

01.02

UK response to CPSS/IOSCO Framework

CREST System

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Introductory comments

On 26 November 2001 the Uncertificated Securities Regulations 2001 came into force. These regulations re-enacted with modifications the USRs 1995, which set up the original legislative framework for CREST. The USRs 2001 introduce two reforms. First, the electronic transfer of title within CREST (ETT) – delivery of securities within CREST’s electronic account now represents the legal transfer of title to securities constituted under UK law - this removes the interval between settlement in CREST and registration of ownership. The second reform was delivery-versus-payment in central bank money – DVP for payments in sterling and euros. This reduces the risk between CREST settlement banks, which carry out payment on behalf of CREST members for securities transferred in CREST.

The USRs 2001 define a new concept- the Operator register, which records holders of uncertificated securities held in CREST. (The Operator register is mainly in information technology and data terms, the same as the CREST records relating to the particular security.) The CREST record now has the legal status of a register, so that a change in it represents a change in legal ownership of securities – this is the electronic transfer of title. The Regulations impose on CREST certain responsibilities relating to keeping the Operator register, but CREST is not responsible for other functions carried out by registrars, such as dividend payments. The Regulations also require registrars to keep a “record of the Operator register” for such purposes.

At the same time, full delivery-versus-payment in central bank money (full Model 1 DVP) was introduced for payments in sterling and euros. Payment in CREST is made by several settlement banks on behalf of CREST members. (The settlement banks can make arrangements to take charges over securities in the member’s CREST accounts – such charges are protected in the event of the insolvency of the member by statutory provisions made under Part VII of the Companies Act 1989.)

The settlement banks take on irrevocable commitments to make payments on behalf of their CREST member customers. The settlement banks make final payments between themselves across accounts at the Bank of England, this now happens immediately on a gross basis. This removes the risk of the settlement banks being exposed to each other during the day. The process requires a high level of liquidity in order for the buyer’s bank to pay the seller’s bank, and the Bank of England has set in place arrangements to provide this higher level of liquidity. The collateral required to support this liquidity is provided in certain cases by an arrangement for the buyer of the securities and his settlement bank to repo the securities automatically to the Bank during the day.

CREST is a designated system under the EU Settlement Finality Directive, so that both securities and payment transfer orders and default arrangements are protected from the ordinary operation of EU insolvency law.

1 Legal framework

<p>1.2 Does the legal framework support:</p> <p>(a) The enforceability of transactions?</p> <p>(b) The protection of customer assets (particularly against insolvency of custodians and intermediaries?)</p> <p>(c) The immobilisation or dematerialisation of securities and the transfer of securities by book entry?</p>	<p>General: The legal framework relating to CREST consists of statutory provisions (company laws and regulations, financial services supervision etc) enacted in the relevant jurisdictions as well as contractual arrangements between CRESTCo and CREST participants. As further described under answer 1.4 below, the contractual arrangements between CRESTCo and the system participants (agreements, terms and conditions, rules etc) are exclusively governed by English law.</p> <p>(a) The enforceability of the settlement of a trade is primarily determined by the terms under which the trade is executed which may, for example, be governed by stock exchange rules and be enforceable pursuant to those rules.</p> <p>(b) CRESTCo does not intermediate the ownership of domestic securities and its character is more in the nature of a central register than a “classic” depository. In this context, there is no exposure, either in relation to domestic securities or payments, between CRESTCo and CREST participants.</p> <p>CRESTCo does intermediate the ownership of international securities through a wholly owned subsidiary. Such securities are held under an English law trust arrangement for the benefit of the relevant CREST members. The insolvency of a custodian or other intermediary (whether the CREST Depository or otherwise) which holds any securities in CREST on behalf of clients under a properly constructed English law trust would not ordinarily pose a threat to the proprietary interest of the client.</p> <p>(c) Yes. Securities in CREST are dematerialised and transferred by book entry.</p> <p>(d) Yes. Netting is enforceable as a matter of English law. Additional specific protections for netting exist in a number of statutes including the UK implementation of the EU Settlement Finality Directive.</p> <p>(e) Yes, both in relation to the automated repo facility used to support central bank money payments and in relation to stock loans, repos and other collateral transactions executed bilaterally by two CREST members.</p>
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<p>(d) Netting arrangements?</p> <p>(e) Securities lending?</p> <p>(f) The finality of settlement?</p> <p>(g) Arrangements for achieving delivery versus payment?</p> <p>(h) Rules addressing the consequences of a participant's default?</p> <p>(i) The liquidation of assets pledged or transferred as collateral to support participants' obligations?</p>	<p>(f) Yes. CREST is "designated" by the competent authorities in the UK and Ireland within the meaning of the EU Settlement Finality Directive in relation to its settlement of securities constituted under UK and Irish law respectively.</p> <p>(g) Payments are made on a real-time basis in central bank money in relation to euros and sterling ("Model 1" DvP) and on an assured payment basis in relation to US dollars ("Model 2" DvP).</p> <p>(h) CRESTCo has made "default arrangements" within the meaning of the EU Settlement Finality Directive which address the consequences of certain types of default which fall within the scope of the Directive and the implementing legislation in the UK and Ireland. Part VII of the Companies Act 1989 (as implemented by the Financial Markets & Insolvency Regulations 1996) also provides protection to market charges provided by Crest members to their settlement banks. The consequences of any other type of default are a matter for contractual resolution and/or the wider effect of insolvency law as appropriate.</p> <p>(i) CREST participants do not give any securities to CRESTCo as collateral in any circumstances.</p>
<p>1.3 Are the rules of the system enforceable notwithstanding the bankruptcy of a participant?</p>	<p>Certain of the CREST Rules are made pursuant to legislative requirements (most importantly in this context in relation to settlement finality), and would be enforceable even where a CREST participant has become insolvent.</p>

