor services of a particular CREST central sponsor (including those cases where EUI has reason to believe that an event has occurred or is likely to occur in relation to the member concerned which affects or may affect the CREST central sponsor's ability to create central sponsor transactions on behalf of that member).

EUI will notify members of the withdrawal of its permission for a particular person to act as a CREST central sponsor (whether generally or in relation to a particular trading system or clearing service, collateral management service or otherwise) by operational bulletin or by other suitable means.

Other CREST memberships

As part of the clearing support and related services, dedicated CREST memberships may be maintained by a participant. These memberships operate under the same terms and conditions as other standard CREST members. Such dedicated CREST memberships may, for example, operate as cross-CCP members, may be used by a clearing house which is not operating in CREST as a 'CCP' participant or may be used by a collateral management service provider.

For a description of dedicated CREST memberships operated as part of the CREST central counterparty service, reference should be made to Chapter 7, Section 2 of the CREST Central Counterparty Service Manual.

For a description of dedicated CREST memberships which operate as part of the CREST Clearing Support Arrangements or otherwise, reference should be made to Section 4B below.

Direct input services

Introduction

The direct input services provided by EUI enable the creation of transactions by a CREST central sponsor on behalf of other CREST participants without the need for those CREST participants to input or match such transactions themselves.

For a description of certain specific issues and modifications relating to the operation of direct input services in the CREST central counterparty service, reference should be made to Chapter 9, Section 3 of the CREST Central Counterparty Service Manual.

For a description of certain specific issues and modifications relating to the operation of direct input services in the CREST Clearing Support Arrangements, CREST Collateral Support Arrangements and certain other services or arrangements, reference should be made to Sections 4B and 4C below.

Description of services

The direct input services comprise those services which through (1) message enrichment where applicable (as described further below) and/or (2) verification procedures (as described further below), enable or facilitate the creation of a central sponsor transaction attributable to a particular member

For the CREST central counterparty service, the direct input services provided by EUI may operate in relation to a gross DEL (where they enable or facilitate the creation of a gross DEL as a central sponsor transaction) and/or in relation to a net DEL (where they enable or facilitate the creation of a net DEL as a central sponsor transaction) and facilitates the determination of whether or not a particular gross transaction may be processed under the netting procedures.

For certain services (e.g. CREST central counterparty service) transactions will be created only after enrichment using static data held within the CREST system under the direct input services.

Transactions are only eligible for processing under central sponsor services if both the relevant security is eligible and the member has opted into the relevant arrangement. The transaction must also have been input by a CREST central sponsor as indicated on its user details. Furthermore, only delivery (DEL) instructions (and, in certain limited cases, DBV, TDO and TDA instructions) are eligible for such processing.

The direct input services provided by EUI are designed (amongst other things) to verify whether in relation to a particular transaction these (and other) matters are satisfied before a central sponsor transaction attributable to a member is created. The direct input services comprise the maintenance of certain databases which record static and other data, which may include:

- the identity of those users (by Central Sponsor ID) which are permitted to act as CREST central sponsors (this field defaults to 'no' and changes to it may only be made by the CREST System Controller);
- the identity of those 'settlement netting principals' (being a participant of type 'CCP' or member) with whom members may opt to net gross transactions under the netting procedures (this field can only be set and changed by the CREST System Controller);
- the identity of the member account which has been selected by a member for the processing of transactions under the netting procedures with a particular settlement netting principal and/or for the processing of transactions under the central sponsor services provided by a particular CREST central sponsor (see further below);
- the eligible central sponsor securities database (see further below);
- the identity of the trade system of origin and, where applicable, the identity of the 'CCP' participant which has been chosen by a member as its settlement counterparty for the

settlement of central sponsor transactions created on its behalf (under a service in which two or more 'CCP' participants operate);

- the Trade System Participant ID and Settlement Firm ID database (see further below);
- the trade feed settlement parties database (see further below);
- information which enables the completion of the stamp fields in a central sponsor transaction (see further below);
- the operation of automated procedures which, by reference to the static and other data maintained as part of the direct input services, enable or facilitate the creation of a (gross or, where available, net) central sponsor transaction (with completed fields) attributable to a particular member or determine that such a transaction should not be so created; and
- the operation of automated procedures which, by reference to the static and other data maintained as part of the direct input services, enable or facilitate a determination as to whether a particular gross DEL transaction attributable to a member should or should not be processed as part of the netting procedures.

The eligible central sponsor securities database

EUI, as part of the direct input services provided by it, maintains the eligible central sponsor securities database. This contains information on which securities are eligible for processing under the central sponsor services (and of any additions or amendments to that information made from time to time). EUI reproduces the information and makes it available for viewing on the 'eligible central sponsor securities' database. This database may be accessed by a user either interactively via the GUI or by file transfer.

Election for central sponsor services

Members may select which CREST central sponsors (by Central Sponsor ID) they will allow to create settlement instructions on their behalf. When a member elects for such services, it must specify the member account it wishes to be used and where applicable a default nationality declaration. The member must also specify whether the services will apply to net and/or gross transactions. These details will be held as static data as part of the direct input services and may be amended by the member. Any amendment will take effect immediately.

The Trade System Participant ID and Settlement Firm ID database

These databases are used in connection with certain services (e.g. the CREST central counterparty service and Clearing Support Arrangements).

Market participants may choose to combine executions across trade system participants for clearing and settlement purposes. This is facilitated by the Trade System Participant ID and Settlement Firm ID database. The circumstances where it is envisaged that this might occur in the context of particular central counterparty services are described further in Chapter 1 of the CREST Central Counterparty Service Manual.

Each trade feed received by the CREST system for a given CREST central sponsor will identify the trading parties (e.g. by the trading system's participant code or recognised BIC). The trading party identifiers are maintained, as part of the direct input services, as the Trade System Participant ID. Each Trade System Participant ID is mapped to a Settlement Firm ID which may be the same

identifier or a new identifier. The Settlement Firm ID will however always be set up as a BIC even if the Trade System Participant ID is proprietary to the trading system.

Using this mapping, it is possible for market participants to combine trades executed under different trading system identifiers under a single identifier for clearing, netting and settlement, since it is the Settlement Firm ID which is used to derive settlement and clearing arrangements for 'CCP' participant transactions.

The trade feed settlement parties database

These databases are used in connection with certain services (e.g. the CREST central counterparty service and Clearing Support Arrangements).

EUI maintains the trade feed settlement parties database as part of the direct input services provided by it. For a given CREST central sponsor, EUI holds details of the settlement arrangements selected by each Settlement Firm ID for CREST settlement in the trade feed settlement parties database. In addition, for each Settlement Firm ID, EUI holds in this database the details of the 'CCP' participant that is appointed as the settlement counterparty to central sponsor transactions attributable to the relevant settlement participant. EUI then uses all this information to enrich transactions received from a given CREST central sponsor. The following system data is maintained:

- Central Sponsor ID;
- Central Sponsor Short name;
- Settlement Firm ID;
- Settlement Firm Short Name;
- TSO Dealing Capacity;
- Settlement Participant ID;
- Participant Short Name;
- Account ID;
- Settlement Status; and
- CCP Participant ID.

The supplied Central Sponsor ID, Settlement Firm ID and TSO Dealing Capacity will determine the settlement participant who will settle the transaction, the member account to be used if the settlement party has opted to make use of central sponsor services and the 'CCP' participant that will be the settlement counterparty to the central sponsor transaction attributable to the settlement participant.

EUI performs validation in relation to the trade feed settlement parties database to ensure that:

- the CREST central sponsor is held as part of the direct input services and has not been deleted;
- the settlement firm is held as part of the direct input services;
- the settlement participant is held within the CREST system and has not been deleted or expired;

- the relevant 'CCP' participant is held within the CREST system and has not been deleted or expired;
- the settlement participant is indicated as both a stock and cash holder on its participant details;
- the member account ID, if completed, is with a valid member account for the settlement participant;
- the member account ID is opted into central sponsor services (either gross or net) and has the default nationality declaration completed on the member account direct input options; and
- the member account has not expired or been deleted.

The settlement participant and/or member account specified in the trade feed settlement parties database, as well as the details of the 'CCP' participant to act as settlement counterparty under a central sponsor transaction attributable to the settlement participant, may be amended at any time by the CREST System Controller. Amendments are effective immediately but only affect transactions received after the update has been applied. Existing open transactions remain with the previous settlement participant and/or member account and/or 'CCP' participant as addressee. This applies to the input of both net and gross transactions.

The following parties have access to the trade feed settlement parties databases:

- the CREST System Controller may view, add, amend or delete the data;
- members (including the cross-CCP members) and CM undertakings may view data related to them;
- exchanges, as regulators, may view data for CREST central sponsors that relate to their trading systems; and
- 'CCP' participants may view data for CREST central sponsors who act on their behalf.

Enrichment of the settlement instruction

Eligible gross central sponsor transactions are input with a priority of 50. Such transactions may either settle gross or be subject to processing under the netting procedures (see below). EUI, as part of the direct input services provided by it, also completes the fields relevant to SDRT as described in publications issued by EUI from time to time.

Where a member opts to use central sponsor services for net transactions, they are also created with a priority of 50. EUI, as part of the direct input services provided by it, will complete the fields of a net central sponsor transaction as described in publications issued by EUI from time to time.

Netting

Introduction

Netting procedures currently only operate in connection with certain CREST central counterparty services.

The netting procedures operated by EUI comprise the processing in the CREST Applications Host whereby the netting rules (as described below) are applied to terminate gross DEL transactions between a 'CCP' participant and a member with a view to their replacement by net DEL

transactions. After such processing, such net transactions may then be input by the relevant CREST central sponsor (as part of the central sponsor services provided by it).

The netting procedures enable or facilitate the (net) settlement of underlying gross trades. Under the procedures, separate (gross) settlement instructions for the delivery of the same stock against payment in the same currency under trades executed on the same trade date (and for the same intended settlement date) are netted by:

(a) aggregating the amount of stock to be delivered by the first party to the second party[4], and deducting from that amount the aggregate amount of stock to be delivered by the second party to the first party; and

(b) aggregating the amount of cash to be paid by the first party to the second party, and deducting from that amount the aggregate amount of cash to be paid by the second party to the first party. The netting procedures facilitate a 'settlement netting' process only. As such, they do not contemplate or require the termination (whether by novation or close-out) of the underlying gross trades upon completion of the procedures, and the (gross) contractual rights and obligations of the parties to those trades are intended to subsist until their performance by way of settlement of the net DELs created or input as a result of the netting procedures.

For transactions to be netted, one of the parties to the transaction must be a settlement netting principal, as indicated on their participant details. Only participant types 'member' and 'CCP' may be set up as a settlement netting principal (a function performed by the CREST System Controller). Each of LCH.Clearnet, x-clear, EuroCCP and ECAG, as 'CCP' participants in the CREST central counterparty service, are settlement netting principals in the CREST system.

Only delivery (DEL) transactions are eligible for settlement netting. Where transactions have been netted, they cannot be further netted or broken out into their gross constituents.

A member may choose which settlement netting principals it wishes to settle net with and which member accounts it wishes to set up for settlement netting. This information is input by members and must be amended by them. This information is maintained by EUI as part of the direct input services provided by it. Any amendments are effective immediately upon sanctioning by the settlement netting principal, but not retrospectively.

Restricted Securities are excluded from settlement netting.

The netting rules

In the CREST Manual the term 'netting rules' is used to refer to either or both of (1) the methodology which is applied under the netting procedures to identify those gross DEL transactions between a 'CCP' participant and a member which are to be terminated with a view to their replacement by the same net DEL transaction; and (2) the obligation and requirements set out below which are imposed upon a CREST member in relation to its use (whether by itself or through its CREST central sponsor) of the netting procedures. Where the CREST Manual refers to the 'netting rules' as part of the CREST Rules, it contemplates the use of that term in the sense described in (2) and not (1).

[4] As it is possible under the netting procedures to net agency trades and (in certain circumstances) cross-BIC trades, the netting procedures do not require mutuality between the first party and the second party. For example, it is possible under the netting procedures to facilitate the (net) settlement of the central counterparty contracts of one party (e.g. a general clearing member) with two or more different contracting counterparties (e.g. the clients of an agency-broker to whom the general clearing member is providing clearing services).

The netting rules form part of the CREST Rules and should be read in conjunction with the rules of the relevant trading platform and clearing house regarding settlement netting. The netting rules assume that a member will not use the netting procedures (whether by itself or through its CREST central sponsor) to net agency and principal trades or to net across non fungible contracts as prescribed by the rulebook of the relevant trading platform and/or clearing house. It is the member's responsibility to ensure that the netting procedures are not used to settle any transactions in any circumstances which are inconsistent with these assumptions. In particular, the member must ensure that the netting procedures are not used (whether by itself or by its CREST central sponsor on its behalf) to enable or facilitate the (net) settlement of trades which have been executed under more than one recognised BIC (or, in the case of ISE trades, under more than one recognised Xetra Member ID), unless:

- the BICs or Xetra Member IDs relate to the same legal entity;
- the BICs or Xetra Member IDs relate to two or more introducing brokers which are using the services of the same model B firm;
- the BICs relate to two or more member firms which are using the services of the same model A firm to clear and settle principal (but not agency) trades; or
- the Xetra Member Firm IDs relate to two or more member firms who are affiliates of an ICM (DCM) which, under or in connection with the central counterparty service for ISE trades, clears the principal trades of the affiliates.

The rules for settlement netting determine which transactions are incorporated in the same net transaction. The following criteria must be identical for transactions to be included in the same net:

- clearing member through a single clearing account (either House or Client);
- trade system of origin;
- settlement participant and member account;
- TSO dealing capacity;
- Settlement Firm ID;
- currency of consideration;
- stock and country of register;
- trade date;
- intended settlement date; and
- nationality declaration.

In addition two specific rules relating to the corporate action status of transactions also apply:

- transactions that have a special condition will not be netted; and
- gross transactions that have had claims raised on them before matching will be included in a separate net to those which have not.

All gross delivery (DEL) transactions that are eligible for settlement netting will be added to a net transaction at the point at which they reach matched status (whether input under central sponsor services or not). Such gross transactions are set to status 'CCC' ('Netted Will Not Be Actioned') which is a final status. The 'Net Transaction ID' field will identify the transaction ID of the new

netted transaction on the gross transaction. However, during the settlement day, the net transactions to which gross transactions are added are rolling and are not in their final state. Such rolling transactions are not visible to participants. Details of net transactions are only visible once they are final following the 'Create Net Transactions' diary event (see below).

A net transaction may include only one gross transaction if no further gross transactions meet the required criteria. If a net transaction results in a zero cash or stock movement, the CREST system does identify the ISIN and/or currency and cash and/or stock postings are still written. Net transactions are also created where both the stock and consideration net to zero. For these transactions to settle, matching by client input is required if the participant has not opted into central sponsor services for the net DEL transaction.

Creation of the net DEL

After the last trade has been received from the relevant trading platform and before the 'Input Disable' diary event has been run, the diary event 'Create Net Transactions' is actioned. This diary event closes net transactions, preventing any further gross transactions being incorporated. The timing of the event is as specified in the daily timetable from time to time.

The relevant CREST central sponsor (using the netting procedures) creates net transactions on the trade date (or on subsequent dates for late matching gross transactions). Members who are matching by customer input net transactions attributable to the settlement netting principal (i.e. members who have not opted into central sponsor services for net DEL transactions) cannot match net transactions until after the 'Create Net Transactions' diary event has been run.[5]

Gross DEL transactions that are matched after the first run of the 'Create Net Transactions' event (but before input is disabled) have a further opportunity to be netted on trade date, as a further set of net transactions is created after input is disabled. Again, the timing of this event is as specified in the daily timetable from time to time. Net transactions are not re-opened, rather new net transactions are created each time the process is run.

Transactions that do not match on the Trade Date but are matched before the Intended Settlement Date are incorporated into new net transactions on the day they are matched. However, if a transaction remains unmatched on or after its Intended Settlement Date, then upon matching it will not be eligible for settlement netting. Transactions input by the settlement netting principal via the GUI are also not eligible for processing under the netting procedures.

The same rules apply for deletion, amendments and splits to gross and net transactions as are described in the rest of this Chapter 4. The only exception is that it is not possible to amend the member account of a matched gross transaction that has been identified as eligible for processing under the netting procedures.

SDRT and Irish stamp duty

SDRT is accounted for on gross transactions in UK chargeable securities, prior to net transactions being created. Such transactions are assessed for SDRT on the same basis as any other transaction (regardless of whether they have been input under central sponsor services) as described in Chapter 8 and, where applicable, Chapter 14 of the CREST Central Counterparty Service Manual. SDRT is not, therefore, accounted for on net transactions. Consequently the agent indicator and stampable consideration fields in the net DEL transaction created as a central sponsor transaction

[5] If such members input before the diary event has been run, the transactions will be assigned a different transaction ID to that of the rolling net, so they will fail to match.

are left blank and the transaction stamp status is completed with a stamp status of 'N' for 'no SDRT liability, centrally generated transaction'.

A similar position arises in relation to Irish stamp duty (see further Chapter 8, Section 9 below).

Non-CREST netting arrangements

The netting procedures described in this Section 4A are EUI's own netting procedures that, where relevant, are provided by EUI either in its own capacity as a CREST central sponsor or to other CREST central sponsors. These netting procedures should not be confused with any CREST central sponsor's (or its associate's) own netting services, facilities or other arrangements which it provides independently of EUI (and to which the provisions of this Section 4A do not apply).

Currently, certain central sponsors provide, or procure that an associate provides, their own netting arrangements independently of EUI. Although the transactions input in the CREST system may result from the application of the CREST central sponsor's (or its associate's) own netting arrangements, such transactions will be treated as gross transactions in the CREST system.

EUI processes the results of a CREST central sponsor's (or its associate's) own netting arrangements by its receipt of gross DELs (or other relevant gross instruction); and, therefore, EUI is not in receipt of information relating to the underlying gross trades on which the CREST central sponsor's (or its associate's) own netting arrangements have operated in order to create the gross instruction that is settled in the CREST system.

Consequently, under a service where the CREST central sponsor provides, or procures that an associate provides, its own netting arrangements, in the event of a default by a clearing member or non-clearing member (or other similar occurrence) that requires action to be taken to minimise the risk to the security or integrity of the EUI systems, EUI will be reliant on the relevant CREST central sponsor or clearing house to take the appropriate default handling actions and notify EUI of the actions taken. EUI is therefore not involved in the handling of default of clearing members or non clearing members in these circumstances. EUI will continue to apply its own default handling procedures to its members.

The scenarios where EUI will apply its default procedures are set out in Chapters 10 and 12 of this CREST Reference Manual and Chapter 18 of the CREST Central Counterparty Service Manual.

Section 4B: CREST Clearing Support Arrangements

As explained in Sections 4 and 4A above, EUI provides clearing support and related services as part of its CREST Clearing Support Arrangements. The CREST Clearing Support Arrangements operate outside the collaborative structure that is at the foundation of the CREST central counterparty service. This section 4B describes the CREST Clearing Support Arrangements provided by EUI in support of clearing and other services provided by a clearing house or other third party. EUI's CREST Clearing Support Arrangements support the constituent services which are detailed from time to time on the Euroclear website (each constituent service is referred to as a "Service" for the purposes of this Section 4B). A description of the CREST Clearing Support Arrangements that are provided in relation to each Service is set out in the remainder of this Section 4B.

Constituent Services

The following is a generic description applicable to each Service except the RepoClear Service, which is described separately further below. Details of each of the entities involved in each Service, including the relevant CREST central sponsor, are available on the Euroclear website.

Introduction

Trade System Manager

Each trading or matching system ("Trading System") participating in a constituent Service operates a trading facility (such as a regulated market or multilateral trading facility) that enables its participants to execute trades in UK (and for certain Services, other) securities.

Each Trading System may be set up in the CREST system as a Trade System of Origin ("TSO"), with the operator of the Trading System being a Trade System Manager participant in the CREST system.

External CCP

The Trading System has one (or more) entities which provide clearing, netting and related services in respect of trades executed on the Trading System ("Service Trades"). One or more entities may perform central counterparty functions in relation to Service Trades (each an "external CCP"). This allows Trading System members to replace multiple relationships with trading counterparties on the Trading System with one relationship with an external CCP, acting in the capacity of a central counterparty.

In order to support the settlement of Service Trades, each external CCP maintains (either itself or using the services of a settlement agent) a CREST membership (the "external CCP Member") for the purpose of receiving and delivering UK (and for some Services, Irish and other securities) in uncertificated form and in performance of Service Trades cleared through a particular Service.

The external CCP Member is a standard CREST member. It does **not** operate as part of the CREST central counterparty service and is not supported by CREST system functionality that operates in connection with a participant of type 'CCP'. EUI is therefore not involved in the clearing of Service Trades, such services being performed solely by the relevant CCP(s). EUI's role is limited to the functions expressly described as undertaken by it in this Section 4B.

CREST central sponsor

An entity may be designated by EUI as a CREST central sponsor for a particular Service. In this capacity, the relevant CREST central sponsor acts, in relation to a particular Service, as a CREST central sponsor for:

- one (or more) external CCP Members; and
- CREST members who have been appointed to act as settlement agent by the Trading System's members and have elected to use the central sponsor services provided by the relevant CREST central sponsor.

External CCP Members opt into the central sponsor services provided by the relevant CREST central sponsor. As described further below, DEL transactions may be created as central sponsor transactions under the central sponsor services provided by the CREST central sponsor. Any such central sponsor transaction is automatically created as a transaction attributable to an external CCP Member.

The CREST member which is a settlement counterparty to the external CCP Member may match DEL transactions by using the central sponsor services provided by the relevant CREST central sponsor. To do so, the settlement counterparty will have to opt in to the relevant central sponsor services (by selecting a member account to be used in respect of a particular CREST central sponsor's services). In doing so, after the operation of any applicable direct input services, a DEL transaction attributable to the member concerned is centrally created (which will 'automatically match' the related DEL transaction attributable to the external CCP member).

The CREST netting procedures do not operate in relation to DEL transactions so created. 'Net' DELs are incapable of being created under the central sponsor arrangements for a Service.

Central sponsor services

Upon receipt of the trade information relating to Service Trades, an external CCP will, as part of a particular Service, net the trades according to their netting arrangements. The external CCP will send the net trade information to the relevant CREST central sponsor (as CREST central sponsor for the Service), and the CREST central sponsor (with whom EUI has a relationship) will then send a settlement instruction to the CREST system in the form of an MT518 message.

EUI treats the netted trades as gross transactions and operates the applicable direct input services on the MT518 messages so received, to facilitate the relevant CREST central sponsor's creation of transactions as central sponsor transactions attributable to an external CCP member and (on the basis that the CREST member which is a settlement counterparty to the external CCP has opted in to the central sponsors services) the relevant CREST member.

The central sponsor services provided by the relevant CREST central sponsor (acting in its capacity as a CREST central sponsor for a member in relation to a particular Service) comprise all the systems, services and procedures which it operates, provides or uses to enable, facilitate or procure:

- its receipt of data relating to Service Trades from an external CCP;
- its sending of SWIFT MT518 messages to the CREST system (in a format agreed with EUI);
- the correction and resending of any SWIFT MT518 messages;

- its sending of those messages by means of an accredited ISO 15022 network, via a gateway maintained for such purpose, to the Network Provider's Communications Host for transmission to the CREST Application Host; and
- the receipt by EUI of properly authenticated dematerialised instructions on behalf of the relevant CREST member.

Direct input services

Introduction

The applicable direct input services that operate in connection with a Service are provided by EUI to the relevant CREST central sponsor, in its capacity as CREST central sponsor for a particular Service. They are provided to enable or facilitate the CREST central sponsor's provision of central sponsor services to members who have opted into those services.

The direct input services provided by EUI for the purposes of a Service operate so as to enable or facilitate the creation of a DEL transaction as a central sponsor transaction.

Description of direct input services

The direct input services, which operate in connection with a Service, comprise those services which through (1) message enrichment and/or (2) verification procedures, enable or facilitate the creation of a central sponsor transaction attributable to a particular member.

Service Trades are only eligible for processing under the central sponsor services provided by a CREST central sponsor if the member has opted into the relevant arrangement. The transaction must also have been input by a CREST central sponsor as indicated on its user details. For a particular Service, the CREST system will apply the existing direct input options that members have set up for gross transactions for the transaction type supported by direct input (i.e. DELs).

The direct input services provided by EUI for the purposes of a Service are designed (amongst other things) to verify whether in relation to a particular transaction these (and other) matters are satisfied before a central sponsor transaction attributable to a member is created:

- the identity of those users (by Central Sponsor ID) which are permitted to act as CREST central sponsors (this field defaults to 'No' and changes to it may only be made by the CREST System Controller);
- information which enables the completion of the stamp fields in a central sponsor transaction (see further below); and
- the operation of automated procedures which, by reference to the static and other data maintained as part of the direct input services, enable or facilitate the creation of a central sponsor transaction (with completed fields) attributable to a particular member or determine that such a transaction should not be so created.

EUI maintains a list of TSO participants, settlement firms and trade feed settlement parties for each Service and will use these details to identify the relevant CREST members.

Enrichment of settlement instructions

Eligible central sponsor transactions are input with a priority of 50. For the purposes of the each Service, such transactions will settle gross, as the netting procedures provided by EUI do not operate. EUI, as part of the direct input services provided by it, also completes the fields relevant

to stamp duty, and SDRT (where applicable) as described in publications issued by EUI from time to time. While the CREST system will report the transactions (which may represent net positions) received from the CREST central sponsor to HMRC, IRC and the FCA (where applicable), the Trading System or its members will be responsible for reporting the gross constituents to HMRC and IRC while the Trading System members will be responsible for reporting such gross constituents to the FCA. SDRT and stamp duty due on the underlying trades can be assessed and collected under the Stamp Duty Assessment Service. In this event, the stamp status field in the SWIFT MT518 message sent by the CREST central sponsor to the CREST system should be flagged 'No SDRT liability or Irish Exempt, Net/Aggregate Transaction or Assessed Elsewhere'.

See Chapter 8 for further details regarding SDRT and stamp duty.

Databases maintained by EUI and excluded databases

Direct input services comprise the maintenance of certain databases which record static and other data. For the purposes of each Service, EUI will be maintaining the following databases as part of the direct input services provided by it:

- eligible central sponsors securities database;
- trade feed settlement parties database;
- trade system participant ID database; and
- settlement firm ID database.

EUI will not operate:

- the netting procedures.

EUI operates validation procedures that verify whether the relevant MT 518 message input by a CREST central sponsor relates to a relevant Service Trade or the category of securities that may properly be the subject of such trades. The performance of the central sponsor services provided by the relevant CREST central sponsor remains its sole responsibility.

Cross Platform Netting Service

An external CCP may be designated by EUI to use the Cross Platform Netting Service. Transactions using the Cross Platform Netting Service ("Cross Platform Netted transactions") may relate to netted trades executed on one or more Trading Systems. The Cross Platform Netting Service is only available to designated external CCPs and their transaction counterparties and may only be used in respect of:

- transactions cleared by an external CCP (which are not subject to EUI's netting procedures);
- UK and Irish securities regularly traded on a Regulated Market;
- transactions which are not subject to SDRT or Irish Stamp Duty (including where counterparties to the CCP are eligible for intermediary relief);
- Delivery (DEL) transactions only. Stock loans, repos, overnight DBVs and term DBVs are not within the scope of the Cross Platform Netting Service.

Cross Platform Netted transactions should be instructed with the Trade System of Origin ("TSO") '9'. Transactions with TSO '9' will be identified by UK and Irish tax authorities as Cross Platform Netted transactions.

TSO ‘9’ does not represent a Trade System of Origin and no operator of a Trading System is the Trade System Manager in respect of TSO ‘9’. The CREST system does not hold TSO participants, settlement firms or trade feed settlement parties in respect of TSO ‘9’.

For the purposes of the definition of a ‘CREST central sponsor’ in the CREST Terms and Conditions, the trading system or clearing service for which a particular CREST central sponsor is designated as a CREST central sponsor in respect of TSO ‘9’ is the clearing service of the relevant CCP which is counterparty to the instructed transaction. Details of CREST central sponsors designated in respect of TSO ‘9’ are available on the Euroclear website.

The TSO '9' is only for use by designated external CCPs and their counterparties. EUI will monitor transactions to ensure that a designated external CCP is always party to any transaction instructed with a TSO of '9'. In accordance with the CREST Terms and Conditions, EUI may suspend the participation of any participant not complying with the above provisions.

The RepoClear Service

Introduction

LCH.Clearnet operates a service, known as the 'RepoClear Service', under which clearing and netting facilities are made available in respect of sale and repurchases trades, and other trades, in fixed income securities ('RepoClear trades'). The RepoClear Service allows financial institutions to replace their existing inter-financial institution cash bond and repo relationships with a single relationship with LCH.Clearnet, acting in the capacity of a central counterparty.

In order to support the settlement of RepoClear trades, LCH.Clearnet maintains a CREST membership for the purposes of receiving and delivering UK and Irish fixed income securities in uncertificated form and in performance of RepoClear trades cleared through the RepoClear Service (the 'RepoClear membership'). The RepoClear membership does not operate as part of the central counterparty service and is not supported by the CREST system functionality that operates in connection with a participant of type 'CCP'.

LCH.Clearnet is designated by EUI as the CREST central sponsor for the RepoClear Service. In this capacity, LCH.Clearnet acts as a CREST central sponsor for (a) itself (as the 'RepoClear member'); and (b) CREST members who have been appointed to act as settlement agent by LCH.Clearnet's clearing members and have elected to use the central sponsor services provided by LCH.Clearnet.

In all cases, LCH.Clearnet (as the RepoClear member) is treated as having elected to opt into the central sponsor services provided by it as CREST central sponsor. As described further below, DEL transactions, term DBV transactions and term DBV adjustment transactions are capable of being created as central sponsor transactions under the central sponsor services provided by LCH.Clearnet as CREST central sponsor for the RepoClear Service. (However, as the netting procedures do not operate in relation to DEL, DBV, TDO or TDA transactions so created, 'net' DELs, TDOs and TDAs are incapable of being created under the central sponsor services so provided.) Any such central sponsor transaction is automatically created as a transaction attributable to the RepoClear member. As in the case of any other DEL, TDO or TDA transaction, any such transaction attributable to the RepoClear member will need to be matched by the settlement counterparty before it can proceed to settlement.

The settlement counterparty to the RepoClear member may prefer to match the DEL, TDO or TDA transaction by using the central sponsor services provided by LCH.Clearnet as central sponsor for the RepoClear Service. In such a case, he will opt into the relevant central sponsor services. In doing so, after the operation of any applicable direct input services, a DEL, TDO or TDA transaction attributable to the member concerned is centrally created (which will 'automatically match' the related DEL, TDO or TDA transaction attributable to the RepoClear member).

LCH.Clearnet as CREST central sponsor for the RepoClear Service

Trades that are cleared through the RepoClear Service as RepoClear trades may have been executed on a trading platform operated as part of an Alternative Trading System (ATS) or an investment exchange, or may have been executed as Over-The-Counter (OTC) trades which are matched or confirmed through the services provided by the operator of a Trade Capture System (TCS). In any such case, details of such RepoClear trades are sent from the ATS, investment exchange or TCS to a router (operated by LCH.Clearnet as part of the central sponsor services provided by it as CREST central sponsor for the RepoClear Service). The router operated by

LCH.Clearnet as CREST central sponsor will make details of such trades available for conversion and transmission as SWIFT MT 518 messages. LCH.Clearnet (acting as CREST central sponsor for the RepoClear Service) has no responsibility for messages sent to it by an ATS, investment exchange or TCS until those messages have been received by the router maintained by it as part of the central sponsor services provided by it.

Using trade information relating to RepoClear trades, LCH.Clearnet will calculate net movements in accordance with the procedures agreed with its clearing members. LCH.Clearnet will shape each of these net transactions to a standard cash size. These 'net' instructions are then sent by LCH.Clearnet (as CREST central sponsor) to the CREST system for term DBV or term DBV adjustment settlement in a single MT 518 settlement instruction. EUI operates the applicable direct input services on the MT 518 messages so received, which facilitates LCH.Clearnet's creation (as CREST central sponsor) of term DBV and term DBV adjustment transactions as central sponsor transactions attributable to the RepoClear member and (where the applicable settlement counterparty has opted into the relevant central sponsor services) that settlement counterparty.

Where applicable, LCH.Clearnet will (as CREST central sponsor) also calculate the interest due on a RepoClear trade in accordance with the procedures agreed with its clearing members. In relation to such interest as so calculated, LCH.Clearnet will (as CREST central sponsor) send a single MT 518 message to the CREST system for a cash-only DEL settlement. EUI operates the applicable direct input services on the MT 518 message so received, which facilitates LCH.Clearnet's creation (as CREST central sponsor) of a cash-only DEL transaction as a central sponsor transaction attributable to the RepoClear member and (where the applicable settlement counterparty has opted into the relevant central sponsor services) that settlement counterparty.

The central sponsor services provided by LCH.Clearnet, acting in its capacity as a CREST central sponsor for a member in relation to the RepoClear Service, comprise all the systems, services and procedures which it operates, provides or uses to enable, facilitate or procure:

- its receipt of data relating to RepoClear trades from an ATS, investment exchange or TCS;
- the calculation of net positions and interest obligations in relation to RepoClear trades as outlined above;
- its conversion of the Trade Notification message, after the relevant calculations and processing outlined above, into corresponding SWIFT MT 518 messages (in a format agreed with EUI);
- the correction and resending of any SWIFT MT 518 messages not successfully processed by EUI;
- its sending of those messages by means of an accredited ISO 15022 network, via a gateway maintained for such purpose, to the Network Providers' Communications Host for transmission to the CREST Applications Host;
- its receipt of properly authenticated dematerialised instructions on behalf of the relevant CREST member;
- EUI's provision to it of the applicable direct input services described further below to enable or facilitate the creation of DEL, TDO and TDA transactions attributable to the member concerned by entering into the CREST Central Sponsors Agreement (and so that LCH.Clearnet's obligation under this bullet shall be discharged if it takes reasonable care to cause EUI to provide to it the direct input services in accordance with the CREST Central Sponsors Agreement, subject to EUI

fulfilling its contractual obligations to LCH.Clearnet to provide these services under that Agreement); and

- the central-generation from the properly authenticated dematerialised instructions received by the CREST Applications Host of a DEL or term DBV or term DBV adjustment transaction as a central sponsor transaction attributable to the member concerned.

Direct input services for the RepoClear Service

Introduction

The direct input services, which operate in connection with the RepoClear Service, comprise those services which through (1) message enrichment[6] and/or (2) verification procedures enable or facilitate the creation of a central sponsor transaction attributable to a particular member.

The direct input services provided by EUI for the purposes of the RepoClear Service may operate in relation to a DEL (where they enable or facilitate the creation of a DEL as a central sponsor transaction); and/or in relation to a TDO or TDA (where they enable or facilitate the creation or cancellation of a term DBV or term DBV adjustment as a central sponsor transaction).

The applicable direct input services that operate in connection with the RepoClear Service are provided by EUI to LCH.Clearnet, in its capacity as CREST central sponsor for the RepoClear Service. They are provided to enable or facilitate LCH.Clearnet's provision of central sponsor services to members who have opted into those services.

Description of direct input services in the RepoClear Service

RepoClear trades are only eligible for processing under the central sponsor services provided by LCH.Clearnet (as central sponsor for the RepoClear Service), if the member has opted into (or, in the case of the Repoclear member, is treated as having opted into) the relevant arrangement. The transaction must also have been input by a CREST central sponsor as indicated on its user details. For the Repoclear Service, the system will apply the existing direct input options that members have set up for gross transactions across all transaction types supported by direct input (DELs, TDOs and TDAs).

The direct input services provided by EUI for the purposes of the RepoClear Service are designed (amongst other things) to verify whether in relation to a particular transaction these (and other) matters are satisfied before a central sponsor transaction attributable to a member is created. These direct input services comprise the maintenance of certain databases which record static and other data. These are:

- the identity of those users (by Central Sponsor ID) which are permitted to act as CREST central sponsors (this field defaults to 'No' and changes to it may only be made by the CREST System Controller);
- information which enables the completion of the stamp fields in a central sponsor transaction (see further below); and
- the operation of automated procedures which, by reference to the static and other data maintained as part of the direct input services, enable or facilitate the creation of a central

[6] Enrichment will not apply to DBV transactions created as central sponsor transactions under the Repoclear Service. All necessary information will be provided on the MT 518 message sent by LCH.Clearnet as CREST central sponsor.

sponsor transaction (with completed fields) attributable to a particular member or determine that such a transaction should not be so created.

EUI does not maintain a list of TSO participants, settlement firms or trade feed settlement parties for the RepoClear Service. The CREST participant and member account details to be used to settle a central sponsor transaction will be specified directly by LCH.Clearnet (as CREST central sponsor) within the MT 518 message.

LCH.Clearnet may, from time to time, be provided with information about the date and time of attempts to recall stock in relation to term DBV returns, term DBV mark-to-market transactions and term DBV adjustments which are failing to settle.

Eligible central sponsor transactions (TDO, TDA or DEL for the Repoclear Service) are input with a priority of 50 for a DEL and 75 for a TDO and 80 for a TDA. For the purposes of the RepoClear Service, such transactions will settle gross, as the netting procedures provided by EUI do not operate. EUI, as part of the direct input services provided by it, also completes the fields relevant to SDRT as described in publications issued by EUI from time to time.

Excluded databases in the RepoClear Service

For the purposes of the LCH.Clearnet RepoClear Service, EUI will **not** be maintaining the following databases as part of the direct input services provided by it:

- eligible central sponsors securities database;
- trade feed settlement parties database;
- trade system participant ID database; and
- settlement firm ID database.

In addition, EUI will not operate:

- the netting procedures; or
- enrichment in relation to DBVs.

In consequence of this, EUI does not operate procedures that verify whether the relevant MT 518 message input by LCH.Clearnet as CREST central sponsor relates to RepoClear trades or the category of securities that may properly be the subject of such trades. The performance of the central sponsor services provided by LCH.Clearnet (as CREST central sponsor for the RepoClear Service) remains its sole responsibility.

Default procedures

If LCH.Clearnet has declared a RepoClear member to be in default under its default rules while term DBVs are outstanding to which a CREST member is a settlement counterparty either for themselves or as settlement agent for such RepoClear member, EUI may, following a request from LCH.Clearnet, take steps to prevent the generation of certain further transactions in the CREST system relating to such outstanding DBVs as part of the default services provided by it to LCH.Clearnet in order to facilitate the effective and efficient management of the default. If LCH.Clearnet wishes EUI to take such action, LCH.Clearnet in its capacity as a recognised clearing house and CREST central sponsor will provide EUI with data relating to such outstanding DBVs. The default services provided by EUI to LCH.Clearnet in relation to the RepoClear service comprise

all the systems, services and procedures which it operates, provides or uses to enable, facilitate or procure:

- the stopping of the generation of term DBV giver recall substitution, term DBV eligibility substitution and term DBV mark-to-market transactions
- the intended settlement date of term DBV returns and any claims relating to the DBV being set to a future date.

Any transformation processing in relation to such DBVs will not be affected.

With due regard to the information held by LCH.Clearnet and the need to take effective and prompt action to minimise systemic or other risks for the CREST system, its participants or the wider financial system as a result of the default of the RepoClear member, EUI will take such action in reliance on information provided to it by LCH.Clearnet and which EUI bona fide believes to be true as to (a) the fact of the proper and valid declaration of a default by LCH.Clearnet in respect of the RepoClear member;and (b) the identity of the transactions held in the CREST system under the RepoClear service which are affected by the RepoClear member's default.

Section 4C: CREST Collateral Support Arrangements

Introduction

Euroclear Bank operates a securities inventory management service, known as Open Inventory Sourcing (the 'OIS Service'). The OIS Service enables Euroclear Bank participants to access and use securities held outside Euroclear Bank, for the purposes of Euroclear Bank's collateral management and other services. In relation to the CREST system, the OIS Service enables Euroclear Bank participants to access and use securities held by them, or on behalf of them, in the CREST system.

Euroclear Bank maintains one or more CREST participants (in the name of a subsidiary nominee company, Euroclear Nominees Limited e.g. with CREST participant IDs EOC and 56XKK) for the purposes of receiving and delivering securities from CREST participants in relation to the OIS Service (the 'EB Nominee'). Securities transferred to the EB Nominee for the purposes of the OIS Service will be credited to the relevant Euroclear Bank participant's account at Euroclear Bank for use in Euroclear Bank's collateral management and other services. Crediting and debiting of securities by Euroclear Bank are the responsibility of Euroclear Bank not EUI.

Euroclear Bank is designated by EUI as a central sponsor in relation to the OIS Service. In this capacity, Euroclear Bank acts as a CREST central sponsor for CREST participants who have elected to use the central sponsor services provided by Euroclear Bank.

In order to automate the security movements for the OIS Service, Euroclear Bank in its capacity as a CREST central sponsor will input instructions in the CREST system on behalf of CREST participants who have opted into the service, to move required securities from their member account in the CREST system to the EB nominee participant, or vice versa. The matching side to these instructions, for which the EB nominee is the counterparty, will be input by Euroclear Bank as CREST sponsor for the EB nominee. These instructions generate DEL transactions in the CREST system and on matching proceed to settlement as any other DEL transactions. These securities will, following relevant processing by Euroclear Bank, then be available for use in Euroclear Bank by the relevant Euroclear Bank participant. CREST participants should note that EUI does not validate that instructions input by Euroclear Bank as CREST central sponsor only relate to transfers of securities to or from the EB Nominee or that they relate to securities movements in connection with the OIS Service.

Eligible securities

All CREST securities with the exception of Jersey securities and securities that have a security category of UTF are eligible for use with the OIS Service. These eligible securities are identified in the CREST system through an 'OIS Allowed' indicator for each participating security which is maintained by CREST System Control. A change to a security's OIS eligibility will in general only take effect overnight.

Certain securities, although flagged as 'OIS Allowed' in the CREST system, may still be excluded from the OIS Service by Euroclear Bank because:

- such securities are excluded by agreement between the Euroclear Bank participant and Euroclear Bank, or
- such securities are excluded by Euroclear Bank for other reasons.

EUI is not responsible for, and does not validate, any such additional exclusions.

OIS Subscriptions

Participation in the OIS Service is subject to the relevant Euroclear Bank participant having established the required agreement and account setup with Euroclear Bank. In addition to defining preferences and other conditions for the OIS Service, the Euroclear Bank participant also needs to specify to Euroclear Bank the CREST member account(s) that will be linked to its account at Euroclear Bank. Participants should contact Euroclear Bank in relation to these arrangements, to which EUI is not a party.

In addition, the relevant CREST participant must opt into the OIS Service in the CREST system. Opting into the OIS Service in the CREST system is managed at the member account level. Participants wishing to opt in will need to select Euroclear Bank as central sponsor and specify one or more member accounts that they wish to use with the OIS Service. EUI does not cross validate with Euroclear Bank the member accounts which are opted into the OIS Service.

Opting in of member accounts only becomes effective from the business day after the day of the election to opt in. Once member accounts are opted into the OIS Service, CREST participants are also able to request that such accounts are opted out from the OIS Service. This can be amended by the CREST participant themselves.

Member accounts opted into the OIS Service as described above, authorises:

- EUI to provide Euroclear Bank with mirroring information in regards to the balance, settlement, pending and other activity taking place in each such subscribed accounts (as described below);
- the appointment of Euroclear Bank to act as central sponsor in respect of each such subscribed account;
- EUI to accept instructions sent by Euroclear Bank (in its capacity as a central sponsor) on behalf of the member in relation to each such subscribed account.

From the moment a member account is opted out from the OIS Service in the CREST system, all subsequent central sponsor instructions in respect of that account received from Euroclear Bank will be rejected by the CREST system. Mirroring of information for that member account to Euroclear Bank will however continue for the remainder of the day on which the opting out of the member account was requested.

Provision of information by the CREST system to Euroclear Bank

The CREST system will provide Euroclear Bank with 'mirroring information' in relation to CREST member accounts that are opted into the OIS service.

The CREST system provides the following information to Euroclear Bank for each member account opted into the OIS Service for each holding in an eligible security:

- at the end of each business day, the available balance, SCR balance and all transactions that remain open against the available balance;
- during each business day, all transactional changes in respect of the available balance as they take place in the CREST system (i.e. transaction status updates and new transactions input, including those centrally generated).

Euroclear Bank will, including on the basis of mirroring information provided by the CREST system, calculate:

- excess positions, being the quantity of eligible securities in a CREST member account, considered by Euroclear Bank (based on defined parameters and other checks) as surplus to the current need required for the pending CREST settlement activity in respect of that account;
- required positions, being the quantity of eligible securities considered by Euroclear Bank to be required in a CREST member account (i.e. the additional quantity of securities required in a member account to satisfy the current pending settlement activity in respect of that account).

This information is the basis for Euroclear Bank to generate settlement instructions for moving required securities to the relevant account at Euroclear Bank from a CREST participant's account, or vice versa. CREST participants should note that EUI does not validate Euroclear Bank's assessment of excess positions or required positions.

Central sponsor services

Euroclear Bank, and not EUI, is responsible for:

- the receipt of mirroring information sent by the CREST system in relation to CREST member accounts opted into the OIS Service;
- monitoring on behalf of CREST participants the inventory of securities for such accounts;
- the calculation of excess positions and required positions for each member account in the CREST system that is opted into the OIS Service, on a daily basis, at scheduled intervals throughout the day;
- managing the usage of eligible securities by generating such instructions as necessary (known as rebalancing instructions at scheduled points throughout the day), in the CREST system on behalf of the relevant participants to move the securities from their CREST member account to an account at Euroclear Bank (by means of the EB nominee), or vice versa:
- creating such properly authenticated dematerialised instructions either as Free of Payment (FOP) or as Delivery versus Payment (DVP) instructions in accordance with the preferences set up by the relevant Euroclear Bank participant (and on GBP currency holidays creating these instructions only as FOP (i.e. irrespective of the preferences set));
- cancelling previously sent rebalancing instructions (which remain unsettled in the CREST system at the end of day). The CREST system accepts all such cancellation requests up to the input instruction deadline (CREST diary event Input Disable). Transactions relating to rebalancing instructions will continue to be processed for settlement until such time as settled or cancelled by Euroclear Bank as CREST central sponsor;
- managing the return of securities, for example in relation to an upcoming corporate action or for other reasons as determined by Euroclear Bank.

The central sponsor services provided by Euroclear Bank, in relation to the OIS service, for which EUI is not responsible, comprise all the systems, services and procedures which it operates, provides or uses to enable:

- the calculation of CREST securities movements it considers necessary, as described above;
- its creation of instructions for input into the CREST system;

- its sending of properly authenticated dematerialised instructions in respect of such instructions, on behalf of the relevant CREST member;
- its receipt of properly authenticated dematerialised instructions, on behalf of the relevant CREST member.

Direct input services

Introduction

The direct input services provided by EUI, which operate in connection with the OIS Service, comprise those services which, through message verification procedures, enable or facilitate the creation of a central sponsor transaction attributable to a particular participant. The direct input services provided by EUI for the OIS service operate only in relation to DELs (where they enable or facilitate the creation and deletion of a DEL as a central sponsor transaction).

Transactions instructed by Euroclear Bank (as central sponsor for the OIS Service) attributable to a particular participant are only eligible for processing if the CREST participant settling the transaction has opted into the arrangement. The transaction must also have been input by Euroclear Bank as CREST central sponsor as indicated on its user details.

On receipt of a settlement instruction from Euroclear Bank, sent on behalf of CREST participants, the CREST system by reference to the static and other data maintained as part of the direct input services, will determine whether to create a central sponsor transaction attributable to a particular member or determine that such a transaction should not be so created.

CREST participants will need to select Euroclear Bank as the central sponsor (by Central Sponsor ID) to facilitate the creation of settlement instructions on their behalf for the OIS service. When a participant elects for such services, it must specify the member account(s) it wishes to be used by means of a tick of the associated OIS Indicator flag. These details will be held as static data as part of the direct input services and may be amended by the participant. Any amendment will take effect immediately. By default, no member accounts will be opted into the OIS service.

Eligible central sponsor transactions created by Euroclear Bank as CREST Central Sponsor for the OIS Service are input with a priority of 50.

Fields relevant to SDRT are completed by Euroclear Bank and will be set to indicate no change of beneficial ownership resulting in exemption from stamp duty.

Direct input services

The direct input services provided by EUI for the purposes of the OIS Service are designed (amongst other things) to verify whether, in relation to a particular transaction, the following (and other) matters are satisfied before a central sponsor transaction attributable to a participant is created. These direct input services comprise the maintenance of certain databases which record static and other data. The points which are verified are:

- the identity of those users (by Central Sponsor ID) which are permitted to act as CREST central sponsors (this field defaults to 'No' and changes to it may only be made by the CREST System Controller);
- the identify of those CREST participants who have selected a CREST central sponsor to be allowed to create settlement instructions on their behalf for the purposes of settlement of transactions in relation to the OIS Service;

- the operation of automated procedures which, by reference to the static and other data maintained as part of the direct input services, enable or facilitate the creation of a central sponsor transaction attributable to a particular participant or determine that such a transaction should not be so created.

The CREST system will not validate the nature of the transaction (i.e. that it is a DEL transaction between the CREST participant and a particular Euroclear Bank member account).

Section 5: Tolerance matching

Tolerance matching functionality enables the CREST system to amend the consideration of a transaction within specified parameters in order to achieve a match[7]. The maximum adjustment for each settlement currency is:

- Sterling £10.00
- US dollar $15.00
- Euro €15.00

Tolerance matching applies to deliveries (DEL), residuals (RES) and stock loans (SLO). It does not apply to cash-only DELs or any non-settling (NC) transactions, or to DELs which are created as central sponsor transactions attributable to a particular member or as part of the EDS maturity process (see further Chapter 2, section 6).

The matching process endeavours to achieve a best fit (i.e. rather than matching the first two transactions within the tolerance band) and thus minimise the degree of any adjustment.

Members may opt in/out of central tolerance: the default is 'opted out'. Members can 'opt in' to tolerance matching using the CREST GUI, with changes to a member's option being made intra-day. The CREST system provides a separate 'opt in' facility for the Investment Funds Service (see further Chapter 13, section 4).

The system determines tolerance adjustments as follows:

- where neither participant has opted in to central tolerance, there is no adjustment to either transaction input;
- where one but not both participants have opted in, the transaction input of the participant who has opted in will always have its transaction input adjusted;
- where both participants have opted in to central tolerance adjustment, the transaction input of the stock giver is considered 'true' if it lies within the tolerance band and the taker of stock's input is adjusted.

Changes to the specified consideration will take place immediately on transaction matching. Notification that the transaction has been centrally adjusted is achieved by means of a specific party transaction status. Only the participant whose input has been amended will be notified by the user file change mechanism.

[7] Tolerance matching for the Investment Funds Service is described in Chapter 13, section 4.

Section 6: Amendment of settlement instructions

The CREST system permits the amendment of non-matching fields in a delivery (including deliveries generated by the CREST system on maturity of an EDS), complex delivery, stock loan, residual, repo transaction, overnight DBV instruction, term DBV instruction or cross border delivery (when receiving UK or Irish stock cross border). The counterparty members are able to amend those data input by themselves, but not those input by the counterparty. However, a member is not able to amend by way of single input data which is input on his behalf by a CREST central sponsor (whether before or after matching by the settlement counterparty).

Non-matching fields in matched deliveries can be amended in any transaction state between matched and settled. Matching fields generally cannot be amended at any time (the transaction must be deleted and re-input) with the exception of the rollover and early return features of the repo transaction (see Chapter 7, section 10), the rollover, early return and interest features of the term DBV transaction (see Chapter 7, section 2B) and term DBV adjustments to 'value sought' and 'consideration' (see Chapter 7, section 2B). No fields (either matching or non-matching) can be amended after settlement.

Similarly, those involved in single input transactions (either as initiator or receiver) can amend non-core fields in single input transactions. Amendment to core fields (broadly similar to the matching fields for matching transactions) requires deletion and re-input.

It is not possible to amend pre-funding payment (PFP) or auto-collateralising repo (SCR) transactions. It is also not possible to amend the member account of a transaction when the Settlement Netting Type field has been set to 'G' signifying that it is a matched gross transaction eligible for netting. In addition, if a member account on a transaction (which is not eligible for netting) is amended to one with netting enabled, the transaction is not reassessed for netting and will settle on a gross basis.

It is not possible to amend a transaction which has been assigned a System Controller priority of 91 or greater.

It is possible to amend transactions in respect of Restricted Securities where certification has previously been provided, however, it is not possible to amend the receiving member account on a transaction involving a Restricted Security. In order to amend the recipient member account the transaction must be fully deleted and re-input with the new member account details so that certification is provided in relation to the amended member account.

Section 7: Deletion of settlement instructions

Participant deletion

The following transaction types are capable of being deleted by the relevant participants:

- CLA - claims, or benefit claims;
- DBR - overnight DBV returns;
- DBV – overnight DBVs;
- DEL – deliveries;
- INT - interest payments;
- MTM - complex (or 'many-to-many') deliveries;
- OAT - own account transfers;
- PAY – dividend and interest payments;
- PFP – pre-funding payments;
- RCN - strip reconstitution request;
- RES - residual transactions;
- RPO - repo transactions;
- RPR - repo returns;
- RPS - repo substitutions;
- SLD - stock loan revaluations;
- SLO - stock loans;
- SLR - stock loan returns;
- STD - stock deposits;
- STR - strip requests;
- STW - stock withdrawals;
- TDA – term DBV adjustments;
- TDI - term DBV interest payments;
- TDO – term DBVs;
- TDR - term DBV returns;
- TFE - transfers from escrow;
- TTE - transfers to escrow;
- USE - unmatched stock event transactions;
- XDL - cross border deliveries.

The ability to delete one of these transactions depends upon its particular circumstances:

- matching transactions (deliveries, complex deliveries, stock loans, repo transactions, repo substitutions, overnight DBVs, term DBVs, term DBV adjustments, residuals and cross border deliveries when receiving UK or Irish securities) which have not yet matched and single input transactions (own account transfers, dividend and interest payments, stock deposits, stock withdrawals, transfers to escrow, transfers from escrow, strips, reconstitutions and unmatched stock events) may be deleted; and
- matching transactions which have matched and centrally generated transactions which are capable of being deleted (claims, stock loan returns, stock loan revaluations, overnight DBV returns, term DBV returns, term DBV interest payments, repo returns and deliveries created by the EDS maturity process) may be deleted only by matched deletion.

Deletion cannot occur after settlement has taken place. Cross-border deliveries cannot be deleted once the transferor's CSD has instructed the receiving CSD. Term DBV returns cannot be deleted before they have reached their intended settlement date.

After matching, whether under central sponsor services or otherwise, and in the case of centrally generated instructions, it is necessary for both parties to enter a deletion instruction. The transaction will only be deleted on input of the matching deletion request. Transactions of these types which have only been requested for deletion by one principal will continue through to settlement. The exception is DBV, TDO and TDA transactions; if a participant inputs an unmatched deletion on a matched but unsettled DBV, TDO or TDA transaction, the CREST system will set the transaction's priority to 0 so that it does not settle.

Deletion of the delivery prior to settlement does not affect settlement of other transactions (e.g. claims) generated from the original transaction. Claims that have been created therefore need to be deleted by matched deletion separately, otherwise they will proceed to settlement. Where relevant, deletion of a matched transaction also results in the creation by the system of an offsetting stamp duty payment (STP).

It is not possible to delete a transaction which has been assigned a System Controller priority of 91 or greater.

Pre-funding payments (PFP) in relation to the US Dollar Top-Up Procedures or the US Dollar Draw-Down Procedures may be deleted only be means of the top-up or draw-down procedures described in Chapter 6, section 4A. Pre-funding payments created automatically as the result of other system processes may not be deleted by the user.

SCR transactions may not be deleted by the user.

Repo return transactions can also be deleted as part of the repo substitution, rollover and early return functions (see further Chapter 7, section 10).

Central deletion of unmatched transactions

Where a transaction remains unmatched 30 business days after the specified Intended Settlement Date, it will be centrally deleted by EUI and both counterparties notified through status changes.

Central deletion of DBV transactions

Outbound DBV transactions (DBV and TDO) and term DBV adjustments (TDA) which remain unsettled at the end of DBV processing will be centrally deleted and not carried forward.

Term DBV return transactions will be centrally deleted (and may be recreated) as part of the term DBV giver recall substitution, term DBV eligibility substitution, term DBV mark-to-market, term DBV value sought/consideration adjustment, rollover and early return functions and related corporate action processing (see further in Chapter 7, section 2B).

Central deletion of PFP transactions

Pre-funding payments (PFP) which remain unsettled will be centrally deleted when Trust Fund entitlements are distributed at the end of day.

Section 8: Enquiry facilities

The CREST system supports enquiry functions for users to access:

- data relevant to their members' membership structures, balances and transactions within the CREST system;
- collateral balances and exposures as against other members;
- data relevant to CREST IPA-issuer relationships held in the CREST system;
- publicly available system data; and
- details on the progress of that user's messages submitted by file transfer.

Except as otherwise noted, this section does not describe the enquiry function for users (including VSPs) to access any instructions input in the context of the CREST voting service as such instructions are not settlement instructions. They are described in Chapter 7 section 9.

Members' stock and cash balances and positions

Users are able to enquire into the balance of stock in any of their members' member accounts and the cash position on any of their members' CMAs. (Voting service providers are only able to enquire into the balance of stock in any member account in relation to which they are currently appointed to act as a voting service provider as certain times as noted in Chapter 7, section 9; but they may not enquire into CMAs.) The CREST system returns stock balances for all ISINs in which that member account has a positive balance at point of enquiry. The CREST system does not return zero stock balances.

For cash balances, the CREST system returns cash positions for all of a member's CMAs with a non-zero position at point of enquiry. The CREST system returns all positions for all CMAs related to that member (including zero balances) when requested interactively, but does not return zero CMA positions in response to file transfer enquiries.

Users can also enquire on the stock and cash postings generated by the settlement of all transactions within a settlement day.

Users can obtain from the system summary open positions in individual lines of securities together with the associated cash value of those transactions. Unmatched transactions, and matched but unsettled transactions, are grouped separately into two different total positions. The enquiry is available throughout the on-line day. Users can also obtain the cash value of open transactions not otherwise attributable to a specific securities movement (e.g. payments in respect of stamp duty, dividends and cash only claims). Each position total may be broken down into its component transactions.

The CREST system provides an enquiry mechanism to enable users to compare transactions input by them but which are unmatched, with those alleged against them by their counterparties and also unmatched. This assists in identifying 'mismatched messages' and adjusting their input to ensure that a match is achieved.

Collateral balances

Members (including settlement bank linked members) involved in the auto-collateralisation arrangements may additionally enquire on the outstanding memorandum balance of stock on repo to their settlement bank (or to the Bank of England in the case of a settlement bank linked

member). Equivalently, the Bank of England memberships may also enquire on the balance of stock received from each settlement bank. The auto-collateralisation arrangements only allow for the generation of sterling liquidity under the Sterling DvP Service (and do not allow the generation of euro liquidity as part of the Euro DvP Service).

Settlement banks may separately enquire upon the balance and value of stock received from individual members through the client auto-collateralisation arrangements and the balance and value (after allowance for margins applied by the central bank) of stock on repo to the Bank of England under the SB auto-collateralisation arrangements.

Members using DBV and repo transactions may enquire on a memorandum balance, indicating the stock which they are due to either receive back or return in open DBR, TDR or RPR transactions.

Settlement banks' cash and stock balance enquiries

Settlement banks have the automatic ability to view:

- cash positions for those members for whom they act as settlement bank;
- stock account balances in all securities in an account linked to a cap belonging to a member for whom they act as settlement bank;
- for sterling and euro, the liquidity changes actioned at the end of a CREST settlement cycle;
- for euro only, the liquidity changes actioned at the end of a Dedicated Liquidity Cycle Period; and
- for euro only, all liquidity received from TARGET2 either at the start of or during a Dedicated Liquidity Cycle Period and whether such liquidity was applied to the settlement bank's LMA.

Settlement banks may view cash postings associated with the cash positions for those members for whom they act as settlement bank with the consent of those members, by means of the participant view function (see Chapter 9).

Only settlement banks may enquire on bank clearing details (i.e. the information used by each settlement bank, including account details, in the end of day settlement between settlement banks).

Settlement banks may enquire on liquidity requirements in relation to unsettled overnight DBV, term DBV outbound and term DBV adjustment instructions.

US dollar payments mechanism

USD settlement banks and pre-funding participants have the ability to view:

- all pre-funding payments for the previous 60 business days;
- the status of unsettled pre-funding payments;
- for each settlement day, the total of their pre-funding payments; and
- for each settlement day, the total of the US dollar equivalent (the Pre-Funded USD Amount) of their pre-funding payments.

NSS settlement participants have the ability to view the Pre-Funded USD amount and the current multilateral net amount that is due to or from each USD settlement bank for which they are acting

as Settler (which at the end of US dollar settlement for a settlement day will be the amount they will be expected to pay or receive in the NSS on behalf of such USD settlement bank).

Transactions

Members are able to view the full transaction data for any unsettled transaction within the CREST system to which they are a counterparty and, within the archive period, for any settled transaction to which they are a counterparty. Enquiry upon the full details of any transaction is in addition to the mechanism for observing the current status of any transaction as set below. Enquiries will reflect the life cycle status of any transaction at the time of the enquiry. Similar enquiry facilities exist for overnight and term DBV instructions.

Additionally, users are able to monitor transactions that have been positioned against the cap but have failed against the cap resource, and those transactions that have been positioned against security resource but have failed against the security resource. Where a user acts for a settlement bank participant, the user is additionally able to monitor its customers' transactions on the liquidity queue for each of its settlement bank's Liquidity Memorandum Accounts (LMAs). Queues and failure reason enquiries can only be viewed for the current settlement day, and are cleared shortly after the close of settlement each day. Enquiry of liquidity queues is only available interactively, failure enquiries are available interactively and by file transfer. Queues and failure reason enquiries are described in Chapter 4, section 9.

Members are also able to identify transactions attributable to them which are created under the netting procedures and reconcile them against the underlying gross transactions. The reconciliation enquiries are available for netting undertaken against each settlement netting principal and allow selection criteria of intended settlement date and security to limit the data returned. The intended settlement date is defaulted to the current date unless specified.

Exposures

The CREST system provides an enquiry mechanism to enable users of stock loan, repo, overnight DBV or term DBV transactions to assess their exposures against their counterparties. This enquiry identifies all open return legs which exist between pairs of CREST members and shows total exposure within the CREST system per transaction type (SLR, DBR, RPR and TDR). It can be broken down into individual transaction exposures, helping members to assess their substitution needs. Exposure is calculated as the difference between consideration and security value (based on the market price).

Additionally, members are able to view aggregate exposures by transaction type for a given counterparty CREST member and member account, as well as exposure for a given counterparty and member account at transaction level.

Account structure and cap details

Users are able to enquire upon the details of the account structure for all members for whom they act. This includes details of their participants and (for stock holding members) of those members' member accounts, CMAs and caps. Responses to each of these enquiries include whether the relevant element of their membership structure is new, enabled, disabled or deleted at time of enquiry. Enquiries of CMAs include the cash position at the point of enquiry.

Enquiries on cap details include:

- (a) the unsecured and secured limits that comprise the CMA cap and (b) the repo cap;
- the margined value of the securities in an account linked to a CMA cap, where applicable;
- the margined value of stock on repo to the member's settlement bank (or, for settlement bank linked members, to the Bank of England), where applicable;
- the current CMA position; and
- the available headroom under a CMA cap.

The valuation returned relates to those securities credited to the member account or on repo to the settlement bank (or, for settlement bank linked members, to the Bank of England) at the point of enquiry in the manner set out in Chapter 1, section 3.

Bank of England

The Bank of England is able to view central bank repo limits (central bank individual repo limits and the central bank global repo limit).

CREST IPA relationship enquiry and issuer ISIN enquiry

CREST IPA-issuer relationships will be held as static data within the CREST system and will be input by the System Controller on the basis of the information contained in the Issuer Application Form (see further Appendix 2 to the CREST Rules). The static data can only be changed by the System Controller when the issuer notifies him of a change of issuing or paying agent (see further Chapter 7, section 11).

A CREST IPA is able to view the details of all relationships which it has with participating issuers (both by Issuer ID and issuer name). The System Controller is able to view all CREST IPA-issuer relationships.

A CREST IPA is able to view the details of all the issues of EDSs for a particular participating issuer (in respect of which that CREST IPA is acting as issuing and paying agent).

System data

System data are public data used within CREST system processing and are not specific to any individual participant. They are available to all users. System data include: security details for each ISIN within the CREST system; security prices; exchange rates; details of any corporate actions associated with those securities settleable within the CREST system; meeting announcements and result announcements input as part of the CREST voting service; and summary details of all other participants within the CREST system.

Operational data

Users including voting service providers are able to enquire upon:

- the status of their operators and whether they are currently in session;
- those user function groups for which the user is enabled;
- the operator function groups that are enabled for each of their operators;
- the status of daily and future diary events;
- messages broadcast by the System Controller; and

- the status of their reference data updates (pending party updates).

Additionally, users including voting service providers are able to enquire upon the processing of any file submitted to the CREST system and the individual items within each file. The response to such enquiries includes error diagnostic information, where appropriate.

Transaction statuses

CREST members may wish to monitor the progress of transactions input to the system for settlement. The CREST system holds data on transactions' progress as a series of statuses which are updated every time that a transaction moves from one stage to the next (e.g. unmatched to matched). Statuses are snap-shots showing a transaction's current position at point of enquiry; cumulatively they represent a transaction's settlement history. Full details are given in the User Guide.

Each time a transaction moves to the next stage of its settlement cycle, this causes a change in status and generates a status change message. The latter is available for users to retrieve, enabling them to mirror its progression in their own back office systems. In relation to term DBVs, TDO and TDR transactions may be subject to a transitory transaction status where a term DBV mark-to-market transaction or term DBV eligibility substitution is required.

A transaction's status uniquely defines its position through the processing life cycle. In the general case, this can be defined by three discrete statuses: the member's own input status; the member's counterparty's input status; and a summary transaction status.

- Party Transaction Status reflects the input status of one party to a transaction type, and is designed to reflect the logical stages in a member's input. There are Party Transaction Statuses for every party that has a relationship within the transaction. For most transactions, there will be just two parties, representing the two members between whom the transaction is taking place.
- Transaction Status summarises the status of the whole transaction and is visible to all parties to the transaction. Prior to intended settlement date, it parallels the information available from Party Status details; on and after intended settlement date, it provides additional information on delayed transactions, registration or bad deliveries.

Parallel statuses also exist to monitor the life cycle of overnight DBV instructions, term DBV instructions and term DBV adjustment instructions up to the point that the DBV selection process is operated, selecting the package of collateral to be transferred and creating the transactions which settle immediately. After settlement, the outturn transactions can be monitored as for any other transaction.

In relation to specific enquiries and alerts available in respect of term DBVs, see further in Chapter 7, section 2B, 'Enquiries and alerts'.

Direct enquiry

Two direct enquiries exist to poll data on current statuses of transactions within the CREST system:

- Transaction Status Change Request returns summary details of all transactions: with a specified intended settlement date; of a certain transaction type; or at a particular stage in their life cycle. It enables users to identify all the transactions within the system conforming to the requested criteria at the point of the enquiry. A similar enquiry exists for DBV instructions.

- Transaction Status History Request returns status details of all stages in the life cycle of a particular transaction. These are time stamped to identify the time at which the status changed. No parallel enquiry exists for DBV instructions.

Noticeboard and file changes mechanism

The CREST system supports a noticeboard which has been structured specifically to be a core part of members' monitoring strategy. Whenever core data change, the CREST system writes a 'file change' record to an internal 'noticeboard', from which it can be retrieved by all users entitled to the information. The information on the noticeboard is keyed differently from that in the main database; file changes are retrieved sequenced by the time of the change, and time can be used as a selection criterion to obtain changes since a specified time or since the last request. Time is not a key in the main database: only the File Changes Request message allows retrieval of 'new' records since the last enquiry; this compares with direct enquiries which return a full set of records in the system that currently meet the selection criteria - even if some of those will not be new to the enquirer.

Both Transaction Status Change Response records and DBV Status Response records are returned as part of the file changes mechanism, and are written to the noticeboard every time a transaction's status changes, with the following exceptions:

- when the transaction reaches intended settlement date, because this simply marks the change of date to settlement day itself;
- records are not written to recipients of third party payments once their CMA has been credited - except for a closing status change to reflect archiving;
- if a participant's Party Status is 'not applicable' for that transaction type; nor would a transaction in that state be visible via direct enquiry;
- if a participant has opted out of receiving archiving file changes; and
- if a participant has opted out of receiving counterparty pending file changes.

The CREST system retains status changes for two business days after their creation. Accordingly, it will be necessary for each user to take all the change records by that time. Thereafter, data on past changes will be available only as part of a 'transaction history'.

Other change records

In addition to status changes relating to dynamic (i.e. transaction status change) data, users are able to receive changes to static data and, if a registrar, registration data. There is a specific static data file changes for EDS.

Static data changes available by the file changes mechanism include, inter alia:

- changes to security details (excluding the daily security price update);
- changes to corporate action data;
- changes to cap details (excluding current position, margined stock value, repo value and headroom) - only available to related participants;
- notices of when timetable events have completed during the day (e.g. end of technical netting) - this only reflects changes to the Diary Event Status from unactioned to actioned;

- additions/changes to timetabled events, e.g. an extension to a payment deadline; and
- broadcast messages.

File changes specifically relating to security details and corporate actions details for eligible debt securities are retrieved by a separate static data request. File changes relating to EDS securities and corporate action details are not sent to members via the standard static file changes mechanism.

The CREST system does not post file changes for forward dated amendments to static data, but rather writes the file changes on the effective date of the amendment.

Registration data comprise registration details for all members within the CREST system. Only registrars have access to registration data; registrars do not have access to transaction data. Registration details are returned for all new participants within the system or amendment to details of all existing participants. They are not specific to holders of securities on that registrar's registers.

File changes to static data, dynamic or registration data must be taken independently.

Graphical User Interface

GUI users are provided with list and details functionality which is essentially identical to the direct enquiries set out above for file transfer users. However, GUI users do not have access to file change records and therefore their transaction monitoring must be done primarily by spotting exceptions (e.g. unsettled transactions due to settle today).

Archive arrangements

Transaction data maintained within the CREST system are accessible to users on-line in accordance with this section throughout the progress of the status of the transaction. Data which are more than 60 business days old are stored in an archive off-line, maintained on optical disk in machine-readable formats. These data can be retrieved from disk storage at a user's request, but will not be restored to the live machine. They are delivered to the user in electronic form, in a format analogous to (but not identical with) standard CREST system message formats. The archive formats are published in the Data Exchange Manual.

A handling charge is made by EUI for extracting and preparing data in response to a user's request.

Data are archived from the live system daily. A transaction's data are removed 60 days after the transaction is complete or (if it remains unmatched) 30 days after it was due to settle. In relation to term DBVs, all related transactions will be removed at the same time as the term DBV outbound transaction (TDO). Gross transactions that have been replaced by a net transaction and which are not subject to SDRT, have matched on trade date and where the Stamp Country field is not "IE", will be archived after 10 days. When transactions are removed to the archive, file status changes are generally made available to users to indicate the event. However, users may opt out of receipt of these status changes through application to CREST System Control. The archiving of other data (e.g. stock or cash postings) does not generate specific information messages to users.

EUI also maintain an archive of the audit logs (records of incoming and outgoing message traffic) from the live service.

Section 9: Deliveries

The CREST system's delivery functionality enables two counterparty members, as between themselves, to:

- make one delivery of securities against the creation of a CREST payment;
- make one delivery of securities without the creation of a CREST payment; and
- create a CREST payment without a delivery of securities.

A delivery transaction may be either 'gross' or 'net' (see Chapter 4, section 1).

When securities are delivered, the system does not undertake any validation of the value of the securities as against the consideration.

In addition to the delivery of securities and the creation of a CREST payment, the system permits each counterparty member to create up to two CREST payments for the benefit of third party members, thus allowing a maximum of five CREST payments in respect of any single delivery. Third parties in receipt of such a payment cannot be a counterparty to the transaction and have no role in the input of the instruction, although they can monitor the transaction's life cycle.

A delivery may be linked, via a deposit link account, to successful registration of a stock deposit.

Successful input of one side of a delivery will generate an unmatched transaction within the CREST system. This transaction can be viewed by both counterparty members and any recipients of a related third party CREST payment.

Delivery transactions are also used to facilitate the EDS issue and maturity processes (see Chapter 2, section 6; and Chapter 7, section 11) and the redemption of gilts held by a collateral taker under a term DBV (see Chapter 7, section 2B) and the assessment and collection of SDRT or stamp duty under the Stamp Duty Assessment Service (see Chapter 8, section 10).

Section 10: Own account transfers

The CREST system's own account transfer functionality enables a member (not being a CREST IPA) to transfer securities between its own member accounts (or, in some cases, between balances within those accounts).

Own account transfers require the single input of instructions by the member. Only securities in the member's available balance or deposit link balance within its stock account can be transferred by an own account transfer. Own account transfers to or from a deposit link balance, can only be from or to the available balance of the same member account. It is not possible to transfer, by means of an own account transfer, securities from a deposit link balance to the deposit link balance of another member account.

Own account transfers do not settle against the creation of a CREST payment.

Section 11: Queues and Failure Enquiries

A queue is a list of similar transactions that are ready to settle, ordered in the sequence in which the CREST system has attempted to settle them. Where a user acts for a settlement bank participant, the user is able to monitor its customers' transactions on the liquidity queue. The enquiry provides details of transactions that have been positioned against liquidity. For each participant, there are separate failure reason enquiries which return information on transactions that have been unsuccessfully positioned against stock and transactions that have been unsuccessfully positioned against the specified cap.

The sequence of transactions which the CREST system will attempt to settle is determined by five factors:

- Priority band – a system generated priority based on the following order (highest to lowest): auto-collateralisation transactions unwinding outstanding repo positions from the BoE to the settlement bank repo member, transactions in auto-collateralisation eligible securities that debit the settlement bank linked member, other transactions in auto-collateralisation eligible securities and transactions in non-repo eligible securities.
- Random security number - A random security number forms part of the sequence to optimise settlement efficiency and to minimise credit usage.

  To avoid favouring one security over another in accessing the credit/liquidity resource, the CREST Settlement Processor attributes a random number to each security in its reference database every day. Instructions will then be sequenced by these random numbers, starting with the highest.
- Priority resource - the priority given by one of the debit parties of the transaction: Normally this will be the priority given by the stock debit party. However, for transactions with multiple different stock debit parties (e.g. MTM), the highest debit party priority will be used. For transactions with no stock movements (e.g. cash only transactions) the cash debit party(s) will be used instead of the stock debit party(s).

  For DvP transactions, the priority given on the cash side will not have an effect on the sequence of the transaction. However, participants still have the ability to freeze the transaction regardless of whether they are the stock debit or stock credit party. Frozen transactions will not be sent to the CREST Settlement Processor.
- Intended settlement date - Transactions will then be sequenced by intended settlement date, starting with the oldest first. This will reduce the time period of failed transactions.
- Value - Transactions will be sequenced by value in descending order, starting with the highest value. The value in this case is the value of the securities moved, or the value of the cash moved if the transaction is cash-only. The value of securities moved is the total of the absolute value of each settling securities movement (quantity multiplied by bid price) in EUR equivalent. The value of cash moved is calculated as the total of the absolute value of each settling standard cash movement (consideration) in EUR equivalent.

Failure reason enquiries

Transactions failing to settle at the CREST Settlement Processor are given a failure reason to indicate the reason for failure. Failure enquiry screens are available interactively and via file transfer. These enquiries assist the participant in monitoring settlement failures.

All failure reason enquiries are disabled during peak settlement. This is because until peak settlement has finished, not all transactions will have been tried for settlement, and to return transactions on the failure screen may portray an inaccurate picture of failed transactions.

The transactions will be displayed in the order that they failed to be positioned.

The failure enquiries may change whenever:

- resources (either securities, headroom or liquidity) change due to settlement of another transaction;
- a CMA cap is changed (altering the available headroom);
- a sponsored member's net limit is changed;
- a priority is changed;
- a transaction is deleted;
- a new single input instruction is entered for immediate settlement or an instruction matches for immediate settlement; and
- an associated user, member, member account, CMA, cap, or settlement bank is enabled or disabled for settlement.

Consequently, the failure reason enquiries change dynamically during the settlement day, as transactions settle.

Repo caps and central bank repo limits

Chapter 7, section 8 describes the functionality that is available to a settlement bank to limit the margined value of securities that are transferred by a member-client to the settlement bank repo member (the 'repo cap' functionality); and the functionality that is available to the Bank of England to limit the margined value of securities that are transferred by an individual RTGS settlement bank or by the RTGS settlement banks collectively to the Bank's repo member (the 'central bank repo limit' functionality).

The operation of the repo cap or the central bank repo limit will not prevent the settlement of an auto-collateralising repo (SCR) transaction as such; rather it may prevent the creation of an SCR transaction attributable to a member that would otherwise cause the relevant repo cap (as between a member and the settlement bank repo member) or central bank repo limit to be breached.

Liquidity Queues

There is a liquidity queue against each Liquidity Memorandum Account (see Chapter 6, section 4). There are separate queue enquiries for sterling and euro. The liquidity queue will include transactions from all members with a Cash Memorandum Account (CMA) associated with that RTGS settlement bank which have failed to settle due to a lack of liquidity.

The liquidity queue will include items where settlement of the transaction will result in a net reduction in the RTGS settlement bank's liquidity reflected on its Liquidity Memorandum Account. It will therefore include:

- transfers against payment where the payee member uses a different RTGS settlement bank;

- free of payment transfers (including stock withdrawals) which require closure of an auto-collateralising repo (SCR) transaction in order to settle;
- transfers against payment where both members use the same RTGS settlement bank, where the transferor of stock needs to close an auto-collateralising repo (SCR) transaction.

If both members involved in a transaction use the same RTGS settlement bank and are not creating or unwinding repos, then these transactions do not require transfer of liquidity between settlement banks and do not appear on the liquidity queue.

In addition, in respect of the US dollar payments mechanism, there is a liquidity queue against each Payments Memorandum Account (see Chapter 6, section 4A). The liquidity queue will include transactions from all members with a US dollar Cash Memorandum Account (CMA) associated with that USD settlement bank which have failed to settle due to a lack of liquidity.

The liquidity queue will include items where settlement of the transaction will result in a net reduction in the USD settlement bank's liquidity reflected on its Payments Memorandum Account. It will therefore include:

- transfers against payment where the payee member uses a different USD settlement bank;
- transfers against payment where both members use the same USD settlement bank, where the transferor of stock needs to close an auto-collateralising repo (SCR) transaction.

If both members involved in a transaction use the same USD settlement bank and are not unwinding repos, then these transactions do not require transfer of liquidity between settlement banks and do not appear on the liquidity queue.

Section 12: Settlement

The CREST system's settlement processing of transaction types runs continuously throughout the business day, during the times specified in the daily timetable. Certain system functions, however, have the effect of temporarily suspending the processing for settlement of particular transaction types (see Chapter 2, section 7).

Settlement can only occur if there is:

- sufficient availability of the relevant securities in the transferor's relevant member account (this includes accounting for securities being reserved by transactions that are a higher priority, see section 12, 'Security Reservation' below);
- sufficient headroom within the relevant CMA cap of the transferee;
- sufficient headroom within the relevant CMA cap of the transferor (where the relevant member account is an account linked to such a cap);
- sufficient liquidity on the transferee's RTGS settlement bank's Liquidity Memorandum Account;
- sufficient liquidity on the transferor's RTGS settlement bank's Liquidity Memorandum Account (where the transfer requires closure of an auto-collateralising repo (SCR) transaction);
- sufficient liquidity within the transferor's US dollar settlement bank's Liquidity Use Limit; and
- settlement would not breach a sponsored member's net settlement limit.

The operation of the repo cap and the central bank repo limit do not, as such, prevent settlement of an SCR transaction; rather the functionality operates to prevent the creation of an SCR transaction attributable to the member (including the settlement bank repo member and the settlement bank linked member) if the creation of the transaction would cause the relevant repo cap or (as the case may be) the central bank repo limit to be breached. In consequence, the repo cap and the central bank repo limit do not represent a constraint upon the settlement of a transaction as such (in contrast to the CMA cap, the operation of the relevant RTGS settlement bank's Liquidity Memorandum Account and the operation of the relevant US dollar settlement bank's Liquidity Use Limit).

The CREST Settlement Processor will allocate resources as follows for each transaction:

- each securities movement in turn;
- each cash movement in turn;
- each liquidity movement in turn; and
- each net settlement position in turn.

The CREST system facilitates real-time gross final settlement of delivery versus payment transfers on a continuous basis throughout the settlement day. There is no overnight batch processing of settlement, so all processing is done during the business day in real time. Settlement of a standard securities against cash transaction is a 'delivery versus payment' process which results in the simultaneous creation of a:

- debit item on the transferor's stock account;
- credit item on the transferee's stock account;
- final credit item on the transferor's CMA;

- final debit item on the transferee's CMA; and
- an RUR, at the point of occurrence of the relevant Delivery Settlement Event.

This 'double-entry accounting' process ensures that for each credit entry made on a CREST securities account, there is a corresponding debit entry on another CREST securities account.

Settlement of a standard securities against cash transaction is a process which results in the simultaneous creation of a:

- debit item on the transferor's stock account;
- credit item on the transferee's stock account;
- final credit item on the transferor's CMA;
- final debit item on the transferee's CMA; and
- an RUR,

at the point of occurrence of the relevant Delivery Settlement Event.

The CREST system's transaction processing varies for equities and gilts (including EDSs). Included in equities for this purpose are the following security categories:

- FTSE 100;
- FTSE 250;
- Irish Equivalent 100;
- Irish Equivalent 250;
- Other CREST settleable UK and Irish securities;
- Eurotop 300;
- US Securities;
- Other international settleable equities; and
- ECB qualifying Tier 1 collateral issued outside of UK and Ireland.

Gilts comprise the following security categories:

- Stripped British Government Stock;
- Unstripped British Government Stock; and
- Non-British Government Stock.

EDSs comprise the following security categories:

- Treasury Bills;
- Local Authority Bills;
- Bank Bills;
- Bank of England Bills;
- Certificates of Deposit; and
- Commercial Paper.

The start of standard settlement will trigger the settlement of both delivery versus payment transactions and cash only transactions (involving all CREST settling currencies).

The close of settlement for equities against payment runs before the final deadline for gilts and EDS settlement against payment.

After the close of settlement of equities against payment, settlement of equities free of payment will continue as well as gilts and EDSs against payments and payment only transfers. The deadline to close standard delivery versus payment settlement for gilts and EDSs permits free of payment settlement for both gilts, EDSs and equities to continue. In order to allow members to control settlement during this period, only transactions with a transferor's priority above 75 will be put forward for settlement.

The CREST system uses a 'smooth stop' process for controlling deadlines. When a timetable event is actioned, the CREST Settlement Processor will recycle those transactions that are currently queued for settlement. Transactions that are not already at the CREST Settlement Processor will not be sent, but those already sent will be recycled until all that were able to settle have done so. With the 'smooth stop', members will not be left with securities that they cannot deliver onwards after an event is actioned.

The settlement of cross-border receipts or deliveries of interests in international securities and CREST securities are processed in the manner described in the CREST International Manual.

Security Reservations

The CREST Settlement Processor 'reserves' securities when transactions fail positioning and consequently do not settle. Although the transaction did not settle, the required amount of securities will be reserved and will not be available for the settlement of certain other transactions. Reserved securities can be used by transactions with a priority equal to or higher than the priority of the original failing transaction (and will not be available for use by other lower priority transactions).

Transactions that fail to settle due to a lack of securities will consequently have an increased chance of finding the securities available when they are subsequently tried for settlement, as the reservation will prevent lower priority transactions from using the outstanding securities balance. Transactions that fail to settle due to a lack of cash, liquidity or liability limit will have an increased chance of settling, once sufficient cash or liquidity is available, as the reservation will prevent lower priority transactions from using the available securities required for their settlement.