<p>1.4 Does applicable law support appropriate choice of law provisions in contracts executed between the system operator(s), direct system participants and indirect system participants to permit operation of the securities settlement system (and related arrangements) in accordance with the system's rules?</p>	<p>Yes. CRESTCo's principal agreements with its participants contain an explicit choice of English law as the governing law and a submission to the courts of England. Before admission to CREST, a participant (other than an individual) established or organised under the laws of a jurisdiction other than the three jurisdictions forming part of the UK is required to provide a satisfactory legal opinion from the relevant jurisdiction confirming inter alia the validity and enforceability of the choice of law and submission to the courts.</p>
<p>1.5 Are jurisdictions other than the jurisdiction in which the system is established relevant for determining the adequacy of the legal framework? How has this been determined?</p> <p>Has the legal framework been evaluated for the other relevant jurisdictions?</p>	<p>Yes. Although CRESTCo is located in England, CREST additionally provides for the holding and settlement of securities issued or constituted under the laws of a number of other jurisdictions (see answer 1.1 above). As such, the laws of other jurisdictions will be relevant in some circumstances (primarily in relation to international securities held with other CSDs).</p> <p>CRESTCo has taken legal advice in all relevant jurisdictions to satisfy itself on key matters such as the finality of transfer in other jurisdictions, the nature of the CREST Depository's proprietary interest and the effects of insolvency law. CRESTCo has published extensive details of these matters in its publication "The International Legal Framework".</p> <p>More generally, as already noted, CRESTCo requires satisfactory legal opinions relating to, inter alia, submission to jurisdiction and governing law from prospective participants incorporated or formed outside the UK.</p>
<p>1.6 Has a court in your jurisdiction ever failed to enforce a contract concluded through an SSS?</p> <p>If so, what contract and for what reasons?</p>	<p>We are not aware of any such event.</p>

2 *Trade confirmation*

<p>2.1 Are trades between direct market participants confirmed through a system provided by a stock exchange, trade organisation, CCP or other central entity?</p> <p>What is the process for confirming such trades?</p>	<p>Note: CRESTCo understands the term “direct” market participant as referring to broker dealers who trade directly on a stock exchange or other execution service. Such participants are usually direct participants in the CREST system. CRESTCo has used this definition when answering the following questions.</p> <p>There are two elements to trade confirmation between direct participants</p> <ol style="list-style-type: none"> 1. <i>Trades executed on London Stock Exchange’s order book (SETS).</i> At the point of execution on the order book, the trade is formally confirmed back to the participants by the SETS platform. SETS trades are automatically fed to London Clearing House (LCH) and onwards to CREST which creates the necessary settlement instructions, which are then matched (confirmed) by the two market counterparties. Since CREST currently settles on a gross basis, both counterparties match with LCH (as CCP); or 2. <i>Trades executed bilaterally between market participants.</i> Direct participants will input settlement instructions into CREST and use CREST’s real-time matching facility to both confirm the full details of the trade and match the relevant transaction prior to settlement.
<p>2.2 What percentage of trades between direct market participants is submitted to a trade confirmation system on trade date (T+0)?</p> <p>How soon after submission are problems communicated to the appropriate parties?</p>	<p>As per above, trades executed on SETS are effectively confirmed at point of execution. These are then also input into CREST through a direct feed from the SETS platform for matching. The percentage of SETS order book trades that are matched within CREST on T+0 is over 95%.</p> <p>The percentage of bilateral trades matched (and hence confirmed) within CREST between direct market participants is 90% on T+0.</p> <p>As the CREST matching facility is real-time, any problems will become apparent to participants immediately after both parties have input their instruction to CREST.</p>

<p>2.3 Is there a trade confirmation system in place that is capable of comparing trade information between direct and indirect market participants by T+1?</p> <p>Is use of the system mandatory? For what types of indirect market participants?</p> <p>Is the information flow between direct and indirect market participants bilateral or do both parties submit their respective information to a central matching or comparison entity?</p>	<p>Note: CRESTCo understands the term “indirect” market participants as referring to custodians and other “client side” participants not trading directly on a Stock Exchange or other execution service. Such participants are usually direct participants in the CREST system. CRESTCo has used this definition when answering the following questions.</p> <p>There is no single trade confirmation system in place that compares trade information between direct and indirect market participants on T+1. In practice participants will use either one of the commercially available Electronic Trade Confirmation (ETC) systems (such as Thomson’s Oasys) or a combination of a commercial ETC system and the real-time matching facilities within CREST to confirm trades.</p> <p>The matching function within CREST is a real-time central matching facility. Direct CREST membership is open to all.</p>
<p>2.4 What percentage of trades between indirect market participants is confirmed on trade date?</p> <p>By the contractual settlement date?</p> <p>Of those trades involving indirect market participants for which confirmation is required, what percentage is confirmed by T+0, by T+1, by the contractual settlement date?</p>	<p>42% of trades between indirect market participants (ie, client side transactions) are matched in CREST on trade date.</p> <p>97% of trades are matched by intended settlement date. This figure may be somewhat understated because it does not take into account the real-time matching and same day settlement that is used by some participants on intended settlement date.</p> <p>There is no regulatory requirement for confirmation of trades involving indirect market participants. CREST sets matching targets for all participants as part of settlement discipline. The settlement discipline regime is established by a market committee. Participants are fined if these targets are not met. As detailed above, 42% of trades between indirect market participants are matched on trade date, 75% are matched by the close of T+1 and 97% of trades are matched by intended settlement date.</p>

<p>2.5 What are the primary reasons for trades between direct market participants and between direct and indirect market participants not confirming successfully?</p> <p>What percentage of unconfirmed trades is resolved prior to the settlement date?</p> <p>How are unconfirmed trades dealt with?</p>	<p>The primary reason for trades between direct and indirect market participants not matching successfully is the incorrect input of the settlement instruction into the CREST system, leading to a failure to match on any of the relevant matching fields (such as intended settlement date, quantity, ISIN, price), by either party to the trade.</p> <p>99% of all transactions are matched by intended settlement date.</p> <p>A significant number of failures may also be attributed to international parties that do not convey settlement instructions to their custodians by intended settlement date.</p> <p>Unmatched trades are flagged by the CREST system in real-time allowing participants to delete incorrect settlement instructions and re-enter new instructions, or amend existing settlement instructions and re-submit the transaction.</p>
<p>2.6 What is the process for matching settlement instructions?</p> <p>How is matching of settlement instructions linked with trade confirmation?</p>	<p>As stated in question 2.1, CREST provides a real-time central matching facility for its users. The two parties to the transaction each input to CREST a common set of data. Each time it receives a transaction input, CREST searches for another unmatched transaction in the system with the same set of common details. If it locates one, it merges the two inputs together, creating a single entity (uniquely identified by the transaction identifier), with a single set of common details.</p> <p>Currently, there is no direct link between trade confirmation and the matching of settlement instructions. However, from June 2002, CREST will introduce a direct input facility that will allow the creation of a fully matched transaction within CREST based on trade data received from relevant Exchange platforms (eg, SETS) or ETC systems (eg, OMGEO).</p>
<p>2.7 Do the systems for confirmation of trades (by both direct and indirect participants) and matching of settlement instructions support straight through processing?</p> <p>How broadly are the systems used, and for what types of participants?</p>	<p>Refer to answer for 2.6 The changes mentioned above will support straight-through-processing.</p>