Reservation only applies to transactions debiting securities, so transactions that are crediting securities will be able to settle.

All securities will be reserved for transactions that have multiple securities movements and are failing to settle (e.g. MTMs).

Information regarding individual reservations are not made available to CREST participants.

Example:

A participant has a balance of 100 units of a particular security and transactions with the following amounts for settlement on the same settlement date:

Transaction	Priority	Units

A	50	-120
B	40	-80
C	30	+40

In this example the following would occur:

- *transaction A will fail to settle as the balance of 100 is insufficient to settle the transaction;*
- *transaction A will reserve 120 units at priority 50. As a result, transaction B will fail to settle. This will occur because while there are sufficient securities to settle the transaction, the reservation taken by transaction A will prevent it as transaction A has a higher priority than transaction B;*
- *transaction C will settle as it is crediting securities rather than debiting, which increases the balance to 140; and*
- *transaction A will now settle when re-accessed as there are sufficient available securities.*

Section 13: Sponsored members net settlement limit

Sponsored members may specify direct to EUI a limit on the net value[8] of transfers of securities which may be made from their membership in any one business day by using the form enclosed in the Sponsored Member's Information Pack. The principal purpose of the limit is to provide the sponsored member with a degree of protection against the risk that its sponsor might input settlement instructions without instructions from the sponsored member to do so. Consequently, EUI would not normally expect a sponsored member whose sponsor is a related or group company to specify a limit; the more appropriate control would be internal to the sponsor's own organisation.

When EUI receives the requisite form, the System Controller checks the signature on the form against the Authorised Signatory Form submitted by the sponsored member at the time of submitting its application to EUI. If it appears to the System Controller that the signature is valid, the System Controller will input or amend the limit in the system. If, contrary to these procedures, the sponsored member's sponsor amends the net limit in the system this has the automatic effect of disabling the sponsored member as a participant.

The new limit input to the sponsored member's Participant Details takes effect either immediately it has been processed by the system or at the start of whatever forward date has been input by the System Controller, as requested by the sponsored member. It does not alter the effect of any transactions which have already settled or which settle before the change can be effected. Consequently, if the net value of the sponsored member's settled transactions at that point is above the new limit, the existing transactions remain unaffected. In that situation, the CREST system allows to settle only those of the sponsored member's transactions which would have the effect of reducing the net value of the sponsored member's settled transactions for that particular business day.

Once a limit has been established in the system, prior to the settlement of any transaction and in addition to the other pre-settlement checks relevant for processing any transaction, the system checks the effect of the settlement of that transaction on the specified net limit. Only where the limit is not breached or where the transaction is settleable through the technical netting process without ultimately breaching the limit does settlement proceed. Where the transaction is denominated in a currency other than the base currency (euro), the system converts the value of the securities involved into euro using the exchange rate maintained within the system.

[8] The net value is the aggregate value of securities transferred by the sponsored member minus the aggregate value of securities transferred to the sponsored member (in each case taking all member accounts within the membership into account). In the context of escrow balances, the system calculates the effect of the transfer by the sponsored member at the point at which the securities are moved from the escrow balance.

Section 14: Splitting deliveries and other transactions

The CREST system provides a mechanism which enables a member to sub-divide a delivery. This function may be used to settle part of a particular transaction; or to split a delivery to or from a number of member accounts of the same original inputting member. Only DEL, CLA, SLO, SLR, DBR, TDR and RPR transactions can be split. A transaction can be split at any time prior to settlement, either before or after matching by either party or unilaterally. TDR transactions can be split on or after the return date.

Transactions in respect of Restricted Securities may not be split.

A transaction which has been split is known as the 'parent' transaction; the new transactions created are its 'descendants'. Once a transaction has been split, the CREST system treats each of the descendants as independent transactions which may settle, or fail to settle, independently and which may be assigned different priorities.

The CREST system imposes a number of limitations on the splitting of a particular transaction:

- the instruction to split may contain no more than 60 shapes for the descendant transactions; and
- the quantity of securities in the descendants must always total that of the parent.

The CREST system pro-rates the consideration across the descendants, maintaining the same unit price.

No action is required of the counterparty during, or subsequent to, the splitting process.

It is also possible to amend the member account specified on a stock claim transaction and to then split the claim transaction into different member accounts.

'CCP' participant transactions (including net transactions) may be split. It is not possible to split a 'CCP' participant transaction before it is matched by the relevant 'CCP' participant.

Section 15: Automatic splitting

Automated splitting functionality is available to all members in relation to:

- gross or net CLA, TDR and DBR transactions in any security type except securities in security category "UTF";
- gross or net DEL transactions in equity securities only.

In addition, all gross or net DEL or CLA transactions that include a delivery of securities from the relevant 'CCP' participant or cross-CCP member are eligible for auto splitting. Eligible transactions include previously split transactions. Transactions in respect of UTF category securities cannot be split.

The auto splitting function checks stock balances and open stock debits of the relevant member, 'CCP' participant or the cross-CCP member and checks whether any stock is available that could be used to part settle one of the open transactions. The first transaction on the stock queue that does not have stock allocated to it will be assessed. If there is some stock available to perform a positioned transaction, the transaction is automatically split into two transactions, one for the available stock and one for the remaining stock. No minimum size requirements apply. The outstanding split will remain unsettled until sufficient stock becomes available.

The auto splitting process is run at several points during the settlement day, as part of the daily timetable. The diary events are not however visible to CREST users. They may also be run at ad hoc times at EUI's discretion.

The auto splitting process has the same effect as a manual split used by a member, as described in Section 14 above. The splits are created in the same way, with considerations pro-rated across the splits (maintaining the same unit price) and the priority of the split is the same as that of the parent transaction. Status changes are also generated in the same manner as for split transactions.

Auto splitting is not available for transactions in respect of Restricted Securities.

Section 16: Broker disintermediation

CREST system functionality enables a member which is an intermediary (such as an agency broker) to stand aside from the settlement of a transaction and avoid managing the transfer of securities into and out of its membership.

The two principals can settle the transaction without being aware of the other's identity by inputting the Participant ID of the intermediary and a reference provided by the intermediary. The system matches the transaction on the Participant ID and reference, and subsequently settles directly between the principals. This is known as broker disintermediation.

Broker disintermediation is available for deliveriesand stock loans.

Section 17: Trade venue identification

Trade System of Origin

The CREST system records the trading system on which a transaction originates as the Trade System of Origin ("TSO"). Examples of TSOs include the London Stock Exchange and Irish Stock Exchange.

The TSO is used in the CREST system to identify a transaction (or any matter relating to a transaction) as a transaction (or a matter relating to a transaction) which has been executed under the rules of the relevant trading system and on one of the relevant trade venues operated by the trading system (see further below regarding venues related to a trading system).

The connection between a transaction (or other relevant matter) and a particular trading system is used as part of the operations or procedures in the CREST system for a number of matters, including:

(a) to identify the relevant trade system for regulatory, reconciliation and other purposes;

(b) to calculate and collect stamp duty or stamp duty reserve tax (SDRT) due to UK or Irish tax authorities and to apply intermediary reliefs and/or reliefs for repurchase and stock lending;

(c) as part of the settlement discipline arrangements; and

(d) to enable settlement processing for the central counterparty service (as described in the CREST Central Counterparty Service Manual).

Trade venues

Trading systems often operate a number of venues and markets ("venues") with different regulatory statuses. As an example, the London Stock Exchange (LSE) operates both a regulated market (its Main Market), and a multilateral trading venue (MTF) (the Alternative Investment Market (AIM)). For the purposes of determining SDRT relief, the CREST system needs to hold information to allow it to derive the possible venues on which a trade was effected from the TSO supplied on the transaction.

The CREST system holds the following information in relation to trading systems:

- a number of segment codes, each representing a different venue operated by the trading system;
- the regulatory status (for example regulated market or MTF) of that venue;
- the TSO and the associated Market Identifier Code (MIC).

Lists of regularly traded securities, intermediaries and members are held for each venue, represented by the segment code above. This allows the CREST system to apply the reliefs for each different venue type.

The CREST system also holds lists of intermediaries approved by HMRC and of members authorised under the law of a European Economic Area (EEA) state to provide certain investment services[9]. However, these lists are not venue specific.

[9] Finance Act 1986 s 89 AA(2A) states that the lender or borrower must be:-

Trade System Manager

Each TSO is managed by a participant of type 'trade system' which is referred to as a Trade System Manager ("TSM"). TSMs have access to generic data in the CREST system, such as security details, as well as data specific to the TSO, such as central counterparty clearings and trade feed settlement parties. Additionally, TSMs are required to maintain data in the CREST system to allow correct determination of any stamp duty or stamp duty reserve tax liability resulting from a transaction, including:

(a) (unless not required by EUI) details of participants that are permitted by an operator of a trading venue (or venues) to execute trades on or through the same trading venue (or venues) for each trading venue operated by the trade system;

(b) details of securities that are regularly traded on or through a trading venue (or venues) for each trading venue operated by the trade system;

(c) details of intermediaries that participate in a trading venue (or venues) and who are designated or approved by HM Revenue & Customs or by the Irish Revenue Commissioners as eligible to receive intermediary relief for each trading venue operated by the trade system (including ensuring that such details are only supplied on or after the date such designation or approval is effective); and

(d) such other information which, in each case, is required for the calculation of stamp duty or stamp duty reserve tax reliefs by the EUI systems in respect of trades executed on or through a trading venue (or venues) or otherwise.

"*authorised under the law of an EEA State to provide any of the investment services or activities listed in section A2 or 3 of the Annex to the Directive* [i.e. MiFID 2004/29/EC, as amended] *(execution of orders on behalf of clients and dealing on own account) in relation to the securities concerned…*"

Chapter 5: Registration

Section 1: Registration

The CREST system is a dematerialised ('book entry') system, with CREST electronic records recording title to units (i.e. ownership of units) of a CREST security, pursuant to the UK Regulations, the Guernsey Regulations, the Irish Regulations, the Isle of Man Regulations and the Jersey Regulations as the context may require.

The best available evidence of title to units of a CREST security is the register for that security. Title is transferred at the moment at which the units being transferred are debited from the register entry of the transferor and credited to the register entry of the transferee. The identity of the register and the composition of the register entries is determined by the relevant governing law being (as the case may be) the laws of Guernsey, Ireland, the Isle of Man, Jersey or the United Kingdom.

UK Securities

In the case of securities constituted under the laws of one of the United Kingdom jurisdictions, which are admitted to the CREST system pursuant to the UK Regulations and units of which are held in uncertificated form, the register of such uncertificated units is referred to in the UK Regulations as the 'Operator register of securities'. The principal purpose of the Operator register is to record title to (or other interests in) securities held and transferred by means of the CREST system. This is known as the 'Local Record'. Paragraph 25(e)(i) of Schedule 1 to the UK Regulations requires EUI (as an Operator of a relevant system) to make provision in its rules as to which of its records constitute an Operator register of securities and EUI has satisfied this requirement in CREST Rule 14. Accordingly, the CREST system records referred to in CREST Rule 14 constitute an Operator register of securities and, subject to that Rule, the receipt by the Local Record of stock postings data recording the debiting of the transferor CREST member's stock account and associated crediting of the transferee member's stock account constitutes a transfer of title to the units of the relevant security.

Note: CREST Rule 14 provides, inter alia, for the circumstances in which stock accounts of certain 'members' do not constitute register entries and in which receipt by the Local Record of stock postings data recording a debit from one stock account and a credit to another does not constitute a transfer of title. Such circumstances affect credit/debit entries to the stock accounts of receiving agents, CREST IPAs and, in relation to the issue of CDIs, the CSD or nominee through whose stock account the CDIs pass before being delivered to the first person who is to be their holder. The use by these participants of the securities functionality, which is available in the CREST system, is described further in Chapter 5, section 3; Chapter 2, section 6; Chapter 7, sections 4 and 11; and the CREST International Manual.

Simultaneously with the receipt by the Local Record of stock postings data recording debits and credits to the relevant stock accounts (unless the relevant stock is an eligible debt security or a CREST Depository Interest), the CREST system generates (as described in Part A of CREST Rule 14) a Register Update Request (RUR) for retrieval by the registrar. In relation to a UK security (other than an EDS) and as provided by the UK Regulations, this RUR is an Operator-instruction for the purposes of the UK Regulations and constitutes a notification by EUI to the relevant issuer of the transfer of title which has been registered on the relevant Operator register of securities. The issuer is obliged by the UK Regulations to amend its issuer record of securities in respect of the

transfer. In respect of a participating security which is an EDS, the issuer is not required under the UK Regulations to maintain an issuer record of securities. This is in keeping with the nature of eligible debt securities as uncertificated counterparts to bearer securities, in relation to which the identity of the bearer need not be known to the issuer of the security.

Further provisions relating to the maintenance of Operator registers of securities and the records of securities to be maintained by issuers, as required by the UK Regulations, are contained in CREST Rule 14.

Guernsey, Irish, Isle of Man and Jersey securities

In the case of securities constituted under the laws of Guernsey, Ireland, the Isle of Man and Jersey, which are admitted to the CREST system pursuant to the Guernsey Regulations, the Irish Regulations, the Isle of Man Regulations and the Jersey Regulations respectively and units of which are held in uncertificated form, the register of such uncertificated units is maintained by or on behalf of the relevant issuer and is outside the CREST system.

At the moment of settlement of a transaction in respect of a Guernsey, Irish, Isle of Man or Jersey security (which occurs upon receipt by the Local Record of the relevant stock postings data), the CREST system generates a Register Update Request (RUR) for retrieval by the relevant registrar. The Guernsey Regulations, the Irish Regulations, the Isle of Man Regulations and the Jersey Regulations each require the relevant issuer to amend its register of uncertificated securities in response to the RUR to show a transfer of title. Each of the Guernsey Regulations, the Irish Regulations, the Isle of Man Regulations and the Jersey Regulations also provides that, upon generation of the RUR, the transferee acquires an equitable interest in the appropriate number of the transferor's holding of the relevant securities. This equitable interest is superseded by the superior title obtained upon registration by the issuer (or his registrar). The issuer may in very limited circumstances refuse to register a transfer of title, in which case CREST Rule 12 (bad deliveries) applies.

Static Data

The CREST system maintains Participant Details for each member including name, address and any designation which is to be recorded on the register. This information is supplied by the member and EUI checks the acceptability for registration purposes of the details when they are set up for the first time. These details and amendments made to them thereafter are made available to registrars. For each CREST member there is a unique set of details that apply to all registers.

Generation of RURs

At the point of settlement of the following transaction types (unless the security which is the subject of the transaction is an EDS or a CREST Depository Interest), the CREST system generates an RUR:

- CLA *;
- DBR;
- DBV;
- DEL *;
- MTM *;

- OAT;
- PAY *;
- RCN;
- RPO;
- RPR;
- RPS;
- SCR;
- SLO;
- SLR;
- STR
- STW;
- TDA *;
- TDE;
- TDG;
- TDM;
- TDO;
- TDR *;
- TFE; and
- USE *.

* (where in respect of securities)

The RUR contains details of the transferor, transferee, amount and security, and is made available for collection by the registrar for the security which is the subject of the transaction. The legal significance of the RUR is described above in relation to UK securities (being a notification of the registration of a transfer of title by EUI) and in relation to Guernsey, Irish, Isle of Man and Jersey securities (being an instruction to the issuer to register a transfer of title).

Where the RUR is in respect of type RCN, STR, OAT or STW (where there is no transfer into the name of the member), the effect of the RUR is to notify the issuer of the amendment to the register (in the case of UK securities) or to require the issuer to amend the register appropriately.

The CREST system also generates an RUR once the CCSS Operator has successfully performed the CCSS accept function in relation to STD transaction types. This message confirms such performance and does not constitute an Operator-instruction requiring or notifying the registration of a transfer within the meaning of the Guernsey Regulations, the Irish Regulations, the Isle of Man Regulations, the Jersey Regulations or the UK Regulations. Other circumstances in which an RUR does not constitute an Operator-instruction instructing or notifying registration of a transfer are described or referred to in Rule 14 and in section 3 of Chapter 5 (below) and in the CREST International Manual.

At the point of settlement of a stock withdrawal (STW), the CREST system generates an RUR which contains the details relating to the transfer of title (if relevant) and the details required for production of the certificate. This RUR constitutes an Operator-instruction within the meaning of the Guernsey Regulations, the Irish Regulations, the Isle of Man Regulations, the Jersey Regulations or the UK Regulations. Accordingly, save where the stock withdrawal requires the production of a certificate in the name of the CREST member, the RUR requires the issuer to register both a transfer of title and a change of the form in which the relevant units are held (and, in the case of UK securities, a movement from the relevant Operator register of securities to an issuer register). Where the certificate is to be produced in the name of the CREST member the RUR only requires the registration of a change of form, (and, in the case of UK securities, a movement from the relevant Operator register of securities to an issuer register).

Section 2: Registrars Adjustments

Registrars Adjustment transactions enable a registrar to credit or debit the balance on a stock account relating to a security for which it is the registrar ('credit adjustment' or 'debit adjustment'). The registrar can use this, for example, in the context of certain corporate actions where securities have been issued or cancelled. The facility requires no system action by the member affected.

Credit adjustments can be made at any time during the on line day and, once the credit is processed, the security is immediately available for settlement purposes. Credit adjustments are most likely to be used in the context of certain corporate actions, though the CREST system does not specify whether the adjustment facility is to be used for a corporate action. Credit adjustments will normally be made to the available balance of a stock account. However, where the REG instruction contains a corporate action number and is being used as the means of replacing one line of stock with another in a non-elective corporate action (i.e. a mandatory corporate action[10]), the CREST system will apportion the credited stock across balance types (available, deposit link, escrow and reserve) in the same ratio as stock was held in those balances in the line being replaced as long as this is equal to or greater than the CREST system expectancy. If the REG instruction does not contain a corporate action number, or if the corporate action is elective (i.e. mandatory with options or voluntary), all of the replacement stock is credited to the available balance. If such apportionment would result in fractions of stock being placed in balances, the CREST system rounds the balances down to the nearest whole number.

When inputting a credit adjustment, registrars must input the number of REG transactions and the total quantity of securities within those REG transactions to be settled (a 'Control Total' instruction). If the Control Total matches both the number of REG transactions received and the total quantity of securities within those REG transactions, the CREST system will release the transactions for settlement. The Control Total applies to all credit adjustments input by registrars, however does not apply to registrar credit adjustments in the CREST Investment Funds Service, or registrar credit adjustments that are crediting a previously nominated receiving agent.

The System Controller may in its absolute discretion allow debit adjustments (also known as 'negative Registrars Adjustment transactions' or 'NEG REG' instructions) to be processed in the course of the settlement day, but only if (a) the System Controller has received a completed 'Request to Process Negative Registrar Movement' form signed by the registrar, (b) the debit adjustment would not cause any cap (to which the relevant stock account is linked) to be breached, and (c) prior to processing the debit adjustment, the registrar has confirmed by fax (or otherwise in writing) to EUI that the member from whose account the stock is to be debited has consented to the deletion of the stock from his account or, where it is not practicable to obtain the consent of all the members affected, the System Controller is satisfied that such confirmation will be obtained subsequently. Where EUI is unable to process a debit adjustment because it would result in the breach of a CMA cap, EUI has procedures under which it notifies the relevant settlement bank that this has happened. The debit adjustment will, however, remain queued for settlement until sufficient headroom is available. If sufficient headroom does not become available before the standard settlement deadline (and provided EUI has received appropriate confirmation from the registrar that the relevant member has consented to the removal of the stock), the CREST system will process the debit adjustment by deleting the stock outside the normal settlement day and before standard settlement commences on the next settlement day. Debit adjustments are

[10] See Chapter 7, section 4 for a description of the CREST system's categorisation of corporate actions.

made to the sub-balances within a stock account in the order of available balance, deposit link balance, then escrow balance; this order is not visible to the registrar.

Section 3: Receiving agents

The participant type CREST Registrar only has access to registration functionality, in particular the collection of and response to RURs and the registrars adjustment transaction and to announcement agent functionality (i.e. the ability to send meeting announcements). It does not have access to payment, stock or issuer's agent functionality. Consequently, for an issuer or its CREST Registrar to make CREST payments for dividend purposes or to use the corporate actions functionality described in this Section, it must also operate as a participant type member with access to receiving agent functionality (the same applies to a participant wishing to act as an issuer's agent for the purpose of collecting proxy appointment instructions or inputting results announcements as further described in Chapter 7, section 9). Other members (which do not also have a participation as a CREST Registrar) may act as receiving agents in the CREST system if they have entered into a Receiving Agents Admission Agreement.

For CREST system purposes, a receiving agent is:

A participant of the type member which acts as receiving agent for corporate actions relating to securities of the issuer which are executed in the CREST system (normally identified in the relevant corporate actions data), as announcement agent and/or as issuer's agent. The receiving agent may be itself an issuer or a person acting on behalf of the issuer. In the latter case, the user in respect of the particular membership is a sponsoring system participant for each issuer for which the receiving agent acts as such.

It should be noted that this does not embrace a receiving agent acting for an offeror in a takeover bid or similar transaction (a 'takeover receiving agent') (see further below).

The relevant contracts are as follows:

- a CREST Registrar who wishes to act as a receiving agent must enter into a Receiving Agents Admission Agreement in addition to the Registrars Agreement;
- a member who wishes to act as a receiving agent must enter into a Receiving Agents Admission Agreement in addition to the Members Admission Agreement; and
- a person who wishes to act as a receiving agent and who has no existing participation in the CREST system need only enter into a Receiving Agents Admission Agreement.

Under the Receiving Agents Admission Agreement, the receiving agent will be admitted both as a receiving agent (i.e. to act on behalf of issuers and takeover offerors) and as a member (because, in system terms, the receiving agent will be a participant type member and therefore have access to all the functionality of a member). It is a matter for the receiving agent and issuer concerned to establish that the receiving agent is acting on behalf of that issuer and to act accordingly. The CREST system facilitates the identification of a particular member as the receiving agent for a particular corporate action in the relevant corporate actions data (similarly, in the relevant security details as the announcement agent and in the relevant meeting announcement data as the issuer's agent, see Chapter 7, section 9). Functionality available to receiving agents is further described in Chapter 7 section 4 and (in relation to acting as an issuer's agent or and announcement agent) in Chapter 7, section 9.

Note: In respect of UK securities, CREST Rule 14 provides, inter alia, for the circumstances in which stock accounts of receiving agents do not constitute register entries and in which a debit from one stock account and a credit to another (where one such account is that of a receiving

agent) does not constitute transfer of title. In such circumstances the RUR generated does not constitute notification of registration of a transfer of title.

In addition, in relation to Guernsey, Irish, Isle of Man and Jersey securities where a credit or debit of securities associated with a corporate action to or from the receiving agent for a corporateaction (other than in relation to a receiving agent acting for an offeror or other comparable event) results in an RUR, the RUR does not constitute an Operator-instruction to the registrar to register a transfer of title to those securities and must therefore not be reflected on the register for those securities.

The system effect of movements between members and receiving agents is to vest control of the securities:

- in the issuer (in the case of credits to the receiving agent's membership); or
- in the recipient (in the case of debits from the receiving agent's membership).

The legal effect of the movements will be prescribed by or for the issuer in the documents relating to the corporate action concerned.

Takeover receiving agents

The functions of a receiving agent acting for an offeror in a takeover bid or similar transaction (a 'takeover receiving agent') involve the acquisition of securities of the target company. The principal functionality used is the movement of such securities to and from the escrow balance of each CREST member who has indicated his acceptance of the offer. A receiving agent in such a situation also receives a copy of every RUR (including an RUR created as a result of an STD transaction) sent to the target company's registrar, in the case of UK securities upon settlement of the transfer concerned and in the case of other CREST securities after the relevant registrar has confirmed to the CREST system that the transfer has been registered. The offeror's receiving agent also receives a copy of every REG transaction relating to the relevant securities upon its settlement. The receiving agent should enter into a Receiving Agents Admission Agreement in these circumstances.

Section 4: Nationality declarations

A number of companies whose securities are settled through the CREST system require transferees to make a declaration relating to their nationality, or to the nationality of any beneficial owner(s) of or persons having an interest in the securities being transferred. This is for the purpose of monitoring the levels of ownership of the company by foreign nationals. The full details, purposes and definitions of qualifying securities of each company are set out in the Nationality Declaration Form which must be completed for certificated transfers. In some cases the forms are available on the Euroclear website. In other cases, details should be requested from the issuer or its agent.

In all cases, it is the responsibility of the CREST member to ensure the correct, current form is used. The forms made available on the Euroclear website are for information purposes only.

Companies requiring declarations as to nationality to be made are identifiable within the CREST system by checking the security details.

CREST system functionality enables members to make a nationality declaration by means of the system without the need to submit a Nationality Declaration Form.

The system validates that an entry has been made in the relevant input field for any transactions relating to those of those companies' securities to which the requirement applies. Where a member has opted into central sponsor services, the nationality declaration is inserted in the transaction as part of the direct input services provided by EUI on the basis of information provided by the member. The system does not validate that the entry complies in all respects with the particular requirements of each relevant issuer.

The relevant companies have confirmed that completion of the relevant input field is an acceptable form of compliance with their nationality declaration requirements. They will treat the data input as being the equivalent of the full declaration set out on the Nationality Declaration Form. Transferees will be bound accordingly, as if they had submitted the declaration using that form. Members must therefore read and understand the terms of each form.

Completion of the nationality declaration field is mandatory on DBVs. Users should input the precise ISO country code from which issuers requiring only general declarations can infer the nationality of the transferee.

Members should note that:

- the CREST system will only accept ISO compliant ISO3166 country codes. The list of valid codes in the CREST system will be updated periodically to remain in line with the ISO/SWIFT values, which can be found on the International Organization for Standardization web site.
- the ISO 3166 code for the United Kingdom of Great Britain and Northern Ireland is 'GB';
- BAE Systems construes 'GB' to mean the United Kingdom of Great Britain and Northern Ireland, the Channel Islands and the Isle of Man and only require a declaration as to whether the transferee is a UK or non-UK national; members should therefore input either 'GB' to indicate a UK national (as defined by British Aerospace) or 'ZZ' to indicate a non-UK national;
- Ryanair Limited requires a declaration of the precise nationality of the transferee from which it will assess whether the transferee is a national of an EU Member State or an EEA member state; members should therefore input the appropriate code for each nationality;

- Aer Lingus requires a declaration of the precise nationality of the transferee from which it will assess whether the transferee is an Irish national; members should therefore input the appropriate code for each nationality;
- International Consolidated Airlines Group requires a declaration of the precise nationality of the transferee from which it will assess whether the transferee is a national of the UK, an EU Member State, an EEA Member State or a national of another territory; members should therefore input the appropriate code for each nationality;
- information in relation to the declaration requirements of other issuers requiring nationality declaration fields to be completed should be obtained from the issuer or its agents;
- for securities using the CREST nationality declaration in the CREST system, members should also input the appropriate code for the nationality of the transferor.

Section 5: Reconciliation

EUI and the registrars for UK securities perform:

- a daily reconciliation of the total balance of each Operator register of securities with the corresponding issuer's record of securities, allowing for all stock deposits and withdrawals;
- a daily reconciliation of the balance of each stock account in the CREST system which has moved that day, with each balance on the corresponding issuer's record of securities which has moved that day; and
- a periodic reconciliation of all stock balances in a security with all balances on the corresponding issuer's record of securities.

EUI and the registrars for other CREST securities perform:

- a daily reconciliation of the total balance of each security held in the CREST system with the corresponding uncertificated register of securities, allowing for all stock deposits and withdrawals;
- a daily reconciliation of the balance of each stock account in the CREST system which has moved that day, with each balance on the corresponding uncertificated register of securities which has moved that day; and
- a periodic reconciliation of all stock balances in a security with all balances on the corresponding uncertificated register of securities.

Where a security cannot be successfully reconciled, EUI's normal practice is to disable the relevant security for settlement.

The CREST system provides all stock balances on request to enable a registrar to perform its own reconciliation.

In relation to the Investment Funds Service, reconciliation is performed as set out in Chapter 13.

Section 6: Technical netting and linked transactions

Technical netting

The technical netting process is a system feature designed to resolve situations of settlement gridlock which can arise where delivery of one type of scarce resource (either securities or headroom) is dependent upon receipt of another scarce resource (also either securities or headroom). The technical netting process is distinct, and performs different functions, from the 'netting procedures' described in Chapter 4, section 4 of this CREST Reference Manual.

The following transaction types are capable of being settled through the technical netting process:

- bad delivery reversal (BDR);
- benefit claim (CLA);
- overnight DBV return (DBR);
- overnight DBV interest payments (DBI);
- delivery (DEL);
- complex delivery (MTM);
- own account transfer (OAT);
- reconstitution (RCN);
- repo transaction (RPO);
- repo return (RPR);
- repo substitution (RPS);
- auto-collateralising repo (SCR);
- stock loan revaluation (SLD);
- stock loan (SLO);
- stock loan return (SLR);
- stamp duty payment (STP);
- strip (STR);
- term DBV eligibility substitution (TDE);
- term DBV giver recall substitution (TDG);
- term DBV interest payment (TDI);
- term DBV mark-to-market transaction (TDM);
- term DBV return (TDR);
- transfer from escrow (TFE);
- transfer to escrow (TTE);
- unmatched stock event (USE); and
- cross border delivery (XDL)

Technical netting is a background process that is completely invisible to members; it runs alongside normal DVP settlement. In normal circumstances, technical netting will be started after peak settlement has finished and will run continuously until just before DBV settlement. Technical netting also runs for a period of time during DBV settlement. The start and stopping of this process will be controlled by diary events in the daily timetable.

Technical netting analyses all failed transactions at the CREST Settlement Processor and links these together to suggest 'nets'. The failed transactions are sent to the CREST Settlement Processor for positioning as linked transactions. If any of the transactions have settled they will be removed from the net. The remaining transactions will stay in the net, and positioning will attempt to settle them. If the net fails to settle, the process of identifying technical nets will be resumed.

Having identified the relevant transactions, the system disapplies the normal requirement for stock account, cash balances and LMA to be positive and allows settlement to occur on the basis that the net result is zero or positive. (In logical system processing terms, the system processes the relevant transactions one at a time; consequently, during the process of settling the relevant transactions, it is likely that some stock accounts would momentarily record a negative balance, that some caps would momentarily be breached and the sum of liquidity debits (less credits from the auto-collateralisation arrangements) might exceed the initial balance on a settlement bank's LMA; all such negative balances and liquidity positions would be restored to zero or positive by the end of the process and similarly all CMA caps would be complied with.) RURs are generated in the normal way and each RUR which results from the technical net carries the same timestamp. The system creates a control record for each security which has been settled in a particular run of technical netting. These control records contain a count of the RURs in a particular security within that particular run of technical netting and are available to the registrar at the same time as the related RURs.

If a registrar for a Guernsey, Irish, Isle of Man or Jersey security bad delivers one or more RURs contained with a technical net and if EUI then resubmits those technical net RURs, the relevant RURs are made available individually. EUI will liaise closely with registrars affected in such circumstances. The system does not create an optimisation control record in these circumstances.

Linking transactions

The CREST system provides a mechanism to enable a member to link two or more transactions together in the system, this mechanism being a variation of the technical netting process available for optional use by members. All the linked transactions must include a stock movement in a common ISIN. Where such a link has been created, the CREST system settles the transactions in the linked group on a similar basis to technical netting - that is, settlement can occur on the basis that the result of settling all the transactions in the group is that stock, liquidity and credit balances for the members involved remain positive or zero as a result. The transactions are not, however, processed by the technical netting software.

The types of CREST transaction which can be 'linked' to settle in this way are:

- deliveries (DEL);
- stock loans (SLO);
- own account transfers (OAT);
- bad delivery reversals (BDRs);

- claims (CLA);
- cross border deliveries (XDLs);
- cross border reversals (XDRs);
- overnight DBV returns (DBR);
- term DBV returns (TDR);
- registrar's adjustments (REG);
- stock loan returns (SLR);
- transfers to escrow (TTE);
- transfers from escrow (TFE); and
- unmatched stock events (USE).

It is possible to link one of the transaction types mentioned above to an RPO/RPR/RPS transaction, but it is not currently possible to link an RPO/RPR/RPS transaction to another transaction type.

However, a transaction with a 'CCP' participant may not be 'linked' to settle in this way other than under 'permanent' or 'transient' links which are centrally-generated in the circumstances described in Chapter 7 and in the CREST Central Counterparty Service Manual (see further below).

The CREST system does not attempt to identify potential groups of linked (offsetting) transactions. To establish a link, one member must complete the fields for Link Transaction ID or Link Transaction Reference with the transaction ID or transaction reference of the transaction to which the transaction being input is to be linked. Transactions cannot be linked if they reference a deposit link balance or escrow balance.

Linking transactions does not guarantee that they will settle as a group. The CREST Settlement Processor will attempt to settle individual transactions first before attempting to settle the linked transactions. The linked transactions will not be given priority over the individual transactions.

Linked transactions can only settle within the period specified in the daily timetable. Throughout this period, the CREST system attempts to settle both normal and linked transactions, depending on the nature of the link. There are three types of link identified by the Dependent Trade Field. These are: permanent; transient and non dependent. Users can only input non dependent links; permanent and transient links are centrally created, currently this is only for transactions to which a 'CCP' participant is party in a number of circumstances described in Chapter 7 and in the *CREST Central Counterparty Service Manual*. Where transactions are included in these links and linked settlement is running, the CREST system attempts to settle the link first and then the underlying transactions. For permanent links, settlement will only try and settle the link, not the underlying transactions separately. It is not possible to add new transactions via linking to existing transient and permanent links.

When the CREST system identifies that a notional transaction reflecting the overall effect of a linked group can settle, it forwards all the transactions within the linked group to the settlement process. The transactions are then processed through settlement as though they were transactions resulting from technical netting settlement and RURs are generated in the same fashion (together with a control record made available to the registrar, as for technical netting).

Section 7: Bad delivery

This section describes the arrangements for handling bad deliveries in relation to Guernsey, Irish, Isle of Man or Jersey securities. Bad deliveries may not occur in relation to transfers of title registered on an Operator register of securities in respect of a UK security (although a stock deposit may be rejected).

A bad delivery occurs where a transfer of title cannot be effected on the register in response to an RUR which constitutes an instruction to amend the relevant register. The Guernsey Regulations, the Irish Regulations, the Isle of Man Regulations and the Jersey Regulations specify the circumstances in which a registrar may refuse registration. The registrar notifies EUI of the bad delivery and indicates the reason for it and the member concerned can see this by means of enquiry functions.

Following notification of a bad delivery between members, EUI applies the Bad Delivery Rules set out in CREST Rule 12.

Bad stock withdrawals and bad stock deposits fall outside the scope of the bad delivery rules:

- following notification of a bad stock withdrawal, the CREST system automatically recredits the withdrawing member's stock account with the number of securities which were bad delivered; and
- following notification of a bad stock deposit, the registrar returns the transfer form to the depositing member via the CCSS and indicates on a rejection docket why the transfer cannot be effected on the register. The registrar also informs EUI and this information is made available to the member concerned by means of enquiry functions.

Chapter 6: The CREST payment mechanism

Section 1: Introduction

Every CREST member[11] is required to have an arrangement with a CREST settlement bank. The appointment of a bank as settlement bank for a member in respect of a designated currency takes effect from the time at which the enablement by the settlement bank of the member's CMA cap in respect of the relevant Cash Memorandum Account (CMA) takes effect in the system.

The CREST system supports two payment mechanisms depending upon the designated currency involved:

- the DvP Service for sterling and euro; and
- the US dollar payments mechanism for US dollars.

Reference is sometimes made in this chapter to the 'payment type' of a CREST payment. This is a reference to the payment mechanism by which the obligations of a settlement bank in respect of the CREST payment are settled – being 'real-time gross settlement' in respect of sterling and euro (as RTGS currencies) and 'US dollar settlement' in respect of US dollars. A bank which is acting as a settlement bank in respect of an RTGS currency is sometimes referred to as an 'RTGS settlement bank' and a bank which is acting as a settlement bank in respect of US dollars is referred to as a 'USD settlement bank' in this CREST Manual.

DvP Service

The payment mechanism for sterling and euro operates under the umbrella term, the 'DvP Service', as described in more detail in section 4 below. For both sterling and euro, CREST settlement is effected on a real-time gross basis in central bank money through accounts opened with a central bank of issue of the relevant currency as the inter-settlement bank payment obligations arising at the moment of CREST settlement are supported by an undertaking or other assurance from the Relevant Central Bank for their completion. This undertaking from the Relevant Central Bank is itself backed by funds held by or for the account of the relevant settlement bank at a central bank which are earmarked or frozen (i.e. irrevocably appropriated) for CREST settlement.

For sterling, the Bank of England gives an unconditional and irrevocable contractual undertaking to each CREST settlement bank to complete payment, the effect of which is to cause the simultaneous settlement of the relevant sterling inter-settlement bank payment obligation immediately upon the occurrence of a Payment Settlement Event.

For euro, the European Central Bank (in its capacity as an ancillary system central bank) provides an irrevocable and unconditional guarantee to EUI that the net (net) euro debit positions of each CREST settlement bank which are instructed to be paid by EUI at the end of the Dedicated Liquidity Cycle Period (in which a Payment Settlement Event occurs) will be settled in TARGET2. This 'ECB Guarantee' provides assurance that the inter-settlement bank positions arising during a Dedicated Liquidity Cycle Period will complete in accordance with settlement procedure 6 (dedicated liquidity and cross-system settlement) for ancillary systems (using an interfaced model) described in Annex

[11] The one exception to this is certain CSD participants whose participation in the CREST system is solely for the purpose of facilitating the mechanism set out in section 9 of Chapter 4 of the CREST International Manual. Such CSD participants do not, accordingly, have CMAs.

IV to the Guideline of the European Central Bank of 5 December 2012 (ECB/2012/27) on a Trans-European Automated Gross settlement Express Transfer system (recast) as the same may from time to time be amended, varied, supplemented or replaced (the Guideline).

US dollar payments mechanism

For US dollars, CREST settlement operates a mechanism under which:

- at the moment of CREST settlement, an irrevocable and unconditional inter-settlement bank payment obligation arises between the the paying member's settlement bank and the payee member's settlement bank to pay the relevant amount in US dollars;
- inter-settlement bank payment obligations will, on normal settlement days, be discharged in US dollar central bank money through payments made in the National Settlement Service (NSS) of the US Federal Reserve Banks; and
- inter-settlement bank payment obligations are backed by sterling central bank money pre-funding by USD settlement banks into a Trust Account held by EUI at the Bank of England.

CREST LM system

The CREST LM system (whether operating as part of the Sterling DvP Service, the Euro DvP Service or the US dollar payments mechanism) referred to in this Chapter forms part of the 'Liquidity Management Services'. As such, it does not form part of the CREST relevant system because it does not enable 'title to units of a security to be evidenced and transferred without a written instrument' or facilitate supplementary or incidental matters for the purpose of the CREST Regulations.

This legal and regulatory distinction is an important one (and is reflected in the contracts between EUI and the settlement banks); however, it remains the case that:

- the actual systems and related equipment which form part of the Liquidity Management Services are either the same as or closely connected with the CREST system, and the means by which settlement banks send and receive dematerialised instructions when using functionality outside the scope of the Liquidity Management Services[12];
- factors which might affect the operation of the CREST relevant system are also likely to be factors which affect the operation of the Liquidity Management Services (including matters which might cause EUI to suspend the operation of the CREST system or CREST services);
- the practical limitations of the CREST system are also likely to be practical limitations of the CREST LM system;
- the management functions of the CREST System Controller extend to the operation of the Liquidity Management Services; and
- the need for a settlement bank to keep records in relation to the persons who send messages to the CREST LM system is or may be as important as the requirement for such persons who send messages to the CREST system.

[12] It follows, therefore, that any communication sent to the CREST LM system by a settlement bank via the GUI will in practice be subject to the same accreditation and authentication procedures which apply to the communication of a dematerialised instruction with the CREST system.

For these reasons, the provisions of Chapters 1, 2, 10 and 11 should be read as applying to the relevant Liquidity Management Services; and (unless the context otherwise requires) a term which is used in this CREST Manual (including those Chapters) to refer to a system, service or functionality which forms part of the CREST relevant system is to be read as including a reference to the corresponding system, service or functionality which forms part of the relevant Liquidity Management Services.

Section 2: Cash Memorandum Accounts

CMAs

Each CREST member has at least one CMA, on which the CREST system records CREST payments made by or to that CREST member upon the occurrence of the relevant Payment Settlement Events. Each member has a separate CMA for each designated currency and only one CMA for each such currency. Members cannot settle any transactions in the CREST system in a currency for which they do not hold a CMA. The CREST system records CREST payments in each payment type per currency in the relevant CMA. Each member can have only one settlement bank per designated currency but could use the same bank as settlement bank for a number of designated currencies.

CREST payments may only be made between the times specified in the daily timetable. A separate schedule of times is specified for each designated currency. CREST payments may arise from a number of activities or events such as:

- normal deliveries of securities;
- commission and other third party payments;
- payment of stamp duty and SDRT (whether within or outside the Stamp Duty Assessment Service);
- distributions of cash (e.g. dividends);
- payment of claims; or
- call payments (e.g. on a rights issue).

The CREST system does not check or validate the purpose for which a payment is made by means of the system.

Before the start of each settlement day, the system sets each member's CMA to zero (and for the treatment of CMAs during a NSSDPs period, please refer to Chapter 10, Section 4). During the course of the day, at the point of settlement of any transaction under which payment is to be made by a CREST payment, the system debits the paying member's CMA and credits the payee member's CMA in respect of the appropriate amount with finality occurring at the point of completion of the relevant Payment Settlement Event in accordance with CREST Rule 17. Subject to any agreement between the member and his settlement bank, the balance on the CMA upon completion of any relevant Payment Settlement Event at any time during the settlement day represents the net amount which each member owes to (or is owed by) his settlement bank in respect of CREST payments in the relevant designated currency made during the settlement day. The balance on a member's CMA upon completion of any relevant Payment Settlement Event can, during the settlement day, be viewed by the member and by the member's settlement bank associated with that CMA. The member can also view the cash postings which are the individual components of the CMA balance. If the member has used his discretion to make them available to his settlement bank, the settlement bank may also view the cash postings.

Appointment of a new settlement bank

A member may appoint a different bank as settlement bank in substitution for an existing settlement bank. The substitution takes effect from the enablement of the new cap by the new

settlement bank. Such changes usually occur after the end of a settlement day and involve coordination between the member and both settlement banks concerned.

If the substitution is to take effect during the course of the settlement day, then the member must notify EUI in advance. Immediately prior to the substitution taking effect, the System Controller disables the cap(s) set by both the old and the new settlement banks in respect of the CMA(s) which is/are to be transferred to the new settlement bank. While the caps are disabled, no new cash postings are made to the CMA(s), except for those resulting from any instruction the processing of which it is not practicable to halt at the time of disabling the cap(s). Once such instructions (if any) have been processed, the System Controller resets that CMA(s) transferred to the new settlement bank to zero and the new settlement bank may then enable the cap. Any credit or debit item included in the balance on the CMA(s) prior to it being reset to zero shall, as between the old and the new settlement bank, be for the account of the old settlement bank.

A member may terminate the appointment of a bank as his settlement bank. The termination shall take effect from the date and time agreed between the member and his settlement bank and may be a time during the course of or after the end of the settlement day. Immediately prior to the termination taking effect, the settlement bank disables the cap(s) in respect of the relevant CMA(s). After the disablement, no new cash postings are made to the CMA(s), except for those resulting from any instruction the processing of which it is not practicable to halt at the time of disabling the cap(s).

Section 3: Caps

Introduction

The CREST system provides functionality that is designed to facilitate or enable a settlement bank to control:

- the amount of credit that it makes available to a member for the purpose of making CREST payments (known as the 'CMA cap'); and
- the aggregate settlement bank margined value of securities that are transferred by a member to their settlement bank's settlement bank repo membership under the client auto-collateralisation arrangements described in Chapter 7, section 8 below – (known as the 'repo cap').

In operational terms, the CMA cap and the repo cap can be considered to be sub-caps of a single cap. Certain functions can only operate at the level of the single cap; while certain other functions can operate at the level of the relevant individual sub-cap. For example, it is not possible for a settlement bank to disable a member's CMA cap without at the same time disabling his repo cap (or vice versa) – as disablement operates at the level of the cap. Further, a member will 'link' his member account(s) to the cap of his settlement bank; and cannot link a member account to a CMA cap set by one of his settlement banks, while linking the same member account to a repo cap set by one of his other settlement banks. However, once a member account is linked to a cap, the member can then 'opt-in' that or those linked account(s) for either or both of the secured credit arrangements (CMA cap) and the client auto-collateralisation arrangements (repo cap). Further, the CMA cap and the repo cap operate independently so that it is possible for example for a settlement bank to reduce the CMA cap for a member to zero, while leaving the repo cap at a level which might allow for further SCR transactions to be settled from the member's linked member account to the settlement bank's settlement bank repo membership. In addition, while a member must have a CMA cap (which may consist solely of an unsecured limit) in order to participate in CREST; it need not participate in the client auto-collateralisation arrangements and need not, therefore, have a repo cap.

Notwithstanding these operational aspects of the CMA cap and the repo cap, this CREST Reference Manual sometimes refers, for example, to the disablement of the CMA cap or the repo cap, or the linking of a member account to the CMA cap or the repo cap (or similar descriptions). This might happen either because the context in which the relevant phrase is used is concerned solely with the operation of one of the sub-caps (but not the other sub-cap), e.g. where the relevant passage is concerned with the operation of the cap as controlling the debit balance that may arise on a member's CMA (which is a function of the CMA cap); and/or for ease of exposition, e.g. where it is easier to refer to a member account being 'linked' to the repo cap where the relevant passage is concerned with the operation of the cap to prevent the creation or settlement of an SCR transaction from that member account (which is a function of the repo cap).

Equally, the generic term 'cap' may be used when a passage is describing functionality that is relevant to both the CMA cap and the repo cap; and/or where, in operational terms, the functionality operates at the level of the cap and not at the level of the sub-caps.

Functionality that applies to both the CMA cap and the repo cap

Each cap is set by only one settlement bank and relates to only one member. A settlement bank may set a zero cap.

A member account can be linked to only one cap. Where a member has more than one cap, the member can specify which member account(s) to link to which cap. The member may wish to do this, for example, where he has charged securities in different member accounts to different settlement banks; or because only one of his settlement banks may enter into auto-collateralisation repurchase transactions with the member and those transactions are to be settled by delivery of repo securities from the linked account to that RTGS settlement bank's settlement bank repo membership. If the securities held in a member account linked to a cap are denominated in a currency different from the base currency of the cap, the CREST system converts the value of the securities to the base currency of the cap (specified by the settlement bank) using the previous business day's closing exchange rate maintained within the system. The member can add and remove a link between a member account and a cap; and link a member account to another cap. Before the addition or removal of a link takes effect it must be sanctioned by the member's settlement bank. Once sanctioned, such changes will take effect on the following settlement day. The existing arrangements continue until the change is sanctioned and becomes effective.

The member's settlement bank can enquire of the CREST system at any time during the on-line day as to which member account(s) are linked to a cap which the settlement bank has set (and whether the member has opted-in such linked account(s) for either or both of the secured credit arrangements and the client auto-collateralisation arrangements); the settlement bank should make such enquiries from time to time to ensure that these links are consistent with its agreement (outside the CREST system) with the member. EUI does not verify whether any such link is consistent with the security or repo arrangements in place between a member and his settlement bank.

CMA cap

Every member must have at least one CMA cap. The same cap can cover a number of CMAs in different designated currencies and payment types belonging to the same member, provided that the same settlement bank is associated with each CMA and has specified the base currency of that cap. Alternatively, a member may have a separate CMA cap for each designated currency for which he holds a CMA, for example if a different settlement bank is associated with each CMA.

The CMA cap allows a settlement bank to control the amount of intra-day credit available to a member. The cap represents the maximum cumulative net debit position on his CMA(s) that a member can run during the settlement day. In relation to a cap, the following can be specified to control available credit:

- unsecured limit; and
- secured limit.

For the purposes of monitoring usage of the CMA cap, where the cap covers a number of CMAs in different designated currencies, the system automatically converts the currency of each CMA to the base currency of the cap by reference to the previous business day's closing exchange rate held within the system. The maximum negative cash position (in the base currency of the cap) used against a cap is recorded each day. As the current position changes throughout the settlement day,

the maximum cap usage will be updated whenever a new extreme is reached. A member may enquire as to his maximum cap usage and similarly a settlement bank may enquire as to the maximum cap usage of any member for whom it acts as a settlement bank.

Unsecured limit

The unsecured limit sets a maximum on the extent of unsecured credit granted to the member by the settlement bank.

Secured limit

A member (with the exception of an issuing and paying agent or any other member who does not have title to units of a security credited to his stock account) may be able to give a charge over securities in one or more member accounts for the benefit of his settlement bank or banks. If he so chooses, such a member may link these 'charged' accounts to any of the caps associated with his membership, then opt into the secured credit arrangements for that linked account. Where a member links a member account to a cap, and then opts-in that account for the secured credit arrangements, that account can be regarded as being linked to the member's CMA cap. The relevant settlement bank may then be prepared to extend additional secured credit to the member up to the secured limit.

The secured limit sets a maximum on the extent of the additional secured credit granted to the member by the settlement bank. Even where the value of securities within member account(s) linked to a CMA cap is greater than the secured limit, no further credit will be extended beyond the value of the secured limit.

Operation of CMA cap and headroom

The CREST system calculates dynamically the value of securities in a member account linked to a CMA cap (but securities held in an escrow or deposit link balance are not included in this calculation). The amount of secured credit actually available at any one time is calculated by reference to the secured credit limit.

The system takes account of deliveries into an account linked to a CMA cap which are waiting to settle: if settlement of a delivery would not cause the (net) debit balance on the CMA(s) to exceed the relevant CMA cap, then the delivery will settle. For the purpose of this calculation, the CREST system uses the previous business day's closing bid price (or other relevant reference price for the security concerned) for the relevant securities maintained within the system. If no price is available for a particular security, it will be valued at zero in the calculation of the cap. The amount of secured credit available to a member may therefore vary during the settlement day as securities are credited to or debited from a member account linked to a CMA cap.

A member's headroom at any one time is calculated as follows:

- current CMA position,
- less the value of securities transferred to the member's RTGS settlement bank under the client auto-collateralisation arrangements (subject to applicable margin as described below),
- plus unsecured limit,
- plus (where a member has member account(s) linked to a CMA cap) the lesser of:
    - the secured limit and

- (i) the value of securities in member accounts linked to the cap and opted into the secured credit service (subject to applicable margin) plus (ii) the value of securities transferred from member accounts linked to the cap and opted into the secured credit service to the member's RTGS settlement bank under the client auto-collateralisation arrangements (subject to applicable margin).

The technical netting process may allow a delivery to settle even though, prior to the end of a technical netting run, the individual settlement of a delivery may cause a CMA cap to be exceeded. When the technical netting process is completed, however, the relevant cap will be equal to or greater than the cumulative (net) debit balance on the CMA(s) (see Chapter 5, section 6).

Repo cap

Where a member participates in the client auto-collateralisation arrangements, its RTGS settlement bank imposes a repo cap. It specifies the maximum aggregate settlement bank margined value of securities that are transferred by the member to the RTGS settlement bank's settlement bank repo membership.

The operation of the repo cap requires the member to link his member account(s) (from which auto-collateralising repurchase transactions are to be settled) to the cap, and then opt-in those linked accounts to the client auto-collateralisation arrangements. Where a member links a member account to a cap, and then opts that account into the client auto-collateralisation arrangements, that account can be regarded as being linked to the member's repo cap.

The operation of the repo cap is described in greater detail in Chapter 7, section 8 below.

Settlement bank margins

Each settlement bank must set the level of margin to be applied to securities in member accounts linked to caps which it has set. The margin determines the value (the 'settlement bank margined value') of:

- credit extended or paid to a member under the secured credit arrangements; and
- securities that are transferred, or are eligible to be transferred, by a member from an account linked to a cap to their RTGS settlement bank's settlement bank repo membership under the client auto-collateralisation arrangements.

To facilitate this, at any one time a security will be placed by the CREST system into a Margined Stock Value or 'MSV' Category. Particular securities can be re-assigned to the appropriate MSV Category by the System Controller, and if so will be included in that MSV Category with effect from the beginning of the next settlement day (see Chapter 10, section 4 for a description of the reassignment of securities during a NSSDPs period).

Upon the admission of a bank as a settlement bank, the margin values for each MSV Category are set at zero (i.e. for cap purposes, the value of any security in that MSV Category is determined by reference to the previous business day's closing bid price or other relevant reference price for the security without deduction). If a settlement bank wishes to set a margin, it is able to change this default margin (and any subsequent margin set by it) by using the Bank Category Margin Amend message (FBMA)[13]. The margin so set is then applied to all securities placed in that category at that time across all the members for which it acts as settlement bank. The CREST system allows a

[13] This message can only be sent via the GUI.

settlement bank only to have access to its own margins and any change to those margins instructed by the settlement bank takes effect only from the beginning of the next settlement day (see Chapter 10, section 1 for a description of what happens during a NSSDPs period).

There are three sets of MSV Category - the first set permits non-eligible debt securities to be automatically moved between the MSV Categories within the set as a security approaches its maturity date; the second set provides a static set of 'manual' categories for equities and other non-EDS classes; and the third set provides a framework for EDS issues based on issue type and credit rating.

The MSV Categories within the 'automatic' set of values relate solely to UK government and similar debt securities ('gilts') and comprise:

- A01 - Short-dated, unstripped British Government Stock (UBG).
- A02 - Short-dated stripped British Government Stock (SBG) and medium-dated UBG.
- A03 - Medium-dated SBG and long-dated UBG.
- A04 - Long-dated SBG and all Non-British Government Stock (NBG).
- A05 – Ultra long-dated UBG
- A06 - Ultra long-dated SBG.

For these purposes, a 'short-dated' gilt is one which must be redeemed in whole or in part within 7 years from the current date; a 'medium-dated' gilt is one which may not be redeemed in whole or in part until after 7 years from the current date but which must be redeemed within 15 years from the current date; a 'long-dated' gilt is one which may not be redeemed in whole or in part until after 15 years from the current date but which must be redeemed within 30 years from the current date; and an 'ultra long-dated' gilt is one which may not be redeemed in whole or in part until after 30 years from the current date, or is undated.

The CREST system automatically places a gilt security into the correct category upon its creation and adjusts this as it progresses towards its maturity date. For example, initially, a 20-year coupon or principal strip (a long-dated Stripped British Government Stock) will be placed into A04. When the strip reaches 15 years before its maturity date, it becomes medium-dated and therefore it will be placed into A03. Once the strip reaches 7 years before its maturity date, then it is short-dated and will be placed into A02. Undated gilt securities will always appear in A03, all Non-British Government Stocks in A04 and any double-dated stocks in the category appropriate to the longer of the two dates.

The MSV Categories within the 'manual' set of values are M01 to M09. All other securities will be assigned to one of these MSV Categories. These categories are:

- M01 - ordinary shares and convertible shares issued by companies included in the FTSE 100 index.
- M02 - ordinary shares and convertible shares issued by companies included in the FTSE 250 index.
- M03 - all other CREST-settleable securities not included in MSV Categories M01, M02, M08 and M09 and not being international securities represented by CDIs.

- M04 - international settling securities (equities, corporate and government instruments) not in MSV Categories M05, M06 and M07.
- M05 - Eurotop 300 (encompassing European securities that are classified in the Eurotop 300, excluding those in MSV Categories M01 and M02).
- M06 - ECB qualifying Tier 1 collateral issued by European governments (other than the British government).
- M07 - United States Securities.
- M08 – Irish Equivalent 100 (Irish securities with an equivalent market value of FTSE 100 securities).
- M09 – Irish Equivalent 250 (Irish securities with an equivalent market value of FTSE 250 securities).

EUI may also change or add to these MSV Categories, but will only do so after consultation with the settlement banks (or any consultation group from time to time established by the settlement banks for the purposes of such consultation).

The MSV Categories for eligible debt securities are as follows:

- E01 - Treasury Bills
- E02 - Eligible Bank Bills (including Local Authority Bills)
- E03 - Other Bills including ineligible bank bills
- E04 - Certificates of Deposit rated in CREST Credit Band 1
- E05 - Certificates of Deposit rated in CREST Credit Band 2
- E06 - Certificates of Deposit rated in CREST Credit Band 3
- E07 - Certificates of Deposit rated in CREST Credit Band 4
- E08 - Commercial Paper rated in CREST Credit Band 1
- E09 - Commercial Paper rated in CREST Credit Band 2
- E10 - Commercial Paper rated in CREST Credit Band 3
- E11 - Commercial Paper rated in CREST Credit Band 4
- E12 – Certificates of Deposit rated in CREST Credit Band 0 (i.e. those guaranteed by HMT under the CGS)
- E13 – Commercial Paper rated in CREST Credit Band 0 (i.e. that guaranteed by HMT under the CGS)
- E14 – Bank of England Bills

The category into which a particular EDS will fall is made in reliance on EDS categorisation contained in the relevant IPA issuance message.

Each settlement bank is also able to set an additional margin to be applied where the securities in member accounts linked to a cap are valued in a currency other than the base currency of the cap. Each security is allocated to one Security Margin Currency by the System Controller by reference to

the currency in which the security is priced. Securities can be moved between Security Margin Currencies by the System Controller; the new Security Margin Currency takes effect overnight.

A member and his settlement bank can view at any time during the on-line day the amount of each line of securities which at that time is contributing to the secured credit limit by reason of their being held in member accounts linked to a cap (or recorded in a memorandum 'repo balance' reflected securities out on repo under the client auto-collateralisation arrangements).

A member's CMA cap and current CMA position(s) are checked before the system debits the CMA to ensure that the cap is not breached upon the occurrence of the relevant Payment Settlement Event. Where a CREST payment for a particular transaction would cause the cap to be breached, that transaction remains unsettled until there is sufficient headroom within the cap. Even if an RTGS payment would not cause the related cap to be breached, the transaction under which that CREST payment is to be made will not proceed to settlement if the payment would cause the balance on the relevant RTGS settlement bank's LMA to go into debit in accordance with the procedures described in section 4 below.

There are a limited range of circumstances in which the CREST system will settle a transaction that would or might allow a CREST payment to cause a CMA cap to be breached. These are:

- technical netting processing – although when the technical netting process is completed, the relevant cap will be equal to or greater than the cumulative (net) debit balance on the CMA(s) (see Chapter 5, section 6);
- procedures for the reversal or other correction of an uninitiated transaction (see Chapter 10, section 1).

The system may remain open for the settlement of transactions free of payment after the close of payments specified in the daily timetable. Settlement of such transactions is not allowed if they are from member accounts linked to a cap and would cause the cap to be breached.

A member's repo cap, and the settlement bank margined value of the relevant securities under the client auto-collateralisation arrangements, are checked before the system creates an SCR transaction that would instruct the transfer of eligible securities received into the member's account linked to a cap to the relevant settlement bank repo membership. If the settlement bank margined value of the received securities, when aggregated with the settlement bank margined value of all securities that are at that point out on repo to the RTGS settlement bank under the client auto-collateralisation arrangements, would exceed the repo cap then an SCR transaction in relation to those securities will not be created. As a result, the eligible securities received into the member's account will not be transferred to the RTGS settlement bank's settlement bank repo membership. This will not, however, affect the transaction under which the securities are delivered into the member's linked account – which will settle, provided the member has sufficient headroom for the transaction.

Changing cap limits and disabling caps

Changes to cap details (including to the unsecured limit or secured limit) input by a member do not take effect until that member's relevant settlement bank has sanctioned the change. A settlement bank can, between the times permitted in the daily timetable, input an instruction to amend any of its customer-member's caps. The amendment takes effect from the time at which the system processes the relevant instruction.

If the member's CMA debit balance at the time an amendment to the CMA cap takes effect is above the new cap, the settlement bank remains obliged to make payment in respect of each debit item included in that CMA balance. In that situation, the CREST system allows to settle only those of the member's transactions which reduce the CMA debit balance until this is back within the member's new (lower) CMA cap.

A settlement bank can, between the times permitted in the daily timetable, input an instruction to disable any of its customer-member's cap(s). The disablement takes effect from the time at which the system processes the relevant instruction. This has the effect of preventing:

- the settlement of any transaction under which the CREST payment by the member was to be satisfied by means of a debit to a CMA in respect of which the CMA cap has been disabled;
- free deliveries of securities into or out of any member account linked to the disabled CMA cap; and
- the creation or settlement of any SCR transaction under which securities are transferred from any member account(s) linked to the repo cap to the RTGS settlement bank's settlement bank repo membership.

Any disablement occurs at the level of the cap, rather than at the level of the sub-cap. In other words, as settlement bank cannot disable a CMA cap without also disabling a repo cap operating under the same cap (or vice versa).

Section 4: The 'DvP Service'

Introduction

The payment mechanism which enables CREST members to make sterling and euro payments by means of the CREST system is provided under separate arrangements put in place between EUI and the Bank of England for sterling RTGS payments; and EUI and the European Central Bank (the ECB) for euro RTGS payments completed through TARGET2.

The services, functions and facilities which in combination comprise these arrangements are referred to collectively as the 'DvP Service'. The DvP service comprises the 'Sterling DvP Service' (consisting of the arrangements put in place between the Bank of England and EUI) and the 'Euro DvP Service' (consisting of the arrangements put in place between the ECB and EUI). Each of the terms 'DvP Service', the 'Sterling DvP Service' and the 'Euro DvP Service' are, depending on the context, used in the contracts between EUI and the CREST members (and other participants).

DvP Service: CREST services

Sterling DvP Service: CREST services

The CREST services provided by EUI as part of the Sterling DvP Service comprise services provided to the Bank of England and the RTGS settlement banks under which:

- EUI uses a network and associated equipment and services[14] (the 'EUI-Bank link network') by means of which:

(a) EUI receives from the Bank of England's systems Liquidity Earmark Notifications;

(b) EUI sends to the Bank's systems CREST Settlement Notifications; and

(c) EUI sends and receives 'heartbeat' and 'closedown' messages;

- EUI operates procedures which enable it to calculate the items which are to be included in, and to prepare and send to the Bank, a CREST Settlement Notification in respect of a CREST settlement cycle or cycles as it or they complete during the settlement day;
- EUI operates and maintains certain databases which form part of the 'RTGS Liquidity Management System' (and provides related services) which enable the RTGS settlement banks for sterling (and, in the case of the sterling Liquidity Position and DBV Liquidity Projection enquiries, the Bank of England as central bank) to make the liquidity enquiries described in Section 5 below;
- the amount of sterling liquidity which is used by an RTGS settlement bank in an RTGS currency during a CREST settlement cycle or cycles is controlled by the operation of that RTGS settlement bank's sterling Liquidity Memorandum Account (LMA) as described under the heading 'Sterling Liquidity Memorandum Accounts' below (and in Chapter 10, section 1 in respect of any disconnection period);
- the amount of sterling liquidity which the Bank of England makes available to an individual RTGS settlement bank or to the RTGS settlement banks collectively under the SB auto-

[14] EUI uses a main and standby network, and associated equipment and services, including the operation by EUI of procedures for encrypting and decrypting electronic messages sent to and received from the CREST LM system by means of these networks where the Bank's systems and the CREST LM system operate from different sites.

collateralisation arrangements is controlled by the operation of the relevant central bank repo limit (see Chapter 7, section 8 below); and

- EUI operates the procedures described in Chapter 10, section 1 under which:
    - it can operate the Sterling DvP Service in stand-by (contingency –disconnection period) mode; and
    - take action to correct any error caused by the entry into the CREST system of an uninitiated transaction.

EUI also makes available to the Bank of England 'stop settlement' functionality which enables the Bank to suspend settlement of transactions in the CREST system against sterling without any requirement for further co-operation or action from EUI. Under this functionality, the Bank can send a properly authenticated dematerialised 'stop settlement' message into the CREST system (utilising its GUI), which will cause a message immediately to be sent to the core processor stopping all further settlement of sterling transactions (including 'on us' transactions) while the 'stop settlement' functionality is operative. Settlement against sterling will only re-start in response to a further re-start properly authenticated dematerialised message sent into the CREST system by the Bank.

The 'stop settlement' functionality is intended to be used by the Bank of England in limited circumstances, being essentially a mechanism to control or mitigate risks or issues connected with operational error, events that threaten the stability or efficiency of the financial system or similar events that have systemic consequences for EUI or the Bank. EUI has put in place arrangements with the Bank with a view to minimising the duration of the interruption to CREST settlement resulting from the Bank's use of the 'stop settlement' functionality. However, EUI is not responsible for the manner or the circumstances in which the Bank may in fact use the 'stop settlement' functionality; and EUI does not accept responsibility to any participant or user to monitor the Bank's use of the functionality, or to monitor or enforce the Bank's compliance with the arrangements put in place with EUI to minimise the duration of the resulting interruption to CREST settlement.

Euro DvP Service: CREST services

The CREST services provided by EUI as part of the Euro DvP Service comprise services provided to the RTGS settlement banks under which:

- EUI uses a network and associated equipment and services[15] (the 'T2 link network') by means of which:
    (a) EUI sends open-daylight/close-daylightprocedure messages to the Ancillary System Interface ('ASI') requesting the opening or closure respectively of the daylight procedure;
    (b) EUI receives open-night-time-procedure messages from the ASI confirming the opening of the night-time procedure;
    (c) EUI sends close-night-time-procedure messages to the ASI requesting the closure of the night-time procedure;

[15] EUI uses a main and standby network, and associated equipment and services, including the operation by EUI of procedures for encrypting and decrypting electronic messages sent to and received from the CREST LM system by means of these networks where the ECB's systems and the CREST LM system operate from different sites.

(d) EUI sends start-of-cycle and end-of-cycle messages to the ASI indicating the start or end respectively of a Dedicated Liquidity Cycle Period;

(e) EUI receives from the ASI Liquidity Earmark Notifications;

(f) EUI sends to the ASI CREST Settlement Notifications; and

(g) EUI sends and receives electronic messages to and from the Information and Control Module.

- EUI operates procedures which enable it to calculate the items which are to be included in, and to prepare and send to the Ancillary System Interface, a CREST Settlement Notification at the end of each Dedicated Liquidity Cycle Period;
- EUI operates and maintains certain databases which form part of the 'RTGS Liquidity Management System' (and provides related services) which enable the RTGS settlement banks for euro (and, in the case of the euro Liquidity Position and euro DBV Liquidity Projection enquiries, the European Central Bank) to make the liquidity enquiries described in section 5 below;
- the amount of liquidity which is used by an RTGS settlement bank in euro during a Dedicated Liquidity Cycle Period is controlled by the operation of that RTGS settlement bank's euro Liquidity Memorandum Account (LMA) as described under the heading 'Euro Liquidity Memorandum Accounts' below;
- EUI operates the procedures described in Chapter 10, section 1 under which it may (a) operate the Euro DVP Service in stand-by (contingency) mode and (b) take action to correct any error caused by the entry into the CREST system of an uninitiated transaction; and
- EUI performs those other functions which Annex IV to the Guideline contemplates are to be performed by EUI as operator or manager of an ancillary system using settlement procedure 6 (dedicated liquidity and cross-system settlement) under an interfaced model.

DvP Service: RTGS Liquidity Management System

The CREST services referred to above (other than the 'stop settlement' functionality which is provided solely to the Bank of England and operates as part of the CREST relevant system) constitute the 'Liquidity Management Services'[16] provided by EUI to the RTGS settlement banks, being services which enable or facilitate each RTGS settlement bank to manage its liquidity in connection with the DvP Service.

As part of the Liquidity Management Services provided by it, EUI uses the services of a network provider for the Sterling DvP Service to send and receive electronic messages to and from the Bank of England's systems when the Bank's systems and the RTGS Liquidity Management System are operating from different sites. Under the Euro DvP Service, EUI uses the services of a network provider appointed by the European Central Bank to provide the T2 link network to send and receive electronic messages to and from the ASI (and the Information and Control Module). While EUI is responsible for entering into and keeping in force (and taking reasonable care to exercise its rights under) a contract with a relevant network provider to provide such network services to EUI,

[16] Some of the services provided by EUI as part of the procedures used by it to correct any error caused by the entry of an uninitiated transaction into the CREST system are provided as part of or in connection with the CREST relevant system. Such services are, to that extent, not provided as part of the Liquidity Management Services (which do not form part of the CREST relevant system).

EUI is not otherwise responsible for the network services provided to it by any such network provider.

Sterling DvP Service

Sterling DvP Service: auto–collateralisation arrangements

As part of the Sterling DvP Service, EUI also provides to CREST members (including settlement bank repo members and settlement bank linked members) and to the Bank of England the systems, procedures and related arrangements which comprise the 'auto-collateralisation arrangements' described in Chapter 7, section 8. EUI also provides certain services and systems to enable the Bank of England, as central bank, to view data held in the EUI systems relevant to the 'auto-collateralisation arrangements' and to amend those data.

Sterling DvP Service: Bank of England services

The services provided by the Bank of England as part of the Sterling DvP Service (and which are not EUI's responsibility) are described in the Bank's RTGS Reference Manual and are:

- the operation of the accounting and banking arrangements which comprise RTGS (including the RTGS Central Systems) for the settlement of settlement bank payment obligations in respect of RTGS payments and payments made by an RTGS settlement bank to the Bank of England under the auto-collateralisation arrangements, including:

(a) the operation of those arrangements under which funds credited to an RTGS settlement bank's Sterling CREST Minimum Balance Group ('MBG') are irrevocably appropriated ('earmarked') for the purpose of CREST settlement; and

(b) the operation of the contingency arrangements for the Sterling DvP Service, including accounting arrangements that facilitate the 'Top Up Procedures' and 'Draw Down Procedures' that operate under the Sterling DvP Service that are described in Chapter 10, section 1;

- the operation of systems and equipment described in the RTGS Reference Manual by means of which:

(a) the Bank sends Liquidity Earmark Notifications to the EUI-Bank link network;

(b) the Bank receives CREST Settlement Notifications from the EUI-Bank link network; and

(c) the Bank sends and receives 'heartbeat' and 'closedown' messages;

such systems and equipment, together with the RTGS Central Systems to the extent that they are operated by the Bank as part of the Sterling DvP Service, are the 'Bank's systems' for the purpose of this CREST Manual;

- the operation of procedures which enable it to calculate the items which are to be included in, and to prepare and send to EUI, a Liquidity Earmark Notification for sterling for any CREST settlement cycle;
- the provision and performance of the Bank of England's undertaking in support of inter-RTGS settlement bank payment finality in sterling upon the occurrence of a Payment Settlement Event, as described further in Section 6 below; and
- the services provided by the Bank of England as part of the auto-collateralisation arrangements, described further in Chapter 7, section 8.

In its provision of CREST services as part of the Sterling DvP Service, EUI relies upon information supplied to the CREST LM system or EUI by the Bank of England in the manner described in this section 4; and in Chapter 7, section 8 and in Chapter 10, section 1.

It is not EUI's responsibility to determine the terms or the legal basis upon which the Bank of England provides the services or performs the functions described above, which are matters solely for the Bank.

Sterling DvP Service: systems interface

The RTGS Liquidity Management System and the Bank's systems will communicate with each other during each settlement day for RTGS payments by using a sequentially numbered 'heartbeat' message. At the start of each such settlement day the first heartbeat message will establish that both systems are available and ready to begin operation. Following these initial heartbeat messages, the Bank will send the first Liquidity Earmark Notifications to the EUI-Bank link network.

Sterling DVP Service: closedown message

At the time indicated in the daily timetable (following the end of gilts free of payment deadline), the RTGS Liquidity Management System flags the last CREST Settlement Notification sent to the Bank's systems under the Sterling DvP Service indicating that the RTGS Liquidity Management System is ready to close. Once the flagged CREST Settlement Notification is received by the Bank's systems, the Bank's systems may respond in one of two ways depending on the position of the 'end of day unwind' process which forms part of the auto-collateralisation arrangements. If the Bank's systems are not ready to close, then Liquidity Earmark Notifications may continue to be sent to, and received by, the RTGS Liquidity Management System under the Sterling DvP Service; and, if so, the 'end of day unwind' process continues to operate and CREST Settlement Notifications are sent to, and received by, the Bank's systems (and each such Notification indicates that the RTGS Liquidity Management System is ready to close). Once the Bank's systems are ready to close, they generate a closedown message and send that message to the RTGS Liquidity Management System. On receiving the closedown message, CREST settlement under the 'end of day unwind' process ceases.

Euro DvP service

Euro DvP service: ECB ASCB services

The ECB performs its functions under the Euro DvP Service in its capacity as the 'Ancillary System Central Bank (ASCB)' to the CREST system (as an ancillary system). These 'ECB ASCB Services' are provided to EUI (as operator or manager of an ancillary system), and not to the RTGS settlement banks or any other CREST participant (to whom the ECB accepts no responsibility in relation to the ECB ASCB Services).

EUI does not accept any responsibility for the performance by the ECB of the ECB ASCB Services (save to the extent expressly accepted by EUI in its contracts with the RTGS settlement banks for euro in respect of the ECB's performance of its obligations under the ECB Guarantee).

The ECB ASCB Services comprise:

- the provision and performance of the ECB Guarantee;
- those services and/or procedures which Annex IV to the Guideline contemplates are to be provided by the ECB as an ancillary system central bank (ASCB) to or for the benefit of EUI as

operator or manager of an ancillary system (AS) using settlement procedure 6 (dedicated liquidity and cross-system settlement) under an interfaced model;

- those functions to be performed by the ECB as part of the contingency procedures described in Chapter 10, section 1 below, including the sending of electronic messages on behalf of EUI to TARGET2 through the Information and Control Module or any other mechanism agreed with EUI; and
- certain contractual undertakings assumed by the ECB in favour of EUI in relation to the performance (a) by the ECB (or other Eurosystem central banks) of the functions of a 'settlement central bank (SCB)' under Annex IV to the Guideline; and (b) by certain Eurosystem central banks as 'SSP-providing NCBs' under the contract between the Eurosystem CBs, any relevant connected NCBs (in each case within the meaning of the Guideline) and the SSP-providing NCBs which is contemplated by Article 7(6) of the Guideline.

In its provision of CREST services as part of the Euro DvP Service, EUI relies upon information supplied to EUI through the T2 link network in the manner described in this section 4.

EUI is not responsible for any systems, procedures or facilities provided or operated by any other Eurosystem central bank as part of or in connection with the Euro DvP Service.

Euro DvP Service: Information and Control Module (ICM)

The ICM is a tool available to participants in TARGET2 and provides access to certain information. It provides EUI as operator or manager of an ancillary system with visibility of the following:

- TARGET2 broadcast messages;
- Static data, for example, settlement banks' BICs in the TARGET2 directory;
- The status of messages sent between the CREST system (as an ancillary system) and the Ancillary System Interface;
- The balances on the PM Sub-Accounts used for settlement in the CREST system (as an ancillary system), including any debits or credits;

and it is possible to open/close the daylight procedure and stop/start a Dedicated Liquidity Cycle Period via the ICM.

To the extent the ICM is used or is to be used by EUI as an ancillary system or as part of the contingency procedures for the Euro DvP Service as described in Chapter 10, section 1 below, it is used by EUI as part of the CREST services provided by EUI under the Euro DvP Service.

To the extent that the ICM is a tool which is to be made available to an ancillary system under or as contemplated by Annex IV to the Guideline, its maintenance, operation and provision to EUI forms part of the ECB ASCB Services provided by the ECB to EUI under and in accordance with, and subject to the limitations set out in, the contract between them. To the extent that the ICM is a tool to be used by the ECB as part of the functions to be performed by it under the contingency procedures for the Euro DvP Service as described in Chapter 10, section 1, it is used by the ECB as part of the ECB ASCB Services provided by it to EUI.

Euro DvP Service: systems interface

EUI's communication with TARGET2 (in relation to the CREST system as an ancillary system) is via the ASI or ICM using TARGET2 XML messages over the SWIFT network forming part of the 'T2 link

network'. The RTGS Liquidity Management System and the ASI communicate with each other during each settlement day using messages with message references that are unique to the sending ancillary system.

Under the Euro DvP Service, EUI has no responsibility for electronic messages sent from or through the T2 link network to the ASI or the Information and Control Module(ICM) after the messages leave the T2 link network or for electronic messages sent from or through ASI or (as the case may be) the ICM to the T2 link network until they reach the T2 link network.

Euro DvP Service: start of settlement day – daylight procedure

At the time indicated in the daily timetable, the 'start euro day' diary event is run. This diary event triggers the RTGS Liquidity Management System to send an open-daylight-procedure message to the ASI to request the opening of the euro daylight procedure for the current business day. The ASI sends a message back to confirm the opening of the euro daylight procedure. When the ASI receives this message, it will trigger the execution of the RTGS settlement banks' (and/or their agents') standing orders to debit the relevant PM Account and credit the PM Sub-Account held by or for each RTGS settlement bank which is dedicated for euro settlement in the CREST system (as an ancillary system).

Once the euro daylight procedure has been opened, the RTGS Liquidity Management System sends a start-of-cycle message to the ASI indicating the start of the first Dedicated Liquidity Cycle Period (see 'DvP Service: CREST settlement cycles and liquidity cycles' for more detail) of the day. When the ASI receives this message, the balance (if any) on a RTGS settlement bank's PM Sub-Account is frozen (i.e. irrevocably appropriated) to complete settlement of the net (net) debit position of that RTGS settlement bank in respect of CREST payments made to and by CREST members (for whom that RTGS settlement banks acts) during the related Dedicated Liquidity Cycle Period – and as notified by EUI in the CREST Settlement Notification for that Dedicated Liquidity Cycle Period which is sent to the ASI. The amount of the funds so frozen for each RTGS settlement bank at the start of a Dedicated Liquidity Cycle Period is notified to EUI through the ASI by way of a Liquidity Earmark Notification (see further below under 'Euro Liquidity Earmark Notifications').

Each Dedicated Liquidity Cycle Period which operates during the settlement day commences with the sending of a start-of-cycle message by EUI to the ASI. Each such Dedicated Liquidity Cycle Period ends when the RTGS Liquidity Management System sends (or is treated as sending) an end-of-cycle message to the ASI indicating the end of the related Dedicated Liquidity Cycle Period. This end-of-cycle message will not be sent, in the normal course, unless and until EUI has received confirmation from the ASI that the net (net) position of each RTGS settlement bank has been debited or (as the case may be) credited to its PM Sub-Account in TARGET2 in response to the CREST Settlement Notification sent by or on behalf of EUI for that Dedicated Liquidity Cycle Period.

Euro DvP Service: end of settlement day- daylight procedure

At the time indicated in the daily timetable, the 'euro payments deadline' diary event will be run. After this diary event has been actioned, the RTGS Liquidity Management System will not allow any further changes, updates or deletions to be made to the information held within the system. This diary event triggers the closure of the last Dedicated Liquidity Cycle Period for that settlement day. Once confirmation is received from the ASI that the euro liquidity transfers have been successfully processed in response to the CREST Settlement Notification sent by EUI in respect of that Dedicated Liquidity Cycle Period, the RTGS Liquidity Management System sends the ASI a message

advising closure of the daylight procedure which ends the last Dedicated Liquidity Cycle Period (and, therefore, an end-of-cycle message is treated as having been sent to TARGET2 for that Dedicated Liquidity Cycle Period). If the request to close the daylight procedure is processed successfully by the ASI, liquidity held in the PM Sub-Accounts by or for the RTGS settlement banks is transferred back to the relevant PM Accounts held by or for the RTGS settlement banks and the ASI sends a close-daylight procedure message to confirm closure of the euro daylight procedure for the current settlement day.

If closure of the last Dedicated Liquidity Cycle Period or the closure of the daylight procedure is not successful, contingency procedures may need to be invoked for the Euro DvP Service (see Chapter 10, section1).

Euro DvP Service: night time procedure

At the start of the new business day in TARGET2 (which is usually confirmed between 18:30 and 18:45 London time) on the evening prior to the new settlement day, the ASI sends an open-night-time-procedure message to the RTGS Liquidity Management System (as an ancillary system) confirming the opening of the night time procedure. The Euro DvP Service does not utilise the night-time-procedure to settle transactions in euro. Therefore the RTGS Liquidity Management System closes this procedure by sending a close-night-time-procedure message to the ASI. This will take place before the daylight procedure for the new settlement day is opened.

DvP Service: CREST settlement cycles and liquidity cycles

EUI sets a time period during which liquidity, which has been irrevocably appropriated for CREST settlement at a central bank may be utilised for the purposes of CREST settlement upon the occurrence of or otherwise in connection with Inter-Bank Settlement Events.

For the Sterling DvP Service, the duration of a settlement cycle corresponds to the period of the relevant 'liquidity cycle' set by EUI. This is a 'CREST settlement cycle' referred to in this CREST Reference Manual, CREST Rule 13 and in the contracts between EUI and (1) the Bank of England and/or (2) the CREST settlement banks.

A euro liquidity cycle in the Euro DvP Service is longer in duration than a sterling CREST settlement cycle, with a euro liquidity cycle comprising a number of CREST settlement cycles. A euro liquidity cycle is referred to as a 'Dedicated Liquidity Cycle Period' in this CREST Reference Manual, CREST Rule 13 and in the contracts between EUI and the CREST settlement banks. Until the end of a Dedicated Liquidity Cycle Period, the RTGS Liquidity Management System recycles the euro liquidity earmarked amount, updating the euro Liquidity Memorandum Account for each RTGS settlement bank at the end of each CREST settlement cycle.

During normal operation for the Sterling DvP Service, the time periods set by EUI for each CREST settlement cycle have two values: a standard duration for most of the settlement day; and a longer duration during peak settlement, which in either case aims to maximise settlement performance in the CREST system. Different values may be set by EUI during a 'disconnection period', e.g. when the EUI systems are operating in 'recycle mode' under the contingency procedures for the Sterling DvP Service (see Chapter 10, section 1).

The steps that are taken by the RTGS Liquidity Management System at the end of a CREST settlement cycle differ as between sterling and euro.

Under the Sterling DvP Service, the RTGS Liquidity Management System sends a CREST Settlement Notification back to the Bank of England as described further below under 'CREST Settlement Notifications for Sterling' and re-sets each RTGS settlement bank's sterling LMA to zero prior to receipt of the Liquidity Earmark Notification from the Bank for the next CREST settlement cycle.

Under the Euro DvP Service, a CREST Settlement Notification is only sent back to the ASI (or otherwise to TARGET2 under the contingency procedures for the Euro DvP Service as described in Chapter 10, section 1) at the end of the related Dedicated Liquidity Cycle Period as described further below under 'CREST Settlement Notifications', and EUI resets each RTGS settlement bank's euro Liquidity Memorandum Account to zero prior to receipt of the Liquidity Earmark Notification from the ASI for the next Dedicated Liquidity Cycle Period.

DvP Service: Liquidity Earmark Notifications

Sterling Liquidity Earmark Notifications

Before the commencement of any CREST settlement cycle, the Bank of England is required to send to EUI a Liquidity Earmark Notification in respect of sterling.

This sterling Liquidity Earmark Notification will contain the details of the sterling amount (the 'liquidity earmarked amount') which, in accordance with the arrangements described in section 6 below, has been irrevocably appropriated in each RTGS settlement bank's Sterling CREST MBG for the purpose of completing payments in respect of:

- its settlement bank payment obligations in sterling to other RTGS settlement banks; or
- its payment obligations to the Bank of England which are to be settled under the auto-collateralisation arrangements through the RTGS settlement bank's settlement bank repo member (and settlement bank linked member(s)) as described in Chapter 7, section 8,

in either case during the relevant CREST settlement cycle.