3 *Settlement cycles*

<p>3.1 Do trades settle on a “rolling” basis or on an “account period” basis?</p> <p>If on a rolling basis, how many business days after the trade date?</p> <p>If on an account basis, what is the length of the account period?</p>	<p>CREST supports the settlement of transactions on T+0.</p> <p>The rolling settlement cycle for equities in the UK is currently T+3. For cash bonds (ie, gilts), the cycle is generally T+1 but with a significant T+0 component: cash bonds account for approximately 70% of the value of settlement through CREST. 70% of stock lending/repo is carried out on a T+0 basis for all instruments with the remainder on T+1/T+2.</p>
<p>3.2 If settlement is on an account period basis or on a rolling basis at T+3 or longer, have the benefits and costs of a shorter settlement cycle been evaluated?</p> <p>By whom?</p> <p>Has the evaluation been documented?</p> <p>What was the conclusion?</p> <p>Did the conclusion differ depending on the type of security?</p>	<p>The London Stock Exchange, CRESTCo, the Bank of England and the Association of payments and Clearing Services (APACS, which represents payment banks) carried out a market consultation in March 1999 in advance of the move to T+3, asking for views on shortening the cycle for equities to T+3 or shorter. A T+3 cycle was adopted on 5 February 2001.</p> <p>The results were published in the CREST newsletter of June 1999, available from the CREST website.</p> <p>The consultation concluded that while the move to T+1 was desirable in the long term, the impact on the institutional and retail markets would be significant. T+3 was deemed workable and desirable in terms of risk reduction.</p> <p>The consultation only focused on equities: government bonds settle on T+1, and collateral markets settle on T+0.</p> <p>(See also 5.4)</p>
<p>3.3 What percentage of trades (by number and value) fail to settle on the contractual date?</p> <p>What is the average duration of fails (by number and value)?</p>	<p>For participants using CREST, settlement fails are normally less than 2% by number across the entire market. Figures for fails by value are not recorded; but the percentage will be much lower than 2% for reasons explained below.</p> <p>The average duration of fails varies according to the instrument and the way in which the sold stock is held. Transactions in liquid securities very rarely fail to settle on ISD, and those that</p>

<p>What are the primary sources of fails?</p>	<p>do fail nearly always settle next day, because of the ability to borrow in real time; transactions in illiquid securities can remain unsettled for some time where they result from short selling and the stock is difficult to borrow. Transactions – which are typically small retail sales – involving the sale of securities held outside CREST in certificated form involve a more complex administrative process, and are thus more likely to fail.</p> <p>Fails occur mainly because of insufficient stock or credit. In practice, almost all fails result from stock shortage and there is little evidence of transactions failing through insufficient credit or liquidity. With the introduction of settlement in Central Bank Money in November 2001, it is theoretically possible for fails to occur due to a lack of liquidity at the Central Bank. The Central Bank will be monitoring the possibility of fails.</p>
<p>3.4 Do market practices, regulations or SSS rules provide incentives for counterparties to settle their obligations on the contractual date?</p> <p>What forms do these incentives take, for example are penalties assessed for failing to settle?</p>	<p>CREST operates a settlement discipline regime that penalises late matching and late settlement. Details of the regime are available from the CREST website.</p> <p>Exchanges in the UK are required by their regulator (the Financial Services Authority –FSA) to monitor members’ settlement performance, and may operate their own settlement discipline regime.</p>
<p>3.5 What steps, if any, are taken to mitigate the risks of fails?</p> <p>Are fails required to be marked to market?</p>	<p>CREST provides sophisticated functionality to allow users to monitor and then take action to minimise fails. These tools include (but are not limited to) credit optimising tools such as self-collateralising repos, transaction linking (optimising back-to-back settlements), circles (a form of settlement netting to resolve dependent trades), the ability to arrange and settle stock borrowing for same day value etc. The real-time nature of the CREST system is also vastly beneficial as a risk reduction tool – members can view open positions, prioritise transactions, position stock etc. with exceptional ease. Banks can adjust credit limits in real time.</p> <p>The FSA requires firms to mark settlement fails to market and take a capital charge against the possibility that settlement may never occur. CREST is not required to make such a provision.</p> <p>Depending on the exchange, there may be rules to enforce closing out (or buying in) – this is not a function performed by the SSS.</p>