Euro Liquidity Earmark Notifications

Under the Euro DvP Service, the RTGS Liquidity Management System initiates the start of a Dedicated Liquidity Cycle Period (by sending a start-of-cycle message to the ASI), which triggers the sending of a Liquidity Earmark Notification from the ASI containing the details of the euro amount which, in accordance with the arrangements described in section 6 below, has been irrevocably appropriated in each RTGS settlement bank's PM Sub-Account for the purpose of completing payments in euro to be made by that RTGS settlement bank at the end of that Dedicated Liquidity Cycle Period.

If, after the commencement of a Dedicated Liquidity Cycle Period, an RTGS settlement bank for euro wishes to top-up the amount of its euro funds that have been irrevocably appropriated for the purposes of CREST settlement, it must follow the Top-Up Procedures for the Euro DvP Service – see below under the heading 'Euro DvP Service: Top-Up Procedures'. Once a Dedicated Liquidity Cycle Period has started, it is not possible for an RTGS settlement bank to draw down the amount of euro funds that have been irrevocably appropriated for the purposes of CREST settlement until that Dedicated Liquidity Cycle Period has ended.

DvP Service: Liquidity Memorandum Accounts (LMAs)

The LMAs form part of the RTGS Liquidity Management System. A separate LMA for each RTGS currency is operated for each RTGS settlement bank which provides CREST payment facilities in that RTGS currency.

Sterling Liquidity Memorandum Accounts

Prior to the beginning of each CREST settlement cycle, the balance on each RTGS settlement bank's sterling LMA is re-set to zero. Upon receipt of the Liquidity Earmark Notification in respect of sterling the RTGS Liquidity Management System records the details of the liquidity earmarked amount on each RTGS settlement bank's sterling LMA. The RTGS settlement bank will not be able to amend the balance once recorded in respect of the relevant CREST settlement cycle[17].

During the CREST settlement cycle, all transactions of a CREST member which impact sterling liquidity are queued against the sterling LMA of the CREST member's RTGS settlement bank. The liquidity queue may contain transactions from all the members for whom the settlement bank acts in that currency. Liquidity is allocated to the transactions of the CREST members according to a central algorithm. The operation of this algorithm is described in Chapter 4, section 10. Only those transactions which, in accordance with the order of priority of the liquidity queue, would not cause the balance on the relevant RTGS settlement bank's LMA to go into debit, may proceed to settlement in the CREST system - resulting in the posting of the corresponding debits and credits to the relevant stock accounts and CMAs in the CREST system.

The amount which is actually applied against an RTGS settlement bank's sterling LMA in respect of any relevant transaction in accordance with the liquidity queue is:

(a) unless the transaction falls with any of paragraphs (b) - (d) below, the amount to be debited or credited to the CMA of the RTGS settlement bank's member-customer in accordance with the instruction for the relevant transaction (but excluding 'on us' payments, where the RTGS settlement bank acts for both the paying and the payee member, which do not use sterling liquidity held at the Bank of England);

(b) in respect of a transaction which is eligible for settlement under the auto-collateralisation arrangements, the net amount which results from the following:

(i) the amount to be debited to the member-customer's CMA under the transaction (but excluding 'on us' payments, where the RTGS settlement bank acts for both the paying and the payee member, which do not use sterling liquidity held at the Bank of England), less

(ii) the amount to be credited, if any, by way of purchase price (in respect of either on flow or on stock auto-collateralisation) to the Sterling CREST MBG of the RTGS settlement bank acting for the member under the auto-collateralisation arrangements;

(c) in respect of an SCR transaction under which the settlement bank repo member (or settlement bank linked member) is the transferee and the Bank of England repo member is the transferor, and which is settled otherwise than under the 'end of day unwind' process which forms

[17] However, amendment functions are available during a disconnection period under the Top Up Procedures and Draw Down Procedures that operate under the contingency procedures for the Sterling DvP Service described in Chapter 10, section 1.

part of the auto-collateralisation arrangements (i.e. in connection with a sale during the settlement day by the repoing member), the net amount which results from the following:

(i) the amount to be debited by way of repurchase price to the member's RTGS settlement bank's Sterling CREST MBG under the auto-collateralisation arrangements; less

(ii) the amount to be credited, if any, to the RTGS settlement bank's member-customer's sterling CMA under the related transaction for the sale of the repo stock by that member-customer (but excluding 'on us' payments, where the RTGS settlement bank acts for both the paying and the payee member, which do not use sterling liquidity held at the Bank of England); less

(iii) the amount to be credited, if any, by way of purchase price to the Sterling CREST MBG of the RTGS settlement bank acting for the member under the auto-collateralisation arrangements (in respect of any on stock auto-collateralisation under the automated substitution process);

(d) in respect of an SCR transaction which is settled under the 'end of day unwind' process, the amount to be debited by way of repurchase price to the member's RTGS settlement bank's Sterling CREST MBG under the auto-collateralisation arrangements.

Euro Liquidity Memorandum Accounts

Prior to the beginning of each Dedicated Liquidity Cycle Period, the balance on each RTGS settlement bank's euro Liquidity Memorandum Account is re-set to zero. Upon receipt of the Liquidity Earmark Notification in respect of euro from the ASI, the RTGS Liquidity Management System records the details of the liquidity earmarked amount on each RTGS settlement bank's euro Liquidity Memorandum Account. The RTGS settlement bank is only able to amend the balance once recorded in respect of the Dedicated Liquidity Cycle Period in accordance with the Top-Up Procedures (see further below). Until the end of the Dedicated Liquidity Cycle Period, the RTGS Liquidity Management System recycles the euro liquidity earmarked amount and at the end of each CREST settlement cycle, if the end of the Dedicated Liquidity Cycle Period has not been reached, the euro Liquidity Memorandum Account will be adjusted to reflect the figures from the previous CREST settlement cycle. The balance on an RTGS settlement bank's euro Liquidity Memorandum Account at the start of each subsequent CREST settlement cycle until the end of the Dedicated Liquidity Cycle Period will be the sum produced by the formula:

$$(A + B + C) - D,$$

where

A is the balance on the RTGS settlement bank's euro LMA at the start of the immediately preceding CREST settlement cycle;

B is the aggregate amount of the euro funds added to the RTGS settlement bank's Liquidity Memorandum Account in respect of the settlement cycle under the Top-Up Procedures (see further below);

C is the aggregate amount of euro CREST payments made to the RTGS settlement bank (for the account of its customers) during the immediately preceding CREST settlement cycle;

D is the aggregate amount of euro CREST payments made by the RTGS settlement bank (for the account of its customers) during the immediately preceding CREST settlement cycle.

As the auto-collateralisation arrangements do not operate under the Euro DvP Service, no relevant amount under those arrangements is applied or queued against a euro LMA.

Save as described above, the queuing and application procedures that operate for sterling LMAs operate in the same way for euro LMAs so as to prevent CREST settlement against euro that would otherwise cause the balance on a settlement bank's LMA to go into debit.

Euro DvP Service: Top-Up Procedures

Once a Dedicated Liquidity Cycle Period has commenced, an RTGS settlement bank may top-up the amount of its dedicated euro liquidity by using the Top-Up Procedures that operate as part of the Euro DvP Service.

Under these Top-Up Procedures, an RTGS settlement bank (or its agent) may send a "highly urgent" MT202 instruction to its Eurosystem central bank to transfer euro funds from its PM Account to the relevant PM Sub-Account in TARGET2 (for the purpose of earmarking those additional funds for CREST settlement). Upon receipt of the relevant euro funds into the PM Sub-Account, the ASI will notify the RTGS Liquidity Management System of the amount of the top-up payment. Upon receipt of such notification, the RTGS Liquidity Management System will credit the amount of the top-up payment to the RTGS settlement bank's euro LMA at the commencement of the next CREST settlement cycle.

DvP Service: CREST Settlement Notifications

EUI sends to the Bank of England (under the Sterling DvP Service) and to the ASI (under the Euro DvP Service) a CREST Settlement Notification that summarises, for each RTGS settlement bank, its CREST payment activity in the relevant RTGS currency.

In the Sterling DvP Service, EUI sends a CREST Settlement Notification to the Bank of England upon completion of each CREST settlement cycle. Under the Euro DvP Service (which provides for the re-cycling of euro liquidity within a Dedicated Liquidity Cycle Period) EUI sends a CREST Settlement Notification to the ASI (or otherwise to TARGET2 under the contingency procedures for the Euro DvP Service as described in Chapter 10, section 1) at the end of each Dedicated Liquidity Cycle Period.

CREST Settlement Notifications for sterling

Under the Sterling DvP Service, having completed a CREST settlement cycle, the RTGS Liquidity Management System will generate a CREST Settlement Notification which is sent to the Bank's systems by means of the EUI-Bank link network.

The CREST Settlement Notification confirms for each RTGS settlement bank its sterling liquidity earmarked amount in each RTGS currency notified to the RTGS Liquidity Management System under the related Liquidity Earmark Notification; and in addition in relation to each RTGS settlement bank in respect of the completed CREST settlement cycle, it provides details of:

- the aggregate amount of the sterling payments made in each RTGS currency during that CREST settlement cycle by that RTGS settlement bank to another RTGS settlement bank, upon the occurrence of an Inter-Bank Settlement Event in accordance with CREST Rule 17;
- the aggregate amount of the sterling payments made in each RTGS currency during that CREST settlement cycle to that RTGS settlement bank, by another RTGS settlement bank, upon the occurrence of an Inter-Bank Settlement Event in accordance with CREST Rule 17;

- the aggregate amount of the payments made in sterling by that RTGS settlement bank to the Bank of England by way of repurchase price made by way of system-transfer during that CREST settlement cycle under the SB auto-collateralisation arrangements, as calculated in accordance with the procedures described in Chapter 7, section 8[18]; and
- the aggregate amount of the payments made in sterling by the Bank of England to that RTGS settlement bank by way of purchase price made by way of system-transfer during that CREST settlement cycle under the SB auto-collateralisation arrangements, as calculated in accordance with the procedures described in Chapter 7, section 8.

The Bank of England has procedures in place, as part of the Sterling DvP Service, under which it is authorised to use the CREST Settlement Notification to update the balances on each RTGS settlement bank's Sterling CREST MBG in accordance with its agreement with that RTGS settlement bank.

At the end of each CREST settlement cycle period, the balances on each sterling LMA are re-set to zero ahead of the start of the next CREST settlement cycle.

CREST Settlement Notifications for euro

Under the Euro DvP Service, prior to the end of a Dedicated Liquidity Cycle Period, the RTGS Liquidity Management System will send a CREST Settlement Notification to the ASI if any liquidity transfers are required between RTGS settlement banks as a result of settlement activity during that Dedicated Liquidity Cycle Period.

The CREST Settlement Notification for euro advises the net (net) amount of euro CREST payments made during the Dedicated Liquidity Cycle Period by or to an RTGS settlement bank (for the account of its customers) upon the occurrence of an Inter-Bank Settlement Event in accordance with CREST Rule 17. A CREST Settlement Notification will only be sent by the RTGS Liquidity Management System if the net (net) amount of the inter-settlement bank payment obligations arising for an RTGS settlement bank is respect of Inter-Bank Settlement Events occurring during the related Dedicated Liquidity Cycle Period is positive (for a 'long settlement bank') or negative (for a 'short settlement bank'). The CREST Settlement Notification instructs the credit of a positive amount to the PM Sub-Account of a long settlement bank; and instructs the debit of a negative amount to the PM Sub-Account of a short settlement bank.

At the end of each Dedicated Liquidity Cycle Period, the balances on each euro LMA are re-set to zero prior to the start of the next Dedicated Liquidity Cycle Period.

Sterling DvP Service: Disconnection period

In respect of a disconnection period (i.e. when the Sterling DvP Service is operating in contingency mode), the procedures relating to:

- the sending and content of Liquidity Earmark Notifications;
- the operation of the LMAs; and
- the Top-Up and Draw-Down procedures that operate as part of the Sterling DvP Service.

are or may be modified in the manner described in Chapter 10, section 1.

[18] Any repurchase price paid by the RTGS settlement bank under the third phase of the 'end of day unwind' process described in Chapter 7, section 8 is not included in the CREST Settlement Notification.

Euro DvP Service: contingency procedures

Similarly, when the Euro DvP Service is operating in contingency mode, the procedures relating to:

- the top-up and withdrawal of euro funds in an RTGS settlement bank's PM Sub-Account;
- the sending of CREST Settlement Notifications; and
- the sending of end-of-cycle messages,

are or may be modified in the manner described in Chapter 10, section 1.

Section 4A: US dollar payments mechanism

Introduction

The US dollar payments mechanism described in this section enables:

- CREST members to make US dollar payments by means of the CREST system; and
- the resulting settlement bank payment obligations, denominated in US dollars and arising between USD settlement banks, to be settled in central bank money by way of end-of-day multilateral net settlement in the National Settlement Service (***NSS***) of the US Federal Reserve System.

Each USD settlement bank must act as or appoint an NSS participating bank (referred to in the NSS as a ***Settler***) to make and received US dollar payments in the NSS on its behalf. The Settlers have access to the CREST system and when doing so are referred to as ***NSS settlement participants*** (referred to in the CREST system as 'correspondent banks', although they may be the same entity as the CREST settlement bank).

EUI acts as NSS settlement agent to instruct payments on behalf of Settlers in the NSS.

Inter-bank payments are backed by sterling central bank money pre-funding made by USD settlement banks into a Trust Account held by EUI at the Bank of England. Following successful end of day settlement in the NSS, these pre-funding amounts are returned to the USD settlement banks.

Participants and relationships

EUI Trust Fund participant

EUI will maintain and operate a CREST member that will receive and make CREST sterling payments in respect of payments into and out of the Trust Account (as detailed below under 'Sterling pre-funding'). This EUI Trust Fund participant will have a sterling CMA and the Bank of England will act as its CREST settlement bank.

USD settlement banks and pre-funding participants

Each USD settlement bank must appoint one CREST member to act as its pre-funding participant (referred to in the CREST system as a 'funding participant'). The pre-funding participant will make and receive CREST sterling payments (to and from the EUI Trust Fund participant) on behalf of the USD settlement bank in respect of payments into and out of the Trust Account (as detailed below under 'Sterling pre-funding'). Each pre-funding participant may only act in respect of one USD settlement bank.

The identity of the pre-funding participant (and any subsequent requests to change the pre-funding participant) must be notified by the USD settlement bank to EUI. Following the update of the relevant information in the CREST system the relationship with a new pre-funding participant will take effect on the next business day.

The pre-funding participant must be the same legal entity as the USD settlement bank, must have a sterling CMA with any settlement bank and must have a US dollar CMA with the USD settlement bank for which it is the pre-funding participant. The pre-funding participant cannot be deleted or transferred to a different user.

The CREST services provided by EUI as part of the US dollar payments mechanism comprise services provided to the USD settlement banks under which:

- EUI uses a network and associated equipment and services[19] (the ***NSS link network***) by means of which:
    - EUI sends Settlement Files to the NSS;
    - EUI sends and receives other electronic messages to and from the NSS;
- EUI operates procedures which enable it to calculate the items which are to be included in, and to prepare and send to the NSS, a Settlement File at the end of each settlement day;
- EUI operates and maintains certain databases which form part of the 'US Dollar LMS' (and provides related services) which enable the USD settlement banks and NSS settlement participants to make the liquidity enquiries;
- the purchasing power (which may be referred to as 'liquidity') of a USD settlement bank in US dollars is controlled by the operation of that USD settlement bank's Payments Memorandum Account (PMA) as described under the heading 'Payments Memorandum Accounts' below;
- EUI operates the procedures described in Chapter 10, section 1 under which it may take action to correct any error caused by the entry into the CREST system of an uninitiated transaction; and
- EUI performs those other functions which the NSS Operating Circular contemplates are to be performed by EUI as an NSS settlement agent.

The CREST services referred to above constitute the 'Liquidity Management Services'[20] provided by EUI to the USD settlement banks, being services which enable or facilitate each USD settlement bank to manage its purchasing power in relation to US dollar settlement (which may be referred to as USD liquidity).

Settlers and NSS settlement participants

A Settler is an entity which:

- maintains an account with a Federal Reserve Bank;
- is permitted by that Federal Reserve Bank to settle through the NSS the balance(s) specified in a Settlement File (see further below) as payable by or to the Settler; and
- agrees to settle through the NSS the multilateral net amount that is due to or from one or more USD settlement banks in respect of CREST payments denominated in US dollars made and received for the account of members in connection with a settlement day (as represented by the relevant balance specified in the related Settlement File).

A Settler includes a USD settlement bank when performing the functions of a Settler in relation to itself (alternatively the Settler may be a related group company or a third party correspondent bank). Each Settler must authorise EUI to act as Settlement Agent on its behalf in accordance with

[19] EUI uses a main and standby network, and associated equipment and services, including the operation by EUI of procedures for encrypting and decrypting electronic messages sent to and received from the US Dollar LMS.

[20] Some of the services provided by EUI as part of the procedures used by it to correct any error caused by the entry of an uninitiated transaction into the CREST system are provided as part of or in connection with the CREST relevant system. Such services are, to that extent, not provided as part of the Liquidity Management Services (which do not form part of the CREST relevant system).

the NSS Operating Circular. When accessing the CREST system and CREST services, a Settler is referred to as an ***NSS settlement participant***.

Each USD settlement bank must appoint one NSS settlement participant to act on its behalf in the CREST system. The NSS settlement participant may accept and activate the appointment in the CREST system. Each NSS settlement participant may act on behalf of one or more USD settlement banks. Both the USD settlement bank or the NSS settlement participant may deactivate the appointment at any time.

The NSS settlement participant must notify in the CREST system a limit (an ***NSS settlement participant limit***) in respect of each USD settlement bank it acts on behalf of. The NSS settlement participant limit indicates the maximum debit amount it may be willing to settle in the NSS on behalf of the relevant USD settlement bank. The NSS settlement participant limit will operate as part of the Liquidity Use Limit for the USD settlement bank (see further below).

The NSS settlement participant may update in the CREST system the NSS settlement participant limit at any time, and the new limit takes effect at the start of the next CREST settlement cycle. If the limit is zero, in each settlement cycle the relevant USD settlement bank will only be able to settle transactions resulting in a net credit position or 'on us' transactions (ie where the same settlement bank participant acts for both members) in US dollars.

During each settlement day NSS settlement participants are able to enquire in the CREST system on the current multilateral net amount payable to or from each USD settlement bank they act for.

At the end of US dollar settlement in the CREST system, final multilateral net amounts payable to or from each USD settlement bank will be available to their NSS settlement participant. Each NSS settlement participant must confirm in the CREST system its consent to EUI sending a Settlement File to the NSS with payment instructions relating to them as a Settler for one or more USD settlement banks. Each NSS settlement participant may optionally indicate in the CREST system that its consent is given by default, thereby removing the need for it to give its consent each day.

Each NSS settlement participant must notify EUI immediately if it decides during the day that it will not settle through the NSS the multilateral net amount due to or from one or more USD settlement banks they act for.

Each NSS settlement participant may also opt to receive a file from the CREST system containing details of the debit or credit amount(s) specified in a Settlement File as payable by or to the Settler in the NSS.

The ***NSS CREST services*** provided by EUI as part of the US dollar payments mechanism comprise services provided to or for NSS settlement participants to enable or facilitate the performance of their functions as a Settler in relation to one or more USD settlement banks under which an NSS settlement participant may:

- activate and deactivate relationships with USD settlement banks;
- make enquiries regarding the current multilateral net amount(s) payable to or by each USD settlement bank with which it has a relationship;
- confirm its consent to EUI sending a Settlement File to the NSS with payment instructions relating to them as a Settler for one or more USD settlement banks;

- permit a Federal Reserve Bank to settle through the NSS the balance(s) specified in a Settlement File as payable by or to the Settler;
- receive a file from the CREST system containing details of the debit or credit amount(s) specified in a Settlement File as payable by or to the Settler; and
- agree (or not agree) to settle through the NSS the multilateral net amount that is due to or from one or more USD settlement banks in respect of CREST payments denominated in US dollars made and received for the account of members in connection with a settlement day (as represented by the relevant balance specified in the related Settlement File).

The NSS CREST services are provided by EUI as NSS settlement agent on and subject to the terms of the NSS Operating Circular. The USD Settlement Banks and NSS settlement participants shall:

- be bound by the NSS Operating Circular;
- not do or omit to do anything that is inconsistent with the terms of the NSS Operating Circular or which may cause EUI to be in breach of the terms of the NSS Operating Circular; and
- not prevent or otherwise interefere with the performance by EUI of its functions as a Settlement Agent in accordance with the terms of the NSS Operating Circular.

Sterling pre-funding

As noted above, US dollar payment obligations of each USD settlement bank are backed by sterling central bank money pre-funding made by USD settlement banks into a Trust Account held by EUI at the Bank of England. The US dollar equivalent of the sterling pre-funding (the ***Pre-Funded USD Amount***) will operate as part of the Liquidity Use Limit for the USD settlement bank (see further below).

Trust fund and accounts

In connection with the US dollar payments mechanism, EUI maintains in the name of its nominee a separate designated sterling account (the ***EUI Trust Account***) at the Bank of England to:

- receive and hold pre-funding payments from the USD settlement banks;
- facilitate top-up and draw-down payments by any USD settlement bank; and
- pay distributions to a USD settlement bank's Relevant Settlement Account,
- in each case on and subject to the terms of the Trust Deed.

A sterling settlement account (a ***Relevant Settlement Account***, which will be constituted by each USD settlement bank's standard CREST accounts with the Bank of England) must be maintained by each USD settlement bank with the Bank of England for the purpose of:

- making pre-funding payments to the EUI Trust Account;
- facilitating top-up and draw-down payments; and
- receiving Distribution Entitlement Amounts from the EUI Trust Account.

EUI will hold the sterling pre-funding on trust for the USD settlement banks in accordance with the terms of the Trust Deed. The Trust Fund comprises the aggregate sterling credit balance held at any time in respect of a settlement day in the EUI Trust Account.

As part of the US Dollar LMS, EUI maintains records (the ***Trust Entitlement Record***) to evidence each USD settlement bank's:

- Pre-Distribution Entitlement Amount at any time during or in respect of a settlement day; and
- Distribution Entitlement Amount in respect of a settlement day.

As the US dollar payments mechanism is backed by sterling pre-funding, US dollar settlement is not possible on days that are designated in the CREST system as sterling holidays (in addition to days which are designated as US dollars holidays).

Start of day

Pre-funding participants will be able to instruct the CREST system in advance to generate automatically daily pre-funding payment transactions at a pre-defined value. This pre-defined value may be changed at any time by the pre-funding participant and changes will take effect the next day.

The pre-funding payment (PFP) transactions will be generated overnight to settle at high priority at the start of the next settlement day. The transaction makes a sterling pre-funding payment to the EUI Trust Fund participant in the CREST system.

Top-ups and draw-downs

After making its initial pre-funding payment, a USD settlement bank may:

- top-up the amount of its pre-funding by using the US Dollar Top-Up Procedures; and
- draw-down some or all of the amount of its pre-funding by using the US Dollar Draw-Down Procedures.

Under the US Dollar Top-Up Procedures, a USD settlement bank may pay sterling funds from its Relevant Settlement Account for credit to the EUI Trust Account during a settlement day by its pre-funding participant specifying the amount of sterling funds to be added. The CREST system will generate a pre-funding payment (PFP) transaction to transfer sterling funds to the EUI Trust Fund Participant.

Under the US Dollar Draw-Down Procedures, a USD settlement bank may withdraw sterling funds from the EUI Trust Account for credit to its Relevant Settlement Account during a settlement day by its pre-funding participant specifying the amount of sterling funds to be withdrawn. The CREST system will generate a pre-funding payment (PFP) transaction to withdraw sterling funds from the EUI Trust Fund Participant. The pre-funding transaction will not settle if it would cause the US dollar equivalent of the sterling pre-funding to be less than the current net US dollar obligations of that USD settlement bank.

Pre-Funded USD Amount

The US Dollar LMS will calculate the US dollar equivalent of the current value of sterling pre-funding (the ***Pre-Funded USD Amount***) for each USD settlement bank, after applying an exchange rate and haircut.

The exchange rate applied will be derived from the previous day's closing EUR:GBP and EUR:USD exchange rates as described in Chapter 1, section 3.

An appropriate haircut will be applied to cover potential fluctuations in the daily exchange rate between US dollars and sterling. The haircut is currently 7%. The haircut may be varied by EUI

from time to time, for example in a time of general higher market volatility or if a known market event is likely to cause such volatility.

Entitlements from the Trust Fund

In the course of any settlement day, the sterling amount of a USD settlement bank's entitlement in relation to the Trust Fund (its ***Pre-Distribution Entitlement Amount***), as determined in accordance with Part V of the Trust Deed and evidenced by the Trust Entitlement Record, will be:

- the amount of sterling funds transferred by the USD settlement bank and credited to the EUI Trust Account immediately prior to the start of the settlement day;
- plus the amount of sterling funds transferred by the USD settlement bank and credited to the EUI Trust Account during the settlement day under the USD Top-Up Procedures;
- minus the amount of sterling funds withdrawn by or otherwise returned to the USD Settlement Bank and debited from the EUI Trust Account during the settlement day under the USD Draw-Down Procedures.

The entitlement to a Pre-Distribution Entitlement Amount:

- arises upon credit of the pre-funding amount to the EUI Trust Account at or after the start of the settlement day; and
- terminates immediately before the Determination Time for that settlement day (i.e. the time at which EUI calculates each USD Settlement Bank's Distribution Entitlement Amount).

At the end of any settlement day (at the Determination Time), the sterling amount of a USD settlement bank's entitlement in relation to the Trust Fund (its *Distribution Entitlement Amount*) is determined by EUI in accordance with the Trust Deed and evidenced by the Trust Entitlement Record. The calculation of the SFAP Distribution Entitlement Amount and PMAP Distribution Entitlement Amount are described below under 'End of day procedures'.

US Dollar LMS

The US Dollar LMS (forming part of the CREST LM system) is the computer-based system (and related databases, services and procedures) provided by EUI as part of the CREST services to facilitate or enable the management of liquidity by USD settlement banks, and of the related exposures incurred by NSS settlement participants, in respect of CREST payments denominated in US dollars made in connection with a settlement day.

The US Dollar LMS comprises:

- the Payments Memorandum Account for each USD settlement bank;
- the Liquidity Use Functionality (including the Liquidity Use Limit for each USD settlement bank);
- the Trust Entitlement Record;
- the NSS settlement parties database;
- the other databases and records that support the US dollar Liquidity Management Services and the NSS CREST services; and
- the associated equipment, systems and procedures operated by EUI.

Payments Memorandum Account

Unlike the DvP Service for sterling and euro, the US dollar payments mechanism does not operate on the basis of liquidity cycles. EUI sets a time period during which US dollars may be utilised for the purposes of CREST settlement.

A multilateral running-account (a ***Payments Memorandum Account*** or ***PMA***) is maintained in the US Dollar LMS in the name of each USD settlement bank which records the cumulative (net) balance, at any time in the course of a settlement day and (if applicable) upon completion of any Adjustment Procedure for that settlement day, of CREST payments in US dollars made by or to members for whom that USD settlement bank is acting as a settlement bank.

The PMAs form part of the US Dollar LMS and a separate PMA is operated for each USD settlement bank. Prior to the beginning of each settlement day, the balance on each USD settlement bank's PMA is re-set to zero. As the auto-collateralisation arrangements do not operate under the US dollar payments mechanism, no relevant amount under those arrangements is applied or queued against a PMA.

Liquidity Use Functionality

The USD LMS records:

- the details of the Pre-Funded USD Amount (in respect of each USD settlement bank's sterling pre-funding) on each USD settlement bank's PMA (which can only be amended using the USD Top-Up Procedures and the USD Draw-Down Procedures noted above); and
- the NSS settlement participant limit which has been most recently notified by the NSS settlement participant acting as Settler for that USD settlement bank.

Each USD settlement bank's ***Liquidity Use Limit*** is the lower of its Pre-Funded USD Amount and its relevant NSS settlement participant limit. USD settlement banks may monitor their Liquidity Use Limit using the CREST system enquiry functions.

The US Dollar LMS's ***Liquidity Use Functionality*** is designed to prevent settlement of a CREST payment in US dollars if the resulting balance on the paying USD settlement bank's PMA (expressed as an absolute value) would exceed that USD settlement bank's Liquidity Use Limit as at that time.

National Settlement Service

The National Settlement Service (***NSS***) is a multilateral settlement service owned and operated by the US Federal Reserve Banks. The service enables settlement agents, acting on behalf of depository institutions (***Settlers***) in a settlement arrangement, to electronically submit settlement files to the Federal Reserve Banks. Files are processed on receipt, and entries are automatically posted to the depository institutions' Federal Reserve Bank accounts.

EUI is authorised by the Federal Reserve System to act as an NSS settlement agent in respect of the US dollar payments mechanism. In connection with a settlement day, a Settlement File of instructions will be submitted to the NSS by EUI as an NSS settlement agent (and as part of the CREST services). The Federal Reserve Bank of New York (as the Processing Federal Reserve Bank) is responsible for accepting and processing Settlement Files submitted by EUI as an NSS settlement agent in accordance with the NSS Operating Circular.

Each USD settlement bank must appoint an NSS settlement participant to act as a Settler in the NSS. Each Settler (which includes a USD settlement bank when performing the functions of a Settler in relation to itself):

- maintains an account with a Federal Reserve Bank;
- is permitted by that Federal Reserve Bank to settle through the NSS the balance(s) specified in a Settlement File as payable by or to the Settler; and
- agrees to settle through the NSS the multilateral net amount that is due to or from that USD settlement bank in respect of CREST payments denominated in US dollars made and received for the account of members in connection with a settlement day (as represented by the relevant balance specified in the related Settlement File).

Settlement Files

EUI sends to the NSS a Settlement File (in the form of a message over an MQ server) that contains the multilateral net amount payable by or to each Settler on behalf of each USD settlement bank it is acting on behalf of. The Settlement File will be sent to the Processing Federal Reserve Bank for processing in the NSS.

The Settlement File instructs the net (net) amount of US dollar CREST payments made during the settlement day by or to an US dollar settlement bank (for the account of its customers) upon the occurrence of an Inter-Bank Settlement Event in accordance with CREST Rule 17. The Settlement File instructs the credit of a positive amount to Federal Reserve Bank account of a Settler when acting for a long settlement bank and instructs the debit of a negative amount to the Federal Reserve Bank account of a Settler when acting for a short settlement bank.

NSS operator services

The Federal Reserve Banks perform functions which facilitate the US dollar payments mechanism in operating the NSS system. These ***NSS operator services*** are provided to EUI (as NSS settlement agent) and to Settlers (which may include USD settlement banks and/or NSS settlement participants when acting in the capacity of a Settler). They are not provided to the USD settlement bank (in their capacity as such) or any other CREST participant. EUI does not accept any responsibility for the performance by the Federal Reserve Banks of the NSS operator services.

The NSS operator services comprise:

- those services and/or procedures which the NSS Operating Circular contemplates are to be provided by the Federal Reserve Banks in operating the NSS system to or for the benefit of EUI as NSS settlement agent and to Settlers;
- FedLine Access Solutions described below;
- those functions to be performed by the Federal Reserve Banks as part of the contingency procedures described in Chapter 10, section 2A below, including the sending of electronic messages on behalf of EUI to the NSS; and

In its provision of CREST services and NSS settlement participant services as part of the US dollar payment mechanism, EUI relies upon information supplied to EUI through the NSS link network in the manner described in this section.

FedLine Access Solutions (which includes FedLine Direct) are tools available in the NSS which:

- enable EUI to send Settlement Files to the NSS and to send and receive other electronic messages to and from the NSS; and
- provide EUI access to certain information.

To the extent the FedLine Access Solutions are used or are to be used by EUI as NSS settlement agent or as part of the contingency procedures as described in Chapter 10, section 2A below, they are used by EUI as part of the CREST services and/or NSS CREST services provided by EUI under the US dollar payments mechanism. Maintenance, operation and provision of FedLine Access Solutions to EUI forms part of the NSS operator services provided by the Federal Reserve Banks to EUI under and in accordance with, and subject to the limitations set out in, the NSS Operating Circular.

EUI's communication with the NSS as an NSS settlement agent is via the FedLine Access Solutions using MQ messages over SSL forming part of the 'NSS link network'. Under the US dollar payments mechanism, EUI has no responsibility for electronic messages sent from or through the NSS link network to the FedLine Access Solutions after the messages leave the NSS link network or for electronic messages sent from or through FedLine Access Solutions to the NSS link network until they reach the NSS link network.

As part of the Liquidity Management Services and NSS CREST services provided by it, EUI uses the services of Verizon as network provider for the US dollar payments mechanism to send and receive electronic messages to and from the NSS as part of the NSS link network. While EUI is responsible for entering into and keeping in force (and taking reasonable care to exercise its rights under) a contract with a relevant network provider to provide such network services to EUI, EUI is not otherwise responsible for the network services provided to it by any such network provider.

End of day procedures

In respect of each US dollar settlement day, EUI will determine which of two procedures to operate to complete settlement of the settlement bank payment obligations in US dollars that have arisen between USD settlement banks in connection with that settlement day:

- the Settlement File Account Procedure (a ***SFAP settlement day***), in accordance with which US dollar inter-bank payment obligations will be discharged by means of US dollar payments in the NSS; or
- the Payment Memorandum Account Procedure (a ***PMAP settlement day***), in accordance with which US dollar inter-bank payment obligations will be discharge by means of sterling distributions from the Trust Fund.

Settlement File Account Procedure

EUI will initiate a multilateral netting account (the ***SFAP Netting Account***) to calculate the amount that is due to or from each USD settlement bank (the ***SFAP Net Amount***) in respect of CREST payments in US dollars made by or to that USD settlement bank for the account of members and which is to be settled by way of net settlement under the Settlement File Account Procedure. This will be the balance standing at the end of that settlement day to the debit or (as the case may be) credit of the USD settlement bank's Payment Memorandum Account.

These multilateral net figures will be made available to each NSS settlement participant in respect of each USD settlement bank they act for. NSS settlement participants may also chose to receive an electronic file containing the multilateral net figure(s).

Each NSS settlement participant will then have a period of time to confirm they are willing to pay or receive these amounts in the NSS as Settler for the account of the USD settlement banks they act for (alternatively each NSS settlement participant may have instructed a default approval to be applied, thereby opting out of providing such confirmation each settlement day).

If an NSS settlement participant does not confirm that it is willing to pay or receive these amounts, EUI will not automatically confirm on its behalf; EUI will consult with the USD settlement banks and may instigate the Adjustment Procedure (see below). If the Adjustment Procedure is not able to be completed, the Settlement File Account Procedure will not be completed and EUI will initiate the Payment Memorandum Account Procedure (see below).

If all NSS settlement participants confirm (either initially or after completion of the Adjustment Procedure) they are willing to pay or receive the amounts as Settlers in the NSS, EUI in its capacity as NSS settlement agent will submit a file of instructions (a ***Settlement File***) to the Processing Federal Reserve Bank and the balances on that Settlement File will be settled through the NSS in accordance with the procedures set out in the NSS Operating Circular. Following successful processing, the NSS will confirm to the CREST system that all payments and receipts have been made.

EUI will then determine each USD settlement bank's Trust Fund entitlement (its ***SFAP Distribution Entitlement Amount***) and pay the relevant SFAP Distribution Entitlement Amount to each USD settlement bank's pre-funding participant by procuring its debit from the EUI Trust Account and its credit to the USD settlement bank's Relevant Settlement Account (by means of pre-funding payment (PFP) transactions through the CREST system). If a USD settlement bank's SFAP Distribution Entitlement Amount is zero, no payment will be made to its pre-funding participant in respect of its SFAP Distribution Entitlement Amount for that settlement day.

The SFAP Distribution Entitlement Amount will be:

- the USD Settlement Bank's Pre-Distribution Entitlement Amount immediately prior to the Determination Time for that settlement day (see 'Entitlements from the Trust Fund' above);
- plus the aggregate Sterling Value of any Adjustment Repayments to be made to the USD Settlement Bank as a Lender Settlement Bank;
- minus the aggregate Sterling Value of any Adjustment Repayments to be made by the USD Settlement Bank as a Borrower Settlement Bank;
- minus the BoE Account Claim allocated to the USD Settlement Bank for the settlement day (as the case may be).

The value of the BoE Account Claim allocated to the Settlement Bank on an SFAP settlement day shall be an amount equivalent to the total value of the Set-Off Sum pro-rated based on the proportion of money attributable to the Settlement Bank in the EUI Trust Account after the aggregate Sterling Value of any Adjustment Repayments to be made has been calculated.

On any SFAP settlement day that a value of the BoE Account Claim is allocated to a USD Settlement Bank, that value shall promptly be repaid by EUI to the USD Settlement Bank.The SFAP Distribution Entitlement Amount calculations also includes a formulation to reflect that USD settlement banks are beneficial co-owners of the Trust Fund.

In summary, in respect of any SFAP settlement day the Settlement File Account Procedure will involve the following steps.

(a) (if applicable) EUI initiates and completes an Adjustment Procedure in respect of that settlement day (see further below);

(b) EUI completes the SFAP Netting Account for that settlement day;

(c) EUI prepares a Settlement File that specifies for each NSS settlement participant the balance payable by or to it as Settler for a USD settlement bank in respect of that settlement day, such balance corresponding to the SFAP Net Amount payable by or to that USD settlement bank in accordance with the related completed SFAP Netting Account;

(d) EUI as an NSS settlement agent sends that Settlement File to the Processing Federal Reserve Bank and the balances on that Settlement File are settled through the NSS;

(e) (if applicable) any Adjustment Repayments (see further below) to be made that settlement day are agreed and confirmed by the relevant Lender Settlement Bank(s) and Borrower Settlement Bank(s);

(f) EUI determines each USD settlement bank's SFAP Distribution Entitlement Amount in respect of that settlement day and enters it up in the Trust Entitlement Record; and

(g) EUI pays the relevant SFAP Distribution Entitlement Amount to each USD settlement bank by procuring its debit from the EUI Trust Account and its credit to the USD settlement bank's Relevant Settlement Account or, if a USD settlement bank's SFAP Distribution Entitlement Amount is zero, EUI confirms to the USD settlement bank that no payment will be made to it in respect of its SFAP Distribution Entitlement Amount for that settlement day.

Adjustment Procedure

EUI will initiate the Adjustment Procedure in circumstances where an NSS settlement participant indicates to EUI that it is unwilling as Settler to pay (if the balance is negative) or receive (if the balance is positive) for the account of a USD settlement bank, the balance standing at the end of that settlement day to the debit or (as the case may be) credit of the USD settlement bank's Payment Memorandum Account (referred to in this section as the ***relevant USD settlement bank***).

In these circumstances, one or more pre-funding participants (for whom other USD settlement banks are acting) may be willing to make or receive a payment (an ***Adjustment Payment***) denominated in US dollars through the CREST system to or from the pre-funding participant for whom the relevant USD settlement bank is acting, in order to adjust the relevant USD settlement bank's Payment Memorandum Account to zero. Such a transaction (input by the relevant members as a standard cash only delivery (DEL) instruction) will be able to settle after end of US dollar payments in the CREST system.

Following successful settlement of such Adjustment Payments, EUI will be able to complete the SFAP Netting Account and continue to complete the steps of the Settlement File Account Procedure (see above) in respect of all USD settlement banks who have a non-zero USD position.

A ***Borrower Settlement Bank*** is a USD settlement bank that owes a repayment obligation to another USD settlement bank (as the Lender Settlement Bank) in respect of any Adjustment Payment made by a pre-funding participant (for whom the Lender Settlement Bank is acting as settlement bank) to a pre-funding participant (for whom the Borrower Settlement Bank is acting as settlement bank). A ***Lender Settlement Bank*** is a USD settlement bank to whom a repayment obligation is owed by another USD settlement bank (as the Borrower Settlement Bank) in respect

of any Adjustment Payment made by a member (for whom the Lender Settlement Bank is acting as settlement bank) to a member (for whom the Borrower Settlement Bank is acting as settlement bank). Repayment of the Adjustment Payment is a matter for agreement between the Borrower Settlement Bank and the Lender Settlement Bank.

The Borrower Settlement Bank and the Lender Settlement Bank may agree that the repayment obligation in respect of an Adjustment Payment will be repaid in sterling from the Trust Fund (as an ***Adjustment Repayment***). Each USD settlement bank must agree and confirm to EUI the details of the Adjustment Payment and that it will be repaid as an Adjustment Repayment.

Such an Adjustment Repayment will be repaid by its deduction (after its conversion into sterling using the previous business day's IDS closing exchange rate) as part of the determination of the Borrower Settlement Bank's SFAP Distribution Entitlement Amount for the relevant SFAP settlement day and its corresponding addition (after its conversion into sterling using the previous business day's IDS closing exchange rate) as part of the determination of the Lender Settlement Bank's SFAP Distribution Entitlement Amount for the relevant SFAP settlement day.

Payments Memorandum Account Procedure

The Payments Memorandum Account Procedure will be initiated on EUI's determination that it will not be possible to operate a Settlement File Account Procedure for that settlement day and that US dollar inter-bank payment obligations will be discharged by means of sterling distributions from the Trust Fund (to be made through payments at the Bank of England). Circumstances when this may arise include:

- one or more NSS settlement participants is not willing to pay or receive amounts in the NSS as Settler for the account of the USD settlement banks they act for;
- technical failures in the NSS;
- technical failures in the CREST system.

EUI will initiate a multilateral netting account to calculate the amount that is due to or from each USD settlement bank (the ***PMAP Net Amount***) in respect of CREST payments in US dollars made by or to that USD settlement bank for the account of members and which is to be settled by way of net settlement under the Payments Memorandum Account Procedure. This will be the balance standing at the end of that settlement day to the debit or (as the case may be) credit of the USD settlement bank's Payment Memorandum Account.

EUI will the determine each USD settlement bank's Trust Fund entitlement (its ***PMAP Distribution Entitlement Amount***) and pay the relevant PMAP Distribution Entitlement Amount to each USD settlement bank by procuring its debit from the EUI Trust Account and its credit to the USD settlement bank's Relevant Settlement Account (by means of sterling payments at the Bank of England). If a USD settlement bank's PMAP Distribution Entitlement Amount is zero, no payment will be made to it in respect of its PMAP Distribution Entitlement Amount for that settlement day.

The PMAP Distribution Entitlement Amount will be:

- the USD Settlement Bank's Pre-Distribution Entitlement Amount immediately prior to the Determination Time for that settlement day;
- plus the Sterling Value of the USD Settlement Bank's Positive PMAP Net Amount for the settlement day;

- minus the Sterling Value of the USD Settlement Bank's Negative PMAP Net Amount for the settlement day
- minus the BoE Account Claim allocated to the USD Settlement Bank for the settlement day (as the case may be).

The value of the BoE Account Claim allocated to the Settlement Bank on a PMAP settlement day shall be an amount equivalent to the total value of the Set-Off Sum pro-rated based on the proportion of money attributable to the Settlement Bank in the EUI Trust Account after the Sterling Value of the Settlement Bank's Positive / Negative PMAP Net Amount (as the case may be) has been calculated.

On any PMAP settlement day that a value of the BoE Account Claim is allocated to a USD Settlement Bank, that value shall promptly be repaid by EUI to the USD Settlement Bank.

Where the Adjustment Procedure has been followed and it has been agreed that an Adjustment Payment will be repaid in sterling from the Trust Fund, the PMAP Distribution Entitlement Amount will additionally include:

- plus the aggregate Sterling Value of any Adjustment Repayments to be made to the USD Settlement Bank as a Lender Settlement Bank;
- minus the aggregate Sterling Value of any Adjustment Repayments to be made by the USD Settlement Bank as a Borrower Settlement Bank.

The Sterling Value of the USD Settlement Bank's obligations will be calculated using the latest current exchange rate available to EUI.

The PMAP Distribution Entitlement Amount calculations also includes a formulation to reflect that USD settlement banks are beneficial co-owners of the Trust Fund.

In summary, in respect of any PMAP settlement day the Payments Memorandum Account Procedure will involve the following steps.

(a) (if applicable) EUI initiates and completes an Adjustment Procedure in respect of that settlement day (see further above);

(b) EUI calculates the PMAP Net Amount that is payable by or to each USD settlement bank in respect of that settlement day;

(c) EUI determines the PMAP Distribution Entitlement Amount for each USD settlement bank and enters it up in the Trust Entitlement Record;

(d) EUI pays the relevant PMAP Distribution Entitlement Amount to each USD settlement bank by procuring its debit from the EUI Trust Account and its credit to the USD settlement bank's Relevant Settlement Account or, if a USD settlement bank's PMAP Distribution Entitlement Amount is zero no payment will be made to it in respect of its PMAP Distribution Entitlement Amount for that settlement day;

(e) (if applicable) EUI initiates and completes the appropriation procedures described in Chapter 10, Section 2A of the CREST Reference Manual to identify which Inter-Bank Payment Obligations arising during that settlement day and (if applicable) under any Adjustment Procedure operated for that settlement day are to be accounted for as Excluded IBPOs in the calculation of the PMAP Net Amount for a USD Settlement Bank;;

(f) (if applicable) EUI notifies the relevant USD settlement banks as to the value of any Excluded IBPO which is due from a USD Settlement Bank and the identity of the relevant USD Settlement Banks to and from whom that Excluded IBPO is due; and

(g) (if applicable) the Excluded IBPOs are settled as between the relevant USD Settlement Banks.

Contingency procedures

When the US dollar payments mechanism is operating in contingency mode, the procedures relating to:

- the top-up and withdrawal of sterling pre-funding;
- the Settlement File Account Procedure, including the sending of Settlement Files and/or other instructions to the NSS;
- the Payments Memorandum Account Procedure; and
- the distribution of Distribution Entitlement Amounts,

are or may be modified in the manner described in Chapter 10, section 2A.

Section 5: Settlement banks

EUI holds, verifies and enables the clearing details (one or more designated currency/payment type combinations) of each settlement bank. The settlement bank's customers who are CREST members cannot settle in a particular designated currency/payment type until those clearing details have been enabled for that settlement bank. Settlement banks do not themselves have stock or cash holder rights.

The CREST system keeps track of the settlement bank payment obligations generated between a member's settlement bank and other settlement banks. For US dollars, the CREST system provides a settlement bank with the means to monitor its gross and net positions against each other settlement bank in US dollars and its total net position against all other settlement banks in US dollars. Settlement banks may enquire as to the maximum or minimum net cash position reached with any individual settlement bank in respect of each settlement day. They may also retrieve the maximum or minimum net cash positions against all other settlement banks, that is one minimum and one maximum per settlement day. These data are available for the current day and for the data retrieval period.

Liquidity monitoring

For the RTGS currencies and for US dollars, the CREST system provides an RTGS settlement bank with a means to monitor liquidity transfers and (for sterling) the value of liquidity generated through the auto-collateralisation repurchase arrangements each settlement day. The RTGS settlement bank may make the following enquiries of the RTGS Liquidity Management System in relation to the usage of its liquidity during the settlement day:

- (for RTGS currencies) the total cumulative liquidity debited and credited in the RTGS Liquidity Management System and (for sterling only) the value of liquidity generated through auto-collateralising repurchase transactions during each settlement day;
- the value of liquidity debited and credited in each CREST settlement cycle;
- the value of liquidity generated and returned through auto-collateralising repurchase transactions (for sterling only);
- the value of liquidity debited and credited in each Dedicated Liquidity Cycle Period (for euro only);
- the value of liquidity introduced or extracted during recycle mode (i.e. during a disconnection period operating under the contingency procedures for the Sterling DvP Service: see Chapter 10, Section 1);
- the value of unused liquidity for each CREST settlement cycle; and
- the bilateral liquidity credits and debit between pairs of settlement banks for each CREST settlement cycle.

Liquidity queues

Each settlement bank may also view its liquidity queue for each currency. This displays those member transactions that are currently queued against the settlement bank's relevant Liquidity Memorandum Account (or Payments Memorandum Account in respect of US dollars) and that have failed to settle because of insufficient liquidity. Since the liquidity queue is dynamic, the details

returned are a reflection of the queue only at the time of the enquiry. For each individual transaction, the settlement bank may only view the transaction identifier, the participant identifier of the bank's customer, the consideration of the transaction and (for sterling) the value of liquidity credited/debited to the settlement bank if the transaction results in creation or closure of an auto-collateralising repo (SCR) transaction. For linked transactions and complex deliveries, the settlement bank is able to identify the group of linked transactions (where appropriate), the liquidity and (for sterling) the auto-collateralisation values but not the individual participants.

The CREST system also provides a settlement bank with a means to monitor the total liquidity value, by currency, of all their clients' transactions (excluding DBVs) and DBVs (overnight and term) which are currently failing settlement due to a liquidity shortfall on the bank's part. The value calculated takes into account the potential credits which may be applied to the bank's sterling Liquidity Memorandum Account through the settlement of auto-collateralising repo transactions, should repo-eligible transactions (excluding DBVs) and DBVs (overnight and term) settle.

Liquidity projections

Additionally, the RTGS settlement bank may enquire upon projections of intra-day liquidity to aid in its provision of sufficient liquidity to support CREST settlement of its member customers.

The liquidity projection is available for sterling, euro and US dollars separately and provides the RTGS settlement bank with an estimate of their future liquidity requirement for the current settlement day. Separate liquidity projections are available for transactions and DBVs; a combined projection is also provided.

The liquidity projection estimates the total value of liquidity that will be debited from the settlement bank, the total value of liquidity that will be credited to the settlement bank and (for sterling) the total value of additional liquidity which may be credited or debited through potential settlement and unwinds of auto-collateralising repo transactions. The projection includes open transactions and DBVs which will be put forward for settlement today, including those that have failed settlement, but for which settlement will be re-attempted today. In the case of USD settlement banks, the projection also includes the amount of sterling pre-funding that the settlement bank has provided.

The liquidity projection makes no assessment of other settlement resources; transactions and DBVs are included in the liquidity projection which may fail settlement due to a lack of stock or cash. The information is accurate at the point of enquiry and historical information is not retained.

Auto-collateralising repo transactions are only generated when the RTGS settlement bank has a liquidity shortfall; it is not possible to accurately predict which transactions and DBVs will trigger the generation of SCRs. Therefore the system makes certain assumptions when calculating a bank's intra-day liquidity projection and the total liquidity value of its clients' failing transactions and DBVs. When calculating the credit stock effect (i.e. the liquidity credited to a settlement bank as a result of the settlement of SCR transactions), the system assumes that an SCR will always be generated where the following conditions are met:

- the credit stock account is SCR eligible and;
    - the underlying security of a transaction is SCR eligible, or
    - the DBV class of a DBV is SCR eligible.

If the credit stock account is not known (i.e. when calculating a bank's liquidity projection and evaluating 'not ready' transactions where only one party has input), then the system assumes that the credit stock account will be SCR eligible.

Conversely, when calculating the debit stock effect (i.e. the liquidity cost to a settlement bank of unwinding stock which is out on repo), the system assumes that stock will need to be unwound from repo to settle a transaction or DBV where the following conditions are met:

- the debit stock account is SCR eligible and;
    - the underlying security of a transaction is SCR eligible, or
    - the DBV class of a DBV is SCR eligible.

If the debit stock account is not known, then the system assumes that it will be an SCR eligible account.

A bank's liquidity position can vary significantly in a very short timescale; the enquiries described in this section are tracking a moving position and should therefore be treated as a guideline.

Sterling settlement banks

The following settlement banks provide CREST payment services in the CREST system where the currency of payment is sterling:

- Bank of America, N.A.;
- Bank of England;
- Bank of Scotland plc;
- Barclays Bank plc;
- Barclays Bank UK plc;
- BNP Paribas SA;
- Citibank N.A.;
- The Co-operative Bank plc;
- Deutsche Bank AG;
- HSBC Bank plc;
- HSBC UK Bank plc;
- J.P. Morgan Chase Bank N.A.;
- Lloyds Bank plc;
- National Westminster Bank plc;
- Northern Trust Company;
- The Royal Bank of Scotland plc;
- Standard Chartered Bank;
- Santander UK plc;
- UBS AG;

- State Street Bank and Trust Company;
- The Bank of New York Mellon;
- Euroclear Bank SA/NV;
- Banco Santander S.A.

Euro settlement banks

The following settlement banks provide CREST payment services in the CREST system where the currency of payment is euro:

- Bank of America, N.A.;
- Bank of Scotland plc;
- Barclays Bank Plc;
- BNP Paribas SA;
- Citibank N.A.;
- Deutsche Bank AG;
- HSBC Bank plc;
- Lloyds Bank plc;
- National Westminster Bank plc;
- The Royal Bank of Scotland plc;
- Santander UK plc;
- J.P. Morgan Chase Bank N.A.
- The Bank of New York Mellon;
- Euroclear Bank SA/NV
- European Central Counterparty N.V.

US dollar settlement banks

The following settlement banks provide CREST payment services in the CREST system where the currency of payment is US dollars:

- Bank of America, N.A.;
- Bank of Scotland plc;
- Barclays Bank plc;
- BNP Paribas SA;
- Citibank N.A.;
- Deutsche Bank AG;
- HSBC Bank plc;
- Lloyds Bank plc;

- National Westminster Bank plc;
- The Royal Bank of Scotland plc;
- J.P. Morgan Chase Bank N.A; and
- The Bank of New York Mellon.

For a current list of CREST settlement banks, please consult the Euroclear website.

Section 6: The legal framework for CREST payments

The CREST system supports two payment mechanisms depending upon the designated currency involved:

- the DvP Service for sterling and euro; and
- the US dollar payments mechanism for US dollars.

The DvP Service

The legal framework in relation to RTGS payments is governed by the combination of: (a) the CREST Terms and Conditions (and comparable agreements entered into by other participant types); (b) the Settlement Bank Agreement; (c) the relevant RTGS Payment Agreement (or RTGS Framework and Payment Agreement) for each RTGS currency; (d) other agreements between settlement banks and the Bank of England (in relation to sterling payments) and their relevant Eurosystem central bank or other euro liquidity provider which maintains a PM Account with a relevant Eurosystem central bank (in relation to euro payments); (e) CREST Rule 17; and (f) the individual contracts between RTGS settlement banks and their customers. These arrangements provide for the discharge of a payment obligation owed by one member (or the person on whose behalf or with whose consent he is acting) to another member (or his principal) upon the occurrence of the relevant Payment Settlement Event; and its simultaneous replacement by a settlement bank payment obligation due from the paying member's RTGS settlement bank to the payee member's RTGS settlement bank.

In the Sterling DvP Service the settlement bank payment obligations will be immediately and simultaneously extinguished by means of an irrevocable and unconditional undertaking by the Bank of England to credit an amount equal to the buyer's payment to the relevant account of the seller's settlement bank (and to debit the corresponding account of the buyer's settlement bank). The unconditional and irrevocable nature of the Bank of England's undertaking is sufficient to complete payment between the settlement banks even though it precedes actual debit/credit to the account on its books.

In the Euro DvP Service, EUI completes a multilateral netting account to determine the net (net) amount which is due to or from each RTGS settlement bank in respect of each Dedicated Liquidity Cycle Period. Settlement of this net amount (subject to any adjustments made by EUI as described below) is made in accordance with settlement procedure 6 (dedicated liquidity and cross-system settlement) of TARGET2 for ancillary systems using an interfaced model in the manner described in Annex IV to the Guideline. The ECB irrevocably and unconditionally guarantees to EUI on first demand the payment of the net amount which EUI instructs in the relevant CREST Settlement Notification is to be debited from the PM Sub-Account of a short settlement bank. Under the ECB Guarantee, the ECB's liability in respect of each such net amount shall not exceed the amount which is frozen on the relevant (short) RTGS settlement bank's PM Sub-Account and available to the relevant Eurosystem central bank to complete payment. In its agreements with the RTGS settlement banks for euro, EUI assumes certain obligations to those RTGS settlement banks in relation to the enforcement of EUI's rights against the ECB under the ECB Guarantee.

In the Euro DvP Service, an adjustment to the net amount due from a (short) RTGS settlement bank in respect of a Dedicated Liquidity Cycle Period, and before notification of the final amount is given by (or on behalf of) EUI through the sending of the related CREST Settlement Notification to TARGET2, is only required where (1) the provisional net amount calculated under the multilateral

netting account exceeds that (short) RTGS settlement bank's frozen funds (i.e. because of an error in operation of the LMA or in the Liquidity Earmark Notification received from TARGET2); (2) the (short) RTGS settlement bank' fails to remove the deficit by way of top-up to its frozen funds in its PM Sub-Account; and (3) the deficit has not arisen as a result of an uninitiated transaction. If step (2) and the measures taken to correct an uninitiated transaction under (3) cannot remove the deficit between the provisional net amount and the frozen funds that would be in the PM Sub-Account at the time the CREST Settlement Notification is sent, EUI will adjust (i.e. reduce) the net amount to be specified in the CREST Settlement Notification sent to TARGET2 to a sum equal to or less than the frozen funds in order to ensure that the CREST Settlement Notification can settle in TARGET2. The process for adjusting the net amount due from a (short) RTGS settlement bank for settlement in TARGET2 is described further in Euro DvP Service: Contingency procedures – Appropriation procedures (Chapter 10, section 1).

The Bank of England's irrevocable undertaking is supported by a process of earmarking (irrevocably appropriating) funds provided by each RTGS settlement bank for sterling under the bilateral account relationship between the Bank of England and that settlement bank. The ECB Guarantee is supported by a process of freezing (irrevocably appropriating) the balance standing to the credit of an RTGS settlement bank in its PM Sub-Account at the beginning of and during a Dedicated Liquidity Cycle Period in accordance with the Ancillary System Banking Arrangements. The value of funds which is so appropriated for the account of each RTGS settlement bank is reflected on each settlement bank's relevant Liquidity Memorandum Account within the RTGS Liquidity Management System. The effect of earmarking or freezing ahead of CREST settlement is to ensure that the total sum earmarked or frozen in the relevant account or sub-account at the relevant central bank is only available to fund CREST settlement occurring after the earmarking or freezing of the central bank liquidity.

The appropriation process differs as between the Sterling DvP Service and the Euro DvP Service.

For sterling payments (outside a disconnection period), the earmarking is in place for the duration of a CREST settlement cycle. At the end of the CREST settlement cycle, the RTGS Liquidity Management System sends a message (CREST Settlement Notification) to the Bank's systems confirming the debits and credits (including any debit items made for its account in respect of payments made by the settlement bank, any credit items made for its account in respect of payments to the settlement bank, and credits/debits from auto-collateralising repurchase transactions under the SB auto-collateralisation arrangements for sterling transactions to/from the Bank) to be made to each RTGS settlement bank's sterling RTGS CREST settlement account group held by the Bank for the account of each RTGS settlement bank. It is only after the instruction has been acted upon by the Bank that the sterling balance will become transferable through RTGS to the RTGS settlement bank for use in its own banking arrangements. A further earmarking is then effected at the Bank of England; a relevant Liquidity Earmark Notification is sent by the Bank into the RTGS Liquidity Management System; and, in response, the RTGS Liquidity Management System updates each sterling LMA in preparation for the next CREST settlement cycle. This process for creation and unwinding of sterling earmarked funds, and the related CREST-Bank of England liquidity messaging, is carried out in respect of each CREST settlement cycle.

For euro payments, funds are frozen for a Dedicated Liquidity Cycle Period and within that period a process of liquidity re-cycling across CREST settlement cycles is used. The RTGS settlement bank's euro funds held in a PM Sub-Account with a Eurosystem central bank are frozen at the beginning of a Dedicated Liquidity Cycle Period. At the end of each CREST settlement cycle within a Dedicated

Liquidity Cycle Period, the RTGS Liquidity Management System updates the euro LMA of each RTGS settlement bank in the manner described under the heading, 'Euro Liquidity Memorandum Accounts' in section 4 above.

At the end of a Dedicated Liquidity Cycle Period, the RTGS Liquidity Management System sends a message ('CREST Settlement Notification') to the ASI in the manner described under 'CREST Settlement Notifications for euro' in section 4 above if any liquidity transfers are required to the PM Sub-Accounts of short and long settlement banks as a result of settlement activity during that Dedicated Liquidity Cycle Period.

The CREST technical account in TARGET2 is used when transferring liquidity across PM Sub-Accounts. The CREST Settlement Notification will first instruct the movement of liquidity from the short RTGS settlement bank's PM Sub-Account to the CREST technical account and then from the CREST technical account to the PM Sub-Accounts of the long RTGS settlement banks.

The operation of this technical account does not result in EUI holding any central bank money; and EUI does not at any time become a creditor or debtor of any Eurosystem central bank, RTGS settlement bank or any other person. It is a technical function only which enables or facilitates settlement of liquidity transfers to long and short settlement banks in accordance with settlement procedure 6 (dedicated liquidity and cross-system settlement) as operated for the CREST system (as an ancillary system using an interface model) in accordance with Annex IV to the Guideline.

The RTGS Liquidity Management System receives a message from the ASI confirming settlement (or otherwise) of the liquidity transfers in TARGET2. If the response indicates that all liquidity transfers for RTGS settlement banks have been successfully settled, the RTGS Liquidity Management System will close the Dedicated Liquidity Cycle Period by sending an end-of-cycle message to the ASI.

The freezing of the balance on the PM Sub-Account expires upon the RTGS Liquidity Management System sending the end-of-cycle message to the ASI.

The next Dedicated Liquidity Cycle Period will then commence upon EUI sending a start-of-cycle message to TARGET2. A further appropriation of euro funds is then effected in TARGET2 (in the PM Sub-Account of each RTGS settlement bank for euro) and a Liquidity Earmark Notification sent by the ASI to the RTGS Liquidity Management System. The RTGS Liquidity Management System then updates each euro LMA in preparation for that Dedicated Liquidity Cycle Period. This process for creation and unwinding of euro frozen funds and the related CREST-ASI liquidity messaging is carried out in respect of each Dedicated Liquidity Cycle Period.

The CREST Terms and Conditions provide that the creation of a settlement bank payment obligation of the paying member's RTGS settlement bank discharges the member's obligation (and the obligation of any person on whose behalf or with whose consent he is acting) to the payee member (or his principal) to the extent of the amount of the settlement bank payment obligation. The individual contracts between members and their RTGS settlement banks will govern:

- to which account(s) each 'inward' settlement bank payment obligation is to be credited and at what time;
- from which account(s) each 'outward' settlement bank payment obligation assumed for him by his RTGS settlement bank is to be debited and at what time; and

- the extent to which the RTGS settlement bank may or may not settle or combine different accounts of the member with his RTGS settlement bank.

The US dollar payments mechanism

The legal framework in relation to US dollar payments is governed by the combination of: (a) the CREST Terms and Conditions (and the comparable sections in agreements entered into by other participant types); (b) the Settlement Bank Agreement; (c) the CREST US Dollars Inter-Bank Settlement Agreement; (d) the NSS settlement participant agreement (e) CREST Rule 17; (f) the NSS Operating Circular (g) the individual contracts between settlement banks and their customers; and (h) the individual contracts between settlement banks and their Settlers.

These arrangements provide for the discharge of a payment obligation owed by one member (or their principal) to another member (or their principal) upon the occurrence of the relevant Payment Settlement Event; and its simultaneous replacement by a payment obligation due from the paying member's settlement bank to the payee member's settlement bank, which is to be settled by way of an end-of-day (net) settlement procedure and underpinned by sterling pre-funding.

The CREST Terms and Conditions provide that the creation of an inter-bank payment obligation of the paying member's settlement bank discharges that member's obligation (and the obligation of any person on whose behalf or with whose consent they are acting) to the payee member (or their principal) to the extent of the amount of that inter-bank payment obligation.

CREST Rule 17 provides that upon the occurrence of an inter-bank settlement event, the payee member's settlement bank shall be irrevocably and unconditionally obliged to pay the relevant amount to the payee member in US dollars. The individual contracts between members and their settlement banks will govern: to which account(s) each 'inward' payment is to be credited and at what time; from which account(s) each 'outward' payment assumed for them by their settlement bank is to be debited and at what time; and the extent to which the settlement bank may or may not set off or combine different accounts of the member with their settlement bank.

In respect of each settlement day, EUI shall determine whether to operate either the Settlement File Account Procedure or the Payments Memorandum Account Procedure. The CREST US Dollars Inter-Bank Settlement Agreement provides that inter-bank payment obligations will be discharged, and settlement of each such payment obligation shall be final, upon the completion of each relevant step in the relevant procedure which is operated in respect of that settlement day.

The US dollar payments mechanism facilitates the daily discharge of inter-bank payment obligations through:

- on a SFAP settlement day, payments in US dollar central bank money in the National Settlement Service (NSS) of the US Federal Reserve Banks between Settlers acting on behalf of USD settlement banks; and
- on a PMAP settlement day, distributions in sterling central bank money from the Trust Fund held by EUI at the Bank of England.

On a PMAP settlement day, in the event of the operation of US dollar appropriation procedures (as described in Chapter 10, section 2A) excluded inter-bank payment obligations will be discharged in the manner agreed between the relevant settlement banks.

Section 7: Realisation of a settlement bank's security

As described in Chapter 6, section 3, a CREST member (other than a CREST IPA or other member who does not have title to units of a security credited to his stock account(s)) may be able to grant their settlement bank a charge over securities in the available balance of one or more of this member accounts and may link such 'charged' accounts to a cap associated with their membership and then opt into the secured credit arrangements. The settlement bank may then be prepared to extend additional secured credit to that member for CREST settlement purposes. This section describes the procedures which EUI will generally follow in circumstances in which a settlement bank wishes to realise its security under these arrangements. These procedures are without prejudice to EUI's rights under the CREST Terms and Conditions to suspend or terminate a CREST membership in the circumstances envisaged in those agreements and EUI may take different action where, in its opinion, the circumstances require, having particular regard to its obligations under the CREST Regulations and as a recognised CSD.

Different procedures apply depending upon whether the relevant CREST membership is enabled or disabled at the time at which the settlement bank seeks to realise its security.

Procedures where the CREST membership is enabled

The procedure will only be applied where, in advance of the settlement bank seeking to realise its security:

- the settlement bank has lodged with EUI a copy of the Security Deed (or other charge instrument) executed by the chargor CREST member in favour of the settlement bank, certified as a true and correct copy of the original by an authorised signatory of the settlement bank previously notified to EUI;
- the Security Deed contains an irrevocable power of attorney or other irrevocable authority granted by the chargor CREST member, in a form acceptable to EUI, appointing or authorising the appointment of the settlement bank's user as his sponsor (an example of a pro forma English law power of attorney which is acceptable to EUI is set out at the end of this Section 7, as Item 1);
- if the chargor CREST member is incorporated outside England and Wales, the settlement bank has provided EUI with a legal opinion(s), in a form acceptable to EUI, from a legal adviser(s) who is independent of the chargor CREST member (but who may be an independent legal adviser, other than in-house counsel, to the CREST member) and is acceptable to EUI, confirming the legality, validity and effectiveness of the charge and power of attorney (including an opinion that the power of attorney or other authority will not be revoked by the donor's winding-up or dissolution or analogous proceedings in the place of incorporation or formation of the CREST member) and the capacity of the CREST member to grant the charge and power of attorney; and
- the chargor CREST member has confirmed to EUI in writing its consent to the arrangement in a form acceptable to EUI, including (where the chargor CREST member has executed a CREST Admission Agreement (Members)) his consent to change or otherwise amend his CREST Admission Agreement (Members) to, or to conform with, a CREST Admission Agreement (Sponsored Members) (an example of a pro forma confirmation which is acceptable to EUI is set out at the end of this section 7, as Item 2).

Ordinarily, it is expected that the above documents and confirmations will be given to EUI when or shortly after the Security Deed is executed.

EUI will transfer the control of the chargor CREST member from its existing user to the user of the settlement bank:

- where the above requirements are satisfied; and
- on receipt of a written request from either the chargor CREST member or the settlement bank on his behalf pursuant to the power of attorney or other authority granted by the chargor CREST member, signed by an authorised signatory previously notified to EUI (an example of a pro forma request which might be used to transfer the user is set out at the end of this Section 7, as Item 3).

Once control of the chargor CREST member has been passed to the user of the settlement bank, the settlement bank's user will be able to send properly authenticated dematerialised instructions attributable to the chargor CREST member and receive properly authenticated dematerialised instructions addressed to the chargor CREST member.

Procedures where the CREST membership is disabled

The procedure will only be applied where:

- the settlement bank has lodged with EUI a copy of the Security Deed (or other charge instrument) executed by the chargor CREST member in favour of the settlement bank, certified as a true and correct copy of the original by an authorised signatory of the settlement bank previously notified to EUI (which, for this purpose, might include in-house counsel);
- the charge is a 'system-charge' for the purposes of the Financial Markets and Insolvency Regulations 1996, as amended (the 'FMI Regulations'); and a 'collateral security in connection with participation in a designated system' for the purposes of the Financial Markets and Insolvency (Settlement Finality) Regulations 1999; and
- the Security Deed conforms with the requirements of the FMI Regulations and, in particular, Regulation 4 of the FMI Regulations.

The procedure will not be applied in circumstances where any relevant investment exchange or clearing house has declared the chargor CREST member to be in default under its default rules if to do so would interfere or otherwise be inconsistent with the operation of those default rules (which require unsettled bargains of a defaulter to be closed-out and not settled).

Where a liquidator has been appointed

Where a liquidator has been appointed and requests that the CREST membership be re-enabled for settlement, the liquidator must provide EUI with:

- satisfactory evidence of his appointment (in the form of a copy of the relevant sealed court order in the case of a liquidator appointed by the court and in the form of a certificate of appointment signed by the chairman of the meeting appointing the liquidator in a voluntary winding-up, in both cases such instrument being certified by the office-holder as being a true and correct copy of the original);

- satisfactory evidence of the liquidator's capacity to act on behalf of the CREST member, including his authority to communicate with, and give instructions to, EUI in connection with the affairs of the CREST member[21];
- confirmation that the liquidator has either secured physical control of the CREST member's gateway computer or, if the CREST member is a sponsored member, that the sponsored member's sponsor is aware of the liquidator's appointment; and
- in cases where there have been complications or any delay in procuring any of the above assurances, a letter of representation and warranty issued by the liquidator in favour of, and in a form acceptable to, EUI; this will be required to be issued by the liquidator acting in his agency and personal capacity; an example of a form of letter of representation and warranty acceptable to EUI is set out at the end of this Section 7, as Item 4.

Where an administrator has been appointed by the court

Where an administrator has been appointed by the court and requests that the CREST membership be re-enabled for settlement, the administrator must provide EUI with:

- satisfactory evidence of his appointment (in the form of the relevant sealed court order certified by the administrator as being a true and correct copy of the original);
- satisfactory evidence of the administrator's capacity to act on behalf of the CREST member, including his authority to communicate with, and give instructions to, EUI in connection with the affairs of the CREST member[22];
- confirmation that the administrator has either secured physical control of the CREST member's gateway computer or, if the CREST member is a sponsored member, that the sponsored member's sponsor is aware of the administrator's appointment; and
- in cases where there have been complications or delay in procuring any of the above assurances, a letter of representation and warranty issued by the administrator in favour of, and in a form acceptable to, EUI; this will be required to be issued by the administrator acting in his agency and personal capacity; an example of a form of letter of representation and warranty acceptable to EUI is set out at the end of this Section 7, as Item 5.

Where an administrator has been appointed by the holder of a qualifying floating charge

Where an administrator has been appointed by the 'holder' of a 'qualifying floating charge' (within the meaning of paragraphs 14(2) and (3) of Schedule B1 to the Insolvency Act 1986) and requests that the CREST membership be re-enabled for settlement, the administrator must provide EUI with:

- satisfactory evidence of his appointment (normally in the form of the relevant debenture(s), together with the notice of appointment filed with the court and any other document or statement which is required to accompany or be filed with such notice under or pursuant to paragraph 18 of Schedule B1 to the Insolvency Act 1986 and Rules 2.16 and 2.19 (as

[21] Where only one CREST member is involved, it is likely that the sealed court order or certificate of appointment will be sufficient evidence. However, further evidence will be necessary in circumstances where a group of companies which are CREST members have been disabled on the appointment of the liquidator to one - but not necessarily all - of them and where it is proposed that the liquidator will send and receive properly authenticated dematerialised instructions attributable to all or any of them.

[22] Where only one CREST member is involved, it is likely that the sealed court order will be sufficient evidence. However, see further corresponding footnote above where there is more than one CREST member involved.

appropriate) of the Insolvency Rules 1986, in each case certified by the administrator as being true and correct copies of the originals and within any time limit specified pursuant to paragraph 18 of Schedule B1);

- satisfactory evidence of the administrator's capacity to act on behalf of the CREST member, including his authority to communicate with, and give instructions to, EUI in connection with the affairs of the CREST member[23] and together with a copy of any statement made for the purposes of paragraph 100(2) of Schedule B1 to the Insolvency Act 1986;
- confirmation that the administrator has either secured physical control of the CREST member's gateway computer or, if the CREST member is a sponsored member, that the sponsored member's sponsor is aware of the administrator's appointment;
- an indemnity from the person by whom or on whose behalf the administrator has been appointed in favour of, and in a form acceptable to, EUI against any liability which arises by reason of EUI acting upon and in accordance with the instructions of the administrator (s) and any properly authenticated dematerialised instructions attributable to the CREST member after its re-enablement (an example of a pro forma indemnity acceptable to EUI is set out at the end of this Section 7, as Item 10); and
- in cases where there have been complications or delay in procuring any of the above assurances, a letter of representation and warranty issued by the administrator in favour of, and in a form acceptable to, EUI; this letter need only be issued by the administrator in his capacity as the chargor's agent (an example of a form of letter of representation and warranty acceptable to EUI is set out at the end of this Section 7, as Item 6).

Where an administrator has been appointed by the CREST member or its directors

Where an administrator has been appointed by the CREST member or its directors (under paragraph 22 of Schedule B1 to the Insolvency Act 1986) and the administrator requests that the CREST membership be re-enabled for settlement, he must provide EUI with:

- satisfactory evidence of his appointment (normally in the form of the notice of appointment filed with the court and any other document or statement which is required to accompany or be filed with such notice under or pursuant to paragraph 29 of Schedule B1 to the Insolvency Act 1986 and Rule 2.23 of the Insolvency Rules 1986, in each case certified by the administrator as being true and correct copies of the originals and within any time limit specified pursuant to paragraph 29 of Schedule B1);
- satisfactory evidence of the administrator's capacity to act on behalf of the CREST member, including his authority to communicate with, and give instructions to, EUI in connection with the affairs of the CREST member[24] and together with a copy of any statement made for the purposes of paragraph 100(2) of Schedule B1 to the Insolvency Act 1986;
- confirmation that the administrator has either secured physical control of the CREST member's gateway computer or, if the CREST member is a sponsored member, that the sponsored member's sponsor is aware of the administrator's appointment;

[23] Where only one CREST member is involved, it is likely that the relevent debenture(s), together with the notice of appointment and other filed documentation, will be sufficient evidence. However, see further corresponding footnote below where there is more than one CREST member involved.

[24] Where only one CREST member is involved, it is likely that the notice of appointment and other filed documentation will be sufficient evidence. However, see further corresponding footnote below where there is more than one CREST member involved.

- an indemnity from the administrator or joint administrators (as agent of the CREST member and in his or their personal capacities) in favour of, and in a form acceptable to, EUI against any liability which arises by reason of EUI acting upon and in accordance with the instructions of the administrator(s) and any properly authenticated dematerialised instructions attributable to the CREST member after its re-enablement (an example of a pro forma indemnity acceptable to EUI is set out at the end of this Section 7, as Item 11); and
- in cases where there have been complications or delay in procuring any of the above assurances, a letter of representation and warranty issued by the administrator in favour of, and in a form acceptable to, EUI; this will be required to be issued by the administrator acting in his agency and personal capacity (an example of a form of letter of representation and warranty acceptable to EUI is set out at the end of this Section 7, as Item 5).

Where an administrative receiver has been appointed

Where an administrative receiver has been appointed and requests that the CREST membership be re-enabled for settlement, the administrative receiver must provide EUI with:

- satisfactory evidence of his appointment (normally in the form of a copy of the relevant debentures (certified by the administrative receiver as being a true and correct copy of the original), together with the instrument of appointment and acceptance of such appointment, within any time limit specified in the Insolvency Act 1986 and/or in the Insolvency Rules 1986);
- satisfactory evidence of the administrative receiver's capacity to act on behalf of the CREST member, including his authority to communicate with, and give instructions to, EUI in connection with the affairs of the CREST member[25];
- confirmation that the administrative receiver has either secured physical control of the CREST member's gateway computer or, if the CREST member is a sponsored member, that the sponsored member's sponsor is aware of the administrative receiver's appointment;
- an indemnity from the person by whom or on whose behalf the administrative receiver has been appointed in favour of, and in a form acceptable to, EUI against any liability which arises by reason of EUI acting upon and in accordance with the instructions of the administrative receiver and any properly authenticated dematerialised instructions attributable to the CREST member after its re-enablement (an example of a pro forma indemnity acceptable to EUI is set out at the end of this Section 7, as Item 12); and
- in cases where there have been complications or any delay in procuring any of the above assurances, a letter of representation and warranty issued by the administrative receiver in favour of, and in a form acceptable to, EUI; this letter need only be issued by the administrative receiver in his capacity as the chargor's agent (an example of a pro forma letter of representation and warranty acceptable to EUI is set out at the end of this Section 7, as Item 7).

Where a receiver who is not an administrative receiver has been appointed

Where a receiver who is not an administrative receiver has been appointed and requests that the CREST membership be re-enabled for settlement, the receiver must provide EUI with:

[25] See the corresponding footnote below.

- satisfactory evidence of his appointment (normally in the form of a copy of the relevant debenture or other charge instrument (certified by the receiver as being a true and correct copy of the original), together with the instrument of appointment and acceptance of such appointment, within any time limit specified in the Insolvency Act 1986 and/or in the Insolvency Rules 1986);
- satisfactory evidence of the receiver's capacity to act on behalf of the CREST member, including his authority to communicate with, and give instructions to, EUI in connection with the affairs of the CREST member[26];
- confirmation that the receiver has either secured physical control of the CREST member's gateway computer or, if the CREST member is a sponsored member, that the sponsored member's sponsor is aware of the receiver's appointment;
- an indemnity from the settlement bank in favour of, and in a form acceptable to, EUI against any liability which arises by reason of EUI acting upon and in accordance with the instructions of the receiver and any properly authenticated dematerialised instructions attributable to the CREST member after its re-enablement (an example of a pro forma indemnity acceptable to EUI is set out at the end of this Section 7, as Item 12);
- a letter of representation and warranty issued by the receiver in his agency capacity in favour of, and in a form acceptable to, EUI confirming that the receiver is qualified to act as an insolvency practitioner (an example of a pro forma letter of representation and warranty acceptable to EUI is set out at the end of this Section 7 as Item 8);
- either a certified copy of the written consent of the chargor CREST member to the appointment of the receiver or some other written evidence satisfactory to EUI that such appointment was made with the consent or at the invitation of the chargor CREST member, or (if it is not possible to provide the above) a copy of the settlement bank's demand for payment certified as being a true and correct copy of the original by an authorised signatory of the settlement bank previously notified to EUI; and
- in cases where there have been complications or any delay in procuring any of the above assurances, a letter of representation and warranty issued by the receiver in favour of, and in a form acceptable to, EUI; this will be required to be issued by the receiver acting in his agency and personal capacity (an example of a pro forma letter of representation and warranty acceptable to EUI is set out at the end of this Section 7 as Item 9).

Where two or more persons are appointed as joint office-holders or receivers, the above requirements will apply in relation to each of them, but in addition EUI will require evidence in a form acceptable to EUI of the circumstances (if any) in which the office-holders or receivers must act together or whether one or more of them may act for the other(s).

Where the above requirements are satisfied and on receipt of a written request from the office-holder or receiver, EUI will re-enable the CREST membership of the chargor CREST member.

[26] Where only one CREST member is involved, it is likely that the relevant debenture or other charge instrument, together with the instrument of appointment will be sufficient evidence. However, further evidence will be necessary in circumstances where a group of companies which are CREST members have been disabled on the appointment of the receiver to one – but not necessarily all – of them and where it is proposed that the receiver will send and receive properly authenticated dematerialised instructions attributable to all or any of them.

Pro forma documentation

Specimen English law power of attorney (Item 1)

THIS POWER OF ATTORNEY is made on [insert date]

Between:

(1) *[insert name, registration number, place of incorporation and registered office of donor]* (the 'Company'); and

(2) *[insert name, registration number, place of incorporation and registered office of the Settlement Bank]* (the 'Bank').

NOW THIS DEED WITNESSES AS FOLLOWS:

[Insert any necessary interpretation provision]

1. For the purposes of securing the interest of the Bank in the Charged Property and the performance of its obligations to the Bank, whether under the Security Deed, the Facility Agreement or otherwise, the Company irrevocably and by way of security hereby appoints each of the Bank and the [Receiver] [Administrator] to be its attorney (with full power to appoint substitutes and to sub-delegate, including power to authorise the person so appointed to make further appointments, in both cases, with regard to all or any part of the Charged Property) on behalf of the Company and in its name or otherwise to execute any document or do any act or thing which the Bank or the [Receiver] [Administrator] or such substitute or delegate may, in its or his absolute discretion, consider appropriate in connection with the exercise of any of the powers of the Bank or the [Receiver] [Administrator] or which the Company is obliged by the Bank to execute or do, whether under the Security Deed, the Facility Agreement or otherwise, and in addition:

(a) to communicate with EUI in all matters relating to the Charged Property and, without limitation, to send properly authenticated dematerialised instructions on behalf of the Company with respect to the Charged Property;

(b) to sign any document and to take any step to confirm or perfect the appointment of the Bank as a CREST sponsor of the Company or to appoint any other person to act as a CREST sponsor of the Company with full authority in each case to communicate with EUI in all matters relating to the Charged Property (including, without limitation, sending properly authenticated dematerialised instructions on behalf of the Company with respect to the Charged Property) and to suspend the authority of any other CREST sponsor to act for the Company;

Without prejudice to the generality of its power to appoint substitutes and to sub-delegate, the Bank may appoint the [Receiver] [Administrator] as its substitute or delegate, and any person appointed the substitute of the Bank or the [Receiver] [Administrator] shall, in connection with the exercise of such power of attorney, be the agent of the Company and the Company shall be solely responsible for his acts and defaults and liable on any contracts or engagements made or entered into by him, and in no circumstances whatsoever shall the Bank be in any way responsible for any misconduct, negligence or default of his.

2. This power shall be exercisable by the Bank at any time or times as it thinks fit in its entire discretion without the necessity of any event of default howsoever described or any other condition having been fulfilled first.'

This Deed shall be governed by and construed in accordance with English law.

IN WITNESS whereof the Company has caused this Deed to be executed and delivered the day and year first before written.

EXECUTED as a DEED)

by [insert name of Company]) ……

Director

……

Director/Secretary

OR

THE COMMON SEAL)

of [insert name of Company])

was hereunto affixed)

in the presence of:) ……..

Director

…….

Director/Secretary

Specimen letter from a CREST System-Member (Item 2)

Euroclear UK & Ireland Limited

33 Cannon Street

London EC4M 5SB

[Date]

For the attention of the Head of Legal Affairs

Dear Sirs

[*insert name of Member*]

We write to notify you that, by a Security Deed dated [*insert date*] (the 'Security Deed'), [Security Deed dated [*insert date* as amended by a Supplemental Security Deed dated [*insert date*] (collectively the 'Security Deed')[27]] we have charged to [*insert name of settlement bank*] (the 'Bank') all the stock receivables and rights referred to in clause [ ] of the Security Deed (the 'Charged Securities') to secure the performance of our obligations to the Bank ('the Secured Obligations'). A certified copy of the Security Deed is annexed to this letter.

We confirm that, until the Security Deed is released by the Bank, or (if earlier) the Secured Obligations are confirmed by the Bank as fully and effectively discharged, the Bank is irrevocably authorised (pursuant to the power of attorney contained in the Security Deed) to act as our sponsor for the following purpose and on the following terms:

(a) upon the powers of the Bank under the Security Deed becoming exercisable, the Bank may as our sponsor communicate with EUI in all matters relating to the Charged Securities and, without limitation, may send properly authenticated dematerialised instructions to EUI on our behalf with respect to the Charged Securities;

(b) the authority of the Bank to act as our sponsor will continue for so long as necessary to enable the Bank to exercise its rights and powers under the Security Deed with respect to the Charged Securities;

(c) the power of attorney contained in the Security Deed is exercisable by the Bank without the necessity of any event of default howsoever described in such Security Deed having occurred or any other condition having been fulfilled first;

(d) you may treat the authority of any other sponsor to act on our behalf in relation to the Charged Securities as terminated or suspended upon your being notified by the Bank to that effect;

(e) the Bank is irrevocably authorised (pursuant to the above power of attorney) to sign any document and to take any step in our name to confirm or perfect the appointment of the Bank as our sponsor and to appoint any other person to act as our sponsor for the above purpose (in which event the provisions of paragraphs (a)-(d) above and paragraph (f) below shall apply to such other person as if it were the Bank for the purpose of those paragraphs);

(f) you may rely on any communication or instruction received from the Bank acting as our sponsor without any duty to enquire into the validity, propriety or purpose of such communication or instruction.

[27] Delete whichever is inapplicable

We confirm that the power of attorney contained in the Security Deed is given by us irrevocably by way of security in favour of the Bank. Any notice given by us to you in the future purporting to revoke the above power of attorney or the authority of the Bank to act as our sponsor for the above purpose shall be valid only if the notice is countersigned by the Bank to signify its agreement to such revocation or is accompanied by a full release of the Security Deed duly executed by the Bank.

The appointment of the Bank (or any other person) to act as our sponsor is without prejudice to the other rights and powers exercisable under the Security Deed (including those exercisable under the power of attorney).

Any reference to the 'Security Deed' in this letter shall be construed as a reference to the Security Deed as it may from time to time be amended, varied, supplemented, novated or replaced and shall include any document which is supplemental to, or is expressed to be collateral to, or is entered into pursuant to or in accordance with the terms of, the Security Deed.

Terms used in this letter which are not defined here, but which are defined or used in the CREST Terms and Conditions or the CREST Regulations shall, unless the context otherwise requires, have the meanings given to them in, and be construed in the manner required by, such CREST Terms and Conditions or the CREST Regulations.

This letter shall be governed and construed in accordance with English law.

Yours faithfully

for and on behalf of

[*insert name of Member*]

……..

Text of notice of appointment of settlement bank as sponsor [where chargor is a sponsored member] (Item 3)

[On the settlement bank's headed notepaper]

Euroclear UK & Ireland Limited

33 Cannon Street

London EC4M 5SB

For the attention of the Head of Legal Affairs and the Head of Service Delivery

[Date]

Dear Sirs,

[Name of Settlement Bank] (the 'Bank') issues this notice in its capacity as attorney for [name of sponsored member] (the 'member').

The member (admitted as a CREST sponsored member under Specified Participant ID [insert Specified Participant ID] (the 'Specified Participant ID')) has appointed the Bank to act as its CREST sponsor in place of [insert name of present CREST sponsor] (the 'existing Sponsor').

This notice requests you to permit the Bank acting under User ID [insert User ID of the Bank] to act with immediate effect upon your receipt of this notice as the CREST sponsor for the member under the Specified Participant ID. The member agrees that it shall be deemed to have given all the undertakings, acknowledgements and consents in relation to the Bank as the member's CREST sponsor which it has given in relation to the existing Sponsor under the CREST Terms and Conditions entered into between the member and EUI.

Upon your receipt of this notice, the authority of the existing Sponsor to send dematerialised instructions attributable to the member and receive dematerialised instructions on behalf of the member shall terminate.

Yours faithfully

…….. …….

Authorised signatory Authorised signatory

for and on behalf of the Bank acting as attorney for the member pursuant to a power of attorney dated [insert date of power of attorney].

Specimen letter of representation and warranty from a liquidator (Item 4)

Euroclear UK & Ireland Limited,

33 Cannon Street

London

EC4M 5SB

For the attention of the Head of Legal Affairs.

Dear Sirs,

[*NAME OF COMPANY*] (IN LIQUIDATION)

In consideration of Euroclear UK & Ireland Limited ('EUI') agreeing at my request to end the suspension of [*insert name*] (the 'Member') as a system-member of the CREST system, I hereby confirm to EUI that:

(a) I am qualified to act as an insolvency practitioner;

(b) on [*insert date of appointment*] I was appointed liquidator under the Insolvency Act 1986 of the Member and remain the liquidator of the Member;

(c) I am, and until such time as I give you actual notice otherwise I will at all material times be, duly authorised to communicate with EUI in connection with the affairs of the Member and, without limitation, to send properly authenticated dematerialised instructions to EUI attributable to the Member; and

(d) any such communication or instruction received by EUI in accordance with paragraph (c) above shall not cause the breach of any agreement to which the Member is a party, including without limitation any agreement with any person who has a beneficial entitlement in the securities recorded in the Member's stock or member account.

I recognise that EUI may further suspend the Member as a system-member or terminate its membership in whole or in part in accordance with the provisions of the CREST Terms and Conditions and agree that nothing in this letter shall prejudice such right or remedy (or any other right or remedy of EUI under or in connection with the CREST Terms and Conditions)

Terms used in this letter which are not defined here, but which are defined or used in the CREST Terms and Conditions or the CREST Regulations shall have the meanings given to them in, and be construed in the manner required by, such CREST Terms and Conditions or the CREST Regulations.

This letter shall be governed by and construed in accordance with English law.

I should be grateful if you would acknowledge your acceptance of the terms and conditions of this letter by countersigning, dating and returning to me the attached copy of this letter.

I confirm that I assume personal liability in respect of the confirmations and agreements set out above, notwithstanding my statutory agency for the Member.

Yours faithfully,

[* insert name*]

acting as liquidator of [*insert name of company*] and in his/her personal capacity

Specimen letter of representation and warranty from an administrator appointed by the court or by the CREST System – Member or its directors (Item 5)

Euroclear UK & Ireland Limited,

33 Cannon Street

London

EC4M 5SB

[Date]

For the attention of the Head of Legal Affairs.

Dear Sirs,

[*NAME OF COMPANY*] (IN ADMINISTRATION)

The affairs, business and property of [*insert name*] (the 'Member') are being managed by me, [*insert name of administrator*], as administrator.

In consideration of Euroclear UK & Ireland Limited ('EUI') agreeing at my request to end the suspension of the Member as a system-member of the CREST system, I hereby confirm to EUI that:

(a) I am qualified to act as an insolvency practitioner;

(b) on [*insert date of appointment*] I my appointment of administrator of the Member under the Insolvency Act 1986 took effect and I remain the administrator of the Member;

(c) I am, and until such time as I give you actual notice otherwise I will at all material times be, duly authorised to communicate with EUI in connection with the affairs of the Member and, without limitation, to send properly authenticated dematerialised instructions to EUI attributable to the Member; [and]

(d) any such communication or instruction received by EUI in accordance with paragraph (c) above shall not cause the breach of any agreement to which the Member is a party, including without limitation any agreement with any person who has a beneficial entitlement in the securities recorded in the Member's stock or member account[.] [; and]

(e) I give my consent to any step that may be taken to enforce any security over the Member's property recorded in any escrow balance and agree to provide such information as EUI may require (in its absolute discretion) in connection with this consent.

I recognise that EUI may further suspend the Member as a system-member or terminate its membership in whole or in part in accordance with the provisions of the CREST Terms and Conditions and agree that nothing in this letter shall prejudice such right or remedy (or any other right or remedy of EUI under or in connection with the CREST Terms and Conditions).

Terms used in this letter which are not defined here, but which are defined or used in the CREST Terms and Conditions or the CREST Regulations shall have the meanings given to them in, and be construed in the manner required by, such CREST Terms and Conditions or the CREST Regulations.

This letter shall be governed by and construed in accordance with English law.

I should be grateful if you would acknowledge your acceptance of the terms and conditions of this letter by countersigning, dating and returning to me the attached copy of this letter.

I confirm that I assume personal liability in respect of the confirmations and agreements set out above, notwithstanding my statutory agency for the Member.

Yours faithfully,

[*insert name*]

acting as administrator of [*insert name of company*] and in his/her personal capacity

Specimen letter of representation and warranty from an administrator appointed by the holder of a qualifying floating charge (Item 6)

Euroclear UK & Ireland Limited

33 Cannon Street

London

EC4M 5SB

[DATE]

For the attention of the Head of Legal Affairs

Dear Sirs,

[*NAME OF COMPANY*] (IN ADMINISTRATION)

The affairs, business and property of [*insert name*] (the 'Member') are being managed by me, [*insert name of administrator*], as administrator.

In consideration of Euroclear UK & Ireland Limited ('EUI') agreeing at my request to end the suspension of the Member as a system-member of the CREST system, I hereby confirm to EUI that:

(a) I am qualified to act as an insolvency practitioner;

(b) on [*insert date of appointment*] my appointment as administrator of the Member under the Insolvency Act 1986 took effect and I remain the administrator of the Member;

(c) I am, until such time as I give you actual notice otherwise I will at all material times be, duly authorised to communicate with EUI in connection with the affairs of the Member and, without limitation to send properly authenticated dematerialised instructions to EUI attributable to the Member; [and]

(d) any such communication or instruction received by EUI in accordance with paragraph (c) above shall not cause the breach of any agreement to which the Member is a party, including without limitation any agreement with any person who has a beneficial entitlement in the securities recorded in the Member's stock or member account[.] [;and]

(e) I give my consent to any steps that may be taken to enforce any security over the Member's property recorded in any escrow balance and agree to provide such information as EUI may require (in its absolute discretion) in connection with this consent.

I recognise that EUI may further suspend the Member as system-member or terminate its membership in whole or in part in accordance with the provisions of the CREST Terms and Conditions and agree that nothing in this letter shall prejudice such right or remedy (or any other right remedy of EUI under or in connection with the CREST Terms and Conditions).

Terms used in this letter which are not defined here, but which are defined or used in the CREST Terms and Conditions or the CREST Regulations shall have the meanings given to them in, and be construed in the manner required by, such CREST Terms and Conditions or the CREST Regulations.

This letter shall be governed by and construed in accordance with English law.

I should be grateful if you would acknowledge your acceptance of the terms and conditions of this letter by countersigning, dating and returning to me the attached copy of this letter.

Yours faithfully

[*insert name*]

acting as administrator of [*insert name of company*] but without personal liability

Specimen letter of representation and warranty from an administrative receiver (Item 7)

Euroclear UK & Ireland Limited,

33 Cannon Street

London

EC4M 5SB

[Date]

For the attention of the Head of Legal Affairs.

Dear Sirs,

[*NAME OF COMPANY*] (IN ADMINISTRATIVE RECEIVERSHIP)

In consideration of Euroclear UK & Ireland Limited ('EUI') agreeing at my request to end the suspension of [*insert name*] (the 'Member') as a system-member of the CREST system, I hereby confirm to EUI that:

(a) I am qualified to act as an insolvency practitioner;

(b) on [*insert date of appointment*] I was duly appointed as an administrative receiver under the Insolvency Act 1986 of the Member and remain the administrative receiver of the Member;

(c) I am, and until such time as I give you actual notice otherwise I will at all material times be, duly authorised to communicate with EUI in connection with the affairs of the Member and, without limitation, to send properly authenticated dematerialised instructions to EUI attributable to the Member; and

(d) any such communication or instruction received by EUI in accordance with paragraph (c) above shall not cause the breach of any agreement to which the Member is a party, including without limitation any agreement with any person who has a beneficial entitlement in the securities recorded in the Member's stock or member account.

I recognise that EUI may further suspend the Member as a system-member or terminate its membership in whole or in part in accordance with the provisions of the CREST Terms and Conditions and agree that nothing in this letter shall prejudice such right or remedy (or any other right or remedy of EUI under or in connection with the CREST Terms and Conditions)

Terms used in this letter which are not defined here, but which are defined or used in the CREST Terms and Conditions or the CREST Regulations shall have the meanings given to them in, and be construed in the manner required by, such CREST Terms and Conditions or the CREST Regulations.

This letter shall be governed by and construed in accordance with English law.

I should be grateful if you would acknowledge your acceptance of the terms and conditions of this letter by countersigning, dating and returning to me the attached copy of this letter.

Yours faithfully,

[*insert name*]

acting as administrative receiver of [*insert name of company*] but without personal liability

Specimen letter of representation and warranty from a (receiver who is not an administrative receiver - confirmation of qualification as insolvency practitioner) (Item 8)

Euroclear UK & Ireland Limited,

33 Cannon Street

London

EC4M 5SB

[Date]

For the attention of the Head of Legal Affairs

Dear Sirs,

[*NAME OF COMPANY*] (IN RECEIVERSHIP)

In consideration of Euroclear UK & Ireland Limited ('EUI') agreeing at my request to end the suspension of [*insert name*] (the 'Member') as a system-member of the CREST system, I hereby confirm to EUI that:

(a) I am qualified to act as an insolvency practitioner;

(b) on [*insert date of appointment*] I was duly appointed as a receiver [*insert name of settlement bank*] (the 'Bank') over the securities charged by the Member in favour of the Bank (the 'Charged Securities') under a Security Deed dated [*insert date*] created by the Member in favour of the Bank; and

(c) I am, and until such time as I give you actual notice otherwise I will at all material times be, duly authorised to communicate with EUI in connection with the affairs of the Member and, without limitation, to send properly authenticated dematerialised instructions to EUI on behalf of the Member with respect to the Charged Securities.

I recognise that EUI may further suspend the Member as a system-member or terminate its membership in whole or in part in accordance with the provisions of the CREST Terms and Conditions and agree that nothing in this letter shall prejudice such right or remedy (or any other right or remedy of EUI under or in connection with the CREST Terms and Conditions)

Terms used in this letter which are not defined here, but which are defined or used in the CREST Terms and Conditions or the CREST Regulations shall have the meanings given to them in, and be construed in the manner required by, such CREST Terms and Conditions or the CREST Regulations.

This letter shall be governed by and construed in accordance with English law.

I should be grateful if you would acknowledge your acceptance of the terms and conditions of this letter by countersigning, dating and returning to me the attached copy of this letter.

Yours faithfully,

[*insert name*]

acting as receiver of [*insert name of company*] but without personal liability

Specimen letter of representation and warranty from a receiver who is not an administrative receiver - in cases of complication or delay (Item 9)

Euroclear UK & Ireland Limited,

33 Cannon Street

London

EC4M 5SB

[Date]

For the attention of the Head of Legal Affairs.

Dear Sirs,

[*NAME OF COMPANY*] (IN RECEIVERSHIP)

In consideration of Euroclear UK & Ireland Limited ('EUI') agreeing at my request to end the suspension of [*insert name*] (the 'Member') as a system-member of the CREST system, I hereby confirm to EUI that:

(a) I am qualified to act as an insolvency practitioner;

(b) on [*insert date of appointment*] I was duly appointed as a receiver [*insert name of settlement bank*] (the 'Bank') over the securities charged by the Member in favour of the Bank (the 'Charged Securities') under a Security Deed dated [*insert date*] created by the Member in favour of the Bank;

(c) I am, and until such time as I give you actual notice otherwise I will at all material times be, duly authorised to communicate with EUI in connection with the affairs of the Member and, without limitation, to send properly authenticated dematerialised instructions to EUI on behalf of the Member with respect to the Charged Securities; and

(d) any such communication or instruction received by EUI in accordance with paragraph (c) above shall not cause the breach of any agreement to which the Member is a party, including without limitation any agreement with any person who has a beneficial entitlement in the securities recorded in the Member's stock or member account.

I recognise that EUI may further suspend the Member as a system-member or terminate its membership in whole or in part in accordance with the provisions of the CREST Terms and Conditions and agree that nothing in this letter shall prejudice such right or remedy (or any other right or remedy of EUI under or in connection with the CREST Terms and Conditions)

Terms used in this letter which are not defined here, but which are defined or used in the CREST Terms and Conditions or the CREST Regulations shall have the meanings given to them in, and be construed in the manner required by, such CREST Terms and Conditions or the CREST Regulations.

This letter shall be governed by and construed in accordance with English law.

I should be grateful if you would acknowledge your acceptance of the terms and conditions of this letter by countersigning, dating and returning to me the attached copy of this letter.

I confirm that I assume personal liability in respect of the confirmations and agreements set out above.

Yours faithfully,

[*insert name*]

acting as receiver of [*insert name of company*] and in his/her personal capacity

Pro Forma Indemnity from a Settlement Bank in connection with administration, where administrator(s) is/are appointed by the holder of a qualifying floating charge (Item 10)

Euroclear UK & Ireland Limited

33 Cannon Street

London

EC4M 5SB

[Date]

Dear Sirs

[INSERT MEMBER'S NAME] (the 'Member')

We [insert name of settlement bank] of [insert address], confirm that we duly appointed [insert name of administrators] on [insert date] as joint administrators ('the Administrators') of certain securities of the Member pursuant to and in accordance with our powers under the [Security Deed] dated [insert date] created by the Member in our favour and under paragraph 14 of Schedule B1 to the Insolvency Act 1986. We hereby certify that true and correct copies of the originals of:

1.1 the notice of appointment

1.2 the statutory declaration which was filed under paragraph 18(2) of Schedule B1 to the Insolvency Act 1986;

1.3 the statement of the Administrators which accompanied the notice of appointment and which was filed with the court under paragraph 18(3) of Schedule B1 to the Insolvency Act 1986;

1.4 such other prescribed documents which were filed with the court in connection with the Administrator's appointment;

are attached to this indemnity.

In consideration of your acting upon the instructions of the Administrators (or any one of them if the notice of appointment so provides) purporting to be given in their (or his) capacity as such or otherwise attributable to the Member or any Group Company and without enquiring as to any of:

2.1 their (or his) qualifications;

2.2 the validity of their (or his) appointment; or

2.3 the propriety or purpose of any exercise or any purported exercise of their (or his) powers, we hereby irrevocably and unconditionally agree to indemnify you (as operator of the CREST relevant system) on demand against any liability, cost and expense (including legal fees) together with value added tax thereon that you may incur by reason of your acting upon any such instruction which you believe to be binding upon the Member or any other Group Company and which is subsequently shown to your satisfaction not to be effectively binding, to the extent that the amount of such liability, cost or expense is not recovered and retained by you from the Administrators or any third party (but without you being under any obligation to, or it being a condition of our liability under this indemnity that you, pursue, exercise or otherwise enforce any right, claim or remedy you may have against the Administrators or any of them or any third party).

In this indemnity 'instruction' includes any written or oral instruction and/or any properly authenticated dematerialised instruction.

We shall, from time to time, on your demand reimburse your for all costs and expenses (including legal fees) together with value added tax thereon incurred in or in connection with:

3.1 the preservation and/or enforcement of any of your rights under this indemnity; and/or

3.2 your defending or otherwise disputing any claim or threatened claim which may give rise to a claim under this indemnity.

Without prejudice to paragraph 5 below:

4.1 if you have actual notice of any claim or threatened claim which is likely to give rise to a demand under this indemnity, you will as soon as practicable give written notice to us, setting out what you consider (in your sole and absolute discretion, but without prejudice to our right to make further reasonable enquiries of you) to be reasonable details of the circumstances giving rise to such claim and, if possible, your estimate of the amount of the claim;

4.2 you will consult with us fully in the conduct of the claim and, unless any such disclosure would contravene any requirement of law or your obligations under the CREST Regulations or as a recognised CSD, provide us with such information as we may reasonably request and will have due regard to our views in connection with the claim;

4.3 if, after we have paid in full any demand made by you under this indemnity, you recover from any source an amount referable to the relevant claim, you will promptly account to us for the net amount recovered (less your actual cost of recovery); and

4.4 if we make payments in full of any demand made by you under this indemnity, you will at our request (and to the extent permitted by and consistent with any applicable laws) assign to us all your rights against other parties in respect of the subject matter of such claim.

Our liability under this indemnity shall not be affected nor shall this indemnity be discharged or diminished by reason of:

5.1 any breach of your obligations under paragraph 4 (including without limitation the failure by you to defend or otherwise dispute any claim) and any failure by you to pursue, exercise or otherwise enforce any right, claim or remedy you may have against the Administrators (or any one or more of them) or any third party;

5.2 any change in your or our constitution, your or our absorption into or amalgamation with any other person or the acquisition of all or a part of your or our undertaking by any other person;

5.3 any other act or omission by you or any other person which is prejudicial to us and which but for this provision might operate as a legal or equitable defence for or impair or discharge our obligations under this indemnity.

All payments to be made by us under this indemnity shall be made free and clear of and without any deduction for or on account of any charges, set off or counterclaim.

A certificate signed by an authorised signatory on your behalf as to any sum payable by us under this indemnity or any costs incurred by you to recover an amount referable to a claim shall, in the absence of manifest error, be conclusive for the purposes of this indemnity.

Where a notice is given or a demand made by you under this indemnity, it shall be served by delivering it by hand, or by sending it by prepaid first class or recorded delivery post, to us as the address indicated above or such other address in the United Kingdom as we may notify you from time to time and marked for the attention of the [insert name/title]. Any such notice or demand shall be deemed served:

8.1 if left at our address, at the time when it is so left (or it is left on a day that is not a business day, at 08:00 on the next following business day); and

8.2 if sent by post, on the second business day following the day of posting.

In proving service of a notice or demand served (a) by hand, it shall be sufficient to prove that such notice or demand was delivered at the address for service and (b) by post, it shall be sufficient to prove that such notice or demand was correctly addressed, full postage paid and posted.

In clause 8 'business day' means a day (other than a Saturday or Sunday) on which banks generally are open for business in London.

9. Terms used in this indemnity which are not defined in this indemnity shall have the meanings given to them in, and shall be construed in accordance with, the CREST Terms and Conditions (as amended, varied, supplemented, novated or replaced) entered into between you and the Member.

10. This indemnity shall be governed by, and construed in accordance with, English law. For your benefit, we irrevocably agree that the courts of England shall have jurisdiction to hear and determine any suit, action or proceeding, and to settle any disputes, which may arise out of or in connection with this indemnity. For such purposes, we hereby irrevocably submit to the jurisdiction of the courts of England.

[The following clause is only required if the settlement bank is incorporated in a country or state outside the European Union]

11. [We hereby agree that the process by which any suit, action or proceeding is begun may be served on us by being delivered to [insert name of process agent] of [insert address in England] or such other person as we may nominate from time to time as our agent for service of any process in England.]

By …….

for and on behalf of [insert name of settlement bank]

Pro Forma Indemnity in connection with administration, where administrator(s) is/are appointed by the CREST System-Member or its directors (Item 11)

Euroclear UK & Ireland Limited

33 Cannon Street

London

EC4M 5SB

[Date]

Dear Sirs

[INSERT MEMBER'S NAME]('the Member')

1. We confirm that [insert name of administrators] were duly appointed by the [Member] [the directors of the Member] on [insert date] as joint administrators ('the Administrators') of the Member under paragraph 22 of Schedule B1 to the Insolvency Act 1986. We hereby certify that true and correct copies of the originals of:

1.1 the notice of appointment;

1.2 the statutory declaration which was filed under paragraph 29(2) of Schedule B1 to the Insolvency Act 1986;

1.3 the statement of the Administrators which accompanied the notice of appointment and which was filed with the court under paragraph 29(3) of Schedule B1 to the Insolvency Act 1986;

1.4 such other prescribed documents which were filed with the court in connection with the Administrator's appointment,

are attached to this indemnity.

2. In consideration of your acting upon the instructions of the Administrators (or any one of them if the notice of appointment so provides) purporting to be given in their (or his) capacity as such or otherwise attributable to the Member or any Group Company and without enquiring as to any of:

2.1 their (or his) qualifications;

2.2 the validity of their (or his) appointment; or

2.3 the propriety or purpose of any exercise or any purported exercise of their (or his) powers, we hereby irrevocably and unconditionally agree to indemnify you (as operator of the CREST relevant system) on demand against any liability, cost and expense (including legal fees) together with value added tax thereon that you may incur by reason of your acting upon any such instruction which you believe to binding upon the Member or any other Group Company and which is subsequently shown to your satisfaction not to be effectively binding, to the extent that the amount of such liability, cost or expense is not recovered and retained by you from any third party (but without you being under any obligation to, or it being a condition of our liability under this indemnity that you pursue, exercise or otherwise enforce any right, claim or remedy you may have against any third party).

In this indemnity 'instruction' includes any written or oral instruction and/or any properly authenticated dematerialised instruction.

3. We shall, from time to time, on your demand reimburse you for all costs and expenses (including legal fees) together with value added tax thereon incurred in or in connection with:

3.1 the preservation and/or enforcement of any of your rights under this indemnity; and/or

3.2 your defending or otherwise disputing any claim or threatened claim which may give rise to a claim under this indemnity.

4. Without prejudice to paragraph 5 below:

4.1 if you have actual notice of any claim or threatened claim which is likely to give rise to a demand under this indemnity, you will as soon as practicable give written notice to us, setting out what you consider (in your sole and absolute discretion, but without prejudice to our right to make further reasonable enquiries of you) to be reasonable details of the circumstances giving rise to such claim and, if possible, your estimate of the amount of the claim;

4.2 you will consult with us fully in the conduct of the claim and, unless any such disclosure would contravene any requirement of law or your obligations under the CREST Regulations or as a recognised CSD, provide us with such information as we may reasonably request and will have due regard to our views in connection with the claim;

4.3 if, after we have paid in full any demand made by you under this indemnity, you recover from any source an amount referable to the relevant claim, you will promptly account to us for the net amount recovered (less your actual cost of recovery); and

4.4 if we make payments in full of any demand made by you under this indemnity, you will at our request (and to the extent permitted by and consistent with any applicable laws) assign to us all your rights against other parties in respect of the subject matter of such claim.

5 Our liability under this indemnity shall not be affected nor shall this indemnity be discharged or diminished by reason of:

5.1 any breach of your obligations under paragraph 4 (including without limitation the failure by you to defend or otherwise dispute any claim) and any failure by you to pursue, exercise or otherwise enforce any right, claim or remedy you may have against the Administrators (or any or more of them) or any third party;

5.2 any change in your or our constitution, your or our absorption into or amalgamation with any other person or the acquisition of all or a part of your or our undertaking by any other person;

5.3 any other act or omission by you or any other person which is prejudicial to us and which but for his provision might operate as a legal or equitable defence for or impair or discharge our obligations under this indemnity.

6 All payments to be made by us under this indemnity shall be made free and clear of and without any deduction for or on account of any charges, set off our counterclaim.

7 A certificate signed by an authorised signatory on your behalf as to any sum payable by us under this indemnity or any costs incurred by you to recover an amount referable to a claim shall, in the absence of manifest error, be conclusive for the purposes of this indemnity.

8 Where a notice is given or a demand made by you under this indemnity, it shall be served by delivering it by hand, or by sending it by prepaid first class or recorded delivery post, to us at the address indicated under our names below or such other address in the United Kingdom as we may notify to you from time to time and, in the case of the Member, marked for the attention of [insert name/title]. Any such notice or demand shall be deemed served:

8.1 if left at our address, at the time when it is so left (or if it is left on a day that is not a business day, at 08:15 on the next following business day); and

8.2 if sent by post, on the second business day following the day of posting.

In proving service of a notice or demand served (a) by hand, it shall be sufficient to prove that such notice or demand was delivered at the address for service and (b) by post, it shall be sufficient to prove that such notice or demand was correctly addressed, full postage paid and posted.

In clause 8 'business day' means a day (other than a Saturday or a Sunday) on which banks generally are open for business in London.

9 Terms used in this indemnity which are not defined in this indemnity shall have the meanings given to them in, and shall be construed in accordance with, the CREST Terms and Conditions (as amended, varied, supplemented, novated or replaced) entered into between you and the Member.

10 This indemnity shall be governed by, and construed in accordance with, English law. For your benefit, we irrevocably agree that the courts of England shall have jurisdiction to hear and determine any suit, action or proceeding, and to settle any disputes, which may arise out of or in connection with this indemnity. For such purposes, we hereby irrevocably submit to the jurisdiction of the courts of England.

11.1 References to 'we' or 'us' (or like expression) in this indemnity shall include references to any one or more of the Member and the Administrators (acting in his or their personal capacity).

11.2 The liabilities and obligations of the Member and the Administrator under or pursuant to this indemnity shall be joint and several.

11.3 It is not a condition to the liabilities or obligations of any one signatory under this indemnity that any other person (whether or not named below as a signatory) shall execute this indemnity or assume, or shall continue to assume, any liability or obligation under it, or that you make demand or pursue any other person for payment under this indemnity before making demand on or otherwise pursuing that signatory.

11.4 The liabilities and obligations of each signatory under this indemnity shall not be prejudiced or impaired by (i) any legal or equitable defence which may be available to any other signatory; (ii) any provision of this indemnity being or becoming void, voidable, unenforceable or otherwise invalid under any applicable law as regards any other signatory for any reason whatsoever; or (iii) the absence, loss, release or impairment for any reason of any rights to contribution, indemnity or other recourse by one signatory against another signatory or against that other signatory's property.

11.5 Each Administrator confirms that he has taken independent legal advice as to the nature, scope and effect of his respective personal liabilities and obligations under this indemnity.

[The following clause is only required if the CREST System-Member is incorporated in a country or state outside the European Union]

12 [We hereby agree that the process by which any suit, action or proceeding is begun against the Member may be served on the Member by being delivered to [insert name of process agent] of [insert address in England] or such other person as may nominate from time to time as the Member's agent for service of any process in England.]

By ……..

as [joint] administrator for and on behalf of [insert name of CREST System-Member]

By ……

as [joint] administrator, acting in his personal capacity

Address: [insert address for notice]

By…….

as [joint] administrator, acting in his personal capacity

Address: [insert address for notice]

Pro Forma Indemnity from a Settlement Bank in connection with [administrative] receivership (Item 12)

Euroclear UK & Ireland Limited

33 Cannon Street

London EC4M 5SB

[Date]

Dear Sirs

[INSERT MEMBER'S NAME] ('the Member')

1. We [insert name of settlement bank] of [insert address], confirm that we duly appointed [insert name of receivers] on [insert date] as joint [administrative] receivers ('the Receivers') of certain securities of the Member pursuant to and in accordance with our powers under the [Security Deed] dated [insert date] created by the Member in our favour. We hereby certify that true and correct copies of the originals of:

1.1 the instrument of appointment; [and]

1.2 the Receivers' written acceptance of that appointment (stating the time and date of acceptance); and

1.3 the request from the directors of the Member for the appointment of receivers/ the letter of demand served by us on the member],

are attached to this indemnity.

2. In consideration of your acting upon the instructions of the Receivers (or any one of them if the instrument so provides) purporting to be given in their (or his) capacity as such or otherwise attributable to the Member or any Group Company and without enquiring as to any of:

2.1 their (or his) qualifications;

2.2 the validity of their (or his) appointment; or

2.3 the propriety or purpose of any exercise or any purported exercise of their (or his) powers,

we hereby irrevocably and unconditionally agree to indemnify you (as operator of the CREST relevant system) on demand against any liability, cost and expense (including legal fees) together with value added tax thereon that you may incur by reason of your acting upon any such instruction which you believe to be binding upon the Member or any other Group Company and which is subsequently shown to your satisfaction not to be effectively binding, to the extent that the amount of such liability, cost or expense is not recovered and retained by you from the Receivers or any third party (but without you being under any obligation to, or it being a condition of our liability under this indemnity that you, pursue, exercise or otherwise enforce any right, claim or remedy you may have against the Receivers or any of them or any third party).

In this indemnity 'instruction' includes any written or oral instruction and/or any properly authenticated dematerialised instruction.

3. We shall, from time to time, on your demand reimburse you for all costs and expenses (including legal fees) together with value added tax thereon incurred in or in connection with:

3.1 the preservation and/or enforcement of any of your rights under this indemnity; and/or

3.2 your defending or otherwise disputing any claim or threatened claim which may give rise to a claim under this indemnity.

4. Without prejudice to paragraph 5 below:

4.1 if you have actual notice of any claim or threatened claim which is likely to give rise to a demand under this indemnity, you will as soon as practicable give written notice to us, setting out what you consider (in your sole and absolute discretion, but without prejudice to our right to make further reasonable enquires of you) to be reasonable details of the circumstances giving rise to such claim and, if possible, your estimate of the amount of the claim;

4.2 you will consult with us fully in the conduct of the claim and, unless any such disclosure would contravene any requirement of law or your obligations under the Regulations or as a recognised CSD, provide us with such information as we may reasonably request and will have due regard to our views in connection with the claim.

4.3 if, after we have paid in full any demand made by you under this indemnity, you recover from any source an amount referable to the relevant claim , you will promptly account to us for the net amount recovered (less your actual cost of recovery); and

4.4 if we make payments in full of any demand made by you under this indemnity , you will at our request (and to the extent permitted by and consistent with any applicable laws) assign to us all your rights against other parties in respect of the subject matter of such claim.

5 Our liability under this indemnity shall not be affected nor shall this indemnity be discharged or diminished by reason of:

5.1 any breach of your obligations under paragraph 4 (including without limitation the failure by you to defend or otherwise dispute any claim) and any failure by you to pursue, exercise or otherwise enforce any right, claim or remedy you may have against the Receivers (or any one or more of them) or any third party;

5.2 any change in your or our constitution, your or our absorption into or amalgamation with any other person or the acquisition of all or a part of your or our undertaking by any other person;

5.3 any other act or omission by you or any other person which is prejudicial to us and which but for this provision might operate as a legal or equitable defence for or impair or discharge our obligations under this indemnity.

6. All payments to be made by us under this indemnity shall be made free and clear of and without any deduction for or on account of any charges, set off or counterclaim.

7. A certificate signed by an authorised signatory on your behalf as to any sum payable by us under this indemnity or any costs incurred by you to recover an amount referable to a claim shall, in the absence of manifest error , be conclusive for the purposes of this indemnity.

8. Where a notice is given or a demand made by you under this indemnity, it shall be served by delivering it by hand, or by sending it by prepaid first class or recorded delivery post, to us as the address indicated above or such other address in the United Kingdom as we may notify to you from time to time and marked for the attention of the [Insert name/title]. Any such notice or demand shall be deemed served:

8.1 if left at our address, at the time when it is so left (or if it is left on a day that is not a business day, at 08:15 on the next following business day); and

8.2 if sent by post, on the second business day following the day of posting

In proving service of a notice or demand served (a) by hand, it shall be sufficient to prove that such notice or demand was delivered at the address for service and (b) by post, it shall be sufficient to prove that such notice or demand was correctly addressed, full postage paid and posted.

In clause 8 'business day' means a day (other than a Saturday or a Sunday) on which banks generally are open for business in London.

9. Terms used in this indemnity which are not defined in this indemnity shall have the meanings given to them in, and shall be construed in accordance with, the CREST Terms and Conditions (as amended, varied, supplemented, novated or replaced] entered into between you and the Member.

10. This indemnity shall be governed by, and construed in accordance with, English law. For your benefit, we irrevocably agree that the courts of England shall have jurisdiction to hear and determine any suit, action or proceeding, and to settle any disputes, which may arise out of or in connection with this indemnity. For such purposes, we hereby irrevocably submit to the jurisdiction of the courts of England.

[The following clause is only required if the settlement bank is incorporated in a country or state outside the European Union]

[11. We hereby agree that the process by which any suit, action or proceeding is begun may be served on us by being delivered to [insert name of process agent] of [insert address in England] or such other person as we may nominate from time to time as our agent for service of any process in England.]

By.....

for and on behalf of

[insert name of settlement bank]

Section 8: Settlement banks with multiple participant IDs

In most cases, a settlement bank will operate with one CREST participant of type 'settlement bank'. However, a settlement bank may operate in the CREST system with more than one participant of type 'settlement bank', each with a separate participant ID (referred to as a ***Specified Participant ID***). The settlement bank will be admitted to participation as a settlement bank separately under each Specified Participant ID (each with specified User).

CREST system functions will operate separately in relation to each participant of type 'settlement bank' operated by a settlement bank. References to a settlement bank shall be taken, where the context requires, to be a reference to a settlement bank participating under a Specified Participant ID.

In connection with the Sterling DvP Service a settlement bank will maintain, in relation to its participation as an RTGS settlement bank under each of its Specified Participant IDs, a separate Sterling CREST MBG. Each Sterling CREST MBG will be linked, through the operation of separate Liquidity Earmark Notifications, with a separate sterling LMA maintained in relation to each Specified Participant ID.

In connection with the Euro DvP Service:

- a settlement bank will maintain, in relation to its participation as an RTGS settlement bank under each of its Specified Participant IDs, a separate relationship with a Eurosystem CB (directly or indirectly) and a separate PM Sub-Account. Each PM Sub-Account will be linked, through the operation of separate Liquidity Earmark Notifications, with a separate euro LMA maintained in relation to each Specified Participant ID;
- the Appropriation Procedures referenced in Chapter 10, section 2, give priority to the exclusion of Relevant On Us Payment Obligations (i.e. 'on us' payments between two settlement bank participants operated by the same settlement bank) to seek to get the Net Amount to a sum equal to or below the Relevant Dedicated Amount before excluding Relevant RTGS Payment Obligations (i.e. payments obligations between separate settlement banks).

Where a settlement bank is acting as RTGS settlement bank for both a payee member and a paying member, an Intra-Bank Settlement Event will occur where the settlement bank is acting for the payee member and paying member under separate participant IDs.

Chapter 7: Other core functions

Section 1: Stock lending functionality (stock loans and repos)

Introduction

The CREST system's stock lending functionality enables members to borrow and lend securities. While EUI believes that the functionality has been designed to be consistent with the principles of the Global Master Securities Lending Agreement (2010) (and its precursors), the CREST system does not monitor or enforce compliance with the terms of that or any other agreement or with any other applicable regulatory or other requirement. An essential feature of the stock lending agreement is that, notwithstanding the use of expressions such as 'borrow', 'lend', 'collateral', 'redeliver', etc., title to all securities and collateral transfers from one party to the other outright. The party acquiring title is obliged to redeliver equivalent rather than identical securities or collateral. This section and sections 2, 2A and 2B use such terms in the same way.

Stock lending functionality may also be used in the context of a sale and repurchase agreement ('repo') executed, ordinarily, pursuant to the terms of the TBMA/ISMA Global Master Repurchase Agreement, although there are transaction types and related functionality specifically available to support settlement under repo agreements (see section 10.). As with stock loans, EUI does not monitor compliance with the terms of this agreement. The term 'stock loan' in this section is used to refer both to stock loans and repos (where the stock loan functionality is being used to support settlement of repos).

A stock loan in the CREST system is a movement of securities between the accounts of two members using the functionality described in this section. Where a loan is intermediated, the CREST system regards this as being two distinct loans (i.e. two separate movements of stock, first from the lender to the intermediary and then from the intermediary to the borrower). These settle independently and the CREST system does not link them in any respect.

Stock lending functionality is not available for use by an issuing and paying agent or a CSD participant type.

Input

Stock loans require the input of instructions by both the borrower and lender. In addition to the identification of the security being lent and relevant counterparty and payment details, members may also specify the consideration and the margin of the stock loan.

Stock loans may be input free of payment. Where a consideration is specified the resulting stock loan return will be revalued daily unless it is specified by both members that revaluations should be suppressed. Upon matching of the inputs the margin is automatically incorporated into the consideration, which is increased or reduced by the amount of the margin. If members do not specify a margin the system automatically applies a default margin of zero. Members may override the 0% margin by specifying a different level, or a negative margin, but these inputs must match.

Members may specify the contracted return date for the loan; this is for information purposes only and the system does not process on the data input; however, if the return date is earlier than the next business day, the system rejects the instruction.

Settlement

Stock loans (SLOs) are subject to the normal pre-settlement checks and to queue management. At the point of settlement, the CREST payment created for the loan is that specified by the members at the time of input plus the default margin or other specified margin.

Stock loan revaluations

The CREST system does not revalue open stock loan returns in respect of which there is no consideration or where the members have indicated in the input for the stock loan that they do not wish the system to do so.

For open stock loan returns which are to be revalued, shortly after settlement of the stock loan (though still on the same business day) and each night while the loan is outstanding, the system revalues any outstanding stock loans by reference to the previous business day's closing offer price or other relevant reference price for the security concerned (see Chapter 1, section 3, but for stock loan revaluations during a NSSDPs period please refer to Chapter 10, section 4). The revaluation adjusts the valuation of the stock loan return and gives rise to a calculation of an amount payable (an SLD) by the lender to the borrower if the price of the relevant securities has fallen since the previous revaluation and vice versa if it has risen. Revaluations are not raised if the offer price or other reference price for the relevant security falls to zero. The revaluation takes into account the relevant margin and the resulting amount is added as an item to settle. The revaluation is created with a high priority which the paying members cannot alter.

Stock loan returns

After settlement of the stock loan transaction, the system automatically creates a pre-matched stock loan return instruction (SLR) for both parties. The intended settlement date created is the next business day and the instruction is created with a zero stock settlement priority. The priority therefore needs to be lifted by the borrower in order to enable settlement of the stock loan return.

Section 2: Deliveries by value

Introduction

The CREST system's overnight and term Delivery by Value (DBV) functionality enables members (but not CSD participants or issuing and paying agents) to give and receive packages of securities as collateral within the CREST system, usually against the creation of a CREST payment. There is no connection within the system between stock loans or repo transactions by one member to another and DBVs given as collateral in return. Each occurs independently of the other.

References in this Manual to 'DBV' are to both overnight Delivery by Value (with outbound transaction type of DBV) and term Delivery by Value (with outbound transaction type of TDO), unless otherwise specified or required by the context (for example, where the specific transaction type of DBV is referred to).

This section 2 describes functions which are common to both overnight DBVs and term DBVs. Section 2A describes functions specific to overnight DBVs, with section 2B describing functions specific to term DBVs.

Input

DBVs require the bilateral input of instructions by the borrower and lender, although DBV transactions may in certain cases be created as central sponsor transactions (see Chapter 4, section 4B and under 'Central sponsor services' below). In addition to the relevant counterparty and payment details, the member must also specify for each DBV:

- DBV class (see below);
- whether the DBV is to be subject to a concentration limit (such that no one security exceeds 10% of the total value for that DBV, including any applicable margin or Bank of England haircut) or whether there is to be no such concentration limit;
- the total value of the securities sought for that DBV (net of the margin or, if applicable, the Bank of England haircut);
- priority (a priority of zero means that the instruction is frozen);
- whether the member is giver or taker of the DBV;
- the consideration;
- the trade system of origin;
- the interest rate;
- Place of trade MIC; and
- CSDR transaction type.

Instruction of the outbound legs of both overnight and term DBVs may not be forward-dated.

In relation to term DBVs, the return date of the DBV must also be specified. The return date must be beyond the current business date and not be more than 520 business days (i.e. 2 years) from the current business day.

DBV class

The DBV class is a mandatory field that specifies the security categories to be included in the DBV. A member wishing to change the DBV class selected will be required to delete and re-input the instruction. The DBV classes include different combinations of security categories; they are as follows:

DBV CLASS	SECURITY CATEGORIES
F10	FTSE 100;
F25	FTSE 250;
OTH	Other UK and Irish securities;
F35	FTSE 350;
C10	FTSE 100 and Irish Equivalent 100;
C25	FTSE 250 and Irish Equivalent 250;
C35	FTSE 350, Irish Equivalent 100 and Irish Equivalent 250;
UKE	All UK and Irish securities;
UBG	Unstripped British Government Debt;
BGS	All British Government Securities;
UGO	Unstripped gilts;
UBN	Unstripped British Government and Non-British Government Securities;
GIL	All gilts;
E30	Eurotop 300;
EGS	Eurotop Tier [28] 1 collateral;
USS	US securities;
OIS	Other international securities;
INT	All international securities;
TSY	Treasury bills;
BEB	Bank of England Bills;
TSB	Treasury and Bank of England Bills;
BB	Eligible bank bills;
ELG	OMO eligible bills;
CD0	CDs guaranteed under the CGS;
CD1	CDs rated Aaa – Aa3;
CD2	CDs rated A1 – A3;
CD3	CDs rated Baa1 – Baa3;
CD4	CDs rated below Baa3;
CP0	CP guaranteed under the CGS;
CP1	CP rated Aaa – Aa3;
CP2	CP rated A1 – A3;
CP3	CP rated Baa1 – Baa3;

[28] This class includes securities of unrated issuers.

DBV CLASS	SECURITY CATEGORIES
CP4	CP rated below Baa3;
OMM	Other (including LA bills and ineligible bank bills);
CD	All CDs (specified in conjunction with Issuer ID);
CP	All CP (specified in conjunction with Issuer ID); and
ISS	All CDs and all CP (specified in conjunction with Issuer ID).

In allocating a particular eligible debt security to a DBV class, the CREST system relies upon the categorisation given to that EDS by the CREST IPA in the relevant IPA issuance message (see further section 11 below).

The specific security categories that make up each DBV class are as follows:

CLASS	DESCRIPTION	CATEGORIES																												
		F10	F25	I10	I25	OTH	UBG	SBG	NBG	E30	EGS	OIS	USS	UTS	TSY	BEB	BB	LAB	OMM	CD0	CD1	CD2	CD3	CD4	CP0	CP1	CP2	CP3	CP4	ISS flag
F10	FTSE 100	✓																												N
F25	FTSE 250		✓																											N
OTH	Other Securities					✓								✓																N
F35	FTSE 350	✓	✓																											N
C10	Combined 100	✓		✓																										N
C25	Combined 250		✓		✓																									N
C35	Combined 350	✓	✓	✓	✓																									N
UKE	All UK and Irish	✓	✓			✓																								N
UGO	Unstripped Gilts						✓																							N
UBG	Unstripped BGS						✓								✓	✓														N
BGS	All BGS						✓	✓							✓	✓														N
UBN	Unstr'd BGS&NBG						✓		✓																					N
GIL	All Gilts						✓	✓	✓						✓															N
E30	Eurotop 300									✓																				N
EGS	EGS										✓																			N
OIS	Other Intern'l											✓																		N
INT	All international									✓	✓	✓																		N
USS	US Security												✓																	N
TSY	Treasury Bill														✓															N
BEB	BoE Bills															✓														N
TSB	Treas'y& BoE Bills														✓	✓														N
ELG	OMO Eligible Sec's						✓	✓							✓	✓	✓	✓												N
BB	Eligible Bank Bills						✓										✓													N
OMM	Other Bills																		✓											N
CD0	CDs Band 0																			✓										N
CD1	CDs Band 1																				✓									N
CD2	CDs Band 2																					✓								N
CD3	CDs Band 3																						✓							N
CD4	CDs Band 4																							✓						N
CP0	CP Band 0																								✓					N
CP1	CP Band 1																									✓				N
CP2	CP Band 2																										✓			N
CP3	CP Band 3																											✓		N
CP4	CP Band 4																												✓	N
CD	All CDs																			✓	✓	✓	✓	✓						Y
CP	All CP																								✓	✓	✓	✓	✓	Y
ISS	All CDs and all CP																			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Y

Exclusions

Member exclusions

Collateral takers may ask EUI to exclude particular securities on their behalf from the DBVs which they receive where:

- there are legal restrictions on their holding and/or owning a particular security (including restrictions in respect of holdings of their clients);
- the security has a nationality declaration requirement;
- the security relates to a specific DBV counterparty; or
- EUI otherwise agrees that a member may exclude a particular security.

Members who are in this position should notify EUI in writing, stating the reason why they cannot hold and/or own the relevant security. EUI then inputs the exclusion details to the system centrally.

For EDS DBVs, it is also possible for collateral takers to exclude the securities of specific issuers (both primary and secondary). In addition, for DBV classes CD, CP and ISS it is possible for a collateral taker to specify that only securities from a specific issuer should be included within the DBV selection.

Member exclusions will apply in relation to both overnight and term DBVs.

CREST system exclusions

The CREST system will exclude securities from DBV allocation where:

- the security has been set up to be excluded from DBVs;
- the security is to be excluded as a result of a corporate action;
- the security has been set up with a Minimum Transfer Amount not equal to Units of Transfer; or
- the security is a Restricted Security.

The third bullet above is of particular relevance to CDs; the majority of securities falling within Categories 18 - 21 (CD1 - CD4 inclusive) will therefore be excluded from DBV allocation.

Where the Bank of England haircut option is applicable to a DBV, securities that are not eligible for use with the auto-collateralisation arrangements will be excluded.

US securities

The DBV allocation process will prevent the selection of US securities (i.e. those with a US ISIN) for a DBV if the collateral taker is a participant of a US person (i.e. those with a US country of residence).

Margins and haircuts

Members may also optionally specify either a DBV margin or (in relation to DBVs in securities eligible for the auto-collateralisation arrangements) a Bank of England haircut. Selection of margin or Bank of England haircut must be matched.

Margin

Margin is a single percentage (positive or negative) applied to all collateral in the DBV. The DBV allocation process will adjust the value sought by the margin percentage and seek to allocate collateral to the total value.

Bank of England haircut

The Bank of England haircut is a variable percentage dependent on the particular security and its time to maturity. The percentage is applied to reduce the price taken into account in valuing the relevant security. The values of the haircuts are determined by the Bank of England from time to time and are held centrally in the CREST system (see further under 'Eligible securities and central bank margins' in Chapter 7, section 8 below).

The Bank of England haircut option is only available for DBVs in securities eligible for the auto-collateralisation arrangements. The option applies to the following DBV classes: UBG, TSY, ELG, BGS, UGO, BEB and TSB.

Where a Bank of England haircut has been selected, the DBV allocation process will:

- not select securities which are not eligible for use with the auto-collateralisation arrangements;
- allocate collateral on the basis of the adjusted market value (i.e. taking into account the applicable haircut rate reducing the price for the particular security).

The DBV allocation process will calculate the adjusted market value of each individual line of security, using the appropriate haircut percentage. It will then attempt to allocate the collateral such that the total of the adjusted market values equals the DBV value sought.

For term DBVs where a Bank of England haircut has been specified, reported collateral values will show adjusted market values (i.e. taking into account the relevant haircuts). Concentration enquiries available for term DBVs will also be based on adjusted market values.

The CREST system's exposure enquiry functions do not take into account Bank of England haircuts. Exposures are calculated using actual stock values. For term DBVs with a Bank of England haircut the enquiry will show, for DBVs which are correctly collateralised, an exposure on the side of the collateral giver.

Settlement

Both overnight and term DBV instructions remain dormant in the system until the time specified in the daily timetable at which point DBV processing begins. Please see Chapter 10, section 1 for the processing of DBVs during a NSSDPs period

Stock allocation in the DBV process can only occur if:

- there is sufficient availability of the relevant securities in the transferor's relevant member account;
- there is sufficient headroom within the relevant CMA cap of the transferee;
- there is sufficient headroom within the relevant CMA cap of the transferor (where the relevant member account is a linked account);
- the transferee's settlement bank has sufficient liquidity at the Relevant Central Bank (for sterling or euro payments);

- the transferor's settlement bank has sufficient liquidity at the Bank of England (where delivery of the relevant securities requires closure of auto-collateralising repurchase (SCR) transactions); and
- settlement would not breach a sponsored member's net settlement limit.

The selection algorithm notionally allocates the collateral giver's securities to the collateral taker using the previous business day's closing bid price or other relevant reference price for the security concerned (see Chapter 1, section 3) until the value sought plus the margin for the DBV instruction has been satisfied (see above in relation to DBV allocation where the Bank of England haircut option has been specified). The CREST system then creates corresponding settlement instructions in respect of multiple securities movements and a single CREST payment between the collateral giver and collateral taker, which is subject to standard settlement processing.

The DBV tolerance functionality permits settlement of a DBV or TDO or related instruction in the event of a very small shortfall in stock availability. In the case of DBV, TDO or TDA, the tolerance permits the allocated stock to be less than the gross DBV value sought (i.e. including the margin where applicable) or the DBV value sought based on the market adjusted prices (where a Bank of England haircut is applicable) by up to the tolerance amount. In the case of a TDG, TDE or TDM, the tolerance permits the transaction to settle even in the event of a shortfall in stock available for allocation of up to the tolerance amount. In relation to TDMs, a tolerance also exists to allow for an over-allocation of stock. The tolerance amount differs according to the DBV transaction type, as follows:

- DBV and TDO
    - A tolerance amount of £250 (or €250 or $250, according to the currency of the value sought) applies if the DBV value sought is both greater than £1 million (or €1 million or $1 million according to the currency of the value sought)and greater than 102% of the DBV consideration; in other cases a tolerance amount of £50 (or €50 or $50 according to the currency of the value sought) applies.
- TDA
    - For TDAs that reduce the value sought to zero, no tolerance amount applies.
    - For TDAs that reduce the value sought to a non-zero value, a tolerance amount of £250 (or €250 or $250, according to the currency of the value sought) applies.
    - For TDAs that increase the value sought: a tolerance amount of £250 (or €250 or $250, according to the currency of the value sought)applies if the DBV value sought is greater than £1 million (or €1 million or $1 million according to the currency of the value sought) and greater than 102% of the DBV consideration; in other cases a tolerance amount of £50 (or €50 or $50 according to the currency of the value sought) applies.
- TDG and TDE:
    - For gilt DBV classes, a tolerance amount of £10 (or €10 or $10, according to the currency of the value sought) applies.
- TDM
    - For gilt DBV classes, a tolerance amount of £0.10p (or €0.10 or $0.10, according to the currency of the value sought) applies in the case of over-collateralisation and £10 (or €10

or $10, according to the currency of the value sought) in the case of under-collateralisation.

This tolerance is unrelated to tolerance matching of DEL, SLO and RES transactions.

In cases where collateral is allocated in a TDG, TDE or TDM, or returned in a TDM it may not be possible to match the target value exactly.

Members may specify that the DBV is to be subject to a concentration limit, in which case collateral will be allocated such that no one security exceeds 10% of the total value for that DBV, including any applicable margin or Bank of England haircut. If a concentration limit is specified, the allocation algorithm will consider the 10 highest-value lines of stock, and if the value allocated from the top 10 lines is within the applicable tolerance, the algorithm will consider that sufficient stock has been allocated. If the value from the top 10 lines is outside the tolerance the algorithm will continue looking in lower-value lines until the target value has been reached or exceeded or there is no more stock; if the value allocated is within the tolerance, then the algorithm will consider that sufficient stock has been allocated.

If a concentration limit has been specified, a combination of the value sought together with high bid prices in the lines of collateral selected may cause the value of the stock allocated to be outside the tolerance. In this case, provided the total stock available is greater than or equal to the target value, the algorithm will consider that sufficient stock has been allocated.

Members may utilise the stock valuation enquiry in order to enquire as to which securities in a specified member account they have available for DBV issuance. In doing so, it takes account of which securities are eligible for SDRT (i.e. they are 'regularly traded' on the exchange on which they will be issued or are not chargeable) and DBV concentration limits. This enquiry is only available to members actively entering into DBVs. Where Bank of England haircut criteria have been specified, the stock valuation enquiry will report adjusted market values (taking into account the relevant haircuts) and will exclude securities which are not eligible for the auto-collateralisation arrangements.

Following settlement of a DBV, collateral is available for re-use by the collateral taker and is not earmarked or otherwise segregated.

DBVs and stamp duty reserve tax

TSOs and venues

As noted in Chapter 4, section 17 above, trade systems often operate a number of venues and markets ("venues") with different regulatory statuses. For the purposes of determining stamp duty reserve tax (SDRT) relief, the CREST system holds information (including segment codes, each representing a different venue operated by the trade system, along with their regulatory status) to allow it to derive the possible venues on which a trade was effected from the Trade System of Origin (TSO) supplied on the transaction.

Lists of regularly traded securities, intermediaries and members are held for each venue, represented by the segment code. The CREST system also holds lists of members authorised under the law of a European Economic Area (EEA) state to provide certain investment services in

relation to those securities[29] (these lists are not venue specific). This allows the CREST system to apply the reliefs for each different venue type.

Where a TSO operates multiple venues in the CREST system, and a member specifies a TSO on the DBV instruction, the member must ensure that, for each of the venues operated by the TSO, either it or its counterparty is a member of the relevant venue (and subject to its rules and reporting requirements). This is to ensure that the DBV will be properly "effected" on the venue, within the meaning of the SDRT loan relief provisions[30].

The DBV allocation process in the CREST system is separate from the DBV SDRT assessment process.

DBV allocation process

The CREST system attempts to allocate to a DBV only securities that are exempt from SDRT and securities that are regularly traded on a regulated market or regularly traded on another type of venue which permits lending.

The TSO specified on the overnight or term DBV instruction drives the allocation process. The status of the parties, while relevant for the granting of relief, is not checked in the allocation process. It is therefore essential that CREST members using the DBV functionality have a thorough understanding of the DBV allocation and SDRT assessment processes.

Where a TSO is specified on the DBV, the CREST system will allocate securities as follows:

- where the TSO does not permit lending, the CREST system will only include exempt securities in the DBV;
- where the TSO permits lending, the CREST system will include any security that is regularly traded on any of the venues operated by the TSO in the DBV, as well as any SDRT exempt securities.

Where a TSO is not specified on the DBV, the CREST system will include securities that are regularly traded on any EEA-regulated market and SDRT exempt securities.

DBV SDRT assessment

The DBV SDRT assessment process does not assess the individual security lines included in the DBV. The CREST system determines whether or not relief can be applied to **all** securities that have been included in the DBV (and are not SDRT exempt) by checking the status of the parties to the DBV.

Where a TSO is specified on the DBV, the member must ensure that, for each of the venues operated by the TSO, either it or its counterparty is a member of the relevant venue (as mentioned above). Any securities which are not SDRT exempt securities will therefore be eligible for relief.

Where no TSO is specified on the DBV, the non-SDRT exempt securities allocated to the DBV (i.e. ISINs regularly traded on an EEA regulated market) will only be relieved if at least one of the DBV counterparties is a firm authorised under the law of an EEA State (see above).

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[29] Finance Act 1986 s 89 AA(2A) states that the lender or borrower must be:

"authorised under the law of an EEA State to provide any of the investment services or activities listed in section A2 or 3 of the Annex to the Directive [i.e. MiFID 2004/29/EC, as amended] *(execution of orders on behalf of clients and dealing on own account) in relation to the securities concerned…"*

[30] S.89AA Finance Act 1986.

The possible scenarios are described in full below:

(1) TSO specified and at least one of the parties is a member of each of the venues of the TSO.

Where a TSO is specified on the DBV, and;

- the TSO permits stock lending, and;
- either of the parties to the DBV is a member of the TSO (note that where a TSO operates multiple venues in the CREST system, members must ensure that either they or their counterparty is a member of each such venue).

The DBV will only include:

- ISINs regularly traded on any venue operated by the TSO. Where a TSO operates multiple venues the DBV will include ISINs regularly traded on any of these venues i.e. in the case of the LSE both AIM and Main Market; and
- ISINs that are exempt from SDRT.

SDRT:

- SDRT will be relieved on the DBV.

(2) TSO specified, neither of the parties is a member of the venue(s) of the TSO

Where a TSO is specified on the DBV, and;

- the TSO permits stock lending, and;
- neither of the parties to the DBV is a member of any venue operated by the TSO.

The DBV will include:

- ISINs regularly traded on any venues operated by the TSO. Where a TSO operates multiple venues, the DBV will include ISINs regularly traded on any of these venues i.e. in the case of the LSE both AIM and Main Market; and
- ISINs that are exempt from SDRT.

SDRT:

- SDRT will be collected from the collateral taker on the regularly traded ISINs as neither of the parties are members of the venues operated by the TSO. In this case if either of the counterparties is a member authorised under the law of an EEA State to provide certain investment services in respect of the securities (see above), the TSO should have been left blank, to allow the granting of relief on ISINs regularly traded on any EEA regulated market i.e. the LSE Main Market (see scenario 4).

(3) TSO specified but does not permit loans

Where a TSO is specified on the DBV, and;

- the TSO does not permit stock lending.

The DBV will only include:

- ISINs that are exempt from SDRT.

SDRT:

- no SDRT will be collected on the DBV. Where a venue does not permit stock lending, then there is no loan relief. However in this case all securities are exempt; there is no SDRT due.

(4) TSO not specified, one of the parties is a member authorised under the law of an EEA State

Where no TSO is specified on the DBV, and;

- either of the parties to the DBV is authorised by the law of an EEA State (within the meaning of s.89AA(2A) FA 1986).

The DBV will only include:

- ISINs regularly traded on any EEA regulated market;
- ISINs that are exempt from SDRT.

SDRT:

- SDRT will be relieved on the DBV.

(5) TSO not specified, neither of the parties is a member authorised under the law of an EEA state

Where no TSO is specified on the DBV, and;

- neither of the parties to the DBV is a member authorised by an EEA state.

The DBV will only include:

- ISINs regularly traded on any EEA regulated market;
- ISINS that are exempt from SDRT.

SDRT:

- SDRT is collected from the collateral taker on the regularly traded ISINs only.

SDRT collection

Please refer to sections 2A and 2B below in relation to SDRT collection for overnight DBVs and term DBVs.

Unsettled DBVs

The system will not allocate securities to satisfy any overnight or term DBV instruction if there is a constraint on the availability of securities on a collateral giver's part, if the collateral giver or collateral taker has insufficient headroom, or the giver's or taker's settlement bank has insufficient liquidity for a particular DBV or if either giver or taker has assigned a priority of zero to the instruction.

Where the system is unable to allocate securities to satisfy a DBV instruction, it returns a DBV Reason Code identifying the reason that allocation could not be completed.

Where a collateral giver's available stock is insufficient to satisfy the value for a particular DBV (e.g. by reason of the effect of the concentration limit, collateral takers' exclusions, quantity of securities in the specified member account or where the number of securities needed to satisfy the value sought exceeds 99), the DBV remains unsettled. The system identifies the value of the securities which were available but whose value was less than the value sought; this information is available for view in the system.

Where a DBV remains unsettled at the end of DBV processing, it will be centrally deleted and not carried forward.

Defaults

In the event that a member who has given or received a DBV goes into default while the DBV is outstanding or where for some other reason one or both parties determine that the DBV return should not be settled, it is necessary that EUI be notified of the relevant member's default or other relevant circumstance. If a counterparty to the defaulting member wishes to prevent the DBV return, it should therefore notify EUI so as to give EUI time to take the necessary action before the time specified in the daily timetable for settlement of DBV returns.

Central sponsor services in relation to the RepoClear Service

Chapter 4, section 4B of this CREST Reference Manual describes the central sponsor services that are provided by LCH.Clearnet as CREST central sponsor for the RepoClear Service. As part of those central sponsor services, LCH.Clearnet creates term DBV transactions and term DBV adjustment as central sponsor transactions. In relation to such DBV transactions, certain parts of the DBV functionality described above may not apply. In this case, the following changes apply:

- DBV margin is automatically set to zero;
- it is not possible to set a DBV concentration limit;
- no DBV reference can be entered prior to creation of the settlement instruction;
- DBV status will go immediately upon matching to 'Ready to action';
- it is not possible to set a DBV repo rate;
- DBVs will be assigned a priority of 75;
- the trade system of origin will be set to 'over-the-counter' (value 'Z');
- the payment type will be automatically set to the default payment type of the DBV value sought currency;
- sundry transaction information will not be entered;
- there will be no participant note entered; and
- the nationality declaration will be derived from the relevant member's direct input options.

DBV allocation and the rules for matching term DBVs and term DBV adjustments remain unchanged.

A number of fields will be instructed within the MT 518 message sent into the system by LCH.Clearnet as CREST central sponsor. These are:

- DBV class;
- DBV Value Sought;
- consideration;
- DBV return date (term DBV only);
- dealing capacity;

- account ID;
- counterparty ID;
- shared note (this will be the common reference assigned to a net collateral obligation by LCH.Clearnet. Accepted market practice is that the shared note field should only be used for exception processing. RepoClear members will be required to adopt the new usage of this field);
- CSDR transaction type.

Chapter 4, section 4B of the CREST Reference Manual also describes the central sponsor services that are provided in relation to other Clearing Support Arrangement constituent services. Overnight DBV, term DBV and term DBV adjustment transactions cannot be created as central sponsor transactions under these other services.

Section 2A: Overnight Deliveries by Value

The CREST system's overnight DBV functionality provides a collateral management facility which enables members to enter into DBV transactions due for return the following day.

Availability by DBV Class

Members may not input overnight DBV transactions (i.e. transaction type "DBV") in a fixed income DBV class. Overnight DBV transactions are only supported for equity DBV classes. However, term DBV transactions (transaction type "TDO") that are due for return the following day are permitted for fixed income DBV classes and also for equity DBV classes.

The following table shows which DBV classes are, for the purposes of this manual, considered to be fixed income and which are considered to be equity.

DBV CLASS	DESCRIPTION	FIXED INCOME OR EQUITY
F10	FTSE 100	Equity
F25	FTSE 250	Equity
OTH	Other Equities	Equity
F35	FTSE 350	Equity
UKE	All UK equity	Equity
C10	Combined 100	Equity
C25	Combined 250	Equity
C35	Combined 350	Equity
UBG	Unstripped BGS	Fixed Income
BGS	All BGS	Fixed Income
UBN	Unstr'd BGS&NBG	Fixed Income
GIL	All Gilts	Fixed Income
UGO	Unstripped Gilts Only	Fixed Income
E30	Eurotop 300	Equity
EGS	EGS	Fixed Income
OIS	Other International	Equity
INT	All international	Equity
USS	US Security	Equity
TSY	Treasury Bill	Fixed Income
ELG	OMO Eligible Sec's	Fixed Income
BEB	Bank of England Bills	Fixed Income
TSB	Treasury & BE Bills	Fixed Income
BB	Eligible Bank Bills	Fixed Income
OMM	Other Bills	Fixed Income
CD0	CDs guaranteed under CGS	Fixed Income
CD1	CDs Band 1	Fixed Income
CD2	CDs Band 2	Fixed Income
CD3	CDs Band 3	Fixed Income

DBV CLASS	DESCRIPTION	FIXED INCOME OR EQUITY
CD4	CDs Band 4	Fixed Income
CP0	CP guaranteed under CGS	Fixed Income
CP1	CP Band 1	Fixed Income
CP2	CP Band 2	Fixed Income
CP3	CP Band 3	Fixed Income
CP4	CP Band 4	Fixed Income
CD	All CDs	Fixed Income
CP	All CP	Fixed Income
ISS	All CDs and all CP	Fixed Income

Interest

Members may specify an interest rate on individual overnight DBV transactions. If an interest rate was specified on the overnight DBV transaction, then CREST system will calculate an overnight interest payment between both parties, crediting the party identified in the DBV transaction as being the party to whom interest should be paid.

Where a rate is specified it should be an annual interest rate. The CREST system will then calculate the appropriate interest payment based upon the consideration specified in the DBV instruction and the relevant day count convention (actual/365 or actual/360) for the currency of the consideration.

The interest payment is made using the overnight DBV interest payment transaction (DBI). A DBI will be created on the settlement of the outbound overnight DBV to which it relates. It will have a priority of 85 and will be queued separately for settlement from DBV returns.

The DBI will be generated in the same currency as the DBV to which it relates. A DBI transaction will not be generated if the payment is rounded down to zero (interest is rounded to the nearest penny or cent). If no interest rate is specified the default is zero and no interest payment will be generated.

Overnight DBV interest payment transactions may not be deleted.

The CREST system will not generate DBV interest payments on DBV returns and therefore no further interest payments will be generated as a result of the DBV return failing to come back on its intended day. Any payment will have to be determined outside of the CREST system.

Stamp duty reserve tax

Where the CREST system has assessed that SDRT is due on the overnight DBV (see section 2 above), it will be collected at the rate of 1% on the outbound overnight DBV.

DBV returns

After settlement of the DBV transaction, the system automatically creates pre-matched overnight DBV return transactions (DBRs) for both members. The return date created is the next business day of the currency of the consideration and the instruction is created with a priority of 85 which the members are able to amend. Overnight DBV return instructions can be split and may be deleted by matched deletion. Deletion cannot occur after settlement has taken place. The instruction is created at the level of individual security movements against the creation of

individual pro rated CREST payments rather than, as is the case with outward overnight DBVs, being a single instruction to move multiple securities.

Section 2B: Term Deliveries by Value

Introduction

The CREST system's term DBV functionality provides a term collateral management facility which enables members to enter into DBV transactions with maturities of anything from one day up to two years. The functionality seeks, as far as possible, to provide automated facilities to support lifecycle management by members and also provides manual adjustment functions.

Term DBV transactions are supported for all DBV classes. However, term DBV transactions that are due for return later than the following business day are not supported for equity DBV classes. It follows that giver recall substitutions, elegibility substitutions and mark-to-market transactions are not supported for equity DBV Classes.

The following automated functions will operate following the matched input and settlement of an outbound term DBV by the counterparties:

- generation and maintenance of the return legs of the term DBV (reflecting the constituents of the DBV throughout its term);
- interest calculation and generation of interest payment (where consideration and interest rate are specified);
- mandatory intraday giver recall substitutions to seek to recall lines of collateral required to satisfy settlement of other transactions (this is not supported for equity DBV classes);
- mandatory intraday generation of eligibility substitutions to manage changes in eligibility of particular constituent securities (this is not supported for equity DBV classes);
- mandatory intraday generation of mark-to-market transactions to seek to maintain collateral values and to apportion consideration (where specified) (this is not supported for equity DBV classes);
- claims and transformations to manage the impact of corporate actions.

Members are also provided with a number of tools to manage their open term DBV transactions manually:

- DBV stock valuation, DBV allocation queue and liquidity projection enquiries;
- transaction status, open collateral returns and exposure enquiries;
- enquiries on the need for, and status of, automated substitutions and mark-to-market processes (this is not supported for equity DBV classes);
- the ability to change certain aspects of the term DBV (including interest rate, return date, consideration and value sought) (this is not supported for equity DBV classes).

Aspects of term DBV functionality which are common with overnight DBVs (including input and settlement) are detailed in section 2 above. The remainder of this section details the following functions specific to term DBVs:

- term DBV returns;
- interest;
- stamp duty reserve tax;

- changes to priority, interest rate, return date, value sought and consideration attributes of a term DBV;
- intraday automatic substitutions;
- mark-to-market transactions;
- enquiries and alerts;
- corporate actions.

Term DBV returns

After settlement of the outbound term DBV (TDO), the system automatically creates pre-matched term DBV return (TDR) transactions. The transaction is created at the level of individual security movements against the creation of individual pro rated CREST payments (if a consideration was specified in the DBV) rather than, as is the case with outbound term DBVs, being a single transaction moving multiple securities. During the term of the DBV, the TDRs reflect the current constituents of the DBV. The CREST system will automatically adjust the TDRs following changes to the constituents, as detailed further below in this section.

The intended settlement date of the TDRs is the return date specified in the DBV. TDRs remain dormant in the system until start of normal settlement on return date.

The TDR transaction is created with a priority of 85, which members are able to amend. For term DBVs in an equity DBV class, members will only be able to amend the priority of all TDRs for a particular DBV as a group, not the priority of individual TDRs. For term DBVs in an equity DBV class, members will only be able to amend the priority of individual TDRs, not the priority of all TDRs for a particular DBV as a group.

TDRs can be manually split (on or after their intended settlement date). TDRs may be subject to automatic splitting.

TDRs can be deleted by matched deletion on or after their intended settlement date (but not before). Where TDRs are manually deleted, members will need manually to manage the impact on exposures and collateral positions (including taking into account the operation of automatic mark- to-market processes).

Splitting and deletion of an individual TDR cannot occur after settlement of that TDR has taken place (other TDRs in relation to the term DBV may be split or deleted where unsettled on or after intended settlement date).

Interest

Members may specify an interest rate on individual term DBV transactions. If an interest rate was specified on the term DBV instruction, then the CREST system will calculate interest on a daily basis between both parties, crediting the party identified in the term DBV transaction as being the party to whom interest should be paid.

Where a rate is specified it should be an annual interest rate. The CREST system will then calculate the appropriate interest payment based upon the consideration specified in the term DBV instruction and the relevant day count convention (actual/365 or actual/360) for the currency of the consideration.

The interest payment is made using the term DBV interest payment transaction (TDI). A TDI will be created on the settlement of the outbound term DBV to which it relates. It will have a priority of 85 and will be considered for settlement separately from DBV returns.

The TDI will be generated in the same currency as the consideration of the term DBV to which it relates. Interest will be calculated overnight on a daily basis and added to the consideration of the TDI. This is a simple interest, and not a compound interest, calculation. Interest will accrue on the principal amount of the consideration from the day of settlement of the term DBV outbound transaction (TDO) to the day prior to the return date of the term DBV. The intended settlement date of the TDI is the return date of the term DBV.

Term DBV interest payment transactions may be deleted prior to settlement by matched deletion. Following deletion, the interest rate attribute of the term DBV will be set to zero and it will not be possible to recreate the TDI. It is not possible to split a TDI transaction.

The CREST system will not generate term DBV interest payments on term DBV returns and therefore no further interest payments will be generated as a result of the term DBV return failing to settle on its intended day. Any payment will have to be determined outside of the CREST system.

If the counterparties agree, the interest rate may be amended (see further below).

Stamp duty reserve tax

Where the CREST system has assessed that SDRT is due (see section 2 above), it will be collected at the rate of 0.5% on the outbound term DBV and 0.5% for each associated term DBV return transaction. A rate of 0.5% will also be collected for any TDA, TDE, TDG or TDM transaction (where it involves a stock movement) that may be created in respect of a term DBV.

In all cases, the SDRT will be payable by the stock credit party to the transaction being assessed (i.e. the TDA, TDE, TDG, TDM, TDO,or TDR). The intended settlement date (payment date) for SDRT will be the earlier of the intended settlement date of the transaction being assessed or 10 days after the current date. This means, for example, that a TDR with a return date of more than 10 days into the future will give rise to an STP with an intended settlement date of current date plus 10.

Automated processing in relation to term DBVs may lead to the central deletion of transactions. Where SDRT was payable in relation to such transactions, central deletion will result in the credit or refund of the SDRT payment.

In relation to a newly created TDR transaction (including where an existing TDR is deleted and recreated with a revised quantity of the same security), SDRT will be calculated, where applicable, on the basis of new/revised quantity and current CREST reference prices on the date of creation of the new TDR transaction. The intended settlement date for SDRT on new/revised TDRs will be the earlier of the intended settlement date of the TDR transaction or 10 days after the date of new/revised TDR creation.

Amending term DBV attributes

Following settlement of the TDO, members are able to change certain attributes of term DBVs that have not reached their return date, including a change to return date, interest rate and priority

(return date and interest rate may only be amended up until 'DBV input disable' on the day prior to return date). For changes to 'value sought' and 'consideration', see further below.

Roll-over

This functionality is not supported on term DBVs in equity DBV classes.

If the counterparties agree, it is possible to 'roll over' a term DBV arrangement. Both members must input an amendment with a new return date. Once these amendments are actioned, the CREST system will automatically delete all the original term DBV returns (TDRs) and recreate them with the new return date.

It is possible to forward date roll-overs. The amended return date must be not later than 520 business days from the input date of the amendment.

Amendments to the return date will also be applied to the related TDI (where applicable).

Early returns

This functionality is not supported on term DBVs in equity DBV classes.

If the counterparties agree, it is possible to 'early return' a term DBV (including to return on the current business day). Both members must input an amendment with a new return date. Once these amendments are actioned, the CREST system will automatically delete all the original term DBV returns (TDRs) and recreate them with the new return date.

If both members have input an amendment to change the return date to the current business day, then once the amendments have been actioned the CREST system will consider the term DBV to be closed and will not generate any further TDE or TDM transactions or permit any further amendments.

It is possible to forward date early returns. Where the effective date of the early return is forward dated, the amendment will be actioned overnight prior to the effective date. Where the term DBV is being amended to return on the current business day, the amendment will be actioned intra-day.

Interest will only be accrued up to the day before the intended settlement date of the new term DBV returns. Once intended settlement date has been reached and providing neither side has frozen the transaction, the CREST system will apply its normal settlement checks and attempt to settle the term DBV returns. The term DBV returns can settle independently of each other.

Amendments to the return date will also be applied to the related TDI (where applicable).

Interest rate

This functionality is not supported on term DBVs in equity DBV classes.

If the counterparties agree, it is possible to amend the interest rate of a term DBV (in contrast to CREST repo functionality, the interest rate may be amended independently of the return date). Both members must input an amendment with a new interest rate. The amendment takes place overnight following matched input.

It is not possible to change the party to whom interest should be paid.

Following amendment of the interest rate, interest accrued to date is not added to the consideration. Interest will continue to accrue on a daily basis, based on the amended interest rate and current consideration of the term DBV. Members should note this is in contrast to the

treatment of interest accrual on rolled-over repos (where interest accrued to date is compounded, see Chapter 7, section 10 below).

Priority

For term DBVs in a Fixed Income DBV class, members may lower or raise the priority of all term DBV returns of a term DBV as a group (amendment of an individual TDR priority is not possible prior to their intended settlement date). Amendments to priority are only on the side of the amending member and therefore do not require matching. For term DBVs in an equity DBV class, members may lower or raise the priority of individual TDRs, not the priority of all term DBV returns of a term DBV as a group.

Adjustments to term DBV Value Sought and Consideration

This functionality is not supported on term DBVs in equity DBV classes.

The CREST system provides functionality for members to make adjustments to the 'value sought' and 'consideration' of a term DBV that has not reached its return date.

Value sought and consideration can either be amended independently of each other or in combination. However, where adjustments are made, values for both attributes must be specified (i.e. where members do not wish to amend one value, they must confirm the current value).

Adjustment of value sought and consideration must be agreed by both counterparties to a term DBV. Each side must input a term DBV adjustment (TDA) instruction. TDA instructions may only be input prior to the return date of the DBV. Only one TDA transaction may be matched and unsettled at any one time in relation to a particular DBV.

It is not possible to amend value sought or consideration to zero except as described in "Early returns by means of TDA transactions" below.

Amendments to consideration are only possible where a consideration (non zero) was specified in the original DBV instruction. It is not possible to amend consideration to zero.

In this section the following terms are used:

- "base consideration" - the original DBV consideration (or the most recent 'base consideration' following a previous TDA adjustment);
- "base value sought" – the original DBV value sought (or the most recent 'base value sought' following a previous TDA adjustment);
- "last equivalent value sought" – the current market value of collateral in the DBV taking into account margin or haircut (i.e. excluding the value of collateral covering any margin or haircut);
- "next base value sought" – the new value sought which the counterparties wish to apply to the DBV;
- "next consideration" – the new consideration which the counterparties wish to apply to the DBV.

Timing of instruction input

Members are not able to forward date term DBV adjustment instructions. TDA instructions will only be assessed for settlement during the times specified in the daily timetable for settlement of DBVs.

Use of TDA for collateral adjustments and rebalancing

Where a term DBV is either over- or under-collateralised, inputting a TDA with 'next base value sought' equal to the current 'base value sought' (i.e. the requested value sought is equal to the current value sought of the term DBV) will cause the CREST system to adjust the DBV on settlement of the TDA, by adding or removing collateral to seek to ensure it is correctly collateralised. This may therefore be used by members effectively to perform an intraday 'mark-to-market'.

Inputting a TDA with a 'next base value sought' of the current 'last equivalent value sought' (i.e. the requested value sought is equal to the current adjusted value of collateral) will cause the CREST system to set the 'base value sought' to the current value of collateral. This may therefore be used by members to rebalance a term DBV without collateral adjustments.

Generation of TDAs

The CREST system will determine whether collateral adjustments are required by comparing the 'next base value sought' against the 'last equivalent value sought' (i.e. comparing the requested value sought against the current adjusted value of collateral).

If the term DBV is under-collateralised (i.e. the total value of collateral securities with the collateral taker is less than the requested adjusted value sought), the CREST system will seek to supplement one or more constituent securities as additional collateral. Additional collateral will be considered as follows:

- collateral will be subject to the standard DBV allocation rules (including in respect of DBV class and exclusions);
- collateral must be in the same member account as was used for the term DBV being supplemented;
- the collateral must not be subject to a corporate action-related exclusion (where the record date of the corporate action is the next business day);
- collateral must respect the concentration limit (if one was specified).

If the term DBV is over-collateralised (i.e. the total value of collateral securities with the collateral taker is more than the requested adjusted value sought), the CREST system will remove one or more constituent securities as excess collateral. Excess collateral to be returned will be selected as follows:

- constituent securities will only be selected where they were previously transferred from the collateral giver in the particular term DBV;
- if a concentration limit applies to the term DBV and there are constituent securities in breach of the limit, then collateral to be returned will be selected first from these lines of security;
- securities will then be selected from constituents which are currently in the collateral taker's account (either available balance and/or SCR balance). Securities are selected in order of collateral value of the constituent security, starting with those having the largest value;
- the constituent security must have an 'enabled' status.

A TDA transaction will not be generated in any of the following circumstances:

- any constituent collateral has a reference price equal to zero;

- in the case of under-collateralisation, there is insufficient eligible replacement collateral in the collateral giver's account;
- in the case of over-collateralisation, there is insufficient eligible collateral that could be returned from the collateral taker's account;
- if a constituent security is in breach of the concentration limit and that security does not have an 'enabled' status;
- the number of security movements required exceeds 99.

Settlement of a TDA is subject to standard settlement checks and the relevant currency deadline (where consideration is specified).

Settlement of TDAs

On settlement of the TDA, the 'base consideration' and 'base value sought' of the DBV will be amended. TDAs may result in stock movements, cash movements, stock against cash, stock with cash or, exceptionally, no stock or cash movements.

Where a DBV is under- or over-collateralised, the TDA will include stock movements to transfer collateral as necessary.

Where the requested adjusted 'value sought' is the same as the current 'last equivalent value sought' no collateral adjustment will be required. Where no change is requested to the consideration, this may result in no stock or cash movements for the TDA.

Where consideration is increased, a cash payment will be generated from the collateral taker to the collateral giver. Where consideration is decreased, a cash payment will be generated from the collateral giver to the collateral taker.

If the TDA is failing to settle because the collateral taker no longer holds the collateral in its account, having onward-delivered it in another term DBV, the CREST system will attempt to recall the required collateral and replace it with alternative collateral from the account of the collateral taker.

Term DBV returns

On settlement of a TDA, TDRs in respect of the DBV may be adjusted as follows:

- if a complete line of collateral is removed, the related TDR will be deleted;
- if a line of collateral is increased or decreased, the related TDR will be deleted and a new TDR created with the revised quantity;
- if a new line of collateral is added, a new TDR will be created.

If the term DBV has a specified consideration, on settlement of the TDA the consideration will be re-apportioned across all TDRs (in proportion to the current value of the collateral concerned).

If the term DBV has one or more constituent TDRs that are for cash only (e.g. from transformations in relation to cash only proceeds) and one or more constituent TDRs with a security, then the term DBV consideration will be apportioned only across the TDRs with a security, and any cash-only TDRs will be deleted.

If the term DBV only has cash-only TDRs, the TDRs will not be deleted, instead the adjustment process will ensure that the total amount of consideration being returned by the TDRs is equal to

term DBV consideration (if required appropriately adjusting the consideration on one of the TDRs, selected arbitrarily).

Where the Bank of England haircut option has been specified, re-apportionment will be on the basis of the adjusted value of collateral in each TDR (in proportion to the total adjusted value of all TDRs).

Amendment and deletion of TDA transactions

Members are able to amend the priority and the transaction reference of TDA transactions prior to settlement. If other amendments are required, members will need to delete the TDA prior to settlement and re-input another TDA transaction.

TDA transactions may be match deleted prior to settlement. It is not possible to split a TDA transaction.

Any TDA transactions which remain unsettled at the end of the DBV settlement window will be centrally deleted and will not be carried forward.

Early returns by means of TDA transactions

If both participants input a TDA transaction having next value sought and next consideration – if consideration was specified on the TDO – set to zero, the CREST system will interpret this as an instruction to close the term DBV. On settlement of the TDA, the collateral will be returned to the collateral giver and the cash – if any – will be returned to the collateral taker, the return date will be set to the current business date, all the TDR transactions will be centrally deleted, and the TDI transaction – if one exists - will have its intended settlement date set to the current business date. The CREST system will then consider the term DBV to be closed and will not generate any further substitutions or permit any further adjustments.

Giver Recall Substitution transactions

This functionality is not supported on term DBVs in equity DBV classes.