<p>Are open positions required to be closed out at market prices if the duration of the fail exceeds a specified number of business days?</p> <p>What entity or entities establish, monitor and enforce these requirements?</p>	<p>CREST's settlement discipline regime provides the incentive for users to meet industry settlement standards, and CREST monitors transaction progress to this end. It is the responsibility of the Exchanges, however, to ensure that risks are managed adequately for deals struck on their systems.</p>
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4 *Central counterparties (CCP)*

<p>4.1 Has a CCP mechanism (or an indemnification arrangement) been introduced?</p> <p>If so, what types of securities and market participants are covered?</p> <p>When does the CCP interpose itself between its participants to assume the role of guarantor to each trade?</p>	<p>Yes, The London Stock Exchange, London Clearing House (LCH) and CRESTCo jointly introduced a central counterparty service for electronically executed trades on SETS and SEAQ crosses on 26 February 2001 (see question 2.1).</p> <p>Around 350 of the most liquid stocks are cleared including all the FTSE 350. Around 100 LSE members trade on SETS and 34 clearing members of LCH clear their business.</p> <p>At time of registration of trade.</p>
<p>4.2 If no such mechanism has been introduced, have the benefits and costs of such a mechanism been evaluated?</p> <p>By whom? Has the assessment been documented?</p> <p>What was the conclusion?</p>	<p>Not applicable</p>
<p>4.3 Does the CCP impose financial and operational standards for participation?</p>	<p>Yes – These are described in the LCH Rule book, available from the LCH and on their website (www.lch.com).</p>
<p>4.4 How does the CCP manage its credit risk vis-à-vis participants?</p>	<p>The LCH, as CCP, manages credit risk via initial and variation margin and a default fund.</p>

<p>Does it require participants to collateralise their exposures?</p> <p>How often are requirements recomputed and collateral collected?</p>	<p>LCH assess their exposures and margin requirements against counterparties around five times daily although they have the capability to access exposures through calling for real time and up-to-date positions from CREST more frequently if required. Margin is normally called twice daily – at 9:00 a.m. based on exposures at close of business the previous day and at around 1:30 p.m.</p>
<p>4.5 What are the financial resources of the CCP?</p> <p>How does the CCP assess the adequacy of the size and liquidity of its financial resources?</p> <p>Does it require participants to contribute to a clearing or guarantee fund?</p> <p>Does the CCP have legally enforceable interests in or claims on the assets in the fund?</p> <p>Does the CCP have transparent and enforceable loss allocation rules?</p>	<p>LCH's primary protection is the initial margin collected from members. It also has a default fund (see below), insurance cover of £100m and share capital & reserves of around £55m.</p> <p>LCH uses stress-testing scenarios designed to ensure that resources can withstand defaults even in extreme market conditions</p> <p>Members of LCH contribute to a default fund. Currently the default fund stands at £333Million.</p> <p>Yes.</p> <p>Yes</p>
<p>4.6 How does the CCP manage its liquidity risk?</p> <p>Does the CCP have in place agreements permitting it to borrow against collateral?</p>	<p>If this question relates to the danger in a default of LCH holding collateral, which in the prevailing market conditions is illiquid, LCH controls the risk by setting high haircuts and only accepting liquid equities as collateral.</p> <p>Alternatively, if this question refers to failure by sellers to deliver stock to LCH in settlement of market transactions, then LCH does not borrow but encourages market participants to borrow, on the premise that this is a more efficient market solution.</p>

4.7 Has a participant ever defaulted?	This is a question for LCH, although we understand that there have been only four defaults since 1990
If so, how did the CCP handle the default?	Full details can be obtained from LCH. See particularly their publication entitled “Market Protection” which is available from their website.
In the past year, has the CCP experienced an operational failure that resulted in a delay in completing settlement?	No significant operational delays.

5 *Securities lending*

5.1 Are there markets for securities lending (or repurchase agreements and other economically equivalent transactions)?	There are active markets for securities lending, repurchase agreements and other collateralised borrowing for UK and Irish corporate securities and UK government debt. All markets are extremely active. For example, at end 2001, the open value of securities lending through CREST was £100 billion. The UK government bond repo market is estimated to be £140 billion. Additionally CREST offers an automated repo facility under which members may repo eligible securities to the Bank of England as necessary for the generation of intra-day sterling liquidity.
If any, how active are they?	
How wide is the range of securities and participants involved in the markets?	There are no restrictions on the range of securities or participants in the market – other than any supervisory restrictions that may apply to individual firms. Both the Bank of England and UK Debt Management Office are active users of repurchase agreements within their official operations.
5.2 Are the markets for securities lending (or repurchase agreements and other economically equivalent transactions) clearly supported by law, regulation, tax and accounting systems?	The markets for securities lending and repurchase agreements are clearly acknowledged in, and supported by law, regulation, tax and accounting systems. Securities lending and repurchase agreements are generally executed under the Global Master Securities Lending Agreements and Global Master Repurchase Agreements respectively. Regulation of securities lending in collateral market is undertaken by the Financial Services Authority and within the rules of the individual exchanges when the activity is undertaken on exchange. The tax treatment of

	securities lending is transparent. For UK equities, this necessitates one party to the transaction being a member of a recognised investment exchange to benefit from exemptions without which lending is highly uneconomic due to Stamp Duty Reserve Tax.
<p>5.3 How is the transfer of a loaned security executed?</p> <p>Does the transfer of the loaned security typically occur over accounts held at a central securities depository (CSD) or over accounts held with custodians?</p>	<p>The transfer of a loan security is executed through CREST on either a delivery versus payment or free of payment basis. The vast majority of loans occur between participants' accounts within CREST, although some custodians additionally offer tri-party repo products. The decision on execution of loans on a DvP or free of payment basis is at the participant's discretion. The majority of free of payment loans reflect transactions between members of the same business group.</p>
<p>5.4 What is the convention for the settlement of a securities lending transaction (T+0, T+1, etc)?</p> <p>Does the CSD or CCP facilitate securities lending?</p> <p>If so, do they perform any of the following services:</p> <p>act as principal or agent in securities lending;</p> <p>provide trade matching or comparison services for securities lending transactions; (3) provide guarantees or indemnification to counterparties in securities lending transactions?</p>	<p>The majority (70%) of securities are lent and executed on a same day basis (T+0) with the remainder undertaken for T+1 or T+2.</p> <p>CREST provides additional facilities for members involved in securities lending and repurchase markets. These include: calculation of initial cover; securities valuation; transfer of valuation; and automatic stock selection for overnight collateral. CREST does not act as principal or agent in securities lending or provide guarantees or indemnification to participants.</p> <p>There is no central counterparty facility for securities lending. The London Clearing House hopes to extend its Repoclear product to include UK government bonds during 2002.</p>
<p>5.5 What risk management procedures are used to monitor and/or limit risks stemming from securities lending activity (eg, DVP, mark-to-market valuation of securities and collateral, daily margining, monitoring of counterparties)?</p>	<p>CREST offers facilities for participants in securities lending to monitor and/or limit risks. These include settlement on DvP basis, calculation of initial cover and daily valuation. CREST does not monitor individual participants or counterparties.</p>