When collateral has been delivered out by a collateral giver in a term DBV, the collateral giver may have a need, during the term of the DBV, for the return of a particular line of collateral in order to settle an otherwise unrelated transaction. The CREST system provides an automated facility to recall a line of collateral from one or more term DBVs to meet a transaction that is failing to settle, substituting the returned collateral with equivalent replacement collateral.

The CREST system will centrally generate, on an intraday basis, term DBV giver recall substitution (TDG) transactions to return a particular line of collateral and replace it with equivalent collateral. The TDG transaction is a delivery versus delivery transaction, with one stock movement to the collateral giver and one or more stock movements to the collateral taker (exceptionally, where returned collateral has zero value, no replacement collateral will be required).

Members should note that there are a number of circumstances which may impact the ability of the CREST system to generate and to settle TDG transactions and settle the failing transaction. These include:

- the timing of the failing transaction (there must be sufficient time for a TDG to be generated and settled);

- availability of securities (both collateral giver and collateral taker must have securities available for recall and substitution, with the substitution meeting the criteria of the original outbound DBV and respecting concentration limits); and
- other settlement processing (including the availability of credit/liquidity or the settlement of other transactions with a higher priority).

Where intraday automatic substitutions are unable to be generated and settled, members may need to take manual steps to resolve any outstanding substitution requirements.

Generation of TDG transactions

TDG transactions will be centrally generated intraday from the time specified in the daily timetable. Central generation will cease from the time specified in the daily timetable. TDGs are generated with a priority of 87. TDG transactions are created as already settled.

Central generation of TDG transactions will be considered where the CREST system has identified a transaction of the collateral giver which is failing to settle and which meets the following criteria:

- the failing transaction is of type BDR, DBR, DEL, MTM, OAT, RPO, RPR, RPS, SLO, SLR, STW, TDR, TDE, TDA, TDM, TTE, USE, XDL;
- the failing transaction involves a security movement and the transaction failure reason is insufficient securities held by the collateral giver;
- the stock debit party to the transaction is a collateral giver in one or more term DBVs which involve the security of the failing transaction and which relate to the same member account as the failing transaction;
- the total quantity of relevant security out on one or more term DBVs will meet the shortfall of security held by the collateral giver in whole or in part (in part if the collateral giver is opted in to auto splitting and the failing transaction is eligible for auto splitting, or if the failing transaction if of a type which is eligible for partial settlement, in whole if it is not); and
- the collateral giver has sufficient eligible replacement collateral in the same member account.

Failing transactions will be processed in order of value, with the highest value transaction first. Where the CREST system is not able to generate a TDG, an alert will not be raised against a TDO.

The required security may be recalled from one or more term DBVs of the stock debit party of the failing transaction. A separate TDG transaction will be generated in respect of each term DBV where security is being recalled.

Failing transactions will be considered for generation of TDGs on their intended settlement date (or the first business day following such date if it is not a business day) or for an indefinite number of subsequent days.

Onward recall of collateral

Where a collateral taker to a term DBV (the 'immediate term DBV') has onward delivered the relevant required collateral in one or more subsequent further term DBVs (each an 'onward delivered term DBV'), the collateral will not immediately be available for recall to the original collateral giver. Further, the required collateral may have been additionally onward delivered down a chain of one or more subsequent further term DBVs.

The CREST system will seek to identify such chains of term DBVs where the relevant collateral has been onward delivered. Where the relevant collateral is in the available balance of one or more collateral takers in such a chain or chains, the CREST system will seek to recall the collateral by centrally generating the necessary TDGs between parties to such onward delivered term DBVs. A separate TDG will be generated in respect of each term DBV between each collateral giver and collateral taker in the chain or chains of onward delivery.

Immediate term DBVs will be considered first. Where the required collateral is in the available balance of one or more collateral takers to such immediate term DBVs, such collateral will be recalled. If the shortfall is not met by such term DBVs, the CREST system will consider onward delivered term DBVs.

The CREST system will only consider onward delivery of relevant collateral along a chain of further onward delivered term DBVs up to a maximum number of links. The maximum limit will be determined by the CREST System Controller. Where relevant collateral is transferred by means of further onward delivered term DBVs beyond the specified limit, such further onward delivered term DBVs will not be considered and a TDG will not be generated to recall such collateral.

Members should note that the CREST system will only identify relevant collateral that has been onward delivered by means of a term DBV (TDO) or term DBV adjustment (TDA) transaction or any automatically generated term DBV substitution transaction. If the relevant collateral is onward delivered from a collateral taker's account by means of a transaction type other than TDO or TDA or any automatically generated term DBV substitution, such transactions will not be considered and a TDG will not be generated to seek to recall such collateral. Members will need to take other steps to meet the settlement failure.

Selection of collateral to recall

If a quantity of stock is needed by the collateral taker for settlement of a pending transaction with a higher priority than TDGs (ie a priority of 88 or above) on the current settlement day of the currency of the pending higher priority transaction, the allocation process will reserve this stock for the pending higher priority transaction and not select it for recall.

Selection of replacement collateral

For each TDG which is generated, the allocation of replacement collateral from the collateral giver will be as follows:

- the potential replacement collateral line with the highest value will be selected first;
- replacement collateral will be subject to the standard DBV allocation rules;
- replacement collateral must be in the same member account as was used for the term DBV being substituted;
- replacement collateral must not include the line of security which is being recalled;
- replacement collateral must respect the concentration limit (if one was specified);
- the total number of collateral lines involved in a TDG can be no more than 99 (although following settlement of a TDG transaction, the total number of collateral lines in the DBV may exceed 99);
- if a quantity of stock is needed by the collateral giver for settlement of a pending transaction with a higher priority than TDGs (ie a priority of 88 or above) on the current settlement day of

the currency of the pending higher priority transaction, the allocation process will reserve this stock for the pending higher priority transaction and not select it as replacement collateral.

Allocation of replacement collateral where there is a chain or chains of onward delivered and further onward delivered term DBVs will be subject to the following additional requirements:

- the replacement collateral must be in a single line of collateral;
- the replacement collateral must be suitable for substitution in all term DBVs in the chain or chains. If the replacement collateral is not suitable for substitution in one of the term DBVs in the chain, the chain is considered to end at the term DBV before the one for which the replacement collateral is not suitable

Where the Bank of England haircut option has been specified:

- recalled collateral, replacement collateral and concentration limits will be valued on the basis of the applicable haircuts; and
- securities not eligible for the auto-collateralisation arrangements will not be selected as replacement collateral.

Where the CREST system is unable to identify eligible replacement collateral in the original collateral giver's account, no TDGs will be generated.

Settlement of TDGs

TDG transactions will be created as already settled between the times specified in the daily timetable.

The CREST system will attempt to settle at the same time all related TDGs (i.e. all TDGs in a chain or chains seeking to return collateral in respect of a particular failing transaction). However, where this is not possible related TDGs will be settled on an individual basis.

Settlement of the TDG to the original collateral giver will return the relevant collateral to the collateral giver's member account. The securities should then be available for settlement of the failing transaction which triggered the TDG. However, members should note that securities returned by the TDG are not 'earmarked' for settlement of the particular failing transaction (the returned securities may therefore be used for settlement of other transactions in the same security, depending on, amongst other things, relative transaction priorities). Automatic splitting functionality will operate periodically alongside TDG settlement to seek to utilise recalled collateral to settle the failing transaction in part.

Term DBV returns

On settlement of a TDG, TDRs in respect of the DBV may be adjusted as follows:

- if a complete line of collateral is removed, the related TDR will be deleted;
- if a line of collateral is increased or decreased, the related TDR will be deleted and a new TDR created with the revised quantity;
- if a new line of collateral is added, a new TDR will be created.

If the DBV has a specified consideration, the consideration of deleted TDRs will be re-apportioned across the new TDRs which are created (in proportion to the current value of the collateral concerned). Where the Bank of England haircut option has been specified, re-apportionment will

be on the basis of the adjusted value of collateral in each new TDR (in proportion to the total adjusted value of new TDRs).

Amendment and deletion of TDG transactions

TDG transactions are created as already settled. Therefore they may not be amended or deleted.

Overnight collateral eligibility assessments

This functionality is not supported on term DBVs in equity DBV classes.

During the lifecycle of a term DBV, particular constituent securities being used as collateral may become ineligible to be continued to be held in the term DBV (for example, as a result of a change the security no longer falls within the specified DBV class). The overnight collateral eligibility assessment process provides an automated facility to identify whether a term DBV contains ineligible collateral.

This process will examine each line of collateral and will set an indicator to highlight where the term DBV contains ineligible collateral.

Collateral eligibility assessment processing will take place overnight, on a daily basis until and including the business day prior to the DBV return date.

Mark-to-market TDR consideration reapportionment

This functionality is not supported on term DBVs in equity DBV classes.

The CREST system receives new reference price data for securities at the end of each business day. Changes in security price may impact the relative collateral values of individual TDRs for a particular DBV. As part of the overnight mark-to-market process, all term DBVs which have not reached their return date (including those with an intended settlement date of the following business day) will be assessed; where the term DBV has a specified consideration all the constituent TDRs will automatically be adjusted so their consideration reflects the relative current values of the collateral lines concerned (total consideration of the term DBV does not change).

Where the term DBV being assessed has one or more constituent TDRs that are either for a zero priced security or are for cash only (e.g. resulting from transformations in relation to cash only proceeds), the adjustments made will be as follows:

- if there are one or more constituent TDRs with a non-zero priced security, the term DBV consideration will be apportioned across only these TDRs and the consideration for the TDR(s) with a zero priced security will be set to zero;
- in the exceptional case that the term DBV has no constituent TDRs for a non-zero priced security, the term DBV consideration will instead be allocated across the TDR(s) with a zero priced security, with the consideration being allocated equally amongst the number of TDRs present;
- as the whole consideration of a term DBV is re-apportioned across the TDRs representing constituent securities, cash only TDRs will be deleted during this adjustment process. In the unlikely situation that the term DBV only has cash-only TDRs, the TDRs will not be deleted, instead the adjustment process will ensure that the total amount of consideration being returned by the TDRs is equal to term DBV consideration (if required appropriately adjusting the consideration on one of the TDRs).

The adjustments made to the consideration during the overnight mark-to-market process will be based on the current constituents of the term DBV during the mark-to-market process.

Where the Bank of England haircut option has been specified, re-apportionment of consideration will be on the basis of the adjusted value of collateral (i.e. taking into account the relevant haircuts).

Overnight mark-to-market collateral valuation

This functionality is not supported on term DBVs in equity DBV classes.

In order to maintain the collateral value of a term DBV, the CREST system provides an automated facility to identify whether a term DBV is over-or under-collateralised or a security is in breach of concentration limit (if specified). This process calculates the current value of collateral and will set an indicator to highlight where the term DBV is either over- or under-collateralised, or where individual securities breach the DBV concentration limit (if applicable).

Where the Bank of England haircut option has been specified, collateral will be valued on the basis of adjusted market values (i.e. taking into account the relevant haircuts).

Mark-to-market collateral valuation processing will take place overnight, on a daily basis until and including the business day prior to the DBV return date. Mark-to-market collateral valuation processing will not take place on the night before a currency holiday in the currency of the term DBV.

Concentration limit breach

Where a concentration limit is specified for a term DBV, the mark-to-market process will assess each constituent security to identify if it breaches the concentration limit. If the current value of a constituent security is more than 10% of the DBV value sought plus any applicable margin, the security is considered to be in breach of the concentration limit. Where the Bank of England haircut option has been specified, concentration limits will be calculated on the basis of the applicable haircuts.

Over-collateralisation

The mark-to-market process will assess each term DBV to identify if it is over-collateralised (i.e. the total value of collateral securities with the collateral taker is more than the DBV value sought plus margin). Where the Bank of England haircut option has been specified, the current total value of collateral will be calculated using the adjusted market values.

A mark-to-market threshold will be applied when considering over-collateralisation. Where the value of the over-collateralisation is within the threshold, the mark-to-market process will not seek to rebalance the over-collateralisation. A threshold of £0.10p (or €0.10 or $0.10, according to the currency of the value sought) applies.

Under-collateralisation

The mark-to-market process will assess each term DBV to identify if it is under-collateralised (i.e. the total value of constituent securities with the collateral taker is less than the DBV value sought plus margin. Where the Bank of England haircut option has been specified, the current total value of collateral will be calculated using the adjusted market values.

The mark-to-market threshold noted above under 'Over-collateralisation' will also be applied when considering under-collateralisation. Where the value of the under-collateralisation is within the threshold, the mark-to-market process will not seek to rebalance the under-collateralisation.

Intraday collateral eligibility substitutions

This functionality is not supported on term DBVs in equity DBV classes.

During the lifecycle of a term DBV, particular constituent securities being used as collateral may become ineligible to continue to be held in the term DBV (for example, as a result of a change the security no longer falls within the specified DBV class). The intraday collateral eligibility substitutions process provides an automated facility to recall a line of 'ineligible' collateral from a term DBV, substituting the returned collateral with equivalent alternate collateral.

Collateral eligibility substitution processing will take place during intraday processing, every day on a daily basis until and including the day before the DBV return date.

The CREST system will centrally generate term DBV eligibility substitution (TDE) transactions to return a particular line of ineligible collateral and replace it with equivalent eligible collateral.

TDE transactions may be generated until one business day prior to the return date. No TDEs will be generated on return date (on return date, any ineligibilities will be identified and highlighted but no TDE transactions will be generated).

TDE transactions are created as already settled. TDEs are generated with a priority of 89.

The TDE transaction is a delivery versus delivery transaction, with one stock movement to the collateral giver and one or more stock movements to the collateral taker. One TDE transaction will be generated for each ineligible line of collateral being returned. Security movements will be to and from the member accounts used in the original TDO.

TDE transactions will be created and settled up until the point specified in the daily timetable when collateral ineligibility substitution processing is to stop. At this point, alerts will be set to indicate whether the term DBVs still contain ineligible collateral. Members will then need to take manual steps, as necessary, to correct any eligibility issues in relation to the term DBV.

Generation of TDE transactions

Collateral will be identified as 'ineligible' when the constituent security is subject to one or more of the following:

- it is no longer in the specified DBV class, following a change of security category of the security;
- it is no longer eligible for DBVs following an amendment to the security details (for example the security is excluded from DBVs);
- the collateral taker has added the security or its issuer to its list of excluded securities;
- it is due to expire on the next business day;
- there is a mandatory corporate action where the security is set to be excluded from DBVs and the next business day is the corporate action record date.

TDE transactions are not generated in relation to voluntary reorganisation corporate actions.

For each TDE which is to be generated, the allocation of replacement collateral from the collateral giver will be as follows:

- replacement collateral will be subject to the standard DBV allocation rules;
- replacement collateral must be in the same member account as was used for the term DBV being substituted;
- replacement collateral must not include the line of security which is being recalled;
- the required quantity is not needed for settlement of a pending TDR, DBR, RPR or a non-zero priority SLR transaction on the next settlement day of the currency of the pending TDR, DBR, RPR or non-zero priority SLR;
- replacement collateral must not be subject to a corporate action-related exclusion (where the record date of the corporate action is the next business day);
- replacement collateral must respect the concentration limit (if one was specified);
- the total number of collateral lines involved in a TDE can be no more than 99 (although following settlement of a TDE transaction, the total number of collateral lines in the DBV may exceed 99).

Where the Bank of England haircut option has been specified:

- returned collateral, replacement collateral and concentration limits will be valued on the basis of the applicable haircuts; and
- securities not eligible for the auto-collateralisation arrangements will not be selected as replacement collateral.

Members should note that a TDE transaction will not be generated in any of the following circumstances:

- there is insufficient eligible replacement collateral in the collateral giver's account (consequently, for TDE processing to operate, members should ensure there are sufficient eligible securities in the relevant member account);
- identified replacement collateral would require more than 99 security movements in the TDE;
- the ineligible security has already expired;
- there is no security price (reference price) available for the ineligible security;
- the ineligible security does not have an 'enabled' status.

Where a term DBV transaction contains ineligible collateral, an alert will be raised on against the TDO and relevant TDR (see further below under 'Enquiries and alerts').

Term DBV returns

On settlement of a TDE, TDRs in respect of the DBV may be adjusted as follows:

- if a complete line of collateral is removed, the related TDR will be deleted;
- if a line of collateral is increased or decreased, the related TDR will be deleted and a new TDR created with the revised quantity;
- if a new line of collateral is added, a new TDR will be created.

If the DBV has a specified consideration, the consideration of deleted TDRs will be re-apportioned across the new TDRs which are created (in proportion to the current value of the collateral concerned). Where the Bank of England haircut option has been specified, re-apportionment will be on the basis of the adjusted value of collateral in each new TDR (in proportion to the total adjusted value of new TDRs).

Amendment and manual deletion of TDE transactions

TDE transactions are created as already settled. Therefore it is not possible to amend or delete a TDE transaction.

Intraday mark-to-market transactions

This functionality is not supported on term DBVs in equity DBV classes.

The intraday mark-to-market process calculates the current value of collateral and will seek to adjust the collateral where the DBV is either over- or under-collateralised, or where individual securities breach the DBV concentration limit (if applicable). The CREST system will centrally generate term DBV mark-to-market (TDM) transactions to return collateral if the DBV is over-collateralised and/or in breach of a concentration limit, and/or to deliver additional and/or replacement collateral if the DBV is under-collateralised or would be under-collateralised after over-concentrated stock is returned.

Where the Bank of England haircut option has been specified, collateral will be valued on the basis of adjusted market values (i.e. taking into account the relevant haircuts).

Mark-to-market processing will take place intraday, on a daily basis until and including the business day prior to the DBV return date. Mark-to-market collateral valuation processing will not take place on a currency holiday in the currency of the term DBV. No TDMs will be generated on return date. TDM transactions are created as already settled.

Concentration limit breach

Where a concentration limit is specified for a DBV, the mark-to-market process will assess each constituent security to identify if it breaches the concentration limit. If the current value of a constituent security is more than 10% of the DBV value sought plus any applicable margin, the security is considered to be in breach of the concentration limit. Where the Bank of England haircut option has been specified, concentration limits will be calculated on the basis of the applicable haircuts.

If a security is in breach of the concentration limit, the CREST system will calculate the quantity of the security that should be returned to the collateral giver so the term DBV is no longer in breach of the concentration limit.

Excess collateral to be returned will be selected as follows:

- the collateral must have been previously transferred from the collateral giver in the particular term DBV, and is valued at more than 10% of the DBV value sought plus any applicable margin;
- if a quantity of stock is needed by the collateral taker for settlement of a pending transaction with a higher priority than TDMs (ie priority of 89 or above) on the current settlement day of the currency of the pending higher priority transaction, the allocation process will reserve this stock for the pending higher priority transaction and not select it for return;

- the collateral must have an 'enabled' status;
- the collateral is currently in the collateral taker's account (either available balance and/or SCR balance).

The CREST system will seek to return sufficient securities to rectify the over-concentration if possible. Where there are insufficient securities to rectify the over-concentration, the CREST system will seek to return the maximum amount possible to reduce the over-concentration if possible (i.e. it may generate a partial re-balancing).

The intraday process will consider whether the DBV will be under-collateralised following a return of collateral in these circumstances and will add additional collateral if possible (see further below).

Over-collateralisation

If the overnight mark to market collateral valuation has indicated that the term DBV is over-collateralised by an amount in excess of the threshhold, the CREST system will seek during intraday processing to return one or more constituent securities. The process will take into account any security which is to be returned for being in breach of a concentration limit.

As stated above under the heading "Overnight mark- to- market collateral valuation" a mark-to-market threshold will be applied when considering over-collateralisation. Where the value of the over-collateralisation is within the threshold, the mark-to-market process will not seek to rebalance the over-collateralisation. The threshold is £0.10. $0.10 or €0.10 (dependant on the currency of the value sought of the Term DBV).

If the value of the over-collateralisation is not within the threshold of the value sought the CREST system will seek to return securities to reduce the over-collateralisation if possible. Where the CREST system has reduced the over-collateralisation to within the tolerance, it will not generate further stock movements (i.e. it will not attempt to remove the over-collateralisation in its entirety but only to within the tolerance of the value sought). This process will not result in an under-collateralisation of a Term DBV. The tolerance is £0.10, $0.10 or €0.10 (dependant on the currency of the value sought of the Term DBV).

Excess collateral to be returned will be selected as follows:

- constituent securities will only be selected where they were previously transferred from the collateral giver in the particular term DBV;
- securities are only selected if they have an 'enabled' status;
- if a quantity of stock is needed by the collateral taker for settlement of a pending transaction with a higher priority than TDMs (ie a priority of 89 or above) on the current settlement day of the currency of the pending higher priority transaction, the allocation process will reserve this stock for the higher priority transaction and not select it for return;
- securities are only selected if they are currently in the collateral taker's account (either available balance and/or SCR balance). Securities are selected in order of collateral value of the constituent security, starting with those having the largest value.

The CREST system will then reassess the Term DBV to identify if it is within the threshold of the value sought.

Where it is not within the threshold of the value sought, the CREST system will seek to further rebalance the Term DBV intra day by following the above process.

Where it is within the threshold of the value sought, the CREST system will not seek to further rebalance the Term DBV during that day.

Under-collateralisation

If the overnight mark to market collateral valuation has indicated that the term DBV is under-collateralised (i.e. the total value of constituent securities with the collateral taker is less than the DBV value sought plus margin) by an amount in excess of the threshhold, the CREST system will seek to supplement one or more securities (from the collateral giver) as additional collateral. The valuation process will take into account any security which is to be returned for being in breach of a concentration limit and will also ensure that adjusted constituents (resulting from additional collateral) respect concentration limits. Where the Bank of England haircut option has been specified, the current total value of collateral will be calculated using the adjusted market values.

A mark-to-market threshold noted above under 'Over-collateralisation' will also be applied when considering under-collateralisation. Where the value of the under-collateralisation is within the threshold, the mark-to-market process will not seek to rebalance the under-collateralisation. The threshold is £0.10, $0.10 or €0.10 (dependant on the currency of the value sought of the Term DBV).

If the value of the under-collaterisation is not within the threshold of the value sought, the CREST system will seek to allocate additional securities to reduce the under-collateralisation. Where there are no futher securities available for allocation or the CREST system has reduced the under-collateralisation to within the tolerance, it will not generate further stock movements (i.e. it will not attempt to remove the under-collateralisation in its entirety but only to within the tolerance of the value sought). In some circumstances this process may result in an over-collaterisation of a term DBV. The tolerance is £10.00, $10.00 or €10.00 (dependant on the currency of the value sought of the Term DBV).

Additional collateral will be considered as follows:

- the collateral will be subject to the standard DBV allocation rules;
- the collateral must be from the same member account of the collateral giver as was used for the term DBV being supplemented;
- the required quantity has not already been allocated to another pending TDM transaction;
- if a quantity of stock is needed by the collateral giver for settlement of a pending transaction with a higher priority than TDMs (ie a priority of 89 or above) on the current settlement day of the currency of the pending higher priority transaction, the allocation process will reserve this stock for the higher priority transaction and not select it as additional collateral;
- securities are only selected if they are currently in the collateral giver's account (either available balance and/or SCR balance). Securities are selected in order of collateral value of the constituent security, starting with those having the largest value;
- the collateral must not be the subject of a corporate action where the record date of the corporate action is the current business day;
- additional collateral must respect the concentration limit (if one was specified).

The CREST system will then reassess the Term DBV to identify if it is within the threshold of the value sought.

Where it is not within the threshold of the value sought, the CREST system will seek to further rebalance the Term DBV intra day by following the above process.

Where it is within the threshold of the value sought, the CREST system will not seek to further rebalance the Term DBV during that day.

Generation of TDM transactions

A single TDM transaction will be generated to make all necessary adjustments (i.e. in relation to concentration limits as well as over- or under-collateralisation). A TDM may therefore be delivery versus delivery and involve multiple lines of stock (with potentially one or more stock movements to the collateral giver and/or one or more stock movements to the collateral taker).

Where a term DBV transaction is incorrectly balanced, or a line of collateral is in breach of the concentration limit (if specified), an alert will be raised against the TDO. Where a line of collateral is in breach of the concentration limit (if specified), an alert will also be raised against the relevant TDR. See further below under 'Enquiries and alerts'.

If any constituent collateral has a reference price equal to zero, a TDM will not be generated to rectify under- or over-collateralisation; the only TDM that can be generated in this case is to fix a breach of concentration limit.

Settlement of TDM transactions

A TDM transaction will be centrally generated during intraday processing and will be created as already settled. TDMs are generated with a priority of 88 which members are able to amend.

TDM transactions will be created and settled up until the point specified in the daily timetable when intraday mark-to-market is to stop. At this point, alerts will be set to indicate whether the term DBVs are still under-collateralised, over-collateralised, or over-concentrated. Members will then need to take manual steps, as necessary, to correct any collateral issues in relation to the term DBV.

Term DBV returns

On settlement of a TDM, TDRs in respect of the DBV may be adjusted as follows:

- if a complete line of collateral is removed, the related TDR will be deleted;
- if a line of collateral is increased or decreased, the related TDR will be deleted and a new TDR created with the revised quantity;
- if a new line of collateral is added, a new TDR will be created.

Where the term DBV has a specified consideration, the consideration will be re-apportioned across all TDRs (in proportion to the current value of the collateral concerned). Where the Bank of England haircut option has been specified, re-apportionment will be on the basis of the adjusted value of collateral in each TDR (in proportion to the total adjusted value of all TDRs).

Exposures

Mark-to-market transactions are generated intraday and are created as already settled, on the basis of the closing prices the previous day. Exposures may therefore arise prior to settlement or as a result of intra-day price changes.

Enquiries and alerts

This functionality is not supported on term DBVs in equity DBV classes.

In addition to standard transaction status changes and enquiry functions (see Chapter 4, section 8) the CREST system provides a number of enquiry and alert functions in relation to term DBVs. These enquiries and alerts will enable members to monitor the status of their term DBVs and, where necessary, take manual action (for example where the CREST system has been unable automatically to substitute a constituent security that has become 'ineligible').

An alert is a status flag which is raised against a particular transaction to indicate a current issue. The CREST system will generate the alerts for a term DBV against the relevant transactions as described below. CREST members must actively monitor these alerts and may need manually to take steps to resolve an issue.

Members should note that alerts will not be raised where the CREST system is unable to generate a TDG transaction.

TDO transactions

Where overnight automated processing has identified that an adjustment is necessary, alerts will be raised against the TDO as follows. More than one alert may be raised against a TDO at the same time.

Alerts will be raised in the following circumstances:

- allocated collateral is no longer eligible;
- under-collateralisation;
- over-collateralisation;
- breach of concentration limit – one or more constituent securities are in breach of the concentration limit.

Alerts will be raised to identify issues with constituent securities where:

- one or more constituent securities do not have an 'enabled' status; or
- no reference price is available for a security.

TDR transactions

Alerts against appropriate TDRs are raised by the overnight substitutions and mark-to-market functionality where the processing has identified an issue with the underlying constituent security of the term DBV. More than one alert may be raised against a TDR at the same time.

Alerts will be raised (in conjunction with status changes to the TDR and TDO transactions) to identify an eligibility issue where the constituent security:

- is no longer available for use with DBVs (i.e. 'DBV Allowed' flag is set to 'No');
- is no longer in the correct DBV class (as a result of a change to the security);
- is now on the DBV exclusion list of the collateral taker;
- is in breach of the concentration limit;
- is due to expire on the next business day;

- is due to mature on the next business day;
- has an imminent mandatory corporate action with a record date of next business day (if raised overnight) or current business day (if raised intraday) which has an impact on the underlying security.

Alerts will be raised to identify an issue with the constituent security in the following circumstances:

- the constituent security is no longer enabled;
- a reference price for the constituent security is not available.

TDE transactions

TDEs are generated with the shared note field pre-populated to indicate the reason for the TDE substitution. TDEs are created as already settled.

Settlement of a TDE transaction (if it has been able to return all of the ineligible security) will reset all alerts raised against the related TDR for that collateral line. Successful settlement of all TDEs in respect of a particular term DBV will reset the 'ineligible collateral' alert that is raised against the related TDO.

Alerts that remain against the TDR/TDO transaction as a result of a TDE not being generated will be reset (and re-raised if applicable) when the overnight process is run at the end of day.

TDM transactions

TDMs are generated with the shared note field pre-populated to indicate the reason for the TDM adjustment. TDMs are created as already settled.

Settlement of a TDM transaction (if it has been able to completely rectify the collateral imbalance) will reset the 'collateral imbalance' alert that is raised against the related TDO.

Alerts that remain against the TDR/TDO transaction as a result of a TDM not being generated will be reset (and re-raised if applicable) when the overnight process is run at the end of day.

Corporate actions

On term DBV creation, the DBV allocation process excludes securities subject to a corporate action that could impact the balance of the security (see further in Chapter 7, section 2 above).

Additionally, where securities are subject to a mandatory corporate action (other than cash distributions), the CREST system's automated substitutions processing will seek to substitute out the security from a term DBV on the day before the record date (see further under 'Overnight automatic substitutions' above).

The allocation and automatic substitution processes will therefore reduce the impact of corporate actions on term DBVs. However, as noted above, automatic substitution may not be possible, or the TDE transaction may be unable to settle. Term DBV return transactions are therefore subject to standard corporate actions processing as detailed in this Manual.

Claims

TDRs (as well as DBRs) are included within the CREST system's claims processing (see further Chapter 7, section 5 below).

Transformations

TDRs are included within the CREST system's transformations processing (see further Chapter 7, section 6 below).

In relation to security proceeds, relevant TDRs are deleted and replaced on transformation date by new TDRs created in respect of the new security. If a TDR transaction already existed in respect of the new security, this existing TDR along with the newly created TDR will both be deleted and replaced by a further TDR for the combined quantity.

In relation to cash proceeds, relevant TDRs are deleted and replaced on transformation date by the following transactions:

- a cash only DEL (with intended settlement date of the corporate action payment date), from collateral taker to collateral giver, in relation to the cash outturn of the corporate action; and
- a cash only TDR (with intended settlement date of the DBV return date), from collateral giver to collateral taker, in relation to the consideration of the relevant deleted TDR (where a consideration was specified).

In relation to corporate actions with mixed cash and stock proceeds, relevant TDRs are deleted and replaced on transformation date by the following transactions:

- a cash only DEL (with intended settlement date of the corporate action payment date), from collateral taker to collateral giver, in relation to the cash outturn of the corporate action; and
- a stock against cash TDR (with intended settlement date of the DBV return date), in relation to the new security and the consideration of the relevant deleted TDR (where a consideration was specified).

Where a TDR is created in respect of a new security, the security may not be eligible for the particular DBV. The overnight TDE substitution process will seek to replace such security with alternative collateral.

Following the transformations process and TDE substitutions process, the DBV may be under- or over-collateralised (due to transformation of TDRs wholly or partially into cash proceeds, or due to variations in value of old and new securities). Over- or under-collateralisation will be assessed, and the CREST system will seek to rebalance the DBV, by the overnight automated mark-to-market process.

The overnight mark-to-market process will also seek to re-apportion the DBV consideration across all TDRs. Cash only TDRs (resulting from transformations in relation to cash only proceeds) may therefore be centrally deleted:

- overnight, where it is possible to re-apportion consideration; or
- the following morning upon settlement of the related TDM transaction (which causes a re-apportionment of consideration).

Where counterparties have opted to skip the transformation process, the relevant TDR will be deleted on security expiry (in accordance with the standard security expiry process).

Buyer protection instructions

Counterparties entering buyer protection instructions for TDRs (including those to skip transformation on mandatory reorganisation events as well as those specifying an option on

elective events) should note that settlement of TDA, TDE, TDG and TDM transactions may all result in the deletion of TDRs and creation of new TDRs in relation to the same line of collateral. Deletion and creation of TDRs in these circumstances does not replicate any buyer protection instructions that may be linked to the original TDR. In relation to mandatory with options events, this may result in the underlying buyer protection instruction not being taken into account by the overnight transformations process.

Collateral takers making corporate action elections must be aware that automated substitution (TDE) transactions may settle on the record date, returning securities subject to a buyer protection instruction back to the collateral giver.

Call payments

For open TDRs involving a constituent security which is a nil paid right (or any other subscription security) that is subject to a call payment corporate action, the automatic transformations processing will take account of the call payment that would have been paid by the collateral taker to the issuer to acquire the fully paid security on behalf of the collateral giver.

Upon transforming a TDR in a nil paid rights security:

- a separate cash only DEL will be generated from the collateral giver to the collateral taker to account for the call payment made by the collateral taker (with intended settlement date ofthe current date);
- the term DBV as a whole will become over-collateralised given that the fully paid security into which the TDR has been transformed will have a greater value than the nil paid right security. Over-collateralisation will be assessed by the automated mark-to-market process which will follow automatic transformations.

For TDRs, given the automatic mark-to-market processing, this transformation processing is slightly different to that employed for repo return transactions (RPRs). As mentioned above, the term DBV as a whole will be over-collateralised after the transformation and the mark-to-market process will generate a TDM to deliver the excess collateral to the collateral giver. The separate cash only delivery transaction created compensates the collateral taker for the call payment they will have paid out to obtain that extra collateral value.

Gilts

Gilt interest and redemption payments may be made through the CREST system. See further Chapter 7, section 12 below.

TDR (as well as DBR) transactions in gilts will be assessed for claims (see further Chapter 7, section 5 below).

TDR transactions in gilts that are subject to a gilt redemption corporate action will be transformed on the date before payment date as follows:

- the original TDR will be deleted;
- if the deleted TDR had a consideration, a new cash only TDR transaction will be created to deliver the consideration from collateral giver to collateral taker (with intended settlement date of the deleted TDR); and

- a separate cash only DEL transaction to deliver the redemption proceeds from the collateral taker to the collateral giver. This transaction will have an intended settlement date of the corporate action payment date and will have a priority of zero.

Eligible debt securities

TDR transactions in EDS securities (otherwise known as money market instruments) are assessed for claims for interim interest payments only. Claims are not generated for the final interest payment which is paid on redemption.

TDR transactions in EDS securities are not subject to the automatic transformation process, instead they are processed by the standard EDS maturity process in the same way as open SLRs, DBRs and RPRs.

For any open TDR transactions, the EDS maturity process automatically creates DEL transactions to deliver the maturity payment from the IPA to the initial collateral giver in return for the underlying security. The DEL transactions are created with a priority of zero on both sides, and additionally will only settle upon successful return of the underlying security to the collateral giver.

Section 3: Escrow balances

The system enables a member (other than an issuing and paying agent) to transfer securities from its available balance to an escrow balance. The escrow balance is within that member's CREST membership and the member retains title to the securities transferred to the escrow balance.

It is a term of the CREST Terms and Conditions that members only transfer securities to an escrow balance in specified circumstances. The term enables the CREST Manual to describe circumstances additional to those specified expressly in the Terms and Conditions in which the escrow functionality may be used. In addition to the circumstances expressly specified in the Terms and Conditions, EUI permits securities to be transferred to an escrow balance if any subsequent movement out of escrow (by TFE transaction type) to the escrow agent would not result in a transfer of legal title (for example, on a redemption of securities where the TFE reflects a cancellation of the security by the issuer, and not its transfer to a third party).

The instruction to transfer securities to the escrow balance identifies a third party member (an escrow agent) who is entitled to the exclusion of the member to direct the transfer of that balance either to itself or to the member's available balance. An issuing and paying agent may not be designated as an escrow agent. After settlement of the transfer to the escrow balance, the member cannot access the securities for any transaction purposes (including system deliveries or recertifications). The appointed escrow agent may either transfer the securities to its own membership or return them to the original member's available balance. Where a transfer of a UK security from the escrow balance to the escrow agent's membership constitutes a transfer of title to the relevant securities, this will be notified by RUR to the issuer. A transfer of a CREST security other than a UK security from the escrow balance to the escrow agent's membership which is intended to result in a transfer of title gives rise to an RUR requesting the relevant issuer to update the register. EUI does not monitor whether the escrow agent is entitled under the terms of its arrangement with the member to effect the transfer of securities from the escrow balance to the escrow agent.

Where a movement out of escrow to the escrow agent does not result in a transfer of legal title, the system will still generate an RUR. In these circumstances, the RUR does not constitute (i) in relation to UK securities, a notification of registration of a transfer of title, or (ii) in relation to Guernsey, Isle of Man, Jersey or Irish securities, an Operator-instruction to the relevant registrar to register a transfer of title to those securities.

Transfers to and from the escrow balance settle free of consideration. Securities held in an escrow balance do not count towards a member's secured credit limit and therefore are not included in the calculation of the member's headroom. Consequently, where the relevant member account is an account linked to a CMA cap, the transfer of securities to an escrow balance is subject to the member's available headroom but a later transfer of securities to the escrow agent is not. The impact of a transfer to and from a sponsored member's escrow balance on that sponsored member's net settlement limit is described in Chapter 4, section 13.

In the event that a security is suspended, no transfers of that security to or from an escrow balance can be made. In the event of the disablement (suspension) of a member, the CREST system has functionality which permits the settlement of a TFE to the escrow agent from the escrow balance without requiring the membership to be re-enabled. This might be utilised, for example, where a bank wishes to enforce its (fixed) charge over the stock held in the escrow balance. However, EUI will not permit the settlement of a TFE in these circumstances without being

satisfied that the risk of a bad delivery or of a threat to the security, reputation or integrity of the system has been minimised. In the context of the realisation by a bank of its security over stock held in escrow under the membership of an insolvent member, EUI is likely to have regard to the procedures on enforcement where a membership is disabled as set out in Chapter 6, section 7.

A registrar or receiving agent does not have knowledge of the escrow balance (unless the receiving agent is also the escrow agent). It may therefore take action which affects the securities in the escrow balance, e.g. if a security is terminated or is the subject of a debit adjustment instruction by a registrar, securities held within the escrow balance will be terminated or deleted in the same way as securities held in the available balance. If termination is followed by the issue of new securities by an issuer's receiving agent (such as in the circumstances of a transformation) by means of an unmatched stock event or a registrars adjustment instruction, the new securities will be credited to the available balance only and will not be credited to the escrow balance by the receiving agent, registrar or EUI (unless the issue of new securities occurs in the context of a corporate action in relation to which the automatic transformations functionality described in Section 6 of Chapter 7 is operational).

If termination of a member is followed by a recertification (or if EUI recertificates a holding for any other reason, e.g. see Chapter 10, sections 1 and 3) the certificates will be sent to the registered member (or as he may direct) and not to the escrow agent. The same applies if for any other reason recertification takes place where securities are held in an escrow balance.

Users should have regard to Chapter 1, section 2 (Practical limitations of the system) in the context of using transfers of securities to escrow balances for the purposes of accepting takeover offers.

Transfers to escrow (TTE) which do not form part of a corporate action (i.e. they have no assigned corporate action number) and involve one or more Restricted Securities, will not pass initial input validation and the transfer will be automatically rejected by the CREST system.

Escrow adjustments

The system also enables a member by using the Escrow Adjustment transaction (ESA) to notify to the relevant escrow agent that he wishes to withdraw securities from an escrow balance and/or move them to a different escrow balance (or, more accurately, identify a different account within the escrow agent's membership to which the securities may be moved on a TFE; similar references below should be read accordingly). This function is mostly likely to be used in the context of takeovers in order to change an election or withdraw an acceptance.

The Escrow Adjustment input specifies:

- the available balance from which the relevant securities were first delivered to the escrow balance;
- the relevant escrow balance itself; and
- either the available balance to which the securities are to be returned or the differentescrow balance to which they are to be moved.

The CREST system does not validate whether, for example, withdrawals or changes to elections are permitted and it is the responsibility of the relevant escrow agent (e.g. a receiving agent acting for an offeror) to do so and to indicate its consent by sanctioning the member's Escrow Adjustment input. Once an escrow agent has accepted the Escrow Adjustment by sanctioning it, the transaction may settle.

Section 4: Corporate actions

Introduction

The CREST system has functionality which may be used to execute corporate actions[31]. For information concerning the execution of corporate actions during a NSSDPs period please refer to Chapter 10, Section 4. It is the choice of the issuer and his agent whether or not to use the CREST system to execute a particular corporate action. Where the issuer chooses to use the CREST system, the system does not prescribe the way in which the action is done, nor does it ensure that the issuer or shareholders act in accordance with the terms of the event. For example, the CREST system does not prevent a shareholder inputting an instruction to 'accept' a rights issue after the closing deadline for the offer. The observance of deadlines is the responsibility of the shareholder and the issuer and it is for the issuer to reject a late 'acceptance'.

Three aspects of the CREST system facilitate the execution of corporate actions. First, the details of corporate actions are held on the system. Second, a number of transactions have been designed specifically to permit the execution of corporate actions. Third, the CREST system provides a means by which buyers can pass instructions to their counterparties in relation to corporate actions

EUI assesses corporate actions by reference to the following 3 categories:

- mandatory (broadly, those actions which will affect a holder in a particular way without the need for him to take any action)
- mandatory with options (a mandatory action which offers a choice of benefits)
- voluntary (broadly, those actions which will not affect a holder unless he so chooses).

EUI's categorisation of a particular corporate event will be identified in the corporate actions data (see below). It is possible for different stages of a corporate action to be categorised in different ways; for example, a take-over will initially be a voluntary event but if it proceeds to the stage at which the shares of a minority are compulsorily acquired, the compulsory acquisition will be treated as a mandatory event (possibly with options). The categorisation used by the CREST system for processing purposes may not always accord with the way in which a corporate event is perceived for other purposes: it is EUI's categorisation which is relevant for the purposes of the CREST Manual.

Corporate actions data

Each corporate action set up in the CREST system is ascribed its own corporate action number which identifies the corporate actions data held under the ISIN of the underlying security. One of the primary functions of the data is to enable the Claims Processing Unit to raise claims.

The corporate actions data includes the identity of the member which is acting as receiving agent for each corporate action. For the corporate action type takeover (TKO), the Participant ID of the member which is acting as the offeror's receiving agent (the 'takeover receiving agent') is used to generate duplicate RURs which are made available to the takeover receiving agent following the successful registration of a transfer in the target security (or, in the case of UK securities, upon settlement of the transfer).

[31] The CREST voting service is described separately in section 9 of this Chapter. The functionality which enables or facilitates the payment of interim interest payments on, and the redemption of, eligible debt securities is described separately in section 11 below and Chapter 2, section 6. Functionality to allow payment of dividends/interest and remit electronic tax vouchers in the CREST system and the facility to make elections for dividend alternatives is described in section 12.

Corporate actions data is used by the CREST system to ensure that an unmatched stock event instruction may only settle if the instruction which has been input identifies the member which is acting as receiving agent as one of the counterparties and another member as the other.

The corporate actions data also gives members limited information on actions which result in a transformation of the underlying security. The CREST system does not itself transform securities, although in some circumstances it does automatically reflect a transformation by the replacement of unsettled instructions in the transformed line. This is referred to in section 6 of Chapter 7 below.

Corporate action transaction types

Six transaction types have particular application to the execution of corporate actions:

- Complex or Many to Many Deliveries (MTM)
- Unmatched Stock Events (USE)
- Registrars adjustments (REG)
- Transfers to escrow (TTE)
- Transfers from escrow (TFE)
- Escrow account adjustment (ESA)
- Dividend/Interest Payment (PAY).

Registrar adjustments and the instructions to transfer to, from and between escrow balances are dealt with in Chapter 5, section 2 and Chapter 7, section 3 respectively.

Corporate actions involving Restricted Securities

For corporate actions involving Restricted Securities, certain corporate action transaction types are accepted without requiring certification in the CREST system on the basis that the issuer, CREST Registrar or receiving agent is responsible for ensuring compliance with any applicable restrictions.

Complex (or Many to Many) Deliveries

The complex delivery is used for the sole purpose of corporate action processing. It is used in connection with acceptance of certain corporate actions and enables two members of the system simultaneously to settle up to four movements of securities and up to two standard payment obligations in different currencies (and up to two commission and 'other' payments). For example, in the case of a rights issue, nil paid securities plus cash can be transferred from the accepting member to the receiving agent, with fully paid rights simultaneously transferred from the receiving agent to the accepting member. There are no constraints on the direction of the movements between the parties; securities do not have to move against the creation of a CREST payment. There must be at least two security movements within a complex delivery transaction.

Any complex deliveries that have no assigned corporate action number or corporate action ISIN) will not pass initial input validation and the transaction will be automatically rejected by the CREST system.

Settlement of a complex delivery is identical to that for an ordinary delivery. Settlement can be controlled by the use of priorities. It is resource constrained and will therefore not settle if either party has insufficient securities or headroom or either party's settlement bank has insufficient liquidity.

Unmatched stock event transactions

The unmatched stock event transaction allows the transfer of one line of securities and/or the creation of one CREST payment between a receiving agent and another member[32]. The delivery of securities to the recipient and/or the creation of the CREST payment in favour of the recipient's settlement bank is a free delivery; there is no delivery of securities or the creation of a CREST payment in the opposite direction. The unmatched stock event transaction is input by the deliverer and is not matched by the recipient counterparty.

Settlement of the unmatched stock event is identical to that for an ordinary delivery. Settlement can be controlled by the use of priorities. It is resource constrained and will therefore not settle if the receiving agent or member inputting the unmatched stock event has insufficient securities headroom or its settlement bank has insufficient liquidity. Settlement cannot be prevented by the recipient. The recipient is informed via transaction status changes that it is the counterparty to an unmatched stock event.

The corporate action number and the corporate action ISIN are mandatory for an unmatched stock event; they must be input by the deliverer.

Unmatched stock events can transfer securities and/or create a CREST payment from a member to a receiving agent (for example in a redemption). Alternatively, the receiving agent may input an unmatched stock event to transfer securities and/or create a CREST payment in favour of the recipient member's settlement bank - for example a scrip dividend with cash fraction.

An unmatched stock event can be deleted by the inputter at any time up to settlement.

Buyer instructions

The CREST system has functionality which enables members to communicate in relation to certain types of corporate action which affect securities the subject of unsettled instructions relating to the CLA, DBR, DEL, SLR and TDR transaction types[33]. It is possible for a member to input in relation to an unsettled instruction for the receipt of securities a Transaction CA Option Input (referred to as an 'ACON'), which will be visible to the deliverer of the securities and which will indicate to the deliverer the steps which the member would like the deliverer to take in relation to the corporate action. For example, if the corporate action is a mandatory event in relation to which it is possible to elect for one or more options the ACON might indicate the acquirer's desired option; if the corporate action is a voluntary event (with or without options), the ACON might be used to indicate whether the acquirer wishes the event to be accepted in relation to the relevant securities and, if so, in relation to which option (if options are available). A party status change is written to alert a member that his counterparty has input an ACON on a particular transaction.

The ACON message can only be used as a means of communication between members in relation to corporate actions for which the CREST automatic transformations functionality will operate. Corporate actions are identifiable as such by the appearance of a 'transformation date' in the relevant corporate actions data.

[32] Specific features of the USE function in respect of interim interest payments made on an eligible debt security are described in Chapter 7, section 11.

[33] The functionality operates in relation to all transaction types in respect of which the automatic transformations functionality operates – see section 6 below (Transformations). It is, however, considered unlikely that it will be used as a mechanism for giving instructions other than in relation to the transaction types listed.

The legal significance of the ACON as a means of passing instructions between counterparties will be determined by the terms of the contract between them. For example, the rules of the London Stock Exchange provide that ACONs input prior to certain deadlines will constitute valid instructions from a buyer to a seller with which the seller is bound to comply. Other than in relation to 'CCP' participant transactions (and in the manner more specifically described below), the CREST system does not monitor whether those deadlines have been met and accordingly it is possible, in system terms, for an ACON to be input after the relevant deadline has passed.

If the ACON is input in relation to a 'CCP' participant transaction, the CREST system relays the message to the seller (if in the CREST system) to the 'CCP' participant in the manner described in the below.

The ACON is one factor used by the CREST system in determining how unsettled transactions should be automatically transformed (see Section 6 of this Chapter (Transformations), below).

'CCP' participant transactions

Processing of buyers' instructions differs in some respects in relation to 'CCP' participant transactions. Reference should be made to the CREST Central Counterparty Service Manual, Chapter 10, for certain matters which are specific to the CREST central counterparty service.

General

The processing in relation to buyers' instructions described in this section is different in five main respects in relation to all 'CCP' participant transactions:

- If the (original) buyer inputs a Transaction CA Option Input (or ACON) message in relation to an unsettled 'CCP' participant transaction, the message is visible to the relevant 'CCP' participant, but not to the (original) seller. On receipt of the buyer's ACON, the CREST system therefore automatically creates an ACON message in relation to corresponding unsettled instruction(s) between the relevant 'CCP' participant and one or more sellers utilising the allocation process described below. The ACON message generated by the CREST system will bear the same details (including the same date and time stamps of input) as that input by the buyer, save that the details of the relevant 'CCP' participant will replace the details of the buyer. The transactions will be linked for settlement purposes (see further Chapter 5, Section 6).
- It is not possible for the CREST system to apply different deadlines for the input of ACON messages depending on which investment exchange's or CCP's rules are relevant. Accordingly, the CREST system normally adopts a common system deadline; the deadline will appear in the relevant corporate action details. The CREST system deadline generally used is that ACON messages will only be accepted up to 11:00 London time on the business day immediately before the relevant last day for acceptance, registration, election or call payment. The CREST system will reject ACON messages input by the (original) buyer after this time. The message will also be rejected if the criteria set out in the following two paragraphs are not met.
- The CREST system will also reject ACON messages relating to voluntary corporate events which are input by the (original) buyer before the relevant deadline, if the intended settlement date of the transaction falls after the deadline.
- The CREST system will also reject ACON messages relating to mandatory events with options, if the relevant trade date is less than two days before the relevant deadline.

- An ACON message can be input in respect of an unmatched transaction by a 'CCP' participant only.

The ACON message deadline set out above is for general guidance only and may vary – the definitive deadline used by the CREST system for processing for each corporate action is set out in the relevant corporate action details. Please see 'Important Note' at the end of this section.

The allocation process

The CREST system provides an allocation process for 'CCP' participants. The allocation process enables the relevant 'CCP' participant to onward allocate instructions on its buy transactions from its sell transactions for corresponding quantities. The allocation process assesses both net and gross matched 'CCP' participant transactions and unmatched net transactions that were input by or on behalf of the 'CCP' participant.

Where a buyer to a CCP sell instruction instructs for an option, the allocation process will identify a corresponding CCP buy transaction (where the 'CCP' participant is buyer) and copy the instruction on to that transaction.

The corresponding transaction will be identified according to the following criteria:

- a linked transaction (as a result of a previous automatic transformation);
- a transaction of equal size;
- a transaction that is greater in size; and
- a transaction that is greatest in size (where there are no transactions of greater size than the CCP sell transaction).

When identifying a corresponding transaction, the system checks the criteria in order, i.e. it first checks to see if a transaction is linked and is of identical size, if not it will proceed further down the list.

For transactions that are not linked, CCP buy instructions are first checked to identify a transaction of the same size. If such a transaction is identified, the transactions will be linked together. The link between such transactions is a 'permanent' link and cannot therefore normally be broken (unless the ACON is deleted by an ACOD message, in which case the CREST system will break the link to allow the allocation process to 're-use' the transaction) to ensure that they can only settle as a pair. The link will be carried across to subsequent splits and transformations as a transient link.

If a transaction of equal size is not identified, the CREST system looks for a transaction of greater size. If such a transaction is found it will be split into two transactions, one for the required size and one for the remainder. The transaction that is the same size will then be linked to the other transaction.

If a transaction of greater size is not identified, the CREST system looks for the biggest available transaction. The original buyer's transaction is then split into two shapes, one of the same size as the biggest available transaction and one for the remainder, and linked to the identified transaction. The unallocated split transaction then proceeds through the criteria identified above in order to identify a corresponding transaction.

If more than one transaction meets the criteria, one transaction is selected at random, using the transaction ID as the selection criteria.

The allocation process will continue trying to allocate buyer instructions until ten minutes after the relevant deadline. If a corresponding transaction cannot be identified then no onward instruction will be made. However, the buyer instruction input by the party buying stock from the 'CCP' participant remains valid and is unaffected by the failure to allocate to a party selling stock to the 'CCP' participant.

If a member deletes an instruction (by an ACOD message) and the transaction has already been linked to another transaction, the ACOD is passed to the other transaction in the link. If a member deletes an instruction before it has been allocated to another transaction, the instruction is removed from the allocation process.

Members may enquire on individual buyer instructions by specifying either the ISIN or the transaction ID. It is also possible to monitor whether transactions have been successfully processed by the allocation process.

Important Note:

- ACONs may also constitute buyer instructions under rules of the particular trading venue (or the rules of their CCPs). An ACON accepted by the CREST system will not necessarily constitute a valid buyer instruction under the relevant trading venue's or CCP's rules. Participants inputting ACONs for this purpose should ensure that they meet the deadlines and any other requirements set out in the relevant trading venue's or CCP's rules.
- Since an ACON can be input by the 'CCP' participant on an unmatched transaction, the seller will not be able to see the ACON until he has matched the transaction. Such transactions will not be transformed, but the instruction to the seller may still be valid under the rules of the exchange. All relevant participants may therefore wish to ascertain the status of ACON messages under the relevant trading venue's or CCP's rules and sellers may wish to match 'CCP' participant transactions promptly.

Section 5: Benefit claims

A claim arises in the context of a benefit distribution for a security in relation to a transaction settled or to be settled in the CREST system on terms that the benefit will belong to one member which is paid to the other.

Corporate actions giving rise to claims would include cash dividends, scrip dividends, enhanced scrip dividends, interest payments, capital repayments, capitalisations, open offers and rights issues.

The Claims Processing Unit (CPU) automatically generates a claim transaction (CLA) which, when settled, delivers the benefit to the transferor or the transferee as appropriate. The system does so in the context of transactions which have either matched but not settled or which have settled.

The way in which the CPU calculates claims is described in The Claims Processing Unit 1995 Whitebook as updated and replaced from time to time. In particular, the CPU calculates claims solely on the basis of the data included in the relevant settlement instructions and corporate action details held in the CREST system. No checks are made for compliance with the rules of any stock exchange or other relevant market (for example, the CPU does not check whether the ex-date held in the system is the same for all relevant markets or whether a trade marked as special was permitted to be so marked at the relevant time).

The transaction types upon which the CPU may generate a claim are: claims, overnight DBV returns, term DBV returns, repo returns, stock loan returns and (though only where securities are involved) deliveries. A claim in respect of an EDS will only be generated to re-distribute interim interest payments, as different procedures are operated upon the maturity of an EDS (see further Chapter 2, section 6; and section 11 below). Although a stock deposit, stock withdrawal or transfer from escrow to an escrow agent may result in a transfer of title, the CPU does not generate a claim on these transaction types.

Record dates for interest payments on gilts are now struck at the end of day, in line with processing for other securities (following the introduction of term DBV functionality, they are no longer struck intra-day). Collateral transactions involving gilts (transactions of types SLR, RPR, DBR and TDR) will be assessed by the Claims Processing Unit if the transaction is unsettled as at close of business on record date. Claims (transaction type CLA) will also be assessed by the Claims Processing Unit in accordance with standard CPU processing. Delivery transactions (DEL) involving gilts are excluded from the Claims Processing Unit.

Where the claim calculation gives rise to a fraction, the CPU rounds the figure down to the nearest full unit of a security or of a currency (i.e. pence or cents).

A claim is generated by the CPU pre-matched for settlement with a settlement priority of 50. Claims are excluded from the automatic process by which transactions with a zero cash priority become settleable at the time specified in the daily timetable (see also Chapter 4, section 8). A claim has an intended settlement date of pay date (or ex date if the benefit does not have a pay date).

If the settlement priority has been reduced to zero by the giving member, on the fourth business day following pay date (or ex-date, if appropriate) for cash claims or the fifth business day following pay date for stock claims and neither member has alleged a deletion in respect of the claim, the giving member will be deemed to have accepted the calculation of the claim by the CPU and to have authorised the CREST system to increase the settlement priority in relation to the

claim. The CREST system will raise the settlement priority from zero to 50 on such claims instructions on the fourth or fifth business day following pay date or ex-date (as appropriate).

If a claim arises in respect of a corporate action which permits a holder to elect to receive one or more different distributions, the claim generated by the CPU will reflect the default option (the distribution which will be received if the holder takes no action). If this does not reflect the arrangement between the giving and receiving members, one or both of them should allege a deletion against the claim before the pay date. This will prevent the claim from settling and enable the members to manually input instructions to reflect their arrangement. No claims will be generated by the CPU in respect of voluntary corporate actions (those which will not affect a holder unless he takes specific action, such as accepting an offer).

Claims in respect of which only one party has alleged a deletion are deleted 60 business days after their pay date.

Specific features of claims processing in relation to the repo return transaction type are described in section 10.

Benefit claims and the netting procedures

The following additional considerations apply in relation to claims processing for transactions subject to the netting procedures. Gross transactions that are eligible for processing under the netting procedures but are not matched prior to the start of claims processing, and net transactions both have claims raised against them. When the unmatched gross transactions are subsequently netted following matching, the resultant net transaction will be identified as having claims raised against it. Gross transactions that have claims raised on them prior to processing under the netting procedures will be netted separately from gross transactions that do not.

'CCP' participant transactions

Claims in relation to 'CCP' participant transactions ('CCP claims') are processed differently to other claims in the following respects:

- Claims are raised on unmatched transactions that are input by or on behalf of the relevant 'CCP' participant. Consequently the following additional considerations apply wheretransactions to which the 'CCP' participant is a party are subject to the netting procedures. Gross transactions that are eligible for processing under the netting procedures, but are not matched prior to the start of claims processing, and unmatched net transactions both have claims raised against them.
- The CREST system will attempt to settle CCP claims on their intended settlement date unless both parties to the claim (i.e., the relevant 'CCP' participant and the relevant counterparty) have entered a deletion in the CREST system in relation to the claim. In practice, therefore, it is unlikely to be possible for a member to receive anything other than a default option in relation to a CCP claim (in relation to those corporate actions in respect of which one or more options may be available).
- Unsettled claims in respect of which only one party has alleged a deletion will not be deleted from the CREST system 60 days after their pay date.

Section 6: Transformations

A transformation generally arises when a security undergoes a change such that the ISIN of the security in its new form is different to that of the security in its original form, or when one security, for example as a result of a corporate action, is replaced by a new security. The CREST system's automatic transformations functionality deletes certain unsettled instructions relating to the original security and creates new instructions relating to the new security, economically equivalent to the original instructions.

The automatic transformations process only affects transaction types CLA, DBR, DEL, OAT, SLO, SLR, STW, RPR, TDR, TTE (where no corporate action number is specified) and TFE (where no corporate action number is specified). All transaction types that are corporate action related, such as the USE, MTM and the TTE and TFE where corporate action numbers are specified, are excluded from transformations functionality.

Only unsettled instructions with status B, D, E or H are transformed, including those that have been partially deleted.

Automatic transformations functionality operates in relation to most corporate actions where a security bearing one ISIN is replaced by a security bearing another. Automatic transformations functionality does not operate in circumstances where a claim is generated by the Claims Processing Unit.

The corporate actions data available in the CREST system indicates whether the automatic transformations process runs in relation to a particular event.

Automatic transformations software identifies those instructions which are to be transformed, deletes them in the system and marks them with a status change TTC or TNC (will never settle, transaction transformed). The CREST system then centrally generates replacement instructions which together reflect, as closely as possible, the bargain terms embodied in the deleted instructions. The replacement instructions are, if possible, created with the same transaction type, status, priority and settlement date as the deleted instructions, but differ from them in a number of ways, including:

- the replacement instructions are not reportable;.
- the transaction reference and transaction ID of the original instructions appear in the revised instructions in the transformed transaction ID and reference fields;
- the new instructions bear the 'N' stamp flag.

In addition,

- where a transformation results in a requirement to deliver more than one security, the CREST system generates separate instructions relating to the delivery of each security. The consideration payable pursuant to the original instructions is apportioned across these deliveries in a ratio to be prescribed in the corporate actions data; any out turn combination which includes cash will lead to the generation of a separate cash only transaction;
- where the replacement instruction would involve fractions of units of a security, the CREST system centrally generates the instruction rounded down to the nearest whole unit;

- where a corporate action results in a requirement to deliver (in addition or in lieu) a security which is not a CREST participating security, the instruction centrally generated by the CREST system in relation to that security is not capable of settlement;
- where transactions in a line on which a call payment is due are transformed, the new transaction(s) will deliver the fully paid rights or out-turn security (as appropriate) via the same type of transaction as the original; the consideration on the CREST system generated transaction will be that for the original transaction plus the call payment (providing the payments are in the same currency). However, in relation to term DBVs, members should refer to section 2B above;
- where the underlying instructions have been split, the CREST system applies the automatic transformations functionality to each split instruction separately, but in addition includes the transaction ID and reference of the parent instruction on the new instructions. The parent instruction is not itself transformed; and
- where the original instructions are linked, the link is not reproduced on the new instructions.

The responsibility for removing a security from the CREST system and introducing a new security to the system remains that of the relevant registrar. However, in circumstances where the automatic transformations functionality is operational, the CREST system identifies whether any of the stock removed from the system has been deleted from a deposit link or escrow balance. If so, it apportions the new security credited into a member account by the registrar among the escrow balances, deposit link and available balance of the relevant member.

The CREST system will not normally automatically transform instructions if the new instructions created as a result would relate to a security which is subject to nationality declaration requirements. If, exceptionally, EUI agrees to automatically transform such bargains it will issue a notification of the basis on which it will do so.

All events

It is the responsibility of each member not wishing certain instructions to be transformed to enter a Skip Transformation flag[34] against the relevant transaction(s). This must be done prior to the time at which the functionality will first operate in relation to that security. Any member not doing so will be deemed to have authorised EUI to delete instructions and centrally generate revised instructions attributable to it in the manner described.

Mandatory events with options

In cases where a mandatory corporate action offers a choice of benefits, the corporate action data in the CREST system specifies the default option which will be reflected in the automatically transformed instructions, in the absence of instruction to the contrary. The CREST system may be instructed not to automatically transform instructions to reflect the default option either by means of the Skip Transformation flag (in which case no automatic transformation will occur) or by means of the Transaction CA Option Input, or ACON, message. The ACON message can be used to instruct the CREST system to the following effect:

[34] The Skip Transformation flag is input by means of the ACON message – see below.

- if only one party inputs an ACON message before the transformation takes place, the transformation will reflect that instruction;
- if both parties input matching ACON messages before the transformation takes place, the transformation will reflect those instructions;
- if both parties input ACON messages but those messages conflict, no transformation will take place;
- if no ACON messages are input before the transformation can take place, the CREST system will transform the instructions in accordance with the default option, unless a Skip Transformation flag has been entered;
- in the normal course, the automatic transformations functionality will run in relation to mandatory events (with or without options) each evening from (and including) the date specified for the commencement of transformations in the corporate actions data until the tenth business day after the End Date of the relevant security.

Voluntary events

Voluntary events are processed on a different basis. The CREST system will only automatically transform instructions to reflect a voluntary event if both parties to the transaction have input matching ACON instructions into the CREST system. Following the input of matching ACON instructions, the CREST system will automatically transform the instructions on the evening of the intended settlement date where the transaction has failed to settle. When the transaction successfully settles on the intended settlement date it will not be automatically transformed. If the outcome of the event is not certain, as may be the case, for example, in relation to a take-over, the CREST system may transform the instruction into a non-settling assented line. If this is to be the case, the assented line will be clearly labelled as such in its security details. A further transformation will then take place once the outcome of the corporate action is known.

'CCP' participant transactions

The automatic transformations functionality operates differently in relation to 'CCP' participant transactions in the following respects:

- The Skip Transformation flag is not available for use in relation to 'CCP' participant transactions.
- The Transaction CA Option Input (or ACON) message is used in relation to voluntary events and mandatory events with options to instruct the CREST system to transform the instructions to reflect a particular outcome. If the (original) buyer inputs an ACON message in relation to an unsettled 'CCP' participant transaction, the message is visible to the relevant 'CCP' participant but not to the (original) seller. The CREST system rejects ACON messages input by the (original) buyer after the relevant deadline.[35] For reference, this time appears in the relevant corporate action details. The CREST system also rejects ACON messages relating to voluntary corporate events which are input by the (original) buyer before the relevant deadline, if the intended settlement date of the transaction falls after the deadline and rejects ACON messages relating to mandatory events with options if the relevant trade date is less than two days before the relevant deadline.

[35] See Chapter 10 above (Corporate actions) for further information in relation to the deadline.

- For mandatory events with options the trade date must be (at least) one day before the relevant deadline.
- The CREST system also rejects any ACON instructions input by the (original) seller.
- The transformation of unsettled 'CCP' participant transactions as a result of voluntary events occurs on the intended settlement date of the transaction.

Section 7: Stripping and Reconstitution

Stripping

Stripping is the process of breaking down standard coupon bearing gilts into zero coupon gilts. These can be held and traded separately as individual lines of stock. Reconstitution is the process whereby the individual coupon and principal payments are reconstructed back into a coupon bearing gilt. The functionality to strip and reconstitute applies to specified fixed interest gilts.

All coupon strips that mature on the same date and are within the same security category are fungible, i.e. coupons payable on the same date, which have been stripped from different underlying gilts, are completely interchangeable. Principal strips however, are not fungible (except in the case of a strippable stock and its 'A' tranche); therefore they cannot be interchanged with other principal strips. Consequently, principal strips are not fungible with coupon strips. This fungibility can lead to coupon strips being reconstituted into a different strippable gilt than the gilt that the strips originated from.

Only Gilt Edged Market Makers (GEMMs) and the Bank of England have the ability to perform stripping and reconstitution. GEMMs and the Bank of England will participate in the system with a participant type of member. A Stripper field on participant details indicates the ability to strip and reconstitute. When a strip is undertaken the value of the strips credited in proportion to the strippable security is calculated by reference to the benefit ratios on each coupon and redemption corporate action data and vice versa for reconstitutions. It is not possible to strip or reconstitute from member accounts linked to a repo cap.

Stripping and Reconstituting can only occur if the GEMM or the Bank of England wishes to strip or reconstitute in multiples of a stated quantity. This quantity must also be equal to or greater than a minimum quantity. These quantities are defined on the security details of the strippable stock.

Other non-GEMM participants can trade in the strippable and stripped stock. They can:

- purchase it from a GEMM or other member in the usual way;
- sell a strippable stock to a GEMM or other member and buy back the stripped stocks; and
- request that a GEMM strips a stock and then delivers back some or all of the principal and coupon stocks.

Stripped stock can only be held in uncertificated form.

To perform stripping in the CREST system, GEMMs and the Bank of England will use a Strip Request to generate an STR transaction. The STR transaction will not be included within Automatic Transformations.

It will generate one transaction with a debit stock movement for the strippable stock and a credit stock movement for each stripped stock. A Strip Request is a single sided (non-matching) instruction. The system can determine the quantity of the stock movements from the strip cross references created upon input of the corporate action data. For both the principal and coupon strips, the quantity is derived from the nominal value being stripped multiplied by the benefit ratio.

Splitting of Strip Requests will not be possible. The transaction is also validated to ensure that the participant is eligible to strip stock and that the ISIN is strippable

Where stripping of a stock is undertaken after the record date for a dividend but prior to the date of its payment, a coupon strip is not generated in respect of that dividend.

Strip Requests do not settle during DBV processing and are subject to the normal pre-settlement checks. Upon settlement of a Strip request the strippable stock will be deleted from the stock account and the individual principal and coupon strips will then be credited to the same account.

Reconstitution

To perform a reconstitution the GEMM or the Bank of England would have to hold the appropriate quantities of the principal and coupon strips and input a Reconstitution Request instruction (an RCN transaction).

The RCN transaction will not be included within Automatic Transformations. The RCN will generate a debit stock movement for each stripped stock and a single credit movement for the strippable stock.

Splitting of Reconstitution Requests will not be possible. The transaction is also validated to ensure that:

- the participant is eligible to reconstitute stock;
- the ISIN is strippable;
- the quantity of stock to be reconstituted is equal to or greater than the minimum strippable quantity; and
- the quantity of stock to be reconstituted is exactly a multiple of the strip multiple.

Reconstitution requests will not settle during DBV processing and are subject to the normal pre-settlement checks. Upon settlement of a reconstitution request the individual principal and coupon strips are debited from the stock account. The strippable stock will be credited to the stock account.

Where reconstitution of a stock takes place after the record date for a dividend but prior to the date of payment, the strips exchanged for that stock will not include a strip corresponding to that dividend payment. These will mature independently.

Section 8: Auto-collateralisation arrangements

Introduction

The CREST system incorporates auto-collateralisation arrangements consisting of:

- 'client auto-collateralisation' arrangements, to allow a member's securities in the course of settlement to be repoed to their RTGS settlement bank (and for such securities to be returned by the RTGS settlement bank to the member); and
- 'SB auto-collateralisation' arrangements, to repo securities from an RTGS settlement bank to the Bank of England (and for such securities to be returned by the Bank of England to the settlement bank).

The client auto-collateralisation arrangements:

a. are triggered by a member's purchase of eligible securities against sterling or in certain circumstances by a member's receipt of eligible securities in a stock-versus-stock transaction, or by a member's receipt of eligible securities in a free-of-payment transaction, regardless of their need for additional credit (known as 'on-supply');

b. will repo the securities (i.e. those received by the member) from the member to their RTGS settlement bank (known as 'on-flow'); and

c. result in cash consideration equivalent to the settlement bank margined value of the securities being credited to the CMA of the member.

In this section 8, such a member (as a customer of a settlement bank participating in the client auto-collateralisation arrangements) is referred to as a 'client-member'. This term is used in contrast to the member(s) that participate(s) in the SB auto-collateralisation arrangements (which are described below), which is or are maintained by and in the name of the settlement bank itself.

The SB auto-collateralisation arrangements:

a. are triggered when a settlement bank has insufficient liquidity in their LMA to fund the settlement of an underlying client-member (or a settlement bank linked member) transaction against sterling or in certain circumstances a stock-versus-stock transaction (known as 'on-demand') or free-of-payment transaction;

b. will repo securities from the settlement bank repo member (or a settlement bank linked member) to the Bank of England's repo membership, where the repoed securities are either:

   i. the subject of the underlying transaction (known as 'on-flow'), which may be either a client-member purchase (where the securities are transferred from the member via client auto-collateralisation to the settlement bank repo member) or a settlement bank linked member purchase; or

   ii. not the subject of the underlying transaction, but are held by the settlement bank repo member or the settlement bank linked member (known as 'on-stock'); and

c. result in a liquidity credit for the settlement bank equivalent to the central bank repo value of the securities.

This service is available for transactions against sterling only (and in certain circumstances for stock-versus-stock or free-of-payment transactions transactions) and is not part of the Euro DvP Service. The arrangements generally support generation of intra-day sterling liquidity only; only in

exceptional circumstances will these auto-collateralising repurchase transactions fail to unwind prior to the end of CREST settlement each day.

The auto-collateralisation arrangements allow a participating client-member to deliver stock to their settlement bank, or for the settlement bank to use securities they already own (in their settlement bank linked member(s)), to be used by the settlement bank to generate a proportion of the liquidity needed to support CREST settlement activity and reduce recourse to the RTGS settlement bank's proprietary liquidity (i.e. the liquidity 'earmarked' by way of credit balance to the Sterling MBG of that RTGS settlement bank, in respect of the CREST settlement cycle in which the settlement occurs, under the arrangements described in Chapter 6, sections 4 and 6).

As provider of sterling liquidity and ultimate repo counterparty, the Bank of England determines the range of securities eligible for repo under the auto-collateralisation arrangements, the haircuts and margins that apply in the valuation of the securities under the SB auto-collateralisation arrangements and, with EUI, the range of transactions to which the arrangements will apply.

Legal basis for auto-collateralisation arrangements

Participation by a member (whether a client-member or a settlement bank linked member) in the auto-collateralisation arrangements is optional and subject to agreement with their settlement bank or (in the case of a settlement bank linked member) the sanction of the link by the settlement bank concerned. Any member's possible participation will be determined by their range of activity (e.g. do they transact in eligible securities?), their capacity and ability to enter into the necessary legal agreements with their RTGS settlement bank or (in the case of a settlement bank linked member) the Bank of England. A repoing client-member will need to enter into an RTGS CREST Master Auto-Collateralising Repurchase Agreement with their RTGS settlement bank, which in turn will need to enter into an RTGS CREST Master Auto-Collateralising Repurchase Agreement with the Bank of England (which covers auto-collateralising repurchase transactions which settle between the settlement bank repo member or a settlement bank linked member and the Bank of England's repo member). These agreements will require confirmations from the transferor (i.e. the repoing member or the RTGS settlement bank as appropriate) that it has the full and unqualified right to make such sale (and repurchase) and that securities will be transferred free and clear of any lien, claim, charge or encumbrance. EUI does not verify whether a member's or RTGS settlement bank's involvement in the auto-collateralisation arrangements is consistent with the necessary agreements being in place or any confirmations therein.

Creation of auto-collateralising repo accounts

Client-member accounts

A client-member may specify one or more member accounts to be linked to a cap and opted in for client auto-collateralisation purposes. A member account may only be linked by a client-member under the auto-collateralisation arrangements in relation to the RTGS settlement bank with whom the member proposes to settle auto-collateralising repo (SCR) transactions. Once linked, members may also request that member accounts currently linked are disconnected. Before addition or removal of a link takes effect it must be sanctioned by the member's RTGS settlement bank. Once sanctioned, the change takes effect on the following business day. An RTGS settlement bank can enquire at any time during the settlement day which member accounts are linked under the client auto-collateralisation arrangements.

A member's account may optionally also be linked to a cap and opted in for secured credit purposes (see further Chapter 6, section 3 above).

Settlement bank accounts

RTGS settlement banks which propose to participate in the SB auto-collateralisation arrangements must maintain a membership (the 'settlement bank repo member') to receive and hold stock delivered by auto-collateralising repo (SCR) transactions from their client-members. The settlement bank repo member is a standard CREST membership and has CMA and cap facilities extended by the RTGS settlement bank as well as member enquiry facilities. Each RTGS settlement bank has only one settlement bank repo member which acts as settlement counterparty under all auto-collateralising repo (SCR) transactions with those client-members of the RTGS settlement bank which are participating in the client auto-collateralisation arrangements.

Additionally, RTGS settlement banks may optionally specify one or more member accounts to be linked for use in the SB auto-collateralisation arrangements by maintaining a membership (a 'settlement bank linked member') to hold their own stock (other than those received from their clients via the settlement bank repo member) that they can use in the auto-collateralisation process. Settlement bank linked members are standard CREST memberships and have CMA and cap facilities extended by the RTGS settlement bank as well as member enquiry facilities. A settlement bank may have more than one settlement bank linked member.

Only CREST memberships maintained by and in the name of the settlement bank itself may be linked as settlement bank linked members. Each RTGS settlement bank undertakes in its agreement with EUI that it will not sanction any link requested by a member, unless that member is the same legal entity as the settlement bank. Any failure to comply with this undertaking may result in enforcement action being taken by EUI in accordance with the powers reserved to it under its agreement with the RTGS settlement bank concerned.

Bank of England accounts

The Bank of England maintains a membership (the 'Bank of England repo membership') to act as settlement counterparty for auto-collateralising repo (SCR) transactions from (or to) each settlement bank (whether acting through its settlement bank repo member or a settlement bank linked member). These memberships are standard CREST memberships and have CMA and cap facilities.

The Bank of England will have one membership for each settlement bank counterparty (in respect of its settlement bank repo member and settlement bank linked member(s)). The Bank's repo memberships operate in substantially the same way as the settlement bank repo member. However, the member accounts under the Bank's repo memberships include an additional balance type 'repo'. This balance records the amount of stock that has been transferred to the Bank repo membership concerned from the relevant settlement bank repo member (and settlement bank linked member(s)). Stock held in the repo balance in the course of the settlement day is available to the Bank for the purpose of settling SCR transactions with the relevant settlement bank repo member (and settlement bank linked member(s)) under the SB auto-collateralisation arrangements. In addition, stock held in the repo balance at the end of the settlement day may be transferred to the Bank's available balance under phase 3 of the 'end of day unwind' process, or otherwise at the request of the Bank of England (see Chapter 7, section 8; and Chapter 10, section 1).

EUI maintains a database identifying the settlement bank repo member and Bank of England membership for each client-member's account linked to a cap and opted in for the client auto-collateralisation arrangements. It also identifies settlement bank linked members participating in the SB auto-collateralisation arrangements. It is this database which is used by the EUI systems to effect the settlement of stock under the auto-collateralisation arrangements between the client-member accounts of the membership concerned and the relevant settlement bank repo member, and between the relevant settlement bank repo member concerned and the Bank's relevant repo member designated by them for this purpose (or between the settlement bank linked member concerned and the Bank's relevant repo member).

Eligible securities and central bank margins

The Bank of England determines, and notifies EUI of, which securities are eligible under the auto-collateralisation arrangements. These securities are identified in the CREST system through an indicator on each participating security which is maintained by CREST System Control. The range of eligible securities is set out in the RTGS Reference Manual. A change to a security's eligibility under the auto-collateralisation arrangements generally takes effect on the next business day.

The Bank of England may set margins and haircuts to determine the value of liquidity extended or repaid to the RTGS settlement bank as countervalue to an auto-collateralising repo (SCR) transaction (the 'central bank repo value') generated under the SB auto-collateralisation arrangements. The value of sterling liquidity extended by the Bank of England as purchase price or repaid to the Bank of England by the RTGS settlement bank as repurchase price is calculated in the CREST system according to the following formula:

- the value of liquidity in sterling equals [(1 – h)/ (1 + m)] *v where m = the initial margin as a percentage, h is the haircut as a percentage, and v is the value of securities in sterling calculated as the product of the quantity of securities and the CREST reference price.

To facilitate this, securities eligible under the auto-collateralisation arrangements are placed by the CREST LM system into a central bank category. Securities are assigned to the appropriate central bank category according to the nature of security and its residual maturity. The central bank may amend the haircut for each category (such amendment being sent by the Bank to the CREST LM system using network communication facilities as agreed between EUI and the Bank). On creation of a new category, the margin and haircut values for each central bank category are set at zero (i.e. the value of liquidity to be extended will be determined by reference to the previous day's closing bid price without deduction). Margins and haircuts set are applied to all securities within that category at that time across all RTGS settlement banks. Only the central bank may view the margin and haircuts set.

The CREST system automatically transfers a security between categories as its residual maturity declines. The central bank categories are:

- C01 - Fixed income bonds redeeming within 1 year, and floating rate notes of all maturities;
- C02 - Fixed income bonds of greater than 1 year and up to 3 year residual maturity;
- C03 – Fixed income bonds of greater than 3 year and up to 7 year residual maturity;
- C04 – Coupon bearing bonds of greater than 7 year residual maturity;
- C05 – Zero coupon bonds – including strips – of greater than 7 year residual maturity;

- C06 – Treasury and Bank of England Bills.

The levels of haircut applied by the Bank of England are published on the Bank of England's website. Changes to haircuts generally take effect on the next business day after notification by the Bank of England to EUI (refer to chapter 10, section 4 for a description of how changes to bank margins are treated during a NSSDPs period).

In allocating an eligible debt security to the appropriate central bank category (i.e. C06 - Treasury Bills), EUI relies upon the categorisation given to that EDS by the CREST IPA in the relevant IPA issuance message (see further section 11 below).

Generation of client auto-collateralisation

Assessment for client auto-collateralisation

Where a client-member account is linked to a cap and opted in to the client auto-collateralisation arrangements, the CREST system assesses all receipts of securities by the member into the member's account.

In the case of a DvP transaction, the client auto-collateralisation process will automatically create an auto-collateralising repo (SCR) transaction, which instructs and settles the movement of the received securities from the client-member's account to the settlement bank repo member, wherever:

- the purchase is of a security eligible under the auto-collateralisation arrangements;
- the DvP transaction (other than TDAs, TDOs, TDGs, TDEs or TDMs) has a sterling consideration equal to or greater than the 'Client Minimum DvP Auto-Collateralisation Value'; and
- the settlement of the transaction would not breach the member's repo cap.

The Client Minimum DvP Auto-Collateralisation Value is determined by the Bank of England in consultation with EUI. The Client Minimum Auto-Collateralisation Value is currently £100,000.

In the case of a free-of-payment (FoP) transaction, the client auto-collateralisation process will automatically create an auto-collateralising repo (SCR) transaction wherever:

- the security being transferred is eligible under the auto-collateralisation arrangements;
- the security being transferred is priced in sterling and its value is equal to or greater than the 'Client Minimum FoP Auto-Collateralisation Value'.

The Client Minimum FoP Auto-Collateralisation Value is determined by the Bank of England in consultation with EUI. The Client Minimum FoP Auto-Collateralisation Value is currently £100,000.

For TDO, TDA, TDG, TDE and TDM transactions, there is no Client Minimum FoP Auto-Collateralisation Value. In the case of these transactions, the client auto-collateralisation process will automatically create an auto-collateralising repo (SCR) transaction wherever:

- the security being transferred is eligible under the auto-collateralisation arrangements;
- the security being transferred is priced in sterling.

Auto-collateralising repo (SCR) transactions will stop being generated at the GBP payments deadline (diary event 150).

When assessing whether the SCR transaction would breach the member's repo cap, the CREST system will ensure that an SCR will not be generated if the settlement bank margined value of the purchase securities, added to the settlement bank margined value of securities already repoed to the settlement bank, would exceed the member's repo cap.

Where a transaction does not meet the criteria above, an auto-collateralising repo (SCR) transaction will not be created by the client auto-collateralisation process.

All transaction types that include a dematerialised transfer(s) and a sterling CREST payment are capable of initiating the automatic creation of an auto-collateralising repo (SCR) transaction under the client auto-collateralisation arrangements. These include: deliveries; stock loans and returns; deliveries by value and returns; and repo transactions and repo returns. Also, certain term DBV-related transactions (term DBV giver recall substitution transactions; eligibility substitution transactions; and mark-to-market transactions) that do not involve a cash payment, and other free-of-payment transactions, are capable of initiating the automatic creation of an auto-collateralising repo.

When assessing the credit resource necessary for settlement of a delivery into a client-member account linked to a cap under the auto-collateralisation arrangements, the CREST system takes into account the simultaneous generation of an auto-collateralising repo (SCR) transaction between the member and settlement bank repo member by the client auto-collateralisation process. For the client-member, the system takes account of the cash or stock received or delivered in the CREST system in calculating whether or not settlement would cause the (net) debit balance on their CMA to exceed the relevant CMA cap. For the settlement bank repo member, the system takes account of the value of cash or stock delivered in calculating whether or not settlement would cause its CMA cap to be exceeded.

When assessing the liquidity resource necessary for settlement of a purchase into a client-member account linked to a cap under the auto-collateralisation arrangements, if there is insufficient liquidity in the LMA of the cash debit/stock credit party's settlement bank to settle the delivery transaction in full, the CREST system's auto-collateralisation process will assess whether additional liquidity can be generated for the RTGS settlement bank to meet the liquidity need. The SB auto-collateralisation arrangements are described in more detail below (under 'Generation of SB auto-collateralisation').

Exclusions in the assessment for client auto-collateralisation

Although the generation of auto-collateralisation is not assessed based on transaction type, the following transactions are excluded and will not generate SCR transactions: ADJ, BWR, RCN, REG, SCR, STD, STR, XDC.

Generation of client auto-collateralisation

Where a transaction meets the criteria and there are sufficient securities, credit, repo cap and liquidity resources, the CREST system will automatically create an auto-collateralising repo (SCR) transaction crediting the full quantity of stock received by the member to the associated settlement bank repo member against a CREST payment to the client-member. The consideration of the SCR will be equal to the settlement bank margined value of the securities which are transferred under the transaction.

Creation and settlement of auto-collateralising repo (SCR) transaction(s) is simultaneous with settlement of the underlying delivery to the CREST member (i.e. it occurs within the same settlement cycle).

Generation of SB auto-collateralisation

Introduction

The SB auto-collateralisation arrangements will seek automatically to create auto-collateralising repo (SCR) transaction(s), which instruct and settle the movement of securities from the RTGS settlement bank's settlement bank repo member (or a settlement bank linked member) to the Bank of England's repo member, wherever:

- a transaction of a client-member (or a settlement bank linked member) has a sterling consideration; and
- the settlement bank of the cash debit party has insufficient liquidity in its LMA to settle the transaction;

or

- a client-member (or a settlement bank linked member) is party to an eligible free of payment transaction; and
- the settlement bank of the cash debit party has insufficient liquidity in its LMA to settle the transaction;

or

- a client-member (or a settlement bank linked member) is a party to TDA, TDG, TDE, TDO or TDM transaction; and
- the settlement bank of the client-member (or the settlement bank linked member) has insufficient liquidity in its LMA to settle the transaction.

All transaction types (providing they have met client auto-collateralisation conditions and are not excluded in the above 'Exclusions in the assessment for client auto-collateralisation' section) that include a sterling CREST payment, or are an eligible free-of-payment or stock vs stock transaction, are capable of initiating the automatic creation of auto-collateralising repo (SCR) transaction(s) by the SB auto-collateralisation process.

Purchasing power

When assessing the sterling liquidity resource necessary for settlement of a transaction where the RTGS settlement bank of the cash debit party or the stock credit party does not have sufficient liquidity in their LMA to settle the transaction, the settlement bank's purchasing power is assessed to determine whether additional liquidity can be generated to meet the liquidity need. A settlement bank's purchasing power can be calculated at any one time by reference to the following calculation:

Purchasing power is equal to:

- current LMA position, plus
- central bank repo value of stock held in linked accounts (the settlement bank repo member and any settlement bank linked member(s)).

On-stock and on-flow auto-collateralisation

There are two mechanisms that can be used to generate the additional liquidity and they are assessed in this order:

1. 'on-flow' auto-collateralisation – using all or part of the securities which are the subject of the underlying transaction, being either (i) a client-member purchase or stock-versus-stock receipt where the securities are transferred from the member via the client auto-collateralisation arrangements to the settlement bank repo member, or (ii) a settlement bank linked member purchase or stock-versus-stock receipt; or
2. 'on-stock' auto-collateralisation – using securities that are eligible under the auto-collateralisation arrangements and that are held by either (i) the settlement bank repo member, or (ii) a settlement bank linked members.

The on-stock auto-collateralisation process will select stock to be used in auto-collateralisation from member accounts in the following order:

- settlement bank repo member, taking securities with shortest maturity date first; then
- settlement bank linked member(s), in order of the priority assigned by the settlement bank to the member account, then taking securities with shortest maturity date first.

Stock selected by the on-stock auto-collateralisation process will be assigned a higher priority band than any other transaction seeking to use the same stock. This will avoid other transactions "reserving" the stock selected (see Chapter 4, section 12, 'Security Reservations') and causing the auto-collateralisation generation to fail.

Generation of SB auto-collateralisation

Where a transaction meets the criteria for creation of on-flow and/or on-stock auto-collateralisation, EUI systems will automatically create:

- in respect of on-flow - an auto-collateralising repo transaction (of transaction type - SCR), crediting to the associated Bank of England repo membership, either the full or partial quantity of stock received either (i) by the settlement bank repo member by way of client auto-collateralisation, or (ii) by the settlement bank linked member by way of a purchase. The SCR will be free of payment; and/or
- in respect of on-stock - one or more auto-collateralising repo transactions (of transaction type - SCR) crediting stock, to the associated Bank of England repo membership, from either (i) the settlement bank repo member account, or (ii) a settlement bank linked member account. The SCR will be free of payment; and
- a liquidity notification crediting the RTGS settlement bank concerned with the central bank repo value of securities transferred to the Bank of England's repo membership.

If the liquidity need is less than the SB Minimum Auto-Collateralisation Value, the auto-collateralisation process will:

- generate auto-collateralising repo (SCR) transaction(s) whose central bank repo value meets the SB Minimum Auto-Collateralisation Value; or
- in relation to on-stock auto-collateralisation, if the central bank repo value of stock available for on-stock auto-collateralisation is sufficient to meet the liquidity need but is less than the SB

Minimum Auto-Collateralisation Value, auto-collateralising repo (SCR) transaction(s) will be generated for the stock available for on-stock auto-collateralisation.

The SB Minimum Auto-Collateralisation Value is determined by the Bank of England in consultation with EUI. The SB Minimum Auto-Collateralisation Value is currently £100,000.

The CREST system takes account of the simultaneous generation of auto-collateralising repo (SCR) transactions when assessing the liquidity resources necessary for settlement of any transaction of a client-member (or a settlement bank linked member) against sterling or free-of-payment. For the RTGS settlement bank, the CREST LM system takes account of the liquidity received from the Bank of England by way of purchase price in calculating the net liquidity to be queued against the settlement bank's Liquidity Memorandum Account (see further Chapter 6, section 4).

The creation and settlement of auto-collateralising repo (SCR) transactions is simultaneous with settlement of the underlying delivery to or payment by the CREST member (or settlement bank linked member).

Central bank repo limits

The Bank of England can use the following functionality (which operates as part of the RTGS Liquidity Management System) to limit the aggregate margined value of securities that are transferred to it under the SB auto-collateralisation arrangements:

- a central bank global repo limit – to limit the total value of auto-collateralisation performed globally across all sterling settlement banks; and
- central bank individual repo limits – to limit, for each settlement bank separately, the value of auto-collateralisation performed with individual settlement banks.

An amendment of either the central bank global repo limit or a central bank individual repo limit will take effect from the time at which the CREST system processes the relevant instruction. Such amendments are sent by the Bank to the RTGS Liquidity Management System using network communication facilities as agreed between EUI and the Bank.

An auto-collateralising repo (SCR) transaction will not be generated or settled between an RTGS settlement bank's settlement bank repo member (or settlement bank linked member) and the Bank of England repo member if the central bank repo value of stock to be auto-collateralised will cause either the central bank global repo limit or the relevant central bank individual repo limit to be exceeded. This is calculated by adding the central bank repo value of the stock to be auto-collateralised to (a) the aggregate central bank repo value of all stock then out on repo to the Bank from all RTGS settlement banks (for assessment against the central bank global repo limit); and (b) the aggregate central bank repo value of all stock then out on repo to the Bank from that RTGS settlement bank (for assessment against the central bank individual repo limit for that settlement bank).

A reduction of either the central bank global repo limit to below the total outstanding central bank repo value or a reduction of a central bank individual repo limit to below the outstanding repo value will not trigger reimbursements of stock but will stop further auto-collateralisation being performed until the relevant central bank repo value is sufficiently reduced to below the corresponding limit.

Intra-day reimbursement of auto-collateralising repo transactions

Where a client-member account is linked to a cap and opted into the auto-collateralisation arrangements, the CREST system dynamically selects stock from that member account in the member's available balance and on repo to the member's RTGS settlement bank in order to satisfy a sale or other delivery by the member. In doing so, it may solely draw from stock on repo, from the member's available balance, or from both. In relation to settlement bank linked members, the CREST system dynamically selects stock from the member's available balance and on repo to the Bank of England, in order to satisfy a sale or other delivery by the settlement bank linked member.

The intra-day reimbursement process can operate in two different modes and this will determine the order in which stock is chosen:

- 'available first' mode – the CREST Settlement Processor will first look to draw from stock held in the relevant member's available balance and only if there is insufficient stock in the member's available balance will it draw from stock on repo;
- 'repo first' mode – the CREST Settlement Processor will first look to draw from stock on repo and only if there is insufficient stock on repo will it draw from the available balance.

The decision as to whether the system operates in 'available first' mode or 'repo first' mode at any time during the business day is taken by the CREST System Controller.

When the reimbursement process is operating in 'repo first' mode, to satisfy a client-member transaction the CREST system will always attempt to return stock from the Bank of England to the relevant settlement bank (via the settlement bank repo member) and then from the settlement bank repo member to the member. If none of the stock has been repoed to the Bank of England (under the SB auto-collateralisation process), the reimbursement process will reimburse solely from the settlement bank repo member to the member. In relation to settlement bank linked members, when operating in 'repo first' mode the CREST system will always attempt to return stock from the Bank of England to the settlement bank linked member.

The CREST system will deliver stock from repo (and thus close auto-collateralising repo) wherever the sale has a sterling consideration greater than the 'Sale Minimum Value Threshold'. If the amount of stock to be delivered is greater than the sum of the available balance and stock on repo, then the transaction cannot settle.

Where the sale consideration is less than the Sale Minimum Value Threshold, the CREST system will preferentially draw stock from the member's available balance regardless of the reimbursement mode in operation. Where the balance of stock in the member's available balance is insufficient to meet the sale in full, the CREST system will draw additional stock from that on repo.

The Sale Minimum Value Threshold is determined by the Bank of England in consultation with EUI. The Sale Minimum Value Threshold is zero.

All transaction types that include a dematerialised transfer are capable of initiating closure of auto-collateralising repo except strip and reconstitution requests. This includes: deliveries and complex deliveries; stock loans and returns; deliveries by value and returns; repo transactions and repo returns.

If the RTGS settlement bank does not have sufficient liquidity to repay to the Bank of England the repurchase price for the reimbursement of stock but does have sufficient purchasing power to reimburse the stock, an automated substitution process will use the on-stock auto-collateralisation

process to generate the liquidity required by the RTGS settlement bank to allow the reimbursement to happen.

Where a client-member (or settlement bank linked member) transaction closes stock on repo, EUI systems will automatically create:

- in relation to client-members, an auto-collateralising repo transaction (of transaction type - SCR) crediting the full quantity of stock required to the delivering/selling member from the associated settlement bank repo member against a CREST payment. The consideration of the SCR will be based equal to the settlement bank margined value of the securities which are transferred under the transaction;;
- if required, an auto-collateralising repo transaction (of transaction type - SCR) crediting the quantity of stock required to the settlement bank repo member (or settlement bank linked member) from the associated Bank of England repo membership. The SCR will be free of payment; and
- a liquidity notification debiting the RTGS settlement bank with the value of liquidity as the repurchase price for the repo from the Bank of England. The value of liquidity will equal to the central bank repo value of the securities which are transferred from the Bank of England repo member to the settlement bank repo member (or the settlement bank linked member).

Stock that was repoed from the settlement bank repo member to the Bank of England repo membership cannot be reimbursed to a settlement bank linked member; and stock that was repoed from a settlement bank linked member to the Bank of England repo membership cannot be reimbursed to the settlement bank repo member.

Where a substitution is being generated, EUI's systems will additionally automatically create:

- an auto-collateralising repo transaction (of transaction type - SCR) crediting the quantity of stock required to the associated Bank of England repo membership from the settlement bank repo member (or settlement bank linked member). The SCR will be free of payment;
- a liquidity notification crediting the RTGS settlement bank concerned with the value of liquidity extended as the repo purchase price by the Bank of England. The value of liquidity will be equal to the central bank repo value of the substitute securities which are transferred from the settlement bank repo member (or a settlement bank linked member) to the Bank of England repo member.

The EUI systems take account of the simultaneous closure of auto-collateralising repo (SCR) transactions in assessing the credit and liquidity resources necessary for settlement of a sale or other delivery from a client-member account linked to a cap under the auto-collateralisation arrangements (where applicable). For the client-member, the CREST system takes account of the CREST payment to the settlement bank repo member for the repurchase price and the payment received from the underlying sale or delivery (where relevant) in calculating whether settlement would cause the (net) debit balance on the CMA, upon completion of the relevant Payment Settlement Events, to exceed the relevant CMA cap. For the RTGS settlement bank, the EUI systems takes account of the liquidity received from the RTGS settlement bank acting for the purchaser of the underlying transaction (where relevant) as well as the liquidity to be repaid to the Bank of England as repurchase price, along with (in the case of substitution) liquidity received from the Bank of England by way of purchase price, in calculating the net liquidity to be queued against

the selling member's RTGS settlement bank's Liquidity Memorandum Account (see further Chapter 6, section 4).

If the settlement would result in either the (net) debit balance on the client-member's CMA, upon completion of the relevant Payment Settlement Events, exceeding the member's CMA cap or the (net) change in the RTGS settlement bank's liquidity exceeding the balances on its Liquidity Memorandum Account, the transaction will not settle and the auto-collateralising repo (SCR) transactions will not be created.

Settlement of a transaction may involve both closure of an auto-collateralising repo (SCR) transaction for the seller and creation of an auto-collateralising repo (SCR) transaction for the purchaser (i.e. within the same settlement cycle).

End of day unwind process

The auto-collateralisation arrangements exist to facilitate the provision of intra-day sterling liquidity by the Bank of England to the RTGS settlement banks. It is not generally intended that auto-collateralising repurchase transactions should extend overnight (refer to Chapter 10, Section 4 for a description of the treatment of auto-collateralising repurchase transactions during a NSSDPs period). The majority of auto-collateralising repurchase transactions will close as a result of deliveries to members that do not participate in the auto-collateralisation arrangements – particularly through the delivery by value (DBV) mechanism.

When any auto-collateralising repurchase transaction remains outstanding after the close of DBV settlement, the CREST system attempts to unwind it back to the member or his RTGS settlement bank. Where this is not possible, the CREST system creates deliveries for settlement the next business day.

The auto-collateralising repo unwind process has three phases.

- In the first phase, immediately after the close of DBV settlement, the CREST system attempts only to return the stock to the settlement bank repo member (and settlement bank linked member(s)). EUI systems create: a free of payment auto-collateralising repo transaction (of transaction type SCR) from the Bank of England repo membership to the settlement bank repo member (and settlement bank linked member(s)) for each line of security requiring auto-collateralisation to be reimbursed; and a liquidity notification debiting the RTGS settlement bank and crediting the Bank of England with the repurchase price for the repo. Stock that was repoed from the settlement bank repo member to the Bank of England repo membership will not be returned to a settlement bank linked member; and stock that was repoed from a settlement bank linked member to the Bank of England repo membership will not be returned to the settlement bank repo member.;
- In the second phase (from the specified time in the daily timetable), the CREST system will continue to attempt return of stock to the settlement bank repo member (and settlement bank linked member(s)) that failed to reimburse in the first phase. In addition to this, the CREST system attempts to return stock from the settlement bank repo member to the underlying repoing client-members. The EUI systems create: a DvP auto-collateralising repo transaction (of transaction type SCR) from the settlement bank repo member to the client-member for each line of security requiring client auto-collateralisation to be reimbursed.

- If it is not possible to return the stock to the settlement bank repo member (or settlement bank linked member(s)) (e.g. the RTGS settlement bank is unable to repay the necessary liquidity), or to the client-member (e.g. the member does not have sufficient headroom to repay the necessary cash consideration) then from the time specified in the daily timetable, the CREST system ceases attempting to return the stock. In this third phase, the CREST system may create: a pre-matched free of payment delivery transaction (of transaction type DEL) from the Bank of England repo membership to the settlement bank repo member (or settlement bank linked member) for settlement the next business day; and/or a pre-matched delivery transaction (of transaction type DEL) against payment from the settlement bank repo member to the repoing client-member for settlement the next business day. The delivery from the Bank of England repo membership to the settlement bank repo member (or settlement bank linked member(s)) is created with a zero priority for the transferor. The delivery from the settlement bank repo member to the member is set at priority zero. Once the third phase has begun, it is no longer possible to unwind an auto-collateralising repurchase transaction by way of an SCR transaction to the settlement bank repo member (or settlement bank linked member(s)). During the third phase, the CREST system will transfer all stock held in repo balances at the Bank of England repo memberships to their available balances by means of own account transfers (OATs).

If stock is held in the repo balance of a Bank of England repo membership or in the available balance of a settlement bank repo member at the end of the 'Last date of Transfer' for that stock (see Chapter 2, section 6), the auto-collateralising repo unwind process will still operate in the manner described above. However, any DEL transaction created by the CREST system as part of phase 3 will not be able to settle (unless the security in question is an EDS, in which case it will be able to settle as usual). In such circumstances, the stock will remain in the available balance of the relevant member account and, on the 'security end date' (maturity date) for that stock, the stock will be subject to the security expiry procedures described in Chapter 2, section 6. The manner in which the Bank of England is required to account to the relevant RTGS settlement bank for any redemption proceeds received by it in respect of such stock held under a Bank of England repo membership (upon payment to the Bank of the repurchase price), and the manner in which the RTGS settlement bank is required to account to its client-member for such proceeds in respect of such stock held under its settlement bank repo member (upon payment by the client-member of the repurchase price), will be a matter to be determined in accordance with the relevant RTGS CREST Master Auto-Collateralising Repurchase Agreement.

Enquiries

The CREST system provides a range of enquiries for client-members participating in the auto-collateralisation arrangements, settlement bank repo members, settlement bank linked members and relevant Bank of England repo memberships to enquire on the balance of stock on repo at any time. These facilities are described in Chapter 4, section 7.

Section 9: The CREST voting service

Introduction

The CREST system has functionality which enables members to send the electronic equivalent of a proxy card to an agent acting for the issuer (who, on behalf of the issuer, collects such proxy appointments relating to a meeting where an entitlement to vote has arisen). It also enables issuers to notify members of the details of such meetings, the resolutions that are to be voted on and, if they wish to, the results of any votes cast at such meetings. This section describes the facilities and procedures which in combination comprise this functionality, also referred to as the 'CREST voting service'.

The CREST voting service uses the following CREST system functions:

- the meeting announcement function: enables issuers to notify holders of a participating security issued by them that a meeting is to take place;
- the proxy appointment function: enables members to complete and submit proxy appointments (including voting instructions) electronically to a CREST participant acting on behalf of the issuer; and
- the results announcement function: enables issuers to notify the results of any votes cast at a meeting to CREST members.

A unique feature of the proxy appointment function is that CREST members will be able to use the proxy appointment function in different ways: they can send and receive proxy appointment messages through their own gateway (or if they are sponsored members, through their sponsor's gateway); and in addition, they can 'outsource' matters relating to the CREST voting service to a type of participant with limited functionality, the 'Voting Service Provider' ('VSP'), who may communicate with the CREST system (using his own gateway) for the purpose of appointing and instructing proxies on their behalf.

The CREST voting service is entirely optional. It is the choice of the issuer whether or not it wishes to use and allow others to use any of the functions; and it is the choice of the CREST member as to whether or not he utilises any of the functions made available by the issuer. In determining whether to make the CREST voting service available in relation to a particular meeting, it is the responsibility of the issuer to ensure that proxies appointed by means of this service would be valid, taking into account in particular all relevant laws and the terms of issue of the security concerned. EUI undertakes no validation in relation to such matters.

Where the issuer chooses to use the service, EUI does not monitor whether the issuer or the members act in accordance with the terms of issue of the relevant participating security in respect of which the meeting has been called or with applicable legal requirements, nor does it monitor whether the members comply with requirements imposed by the issuer in relation to the appointment of proxies (or other matters) in relation to the meeting. For example, the CREST system does not prevent a member inputting an instruction to alter his voting preferences after the closing deadline for the meeting, nor does it validate whether a person is entitled to vote when he inputs a proxy appointment instruction for that meeting. The input of correct information, the observance of the terms of issue of a security (including deadlines), compliance with applicable legal requirements and compliance with requirements imposed by the issuer in relation to the appointment of proxies (or other matters) in relation to a meeting are the responsibility of the

issuer and the members concerned. EUI does not accept any responsibility for such matters. With a few exceptions, some of which are further described in this section, EUI does not perform validation of data input in any of the fields of the meeting announcement, the proxy appointment or the results announcement, nor of any amendments made to data in those fields.

Proxy appointment instructions sent by or on behalf of any participant to the CREST system in the context of the CREST voting service must relate only to holdings of uncertificated securities held in an account in the CREST system. An audit trail is produced for those sending and receiving instructions, evidencing the sending of such instructions (including a timestamp); however it is for the issuer to determine whether a proxy appointment instruction sent through the CREST voting service is valid.

For the CREST system to be able to perform the proxy voting service and for users and participants to be able to use the same, the relevant users, participants and securities in the CREST system need to be enabled. A user, participant or security may not be enabled for a number of reasons: for example, a participant may have been (temporarily) disabled or terminated by EUI using its own discretion (as further described in Chapter 10) or at the request of the participant itself. Any disablement or termination may have an impact on any proxy appointment instruction input into the CREST system before such event took place depending on whether the disablement or termination relates to a relevant user, participant and/or security.

Meeting Announcement

The CREST system provides functionality for the issuer to announce summary details of a meeting which is to take place in respect of a participating security at which votes may be cast, where the issuer has chosen to allow proxy appointments including voting instructions to be sent by means of the CREST system. It is not intended that the input (by or on behalf of the issuer) of a CREST message containing data relating to a proposed meeting (a 'meeting announcement instruction') constitutes formal notice of the meeting normally required by law or under the terms of issue of the security.

Announcement agent

Unlike corporate actions data, meeting announcement instructions are input directly into the system by the issuer (or his agent). Only a CREST registrar or receiving agent whose participant ID appears in the 'announcement agent ID' field in the security details of a CREST security (or, where it is sponsored, its sponsor) is permitted to act as the relevant issuer's 'announcement agent' and to input meeting announcement instructions relating to such security.[36] EUI will, where prior to the introduction of the CREST voting service no participant ID has been designated for the 'announcement agent ID' field, and in the absence of instructions to the contrary from the issuer, enter the participant ID of the CREST Registrar for that security in the 'announcement agent ID' field in the security details. The issuer can at any time designate another participant (being a CREST Registrar or receiving agent) to act as its announcement agent in relation to a particular security by requesting EUI in writing to input a different participant ID in that field: such a request will, like a request to change the registrar, not be processed immediately or during the overnight processing but on a date mutually agreed between EUI and the relevant participant(s). At any time only one participant may be designated as announcement agent in relation to a participating

[36] The CREST Security Application forms (other than the application form for covered warrants) contain an 'announcement agent ID' box enabling the issuer to designate an announcement agent other than the registrar.

security. A CREST Product Provider is not able to act as an announcement agent. A change of registrar or receiving agent for a participating security will not, in the absence of such a written request, result in a change of announcement agent for that security (where relevant).

Input

Each meeting announcement instruction input by the announcement agent (or its sponsor) will include:

- ISIN
- ratio
- type of meeting
- date and time of meeting
- last date and time for submitting proxy appointment
- entitlement date and time
- who may be appointed as proxy (e.g. Chairman of the meeting)
- brief details of resolution(s) on which members may vote, each having their own resolution number
- options (for, against, discretionary and votes withheld)

The meeting announcement will also include the participant ID of the CREST member who administers and collects all proxy appointment instructions relating to that meeting that are sent by means of the CREST system (also known as 'issuer's agent', see proxy appointment subsection below).

Following input into the CREST system, each meeting announcement instruction is ascribed its own unique announcement reference number which identifies the meeting announcement and the ISIN of the relevant security and is available to all users (see also Chapter 4, Section 8).

Changes

Any data in a meeting announcement may be amended at any point in its lifecycle (including adding or deleting resolutions but not altering their numbers [37]) up to the closure of business on the meeting date (as specified in the meeting date field); however data in fields 'type of meeting', 'ISIN', 'issuer's agent ID' and 'resolution number' can only be amended by the deletion and re-input of a (new) meeting announcement instruction. Where a meeting announcement has been deleted (and accordingly has a status of 'Disabled, Meeting Cancelled') the system will reject any proxy appointment instructions that specify the announcement reference number of the deleted meeting announcement.

Proxy Appointment

The CREST system's proxy appointment functionality enables:

- members to (i) appoint one or more proxies and (ii) give such proxies instructions on how to vote at the meeting in respect of which a meeting announcement has been made; and

[37] Although it is not possible to amend or delete a resolution number, other details for resolutions may be amended. Resolutions which are no longer relevant may have their status set to 'disabled'.

- issuers to collect and administer such appointments and voting instructions,

by means of the CREST system. The CREST message containing data relating to the appointment of a proxy (a 'proxy appointment instruction') includes some of the information contained in the related meeting announcement, details of the person who is to be appointed as proxy and instructions for the proxy how to vote.

The CREST proxy appointment function enables a CREST member who wishes to outsource the proxy appointment function in relation to one or more of his member accounts to appoint a participant of the type VSP to transmit proxy appointment instructions on his behalf, as further described below under the subsection titled 'Voting Service Providers ('VSPs')'. Each CREST member's member account has a 'voting service provider ID' field which contains the participant ID of the CREST participant entitled to input proxy appointment instructions for that member account. For each member account the participant ID of the CREST member to whom the account belongs will appear in this field when it is set up in the CREST system. Similarly, EUI will, where prior to the introduction of the CREST voting service no participant ID has been designated for the 'voting service provider ID' field of a member account, and in the absence of instructions to the contrary from the relevant CREST member, enter the CREST member's participant ID in that field. Only the member (or his sponsor if sponsored) or the VSP whose participant ID appears in the 'voting service provider ID' field for a member account will be able (on the member's behalf) to send and receive instructions in relation to the proxy appointment function in relation to such account.

Input

Proxy appointment instructions may be input by participants of the type member (excluding for these purposes CSD participants and CCPs) or by their sponsors or VSPs on their behalf and do not lead to any form of settlement (i.e. movements of stock or cash) in the CREST system: the purpose of the input (by or on behalf of a member) of a proxy appointment instruction is to pass relevant information from the CREST member to the issuer's agent. Proxy appointment instructions are not matched when input in the CREST system.

The template for proxy appointment instructions in the CREST system contains a variety of fields providing essentially for two different sets of information to be sent to the person receiving the same through the CREST system. The first element provides for the notification of the appointment of the person specified to act as the member's proxy in connection with a related meeting. The second element serves to provide such proxy with instructions on how to vote in relation to the stated quantity of relevant securities at such meeting (including the option to use his discretion or to withhold a vote where possible) in respect of the resolution(s) contained in the meeting announcement. In order for a proxy appointment instruction to be a valid instruction, the following mandatory fields must be completed:

- Participant ID of member
- Account ID
- ISIN)
- Announcement Reference Number)
- Issuer's Agent ID)
- Proxy Instruction Reference

The default values for these fields will be the values contained in the relevant meeting announcement.

- Proxy Appointment
- Proxy Appointment Description (only mandatory in case the 'Proxy Appointment' field is set to 'Other')

It is the responsibility of members and issuers to ensure that the correct number of proxy votes are cast, and that the proxy appointment instruction is submitted within the allocated time available. In system terms, a proxy appointment instruction may be submitted at any time from the time of input of the related (first) meeting announcement instruction up to the close of business on the meeting date (i.e. as long as the related meeting announcement has a status of 'active'). The last time for appointment as set out in the meeting announcement is for information only and no intra day validation will be provided by the CREST system against this time and the time the proxy appointment instruction is submitted. The CREST system does however reject any proxy appointment instructions submitted after the close of business on the meeting date (as specified in the 'meeting date' field of the meeting announcement). Similarly, where a meeting announcement has been deleted before that time (and has a status of 'Disabled, Meeting Cancelled'), the system will reject proxy appointment instructions (including purported amendments, see below under 'changes') specifying the announcement reference number of the deleted meeting announcement that are input following such deletion (as set out above under 'meeting announcement', 'changes'). Proxy appointment instructions that were input before the deletion of the related meeting announcement will be available for enquiry to the member or his VSP (but not any issuer's agent) for 60 days after such deletion (they also have a status of 'Disabled, Meeting Cancelled').

For each member account only one proxy appointment instruction may be input which appoints the 'Chairman' as the member's proxy for the meeting. The CREST system will reject proxy appointment instructions which purport to appoint the 'Chairman' as proxy if the 'Chairman' has already been appointed as proxy by means of a previous proxy appointment instruction relating to the same member account. This validation will not exist for proxy appointment instructions purporting to appoint persons other than the 'Chairman' since this may not represent the same individual.

EUI also performs limited validation on the resolution options which can be specified in a proxy appointment instruction as follows. The CREST system rejects proxy appointment instructions in which a resolution number appears more than once as well as a proxy appointment instruction which relates to a specified resolution number if any one of the 'Quantity For', 'Quantity Against', 'Quantity Discretionary' or 'Quantity Withheld' fields is populated by setting the total holding instruction to 'yes' and any other such field is populated by setting the total holding indicator to 'yes' or a numeric value. It also rejects proxy appointment instructions where the 'resolution number' field is populated by 'all' and a resolution number is specified.

Changes

Proxy appointment instructions may be amended at any time up to the close of business on the meeting date (as specified in the 'meeting date' field of the related meeting announcement) and any instructions purporting to make any changes to a proxy appointment after such time will be rejected. Any fields in that part of the proxy appointment concerned with directions as to how the proxy should vote on one or more resolutions (including the quantity of securities such direction relates to) may be amended however any other fields (including changes to the person appointed

as proxy) may only be amended by the deletion and re-input of a (new) proxy appointment instruction.

All the resolution details contained in a proxy appointment instruction which has been amended in the manner described above will be made available to the issuer's agent including any resolution details that were not amended.

Receipt of proxy appointment instruction: the issuer's agent

The announcement agent for a participating security is required to specify (in the 'issuer's agent ID' field of a meeting announcement instruction, see 'Meeting Announcement' above) the participant ID of a CREST participant appointed by the relevant issuer to collect and administer proxy appointment instructions relating to the meeting (the 'issuer's agent'). Only a participant of the type member who has been permitted by EUI to act as a receiving agent is permitted to act as an issuer's agent. The system ensures that proxy appointments are received by the issuer's agent for that meeting (in the manner described under 'Status changes and timestamps' below) by validating whether the 'issuer's agent ID' field in each proxy appointment instruction corresponds with the ID of the issuer's agent as specified in the related meeting announcement.

Change of issuer's agent

As set out above (under 'meeting announcement', 'changes'), following the input of a meeting announcement instruction no changes may be made to the ID specified in the 'issuer's agent ID' field other than by the deletion and re-input of an (new) meeting announcement instruction. Where the issuer's agent ID has been amended in this manner, neither the original issuer's agent nor the new issuer's agent will be able to access proxy appointment instructions addressed to the ID of the original issuer's agent as specified in the deleted meeting announcement (the latter having a status of 'Disabled, Meeting Cancelled', see also below).

Status changes and timestamps

Following each input of a proxy appointment instruction (including each change to or deletion and re-input of a proxy appointment instruction) by a member or his VSP, the CREST system generates a status change message reflecting such input for retrieval by the relevant issuer's agent (or, where relevant, its sponsor). The status change message includes a time stamp generated by the CREST system indicating the date and time at which the relevant proxy appointment instruction became available for retrieval by the issuer's agent.

Where any amended proxy appointment (but excluding any proxy appointment amended by the deletion and re-input of a new proxy appointment instruction) will show two timestamps. The first timestamp (referred to as the 'Original Input Timestamp') indicates the date and time at which the proxy appointment instruction containing the appointment of a particular person as the proxy (which, as set out under 'Changes' above, may not be amended other than by the deletion and re-input of a new proxy appointment instruction) became available for retrieval by the issuer's agent enabling it to establish when it was notified of the appointment of such proxy. The second timestamp (referred to as the 'Last Amended Timestamp') indicates the date and time at which the most recent proxy appointment instruction containing a change to the proxy appointment became available for retrieval by the issuer's agent.

Results Announcement

In addition to the meeting announcement function, the CREST system also provides functionality which enables issuers to announce whether each resolution identified in the earlier meeting announcement was passed or defeated[38] including, if they so choose:

- the total number of votes proxies (including, where relevant, proxies not appointed by means of the CREST voting service) were instructed to cast for and against each resolution; or
- the total number of votes that were cast on a poll (including, where relevant, votes not cast by proxies).

All results must relate to a resolution contained in a meeting announcement with a status of 'active' and the CREST system will reject any result if an invalid resolution number is included. It is not intended that the input (by or on behalf of the issuer) of a CREST message containing data relating to the results of votes cast at such a meeting (a 'results announcement instruction') constitutes a formal declaration of the results of votes cast at the meeting where such a declaration is required (e.g. under the terms of issue of the security).

Input

Like a meeting announcement instruction, a results announcement instruction is input directly into the system by the issuer (or his agent) using the template and data contained in the related meeting announcement. Only a participant whose participant ID appears in the 'issuer's agent ID' field of the related meeting announcement (or, where it is sponsored, its sponsor) is permitted to act as 'issuer's agent' and to input results announcement instructions on behalf of the relevant issuer of the security. A results announcement instruction can be input during the 10 business days after the date specified in the 'meeting date' field of the meeting announcement. However, if the 'meeting date' field has been amended (by the announcement agent, see above) the CREST system will reject any attempt to input a results announcement instruction on or before the amended meeting date. Results announcements are available to all users (see also Chapter 4, Section 8).

Changes

The issuer's agent will be able to amend all data in a results announcement (including by inputting additional results) during the 10 business days after the meeting date (as specified in the 'meeting date' field of the meeting announcement) by inputting another results announcement instruction including such new data.

Voting Service Providers ('VSPs')

Introduction

As set out above, proxy appointment instructions may only be input by a participant of the type member (excluding CSD participants and CCPs) or VSP. CREST members can input these instructions either by using their own gateway(s) to communicate directly with the CREST system (in which case they are a 'user' in addition to being a participant) or by using the services of a sponsor (in legal terms a 'sponsoring system-participant') using its gateways to communicate with the system on their behalf in which case they are known as 'sponsored members'.

[38] Indicated in the system as 'failed'.

Alternatively, members may wish to outsource the proxy appointment function in whole or in part to one or more participants of the type VSP. Members who choose to appoint a VSP for this purpose do not need to change their existing arrangements for sending and receiving instructions to and from the CREST system. They can continue to use their own (or, if they are sponsored members, their sponsor's) gateway for such other CREST system matters which are not related to the voting service. They can also continue to use their own (or their sponsor's) gateway to send proxy appointment instructions for member accounts in relation to which no VSP has been appointed.

Appointment of a VSP

The appointment of a person to act as a VSP on the member's behalf is a matter for the member and the VSP; EUI is not involved. EUI only allows a VSP to act for a member as his VSP (and not, for example, as announcement agent or issuer's agent for an issuer) in the CREST system as and when the 'voting service provider ID' field in the relevant member account(s) contains the participant ID of such VSP. As this field is set by default to the member's participant ID, a member who wishes to appoint one or more VSPs for any or all of his member accounts must notify EUI by inputting the appropriate message containing the IDs of such VSPs. Only when the CREST system has amended the 'voting service provider ID' field in response to such an instruction (this takes place during the overnight processing following receipt of such instruction but before the start of settlement on the next settlement day) will EUI be treated as having been notified of the VSP's appointment and will the VSP be enabled to act as that member's VSP in relation to the relevant member account(s) in the CREST system.

The system is designed to allow a member with two or more member accounts to appoint a VSP for only some of the accounts or a different VSP for each account. As a proxy appointment instruction does not need to include the participant ID of the inputter, merely the participant ID of the member, the issuer's agent will not be aware whether it has been input by a VSP (rather than the member or, in the case of a sponsored member, his sponsor).

Withdrawal or change of a VSP's appointment

A member who has appointed a VSP in respect of any of his member account(s) in the manner described above (or in the case of a sponsored member, a sponsor who has made such an appointment on his behalf) and subsequently wishes to terminate such appointment and/or appoint another VSP must notify EUI by inputting the appropriate message containing the member's own or, as the case may be, the replacement VSP's participant ID (after which the 'voting service provider ID' field will be amended by the system during the overnight process). A member (or if sponsored, his sponsor) who has appointed a VSP will therefore be able to send and receive messages relating to the proxy appointment function through his own (or his sponsor's) gateway if his VSP has been disabled or suspended by the system operator (providing he inputs the relevant message so as to change the participant ID in the relevant VSP ID field in the manner described above).

VSP functionality

A VSP is, in CREST terminology, a 'sponsoring system participant' as he sends and receives dematerialised instructions to and from the system for the member who appointed him. As a CREST user, a VSP is similar to a sponsor however his access to the relevant member's functionality is limited:

- to the proxy appointment function (i.e. sending proxy appointment instructions to an issuer's agent relating to those securities in respect of which there is a meeting announcement with a status of 'active'); and
- to those member accounts which contain his ID in the 'voting service provider ID' field.

Where at any time the account of a CREST member contains the ID of a VSP, only that VSP (and not, for the avoidance of doubt, the CREST member) is able to view, change and delete any proxy appointment instruction with a status of 'active' relating to that account even where the instruction has been input, prior to his appointment, by another person (e.g. the member, acting on his own behalf). Such a VSP is also able to view stock balances in that account in respect of which a meeting announcement exists with a status of 'active', however, he has no access to any other data relating to the member nor does he have access to the member's stock or payment functionality. It is therefore not possible, for example, for a VSP to view a member's transaction data.

Section 10: Repo functionality

Introduction

The CREST system's repo functionality enables members (but not CSD participants or issuing and paying agents) to give and receive packages of securities as collateral within the CREST system, usually against the creation of a CREST payment. There is no connection in the CREST system between stock loan and DBV transactions used for collateral purposes, as each transaction type is independent of the other. Repo transactions settle during the normal CREST settlement periods, so cannot settle during DBV processing.

The repo functionality permits between one and ten lines of stock to be delivered as collateral, either as a 'term' repo (where a return date is specified) or as an 'open' repo (where no return date is specified). Additionally the repo functionality permits interest to be accrued, lines of collateral to be substituted in and out of the repo and the early return or roll-over of a term repo.

The repo functionality is dynamic, even after settlement of the outward leg of the repo. The initial repo instruction is used as the basis for all actions being performed on the overall repo arrangement, such as returning an open repo, substituting lines of stock, early returning a term repo or rolling-over a term repo.

Input

Repo (RPO) transactions require the bi-lateral input of instructions by the borrower and lender. In addition to the usual transaction details, the member must specify for each repo:

- ISIN(s) and quantity(ies) of collateral being transferred (between one and ten lines may be specified);
- interest rate (this can be set to zero);
- buy/sell back indicator;
- repo margin (can be left blank);
- repo return date (can be left blank for open repo)
- trade date;
- CSDR transaction type; and
- Place of trade MIC.

Repo transactions may be forward dated. The repo return date can be specified up to 520 days in the future. There must be a minimum of 1 line of stock specified – cash only repos are not possible.

Repo transactions cannot be split.

As the repo functionality is being used to manage the overall repo arrangement, the relevant repo transactions are only archived once all the related repo returns have settled.

Repo transactions involving a Restricted Security will not pass initial input validation and the transaction will be automatically rejected by the CREST system.

Settlement

Repo transactions can be input for same day or forward-dated settlement. Once the intended settlement date has been reached, the CREST system will apply its normal settlement checks to ensure the transaction is able to settle i.e. a sufficient balance exists in all specified lines of stock for the cash borrower, that the cash lender has sufficient headroom and that the cash lender's settlement bank has sufficient liquidity.

Settlement of repo and repo return transactions will be supported by the auto-collateralisation arrangements, where the stock in the repo is eligible for SCR.

Repo returns

Upon settlement of the repo transaction, a repo return (RPR) transaction is created for each line of stock within the original repo transaction. If the original repo had a return date specified then the relevant repo returns will have an intended settlement date equal to the repo return date specified and will have a priority of fifty.

Where the original repo arrangement had more than one line of stock, the consideration of the repo returns is pro-rated on the basis of the value of the individual lines of stock at the point of settlement.

Repo returns can be split or deleted, but any subsequent actions on the repo arrangement will cause the CREST system to collateralise the repo to its original value.

Optional non-matching fields can be amended on the repo returns as per any other CREST transaction with the exception of the account ID. The account IDs on the associated RPRs will be the same as the account ID of the initial repo and cannot be amended, even when splitting an RPR.

If no repo return date was specified in the original RPO transaction then the repo returns will be generated with an intended settlement date equal to that of the original repo transaction (to permit same day repo) but with a priority of zero. To settle the repo returns, both parties must raise the priority on the original repo transaction – this will cause the CREST system to automatically raise the priorities on all associated repo returns.

Interest accrual

If an interest rate was specified on the original repo transaction, then the CREST system will calculate interest on a daily basis using the day count convention as determined by the currency of the consideration. For sterling repos this will be actual/365, for euro and US dollars this will be actual/360. Interest is added overnight.

For open repos, the CREST system will accrue interest on a daily basis until both parties have raised the priority on the repo returns. Once the priorities have been raised, the CREST system will assume that the repo is to be terminated; no further interest is calculated, even if the priority of the returns is set back to zero by both parties.

For term repos, the CREST system will accrue interest until the intended settlement date of the repo return is reached. The CREST system will stop accruing interest at that point.

Roll-over

If the counterparties to a repo arrangement agree, it is possible to 'roll over' a term repo arrangement. Both members must amend the original repo transaction with a new repo return date

and, optionally, a new repo interest rate. Once these amendments are actioned, the CREST system will automatically delete the original repo returns and recreate them with the new return date and, optionally, the new interest rate. The interest accrued to that point is added to the consideration of the original repo arrangement, and the new interest is calculated on the new consideration (i.e. interest will be compounded for rolled-over repos). It is possible to forward date roll-overs.

Early returns

If the counterparties to a repo arrangement agree, it is possible to 'early return' a term repo arrangement. Both members must amend the original repo transaction with a new repo return date. Once these amendments are actioned, the CREST system will automatically delete the original repo returns and recreate them with the new return date. Interest will only be accrued up to the intended settlement date of the new repo returns. Once intended settlement date has been reached and providing neither side has frozen the transaction, the CREST system will apply its normal settlement checks and attempt to settle the repo returns. The repo returns can settle independently of each other.

Substitution

The CREST system provides the facility for members to manage the individual lines of collateral within a repo arrangement. It is possible for members to:

- exchange one line of collateral for another;
- remove an entire line of collateral;
- insert a line of collateral; and
- insert or remove partial lines of collateral.

A substitution must be agreed by both counterparties to a repo arrangement. Each side must input a 'repo substitution' (RPS) transaction with the details of the stock(s) to be added, removed or exchanged. The RPS transaction is a delivery versus delivery transaction. Members may either specify the amount of stock to be transferred or, if they wish, may allow the CREST system to calculate the amount of stock required to 'balance' the repo. The CREST system works out the amount of stock to be transferred in each case by looking at the current consideration of the repo and working out the current value of stock held as collateral based upon the reference price held in the system on the day the substitution was input.

RPS instructions may be input at any time the CREST system is accepting input. Unsettled RPS transactions will not be central deleted and will continue to be available for settlement.

Substitution instructions can be forward dated. Once a substitution instruction is matched and has reached its settlement date it will be assessed using the normal CREST settlement check for security availability. Assuming enough stock is present, the substitution will settle. Settlement of the substitution instruction will cause the CREST system to delete and recreate the relevant repo return(s) using the relevant security. The total cash consideration across the repo arrangement will be maintained, along with any accrued interest.

The account ID specified on the RPS need not be the same as on the initial RPO. However, when the corresponding RPRs are generated, these are created using the original account ID from the RPO.

It is possible to substitute in extra lines of stock into a repo. This will result in the creation of new repo returns for each extra line of stock. These extra returns will be free of payment, as the total cash consideration will be maintained on the original repo returns. There will be circumstances in which a partial substitution of an original line of stock with a new line (where the CREST system calculates the quantity to be substituted in) results in a quantity of zero being transferred in.

Substitutions cannot be performed on term repos once the repo return date has been reached (or passed), nor can they be performed on open repos once the priority has been raised by both sides.

Repo substitutions (RPS) involving a Restricted Security will not pass initial input validation and the transactions will be rejected by the CREST system.

SDRT

Repo arrangements in UK chargeable securities will be subject to the normal lending reliefs as described in Chapter 8. Where a repo arrangement consists of a mixture of chargeable and non-chargeable securities, the CREST system will only calculate a charge consistent with the chargeable element of the arrangement.

Settlement discipline

RPO, RPR and RPS transactions are not subject to the settlement discipline regime.

Section 11: The issuance function and eligible debt securities

Introduction

To accommodate the rapid, same day (or future dated) issuance of EDSs relating to Treasury Bills (including Local Authority Bills), Bankers' Acceptances (or Bank Bills), Bank of England Bills, Certificates of Deposit (CDs) and Commercial Paper (CP) into the CREST system, functionality exists to permit issuing and paying agents (CREST IPAs) to create, administer and redeem EDSs on behalf of their issuers. This functionality is known as the issuing and paying agent (IPA) functionality.

The IPA functionality covers the lifecycle of an EDS, including the initial setup of the security details (including the allocation of an ISIN), the credit of units (of an aggregate value equal to the nominal value of the EDS) to the stock account of the CREST IPA, the delivery of units of the EDS to the initial holder(s), any interim coupon payments (for interest bearing EDSs) and the payment of the maturity proceeds at the end of the EDS's life.

Initial setup of an EDS

The CREST system provides CREST IPAs with a mechanism to create the security details relating to an EDS, the nominal amount of an EDS and any corporate actions relating to interest payments (for coupon bearing EDSs) and maturity payments. This functionality is accessed via a single CREST system function called the 'IPA issuance message'. This function is accessible via the CREST GUI (the interactive interface), the CREST file transfer interface or via the CREST ISO15022 interface[39]. The IPA issuance message is an issuer-instruction attributable to the issuer of an eligible debt security and its issuing agent. Upon input of an IPA issuance message, the CREST system operates validation procedures with a view to ensuring that:

- the Primary Issuer ID field is populated with an issuer that has a relationship with the issuing agent (which is derived from the information contained in the Issuer Application Form and any subsequent notice of change received by EUI - see further below and Appendix 2 to the CREST Rules);
- where the EDS type is that of a Treasury Bill, the Primary Issuer ID field is populated with the Issuer ID representing the UK Debt Management Office;
- where the EDS type is that of a Bank Bill, the Secondary Issuer ID field is populated with an issuer that has a relationship with the issuing agent (which is derived from the information contained in the Issuer Application Form and any subsequent notice of change received by EUI - see further below and Appendix 2 to the CREST Rules);
- where the EDS type is that of a Bank of England Bill, that the Primary Issuer ID is populated with The Governor & Company of the Bank of England as issuer of the EDS;
- where the Dividend Rate Type is Fixed or Floating, that the Payment Date fields are populated;
- where the Dividend Rate Type is Fixed, that the Dividend Rate field is populated;
- Payment Frequency is one of annual, half-yearly, quarterly or redemption only; and.
- that the Issuer ID of the Primary Issuer and, where applicable the Secondary Issuer, is enabled.

[39] A specially defined MT598 message has been registered with SWIFT.

The following fields are available for input on the IPA issuance message:

- MMI Issue Reference;
- Primary Issuer ID;
- Secondary Issuer ID;
- Issuing Agent ID;
- Paying Agent ID;
- Security Start Date;
- Instrument Type;
- Nominal Amount;
- Minimum Transfer Amount;
- Units of Transfer;
- Maturity Call Date;
- Actual Maturity Date;
- Early Redemption;
- Basis (i.e. day count convention e.g. actual/365 for GBP, actual/360 for EUR and USD);
- Guarantor;
- London CD;
- Dividend Rate Type;
- Payment Frequency;
- Payment Date;
- Actual Payment Date; and
- Dividend Rate.

The fields used will depend on the type of EDS being used. The CREST system will automatically allocate an ISIN to a new issue of an EDS upon successful processing of an IPA issuance message.

In all instances, the nominal amount of a given EDS will only be visible to the CREST System Controller, the Bank of England and the IPA acting as issuing and/or paying agent in respect of the EDS concerned.

It is possible for the issuing agent and the paying agent to be different entities for Bankers' Acceptances, Certificates of Deposit and Commercial Paper. If they are different, the issuing agent will be responsible for the initial and any subsequent issuance (including 'tap' issuance), whereas the paying agent is responsible for interim interest payments and maturity. The remainder of the description of the functionality in this document presumes that the issuing and paying agent is the same entity.

Treasury Bills

Treasury Bills are short-term Government debt instruments issued by the UK Debt Management Office (DMO) on behalf of Her Majesty's Treasury[40]. As such, validation procedures exist in the CREST system with a view to ensuring that EDSs representing Treasury Bills can only be issued by an issuer assigned to the DMO.

EDSs representing Treasury Bills are issued at a discount, hence there is no requirement for interest payment details to be specified.

EDSs representing Treasury Bills will have the following fields specified:

- MMI Issue Reference;
- Primary Issuer ID – the DMO;
- Issuing Agent ID – the Bank of England;
- Paying Agent ID – the Bank of England;
- Security Start Date;
- Instrument type – Treasury Bill;
- Nominal Amount;
- Minimum Transfer Amount;
- Units of Transfer;
- Maturity Call Date;
- Basis – to be specified if non-standard day count convention used; and
- Dividend Rate Type – discounted.

Bankers' Acceptances

Bankers' Acceptances (also known as Bills of Exchange or Eligible/Ineligible Bank Bills) are used as a mechanism for corporate entities to raise finance on the London money markets. The corporate entity concerned will enter (as borrower) into an arrangement with an 'accepting bank' or a syndicate of 'accepting banks'. Under syndicated arrangements, it is typical for the Agent Bank to hold a number of blank bills which it is authorised (usually under a suitable power of attorney granted by the borrower) to sign and complete on behalf of the borrower (as drawer). The Agent Bank will then send to each syndicate bank a bill drawn on that syndicate bank for acceptance in the principal amount of that bank's participation in the utilisation. The bill is then discounted (at the eligible bill discount rate) and the proceeds (less acceptance commission) are made available to the borrower. A key use for Bankers' Acceptances in the market (where accepted by 'eligible banks') is as eligible collateral at the Bank of England, providing liquidity to the central bank's payments system. The manner by which the CREST system validates eligibility for DBV purposes is outlined in Chapter 7, section 2.

A key feature of Bankers' Acceptances in EDS form is that both the accepting bank and the corporate entity borrowing the money (or 'drawing the bill', hence known as the drawer) are liable as 'principal debtors' in respect of the single debt constituted by the EDS (although the liability of

[40] Local Authority Bills are similar in concept, but are used occasionally to fund local government. They are extremely rare.

the drawer arises only upon a default in payment by the accepting bank). This corresponds to the respective liabilities of an acceptor and a drawer to a physical, negotiable Banker's Acceptance under the Bills of Exchange Act 1882. Hence, should the accepting bank be unable to meet its obligations upon the maturity of the Banker's Acceptance, the investor can call upon the drawer to make payment. For this reason, in CREST terms, the identity of both the acceptor and the drawer is validated - the accepting bank is known as the 'Primary Issuer' and the drawer is known as the 'Secondary Issuer'.

It is market practice for EDSs representing Bankers' Acceptances to be issued at a discount, hence there is no requirement for interest payment details to be specified in the IPA issuance message.

To issue a Banker's Acceptance in EDS form through the CREST system, the CREST IPA is therefore required to submit the following fields in the IPA issuance message:

- MMI Issue Reference;
- Primary Issuer ID – the accepting bank;
- Secondary Issuer ID – the drawer;
- Issuing Agent ID;
- Paying Agent ID;
- Security Start Date;
- Instrument type – Bank Bill;
- Nominal Amount;
- Minimum Transfer Amount;
- Units of Transfer;
- Maturity Call Date;
- Basis – to be specified if non-standard day count convention used; and
- Dividend Rate Type – discounted.

The CREST system will apply validation to ensure that the IPA specified in the message has a relationship with both the Primary and the Secondary Issuer. This validation is described above.

The identity of the Secondary Issuer will only be visible in the CREST system to the CREST System Controller, the Bank of England, the CREST IPA of the security concerned and the holder of a unit of the EDS representing the Banker's Acceptance.

Bank of England Bills

As part of its sterling money market operations the Bank of England may from time to time issue 'Bank of England Bills'. A Bank of England Bill is constituted by a promise by the Governor and Company of the Bank of England to pay the principal amount of the Bill on its maturity date. It is issued in pounds sterling, at a discount.

Bank of England Bills can only be issued by the Bank of England.

EDSs representing Bank of England Bills will have the following fields specified;

- MMI Issue Reference;

- Primary Issuer ID – the Bank of England;
- Issuing Agent ID – the Bank of England;
- Paying Agent ID – the Bank of England;
- Security Start Date;
- Instrument Type – Bank of England Bill
- Nominal Amount;
- Minimum Transfer Amount;
- Units of Transfer;
- Maturity Call Date;
- Basis – Actual/365; and
- Dividend Rate Type.

A Bank of England Bill is therefore recognised in CREST by the fact that the Bank of England is specified in the Primary Issuer ID field and the Bank of England's CREST IPA is inserted in the fields for the issuing agent and the paying agent.

Certificates of Deposit and Commercial Paper

Certificates of Deposit (CDs) are customarily issued by deposit takers (i.e. credit institutions and building societies). A class of CDs known as 'London CDs' are issued into the London Money Markets. A London CD is: (a) issued by institution authorised to accept deposits in the UK; (b) issued and payable in the UK; (c) designed primarily to trade in the UK; and (d) is described as a 'London CD' in the terms of issuance. London CDs (and non-London CDs) are issued in accordance with guidance published from time to time by the Sterling Money Markets Liaison Group and the British Bankers' Association. CREST IPAs of issuers of London CDs should apply the 'London CD' marker in their IPA issuance message - this is an information only field in the CREST system, and is not validated.

Commercial paper is widely-used by top-rated corporates and institutions to finance short-term, working capital requirements. It is a debt security which typically must be redeemed before the first anniversary of the date of issue.

Both CDs and CP can be issued in either discounted or coupon bearing form. They can have a maturity period of up to five years, although discount CDs/CP rarely have maturities greater than 6 months. Although the two types of security have different reasons for being issued and are constituted differently (a CD being constituted as an acknowledgement of indebtedness, while CP is constituted as a promise to pay), in EDS form they look the same in the CREST system (other than the instrument type) as they are both 'single name' EDSs.

If the CD/CP is issued as an EDS in the CREST system in discount form, the following fields must be supplied by the CREST IPA:

- MMI Issue Reference;
- Primary Issuer ID;
- Issuing Agent ID;

- Paying Agent ID;
- Security Start Date;
- Instrument type – CD or CP;
- Minimum Transfer Amount;
- Units of Transfer;
- Nominal Amount;
- Basis – to be specified if non-standard day count convention used;
- Maturity Call Date; and
- Dividend Rate Type – discounted.

Where the CD/CP is issued as an EDS in the CREST system in interest bearing form, the CREST IPA will need to supply details of the interest payment dates and interest rate(s). The CREST IPA is able to specify up to 10 interest payments on the IPA issuance message (allowing a 5 year CD/CP to be set up with bi-annual interest payments). If subsequent interest payments are required, it will be possible for the CREST IPA to set up further interest payments once earlier interest payments have been made.

For CD/CP with fixed interest rates, the rate can be specified at the point of issuance for up to 10 future interest payments. For floating rate issues, it is possible for the IPA to set up interest payments with zero dividend rates, and to amend them later once the rate has been set.

To set up a fixed or floating rate CD/CP therefore, the CREST IPA will need to specify the following fields:

- MMI Issue Reference;
- Primary Issuer ID;
- Issuing Agent ID;
- Paying Agent ID;
- Security Start Date;
- Instrument type – CD or CP;
- Nominal Amount;
- Minimum Transfer Amount;
- Units of Transfer;
- Maturity Call Date;
- Actual Maturity Date;
- Early Redemption;
- Basis – to be specified if non-standard day count convention used;
- Guarantor;
- London CD;

- Dividend Rate Type;
- Payment Frequency;
- Payment Date;
- Actual Payment Date; and
- Dividend Rate.

As with other EDS types, the CREST system will validate IPA issuance message to ensure that the CREST IPA has a relationship with the issuer of the CD/CP.

CDs/CP issued under the 2008 Credit Guarantee Scheme

In October 2008 the UK Government instituted the 2008 Credit Guarantee Scheme ("the CGS"). Under the CGS, the Commissioners of Her Majesty's Treasury ("HMT") may guarantee the payment of certain debt instruments issued by certain institutions (referred to as "Eligible Institutions"). The UK Debt Management Office publishes a list of Eligible Institutions on its website. Please refer to http://www.dmo.gov.uk/ for more information.

Once the issue of a particular debt instrument has been approved pursuant to the CGS, HMT will issue an Eligibility Certificate in respect of it. CDs/CP issued by Eligible Institutions and in respect of which Eligibility Certificates have been issued are placed in their own separate security categories within the CREST system, distinct from other CDs/CP (see page 48 of this Manual). Such guaranteed CDs/CP shall also be placed in distinct DBV classes (see Chapter 7, section 2 of this Manual) and distinct MSV Categories (see Chapter 6, section 3 of this Manual).

An issuer who wishes to issue guaranteed CDs/CP into the CREST system must first sign and return to EUI a version of the Issuer Application Form produced by EUI for the purposes of confirming that they are guaranteed under the CGS. The issuer's details will be added to the list of eligible institutions maintained by EUI when the Issuer Application Form has been received and processed by EUI. EUI will not accept guaranteed CDs/CP to be issued within the CREST system until the form has been processed and the relevant issuer has been added by EUI to the list of eligible institutions maintained by it.

To set up a CD/CP which is guaranteed under the CGS in the CREST system the CREST IPA will, in addition to supplying the fields discussed above in relation to CDs/CP generally, need to enter "HMTCGS" in the "guarantor" field, in order to indicate that the security is guaranteed under the CGS. It is entry of this text in the "guarantor" field that triggers the categorisation of the securities in the CREST system as CDs/CP guaranteed under the CGS. The CREST IPA must not enter "HMTCGS" in the "guarantor" field for an instrument in respect of which an Eligibility Certificate has not been granted.

Delivery of EDS to investor

Once the EDS has been created (by credit, via an ADJ transaction, to the issuing agent's stock account – see further Chapter 10, section 1), the delivery to the investor takes place on a standard, matching delivery instruction (DEL) which must be input by the CREST IPA and the investor. The CREST IPA participant will only be able to input delivery instructions relating to an EDS for which he is issuing and/or paying agent.

Amendments and cancellations to issues

It will be possible for the CREST IPA to amend details of EDS issues that have a status of 'New', i.e. those for which the security details are created but for which there is not yet a balance in the Issuing Agent's member account. To amend an issue the Issuing Agent will need to resubmit the issuance message in its entirety with the new values in the amended fields. An amendment will generate a file change.

The following fields on the issuance message can be amended:

- Actual Maturity Date;
- Early Redemption;
- Nominal Amount of Issue;
- Minimum Transfer Amount;
- Units of Transfer;
- Dividend Rate;
- Payment Date; and
- Actual Payment Date.

Once the security is enabled only the Actual Maturity Date, Early Redemption, Nominal Amount of Issue, Payment Date and Actual Payment Date fields can be amended. Additionally for floating rate issues the field Dividend Rate can also be amended. Thus to 'tap' an issue, the CREST IPA will need to send a new IPA Issuance Message specifying the new total nominal amount. To 'draw down' and issue, the CREST IPA must send a new IPA issuance message specifying the new, lower total nominal amount (adjusted as per the amount of the draw down) – this IPA issuance message will only be processed by the CREST system if the relevant amount is already help in the IPA's stock account.

If an issue with incorrect details is created and the issue has already been delivered to the holder(s), the Issuing Agent must arrange for the return of the issue back to his IPA participant account, its cancellation and the re-issue of the security (which will have a new ISIN code) with the correct details.

To cancel an issue, the delete message will be used specifying the Issue Reference. The entire issue must be held in the IPA's stock account in order for this to take effect.

To re-issue the Issuing Agent will need to send in a new IPA issuance input message with the correct details. A new ISIN will be allocated in these cases.

Interim Interest Payments

As described above, the CREST system permits CREST IPAs to set up details of interest payments pertaining to the EDSs representing CDs or CP. As part of the IPA issuance message, the CREST IPA can specify the interest rate to be paid, and the dates on which it is to be paid.

Upon receipt of the IPA issuance message, the CREST system will take the interest rate and payment dates and create CREST corporate action details. These will be visible to members using the MMI file changes mechanism (as described in Chapter 4, section 8), as well as being accessible via the interactive interface.

Using the corporate action details, the CREST system will identify where an interim interest payment date has been reached and will automatically generate payment instructions (in the form of a USE transaction) attributable to the relevant paying agent. The USE transaction will be created with a priority of zero and its settlement will effect a CREST payment to the holder of units who were entered on the relevant operator register of eligible debt securities at the close of business on the settlement day immediately before the Actual Payment Date (see further below). For EDSs denominated in non-settling currencies, the CREST system will create non-settling USE transactions.

There may be instances where the payment date falls on a non-settlement day (for example, a weekend or a bank holiday). The CREST system will, by default, create the interest payments to settle on the next business day - if this is inappropriate (for example, market convention for certain instrument types dictates that where the payment is at the end of the month, the interest should be paid the previous business day), the CREST system provides the facility for the CREST IPA to specify an 'Actual Payment Date'. This allows interest to be paid on the correct date without affecting the CREST valuation mechanism.

Maturity Process

To assist the CREST IPAs in their administration of EDSs at point of maturity, the CREST system automatically creates delivery versus payment transactions to present the maturing issue back to the CREST IPA. An overnight process identifies holdings and any open repo returns, stock loan returns, overnight DBV returns and term DBV returns and reallocates the automatically created deliveries accordingly. Thus, a member who has accepted securities in a repo and has not performed a substitution prior to maturity date being reached will be able to do so the next morning, and the collateral provider under the repo arrangement will still benefit from the automatic maturity process.

To ensure that the CREST IPA and the member have the appropriate level of control over the maturity process, the centrally created deliveries are created with a priority of zero on both sides. This priority will require raising by both the CREST IPA and the holder in order for the deliveries to settle.

Once all the stock has been returned to the IPAs stock account, the CREST system will expire the stock and archive the details. The expiry process will work in the same way as for any other security once it has reached that status (see Chapter 2, section 6).

It will still be possible to transfer the stock back to the CREST IPA once maturity date has passed. This is to facilitate late redemptions, although it is anticipated that this will be a very rare occurrence due to the automation in place.

Further details on the EDS maturity process are contained in Chapter 2, section 6.

Change of issuing/paying agent

To facilitate the option for an issuer to change his issuing and paying agent arrangements, it will be possible for either the issuing agent or paying agent to be changed for an individual issue, or for all issues relating to a given CREST IPA. This function is performed by the CREST System Controller on receipt of the correct authorisation from the issuer. The change will be effective the following business day following action by the CREST System Controller. It will not be possible to change the IPA if units of an EDS relating to the issuer are still credited to the CREST IPAs stock account.

Evidence of entries on an Operator register of EDSs

EUI may, upon the written request of the participating issuer of an eligible debt security and/or a member who is or has been a holder of a unit of such an EDS and subject to such other conditions as EUI may specify, issue a certificate as to any other matters which are or were at any one time inserted in the Operator register of eligible debt securities for the EDS concerned. Any person requesting the issue of such a certificate will be required to re-imburse EUI with any costs or expenses which it has incurred in preparing and issuing that certificate.

Section 12: Dividend Election Instructions and Dividend and Interest Payments

Introduction

In connection with the payment of dividends and interest entitlements, the CREST system provides functionality that:

- may be used by registrars/receiving agents to send Members tax vouchers in electronic form;
- permits members to advise registrars/receiving agents of elections for an alternative to the default distribution type; and
- permits input of mandate instructions in connection with the receipt of dividend and interest entitlements.

Tax vouchers in electronic form

EUI believes that tax vouchers in electronic form which correspond to the template in the Data Exchange Manual are consistent with The Income and Corporation Taxes (Electronic Certificates of Deduction of Tax and Tax Credit) Regulations 2003 to the extent that those regulations apply but, in all cases, Members should satisfy themselves on this matter.

Electing on dividends with non default alternatives

Issuers may offer their shareholders the opportunity to elect for an alternative to the default (typically cash) dividend distribution type. Where a dividend offers alternative options to the default distribution, the CREST system provides two distinct processing methods for members wishing to inform registrars/receiving agents of their chosen alternative option. These are:

- by setting up a mandate using a dividend election instruction message (KMIN); or
- through the use of standard CREST system corporate action election functionality.

The processing method is chosen by the registrar/receiving agent, upon agreement with the issuer, for each dividend event. Only one method can be selected per dividend event for the relevant ISIN which is the subject of a distribution. From one dividend to the next the registrar/receiving agent, upon agreement with the issuer, may choose to switch from one processing method to the other. If the method chosen changes from the use of the dividend election message (KMIN) method to the use of the method involving standard CREST system corporate action election functionality then EUI will delete existing dividend election messages (KMINs) for the relevant ISIN and prevent further dividend election messages (KMINs) from being input in respect of the particular dividend event on the relevant ISIN.

If Members have elected to receive the outturn through the CREST system, regardless of the processing method used, the outturn of a dividend event will be the option elected or, where no election was made, the default option.

The processing methods available for non default alternatives in the CREST system are entirely optional for issuers and Members (unless the issuer's terms governing the dividend alternative scheme require the use of a specific processing method). In determining which processing method to use, it is the responsibility of the issuer to ensure that the governing terms and conditions of the scheme permit acceptance of elections submitted in the chosen manner.

The KMIN method or the method involving standard CREST system corporate action election functionality may be used by any participant of type 'member' who is a stock holder i.e. has the field 'Stock holder' with the participant details set to 'yes'.

An election may only be submitted in respect of one choice of alternative distribution type. Where multiple distribution outturn types are supported and Members wish to elect for more than one distribution type (e.g. scrip and currency), separate elections must be made using the appropriate method (as selected for the event). Furthermore, where a choice of currencies is available, Members must input separate partial elections, using the appropriate method (as selected for the event), in respect of each currency they wish to receive.

The Dividend Election instruction (KMIN)

Where a registrar/receiving agent, upon agreement with the issuer, selects and confirms to EUI the use of the dividend election message (KMIN) for a dividend event, Members may use the KMIN to notify the registrar of an election for one of the available alternatives. This message allows members to elect electronically for a scrip, DRIP or alternative currency in lieu of the default entitlement. The template for the dividend election message contains a number of fields. Through completion of the appropriate fields, Members may indicate both the required alternative and the number of shares for which they wish to receive such entitlement. Members may also specify whether the election is relevant for one dividend only (a 'one off' election) or, if until further notice, it should apply to all future dividends for which that alternative is available (an 'evergreen' election).

The KMIN has been designed to allow a wide range election types. Accordingly only a relatively small number of fields within the template must be common to all elections (thus mandatory for completion). These are:

- Dividend election reference;
- Account ID (left blank for a default participant account);
- Distribution type (Scrip/DRIP/Currency).

EUI has deliberately not provided functionality to amend this message. If a Member wishes to change the election, the current instruction must first be deleted and then a fresh message sent.

An additional function of this message is to allow members to advise the Gilts registrar as to whether they wish to receive their interest payments net of Income Tax.

The KMIN message is directed by the CREST system to the registrar ID held in the security details for the ISIN specified in the message. All dividend election instructions (and requests to delete instructions) are subject to acceptance or rejection by the registrar/receiving agent and such instructions are only effective when accepted by the registrar/receiving agent. The submitter of the election will be notified via status change whether or not the instruction has been accepted. If the message cannot be accepted, the registrar will provide the inputter with a rejection reason.

It is possible that an instruction input in the CREST system could be superseded or amended by a written instruction from the shareholder (in which case the registrar may disregard the instruction remaining in the CREST system). Conversely, where permitted by an issuer, it is possible to use the KMIN message to delete an election that was not made through the CREST system e.g. that was made by written instruction. Whilst Members may interrogate the system and view details of

any current electronic election submitted through the CREST system, the definitive record of election instructions is maintained by the registrar.

Dividend election using standard CREST system corporate action functionality

Where a registrar/receiving agent, upon agreement with the issuer, selects and confirms to EUI the use of the method to elect on a dividend event using standard CREST system corporate action election functionality it involves the creation of two corporate action events in the CREST system. Members must make use of the unmatched stock event (USE) transaction (see further Chapter 7, section 4) to notify the registrar/receiving agent of an election of one of the available alternatives to the default. This transaction allows Members to elect electronically for a scrip dividend, currency election option and DRIPS with currency election option (other DRIPs are out of scope) in lieu of the default entitlement. This method is available in the case of dividends on all security types except for securities participating in the the CREST International Settlement Links Service and the Investment Funds Service.

Registrars/receiving agents must send EUI the details for the two corporate action events required for this processing method.

The first corporate action event is used to distribute an Electronic Election Entitlement (EEE) line which is an interim line for processing purposes. The quantity of the EEE line received in the Member's member account in the CREST system, by means of a Registrars Adjustment (REG), is based on their record date holding of the relevant security which is the subject of the dividend event.

The EEE will carry an ISIN but will not be enabled for settlement with the exception of REG and USE transactions permitted by way of settlement override input by EUI. The EEE will not be a freely transferable security with it only being capable of transfer, by way of override input by EUI, between the Member and the registrar/receiving agent.

The registrar must submit a Securities Application Form to admit the EEE line in the CREST system in advance of any REG. There will be a new EEE line set up for each event. The "Security Description" field of an EEE line will contain the narrative 'Electronic Election Entitlement' so Members can identify that the line relates to an EEE.

The EEE line will be removed from the CREST system at the end point of the linked corporate action.

The second corporate action event will enable the Member to elect for their chosen alternative option to the default. To elect on an alternative to the default, a USE transaction should be used by Members, as described in Chapter 7, Section 4, to transfer the chosen quantity of the EEE line to the receiving agent on or before the deadline specified for the event.

It will be possible for Members to delete the USE transaction in respect of the EEE while it remains unsettled. Once settled, if a Member wishes to delete an election they will need to contact the registrar/receiving agent (or issuer) to request this.

Outturns elected by way of standard CREST system corporate action functionality can be distributed to Members using the registrar's/receiving agent's chosen corporate action transaction type as described in Chapter 7, section 4 (market practice is anticipated to determine this).

Existing or proposed evergreen elections (i.e. a Member designating a given election for all future dividends for which the relevant alternative is available) are not possible when processing a

dividend event using this method of election. Consequently, an election will need to be made on each subsequent event for which this method is made available to Members.

Where a registrar/receiving agent selects and confirms the use of the method involving standard CREST system corporate action functionality, upon agreement with the issuer, EUI will delete any existing dividend election messages (KMINs) for the relevant ISIN and prevent further dividend election messages (KMINs) from being input in respect of the particular dividend event on the relevant ISIN. Once this data is deleted, and if the decision is taken to process a subsequent dividend election using the KMIN method, then Members will need to be re-enter dividend election messages (KMINs) into the CREST system.

Claim transactions will be raised by the CREST system in respect of the EEE line in accordance with standard CREST system claims processing (see Chapter 7, section 5). Claim transactions will not settle on the EEE line as it is disabled in the CREST system and EUI will not apply a settlement override in respect of claims.

ACON/buyer protection processing is available on claim transactions involving the EEE line. Members can input ACON/buyer protection instructions as described in Chapter 7, section 4.

On the transformation date, the CREST system will automatically transform any unsettled claims in the EEE line into settling transactions reflecting either the default or the chosen outturn (see Chapter 7, section 6).

Dividend and Interest Payments using PAY instructions

Dividend and interest payments and the relevant details of tax deducted may be distributed via the CREST system using the PAY instruction (payments may also be made by means of a USE instruction, see further Chapter 7, section 4). The payment (and associated electronic tax voucher) may only be made through the CREST system in respect of securities registered in the CREST system as at the record date for the payment. Furthermore, electronic tax vouchers may only be submitted to those members who have requested to receive them in this form, and where the issuer's Articles of Association or other terms of issue of the security permit.

Payment of dividends or interest and transmission of the associated tax vouchers in the CREST system is optional. In determining whether or not to distribute dividend or interest payments in the CREST system, it is the responsibility of the issuer to ensure that its Articles of Association or terms of issue permit usage of the available functionality.

If an issuer decides to allow dividend or interest distributions to be made in the CREST system, it should advise EUI of its intention and request that the securities data held by the CREST system in respect of the relevant ISIN is updated to indicate that distributions in the CREST system are permitted. This notification may be made by completion of the relevant section of the CREST Security Application Form for a new security or alternatively by written instruction to EUI for securities that are already CREST eligible.

There are a number of fields available for input within the PAY transaction. The details remitted are at the discretion of the issuer, and it is the responsibility of the issuer to ensure that the instruction contains at least the minimum detail required to satisfy the requirements of the relevant tax regulations.

The following details are mandatory for inclusion:

- ISIN

- Participant ID of Receiving Agent and recipient
- Member ID of Receiving Agent and recipient
- Corporate action no.
- Tax credit/Tax deducted (may be set to zero)
- Dividend rate
- Record date holding

The PAY instruction may contain shares or cash but not both. It is possible to issue the instruction without a cash or stock movement. Typically this might occur where a holder has a standing instruction to receive shares in lieu of a dividend payment and the cash entitlement is not sufficient to purchase any additional shares. In this case the PAY instruction would merely indicate the change in cash withheld by the issuer for future purchase of shares.

This is applicable to both methods of processing dividends with non default alternatives in the CREST system that are described above.Payment mandate

If a participant wishes to receive dividend, interest or redemption payments in the CREST system, it must instruct EUI to make the necessary change to the participant standing details to indicate to registrars that, for those securities that permit such distributions in the CREST system, entitlements should be distributed via the system. For those securities which do not permit such distributions in the CREST system, the CREST mandate instruction has no effect.

A participant may indicate the following options for payments in the CREST system:

- dividend and interest for non-gilt securities (not gilt interest or gilt redemption);
- dividend and interest for non-gilt securities and gilt interest (not gilt redemption);
- dividend and interest for non-gilt securities, gilt interest and gilt redemptions;
- dividend and interest for non-gilt securities and gilt redemption (not gilt interest);
- gilt interest (not dividend and interest for non-gilt securities or gilt redemption);
- gilt interest and gilt redemption (not dividend and interest for non-gilt securities);
- gilt redemption (not dividend and interest for non-gilt securities or gilt interest).

The instruction is given at participant level and applies to all member account designations relating to that participant ID. In respect of any security for which payments are made in the CREST system, this instruction supersedes any existing mandate instruction held by the registrar. This instruction should be made by the participant to EUI in the form of the letter set out below. In the absence of a mandate form, participants will have their dividend mandate flag set to indicate no payment of dividend, interest, gilt interest or gilt redemption via the CREST system.

If the participant wishes to cancel this instruction (and any cancellation will apply to all securities held by the participant under that participant ID) the participant must write to EUI cancelling the written instruction.

If a participant wishes to amend the options selected, the participant must write to EUI in the form of the letter below, indicating that this is in respect of a change of options.

It is the responsibility of the recipient of dividend, interest or redemption payments via the CREST system to ensure that the cash memorandum account associated with the participant is enabled. If the transaction does not settle because a cap is not enabled, the receiving agent making the payment may chose to cancel the instruction and reissue the payment outside of the CREST system.

DIVIDENDS, INTEREST AND REDEMPTIONS – LETTER OF INSTRUCTION TO EUI ON HEADED PAPER OF PARTICIPANT

I/we/[company name] write to instruct Euroclear UK & Ireland Limited ('EUI') to input on my/our behalf an Operator instruction in respect of the Dividend Mandate field for participant [insert participant ID] setting the flag for the payment of [select one: dividend and interest for non-gilt securities / dividend and interest for non-gilt securities and gilt interest / dividend and interest for non-gilt securities, gilt interest and gilt redemptions / dividend and interest for non-gilt securities and gilt redemption / gilt interest / gilt interest and gilt redemption / gilt redemption] in the CREST system (hereinafter a 'Mandate flag') in accordance with the procedures set out in the CREST Manual.

I/we irrevocably confirm that this letter of instruction is sufficient authority from me/us/[company name] to EUI to communicate to the issuer/his registrar, through the CREST system in the manner described in the CREST Manual, my/our request to receive payments in respect of all and any relevant securities for the categories above (as identified in the CREST Manual from time to time).

I/we confirm that (a) such authority shall continue in full force and effect until I/we have notified EUI in writing that I/we revoke this letter of instruction, and (b) this letter instructs EUI to maintain the request made by me/us until such notification. (On which notification EUI shall treat the instruction as revoked in respect of any and all securities for the categories above held by me/us/[company name] in the CREST system and EUI shall remove the Mandate flag.)

We acknowledge that in all cases any payment, non-payment or delay in making payment by the issuer/his registrar to me/us/[company name] remains a matter for the issuer/his registrar and not for EUI and that the issuer/his registrar may at his/its discretion refuse to make payment (or part thereof) in the CREST system notwithstanding any mandate or Mandate flag.

Yours faithfully

[name]

[company name]

CREST authorised signatory

Section 13: Transaction Reporting

Introduction

Prior to 3 January 2018, EUI was approved by the FCA as an Approved Reporting Mechanism ("ARM") to operate a transaction reporting service to enable participants to make transaction reports to the FCA (the "EUI transaction reporting service"). The EUI transaction reporting service terminated with effect from 3 January 2018. Participants are no longer able to make transaction reports to the FCA or amend, delete, cancel any existing transaction reports using the CREST system.

This section 13 of this Chapter 7 describes the current CREST system functionality of the transaction report marker, the effect of splitting a transaction that had generated a transaction report, the retention of transaction reporting data, the retrieval of transaction reports, systems and functions following the termination of the EUI transaction reporting service and report responses from the FCA following the termination of the EUI transaction reporting service.

No other functionality is retained by the CREST system and available to participants with respect to the EUI transaction reporting service.

Transaction report marker

The transaction report marker is still available in the CREST system following the termination of the EUI transaction reporting service on 3 January 2018. If a participant inputs a transaction having the transaction report marker set to 'report to the FCA', the CREST system will replace that value with the value corresponding to 'no report', and no report will be generated and sent to the FCA.

Similarly, if a participant has opted in to a central sponsor service and the transaction report marker selected for the central sponsor service is 'report to the FCA', when any transaction is received from that central sponsor service the CREST system will replace that value with the value corresponding to 'no report', and no report will be generated and sent to the FCA.

Splitting

Where a transaction is split – manually or automatically - within the CREST system and the original transaction being split (the "parent") has generated a transaction report, the CREST system will not delete the transaction report for the parent or create a new transaction report for each newly created "sibling".

Retention of transaction reporting data

Under the FCA rules relating to transaction reporting prior to 3 January 2018, each reporting participant was required to maintain a record of the relevant data relating to all transaction reports that were submitted to the FCA, whether the transaction was carried out on that firm's own account or on behalf of a client.

Data related to transaction reports and transaction report cancellations accepted by the FCA will be available in the CREST system for enquiry for 20 business days following the generation of the report, after which time it will be removed from the system. Transaction reports which have been rejected by the CREST system or the FCA and transaction report cancellations which have been rejected by the FCA will be available for enquiry in the CREST system for 60 business days following the generation of the report.

EUI maintains archived records of data for transaction reports made to the FCA and transaction report cancellations accepted by the FCA for 13 years from the date that each report is submitted to the FCA. This includes data for transaction reports rejected by the EUI transaction reporting service before being sent to the FCA and data for transaction reports rejected by the FCA. Reporting participants may request that archived data is retrieved using the usual CREST procedures as specified in Chapter 4, section 8 of the CREST Reference Manual.

Following the termination of the EUI transaction reporting service on 3 January 2018, the transaction reporting data sent to the FCA prior to the termination will continue to be available as outlined above.

Retrieving transaction reports

Reporting participants may retrieve messages containing the latest status of a transaction report either interactively via the transaction report list screen (ATRL/ATRM) or via a file transfer message transaction report status change (ARSQ/ARSP). Retrieval messages also provide summary information on specified transaction reports and transaction report cancellations.

Reporting participants may (if they wish) choose either or both of the following criteria for retrieving transaction reports or transaction report cancellations (available for both interactive and file transfer retrieval methods):

- date – if a particular date is selected, all transaction reports and transaction report cancellations created on the selected date are set out in the retrieval message (otherwise, by default, all transaction reports or transaction report cancellations created on the current working date will be set out in the retrieval message); and
- transaction report status – if a particular status is selected, all transaction reports or transaction report cancellations for the selected status (on a given selection date) are set out in the retrieval message.

The following data is summarised in the retrieval message for each selected transaction report or transaction report cancellation:

- Transaction Reference Number;
- FCA report status (i.e. an indication of whether data is for a transaction report ('N') or a transaction report cancellation ('C'));
- transaction report status (i.e. the current status of a transaction report or transaction report cancellation); and
- status changed timestamp (i.e. the date and time that the current transaction report status was applied).

In addition, full details in relation to the content of a single transaction report or transaction report cancellation can be obtained interactively via the transaction report retrieve mechanism (ATRR/ATRS) or via a file transfer message transaction report (ATRQ/ATRP) by identifying the Transaction Reference Number and FCA report status.

Transaction report rejections can also be retrieved using the existing file change mechanism, as more particularly described in Chapter 4, section 8 of the CREST Reference Manual regarding enquiry facilities.

Additionally, a high-level breakdown of the status of a participant's transaction reporting for a given date is available in the CREST system.

Systems and functions following the termination of the EUI transaction reporting service

Those sections of the CREST Manual that describe practical limitations on the EUI systems or factors that may affect the time within which messages are processed (see e.g. Chapter 1, section 2) also apply to the functionality described in this section 13 of this chapter 7.

Report response from the FCA following the termination of the EUI transaction reporting service

The CREST system, with respect to transaction reports sent to the FCA prior to 3 January 2018, updates the transaction report with the report response details from the FCA, on the business day following the submission of the report.

If the transaction report is rejected by the FCA, the CREST system updates the transaction report with details of the errors returned by the FCA.

The following errors reported by the FCA can be passed onto the relevant reporting participant:

- Field does not contain a valid value (CON-103). This error is raised when a field within a record sent to the FCA does not contain a valid value. This is the most likely FCA error to be received by reporting participants;
- Internal Error (CON-100). This error is raised when a record sent to the FCA is not of the correct length;
- Internal Error (CON-104). This error is raised when a duplicate transaction report is received by the FCA;
- Internal Error (CON-105). This error is raised when the original transaction report is not found for update or cancellation;
- When the mandatory field is missing (CON-101). This error is raised when a record sent to the FCA is missing a mandatory field;
- When the field does not conform to the expected format (CON-102).

If one of these errors is received from the FCA, the CREST system updates the Transaction Reporting Status of the transaction report to indicate 'Rejected by the FCA'.

If the transaction report is accepted by implication and not rejected by the FCA, the CREST system updates the Transaction Reporting Status of the transaction report to 'Reported'.

Chapter 8: Stamp duty

Section 1: Introduction

EUI provides two discrete sets of procedures to support the assessment and collection of stamp duty reserve tax due to HM Revenue & Customs and stamp duty due to the Irish Revenue Commissioners on trades in chargeable securities.

As part of standard CREST settlement the CREST system incorporates procedures for the assessment and collection of duty in response to settlement instructions which are input into the system. In practice, it is anticipated that these procedures will be used by members where they input (or are treated as inputting) settlement instructions into CREST which relate to a single gross trade for the sale and purchase of securities. The relevant settlement instruction may itself settle in CREST on a gross basis or (after application of the netting procedures operated by EUI and described in Chapter 4, section 4A) on a net basis. The procedures for the assessment and collection of duty in this way are described in greater detail in sections 2 to 9 of this Chapter 8.

The Stamp Duty Assessment Service incorporates procedures for the assessment and collection of duty in response to non-settling "Stamp Assessed Trade" (SAT) instructions which are input into the system. In practice, it is anticipated that the Stamp Duty Assessment Service will usually be used by members where their (or their principals') trades are to be performed by way of net settlement in CREST, but the relevant netting process for those trades has been undertaken by a third party (and not EUI) outside the system. In such a case, no settlement instruction will enter CREST which relates to a single gross trade for the sale and purchase of securities. Any (DEL) settlement instruction which is input into the CREST system will reflect a gross trade or the net position of the two or more gross trades which are included in the netting procedure operated by the relevant third party. The Stamp Duty Assessment Service is described in greater detail in section 10 of this Chapter 8.

As a technical matter there are in the UK two charges relevant to the settlement of securities: stamp duty (a tax on documents) and stamp duty reserve tax ('SDRT' - a tax on transactions). In Ireland only stamp duty exists. In this Chapter, references to 'duty' should be taken as references to UK stamp duty or, more usually, UK SDRT (which is the tax which applies to most CREST transactions) and where relevant Irish stamp duty.

EUI does not enforce compliance with tax rules. It is the member's responsibility to input the correct details in respect of any transaction settled through the CREST system; or under the Stamp Duty Assessment Service, to procure that the correct details are provided by its SAT Sending Participant. The way in which the system and the relevant CREST Services operate is described in this Chapter. However, members should be aware of the following:

- The provisions relating to stamp duty and SDRT are complex. While CREST system procedures for these taxes apply many of the reliefs and charges which are applicable, they do not apply all of them. As a result, in certain circumstances members may have to account for tax on the relevant transaction(s) outside the CREST system or to pay tax through the CREST system and reclaim it subsequently. An example of this can arise where shares are issued to a depositary in connection with the issue of depositary receipts (duty must be accounted for outside the CREST system) or where transfers are made to depositaries in connection with the issue of depositary receipts.

- Certain reliefs may need to be claimed through the execution and stamping of a document, or may require documentary evidence to be kept. This is because some reliefs are only available for stamp duty and not SDRT. An example is the relief from stamp duty on transfers between companies in the same group.
- For UK chargeable securities, any CREST transaction which occurs, or any SAT instruction which is created without the deduction of duty, either at the standard (0.5%) or the higher (1.5%) rate, for instance as a result of the inputting of data flags, or where the bargain consideration is zero, will generate exception reports to HMRC. HMRC may request details of the transaction from CREST members to be forwarded to them.
- For Irish chargeable securities, any CREST transaction which occurs, or any SAT instruction which is created without the deduction of duty at the standard (1.0%) rate, for instance as a result of the inputting of data flags, or where the bargain consideration is zero, will generate exception reports to the Revenue Commissioners (in Ireland). The Revenue Commissioners may request details of the transaction from CREST members to be forwarded to them.
- HMRC (in the UK) and the Revenue Commissioners (in Ireland) are granted access as regulators and are continually supplied with data in respect of CREST transactions and may make interactive enquiries on the system or receive specially tailored reports, to allow them to check on the instructions for charging (or exempting) transactions settled through the CREST system. If a transaction has unusual features, such as the absence of bargain conditions, HMRC and the Irish Revenue Commissioners may raise enquiries to ascertain whether duty has been properly accounted for. Under the Stamp Duty Assessment Service, the relevant tax authority receives notice of reconciliation failures as between the relevant SAT instructions and the related (settling) DEL transaction(s) (flagged 'K - No SDRT liability or Irish Exempt, Net/Aggregate Transaction or Assessed Elsewhere') as from the Intended Settlement Date (ISD) for a period of 60 days. SAT instructions and other information (see Chapter 8, section 10) are also reported overnight to the relevant tax authority, which may then raise enquiries. In any of these circumstances, the relevant tax authority. It may require access to members' (or their principals') accounting records to audit transactions according to their own criteria. The tax authorities have certain audit procedures in connection with stamp duty. Members (or their principals) should keep adequate records to enable them to comply with these procedures.

The CREST system collects in principle duty (Stamp Duty Reserve Tax or SDRT on behalf of HMRC and Stamp Duty on behalf of the Irish Revenue Commissioners) from the purchaser (or his agent) on all transfers in the CREST system at the standard percentage rates of the stampable consideration. Exceptions to the standard rate may be applicable in certain circumstances: these are notified to the system by means of data flags attached when the transaction is input to the CREST system. Although liability to pay the duty as a rule falls on the purchaser, accountability may be with another CREST member, either by statute or by contractual agreement with the purchaser. Certain securities (principally fixed-interest securities or securities subject to the Growth Market Exemption (UK Securities) or Enterprise Securities Market exemption (Irish Securities) described in section 6 below) are exempt from stamp duty. The CREST system will recognise these by means of exempt flags linked (by the CREST system) to their ISIN codes. Securities bearing such flags will not be processed for stamp duty liability and any stamp-related fields which are completed will be ignored. Members can view the effect of these exemptions on their transactions using the CREST GUI via the transaction stamp status flag.

As explained further in section 10 of this Chapter 8, where a member intends that any duty payable in respect of its (or its principal's) trade(s) is to be assessed and collected under the Stamp Duty Assessment Service, the relevant settlement instruction (for transaction type DEL) input by the member (or its CREST central sponsor) for the trade(s) should be flagged with the transaction stamp status, 'K - No SDRT liability or Irish Exempt, Net/Aggregate Transaction or Assessed Elsewhere'. This will prevent the double assessment and collection of duty in respect of the same trade(s).

Whilst EUI may attach flags to individual accounts (for example C (1.5%)), it is the responsibility of CREST members to attach the correct Transaction Stamp Status flag to each individual transaction. Any flag attached by EUI to an account is not a representation by EUI that any or all transfers to or from that account attract a particular treatment. EUI does not advise on the taxation consequences of transactions; it is for each CREST member to take their own individual advice.

Section 2: Input

Note: this section 2 and the following sections up to (and including) section 9 of this Chapter 8 describe the procedure for the assessment and collection of duty outside of the Stamp Duty Assessment Service (which is described in section 10). Sections 2 to 9 set out, therefore, the procedures for the assessment and collection of duty where the relevant STP instruction is generated in the CREST system in response a settlement instruction input (or treated as input) by the member, rather than in response to a (non-settling) SAT instruction input by a SAT Sending Participant and assessed for duty under the Stamp Duty Assessment Service.

In order to generate a payment of stamp duty, input of the stamp fields in the relevant CREST transaction by one party only is required. Note that the transaction has to be fully inputted before stamp duty will be collected for that transaction. The stampable consideration is input by the member electing to be accountable for the payment of duty; thus, either the purchaser or the seller (e.g. on behalf of a client) may enter this amount.

For UK securities, the entry of a stampable consideration will always result in a 0.5% ad valorem charge unless:

- the security is stamp exempt due to being traded on a growth market; or
- the security is stamp exempt for any other reason; or
- the account has member account tax status Z (tax exempt) or status C (1.5%); or
- the account has member account tax status A (0.5%) and the transaction stamp status flag indicates another rate of duty (exempt or 1.5% - see below).

For Irish securities, the entry of a stampable consideration will always result in a 1.0% ad valorem charge unless:

- the security is stamp exempt due to being traded on the Enterprise Securities Market; or
- the transaction stamp status flag indicates exempt (see below).

Data flags determine the rate of charge, and are applied at account level (member account stamp status) and at instruction level (transaction stamp status). In general, those eligible for reliefs from stamp duty signify the fact by using the appropriate transaction stamp status flag. However, the CREST system automatically calculates the reliefs to UK duty available to intermediaries recognised by an EEA regulated market, MTF or RFE and intermediaries approved by HMRC, and on stock lending and repurchase transactions (introduced in the Finance Act 1997 and having effect for agreements entered into on or after 20 October 1997) and Irish duty available to recognised/approved intermediaries (introduced in the Finance Act 2007). The member indicates the capacity in which he has entered the transaction by means of the agent indicator, which has values for 'agent', 'principal' (as buyer or as seller), and 'not applicable'. A list of the member account flags and the data flags is set out at the end of this Chapter.

The currency in which the CREST system deducts duty from the accountable member is determined by the currency of the stampable consideration.

- For a security registered in the UK, or for transfers of CREST Depository Interests (CDIs) which are subject to stamp duty consideration may only be in sterling.
- For a security registered in Ireland, stampable consideration may be entered either in euro or sterling.

- The CREST system will pay all the duty it collects on UK registered securities (and CDIs which are subject to stamp duty) to HMRC, and all the duty it collects on securities registered in Ireland to the Revenue Commissioners.

If a consideration is being paid in a currency which is not a designated currency, this must be paid outside the CREST system. However, where the transaction involves a CREST-settleable security, CREST may be used to generate the payment of duty on such a trade, in which case the stampable consideration should be entered as the sterling equivalent of the bargain consideration (or euro equivalent for an Irish security on which duty is being paid in euro), adjusted as appropriate to reflect non-dutiable fees and commissions.

HMRC require that the CREST member must himself be FCA regulated, or be sponsored by an FCA regulated member, in order to be entitled to exceptions to the standard rate of duty. HMRC accept that a nominee for an FCA regulated member can allege stamp duty exceptions in the CREST system provided that the nominee firm is acting on instructions. Under the authority of HMRC, the CREST system applies an override on the input of members which are not FCA regulated and this results in all their purchases of UK-chargeable securities being charged at the standard rate of duty, regardless of whether an exempt transaction stamp status flag has been applied by the non-regulated participant.

The override facility may also be applied by EUI to particular CREST members, on the written instructions of UK or Irish tax authorities. It is understood that such action will be taken in exceptional circumstances only, as a result of non-compliance by a particular participant.

UK chargeable securities held on behalf of exempt bodies such as charities should be held in one or more member accounts with an exempt member account tax status. Transfers into such accounts will be automatically exempted from duty. HMRC have stipulated that where two or more charities are pooled within a single member account, the designation of that account should begin 'CH... ' (where this is not possible for any reason, the member should notify HMRC). In addition, HMRC require the inclusion of charity reference numbers on the associated legs of transfers destined for charities, in particular where custodians acquire securities on behalf of charities. Where securities are acquired on behalf of a fund or investment manager which is acting on behalf of a charity, HMRC will, where the relevant fund or investment manager has entered into approved arrangements with it, permit the member acquiring the securities to provide the fund or investment manager's unique HMRC reference. The member acquiring the securities must first clearly establish the following:

- that the fund or investment manager has entered into approved arrangements with HMRC; and
- that the fund or investment manager agrees to retain and make available to HMRC on enquiry records relating to the charity client and the instructions to purchase securities for and on its behalf and permits the member to provide its unique HMRC reference.

Separate member accounts are also required for transfers to a depository receipt or clearance service (or nominee thereof): these are subject to a higher rate of duty (1.5%) (except where newly created chargeable securities are delivered to the operator of a clearance service or depository receipt issuer, in which case the transfer is exempt from duty), which is charged automatically on transfers to accounts with the appropriate tax status[41]. Depository receipt

[41] Where newly created chargeable securities are delivered to the operator of a clearance service or depository receipt issuer, Transaction Stamp Status flag W may be used to indicate that the transfer is exempt from duty.

custodians or depositaries have a duty to see evidence that duty has been paid at the correct (1.5%) rate before permitting the transfer into the depository. Since a person cannot see in the CREST system what stamp fields the delivering broker has input, HMRC have agreed to a procedure whereby the broker enters details in the Shared Note field (which is visible to his counterparty) as follows: '1.5% SDRT paid, amount £[x]'. In entering this information, the broker is deemed to be making a representation that the correct duty had been paid on the transfer (depending on the arrangements between transferor and transferee).

Data Flags applied at transaction level: transaction stamp status

Every transfer in the CREST system of a security liable to UK or Irish duty will bear a transaction stamp status flag. This flag has 33 different values: if no value is specified on input, the system defaults are: for a UK chargeable security, value 'P', the standard UK 0.5% ad valorem rate; for an Irish chargeable security, value 1, the standard Irish 1% ad valorem rate.

Of these flags, 26 are applicable only to UK chargeable securities, (and CDI transfers which are subject to stamp duty) 5 only to Irish chargeable securities and two, the K flag and the N flag, to both. The flags are as follows:

FLAG	MEANING
A*	no SDRT liability, change of trustee
B*	no SDRT liability, transfer to specific beneficiary of will, transfer to residual beneficiary of will or distribution to beneficiary of settlement
C*	no SDRT liability, transfer in intestacy
D*	no SDRT liability, appropriation on death
E	no SDRT liability, confirmation of traditional option
F	no SDRT liability, hedge against traditional option
G*	no SDRT liability, transfer on marriage
H*	no SDRT liability, transfer on divorce
I*	no SDRT liability, transfer on liquidation
J*	Irish exempt, CCP Clearing related relief claimed
K	no SDRT liability or Irish Exempt, Net/Aggregate Transaction or Assessed Elsewhere
L*	no SDRT liability, gift inter vivos
M*	no SDRT liability, death (varying disposition)
N	no SDRT liability, centrally generated transaction (cannot be input by members)
O	no SDRT liability, transfer to/from nominee, with no change of beneficial owner (NCBO) or transfer between nominees of the same beneficial owner
P	0.5% ad valorem SDRT, default
Q	Irish exempt, for any other reason
R	1.5% ad valorem SDRT
S	no SDRT liability, transfer to exempt charity
T	no SDRT liability, SDRT paid inside the CREST system on another CREST transaction
U	no SDRT liability, stamp duty paid outside the CREST system on physical document (including Form 169); or SDRT paid (or to be paid) outside the CREST system on corporate action

FLAG	MEANING
V*	no SDRT liability, NCBO-NCLO (no change in legal or beneficial owner) including pure deor re-materialisation
W	no SDRT liability, issuing house exemption on new issue
X	no SDRT liability, contra trade linked to a settled transaction
Y	Irish exempt, no change in beneficial ownership (NCBO)
1	Irish 1% ad valorem (exact percentage)
2	no SDRT liability, transfer result of corporate action.
3*	no SDRT liability, intra-group transfer, a letter of direction having been adjudicated as exempt by the Stamp Office.
4	no SDRT liability, stock loan or repo, stock loan return or repo return or transfer of DBV collateral, relating to loans to market makers.
5	no SDRT liability, letter of direction executed (including pension scheme mergers, purchase of life insurance policies and transfers as security for loans)
6	no SDRT liability, AUT merger or AUT/OEIC conversion/amalgamation
7	no SDRT liability, security on an overseas register
8	Irish exempt, new issue.

For the exemption to ad valorem rates marked above with *, HMRC (and also the Revenue Commissioners in respect of flags Q and Y) expect that the CREST member (or the sponsor, in the case of a sponsored member) will retain documentary evidence; for other exemptions, electronic records (where appropriate) will be required to support the alleged reason.

HMRC have explained that a 'transfer by way of security for a loan' can be executed through the CREST system using flag 5 provided the transfer is accompanied by a letter of direction which is duly stamped with £5 fixed duty. CREST transaction flag 5 applies to this and certain other transfers on which stamp duty at a fixed rate would apply to transfers in materialised form. Full details are in the EUI publication 'SDRT in CREST: A Guide to Market Practice'.

Exempt securities: securities that are not liable to duty on transfer (i.e. non-chargeable securities) are identified via exempt flags linked to their ISINs. Securities bearing such flags will not be processed for stamp duty liability, and so transactions need not carry stamp fields, such as stampable consideration or transaction stamp status.

Section 6 explains more about other exemptions, such as the growth markets and Enterprise Securities Market stamp exemptions.

Irish registered companies in the CREST system

The Irish Finance Act 2003 amended the Irish Stamp Duties Consolidation Act 1999 so as to ensure that Irish stamp duty is chargeable to the contracts of sale performed by way of net settlement and not just the net settlement transaction. This is subject to the reliefs which are described further in Chapter 14 of the CREST Central Counterparty Service Manual. To support the net settlement of trades in Irish securities, the netting procedures described in Chapter 4, section 4A operate in relation to such securities.

Transfers within a single nominee account

By virtue of the Finance Act 1996, SDRT is calculated as an exact percentage: amounts of 0.5p and over are rounded up to the nearest penny. The CREST system applies this so that if a bulk transaction is allocated across a number of separate clients, there is no difference between the duty on the bulk transaction and the total amount of duty payable on allocations. Transfers within a single nominee account therefore do not need to be re-input as non-settling transfers for stamp duty purposes save where these represent a change of underlying beneficial ownership for a consideration (there may, however, be other reasons for re-input,).

Where the CREST system's splitting function is used to allocate the original transaction across several member accounts, the duty is recalculated from the pro-rated stampable consideration. The total duty paid on the transaction remains unchanged after splitting, unless the recipient member accounts have non-standard tax statuses. In the latter case, a new calculation of duty is made for the sibling transactions, based on the tax rate applicable to the accounts to which the stock is being delivered.

Agent indicator

The agent indicator flag on the transaction input indicates whether the participant is a regulated firm acting as an agent or principal. Where a regulated CREST member acts as an agent in a transaction this indicator is set on all legs of the agency trade. Members acting in an agency capacity - acquiring stock on behalf of another (e.g. their client) - will not acquire beneficial ownership of the stock and will not therefore themselves be liable for duty. They may however elect to be accountable for their purchasing clients' duty i.e. to pay the duty on behalf of those clients.

If agency capacity is alleged but no stampable consideration is entered by either party, the CREST system will not raise a stamp charge, but may generate exception reports for HMRC if the purchaser does not subsequently account for the duty. Further, where a purchaser of securities indicates that he is acting in a principal capacity in the transfer, the CREST system will assess the transfer for the relief from duty available to principal traders, unless overridden by a transaction stamp status flag (see above). For Irish participants, the ability to mark a transaction as dealt in an agency capacity is not dependent on their regulated status.

Depositing stock into the CREST system in the course of a sale

Where on deposit of stock into the CREST system the change in ownership is only one of legal title, no UK duty (SDRT) will be payable. If, however, beneficial title passes - as would occur if the broker acquiring securities on dematerialisation were acting in a principal capacity - then normal UK 0.5% duty (SDRT) is payable. The stampable consideration would be input by the broker who would, subject to the SDRT regulations, be liable to pay duty.

Withdrawing stock from the CREST system following a purchase

Where a stock withdrawal from a broker's nominee or clearing account into his client's name represents a change in legal but not beneficial title, this will not be subject to UK duty (SDRT) in the CREST system. In such circumstances, the client's purchase would have involved a transfer in the CREST system to the broker's nominee or clearing account, subject to 0.5% duty (SDRT) as normal, since the client would have acquired beneficial title to the stock. No additional liability to duty would arise on the broker passing the stock from that CREST account into certificated form for

the purpose of final delivery to his client. The appropriate instructions for the payment of the duty would be input by the broker, from whom the duty would be debited in the CREST system.

Options deliveries to depositary receipt issuers or clearance services

When securities are transferred to a depositary receipt issuer or clearance service (or to their respective nominees) as a result of the exercise of an option, the transfer will attract SDRT at the 1.5% rate, based on either the option strike price or market value of the securities, whichever is higher at the time of the transfer.

Market practice is for the depositing member (i.e. the member delivering stock) to account for SDRT on the delivery into the depositary/clearance service account (although, in strictness, it is the depositary receipt issuer/clearance service which is accountable).

To correctly account for SDRT the member delivering stock sets the Bargain Condition flag to 'Result of Option' on the transaction to identify that a delivery results from the exercise of an option, and the stampable consideration to the quantity of the securities multiplied by the option strike price. The CREST system then determines which is higher, the stampable consideration or the market value of the securities, and uses the higher amount to calculate the amount of SDRT payable at the 1.5% rate. If neither CREST member to the transaction populates the stamp consideration field, the CREST system will calculate SDRT using the market value of the securities.

Where a delivery resulting from the exercise of an option is into a standard member account, the Bargain Condition flag 'Result of Option' must still be set on the transaction by the member delivering stock, and the stampable consideration to the quantity of the securities multiplied by the option strike price. In these circumstances the transfer will attract SDRT at the 0.5% rate.

Stock events: treatment of post-rights issue stock movements

In a rights issue, the company issues new stock in exchange for payment. An individual subscribing for the new shares (on the basis of possession of the nil-paid right to do so) does not pay stamp duty. Any subsequent transfers of the newly issued shares are subject to ad valorem duty in the normal way.

At the end of the offer period there may be a proportion of nil-paid rights which have not been exercised. These constitute the rump or stick of the issue. The corporate broker to the issue (i.e. the issuing house) will spend up to 48 hours endeavouring to place this unallocated stock. If successful, he will receive payment from one or more placees. The newly issued stock is then issued into the name of that placee: 'pension fund XYZ'. There is no stamp duty liability on this initial issuing of stock to the first legal owner, although if any premium is passed to those shareholders whose rights lapsed, SDRT may be due on this sum.

Corporate brokers differ in their current, paper based, practice as regards the name in which the stock is initially issued. A number have the fully-paid rights issued into their own nominee name. These fully-paid rights are then split/renounced into the names of the placees.

Where a corporate broker is unsuccessful in finding placees, the underwriters are obliged to subscribe for the remaining stock. This issue of stock into the name of the lead underwriter, and/or his sub-underwriters, is not normally liable to stamp duty.

The current process of transferring stock and cash between placees, the corporate broker and the company's receiving agent is normally sequential. The placees pay for the new stock, some time later receiving the stock from the corporate broker.

The CREST system offers the opportunity to introduce delivery versus payment to the distributors of shares in connection, in particular, with public offers and placings. It is possible that either the fully paid rights or the resulting securities into which they are transformed will be moved from the company's receiving agent to the corporate broker against payment. These movements within the CREST system will generate CREST payments in exactly the same way as standard market trades.

The corporate broker and placees will also match CREST instructions, simultaneously moving the stock from the corporate broker's name into that of the placees. There is no general SDRT exemption, except for the issuing house in a public offer. HMRC's ruling on particular cases may need to be sought. Transaction stamp status flag 'W' may be used for straightforward issues of shares in a placing and with HMRC authority for the SDRT exemptions applying to certain public offers.

Claims relating to capitalisation issues

In a capitalisation or bonus issue, registered holders receive an additional allotment of shares. Open transactions in the underlying security may give rise to claims on the bonus issue. For example, the seller may still be the registered holder of stock on record date, despite having entered into a contract to sell the stock including the bonus issue. Hence the seller will receive the bonus issue, which he must pass over to the buyer.

The CREST system will raise a claim transaction transferring the bonus stock from the seller to the buyer. This movement of stock will be dematerialised. Since there will be no £5 rate of SDRT, no stamp liability will arise in respect of the claim transfer.

Transformations

Liability to pay SDRT is not affected by the central deletion of instructions by the automatic transformation software and the calculation of SDRT remains made by reference to the information contained in the deleted instructions. Accordingly replacement transactions centrally generated bear the 'N' flag (no SDRT liability, centrally generated transaction).

Section 3: Amendment of transactions

For matching transactions, the stamp related fields (which are themselves all non-matching) - i.e. Agent Indicator, Transaction Stamp Status (which determines the rate of duty) and Stampable Consideration (which also defines the currency in which the CREST system will deduct the duty from the member accounting for it) - can all be amended before matching (unless included in a central sponsor transaction under the direct input services made available by EUI). None of these fields can be amended after matching. In order to change such details after matching, it is necessary to execute a matched deletion of the original transaction and then input a substitute transaction with the stamp fields amended as required. Deletions will generate exception reports for the tax authorities. However, note that if the member account is amended on the transaction then the amount of stamp duty due may be affected and this will automatically be taken into account by the CREST system.

It will not be possible to amend the stamp fields in conjunction with splitting. If some of the underlying clients are eligible for exceptions, the original trade (or one of its siblings) could be deleted and re-input in the appropriate shapes; alternatively, any excess duty paid could be reclaimed outside the CREST system. However, note that if the sibling is being transferred into a member account with a tax status of exempt or 1.5%, the rate charged will reflect that tax status.

Outside the Stamp Duty Assessment Service, the CREST Applications Host generates an instruction (the ***relevant PTO***) to initiate or implement an STP transaction (instructing the payment of duty by the CREST member whose CMA is to be debited) in response to the related settlement instructions attributable to the accountable member. For the purposes of paragraphs 2 and 3 of CREST Rule 13 (Settlement finality), this means that:

- the relevant PTO enters the designated system at the point it is created in the CREST Applications Host in response to the related settlement instruction; and
- as from the point of its entry the relevant PTO is incapable of being amended by the single input of an instruction from the member to whom it is attributable, it is irrevocable from the moment of its entry into the system.

Section 4: Matched deletion of transactions

HMRC have stipulated that an instruction should not be deleted unless the agreement to transfer securities was not legally enforceable. Members initiating matched deletion instructions to the CREST system do so on the basis that HMRC may require that the original transaction, the instructions to delete and the replacement transaction are all reported to the FCA.

Only unsettled transactions can be deleted in the CREST system; (central sponsor transactions may not be deleted even before matching). If a deletion is effected before intended settlement date, the CREST system creates a stamp duty credit, offsetting the debit already created. A matched deletion can be effected after the original intended settlement date has passed. In this case, the duty would have been deducted by the CREST system (at the latest on T+10), and the deletion would result in that duty being refunded in the CREST system, by means of a credit stamp payment on the next working day. See Section 2 of this Chapter for the effect of central deletion of instructions by EUI in the course of operating the automatic transformation software.

Outside the Stamp Duty Assessment Service, the CREST Applications Host generates an instruction (the ***relevant PTO***) to initiate or implement an STP transaction (instructing the payment of duty by the CREST member whose CMA is to be debited) in response to the related settlement instructions attributable to the accountable member. For the purposes of paragraphs 2 and 3 of CREST Rule 13 (Settlement finality), this means that:

- the relevant PTO enters the designated system at the point it is created in the CREST Applications Host in response to the related settlement instruction; and
- as from the point of its entry the relevant PTO is incapable of being deleted by the single input of an instruction from the member to whom it is attributable, it is irrevocable from the moment of its entry into the system.

Section 5: Settlement

Automatic calculation of duty by the CREST system will be based on the stampable consideration, in conjunction with the transaction stamp status to determine the duty applicable. Both will be input by the accountable member for each transaction on which duty at 0.5% is payable or 1% in the case of transactions subject to Irish stamp duty. The exception to this rule applies in the case of UK chargeable securities where a dedicated member account has been set up for either charity clients (exempt) or depository receipts and clearance services (normally higher rate of duty). For these, the member account tax status will drive the rate of duty (the stampable consideration must still be entered).

Duty is calculated overnight, on the day that instructions match or on input (for single sided transactions such as Own Account Transfers) in the CREST system. The matching process results in a record being written to the member's cash queue, the actual debit taking place either on intended settlement date or on T+10, whichever date is the earlier.

The CREST system holds all stamp duty collected by it through the system, from the time of collection, for the account of HMRC (if deriving from transfers of UK chargeable securities) or the Revenue Commissioners (if from Irish chargeable securities). By agreement with the respective tax authorities, any interest earned on that money before it is paid over to them is retained by EUI.

Section 6: Reliefs and exemptions automatically applied by the CREST system (independently of data flags applied at member account and transaction level)

Principal trader relief

The CREST system supports the reliefs available in both the UK and Ireland to principal traders. EUI maintains data on recognised or approved intermediaries on behalf of HMRC and Revenue Commissioners, and whether securities are regularly traded on regulated markets, multilateral trading facilities, recognised foreign exchanges and recognised foreign options exchanges, based on source information obtained from the exchanges and HMRC. This data, together with data relating to the venue on which the agreement to transfer the securities is effected, enables the CREST system to calculate automatically reliefs available for those qualifying firms which have effect from 1 November 2007. All transactions in UK & Irish chargeable securities reported as being executed in a principal capacity are assessed for their eligibility for principal/intermediary relief.

Principal traders' purchases are automatically relieved of duty (SDRT and Irish stamp duty) in the CREST system. The relief rate of duty is that set from time to time by HM Government and Revenue Commissioners. In order for the CREST system to calculate any duty due in cases where relief is not available, principals must enter the stampable consideration on their purchases of stock, unless the transaction stamp status for the DEL transaction is set to 'K - No SDRT liability or Irish Exempt, Net/Aggregate Transaction or Assessed Elsewhere' (i.e. the relevant duty is to be assessed and collected under the Stamp Duty Assessment Service as described in section 10 below). Where duty is assessed in respect of a trade under the Stamp Duty Assessment Service, the stampable consideration is derived from the stock quantity and trade price information for the trade provided by the SAT Sending Participant.

Principal traders acting in certain capacities are not entitled to the intermediaries relief. It is for the parties concerned to decide whether the relief applies and trade report the transaction accordingly to the relevant exchange via a mechanism outside the CREST system. The CREST system will only act on the basis of information received from the exchange and is not responsible for monitoring the availability of the relief.

Clearing relief

The CREST system also supports clearing relief, and the purchases of eligible participants are automatically assessed for relief of duty (SDRT). EUI maintains a list of participants eligible for clearing relief on behalf of HMRC. These participants are used exclusively for the purpose of clearing over the counter transactions and those which have been agreed on a Recognised Investment Exchange (RIE)[42]. Participants who are eligible for clearing relief cannot obtain relief as a principal trader or by holding a member account with a tax status of Z (tax exempt). Similarly principal traders are not eligible for clearing relief.

Stock lending relief

The CREST system is also able to calculate automatically the separate relief available in the UK on stock lending, repurchase (repo) and collateral transactions. Tables of exchange members, authorised EEA members, regularly traded securities and regulated markets, multilateral trading facilities and recognised foreign exchanges which have relevant lending rules are maintained in the

[42] In this context, in accordance with section 116(4)(b) of the Finance Act 1991, "recognised investment exchange" means a recognised investment exchange within the meaning of the Financial Services and Markets Act 2000 or a regulated market or multilateral trading facility within the meaning of MiFID (Directive 2004/39/EC).

CREST system, to allow for the automatic calculation of the reliefs. The source information is again provided by those exchanges. Lending and collateral transactions are relieved at a rate set from time to time by HM Government, which may be different from that applying to principal purchases.

Growth markets exemption for UK securities

Securities which are admitted to trading on HMRC "recognised growth markets" and which are not listed on a recognised stock exchange are exempt from stamp duty and SDRT.

Inclusion of securities for growth markets exemption

Eligible securities qualify for the exemption wherever they are traded and will be designated as "Stamp Exempt" in the CREST system.

On receipt of notification that a security is subject to the growth markets exemption, EUI will set the "Stamp Exempt" flag to "Yes" for the specified growth markets exemption period. For transactions involving growth markets securities, where the trade date falls on or after the start date and before the end date of the specified growth markets exemption period for which the "Stamp Exempt" flag is set, SDRT processing will no longer occur for that security.

Removal of securities for growth markets exemption

On receipt of notification that a security is no longer subject to growth markets exemption, for whatever reason, EUI will set the "Stamp Exempt" flag to "No" and normal SDRT processing will resume. This will happen from the date the security is no longer eligible for the growth markets exemption (the end date).

Issuers are responsible for advising EUI of changes to their growth market stamp exempt status, and EUI is not responsible if incorrect or no such notifications are received.

Securities eligible for the growth markets exemption are published on the Euroclear website.

Enterprise Securities Market exemption for Irish securities

Securities which are admitted to trading on the Enterprise Securities Market, operated by The Irish Stock Exchange plc, are exempt from Irish stamp duty on the transfer of stocks or marketable securities.

The processes for inclusion and removal of securities from the Enterprise Securities Market exemption are identical to those described for growth markets exemptions above.

EUI is notified of changes to securities included on the Enterprise Securities Market by The Irish Stock Exchange plc.

Securities eligible for the Enterprise Securities Market exemption are published on the Eurodear website.

Section 7: CREST generic transaction types eligible for exemption

The following CREST transaction types are not processed for stamp duty liability because the transactions to which they relate are not normally chargeable to duty:

- Unmatched stock event (USE);
- Auto-collateralising repurchase (SCR);
- Registrars adjustment (REG); and
- Benefit claim (CLA).

CREST participants should, however, account to the tax authorities outside the CREST system for any duty which is due on one of the above transaction types giving full details of the transaction concerned. A member may not use the Stamp Duty Assessment Service for the collection and assessment of duty in respect of any trades to which the above transaction types relate. Under the Stamp Duty Assessment Service, SAT instructions should only be input in relation to trades for which (securities delivery) DEL transactions (flagged 'K - No SDRT liability or Irish Exempt, Net/Aggregate Transaction or Assessed Elsewhere') have been entered into the CREST system for settlement.

Changes of legal (but not beneficial) ownership in the CREST system are not liable to duty. Such transfers will still need to be flagged with the appropriate stamp transaction status (O for UK chargeable securities, Y for Irish chargeable securities). Even though a stock withdrawal converts securities from electronic to certificated form, and the £5 fixed UK Stamp Duty (or Irish £10 duty) on paper transfers has not been abolished, the withdrawal is not itself a paper transfer and will not therefore be subject to duty of any kind. If the stock withdrawal involves a change in beneficial ownership, this transfer will be liable to normal duty.

Section 8: Statutory duty of Registrars

Transactions that have passed through the SDRT process in the CREST system will not need to be checked by registrars for the correct payment of duty. Deposits of certificated stock into the CREST system involving a change in legal (but not beneficial) title - for example, where the certificated holder is moving his stock into a broker's nominee account, but still retaining beneficial title to that stock - will need to be accompanied by a CREST Stock Transfer Form, on which the 'No change of beneficial ownership' condition is indicated. No duty will be payable on such deposits.

A deposit of stock into the CREST system in the course of a sale via an agency broker will also be exempt from duty on the transfer into the broker's client nominee account. The CREST Stock Transfer Form will indicate 'No change of beneficial owner'.

Where certificated stock is being transferred to a CREST member acting in a principal capacity, 0.5% duty will be payable on the transfer and will be collected inside the CREST system. The CREST Stock Transfer Form will need to indicate the change of beneficial ownership but it will not itself be stamped. As the actual transfer will be a dematerialised one which occurs in the CREST system, and be subject to SDRT, the registrar's obligation in respect of physical transfers (to check that Stamp Duty has been paid on the transfer before registering it) will not be applicable.

Section 9: Impact of the netting procedures and central sponsor services

Introduction

In relation to the netting procedures described in Chapter 4, Section 4, there are various different options that members can take, including for the creation of 'automatically matched' gross transactions and 'automatically matched' net transactions under the relevant central sponsor services. For more detail of the central counterparty service and applicable stamp duty reliefs, members are referred to the CREST Central Counterparty Service Manual.

The stamp duty analysis set out above in this Chapter 8 will also, in general, apply where the netting procedures are used. This is because no new agreement arises as between the 'settlement firm' and the CCP as a result of a member opting into netting procedures: the existing contract is simply performed by means of (net) settlement in accordance with the netting procedures operated by EUI. Stamp duty will continue to be calculated on gross transactions made between participants before they are processed under the netting procedures and therefore the amount of stamp duty payable will be unaffected.

Where a member has opted into the netting procedures, he will not necessarily be required to send (by customer input) a gross DEL transaction before the netting procedures operate in relation to such a transaction attributable to the member. This has an effect on how stamp duty is determined. In particular if a member opts for central sponsor services in relation to gross DEL transactions, stamp fields will be completed as part of the direct input services provided by EUI as follows:

- the Transaction Stamp Status will be 'P' so that the standard rate of 0.5% SDRT will apply. However, this will be subject to any flag attaching to a particular member account in the CREST system. For example if a transaction was carried out for a member flagged as a clearance service the rate of tax payable would increase to 1.5%;
- the Agent and Principal indicator will be completed from the Dealing Capacity Buyer and Dealing Capacity Seller information on the trade feed;
- EUI will complete the Stampable Consideration field from the input in the consideration field if the party is a principal. If the party is an agent, this field will be left blank. This is consistent with market norms for agency transactions.

Reliefs and Reporting

As indicated above, members which opt for central sponsor services in relation to gross DEL transactions will find that reliefs or exemptions can no longer be specified on a transaction-by-transaction basis, as the transaction will always be flagged 'P'. However, intermediary relief will continue to be applied. Following the application of this relief the gross transactions will then be assessed for SDRT by the Stamp Processing Unit. The CREST system will send transaction reports to HMRC for every transaction assessed by the Stamp Processing Unit irrespective of whether it was automatically matched or not.

Net transactions

The net DEL transaction to effect settlement should not be subject to stamp duty or SDRT. On automatically matched net transactions, the Agent Indicator and Stampable Consideration fields will be left blank and the transaction stamp status completed with a status of 'N' for 'no SDRT

liability, centrally generated transaction (cannot be input by members)' on the members side of the transaction. Whilst net transactions will not have stamp charged on them, their details will be sent to the Stamp Processing Unit to ensure they are passed to HMRC.

Members who opt to match netted transactions must ensure they specify transaction stamp status value 'T' to avoid being charged SDRT on the net transaction.

Netting of trades in Irish securities

The CREST system populates Irish Stamp fields on the gross DEL transactions using the trade information received (initially) from the relevant trading platform. The fields are completed according to existing market practice and the gross transactions are then assessed for Irish Stamp by the Stamp Processing Unit. The CREST system sends a report to the Irish Revenue Commissioners for every transaction assessed by the Stamp Processing Unit, irrespective of whether it was automatically matched via central sponsor services or not.

Participants who opt for central sponsor services in relation to gross DEL transactions cannot account for Irish Stamp on the client leg of the trade. As the processing follows the Irish legislative position, any firm that wishes to account for Irish Stamp on the client leg needs to match (by customer input) all gross DEL transactions addressed to them and make the relevant inputs themselves.

For the relevant 'CCP' participant, Irish Stamp fields on transactions will be populated in the same manner as the fields on transactions in UK securities.

Irish Stamp Duty will be calculated on the gross transaction data, which means there are no changes to how Irish Stamp Duty is assessed.

If a member opts for central sponsor services in relation to gross DEL transactions, stamp fields will be completed as part of the direct input services provided by EUI as follows:

- Agent indicator on the transaction is defaulted from Dealing Capacity Buyer and Dealing Capacity Seller on the trade feed;
- where the Dealing Capacity (Buyer or Seller) is 'A' the Agent indicator on the transaction is completed with 'A' for Agent;
- where the Dealing Capacity (Buyer) is 'P' the CREST system completes the agent indicator with 'P' for Principal Purchase;
- where the Dealing Capacity (Seller) is 'P' the CREST system completes the agent indicator with 'S' for Principal Sale;
- The CREST system completes the Transaction Stamp Status with '1' for the standard rate of 1% ad valorem Irish Stamp for all gross agency purchases settled under central sponsor services, and 'Z' for all Principal Purchases; and
- The CREST system completes the Stampable Consideration field from the input in the consideration field if the party is an agency purchaser. If the party is principal, this field will be left blank.

Automatically matched net transactions do not have stamp duty charged on them. Under these transactions, the agent indicator and stampable consideration fields are left blank and the transaction stamp status completed with a status of 'N' for 'no Stamp liability, centrally generated

transaction (cannot be input by members)' on the member's side of the transaction. Whilst net transactions do not have stamp charged on them, their details will be sent to the Stamp Processing Unit to ensure they are passed to the Irish Revenue Commissioners across the nightly data feed provided to them by EUI.

Members who opt to match (by customer input) net DEL transactions must ensure they specify the appropriate transaction stamp status value to avoid being charged Irish Stamp on the net transaction.

Section 10: Stamp Duty Assessment Service

Introduction

Sections 2 to 9 of this Chapter 8 describe the procedures for the assessment and collection of duty when the CREST system generates STP transactions in response to settlement instructions which have entered the CREST system.

However, as explained in section 1 above, there may be circumstances – most likely to occur where trades in chargeable securities are netted by a third party outside the CREST system, for settlement within the system – where the procedures described in sections 2 to 9 would not operate so as to enable or facilitate the efficient and effective assessment and collection of duty.

For these purposes, EUI provides the Stamp Duty Assessment Service (the *SDAS*). EUI performs its functions under the SDAS in its capacity as a recognised CSD.

SDAS: participants

There are two types of participant in the SDAS:

- SAT Sending Participants; and
- SAT Settlement Participants.

SAT Sending Participants: overview of CREST services

It is a CREST Requirement that a SAT Sending Participant must at all times be a user in the CREST system.

A user which wishes to access the CREST services made available to a SAT Sending Participant must opt-in to those services. Once opted-in, its User ID will be flagged as being that of a SAT Sending Participant. This will enable SAT Settlement Participants (see further below) to elect to use that SAT Sending Participant to create (non-settling) "Stamp Assessed Trades" (SAT) instructions on their behalf.

The following CREST services are made available by EUI to a SAT Sending Participant.

- EUI operates systems and procedures that enable EUI to receive and process SAT files sent to it by SAT Sending Participants through a secure internet connection (or other secure methods in contingency scenarios). The SAT files contain information relating to each (gross) trade executed by a SAT Settlement Participant (or its principal), who has elected to use that SAT Sending Participant under the SDAS in relation to the relevant (gross) trade.
- EUI accepts information forms from a SAT Sending Participant in relation to each SAT Settlement Participant for which it proposes to act. This information is used to populate mapping systems maintained by EUI. This information, and these systems, are used by EUI to convert the information contained in each SAT file received from a SAT Sending Participant into (non-settling) SAT instructions for the SAT Sending Participant acting on behalf of each SAT Settlement Participant that has elected to use that SAT Sending Participant under the SDAS.
- Each SAT instruction created under the service for a SAT Sending Participant acting on behalf of a SAT Settlement Participant will contain sufficient information in respect of each (gross) trade of the SAT Settlement Participant (or its principal) to enable the service to assess the underlying trade for duty and to identify the SAT Settlement Participant from whom payment of any duty due is to be made.

- EUI provides facilities to each SAT Sending Participant which enable that SAT Sending Participant: (i) to enquire as to the processing status of a SAT file sent by it to EUI; (ii) to view any constituent instructions within a SAT file which have been rejected under the service for any reason (for example, the SAT Sending Participant is no longer permitted by the relevant SAT Settlement Participant to send the information on its behalf); and (iii) to view the information held in the mapping systems relating to the SAT Settlement Participants that are using that SAT Sending Participant under the SDAS.

SAT Settlement Participants: overview of CREST services

A participant who wishes duty to be assessed and collected under the SDAS must **opt-in** to those services and specify which SAT Sending Participant(s) it elects to use under the service. A participant who makes such an election is a SAT Settlement Participant. EUI operates procedures to enable a SAT Settlement Participant to make this election and to terminate the permission of a SAT Sending Participant to act on its behalf under the service.

The following CREST services are made available by EUI to a SAT Settlement Participant.

- EUI operates systems and procedures that enable a SAT Settlement Participant to elect to use a SAT Sending Participant (and to terminate the permission of any SAT Settlement Participant previously selected by the SAT Sending Participant).
- EUI operates the systems and procedures (as described under *"SAT Sending Participants: overview of CREST services"* above) that enable or facilitate a SAT Sending Participant selected by the SAT Settlement Participant to create SAT instructions on behalf of the SAT Settlement Participant.
- EUI operates procedures that enable a SAT Settlement Participant to (match) delete SAT instructions which have been created on its behalf (for example, if the SAT instruction contains incorrect information).
- The CREST Applications Host creates an STP transaction attributable to a SAT Settlement Participant in respect of those trades which, on the basis of the information contained in the SAT instructions created on behalf of the SAT Settlement Participant for those trades, are assessed for duty payable by that SAT Settlement Participant.
- EUI operates procedures under which it seeks to reconcile SAT instructions created on behalf of a SAT Settlement Participant with a DEL settlement instruction(s) attributable to that SAT Settlement Participant which is flagged with the transaction stamp status 'K - No SDRT liability or Irish Exempt, Net/Aggregate Transaction or Assessed Elsewhere' (and which shares common criteria with the related SAT instructions).
- EUI provides facilities to each SAT Settlement Participant which enables the SAT Settlement Participant: (i) to enquire as to the stamp processing status of a SAT instruction which is created on its behalf ("Not assessed" or "Stamp assessed"), including information relating to the deletion of a SAT instruction; (ii) to view reconciliation failures (and the related SAT instructions and settlement instructions); (iii) to view the information relating to the SAT Settlement Participant held in the mapping systems; (iv) to verify that the service holds the correct details of the SAT Sending Participant(s) which is/are permitted by the SAT Settlement Participant to create SAT instructions on its behalf; and (v) to view STP transactions which are created and attributable to the SAT Settlement Participant (including the stamp constituents of any such STP transaction).

Responsibility of EUI

EUI is responsible to each SAT Sending Participant for EUI's provision to it of the CREST services described under *"SAT Sending Participants: overview of CREST services"* above; and EUI is responsible to each SAT Settlement Participant for EUI's provision to it of the CREST services described under *"SAT Settlement Participants: overview of CREST services"* above.

EUI is not responsible to any person for the functions performed by a SAT Sending Participant in connection with the SDAS. EUI is not responsible for any information that is sent in a SAT file until that file is received through the secure internet connection (or other secure methods in contingency scenarios) by the systems operated by EUI to process SAT files under the SDAS.

Further, EUI does not verify any information provided to it by a SAT Sending Participant under the SDAS; nor does EUI monitor the continuing accuracy of any information held in relation to a SAT Settlement Participant or its transactions. This information can be verified or otherwise viewed by the SAT Settlement Participant or its SAT Sending Participant under the CREST enquiry facilities made available by EUI to either or both of them under the SDAS.

Responsibility of SDAS participants

As a result, SAT Settlement Participants and SAT Sending Participants should monitor information held about them, their transactions or their clients in relation to the SDAS. A SAT Sending Participant should promptly inform EUI if is or is made aware that any of this information is or becomes incorrect, inaccurate or incomplete; and the SAT Settlement Participant should promptly inform its SAT Sending Participant if any of this information is or becomes incorrect, inaccurate or incomplete. The procedure for giving any such notice by a SAT Sending Participant to EUI is described in Chapter 12, sections 1C and 4 of the CREST Reference Manual.

A SAT Settlement Participant should also take prompt corrective action in relation to incorrect SAT instructions which have been created on its behalf by seeking their (matched) deletion with its SAT Settlement Participant counterparty and input of the correct information for the affected trade(s) by its SAT Sending Participant.

It is a CREST Requirement applicable to each SAT Settlement Participant that it must promptly terminate its use of a SAT Sending Participant under the SDAS if the SAT Settlement Participant is or becomes aware of any circumstance affecting the ability or authority of the SAT Sending Participant to create SAT instructions on its behalf. Such circumstances may include the termination of the arrangements between them under which the SAT Sending Participant sends SAT files in relation to trades of the SAT Settlement Participant (or its principal); or the occurrence of an insolvency–related event in relation to the SAT Sending Participant or the SAT Settlement Participant itself. Any such termination shall be effected by using the systems and procedures made available by EUI to SAT Settlement Participants to terminate the permission of a SAT Sending Participant to act on its behalf under the service.

SDAS: SAT files

It is a CREST Requirement applicable to all users who are SAT Sending Participants that they must prepare and send to EUI SAT files within 24 hours of the execution of a trade by a SAT Settlement Participant (or its principal) which uses the SAT Sending Participant under the SDAS. This will facilitate the timely reconciliation of the information contained in the SAT files with the related (DEL) settlement instructions before the Intended Settlement Date (ISD) (see under

"Reconciliation" below). Trades that are not reconciled by the ISD are reported to the relevant tax authority (see under *"Reporting to the tax authorities"* below).

A SAT file will contain information relating to each gross trade of the SAT Settlement Participants (or their principals) for which the SAT Sending Participant acts. The content and form of this information are specified by EUI; and will be sent to EUI over a secure internet connection (or other secure methods in contingency scenarios).

The information contained in the SAT files must only relate to trades in UK or Irish securities for which (securities delivery) DEL transactions are input into CREST. All other transaction types are outside the scope of the SDAS, including cash only DELs, SLOs, RPOs, DBVs and TDOs.

SDAS: SAT instructions

The SAT files received by EUI from the secure internet connection (or other secure methods in contingency scenarios) are processed under systems and procedures used by EUI to create SAT instructions. The SAT instructions are created for the SAT Sending Participant acting on behalf of the SAT Settlement Participants which are (or whose principals are) parties to the gross trades covered by the relevant SAT file.

In order for a SAT instruction to be successfully created in the system, the SAT Sending Participant must act for both SAT Settlement Participants indicated as (or as acting for) the buyer and seller under the gross trade to which the instruction relates.

If the SAT Sending Participant does not maintain a relationship with one of the SAT Settlement Participants to the trade (as indicated by the SDAS mapping systems), no SAT instruction will be created. To that extent, the constituent instructions contained in the relevant SAT file will be rejected and the related settlement instruction will fail reconciliation.

SDAS: mapping systems

The relationship between a SAT Settlement Participant and a particular SAT Sending Participant is held in part of the mapping systems maintained by EUI to enable or facilitate its creation of SAT instructions for the SAT Sending Participant acting on behalf of the SAT Settlement Participant.

The mapping systems also contain other static information provided by the SAT Sending Participant which is used by EUI to convert the information contained in SAT files sent by the SAT Sending Participant into SAT instructions. This information includes the Venue ID of trades for which the SAT Sending Participant is used by the SAT Settlement Participant; the dealing capacity of the SAT Settlement Participant (or its principal) under the trades; the SAT Settlement Participant's Participant ID in the CREST system; and the Member Account ID of the SAT Settlement Participant.

SDAS: enquiry facilities

Once a SAT instruction has been successfully created in the system for a SAT Sending Participant acting on behalf of each SAT Settlement Participant, the SAT Settlement Participants are able to use CREST enquiry facilities to view the status of their SATs. Two statuses are made available:

- Stamp duty assessment status, indicating whether or not a SAT has been assessed for duty,
- SAT status, indicating that the SAT is 'active' and whether either or both SAT Settlement Participants have input a deletion instruction.

SDAS: assessment of duty

The stamp duty assessment of SATs is identical to that for settlement instructions in the CREST system, as described in sections 2-9 above, subject to modifications detailed in this section. The Transaction Stamp Status 'K - No SDRT liability or Irish Exempt, Net/Aggregate Transaction or Assessed Elsewhere' is not available in relation to SATs. Certain stamp fields which would normally be input on a settlement instruction are for SATs derived from other information or set to default values:

- Stampable Consideration and Currency are derived from the Trade Price and Currency, and the Security Country (UK or IE) provided by the relevant SAT file;
- the CREST Participant and Member Account ID are derived from the SAT Sending Participant's Client ID using the information provided by the SAT Sending Participant and held in the mapping systems (see "SDAS: mapping systems" above);
- the Agent Indicator is derived from the Buyer Dealing Capacity and the Seller Dealing Capacity, in accordance with the procedures for central sponsor services described in chapter 8, section 9.
- when the Transaction Stamp Status is not supplied by the SAT Sending Participant, the SAT will be assessed at 0.5% (UK) or 1% (IE).

As with the stamp duty assessment of settlement instructions, the stamp duty assessment of SATs results in the generation of stamp constituents where duty is due. These stamp constituents initiate STP transactions attributable to the accountable SAT Settlement Participant on behalf of whom the related SATs were created. However, individual Stamp Payment transactions (STPs) will not contain constituents from both sources (separate STPs are created for the duty due from the stamp duty assessment of SATs and for duty due from the stamp duty assessment of settlement instructions). STPs and their constituents are available to be viewed by SAT Settlement Participants to whom they are attributable using standard enquiry facilities.

Reconciliation

To ensure that stamp duty assessment of both the underlying gross trades and net settlement instructions take place within the Service, the net stock quantities of all SATs created on behalf of a SAT Settlement Participant and every settlement instruction carrying the Transaction Stamp Status 'K - No SDRT liability or Irish Exempt, Net/Aggregate Transaction or Assessed Elsewhere' attributable to the SAT Settlement Participant are compared. If the net stock quantities for each combination of Intended Settlement Date (ISD), ISIN, Dealing Capacity, Participant ID and Account ID match, then that combination is considered reconciled.

The combinations for which the net stock quantities do not match (reconciliation failures) are made available to SAT Settlement Participants via enquiry facilities until either:

- a corrective action causes the quantities to match,
- the combination is archived, 60 days after ISD.

A reconciliation failure does not preclude settlement of the relevant settlement instruction or stamp duty assessment of the SAT (and collection through settlement of the related STP transaction).

Matched Deletion of a SAT

SAT Settlement Participants are able to (match) delete SATs, but are not able to amend them. SAT Sending Participants can input additional SATs or re-input a fully deleted SAT. The deletion of a SAT can be instructed until the earlier of receipt date +60 days or ISD +60 days. In order to fully delete a SAT, both participants have to instruct the deletion separately. A SAT deleted by one participant will display a status of 'Deleted by you' to the deleting participant, and 'Deleted by counterparty' to their counterparty. Once both SAT Settlement Participants have instructed deletions, the status will change to 'Fully Deleted', the SAT is removed from the reconciliation process and any duty that was paid based on the stamp duty assessment of that SAT is reversed.

Within the Stamp Duty Assessment Service, the CREST Applications Host generates an instruction (the ***relevant PTO***) to initiate or implement an STP transaction (instructing the payment of duty by the CREST member whose CMA is to be debited) in response to the related SAT instructions (assessed for duty) created on behalf of the accountable participant. For the purposes of paragraphs 2 and 3 of CREST Rule 13 (Settlement finality), this means that:

- the relevant PTO enters the designated system at the point it is created in the CREST Applications Host in response to the related SAT instruction (which is assessed for duty); and
- as from the point of its entry the relevant PTO is incapable of being amended or deleted by the single input of an instruction from the participant on whose behalf it is created, it is irrevocable from the moment of its entry into the system.

Reporting to the tax authorities

The relevant tax authority will be provided with details of:

- all settlement instructions in chargeable securities with the Transaction Stamp Status 'K - No SDRT liability or Irish Exempt or Net/Aggregate Transaction or Assessed Elsewhere';
- all SATs in a chargeable security;
- all STPs, including reversals and the stamp constituents of STPs;
- all current reconciliation failures, which are reported daily from ISD until ISD + 60 days.

Chapter 9: External data view

The CREST system enables one participant to have read-only access to another participant's data. This is available through the participant view facility.

Section 1: The participant view

The participant view enables one participant to give another participant access to all the data relating to him which is held in the CREST system. The participant needs to inform EUI of any other participants who should be given such access rights so that EUI can input the relevant field to the Participant Details on its behalf. It is this field which controls those access rights. Those access rights can only be removed by EUI.

The Application Procedures describe the particular arrangements which are in place to ensure that regulators have access to relevant participants' data (HMRC have automatic access rights). However, a participant can nominate any CREST participant to be given a participant view of its data and not just those who have supervisory responsibilities. Consequently, participants may also choose to allow their settlement banks or auditors to have data access rights.

Chapter 10: System Controller functions and business continuity

Section 1: Central intervention

EUI is required under Schedule 1 to the UK Regulations to satisfy the Bank of England that EUI:

- under Paragraph 21(1)(a)(ii), only registers a transfer of title or generates an RUR relating to a transfer, inter alia, if it has:

been required to do so by a court order in the United Kingdom or by or under an enactment.

- under Paragraph 21(3), comprises:

procedures which provide that an Operator may amend an Operator register of securities and an Operator-instruction requiring a participating issuer to register a transfer of uncertificated units of a security, or informing a settlement bank of its obligations in respect of such a transfer, may be generated if necessary to correct an error and if in accordance with the rules and practices of an Operator instituted to comply with this Schedule.

- under Paragraph 22(1)(b), only generates an RUR relating to a corporate action, inter alia, if it has:

been required to do so by a court order in the United Kingdom or by or under an enactment.

- under Paragraph 22(2), comprises:

procedures which provide that an Operator-instruction to a participating issuer relating to a right, privilege or benefit attaching to or arising from an uncertificated unit of a security may be generated if necessary to correct an error and if in accordance with the rules and practices of an Operator instituted to comply with this Schedule.

- under Paragraph 21(4) comprises

procedures which provide that:

(a) the Operator may amend an Operator register of securities: and

(b) an Operator-instruction requiring a participating issuer to register a transfer of units of a wholly dematerialised security, or informing a settlement bank of its payment obligations in respect of such a transfer, may be generated,

if necessary to effect a transfer of such units on the termination of participation in the relevant system by the system-member by whom those units are held to a person nominated under the Operator's rules, and if in accordance with the rules made and practices instituted by the Operator in order to comply with this Schedule.

Additionally, members grant EUI authority under clause 5.4.2 of the Terms and Conditions to correct errors brought about by the entry of an uninitiated transaction into the CREST system. Similar authorities are given by the RTGS settlement banks (and other participants) to EUI under their contracts with EUI.

The CREST system enables EUI to take the action envisaged by these requirements, though to do so may result in the temporary disablement of the user or participant involved.

Additionally, the System Controller may view any data held in the system relating to a user or participant.

The System Controller functions may be used, inter alia:

- to correct an error identified as a result of the overnight reconciliation of stock account balances against register balances;
- where required to do so by a court order or by or under an enactment requiring the transfer of securities;
- to give effect to the transfer of securities to an escrow balance as required by Rule 12 (the Bad Delivery Rules);
- to correct any error caused by the entry of an uninitiated transaction into the CREST system;
- to create or change the settlements priority of a transaction;
- to recertificate all or part of a holding (for example see Rule 7 and UK Regulation 32(2)(c)); or
- to effect a transfer to a nominee of units of a wholly dematerialised security upon termination of membership of a member holding such units (see Rule 7, paragraph 6).

In some cases, instructions generated on exercise of the System Controller functions are attributed to one or more CREST participants pursuant to the provisions of Chapter 11, section 3; but such instructions are identifiable as being from the computers of EUI as Operator and expressed to be sent by the Operator.

The System Controller functions may also be used to correct entries in systems maintained by EUI in its capacity as a recognised CSD. For example, under the Stamp Duty Assessment Service, the System Controller will amend or delete static information held in the SDAS mapping systems when notified by a SAT Sending Participant that the relevant information is incorrect, inaccurate or incomplete.

System Controller's Adjustment

The System Controller's Adjustment transaction (ADJ) is available to the CREST System Controller only. It is capable of settlement outside normal settlement hours but may not settle during DBV settlement.

An ADJ may be forward dated and is ordinarily created with a priority of 99, though it may be created with a priority of zero (i.e. frozen) in some circumstances. An ADJ will not settle if to do so would create a negative stock account balance or negative headroom under a cap.

There are three principal circumstances in which the ADJ is used:

- Where a security passes its security end date (or, in the case of an eligible debt security, when all the units of the EDS have been returned to the paying agent on or after maturity date), but where the registrar or CREST IPA for that security has not deleted stock balances from the CREST system, the CREST system automatically generates ADJs 10 days after the security end date (or all units of the relevant EDS have been returned to the paying agent on maturity) to reduce balances in that security to zero. The 10 day period is to enable users to reconcile their final holdings. Balances are then archived.
- Where a member has securities in a deposit link but where the intended settlement date is older than the CREST archive date, the securities become inaccessible to the member and the member is unable to create a transaction which could remove the securities from the balance himself. The CREST system automatically creates an ADJ to transfer the balance to the

member's 'available' balance. At the same time the CREST system identifies any outstanding transactions referencing unavailable deposit link balances, and switches these transactions to the available balance. By these means, securities and transactions which have erroneously referenced unavailable deposit link balances are made available to the member for correction and settlement.

- In response to a validated IPA issuance message, where units of an eligible debt security of an aggregate value equal to the nominal amount of the EDS are credited to the issuing agent's stock account. See Chapter 7, section 11 for further details.

Section 2: DvP Services

Uninitiated transactions

An uninitiated transaction occurs when either a transaction is entered into the CREST system without EUI having received a properly authenticated dematerialised instruction attributable or addressed to the member whose cash memorandum account (in an RTGS currency) is debited or credited under the transaction: or where an amount in an RTGS currency debited or credited to the cash memorandum account of the member was not instructed to be so debited or credited by the related system-member instruction (excluding procedures for tolerance matching).

EUI maintains procedures to effect the reversal of a transfer of title and/or an RTGS payment resulting from the settlement of an uninitiated transaction wherever possible. These procedures are complementary to the bad delivery rules in the event of a registrar refusing registration as set out in the CREST Rules.

EUI's agreements with its members and (where relevant) other participants include an authorisation to EUI to generate dematerialised instructions centrally without receipt of an instruction from the member for the purpose of correcting an uninitiated transaction. In order to do this, the System Controller may create transactions (of whatever transaction type which he considers is appropriate in the relevant circumstances) to correct the error resulting from the entry of the uninitiated transaction. In either case, the instruction which initiates or implements any such transaction is treated as having been sent by, and as being addressed to, such persons as are determined in accordance with the CREST system's Addressing and Attribution requirements set out in Chapter 11, section 3. Any such transaction will ordinarily be created with a priority greater than 91.

In the event of identification of an uninitiated transaction that has not yet settled, EUI will centrally delete the relevant transaction.

In the event of identifying an uninitiated transaction which has settled, the nature and content of the transaction which is created by the System Controller will be determined by the nature of the error which has been caused by the settlement of the uninitiated transaction. Where the uninitiated transaction consisted of both an erroneous stock and cash entry, the System Controller is likely to introduce an equal and opposite transaction for settlement through the CREST system. This transaction will be set with a priority greater than 91 and will take precedence over all other settlement.

In contrast, where the uninitiated transaction consists of an erroneous cash entry only, the System Controller is likely to introduce transactions which allow an off-setting cash only payment (e.g. matching DEL transactions in the amount of the mistaken payment attributable to the members

concerned, and addressed to those members and their RTGS settlement banks). Any such transaction will be set with a high priority (greater than 91).

Prior to taking any such correcting action, EUI will endeavour to inform affected members and RTGS settlement banks in advance of settlement of the correcting transactions. In certain circumstances, it may be necessary for the System Controller temporarily to increase secured and unsecured limits for caps to allow settlement to proceed.

Sterling DvP Service: repo balances

The Bank of England maintains repo memberships within the CREST system for receipt of repo under the SB auto-collateralisation arrangements (see Chapter 7, section 8). Stock received through the auto–collateralisation process is held in a repo balance from which it may only be transferred through an auto-collateralising repo transaction (SCR). In certain circumstances, the Bank of England may request that for such a membership, all balances are transferred from the repo balance to the available balance. CREST System Control maintains procedures to effect this at the request of the Bank of England. As auto-collateralisation arrangements only operate as part of the Sterling DvP Service, these procedures are not relevant to the ECB or the Euro DvP Service.

Sterling DvP Service: contingency procedures in a disconnection period

EUI and the Bank of England maintain procedures to permit CREST settlement to continue in the event of either failure of the Bank of England's systems (including the RTGS system) or the link between the RTGS Liquidity Management System and the Bank's systems (the 'EUI – Bank link network' – see Chapter 6, section 4). In such circumstances, either or both of EUI and the Bank of England will notify all affected users and participants that EUI intends to operate the stand-by (contingency) procedures for the Sterling DvP Service from such time either given in such notification or subsequently notified (a 'notice of disconnection'). A notice of disconnection will be given by EUI by any method which is appropriate in the relevant circumstances, but such means may include a system message or operational fax.

A 'disconnection period' will usually begin at the time the related notice of disconnection is given or (if later) at the time specified in or pursuant to the notice of disconnection. In certain circumstances, it may begin at an earlier time (i.e. where a notice of disconnection is given during the running of a CREST settlement cycle when the disconnection period is treated as beginning at the commencement of that CREST settlement cycle). During such a disconnection period and in agreement with the Bank of England, EUI may switch to a recycle settlement mode under the Sterling DvP Service which operates across settlement cycles.

During recycle mode when operating under the contingency procedures for the Sterling DvP Service, the EUI systems do not interact with the Bank of England's RTGS system at the beginning and end of each CREST settlement cycle (i.e. to receive notifications of liquidity available for CREST settlement and advising RTGS of liquidity transfers resulting from the immediately completed CREST settlement cycle). Instead, the liquidity remains available to the CREST system during and across a series of settlement cycles. An explanation of the concept of a 'CREST settlement cycle', as that term is used in connection with the DvP Service, is contained in Chapter 6, section 4.

A disconnection period under the Sterling DvP Service ends at the time at which either or both of the Bank of England and EUI gives a 'notice of reconnection' to the affected users and participants or (if later) the time specified in or pursuant to such notice as the time at which the disconnection

period will end. Such a notice may be given by any of the methods by which a notice of disconnection may be given.

At the end of the disconnection period for the Sterling DvP Service, the RTGS Liquidity Management System will advise the Bank's RTGS system of all liquidity transfers arising during the disconnection period in order to allow transfers through RTGS. Once the CREST system and RTGS are re-synchronised, the CREST system will revert to standard settlement mode.

During the disconnection period for the Sterling DvP Service, an RTGS settlement bank may wish to increase or decrease the sterling liquidity available to it to support CREST settlement. An RTGS settlement bank for sterling may therefore input a liquidity adjustment to either increase or decrease the balance of liquidity on its sterling Liquidity Memorandum Account within the RTGS Liquidity Management System. The liquidity adjustment requires sanction by the Bank of England before being effected in the RTGS Liquidity Management System (such sanction being sent by the Bank to the RTGS Liquidity Management System using network communication facilities as agreed between EUI and the Bank). No liquidity adjustment to decrease the balance of liquidity on a sterling LMA may release liquidity which is, at that time, irrevocably appropriated at the Bank for the purposes of CREST settlement against sterling in accordance with the arrangements described in Chapter 6, section 6. The Bank of England and the relevant RTGS settlement bank may view all liquidity adjustment requests requiring sanctioning and their subsequent settlement. The procedures by which an RTGS settlement bank may transfer liquidity to its sterling LMA during a disconnection period for the Sterling DvP Service are referred to as the 'Top Up Procedures' for the Sterling DvP Service in this CREST Manual and the agreements in place between EUI, the Bank and the RTGS settlement banks. The procedures by which an RTGS settlement bank may transfer liquidity from its sterling LMA during a disconnection period are referred to as the 'Draw Down Procedures' for the Sterling DvP Service in this CREST Manual and the agreements in place between EUI the Bank and the RTGS settlement banks.

The CREST Settlement Notification which is sent by the RTGS Liquidity Management System to the Bank's systems at the end of a disconnection period for the Sterling DvP Service will include details of the aggregate amount of payments made by the RTGS settlement bank concerned in each RTGS currency during that disconnection period under the Top Up Procedures and Draw Down Procedures respectively.

The Top-Up and Draw-Down Procedures that operate as part of the contingency procedures for the Sterling DvP Service should be contrasted with the corresponding procedures that operate in the Euro DvP Service. Unlike the Sterling DvP Service, the Euro DvP Service operates in liquidity re-cycle mode across CREST settlement cycles operating during a Dedicated Liquidity Cycle Period during standard (and not just contingency) operation. As such, procedures operate as part of the Euro DvP Service (outside of a contingency context) to allow for intra-settlement day top-up payments to ensure that euro liquidity for CREST settlement can be properly managed – see further Chapter 6, section 4 under the heading 'Euro DvP Service: Top-Up Procedures'.

Euro DvP Service: contingency procedures

EUI and the ECB maintain procedures to permit CREST settlement to continue in the event of a failure of the 'T2 link network' (see Chapter 6, section 4). In such circumstances, EUI will notify all affected users and participants that EUI intends to operate the stand-by (contingency) procedures for the Euro DvP Service from such time either given in such notification or subsequently notified (a 'contingency procedures notice'). A contingency procedures notice will be given by EUI by any

method which is appropriate in the relevant circumstances, but such means may include a system message or operational fax.

A 'contingency procedures period' under the Euro DvP Service will usually begin at the time the contingency procedures notice is given or (if later) at the time specified in or pursuant to the notice of disconnection. In certain circumstances, it may begin at an earlier time (i.e where a contingency procedures notice is given during the running of a Dedicated Liquidity Cycle Period when the contingency procedures period is treated as beginning at the commencement of that Dedicated Liquidity Cycle Period).

A contingency procedures period for the Euro DvP Service ends at the time when EUI give a 'notice of termination of contingency procedures' to the affected users and participants or (if later) the time specified in or pursuant to such notice as the time at which the contingency procedures period will end. Such a notice may be given by any of the methods by which a contingency procedures notice may be given.

At the end of the contingency procedures for the Euro DvP Service, the RTGS Liquidity Management System will recommence the remainder of the settlement day as per the normal procedure for the Euro DvP Service (as described in Chapter 6, section 4).

During the contingency procedures period for the Euro DvP Service when a Dedicated Liquidity Cycle Period is open, the ending of the Dedicated Liquidity Cycle Period may be manually effected by the ECB or EUI.

An RTGS settlement bank will not be able to increase or decrease their euro liquidity dedicated to support CREST settlement during a contingency procedures period. Any increase or decrease of euro liquidity instructed during the contingency procedures period will only be applied to the RTGS settlement bank's Liquidity Memorandum Account when the contingency procedures period has ended. This happens in the following manner:

- if a Dedicated Liquidity Cycle Period has opened – 'high priority' top-ups will be processed as per the Euro DvP Service: Top-Up Procedures (as described in Chapter 6,section 4)
- if a Dedicated Liquidity Cycle Period has ended – top-ups and drawdowns will be processed as per the DvP Service: CREST settlement cycles and liquidity cycles (as described in Chapter 6,section 4).

Start of day

In the event of a failure of the T2 link network at the start of a settlement day, EUI will use reasonable endeavours to delay opening the first Dedicated Liquidity Cycle Period for that settlement day and to block settlement in euro until the link to TARGET2 has been restored. If EUI is not able to block settlement in euro before the opening of the first Dedicated Liquidity Cycle Period, "on us" transactions will be able to settle until settlement in euro is blocked by EUI.

During the day

During a settlement day and after the commencement of the contingency procedures period, EUI may decide to extend or reduce the duration of the current Dedicated Liquidity Cycle Period, if a Dedicated Liquidity Cycle Period is in progress.

End of day

In the event that a contingency procedures period is set to last beyond the deadline for the closure of TARGET 2 contingency procedures and a Dedicated Liquidity Cycle Period is in progress, EUI and the ECB will operate an end-of-day contingency procedure.

Under this contingency procedure and prior to the TARGET 2 deadline:

- the CREST system will cease settlement of transactions against euros. Any transactions against euro that have not settled at that point will be put forward for settlement the following settlement day;
- EUI will extract the CREST Settlement Notifications for euro, which are to be sent to TARGET2 in respect of that ongoing Dedicated Liquidity Cycle Period, from the RTGS Liquidity Management System and provide these to the ECB;
- the ECB will manually upload in xml message format those CREST Settlement Notifications for euro into the relevant TARGET2 component system on behalf of EUI (and in so doing a CREST Settlement Notification is treated as sent on behalf of EUI to and received in TARGET2);
- the ECB will manually end the last Dedicated Liquidity Cycle Period for the current settlement day on behalf of EUI using the relevant TARGET2 component system interface (and in so doing an end-of-cycle message is treated as having been sent on behalf of EUI to TARGET2); and
- the ECB will manually close the daylight procedure for the current settlement day on behalf of EUI using the relevant TARGET2 component system interface.

In the event that EUI is unable to send and the ECB is unable to upload manually the CREST Settlement Notifications to TARGET2 before the TARGET2 end of day closure, the liquidity frozen in the PM Sub-Accounts in respect of the related Dedicated Liquidity Cycle Period will be transferred back to the relevant PM Accounts. EUI will calculate the final liquidity positions arising from the related Dedicated Liquidity Cycle Period. The interbank positions for each RTGS settlement bank will also be extracted and forwarded to the RTGS settlement banks.

At the start of the next settlement day all CREST euro settlement (including "on us" transactions) will initially be blocked in CREST. EUI will instruct each RTGS settlement bank of the amount of liquidity to be transferred by it into its PM Sub-Account to cover any payment obligations outstanding from the end of the previous settlement day. Upon receipt of notification from the Ancillary System Interface that sufficient funds have been transferred into the relevant PM Sub-Account(s) and dedicated for CREST settlement, EUI will adjust the Liquidity Memorandum Accounts accordingly and send the related CREST Settlement Notification(s) to the Ancillary System Interface. When the RTGS Liquidity Management System receives a message from the Ancillary System Interface confirming settlement of the liquidity transfers in TARGET2 the CREST system will close the Dedicated Liquidity Cycle Period.

In the event of EUI giving or receiving to or from the ECB notification of a failure of the T2 link network while either of the following applies:

- EUI has sent an end-of-cycle message to the Ancillary System Interface requesting the end of a Dedicated Liquidity Cycle Period which end-of-cycle message has either not been received or processed on account of a failure in TARGET2; or
- the balances on each euro Liquidity Memorandum Account are set to zero,

no further CREST settlement in euro will take place during the contingency procedures period apart from "on us" transactions.

In the event of EUI giving or receiving from the ECB notification (or otherwise becoming aware) of a failure in TARGET2 (including an error or incorrect information in TARGET2 or any TARGET2 component system operated by a Eurosystem central bank), EUI will (if it or the ECB determines acting in good faith that the failure represents a threat to the security, integrity or reputation of the Euro DvP Service, or any part of it) (a) take reasonable care to cease settlement of transactions in euro unless it is not practicable to do so in respect of any transaction and (b) will not recommence settlement in euro without the prior consent of the ECB (such consent not to be unreasonably withheld or delayed).

Euro DvP Service: Contingency procedures – Appropriation Procedures

The appropriation procedures for the Euro DvP Service will be operated by EUI if, upon initiating the multilateral netting account in respect of a Dedicated Liquidity Cycle Period (see Chapter 6, section 6 under 'RTGS payments mechanism'), EUI determines or otherwise becomes aware that (as result of an operational error) the net (net) amount which would otherwise be due from a (short) RTGS settlement bank would exceed the amount of euro funds frozen in that RTGS settlement bank's PM Sub-Account (after any top-up of funds made by or on behalf of that RTGS settlement bank to its PM Sub-Account before the Dedicated Liquidity Cycle Period ends).

The appropriation procedures aim to identify inter-settlement bank payment obligations ('excluded payment obligations') due from the affected RTGS settlement bank which might properly be removed from the multilateral netting account before it is completed. After the removal of excluded payment obligations, the related CREST Settlement Notification for the relevant Dedicated Liquidity Cycle Period which is sent by or on behalf of EUI to TARGET2 will instruct a net amount to be debited to the PM Sub-Account of the short RTGS settlement bank which does not exceed its frozen funds. Any excluded payment obligations will not be settled through TARGET2 in accordance with the settlement procedure set out in Annex IV to the Guideline.

The methodology adopted by EUI under the appropriation procedures in respect of a particular Dedicated Liquidity Cycle Period will be determined by EUI (acting in good faith) with due regard to the efficient and effective resolution of the operational error which has caused the deficit of frozen funds to arise. EUI's approach will comprise either or both of the following:

- a 'last in, first out' approach (under which the settlement bank payment obligations which were last applied against the short settlement bank's LMA in the Dedicated Liquidity Cycle Period are removed); and
- a 'minimum disruption' approach (under which those settlement bank payment obligations with the highest value or value closest to the amount of the deficit, and so as to minimise the number of excluded payment obligations required to resolve the deficit, are removed).

When the excluded payment obligations have been selected, EUI will adjust the LMA positions of the affected settlement banks in respect of the excluded payment obligations. Upon completion of this adjustment EUI will inform each pair of RTGS settlement banks that is a party to any excluded payment obligations, that the excluded payment obligations have not or will not be settled through TARGET2 and the identity of the RTGS settlement bank from which or (as the case may be) to which the excluded payment obligation is due. The excluded payment obligation shall be promptly

discharged or collateralised in accordance with such procedures as may be agreed between the affected RTGS settlement banks.

Once all excluded payment obligations are removed under the appropriation procedures, EUI will complete the multilateral netting account for the Dedicated Liquidity Cycle Period by sending the related CREST Settlement Notification (instructing the debit of the adjusted net amount from the PM Sub-Account of the affected short settlement bank) to, and for settlement through, TARGET2 in accordance with the settlement procedure set out in Annex IV to the Guideline.

Section 2A: US dollar payments mechanism

Contingency procedures

Settlement File Account Procedure

After the multilateral net positions have been calculated they must be approved by the NSS settlement participants. In the event that an NSS settlement participant is unable to approve because it has lost connectivity with the CREST system, EUI may transfer control of the NSS settler CREST participant from its user to the user of EUI and will approve or reject the obligation itself (as instructed by the NSS settlement participant), then EUI will transfer control of the NSS settlement participant back to the NSS settlement participant's user.

After the multilateral net positions have been calculated and approved by all the NSS settlement participants, EUI will use the Fedline Direct service operated by the Federal Reserve to transmit them to the NSS. In the event of connectivity problems rendering this service unavailable, EUI may send the file by secure email to the NSS, and the NSS will load the data itself.

Payments Memorandum Account Procedure

As noted in Chapter 6, section 4A, the Payments Memorandum Account Procedure will be initiated on EUI's determination that it will not be possible to operate a Settlement File Account Procedure for that settlement day and that US dollar inter-bank payment obligations will be discharged by means of sterling distributions from the Trust Fund. Circumstances when this may arise include:

- one or more NSS settlement participants is not willing to pay or receive amounts in the NSS as Settler for the account of the USD settlement banks they act for;
- one or more NSS settlement participants is unable to pay or receive amounts in the NSS because of technical issues with the NSS settlement participant, the NSS, or in connectivity between them;
- technical failures in the CREST system.

In the event of contingency procedures needing to be followed, EUI may determine following discussions with relevant stakeholders, that one of the following options may be followed:

- follow the Payments Memorandum Account Procedure and finish the settlement day as normal;
- retain sterling in the Trust Fund overnight, complete the Payments Memorandum Account Procedure the following morning, then commence the following US dollar settlement day as normal;
- retain sterling in the Trust Fund overnight, complete the Payments Memorandum Account Procedure the following morning, and prevent US dollar settlement that day.

Option 1: follow the Payments Memorandum Account Procedure and finish the settlement day as normal

On EUI's determination that it will not be possible to operate a Settlement File Account Procedure for that settlement day EUI will seek to complete the Payments Memorandum Account Procedure that day, with US dollar inter-bank payment obligations being discharged by means of sterling distributions from the Trust Fund.

Option 2: retain sterling in the Trust Fund overnight, complete the Payments Memorandum Account Procedure the following morning

Where it is not possible to complete the Payments Memorandum Account Procedure that day:

- pre-funding payments will be retained in the Trust Fund overnight;
- CMA balances will be cleared down at end of day as normal;
- US dollar inter-payment obligations will be discharged by means of sterling distributions from the Trust Fund in accordance with the Payments Memorandum Account Procedure the following morning;
- US dollar settlement will then commence. The US Dollar Top-Up Procedures will need to be followed (as no initial pre-funding payment transactions will have settled).

Option 3: Prevent US dollar settlement on the following day

EUI may decide that US dollars should not settle on the following settlement day and therefore disable US dollar settlement for that day. If this option is chosen:

- US dollar inter-payment obligations will be discharged by means of sterling distributions from the Trust Fund in accordance with the Payments Memorandum Account Procedure;
- PMA balances will be cleared down at end of day as normal;
- no settlement for US dollars will occur the following day.

Appropriation procedures

The appropriation procedures for the US dollar payments mechanism will be operated by EUI if, upon initiating the Payments Memorandum Account Procedure, EUI determines or otherwise becomes aware that (as result of an operational error or an adverse movement in exchange rates) one or more Inter-Bank Payment Obligations arising during a PMAP settlement day are not covered by the Pre-Distribution Entitlement Amount of the USD settlement bank from whom those Inter-Bank Payment Obligations are due.

The appropriation procedures aim to identify Inter-Bank Payment Obligations ('excluded payment obligations') due from the affected USD settlement bank which might properly be removed from the calculation of the PMAP Net Amount before it is completed. After the removal of excluded payment obligations, the PMAP Net Amount payable by any USD settlement bank will not exceed its Pre-Distribution Entitlement Amount. Any excluded payment obligations will not be settled through the CREST system.

The methodology adopted by EUI under the appropriation procedures will be determined by EUI (acting in good faith) with due regard to the efficient and effective resolution of the operational error or adverse movement in exchange rates which has caused the Inter-Bank Payment Obligations not to be covered by the Pre-Distribution Entitlement Amount of the USD settlement bank. EUI's approach will comprise either or both of the following:

- a 'last in, first out' approach (under which the settlement bank payment obligations which were last applied against the short settlement bank's Payments Memorandum Account are removed); and
- a 'minimum disruption' approach (under which those settlement bank payment obligations with the highest value or value closest to the amount of the deficit, and so as to minimise the number of excluded payment obligations required to resolve the deficit, are removed).

When the excluded payment obligations have been selected, EUI will adjust the Payments Memorandum Account positions of the affected settlement banks in respect of the excluded payment obligations. Upon completion of this adjustment EUI will inform each pair of USD settlement banks that is a party to any excluded payment obligations, that the excluded payment obligations have not or will not be settled through the CREST system and the identity of the USD settlement bank from which or (as the case may be) to which the excluded payment obligation is due. The excluded payment obligation shall be promptly discharged or collateralised in accordance with such procedures as may be agreed between the affected USD settlement banks.

Once all excluded payment obligations are removed under the appropriation procedures, EUI will pay the relevant PMAP Distribution Entitlement Amount to each USD settlement bank by procuring its debit from the EUI Trust Account and its credit to the USD settlement bank’s Relevant Settlement Account (or, if a USD settlement bank's PMAP Distribution Entitlement Amount is zero, EUI will confirm to the USD settlement bank that no payment will be made to it in respect of its PMAP Distribution Entitlement Amount for that settlement day).

Section 3: Procedures relating to the incapacity of users and participants

In its agreements with users and participants, EUI has certain rights to suspend or terminate a user or participant or to recertificate a member's holdings in a range of circumstances. These include a number relating to the actual or threatened incapacity of a user or participant. The agreements give EUI wide discretion as to whether or how to use these powers and the corresponding internal procedures likewise allow for full discretion on the part of the System Controller and other EUI staff involved in decision making.

As a general matter, EUI will, where appropriate, seek to liaise with and involve any appropriate authorities such as recognised investment exchanges, recognised clearing houses, self regulating organisations and other regulators when taking action to suspend or terminate a user or participant.

In relation to wholly dematerialised securities, references in this Section 3 to re-certification should be taken to include other applicable procedures as contemplated in Rule 7.6 and the accompanying notes.

Incapacity of individuals

EUI's internal procedures relating to the incapacity of individuals are likely only to be relevant to sponsored members but would also apply to any individuals who are users. The following describes the principal procedures used.

In the event that a sponsored member dies or is brought within the jurisdiction of the Court of Protection, EUI will generally recertificate the deceased member's holdings and terminate the membership.

In the event that an Enduring Power of Attorney or a Lasting Power of Attorney has been registered in respect of a sponsored member, EUI has the discretion to suspend that sponsored member. EUI will generally consult the attorney to determine whether or when the membership can be re-enabled or whether to recertificate the member's holdings and terminate the membership. Re-enablement would be subject to reassurance that the sponsor has been made aware of the registration of the Enduring Power of Attorney or the Lasting Power of Attorney.

In the event of the presentation of a petition for the making of a bankruptcy order against a sponsored member, EUI has internal procedures for making a judgement as to whether such a petition is either frivolous or otherwise does not merit any action by EUI.

In the event that a sponsored member who is an individual is declared bankrupt, EUI will generally recertificate the member's holdings and terminate the membership.

In the event that steps are taken with a view to a sponsored member entering into a voluntary arrangement with creditors, EUI has the discretion to suspend the member. EUI will generally consult with the member and with any insolvency practitioner appointed to determine whether or when the membership can be re-enabled or whether to recertificate the member's holdings and terminate the membership.

Corporate incapacity

The following describes the principal internal procedures used in relation to the incapacity ofbodies corporate:

In the event of the presentation of a petition for the winding up of a user or participant, EUI has internal procedures for making a judgement as to whether such a petition is either frivolous or otherwise does not merit any action by EUI.

In the event that an insolvency practitioner has been appointed to a user or participant, EUI has the discretion to suspend that user or participant. EUI will generally consult the practitioner to determine whether or when the user or participant can be re-enabled or whether to recertificate the participant's holdings (where the participant is a member) or terminate the user or participant. Re-enablement would be subject to reassurance that either the practitioner has secured control of the user's gateway computer or (in the case of sponsored members) that the sponsor has been made aware of the practitioner's appointment.

Where the Default Rules of a recognised investment exchange or recognised clearing house are relevant in the incapacity of a member, EUI has internal procedures agreed with the recognised investment exchanges and recognised clearing houses to facilitate the execution of those Default Rules.

In the event of the dissolution of a user or participant, EUI will generally recertificate the participant's holdings (where the participant is a member) and terminate the user or participant.

Section 4: Non Standard CREST Closure

In the circumstances described in Chapter 1, section 2, EUI, in conjunction with the Bank of England, will invoke the Non Standard Settlement Day Procedures (***NSSDPs***). In such circumstances, either or both of EUI and the Bank of England will notify all affected users and participants that EUI wishes to invoke the NSSDPs from such time either given in such notification or subsequently notified (the ***NSSDPs notice***). A NSSDP notice shall be given by EUI by any method which is appropriate in the relevant circumstances but such means may include a system message or operational fax.

An ***NSSDPs period*** will usually begin at such time that EUI and the Bank of England agree to invoke the NSSDPs and will continue until such time at which the last of those normal CREST settlement procedures and functionality (which ceased and/or became unavailable following the commencement of the NSSDPs period) is completed and/or becomes fully available once more. For the purposes of a CREST Settlement day on which the NSSDPs are invoked, that CREST Settlement day shall not be treated as having ended until the end of the NSSDPs period.

The NSSDPs include the following:

- the end of day unwind process (forming part of the auto-collateralisation arrangements) shall, where necessary, be extended overnight;
- members' CMAs will not be reset to zero;
- the funds in the EUI Trust Account, in connection with the US dollar payments mechanism, will not be returned to the pre-funding participants, but will be carried forward to support the next day's settlement;
- where it is possible to discharge settlement banks' USD obligations in the NSS (using the Settlement File Account Procedure), each USD settlement bank's purchasing power the next day will be calculated based on its pre-funding held in the EUI Trust Account;
- where it is not possible to discharge settlement banks' USD obligations in the NSS, each USD settlement bank's purchasing power the next day will be calculated based on its pre-funding held in the EUI Trust Account and cumulative net balance of the current day's CREST payments in US dollars made by or to members for whom that USD settlement bank is acting as a settlement bank;
- in connection with the US dollar payment arrangements, 'next' values for pre-funding participants and pre-funding amounts will not be applied;
- there will be no update to: securities prices; bank margins; bank currency margins; exchange rates; interest rates or stock loan revaluations;
- requests by Members to de-link their caps from their member accounts (even where the change has been sanctioned by the member's settlement bank) will not be effected;
- securities will not be reassigned to new MSV Categories and any changes to margin values instructed by a settlement bank for a MSV Category will not take effect;
- the margined stock value of repo balances will be carried forward; and
- any unsettled DBVs will be deleted.

Any alterations to the daily timetable necessitated by the NSSDPs shall operate independently from any power of EUI to do so as described in Chapter 1, section 1.

Section 5: Regional Disaster Recovery

Introduction

EUI has two main data centres which provide local disaster recovery capability (if one data centre is impacted by a local incident, the other main data centre should be immediately available to continue processing).

As part of EUI's regional disaster recovery strategy, data from the main data centres will be replicated automatically to a backup data centre. In the event of a regional incident at the main data centres, having the result that processing there cannot continue, EUI may decide to continue processing from the backup data centre.

Following a decision to switch to the backup data centre, EUI will operate a phased recovery, so that critical services will be restored before less-critical services.

Intraday site switch to backup data centre

Immediately following an intraday switch to the backup data centre, EUI will perform internal reconciliations, during which time there will be no settlement processing and participants will not have input or enquiry access to the CREST system.

In the event of a controlled switch to the backup data centre, the integrity of data replication can be ensured prior to the switch. In the highly exceptional circumstances of an uncontrolled switch to the backup data centre (for example following a catastrophic disruption to both main data centres) there is a possibility that certain data may not have been replicated to the backup data centre in time before the switch. EUI's internal reconciliation process will ensure the integrity of the CREST system prior to restoring settlement capability. Transaction settlement is protected by a lockstep process which ensures that transactions notified to participants as settled will not be impacted by a site switch.

Following completion of internal reconciliations, participants will then have an opportunity to send enquiries to the CREST system and to reconcile their own records against the information in the CREST system. During this time participants must:

- check that any messages (including transactions and other reference data changes) they sent to the CREST system before the switch have been successfully received at the backup data centre, and if necessary be prepared to send them again;
- check that any messages they received from the CREST system before the switch correctly reflect the position at the backup data centre, and if necessary be prepared to disregard them.

Participants will then have the opportunity to submit reference data updates into the CREST system, and the CREST system will action them.

Depending on the time of day when the CREST system becomes available again, either:

- processing will continue as normal. Participants will be able to submit transaction messages into the CREST system and the CREST system will settle existing and new transactions; or
- normal settlement will not be recommenced for the day and the CREST system may operate a limited diary of operation including DBV settlement. Participants will be able to submit DBV messages into the CREST system. The CREST system will settle existing and new DBVs; or

- normal settlement (including DBV settlement) will not recommence and Non Standard CREST Closure will be implemented (see Chapter 10, section 4 above).

Overnight site switch to backup data centre

EUI will perform internal reconciliations, then will continue its overnight processing. Settlement will be resumed from the backup data centre.

Potential for data loss

EUI considers failover to DC3 would be a very exceptional event and if it were to occur it is likely to happen in a controlled manner. In the event of a controlled failover to DC3, data loss can be avoided.

Highly exceptional circumstances, such as a sudden catastrophic loss of both DC1 and DC2, may require an uncontrolled failover (i.e. one that is unplanned and entirely unprepared for). As noted above, asynchronous replication may result, in certain circumstances, in data loss in the event of an uncontrolled failover to DC3. Although a limited form of synchronisation between DC0 and DC3 seeks to ensure the integrity of externally notified settled positions and liquidity, it is not possible to extend this protection to all CREST processing and the synchronisation may not be possible at all times.

In the event of a failover from DC0 to DC3, steps will need to be taken by both EUI and external parties to ensure that records are reconciled and that processing can continue once DC3 is brought online. This will require EUI to reconcile its internal systems. In highly exceptional circumstances, and in order to enable the recommencement of settlement processing, it may not be possible to recover all information or transactions that were applied at DC0 as available records may be incomplete or insufficient to allow processing to recommence. EUI may need to go back to the best and most complete record available and resume operation on the basis of information available at DC3.

Chapter 11: Networks and system messages

Section 1: Accreditation

EUI notifies users as and when appropriate of the identity of accredited network providers. The accreditation process involves a series of technical tests to check each network provider's compliance with the technical specifications of the Network and Systems Security Systems Requirements Specification, as amended under change control procedures during the course of the accreditation process. The testing process relies on sampling checks relating to particular features of the specification and on an external audit of the process. Accreditation does not imply any guarantee of the network providers' service or of their probity or competence. EUI has no responsibility for the maintenance or security of the networks. Each network provider is responsible for the development, installation, operation availability and maintenance of the network.

Clause 6 of the CREST Terms and Conditions (and the comparable provisions in the other agreements entered in to by users and participants) state that:

> *6.3 EUI has specified the requirements in relation, inter alia, to functionality, security and performance to be met by the networks through which dematerialised instructions are sent. EUI accredits network providers who demonstrate to EUI that they are able to supply services which comply with the requirements specified by EUI. The CREST Software is designed and built by EUI and is supplied to the Member on the terms and conditions set out in Schedule 2.*
>
> *6.4 Accredited network providers provide their services as principal and not as agent or delegate for EUI, and EUI has arrangements to enable it to monitor the provision of such services by them. The Member acknowledges and agrees that its network provider (or in the case of Sponsored Members, the network provider used by its Sponsor) and not EUI is responsible for the supply, upkeep and security of the network and the service levels to which the Network Services are provided and that it is the responsibility of the network provider and not EUI:*
>
> *6.4.1 to supply hardware for authentication of messages to the standards specified by EUI and of software which is required in order to provide Network Services (except for the CREST Software);*
>
> *6.4.2 to transmit to the CREST system only dematerialised instructions which have been authenticated at the Gateway;*
>
> *6.4.3 to provide such other services as are described in the CREST Manual as being the responsibility of a network provider;*
>
> *and that the basis on which the network provider provides its services is a matter for agreement between the Member and the network provider (or where relevant, the Sponsor).*
>
> *6.5 The Member acknowledges and agrees that it (or its Sponsor) is responsible for:*
>
> *6.5.1 the operation of the equipment used by the Member (or the Sponsor) to prepare, send and receive dematerialised instructions (including the CREST Software, any file transfer system, any local or wide area network and the Gateway);*
>
> *6.5.2 the maintenance and security of the equipment used by it (or in the case of Sponsored members, used by its Sponsor), including the security of any local or wide area network, and accordingly acknowledges that it is its responsibility (or in the case of Sponsored*

members, its Sponsor's responsibility) to ensure that the only communications delivered to the Gateway are dematerialised instructions which have not been tampered with en route to the Gateway;

6.5.3 the design and build of any file transfer system used by it to assist with the creation of dematerialised instructions;

6.5.4 taking steps to prevent tampering with the CREST Software or the authentication hardware and software;

6.5.5 ensuring that if any software is used on the Gateway (or any other hardware on which the CREST Software is operating) which is not CREST Software or supplied by its network provider as referred to in clause 6.4.1, that such software does not interfere with the CREST Software or the authentication procedures contained in the Gateway.

Section 2: Authentication procedures

Introduction

The network providers are responsible both to their clients and to EUI for ensuring that only properly authenticated dematerialised instructions are transmitted to the CREST Applications Host (when operating for purposes that are within the scope of any applicable CREST Regulations). EUI treats, without further reverification, all messages transmitted by the network providers to its Applications Host as being properly authenticated dematerialised instructions and thus as comprising the requisite authority for EUI to act in accordance with them.

Message authentication is one of a set of security procedures which EUI has specified for implementation by the network providers to check the validity of messages (whether interactive or by `file transfer) sent across the network. It checks that messages received have come from the purported source, and have not been altered en route. Message authentication is a cryptographic procedure, relying on keys which are stored securely and are uniquely associated with individual CREST gateway computers.

Before a message is sent, a check code is produced by the authentication process, whose value is dependent upon every 'bit' of the message and upon a secret key which is shared only with the receiver. This check code is transmitted with the message. Upon receipt of the message, the authentication process at the receiver performs an identical calculation, and checks that the result is the same as the received check code.

If the check code which the receiver calculates differs from that received (implying that the message has been modified in some way during transmission), the message should not be forwarded by the network provider to the CREST system for processing. The use of a cryptographic algorithm is designed in accordance with international standards whose purpose is to ensure that the value of the check code cannot be generated without knowledge of the secret key to minimise the risk that an interloper could forge a valid combination of message and check code.

The secret keys used in this process exist only within secure units at the sender and receiver. To ensure that both share the same key without it being divulged, the key is transmitted in encrypted form and the transmission is itself subject to an authentication process. The encryption and authentication of the keys is carried out using 'asymmetric cryptography'. In this technique, each party has two related keys, a private key and a public key. The private key is never transmitted outside of the secure unit in which it is generated. The 'public' key is required by anyone wishing to communicate with its 'owner'.

In the case of the CREST system, all communication is from users to the CREST service rather than between users. Therefore a user's keys are not shared with other users, but only with EUI.

Authentication specification

In accordance with Paragraph 5(3)(a) of Schedule 1 to the UK Regulations, EUI has specified the following authentication requirements to the network providers.

Users shall only be able to access the CREST system via specific gateway computers.

Before a session is established between a gateway computer and the communications host, both systems must authenticate themselves to each other.

All messages and files passing between the CREST system's gateway computers and the CREST Communications Host (in both directions) shall be appended with a message authentication code (MAC) which shall be checked on receipt.

The MAC must be computed using a cryptographic algorithm, operating in a mode which ensures that the value of the MAC is dependent upon the order of the data as well as the data content.

Messages and files which fail the MAC check shall not be delivered to the CREST application host or, in the reverse direction, to the user. The security layer at both ends will implement this requirement.

The authentication scheme shall prevent replay attacks and be able to detect missing messages.

Tamper resistant hardware, exclusively, shall be used to store and execute all cryptographic algorithms, store all plain text secret cryptographic keys and overwrite all keys and generate alarms if tampered with.

No CREST user shall share any key with any other CREST user.

A single key shall be associated with a particular gateway computer.

All cryptographic keys must have a minimum length of 1024 bits.

Tamper resistant hardware shall be used to enforce the use of separate working keys for encryption (if supplied), inbound authentication and outbound authentication.

Working keys shall be changed securely on a regular basis.

Section 3: Attribution and addressing of system instructions

The following provisions specify to whom each instruction is attributable and to whom each instruction is addressed. The terminology used in the left-hand column is that employed in the UK Regulations; the general effect of each provision, using the terminology employed in the Manual, is shown on the right for convenience.

REGULATIONS TERMINOLOGY	MANUAL TERMINOLOGY
ATTRIBUTION OF INSTRUCTIONS	
1 Save as set out in paragraph 1A below, each instruction sent (or treated as sent as provided in paragraphs 2, 2A and 3 below) by a system participant is attributable to the system participant whose User ID appears (or is treated as appearing as provided in 4 below) in the instruction as sender (whether or not the Participant ID which appears is that of the same system participant) and in addition:	1 Save as set out in 1A below, each message input (or treated as input as provided in 2, 2A and 3 below) by a user is attributable to the user as identified in the message by the User ID and (where relevant) to the user as identified under 4 below (whether or not the sender's Participant ID in the same message relates to the same person). In addition, it is also attributable to (where relevant):
(1). if the instruction indicates as sender (by Participant ID of sender) a system member different from the system participant whose User ID appears (or is treated as appearing) in the instruction as sender, it is taken to have been sent on behalf of (and is thus attributable to) that system member;	(1). the member on whose behalf it was sent (as indicated by the Participant ID);
(2). if the instruction indicates as sender (by Participant ID of sender) a registrar or receiving agent or issuing and paying agent (acting for a participating issuer) which is not itself a participating issuer in respect of the security concerned, it is taken to have been sent on behalf of (and is thus attributable to) the participating issuer as indicated by the identity of the security the subject of the instruction and, if the instruction indicates as sender (by Participant ID of sender) a registrar or receiving agent or issuing and paying agent different from the system participant whose User ID appears (or is treated as appearing) in the instruction as sender, that registrar or receiving agent or issuing and paying agent[43];	(2). the issuer (where the Participant ID of the sender is that of a CREST Registrar or receiving agent or issuing and paying agent of the issuer) as indicated by the identity of the security specified in the message and (where the Participant ID of the sender is that of a CREST Registrar or receiving agent or issuing and paying agent different from the user as identified in the message by the User ID) that CREST Registrar or receiving agent or issuing and paying agent;
(3). if the instruction indicates as sender (by Participant ID of sender) a participating issuer which is also in respect of securities issued by it acting as a registrar or receiving agent or issuing and paying agent and relates to those securities, it is taken to have been sent on	(3). the issuer (where the Participant ID of the sender is that of an issuer acting as its own CREST Registrar or receiving agent or issuing and paying agent); or

[43] References in these attribution and addressing specifications to an instruction or message which indicates as sender a registrar or receiving agent or issuing and paying agent acting for a participating issuer, or a participating issuer which is also in respect of securities issued by it acting as a registrar or receiving agent or issuing and paying agent, include an instruction or message relating to a security in respect of which the sender so indicated is (pursuant to that instruction or message) to act as such registrar or receiving agent or issuing and paying agent, or as such participating issuer, upon the issue of the security concerned as a participating security. Where the security details held (or instructed to be held by the message concerned) in the CREST system relating to a particular eligible debt security specify (or are instructed to specify) both a Primary Issuer ID and a Secondary Issuer ID, the (participating) issuer of that security for the purposes of these attribution and addressing specifications includes each of the persons so identified.

behalf of (and is thus attributable to) that participating issuer; or	
(4). if the instruction indicates as sender (by Participant ID of sender) a settlement bank different from the system participant whose User ID appears in the instruction as sender, it is taken to have been sent on behalf of (and is thus attributable to) that settlement bank.	(4). the settlement bank on whose behalf it was sent (as indicated by the Participant ID of the sender).
1A In relation to the auto-collateralisation arrangements described in Chapter 7 Section 8, each instruction generated by the Operator-system which initiates or implements transfers of securities and/or making of payments under transaction types SCR or DEL between (i) a member participating in the arrangements and the settlement bank repo member of his settlement bank; and (ii) a settlement bank repo member or settlement bank linked member and the Bank of England acting through its related repo membership; is attributable to: (a) in case (i), each of the participating member, the settlement bank repo member of his settlement bank and the system participant(s), if any, which act as their respective sponsoring system participants in relation to their respective relevant memberships; and (b) in case (ii), each of the settlement bank repo member or the settlement bank linked member concerned, the Bank of England repo member concerned and the system participant(s), if any, which act as their respective sponsoring system participants in relation to their respective relevant memberships; and each such instruction shall be treated as having been sent to the Operator by each system participant to whom it is so attributable which has a related User ID.	1A Each message generated by the CREST system to effect transfers of securities or the making of payments pursuant to the auto-collateralisation arrangements is attributable: (a) for repo movements between the member and his settlement bank: to the member, his settlement bank's repo member and their respective sponsors, if any; and (b) for repo movements between a settlement bank and the Bank of England: to the settlement bank repo member or the settlement bank linked member, the related Bank of England repo member and their respective sponsors, if any; and each message is treated as having been sent to the Operator by the related user.
2 For the purposes of paragraph 1 above, (a) instructions generated by the Operator-system to initiate or implement transaction types CLA, DBI, DBR, INT, RPR, SLD, SLR, STP, TDE, TDG, TDI, TDM and TDR (and, in the case of the Bank of England's repo memberships, OATs), or pursuant to the operation of the automatic transformation software, or (b) instructions input by the Operator to effect a payment pursuant to the exercise of its central intervention powers as described in Chapter 10 Section 1, are treated as being instructions which have been sent to the Operator by each system participant whose User ID is input by the Operator as the person instructing the movement or receipt of the securities or payment concerned.	2 For the purposes of paragraph 1 above, each CLA, DBI, DBR, INT, SLD, RPR, SLR, STP, TDE, TDG, TDI, TDM and TDR (and, in the case of the Bank of England's repo memberships, OATs) transaction generated by the CREST system and each instruction generated by the CREST system pursuant to the operation of the automatic transformation software and each instruction to move cash input by EUI pursuant to EUI's central intervention powers, is treated as having been sent to the CREST system by the user whose User ID appears in the transaction as the person instructing the delivery or receipt of the securities or payment concerned.
2A For the purposes of paragraph 1 above, instructions generated by the Operator-system to initiate or implement transaction types ADJ, DEL and USE pursuant to the operation of the	2A For the purposes of paragraph 1 above, each ADJ, DEL and USE generated by the CREST system instructing the credit or debit of an eligible debt security to or from a stock

procedures which relate to the issue or redemption or cancellation of a unit of an eligible debt security, and the payment of interest in respect of any such unit, are treated as being instructions which have been sent to the Operator by each system participant whose User ID is input by the Operator as sender.	account of an issuing and paying agent (and, where applicable, any related payment), or to effect an interim interest payment in respect of such unit, is treated as having been sent by the user whose User ID appears in the transaction as sender.
3 For the purposes of paragraph 1 above, (a) instructions generated by the Operator-system to initiate or implement transaction types DEL or XDL, and in which the Participant ID indicates as sender a person who is admitted as a system member under participant type 'CCP' or CSD participant, or (b) instructions generated by the Operator- system to initiate transaction type DEL, in which the Participant ID indicates as sender a system member who is admitted otherwise than under participant type 'CCP' and which are generated to match instructions which initiate or implement transaction type DEL in which the Participant ID indicates as sender a person who is admitted as a system member under participant type 'CCP', are treated as being instructions which have been sent to the Operator by the system participant whose User ID is input by the Operator as the person instructing the movement or receipt of the securities or payment concerned.	3 For the purposes of paragraph 1 above, each DEL or XDL transaction generated by the CREST system on behalf of the user of a 'CCP' participant or of a CSD participant, and each DEL transaction generated by the CREST system on behalf of the user of a member (other than a 'CCP' participant) to match a DEL transaction generated by the CREST system on behalf of the user of a 'CCP' participant, is treated as having been sent to the CREST system by the user whose User ID appears in the transaction as the person instructing the delivery or receipt of the securities or payment concerned.
4 Each instruction which is identifiable as being sent from the computers of a system participant whose User ID does not appear in the instruction as sender is attributable to that system participant and, for the purposes of paragraph 1 above, the User ID of the system participant concerned shall be treated as appearing in the instruction as sender[1].	4 Each message input by a user which is identifiable as being sent from the Gateway computer of a user who is not identified in the message by his User ID is, in addition to being attributable to the user and the participant or issuer identified by the User ID and Participant ID or identity of security which appears in or is the subject of the message as per paragraph 1, attributable to the user from whose Gateway computer the message was sent (and, for the purposes of paragraph 1 above, the User ID of the user concerned is treated as appearing in the message as sender).[44]
5 Each instruction sent by the Operator in consequence of an instruction sent (or treated as sent) to the Operator by a system participant (the 'originating instruction') is attributable to the Operator and in addition is taken to have been sent on behalf of (and is thus attributable to) each person to whom the originating instruction is attributable under paragraph 1 or paragraph 1A and (where relevant) paragraph 4 above. Save as set out in paragraph 5A, each	5 Each message sent by the CREST system as a result of processing a transaction or message input (or treated as input) by a user is attributable to EUI, and to the user and the participant or issuer identified by the User ID and Participant ID or identity of security as per paragraph 1 or 1A and (if relevant) paragraph 4. Any other message sent by the CREST system (in particular, subject to paragraphs 2 and 2A, for transaction types ADJ, BDR, BWR,

[44] In connection with the International Settlement Links Service, a CSD participant may appoint EUI to act as its sponsor (other than as a CREST central sponsor) to send and receive certain messages on behalf of the CSD participant concerned. As each CSD participant may also send messages from its own gateway computer, it is admitted to the CREST relevant system under its own specified User ID and Participant ID. The specified User ID and Participant ID of the CSD participant concerned appear in each message (as sender) which is sent by EUI as sponsor on its behalf. However, each message sent by EUI as sponsor is processed differently from a message sent to the CREST system by other users, and accordingly is identifiable as a message sent from the gateway computer of EUI (in its capacity as a sponsor). The purpose of paragraph 4, when read in conjunction with paragraph 1, is to specify that each such message is sent by EUI and is sent on behalf of (and is thus additionally attributable to) the CSD participant concerned.

other instruction sent by the Operator is attributable to the Operator.	XDC and XDR) is, save as set out in paragraph 5A, attributable to EUI only.
5A Each instruction sent by the Operator to an issuer, or any registrar, receiving agent or sponsoring system participant acting for it, which relates to details of a system participant who holds uncertified units of a participating security is attributable to the Operator and is in addition taken to have been sent on behalf of (and is thus attributable to) the system participant concerned.	5A Each message sent by EUI to any issuer (or a registrar, receiving agent or sponsor acting for it)| which relates to details of a member is attributable to EUI and to the member concerned.
6 Each instruction (the 'relevant instruction') is taken to repeat all the information contained in each (if any) prior instruction which was sent or treated as sent by the sender of the relevant instruction and to which the relevant instruction relates, subject to such addition, variation, modification or deletion as may be directed by the relevant instruction.	6 Each message sent confirms each previous message relating to the same subject, subject to additions, changes and deletions directed by the message.
ADDRESSING OF INSTRUCTIONS	
7 Each instruction sent (or treated as sent as provided in the foregoing paragraphs) by a system participant to the Operator, or attributable to the Operator, is addressed, insofar as it relates to a transfer or proposed transfer of uncertificated units of a participating security by or to a system member (including a TTE or ESA which is followed by a TFE to the escrow agent) to:	7 Each message input (or treated as input) by a user which relates to transfers of securities under transaction types DBV, DEL, MTM, RPO, RPS, SCR, SLO, TDA, TDO, XDL(and TTE or ESA which is followed by a TFE to the escrow agent), including each message input by EUI pursuant to the operation of the automatic transformation software or the auto-collateralisation arrangements and each message generated by the CREST system to initiate or implement a CLA, RPR, SLR, DBR, TDE, TDG, TDM, TDR or otherwise input by EUI is addressed to:
(1). the Operator;	(1). EUI;
(2). the participating issuer of the security (as indicated by the identity of the security the subject of the instruction);	(2). the issuer indicated by the identity of the security specified in the message;
(3). if applicable, the sponsoring system participant which acts for that issuer and, if different, the registrar or issuing and paying agent in respect of the security concerned;	(3). where relevant, the CREST registrar or issuing and paying agent for that security and, where applicable, its sponsor;
(4). the system member (including an escrow agent) whose Participant ID is indicated in the instruction (or, where the transfer is pursuant to the auto-collateralisation arrangements, identified by the Operator) as the person who is or is to be the transferee or transferor of the security the subject of the instruction;	(4). the member (including an escrow agent) identified by the Participant ID of the stock credit party or stock debit party;
(5). the sponsoring system participant acting for that system member in relation to that instruction; and	(5). where relevant, the sponsor (which may be a CREST central sponsor) acting for the member in relation to that message identified by the Participant ID of the stock credit party or stock debit party;
(6). in the case of a TTE or ESA and of a TFE to an escrow agent identified in any relevant corporate actions data, the person, if different	(6). in the case of a TTE or ESA or of a TFE to an escrow agent (where relevant) any person on whose behalf the relevant escrow agent is

from the system member acting as escrow agent, for whom such escrow agent is acting as identified in such Data; and, for the purposes of this paragraph 7, a transaction type DEL or XDL relating to a transaction which results in the issue or cancellation of a CDI, and a transaction type DEL relating to a transaction which results in the issue or redemption of a unit of an eligible debt security, shall be deemed to relate to a transfer or proposed transfer of uncertificated units of a participating security[45].	acting as identified in any relevant corporate actions data; and, for the purposes of this paragraph 7, a transaction type DEL or XDL relating to a transaction which results in the issue or cancellation of a CDI, and a transaction type DEL relating to a transaction which results in the issue or redemption of an eligible debt security, shall be deemed to relate to a transfer of securities[2].
8 Each instruction sent (or treated as sent as provided in the foregoing paragraphs) by a system participant to the Operator, or attributable to the Operator, is addressed, insofar as it relates to a payment or proposed payment by (or to) a system member (including a receiving agent) or an issuing and paying agent, to:	8 Insofar as it results or is to result in a debit (or credit) to a CMA, each message input or treated as input by a user, including each DBI, INT, SLD, STP or TDI generated by the CREST system as the result of processing any other transaction and each message generated by EUI pursuant to the operation of the automatic transformation software or the auto-collateralisation arrangements or otherwise input by EUI, is addressed to:
(1). the Operator;	(1). EUI;
(2). the settlement bank of that system member or issuing and paying agent;	(2). the settlement bank of the member whose CMA is or is to be debited (or credited);
(3). any sponsoring system participant acting for such settlement bank;	(3). where relevant, the sponsor of a sponsored settlement bank;
(4). any system member or issuing and paying agent to (or by) whom the payment is to be made (as identified by the Participant ID of the recipient (or maker) indicated in the instruction or, in the case of the auto-collateralisation arrangements, identified by the Operator);	(4). the member to (or by) whom payment is to be made as identified by the Participant ID entered or identified as the cash credit party (or cash debit party);
(5). if applicable, a participating issuer to (or by) whose receiving agent or issuing and paying agent the payment is to be made (as identified by or derived from the Participant ID of the recipient or maker of the payment indicated in the instruction); and	(5). where relevant, the issuer to (or by) whose receiving agent or issuing and paying agent the payment is to be made;
(6). the sponsoring system participant acting for such system member in relation to that instruction, or any sponsoring system participant acting for such participating issuer (and, if different, such issuer's receiving agent or issuing and paying agent).	(6). the sponsor (which may be a CREST central sponsor) acting for the member, in relation to that message, or the issuer's receiving agent or issuing and paying agent and, where applicable, its sponsor.
9 Each instruction sent by a system participant to the Operator, or attributable to the Operator, is addressed, insofar as it relates to the exercise of a right, privilege or benefit attaching to or arising from uncertificated units of a participating security by a system member, to:	9 Each DEL, ESA, MTM, USE, RCN, STR, TTE or other message[46] input by a user or EUI insofar as it relates to the exercise of a right, privilege or benefit relating to a security by a member is addressed to:
(1). the Operator;	(1). EUI;

[45] Note the 'buyer election' instructions (ACON messages) fall within this paragraph 7, not paragraph 9.

[46] Examples of other relevant messages for these purposes are the dividend election input and dividend election deletion messages described in Chapter 7.

(2). the participating issuer concerned (as indicated by the identity of the security the subject of the instruction); and	(2). the issuer indicated by the identity of the security specified in the message; and
(3). any sponsoring system participant acting for it and, if different, its registrar or receiving agent.	(3). any receiving agent (as identified in the relevant corporate actions data or meeting announcement data) or registrar acting for that issuer and, where applicable, its sponsor.
9A Each instruction sent to the Operator by a participating issuer, or any registrar, receiving agent or sponsoring system participant acting for it, insofar as it constitutes an electronic tax voucher[47] is addressed to:	9A Each PAY instruction, insofar as it constitutes an electronic tax voucher[48], is addressed to:
(1) the system member whose Participant ID is indicated in the instruction;	(1) the member identified by the Participant ID of the cash credit party or, as the case may be, the stock credit party;
(2) any sponsoring system participant of such a member; and	(2) where relevant, the sponsor acting for the member in relation to that message; and
(3) the Operator.	(3) EUI.
9B Each instruction sent by a system participant to the Operator, or attributable to the Operator, is addressed, insofar as it is an instruction by a participating issuer, or by a sponsoring system participant acting for it, which contains details of a proposed meeting at which a system member may exercise voting rights in respect of uncertificated units of a participating security held by him, to: (1). the Operator; (2). each system member who is or thereafter becomes eligible to exercise such voting rights; and (3). each sponsoring system participant who acts for such a system member.	9B Each message comprising an announcement made by or for an issuer which contains details of a meeting at which voting rights are exercisable is addressed to EUI and to every member (and where relevant his sponsor or voting service provider) who is or becomes eligible to exercise such voting rights.
10 Each instruction sent by a system participant to the Operator, or attributable to the Operator, is addressed, insofar as it relates to details of a holder of an uncertificated unit of a participating security or of a transfer between balances in a member account, to:	10 Each message which relates to details of a member and each OAT (in each case whether input by a user or EUI) is addressed to:
(1). the Operator; and where relevant	(1). EUI;
(2). the participating issuer concerned (as indicated by the identity of the security the subject of the instruction) or, in the case of an instruction relating to details of a holder, any other participating issuer whose securities are held by the relevant holder from time to time; and	(2). the issuer of the security specified in the message or, in the case of a message relating to details of a member, any other issuer whose securities are held by that member from time to time; and
(3). any sponsoring system participant acting for that issuer and, if different, the registrar or issuing and paying agent in respect of the security concerned.	(3). the CREST Registrar or issuing and paying agent for that security and, where applicable, its sponsor.

[47] For these purposes, an 'electronic tax voucher' means a statement of the type referred to in The Income and Corporation Taxes (Electronic Certificates of Deduction of Tax and Tax Credit) Regulations 2003.

[48] For these purposes, an 'electronic tax voucher' means a statement of the type referred to in The Income and Corporation Taxes (Electronic Certificates of Deduction of Tax and Tax Credit) Regulations 2003.

11 Each instruction sent by a system participant to the Operator, or attributable to the Operator, is addressed, insofar as it is or relates to an instruction to convert uncertificated units of a participating security into certificated form, to:	11 Each STW input by a user or EUI is addressed to:
(1). the Operator;	(1). EUI;
(2). the participating issuer concerned (as indicated by the identity of the security the subject of the instruction); and	(2). the issuer of the security specified in the message; and
(3). any sponsoring system participant acting for it and, if different, its registrar.	(3). the CREST Registrar for that security and, where applicable, its sponsor.
12 Each instruction sent by a system participant to the Operator, or attributable to the Operator, is addressed, insofar as it is or relates to an instruction by a participating issuer or a sponsoring system participant acting for him to credit or debit a stock account of a system member (other than with a unit of an eligible debt security), to:	12 Each USE, PAY, REG, STD, DEL or other message input by a user or EUI which is an instruction by or for an issuer to credit or debit stock (other than an eligible debt security) to a member or relates to such a transaction is addressed to:
(1). the Operator;	(1). EUI;
(2). the system member whose Participant ID is indicated in the instruction;	(2). the member identified in the message as the stock credit party or stock debit party;
(3). any sponsoring system participant acting for that system member; and	(3). if the member is a sponsored member, its sponsor (other than a CREST central sponsor); and
(4). where relevant, the participating issuer concerned (as indicated by the identity of the security the subject of the instruction) and any sponsoring system participant acting for it and, if different, its registrar.	(4). where relevant, the issuer concerned and the CREST Registrar for the security and, where applicable its sponsor.
12A Each instruction sent by a system participant to the Operator is addressed, insofar as it is an instruction attributable to a participating issuer to record in the CREST system details relating to an eligible debt security issued or to be issued by that participating issuer, to:	12A Each message input by a user as an issuing and paying agent which instructs EUI to add, amend or delete security details or corporate actions details relating to an eligible debt security to or in the CREST system, is addressed to:
(1). the Operator;	(1). EUI;
(2). each person who (whether as a system-participant or by using the facilities of a sponsoring system-participant) may access the security details so recorded; and	(2). each person who (whether by himself or through using the services of a sponsor) may access the details so recorded by means of CREST enquiry facilities; and
(3). any sponsoring system participant acting for that person.	(3). if the person uses the services of a sponsor, his sponsor.
13 Each instruction sent by the Operator in consequence of an instruction sent (or treated as having been sent) to the Operator by, or generated by the Operator-system for, a system participant (the 'originating instruction') is addressed to the persons, other than the Operator, to whom the originating instruction is in accordance with the preceding paragraphs 7 to 12A taken to be addressed.	13 Paragraphs 7 to 12A also apply to the messages sent or treated as sent by EUI in response to messages sent or treated as sent to it by users or generated automatically by the CREST system for users.

Chapter 12: Serving of notices

Section 1: Notices relating to restraints on the transferability of securities by members (e.g. stop notices, court orders)

In some circumstances, legal action or events occurring outside the CREST system may inhibit a member's ability to transfer securities or to exercise any rights, benefits or privileges attaching to or arising from securities. If EUI were unaware of this restraint, it would be possible for the system to process a transfer from one membership to another which could not then be registered, or which might otherwise give rise to disruptive effects upon other members. It would also be possible for the system to process instructions (such as proxy appointment instructions) which might mislead other participants. In order to minimise this risk, the CREST Rules and Terms and Conditions require a member or a sponsored member (as well as his sponsor, including a CREST central sponsor) to notify EUI immediately:

- if it believes or becomes aware that a stop notice is to be served in respect of any units of a participating security held by it through the CREST relevant system;
- if it believes or becomes aware that an application is to be made for a court order which, if granted, would in any way restrain the transfer of title to units of a participating security held by it through the CREST relevant system or the exercise of any rights, benefits or privileges attaching to or arising from such units;
- if it believes or becomes aware that any other event is likely to occur which could affect its ability to transfer title to units of a participating security held by it through the CREST relevant system or to exercise any rights, benefits or privileges attaching to or arising from such units;
- if it receives any stop notice or court order of the type described in the first two indents above or becomes aware that any such order has been or is to be served on any other person; or
- of the occurrence of any other event affecting its right or capacity to transfer title to units of a participating security held by it through the CREST relevant system or to exercise any rights, benefits or privileges attaching to or arising from such units.

Similar requirements are contained in the agreements entered into by registrars and sponsored registrars (as well as their sponsors).

Note: The procedure for serving notice is set out in Section 4 below. When EUI receives notification of such a restraint under the procedure set out in Section 4 below, EUI will in normal circumstances transfer the securities affected by the stop notice or court order to an escrow balance, for which EUI itself will act as escrow agent. EUI will await progress in respect of the stop notice, court order etc before taking any further action.

Section 1A: Notices relating to the restraints on the ability of a participating issuer of eligible debt securities (or a CREST IPA on its behalf) from issuing or redeeming units etc.

In some circumstances, whether as a result of legal incapacity or some other legal action or event, the ability of a participating issuer (or the CREST IPA on its behalf) to issue or redeem units of an EDS, or to make or receive CREST payments, by means of the CREST relevant system may be inhibited. In some circumstances, this may result in a CREST IPA being unable to confer title to units of an EDS on the initial holder or from making or accepting final payment of interest, issue or

maturity proceeds, in either case on behalf of and so as to bind the participating issuer. In order to minimise these risks, the CREST Issuing and Paying Agents Admission Agreement requires a CREST IPA to notify EUI immediately upon becoming aware of the occurrence, in relation to any participating issuer for which the CREST IPA is acting as issuing and paying agent, of any of the following events:

- the presentation of a petition for the winding-up of the participating issuer;
- the taking of any step with a view to the voluntary winding-up of the participating issuer;
- the occurrence under the laws of any applicable jurisdiction of anything analogous to or having a substantially similar effect to any of the events described in the first two indents in relation to the participating issuer; or
- the occurrence of any other event which affects or may affect the ability of the participating issuer (or the CREST IPA on its behalf) to issue or redeem units of an eligible debt security, or to make or receive CREST payments, by means of the CREST relevant system.

Note: The procedure for serving notice is set out in Section 4 below. When EUI receives notification of such constraint or incapacity under the procedure set out in Section 4 below, EUI will in normal circumstances disable the Issuer ID of the participating issuer concerned and/or suspend all affected securities of that participating issuer.

Section 1B: Notices relating to the suspension, termination or withdrawal of a CREST sponsor's (including a CREST central sponsor's) authority to act and related matters

Where a member uses the services of a sponsor (or a VSP), any event which affects the authority of the sponsor (or VSP) to send and receive messages on behalf of the member may affect the integrity of settlement through the CREST system (or any action taken or to be taken in connection with the CREST Voting Service). In order to minimise this risk, the CREST Rules and Terms and Conditions require a member (as well as its sponsor or VSP) to notify EUI immediately of:

- any suspension, termination or withdrawal of the sponsor's (or VSP's) appointment or authority to act as the member's sponsor (or VSP);
- any proposed appointment by the member of a replacement sponsor (or VSP); and/or
- any other matter which (for any reason) affects the right, capacity or ability of the sponsor (or VSP) to act on behalf of the member.

Note: The procedure for serving notice is set out below. When EUI receives notification of any of these matters, the course of action which EUI can be expected to take will be determined by reference to the particular circumstances of the suspension, termination or withdrawal of the sponsor's (or VSP's) appointment or authority. If the member wishes (and, subject to the restrictions set out in Chapter 4, section 4 on the circumstances in which a member's appointment of a CREST central sponsor may be terminated or suspended, is permitted) to terminate or suspend such appointment or authority immediately, in normal circumstances EUI will immediately suspend the services provided by the sponsor (or VSP) to the member. Similarly, if some other event or circumstance has occurred which has an immediate impact upon the right, capacity or ability of the sponsor (or VSP) to send and receive messages on behalf of the member. However, if the member proposes (and is permitted) to appoint a replacement sponsor (or VSP) with effect from some future date, it should complete and send to EUI a 'Change of Sponsor/VSP' Form (which

is available from EUI). After its receipt of a duly completed and dated 'Change of Sponsor/VSP' Form, EUI will check with the proposed replacement sponsor (or VSP) whether the necessary arrangements are in place and, once confirmed, make appropriate changes in the CREST system to allow the replacement sponsor (or VSP) to send and receive properly authenticated dematerialised instructions on behalf of the member (in place of the sponsor or VSP formerly authorised by that member). The changes will take effect from the start of the 'effective date' specified by the member in the 'Change of Sponsor/VSP' Form or, if no date is stated or the 'Change of Sponsor/VSP' Form is received by EUI too late for processing by the date specified, from the start of the second business day after the 'Change of Sponsor/VSP' Form is received by EUI.

Section 1C: Notices relating to inaccurate or incomplete information held in relation to the SDAS

Under the Stamp Duty Assessment Service, EUI provides CREST services in reliance upon static information relating to SAT Settlement Participants (and their relationship with one or more SAT Sending Participants) which is provided or purports to be provided by SAT Sending Participants.

EUI does not verify the accuracy or completeness of this information, but makes available certain enquiry facilities that enable or facilitate participants in the Stamp Duty Assessment Service to monitor this information and check whether it is or remains accurate and complete. EUI will continue to provide CREST services under the Stamp Duty Assessment Service in reliance on this static information until it receives actual notice that the information is inaccurate or incomplete in accordance with the procedure for notice contemplated by this Section 1C; or the relevant SAT Settlement Participant(s) has/have otherwise taken corrective action which is available to it/them under the Stamp Duty Assessment Service (as described in Chapter 8, section 10 of the CREST Reference Manual).

In order to avoid EUI's provision of CREST services under the Stamp Duty Assessment Service being made on the basis of inaccurate or incomplete information, the affected SAT Sending Participant should promptly notify EUI upon becoming aware that any such information relating to it or any SAT Settlement Participant for whom it acts (or has acted) is (or has become) inaccurate or incomplete. Any such notification must be accompanied by a further static information form as may be required by EUI to update the relevant information held by EUI.

Note: The procedure for serving notice is set out in Section 4 below. When EUI receives notification that any static information held in relation to the SDAS is (or has become) inaccurate or incomplete under the procedure set out in Section 4 below (together with any required updating static information form), EUI will (where it is practicable to do so) take reasonable care to halt its processing of that information and the System Controller will exercise his/her functions described in Chapter 10, section 1 of the CREST Reference Manual to amend or delete the relevant information held.

Section 2: Notices relating to incapacity of participants (e.g. insolvency)

Members and sponsored members may become subject to a legal incapacity, most commonly in the context of a corporate insolvency. In some circumstances, this may result in a member or sponsored member being unable to transfer securities or exercise any rights, benefits or privileges attaching to or arising from securities. If EUI were unaware of such an incapacity, it would be possible for the system to process a transfer from the incapacitated membership to another membership which could not then be registered, or which might otherwise give rise to disruptive effects upon other members. It would also be possible for the system to process instructions (such as proxy appointment instructions) which might mislead other participants. More generally, an incapacity may also affect any participant's ability to adhere to the terms of its contract with EUI. In order to minimise these risks, the CREST Rules and Terms and Conditions require a participant to notify EUI immediately upon becoming aware of the occurrence of:

- the presentation of any petition or the making of an application for the bankruptcy or winding-up of the participant or for the appointment of a receiver or an administrator in relation to the participant;
- the taking of any step with a view to the voluntary winding-up of the participant;
- the appointment or purported appointment of a receiver, administrative receiver, manager, trustee, administrator or similar person in respect of the participant or any property of the participant;
- the service or filing of any notice (or a copy of any notice) by any person of intention to appoint an administrative receiver or administrator in respect of the participant;
- the participant becoming unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 (but as if in subsections (1)(e) and (2) of that section the words 'it is proved to the satisfaction of the court that' did not appear);
- the participant appearing to be unable to pay or to have no reasonable prospect of being able to pay any debt as those expressions are defined in Section 268 of the Insolvency Act 1986;
- the proposal of a voluntary arrangement in respect of the participant under Part I or Part VIII of the Insolvency Act 1986;
- the dissolution of the participant or the publication in the Gazette of a notice of prospective striking off pursuant to Section 1000 of the Companies Act 2006 or the making of an application by the participant for its striking off pursuant to Section 1003 of the Companies Act 2006;
- the making of an application in respect of the participant for an interim order under section 253 of the Insolvency Act 1986;
- the Financial Conduct Authority or Prudential Regulatory Authority imposing, or giving written notice to the participant that it proposes to impose, an assets requirement (within the meaning of section 55P(4) of the Financial Services and Markets Act 2000) on the participant in respect of any assets of, or which are held by or to the order of, the participant (or the Financial Conduct Authority or the Prudential Regulation Authority giving written notice of the imposition of any such assets requirement to any institution with whom the participant keeps an account);

- the participant stopping, suspending or threatening to stop or suspend payment of all or any part of its indebtedness or the commencing of negotiations with any one or more of its creditors with a view to the general readjustment or rescheduling of all or any part of its indebtedness or the making of a general assignment for the benefit of or composition with, its creditors or if a moratorium is agreed, declared or otherwise obtained in respect of, or affecting, all or any part of its indebtedness;
- the occurrence under the laws of any applicable jurisdiction of anything analogous to or having a substantially similar effect to any of the events described in any of the indents above in relation to the participant;
- the occurrence in relation to any Group Company of any of the events listed in any of the indents above (and for this purpose any reference in those paragraphs to 'the participant' shall be construed as a reference to each Group Company), where such occurrence could or may give rise to the occurrence in relation to the participant of any of such events; or
- (if relevant) the occurrence in relation to the participant of any event of default (howsoever described) under the RTGS CREST Master Auto-Collateralising Repurchase Agreement to which the participant is party.

Note: The procedure for serving notice is set out in Section 4 below. When EUI receives notification of such incapacity under the procedure set out in Section 4 below, EUI will in normal circumstances suspend the participant affected in order to prevent the processing of any further transactions relating to that participant (including settlement). EUI has internal procedures in place in order to liaise with the appointed insolvency practitioner and (where relevant) any recognised investment exchange's Default Officials or regulators in order to determine the appropriate action after suspension (see further Chapter 10, section 3).

Section 3: Incapacity of personal members and sponsored members (e.g. death, bankruptcy or mental incapacity) - additional provisions

A sponsor who becomes aware of the death of a sponsored member, or considers or becomes aware that a sponsored member has become or is likely to become mentally incapable of managing his property and affairs, must notify EUI immediately of such event in accordance with the requirement of the CREST Rules. EUI may also acquire this information from other participants or from someone who is not a participant (e.g. personal representatives or the Court of Protection).

Note: The procedure for serving notice is set out in Section 4 below. When EUI receives notification of a personal incapacity under the procedure set out in Section 4 below, EUI will in normal circumstances suspend the member or sponsored member affected in order to prevent the settlement of any further transactions relating to that member or sponsored member. See further Chapter 10, section 3.

Section 4: Procedures for serving notices under sections 1-3

When serving a notice relating to any of the matters set out in sections 1-3 (including sections 1A and, unless a 'Change of Sponsor/VSP' Form is to be used, 1B) above, users and participants shall notify the System Controller immediately by calling the Client Contact Centre on 0845 9645 648.

Where possible, users and participants shall confirm the information given by telephone immediately by email to client_service_london@euroclear.com or fax on 020 7849 0134 (if after 6pm and before 8am please use 020 8418 6908) for the attention of the System Controller.

In all cases, users and participants shall confirm the information given by telephone in writing, together with all relevant information that the user or participant has relating to the matter, signed by or on behalf of the user or participant. This should be sent to:

Euroclear UK & Ireland Limited,

33 Cannon Street,

London EC4M 5SB

and marked for the attention of the System Controller.

Section 5: Notification of group companies which are CREST members

It is a requirement of Clause 3.1.8 of the CREST Terms and Conditions (and the comparable clauses in the agreements entered in to by other users and participants) that they:

- keep EUI informed at all times, in accordance with the CREST Manual, of all Group Companies that are for the time being CREST members or CREST IPAs.

This information is required in the event that a member suffers an incapacity. In such circumstances, any other members (or other users or participants) which are related to the incapacitated member (or other user or participant) may be affected by that incapacity and EUI has the discretion to suspend those other members (or other users or participants).

Applicants for admission to the system must inform EUI at the time of their application of any group companies which are already users or participants.

EUI will contact users and participants periodically in order to ensure the continued integrity of the database relating to Group Company relationships among those users and participants.

Section 6: Other notices

Notices given under the CREST Terms and Conditions (or other contractual agreements to which EUI is a party) shall be given in accordance with the relevant contractual provision signed (where relevant) by an authorised signatory (as identified to EUI).

Notices given by participating issuers pursuant to regulations 25(3) or 32(2)(c) of the UK Regulations should be addressed to the System Controller and sent to the address in section 4. Such notices should be signed by an officer or other authorised signatory (as notified to EUI). EUI may in its discretion request further evidence of the authority of the signatory as it considers appropriate.

Notices relating to matters set out in sections 1-3 (including sections 1A and, unless a 'Change of Sponsor/VSP' Form is to be used, 1B) above must be given in accordance with section 4. Any other instructions or information to be provided to EUI which is not provided through the CREST system may be provided in writing (including by facsimile), signed by an authorised signatory (as notified to EUI) and sent to EUI to the address in section 4. Notices which concern operational issues should be addressed to the System Controller, all other notices should be marked for the attention of the Company Secretary. Failure to mark a notice for the attention of the correct person may lead to a delay in dealing with the matter.

EUI may also receive instructions or information relating to CREST participants or Users both from the participant/User itself as well as from (where appropriate) its Parent, Sponsor, a person notified by the participant/User as having authority to act on its behalf or any other person who EUI believes to be a person legally able to act on behalf of the relevant participant / User. In addition, EUI may receive instructions or information relating to a participating issuer of an eligible debt security both from the participating issuer itself as well as from its issuing and paying agent. Any such instructions or information should be given in writing (including by facsimile) and addressed as indicated above, except where it relates to a matter set out in sections 1 to 3 (including section 1A) above in which case notice must be given as provided in section 4.

Chapter 13: Investment Funds Service

Section 1: Introduction

The Investment Funds Service provides functions, described in this Chapter, to support the holding and settlement by CREST members of units of an investment fund.

The CREST system maintains a record of notional balances of units held by members. Although the notional balances do not evidence actual title or a proprietary interest (legal title continues to be maintained by reference to the records of the particular investment fund outside the CREST system), the balances should reflect the actual holdings of the member in a particular investment fund (as they are reconciled on a daily basis against the actual legal register).

Members are able to input settlement instructions, using standard CREST system functionality, to settle movements of notional units and related payments. Members and fund managers are also be able to reconcile holdings of notional balances in members' accounts against their own records. The service also facilitates the settlement of payment-only transactions in relation to transfers of units (not linked to settlement of notional unit movements).

Members (and fund managers) may input settlement instructions themselves or they may make use of the services of a CREST central sponsor, which will result in settlement instructions being input on their behalf as a result of, for example, orders placed via an order routing platform.

Unit holders can access the Investment Funds Service using a standard CREST member, with balances of notional units being reflected in standard CREST member accounts. Fund managers (or their agents) can use 'product provider' and 'registrar' participant types to carry out functions in relation to the Investment Funds Service.

In summary, the service enables:

- settlement of notional unit movements and full settlement of payment aspects arising from the issue, cancellation and transfers of investment fund units;
- full settlement of payment aspects arising from the issue, cancellation and transfers of investment fund units (not linked to settlement of notional unit movements);
- unit holder reconciliation of pending and settled positions between information in theirown systems and balances in the CREST system;
- unit holder reconciliation of group 1 and group 2 balances between information in their own systems and balances in the CREST system (as provided by the fund manager);
- fund manager reconciliation of pending and settled positions;
- bilateral input or input using the services of a CREST central sponsor;
- notification of corporate actions in investment funds; and
- settlement of notional unit movements and settlement of payments arising from corporate action outturns.

Notional fund units

As noted above, the CREST system does not maintain the legal registers of title to participating investment funds, which continue to be maintained by reference to the relevant investment fund's records. Securities holdings displayed within a member's member accounts are therefore a

notional representation of the holdings which the member may have in any particular investment fund. These holdings do not constitute or evidence any legal or equitable interest in investment fund units.

Settlement in the CREST system of transactions involving notional units will involve actual settlement of the payment aspect of an investment fund transaction, with notional settlement of the units based on the notional holdings maintained in the CREST system. Settlement in the CREST system of an investment fund transaction on a notional basis is not itself intended to result in any change of legal or beneficial ownership. Changes to the formal records should usually be made following settlement of the cash and notional units in the CREST system. However, this is a matter for the investment fund concerned.

Terminology

In this Chapter, the following terms are used:

- "fund manager" refers to a manager of a unit trust or the authorised corporate director of an OEIC;
- "group 1" refers to units that have been held since the start of the current accounting period for the investment fund;
- "group 2" refers to units that were acquired during the current accounting period for the investment fund;
- "investment fund" refers to a unit trust or an OEIC;
- "investment fund class", "class" and "class of units" refers to a particular class of units in an investment fund;
- "notional unit" refers to a notional representation of a unit reflected in the CREST system;
- "OEIC" refers to an open-ended investment company within the meaning of the Open-Ended Investment Companies Regulations 2001;
- "participating investment fund" refers to a unit trust or an OEIC participating in the Investment Funds Service;
- "trustee" refers to the trustee of a unit trust or the depository of an OEIC;
- "unit" refers to a unit in a unit trust or to a share in an OEIC, in either case in a participating investment fund;
- "unit trust" refers to an authorised unit trust scheme within the meaning of section 237(3) of the Financial Services and Markets Act 2000 which is constituted under the law of England and Wales, Scotland or Northern Ireland and, where appropriate, the trustee of such a scheme.

The provisions of the CREST Manual apply to the Investment Funds Service (unless otherwise specified) as if references to:

- securities were to notional units and consequential references, such as to stock account balances, credits and debits were to the notional entries of units in such balances and to the notional credits and debits made as part of the Investment Funds Service;
- issuers were to the investment fund;
- transfers through the CREST system were to transfers of notional units; and

- purchases, sales, redemptions and transfers include (where the context admits) the issue and cancellation of units.

Applicability of the CREST Manual

The provisions of the CREST Manual apply in relation to the Investment Funds Service subject to the modifications set out in this Chapter.

More specifically, the following parts of the CREST Manual do not apply in relation to the Investment Funds Service:

- the CREST Central Counterparty Service Manual;
- the CREST International Manual; and
- the CREST CCSS Operations Manual.

Additionally, the following provisions of the CREST Rules do not apply in relation to the Investment Funds Service:

- CREST Rule 2 (Claims transactions);
- CREST Rule 6 (Settlement discipline);
- CREST Rule 9 (Depository Interests);
- CREST Rule 10 (Stock deposits);
- CREST Rule 11 (Rectification of registers); and
- CREST Rule 15 (Inspection of the Operator Register of securities).

Scope of service

The Investment Funds Service has been designed to meet the needs of the UK authorised investment fund market (and terminology in this Chapter is defined accordingly). However, the CREST system will not validate that only UK authorised investment funds participate. Persons considering using the service in relation to other investment funds, including funds constituted under the laws of other jurisdictions, should consider undertaking their own assessment as to the suitability of the service for such funds (in which event, defined terms shall be construed with appropriate changes). EUI provides no assurance as to the suitability or effectiveness of the Investment Funds Service in relation to such investment funds.

The CREST residual service, as described in Chapter 3, section 3 of this CREST Reference Manual, is not incorporated into the Investment Funds Service. The CREST residual service, continues to operate as a separate service.

The Electronic Communications Act 2000 ("ECA")

In England and Wales, by virtue of section 136 of the Law of Property Act 1925 ("LPA"), to be effective, a transfer of a share in an OEIC had to be made in writing and signed by the transferor and notice in writing of the transfer had to be given to the company. The Open-Ended Investment Companies Regulations 2001 were amended in March 2009 so as to permit transfers of shares in an OEIC incorporated by virtue of those regulations, to be made by means of electronic communication (within the meaning of the ECA). The electronic communication must be made by the transferor or his agent authorised in writing and notice must be given by electronic

communication to the company. The company may refuse to register any transfer of shares made by such means.

Messages sent through the CREST system are electronic communications within the meaning of the ECA and accordingly, an investment fund may accept the delivery of a message through the CREST system in place of a written instrument transferring title to shares in an OEIC, subject to any requirements imposed by the company for transfers by electronic communication having been complied with.

EUI does not monitor whether in the case of any particular OEIC, the instrument of incorporation, terms of issue and terms of business agreed between the participants permit transfers to be made by means of the CREST system and if so whether the requirements of the ECA and any requirements imposed by the company have been satisfied in the case of any particular transfer.

To similar effect, the Unit Trusts (Electronic Communications) Order 2009 disapplied section 53(1)(c) of the LPA in relation to dispositions by electronic means of units in an authorised unit trust scheme (within the meaning of the Financial Services and Markets Act 2000). Similar considerations as apply to reliance upon messages sent by means of the CREST system in place of written instruments to transfer shares in OEICs, apply to transfers of units.

This section of the CREST Reference Manual on the ECA merely provides guidance on considerations of a legal nature relevant to transfers of shares and units and is not intended to constitute legal advice; participants should take their own legal advice if they are in any doubt about these matters.

Stamp duty and regulatory reporting

Stamp duty or stamp duty reserve tax is not collected on the settlement of transactions in the Investment Funds Service. It is the responsibility of the fund manager and/or the parties to account outside the CREST system for any stamp duty or stamp duty reserve tax which is payable.

Any applicable regulatory or tax reporting obligations in relation to investment funds will not be performed by EUI or through the CREST system. It is the responsibility of all participants to meet any regulatory reporting obligations in relation to transactions in the Investment Funds Service.

Section 2: Participants

Standard CREST system functionality applies in relation to participants using the Investment Funds Service, subject to the modifications described in this Chapter 13.

Members

Holders (or prospective holders) of notional units need to be set up in the CREST system as a CREST participant of type 'member'. Holders may include intermediaries such as retail brokers, custodians, distributors or fund platforms, as well as other holders of investment fund units. A member may operate in relation to both standard CREST securities and in relation to participating investment funds.

Product providers

Product providers are set up in the CREST system as a CREST participant of type 'product provider'. Product providers are typically the fund manager of the relevant investment fund or an agent of the fund manager. The relevant product provider is a party to certain DEL transactions in relation to issue (transfer from the product provider) and cancellation (transfer to the product provider) of notional units.

Product provider participants have access to similar functionality as is available to other participants of type member. A product provider participant may operate in relation to both the CREST residual service (as described in Chapter 3, section 3 of this CREST Reference Manual) and the Investment Funds Service.

Registrars

Entities which maintain an investment fund's formal record of unit holders (which are sometimes known as registrars or third party administrators) need to be set up in the CREST system as a CREST participant of type 'registrar'. CREST registrars are restricted to registrar and announcement agent functions.

As noted above, for the Investment Funds Service the legal register of title to units is maintained by the registrar outside the CREST system. EUI does not maintain a register (notional or otherwise) of units.

To have access to stock and cash and/or issuer's agent functions, CREST registrars need a separate participant of type 'member' and/or must enter into a receiving agent agreement.

Receiving agents

Entities which make cash distributions in relation to corporate actions in investment funds units (which typically include product providers, trustees, depositories and/or their agents) will need to be set up in the CREST system as a receiving agent – a CREST participant of type 'member' or 'product provider'. Receiving agent functionality is described in Chapter 5, section 3 of this CREST Reference Manual. A member participant used as a receiving agent in the Investment Funds Service may also operate as a receiving agent in relation to standard CREST securities.

To pay cash distributions by submitting unmatched stock event (USE) instructions into the CREST system, the participant acting as the receiving agent must be specified in the corporate action reference data as the receiving agent for the corporate action.

Section 3: Securities

Introduction

As described in Chapter 2, section 6 of this CREST Reference Manual, EUI maintains a database of information relating to securities which have been admitted to the CREST system. As part of the Investment Funds Service, EUI maintains in this database information relating to participating investment funds and particular classes of units of an investment fund. This includes basic information on the investment fund (its name, registrar and product provider) as well as elements specific to the CREST system, such as the start and end date in the CREST system of a particular class of units. The CREST system does not retain data relating to the prices of investment funds.

Data in relation to participating investment funds are taken from sources external to EUI (see Chapter 1, section 3 of this CREST Reference Manual). EUI creates the investment funds security details from information received from the relevant product provider. Separate security details are maintained for each different class of a particular investment fund.

In addition, as part of the direct input services provided by EUI, flags are included in the details of each investment fund which specify whether or not that investment fund is eligible for processing under central sponsor services made available by a particular CREST central sponsor to members.

Transactions in notional units can be input into the CREST system as soon as the relevant class of units has been enabled in the CREST system. Each class of units carries a 'start date', which is the first date of settlement for notional units in relation to that class in the CREST system. Therefore, any transactions input against a new class of units only become eligible for settlement once the start date has commenced. If a class of units has been suspended, no settlement of any transaction involving that class can take place except that a registrar may adjust balances by means of the registrars adjustment.

For the purposes of CREST transaction processing, as described in Chapter 4, section 12 of this CREST Reference Manual, notional units are treated in the same way as "equities".

Restrictions

On occasion, fund managers may issue funds which only certain CREST participants and member accounts can hold, due for example to the funds being internal, institutional, charitable or not appropriate for general dealing/settlement.

In such cases, Fund Managers must provide EUI with the CREST participant IDs and member accounts that are authorised to hold the restricted fund. EUI will input details of the authorised participants and member accounts into the CREST system.

Once details of the authorised participants and member accounts have been input into the CREST system, any attempt to input a DEL transaction to receive a fund into an account which is not authorised will be rejected by the CREST system.

Where Members holds and/or transfer any Restricted Funds they acknowledge, agree and accept that they remain responsible for compliance with any applicable holding and transfer restrictions and that EUI will not take any actions in respect of such holding or transfer restrictions except as set out above.

Members may not hold or transfer by means of the CREST system any Restricted Funds where they are not identified in the CREST system as authorised to hold such Restricted Funds.

Pricing of notional units

Data relating to the prices of investment funds is not maintained in the CREST system. Notional units are not be taken into account when calculating the value of securities held by a participant. Notional units are not therefore taken into account in valuing securities held in an account linked to a CMA cap for secured credit purposes or for assembly of overnight or term DBV transactions.

Investment funds security category

Securities which have been admitted to the CREST system are arranged in categories according to type (as set out in Chapter 2, section 6 of this CREST Reference Manual). Notional units in relation to investment funds participating in the Investment Funds Service are placed in Category 15 'Unit Trusts and Open Ended Investment Companies (OEICs) – Investment Funds Service', with a category code of 'UTF'.

Security expiry

When a class of units reaches the end of its life (for example, it is replaced by a new line in a corporate action or EUI or the product provider, on behalf of the trustee or OEIC, withdraws its permission for such investment fund to be a participating investment fund in the CREST system), the product provider and/or EUI specifies an end date. EUI will apply the end date, which triggers the process of 'expiring' the security. The actions that will be taken on the expiry of an investment fund are set out in Chapter 2, section 6 of this CREST Reference Manual, under the heading 'Security expiry'.

Settlement discipline

The CREST Settlement Discipline Rules, as set out in CREST Rule 6, do not apply in relation to the matching and settlement of delivery (DEL) transactions in the Investment Funds Service.

Note: In the interests of seeking to ensure high standards of input, matching and settlement of transactions in participating investment funds, EUI intends to extend the CREST Settlement Discipline Rules to such transactions following a transitional migration period and further consultation with industry user groups.

Section 4: Transactions

Transaction types

The following transaction types are used in connection with the Investment Funds Service:

- DEL transactions;
- automatically created REG transactions;
- REG transactions created by the registrar;
- OAT transactions.

Standard CREST system functionality applies in relation to these transactions, subject to any modifications noted below.

DEL transactions

The issue of notional units, cancellation of notional units and transfers between different CREST members of notional units can be settled through the use of the delivery (DEL) transaction type. Standard CREST system functionality applies in relation to the input and matching of such DEL transactions. Delivery functionality is described in Chapter 4, section 9 of this CREST Reference Manual.

The Shared Reference field of the DEL transaction may be used to carry additional information about the transaction, such as the member's member account ID. This is a matching field.

Transactions will settle on a gross basis as the netting procedures[49] provided by EUI do not operate as part of the Investment Funds Service.

The CREST system's splitting functionality[50] and auto splitting functionality[51] do not operate as part of the Investment Funds Service.

Being a matching transaction type, both parties to a DEL need to input delete instructions in order for the transaction to be deleted.

Tolerance matching

Tolerance matching for the Investment Funds Service enables the CREST system to amend the consideration of a funds transaction within specified parameters in order to achieve a match. The maximum adjustment for each settlement currency is:

- Sterling £1.00
- US Dollar $1.00
- Euro €1.00

Participants of type 'member' may opt in/out of this tolerance matching: the default is 'opted out'. Members can 'opt in' to tolerance matching using the CREST GUI, with changes to a member's option being made intra-day. The CREST system offers a separate tolerance 'opt in' for transactions

[49] Described in Chapter 4, section 4A of this CREST Reference Manual.
[50] Described in Chapter 4, section 14 of this CREST Reference Manual.
[51] Described in Chapter 4, section 15 of this CREST Reference Manual.

in the Investment Funds Service and one for other transactions[52], meaning that members may choose to opt in for one function but not the other.

Participants of type 'Product Provider' are not permitted to 'opt in' to tolerance matching, therefore the consideration entered by the Product Provider will never be adjusted.

The CREST system determines tolerance adjustments for the Investment Funds Service as follows:

- where the member has not opted into tolerance matching, there is no adjustment to either transaction input;
- where the member has opted in, the consideration of their transaction will be adjusted within the tolerance band. Changes to the member's consideration will take place immediately on transaction matching.

Automatically created REG transactions

In relation to all DEL transactions involving the product provider, on the matching of the DEL transaction (or the creation of a 'pre-matched' DEL transaction on input by a CREST central sponsor) the CREST system will automatically create an associated registrars adjustment (REG) transaction on behalf of the product provider. The creation of the REG transactions requires no system action by the member or product provider concerned.

Where the DEL transaction relates to a transfer of notional units from the product provider to a member, the CREST system will automatically generate a REG transaction to credit the necessary number of notional units to the relevant member account of the product provider. Where the DEL transaction relates to a transfer of notional units from a member to the product provider, the CREST system will automatically generate a REG transaction to debit the necessary number of notional units from the relevant member account of the product provider. The DEL transaction and its related REG transaction will be linked, such that they will either settle together or neither will settle. The credit or debit of the product provider's member account by the REG transaction at the same time as settlement of the DEL transaction should ensure that the product provider does not hold notional units in its member account.

The CREST system will generate the REG transaction with a status of 'not ready' and a Party Status of 'fully input'. The REG transaction will be visible to the product provider but not the counterparty.

Where the REG transaction will make a debit adjustment (also known as a 'negative registrars adjustment transaction' or NEG REG), this will not require authorisation from the System Controller. Therefore, the requirements set out in Chapter 5, section 2 of this CREST Reference Manual in relation to NEG REG transactions do not apply in relation to the Investment Funds Service.

Following creation of the REG transaction, if the product provider amends the DEL transaction to change the member account referred to in it, the related REG transaction will automatically be amended accordingly. If the DEL transaction is deleted by both the product provider and the counterpart member, the REG transaction will automatically be deleted. However, it is not possible for the product provider or member to delete the REG transaction.

[52] Described in Chapter 4, section 5 of this CREST Reference Manual

REG transactions created by a registrar

Registrars adjustment (REG) transactions enable a registrar to credit or debit the balance on a stock account relating to a notional unit for which it is registrar (as noted in Chapter 5, section 2 of this CREST Reference Manual).

The registrar can use this in the context of transfers of notional holdings into and out of the CREST system. The registrar can also use this in the context of certain corporate actions where units have been issued or cancelled. Additionally, the registrar may use this for the purposes of reconciling and correcting discrepancies between balances of notional holdings in the CREST system and actual holdings recorded on the legal register outside the CREST system. The facility requires no system action by the member concerned.

Where the REG transaction will make a debit adjustment (also known as a 'negative registrars adjustment transaction' or NEG REG), this will not require authorisation from the System Controller. The requirements set out in Chapter 5, section 2 of this CREST Reference Manual in relation to NEG REG transactions therefore do not apply in relation to the Investment Funds Service.

OAT transactions

Transfers of notional units between member accounts of a CREST member can be settled through the use of the own account transfer (OAT) transaction type. Unless stated below, standard CREST system functionality applies in relation to the input of such OAT transactions. Own account transfer functionality is described in Chapter 4, section 10 of this CREST Reference Manual.

Other transactions

The CREST system does not prevent transactions other than DEL or OAT transaction types (or unmatched stock event (USE) transactions in the context of a corporate action) from being input by members. In principle, it is therefore possible for members to enter other transactions, including 'many-to-many' delivery (MTM), repo (RPO) and stock loan (SLO) transactions. However, members need to confirm with the relevant product provider, outside the CREST system, before doing so, to prevent settlement of the transactions being bad delivered.

As noted previously, it is not possible to include notional units in delivery by value (DBV) transactions.

Use of transactions

Issue and cancellation

The Investment Funds Service enables members to settle transactions in relation to notional units for the purpose of issue (i.e. the issue of units or the transfer of units from the product provider) and cancellation (i.e. the cancellation of units or the transfer of units to the product provider). These transactions are settled through the use of the DEL transaction type. The relevant product provider is a counterparty to the DEL for all such transactions. It will not be apparent from the CREST system records whether in relation to a transaction the product provider is a counterparty acting as principal (for example, in relation to transfers such as purchases or redemptions) or whether the investment fund is the principal (for example, issue, subscriptions or cancellations).

Issue

The product provider and the purchasing CREST member each enter a DEL transaction in the CREST system (or a pre-matched DEL transaction is input by a CREST central sponsor) for the delivery of the notional units to the member.

As noted above, the CREST system will automatically generate a REG transaction to credit the necessary number of notional units to the relevant member account of the product provider. The REG transaction is linked to, and will settle at the same time as, the related DEL transaction.

Cancellation

The product provider and the selling CREST member each enter a DEL transaction (or a pre-matched DEL transaction is input by a CREST central sponsor) in the CREST system for the delivery of the notional units to the product provider.

The CREST system will automatically generate a REG transaction to debit the necessary number of notional units from the relevant member account of the product provider. The REG transaction is linked to, and will settle at the same time as, the related DEL transaction.

Moving holdings into and out of the CREST system

The Investment Funds Service enables members to move a holding of units into or out of the notional records maintained in the CREST system. This will, for example, facilitate 're-registration' from (or to) a holding by a member or distributor recorded in the CREST system, to (or from) an individual holding not recorded in the CREST system.

These movements will be settled through the use of the REG transaction type. These transactions are input by the registrar for the investment fund. The facility requires no system action by the member concerned. Members must therefore contact the product provider or registrar concerned in order to move holdings of notional units into and out of the CREST system.

A CREST member wishing to transfer an existing holding in an investment fund into the notional records maintained in the CREST system must contact the relevant product provider for that investment fund. Following agreement by the product provider, the registrar for that investment fund will then input a REG transaction to credit the necessary number of notional units to the relevant member account of the member.

A CREST member wishing to transfer an existing holding in an investment fund out of the notional records maintained in the CREST system must contact the relevant product provider for that investment fund. Following agreement by the product provider, the registrar for that investment fund will then input a REG transaction to debit the necessary number of notional units from the relevant member account of the member.

Transfers between two CREST members

The Investment Funds Service enables notional holdings to be transferred between members. Transfers between two CREST members will be settled through the use of a DEL transaction. The two CREST members each enter a DEL transaction (or a pre-matched DEL transaction is input by a CREST central sponsor) in the CREST system for the delivery of the notional units from the transferor member to the transferee member.

CREST members may need to provide additional information (including in relation to the member and their account) to the registrar outside the CREST system. EUI provides no assurance that the

provision of this information will be sufficient to secure the registration of the intended transfer. See "Bad delivery" below.

Although transfers between two CREST members areusually free of payment, the CREST system does not validate the DEL transaction and payment may therefore be made as part of such a DEL.

Own account transfers

The CREST system's own account transfer functionality enables a member to transfer notional units between different member accounts of one CREST member. As set out above, own account transfers require the single input of an instruction by the member (or by a CREST central sponsor offering that service) of an own account transfer (OAT) transaction. Own account transfers do not settle against the creation of a CREST payment (i.e. they are free of payment transfers only).

CREST members may need to provide additional information (including in relation to the member and their account) to the registrar outside the CREST system. EUI provides no assurance that the provision of this information will be sufficient to secure the registration of the intended transfer. See "Bad delivery" below.

In relation to OAT transactions input by a CREST central sponsor (where a central sponsor provides this service), both member accounts of the participant must be opted in to direct input.

Registration

Introduction

The register of participating investment fund units is maintained by a registrar and is outside the CREST system. Title to investment fund units is maintained and transferred by reference to this register, not by reference to notional entries contained in the CREST system. As noted above, notional entries maintained in the CREST system do not constitute or evidence title to, or other proprietary interests in, units of an investment fund. EUI has no responsibility for actual settlement of the units aspect of a transaction in the Investment Funds Service.

Register Update Requests

Chapter 5, section 1 of this CREST Reference Manual describes the static data maintained in relation to participants and the circumstances in which a Register Update Request (RUR) will be generated.

At the moment of settlement of a transaction in respect of a notional unit, the transaction will be set with a status of 'complete, awaiting registration'. The CREST system will generate an RUR for retrieval by the relevant registrar. The RUR contains details of the transferor, the transferee, amount and class of units. Registrars must poll the CREST system at frequent intervals throughout the day to retrieve RURs.

The registrar should, in response to the RUR, amend its register to show a transfer of title. However, the registrar has no obligation to do so. A confirmation message should then be sent by the registrar to the CREST system. The CREST system will then update the transaction status to 'complete, all registered'.

Upon generation of the RUR, the transferee may not acquire (or have acquired) a proprietary interest in the appropriate number of the transferor's holding of the relevant investment fund. Transfer of title takes place by reference to the register maintained by the registrar outside the CREST system.

Bad delivery

The registrar's response to the RUR indicates that the registrar has informed EUI that it has registered the transaction or, as appropriate, has been unable to register the transaction. Although the registrar is not obliged to update the register in accordance with the RUR, only in very limited circumstances should a registrar refuse to register a transfer of title.

Circumstances which may result in a bad delivery include:

- where the terms of a court order received by the registrar prevent the transfer of units;
- where, according to the records of the registrar, there is an insufficient holding in the name of the transferor;
- where, according to the records of the registrar, units of that class are not yet available for settlement;
- where the registrar receives invalid data which they are unable to process (which, for example, may include where they do not act as registrar); and
- where the registrar is not able to register the transfer because details of the transferee are not correctly set up.

In relation to the Investment Funds Service, a bad delivery occurs where, following a transfer of notional units in the CREST system, the registrar is unwilling or unable to effect transfer of legal title on the relevant register maintained outside the CREST system. The registrar notifies EUI of the bad delivery and indicates the reason for it. The member concerned can see the bad delivery reasons given by the registrar by means of enquiry functions.

Following notification of a bad delivery in relation to the Investment Funds Service, EUI will apply the provisions of CREST Rule 12 (Bad deliveries). For the purposes of CREST Rule 12, a bad delivery in relation to the Investment Funds Service means an intended transfer of title to units from one member to another member which cannot be effected on the register maintained by the registrar following the generation of an RUR.

EUI monitors bad delivery reasons and may either resend the RUR for retrieval by the registrar (where, for example, EUI has cause to believe that the condition which caused the failure no longer exists) or generate a bad delivery reversal (BDR) transaction which will attempt to reverse the notional unit and cash movements in the CREST system.

Reconciliation

EUI and the registrars for investment funds perform a reconciliation as follows:

- a daily reconciliation of the total notional balance of each class of units of each participating investment fund held in the CREST system with the corresponding register maintained by the registrar;
- a daily reconciliation of the notional balance of each stock account in the CREST system which has a balance of notional units which has moved that day, with each balance on the corresponding register maintained by the registrar which has moved that day; and
- a monthly reconciliation of all notional stock balances in an investment fund with all balances on the corresponding register maintained by the registrar. Notional stock balances are provided on request to enable a registrar to perform its own reconciliations.

In relation to the Investment Funds Service, where a particular class of units of a participating investment fund cannot be successfully reconciled with the register, EUI and the relevant registrar will investigate the situation and agree action to resolve any discrepancies. EUI has the discretion to disable the relevant class of units for settlement where it remains unreconciled and not to re-enable for settlement until reconciliation is completed. When requested by members, EUI will inform relevant members as soon as practicable of any discrepancies in the CREST Investment Funds Service records that could affect the accuracy of the member's external reconciliation. In particular, where an individual member balance or total security balance is subject to discrepancies that cannot be resolved, EUI will notify the member(s) concerned.

Members and product providers are able to reconcile settled transactions by means of the CREST system's enquiries on stock balances and postings. Members and product providers are able to reconcile unsettled transactions by means of the CREST system's enquiries on open transactions and open positions.

Members and product providers are able to reconcile group 1 balances and group 2 balances by means of the CREST system's enquiries on group 1 and group 2 balances. The group 1 balances and group 2 balances returned in response to these enquiries are as notified to the CREST system by registrars for investment funds during their daily or periodic reconciliation.

Registrar Service Standards

CREST Rule 5 (Registrar service standards) applies in relation to the Investment Funds Service, subject to the following modifications:

- Standard 1 (Deposit sets) shall not apply;
- Standard 2 (Member to member deliveries) shall apply with the exception of Standard 2.2 (regarding refusal to register transfers) which shall not apply;
- Standard 3 (Stock withdrawals) shall not apply; and
- Standard 4 (Integrity of the issue) shall apply with the exception of the following:
    - Standard 4.4 (regarding daily reconciliation requirements) shall apply as if "after close of settlement (event 160 for equities and 170 for gilts) but" were replaced with "at a time agreed with EUI"; and
    - Standards 4.4A, 4.8, 4.9, 4.10, 4.11 and 4.12 which shall not apply.

EUI has the discretion to disable participating investment funds from settlement where these standards are not met.

Central sponsors

CREST central sponsors are permitted by EUI to act and create transactions on behalf of multiple participants. Certain investment fund order routing platforms may be set up so as to offer the services of a central sponsor. In such cases, members and product providers may prefer to input DEL transactions (and OAT transactions where the central sponsor offers that service) using the services of a CREST central sponsor. In such cases, the member or product provider must opt in to the relevant central sponsor services. In doing so, after the operation of any relevant direct input services by EUI, a DEL (or an OAT) transaction attributable to the member or product provider concerned will be centrally created.

A general description of CREST central sponsor services is provided in Chapter 4, section 4A of this CREST Reference Manual, under 'CREST central sponsors'. A general description of CREST direct input services provided by EUI to enable the creation by a CREST central sponsor of transactions on behalf of other CREST participants is provided in Chapter 4, section 4A of this CREST Reference Manual, under 'Direct input services'.

Further details of central sponsor services in relation to the Investment Funds Service are provided in section 6 below.

Section 5: Corporate actions

Introduction

As described in Chapter 7, section 4 of this CREST Reference Manual, the CREST system has functionality which may be used to execute corporate actions. It may not be possible to execute all types of corporate action using the CREST system and, in particular, only certain non-elective corporate action events may be processed as part of the Investment Funds Service. It is the choice of the investment fund and its agent whether or not to use the CREST system to execute a particular corporate action.

A number of transactions have been designed to permit the execution of corporate actions. Where the CREST system is to be used to execute a corporate action, the system does not prescribe the way in which the action is done, nor does it ensure that any participant or holder of notional units acts in accordance with the terms of an event.

Corporate actions data

Where a corporate action is to be processed by means of the CREST system, the system will hold certain details of the corporate action. Each corporate action set up in the CREST system in relation to an investment fund is ascribed its own corporate action number which identifies the corporate action data held under the ISIN of the relevant class of units. The corporate actions data includes the identity of the member which is acting as receiving agent for each corporate action.

Following the creation or updating of corporate actions data, the CREST system will generate notifications to holders of notional units in the relevant investment fund.

Income distributions

Product providers are able to input, amend and delete corporate actions data in relation to income distribution corporate actions for investment funds where they act as product provider. Product providers will additionally have access to enquiry functions regarding income distribution corporate actions in the product provider's investment funds.

To submit an unmatched stock event (USE) instruction into the CREST system, the member or product provider acting as the receiving agent must be specified in the corporate action reference data as the receiving agent for the corporate action.

Electronic tax voucher functionality described in Chapter 7, section 12 of this CREST Reference Manual will not be available in relation to the Investment Funds Service.

Other corporate action events

Product providers are only able to input, amend and delete directly in the CREST system corporate actions data in relation to income distributions for investment funds. Corporate actions data in relation to other corporate actions provided by product providers to EUI in order for the information to be input into the CREST system.

Certain corporate actions may require new units to be issued to holders, or existing units to cancelled. Registrars may perform each of these functions by submitting a REG transaction type. As noted in section 4 above, where a REG transaction will make a debit adjustment (also known as a 'negative registrars adjustment transaction' or NEG REG), this will not require authorisation from the System Controller. The requirements set out in Chapter 5, section 2 of this CREST Reference

Manual in relation to NEG REG transactions therefore do not apply in relation to the Investment Funds Service.

Corporate actions resulting in the expiry of a particular class of units (for example where they will be replaced by a new class of units) may be executed by the security expiry process described in section 3 above.

CREST Voting Service

The CREST Voting Service[53] operates in relation to the Investment Funds Service. This service enables members to be notified of the details of meetings and enables members to send electronic equivalents of a proxy card. Product providers are not able to act as announcement agents (registrars or receiving agents may act as announcement agents).

Other corporate actions related services

The CREST system does not generate any claims in relation to transactions in notional units. The Claims Processing Unit[54] does not automatically generate claim (CLA) transactions in relation to the Investment Funds Service.

The automatic transformations processes[55] does not operate in relation to the Investment Funds Service.

Section 6: The Euroclear Connections Client

Introduction

As an alternative to the GUI, FT and ISO interfaces, a user whose participants use only the Investment Funds Service may send and receive messages to/from the CREST system via a Euroclear Connections Client network provider ('ECC network provider') using the Euroclear Connections Client communication software (the 'ECC'), instead of via an accredited network provider (see Chapter 11, section 1).

The ECC is 'client' software provided to users by EUI which is installed within the user's IT infrastructure. The ECC:

- receives messages from third party or user developed software, validates them and sends properly authenticated dematerialised instructions to the EUI gateway application, which is installed within EUI's infrastructure; and
- receives properly authenticated dematerialised instructions from the EUI gateway application, validates them and sends messages to third party or user developed software.

The EUI gateway application:

- decrypts messages received from the ECC and sends them to the CREST system for validation and processing
- encrypts messages received from the CREST system and sends them to the ECC.

[53] Described in Chapter 7, section 9 of this CREST Reference Manual.
[54] Described in Chapter 7, section 5 of this CREST Reference Manual.
[55] Described in Chapter 7, section 6 of this CREST Reference Manual.

The ECC and the EUI gateway application, which connect via an ECC network provider, together provide the communication link between the user and the CREST system.

The CREST system will reject any messages sent via the ECC that include ISINs that are not in respect of units in participating investment funds. The CREST system will accept FT messages only. A full list of the messages the CREST system accepts is defined in the FT DEX.

Eligibility criteria for use of the ECC

Users are eligible to install and use the ECC (instead of an accredited network provider) to send and receive messages to/from the CREST system where the user is a CREST Investment Funds Service user only. It is not possible to be a user and send messages via the ECC and the CREST FT, CREST GUI or CREST ISO interfaces.

In order to send messages to/from the CREST system via an ECC network provider using the ECC, users will be required to use third party or user developed translation software to format CREST FT messages that are accepted by the CREST system. EUI takes no responsibility for any third party or user software that commnicates with the ECC, and it is incumbent on users to ensure such software is capable of communicating with the ECC and enables the user to fulfil all relevant CREST Requirements.

A user who wishes to send messages to/from the CREST system in respect of both investment funds and MMI's, equities and/or debt instruments will only be able to do so using an accredited network provider.

Performing Registrar, Product Provider and Member functions

A subset of the messages defined in the FT DEX are specifically available for use by Registrars, Product Provider and Member participant types. These messages allow the funds distributor and/or the transfer agent to settle transactions in participating investment funds, to register the resulting stock movements, and to perform associated enquiries. ECC network providers

Messages sent between the ECC and the EUI gateway application must be sent over an ECC network agreed to by EUI. Participants who wish to use a specific network provider must provide, at EUI's request, evidence and confirm to EUI the network meets Euroclear's security standards as specified from time to time.

Authentication procedures

For messages sent and received via the ECC, confidentiality, integrity and non-repudiation is ensured through private key certificates using industry standard encrypted transmission and digital signatures.

Message authentication is inbuilt within the ECC. The ECC checks that messages received have come from the purported source, and have not been altered en-route. Message authentication is a cryptographic procedure, relying on keys which are stored securely and are uniquely associated with clients.

Before a message is sent from the ECC to the EUI gateway application, a check code is produced by the authentication process, whose value is dependent upon every 'bit' of the message and upon a secret key which is shared only with the receiver. This check code is transmitted with the message. Upon receipt of the message, the authentication process at the receiver performs an identical calculation, and checks that the result is the same as the received check code.

If the check code which the receiver calculates differs from that received (implying that the message has been modified in some way during transmission), the message will not be forwarded to the CREST system for processing. The use of a cryptographic algorithm is designed in accordance with international standards whose purpose is to ensure that the value of the check code cannot be generated without knowledge of the secret key to minimise the risk that an interloper could forge a valid combination of message and check code.

Authentication specification

EUI has specified the following authentication requirements for network providers to meet:

- users shall only be able to access the CREST system via the ECC;
- all messages and files passing between the ECC and the CREST Communications Host (in both directions) shall be signed and encrypted;
- all cryptographic keys must have a minimum length as deemed secure, currently 2048 and higher.

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