6 *Central securities depositories (CSDs)*

<p>6.1 Are securities issued on a dematerialised basis or as a physical certificate?</p>	<p>CREST provides securities settlement services but it is not a securities depository and does not provide safekeeping facilities for physical certificates. Even though the vast majority of shares are in dematerialised form, only a limited number of securities are issued wholly in</p>
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<p>If the latter, are they immobilised in a CSD to facilitate settlement?</p> <p>What percentage of securities issued domestically is either immobilised or dematerialised, and what is the trend?</p> <p>Is the transfer of securities carried out by book entry or does it require any form of physical delivery?</p>	<p>dematerialised form.</p> <p>Over 85% of the value of equities in the UK and Irish stock markets are dematerialised. The figure for gilts is 99%.</p> <p>Physical certificates can be dematerialised into the CREST system through the CREST Courier and Sorting Service (CCSS) and rematerialised later if required. 100% of securities are dematerialised in CREST at point of settlement. No CREST securities are immobilised, since there is no reason to do so. CREST operates a book entry system.</p>
<p>6.2 What laws govern the book entry issuance, custody and transfer of securities?</p> <p>Do beneficial owners of securities have a direct property interest in identifiable securities or a claim against a pool of fungible securities?</p> <p>What ownership rights does an entry in the CSD confer?</p> <p>Is there an underlying register, and if so what is the legal status of a register entry?</p> <p>Is there a lag between settlement and registration and what are the implications of the time lag for finality?</p> <p>If the CSD is not the official registrar, does the transfer of securities in the CSD result automatically in the transfer of securities in the official register?</p>	<p>On 26 November 2001 a new Statutory Instrument, the Uncertificated Securities Regulations 2001 (No 3755) came into force. It forms the legal foundation for the CREST system, enabling the holding and transfer of UK securities in uncertificated form and re-enacts the Uncertificated Securities Regulations 1995 (as amended). CRESTCo Ltd is the owner and operator of the CREST securities settlement system. The Regulations establish the CREST records as the register for these dematerialised securities. At the point of settlement within CREST the transferee (buyer) receives immediate and irrevocable direct legal title to the dematerialised securities.(see also the answer to question 14.5)</p> <p>In Ireland CRESTCo is recognised as the Operator of a relevant system under the Companies Act 1990 (Uncertificated Securities) Regulations 1996. Similar legislation exists in the Isle of Man and the Channel Islands. There is a legal contract in place between CRESTCo Limited and each member of the system, which defines the terms of its participation.</p> <p>Transfers of Irish, Jersey, Guernsey and Manx securities confer statutorily backed equitable title on the transferee pending registration of legal title by the issuer's registrar. Registration must occur within two hours of CREST settlement and generally occurs within 30 minutes.</p> <p>The circumstances where a non-UK registrar may reject registration of transfers are heavily circumscribed in law and as a result there has never been an incident within CREST in five</p>

	<p>years of operations. However, in the theoretical event, CREST maintains rules to manage the reversal of settlements, including returning relevant cash to purchasers in respect of reversed settlements.</p> <p>UK registrars can no longer reject registration since the implementation of ETT.</p>
<p>6.3 Is the issuance of securities centralised in a single CSD?</p> <p>If there are several CSDs, what are the criteria followed to determine which securities are issued in which CSD?</p> <p>Might a security be issued into, or held in, more than one CSD?</p>	<p>CREST is able to provide settlement services for any security constituted under the laws of the United Kingdom, Ireland, the Isle of Man, Guernsey and Jersey which has a register located in one of those countries and the terms of issue of which are consistent with the CREST Requirements. CREST also provides settlement services in an increasing range of international securities.</p> <p>CREST is the sole CSD in the UK for dematerialised securities. However, it is possible for part of a security issue to be held in dematerialised form in CREST whilst the remainder is deposited physically into an overseas (I)CSD. To transfer securities in such a case, the stock must be withdrawn from one CSD and deposited into the other.</p>
<p>6.4 How does the CSD ensure that the amount of securities recorded in the accounts of its participants on its book at any time equals the total amount of securities immobilised or dematerialised in its system?</p>	<p>See 6.2 above.</p>

7 *Delivery versus payment (DVP)*

<p>7.1 Does the technical, legal and contractual framework ensure that delivery of securities takes place if, and only if, payment is received?</p>	<p>The technical, legal and contractual framework ensures that, for DvP transfers, delivery of securities is simultaneous with: discharge of the obligation of the purchaser on the seller; and creation of an irrevocable payment obligation from the purchaser's settlement bank and the seller's settlement bank (where different).</p> <p>For sterling and euro payments, this inter-bank obligation is discharged by means of a transfer</p>
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<p>If so, how? What proportion of trades are settled on a DVP basis?</p>	<p>across the accounts at the Bank of England. These obligations are irrevocable and final at the point of settlement within CREST and cannot be subsequently rescinded by either the paying bank, an insolvency practitioner or the Bank of England. For US dollar payments, the inter-bank obligations are discharged through the US wholesale payments system after the close of CREST settlement. A settlement bank failure for US dollars would result in the seller or his bank being exposed to the buyer's bank. (The value of US dollar payments is very small relative to the sterling and euro payment flows) The nature of the obligations and the timing of payments between a member and its bank are set out in their bilateral contracts.</p> <p>CREST permits members to execute transactions on a DvP or free of payment basis at their discretion. Free of payment transfers are generally only used in the following circumstances:</p> <ul style="list-style-type: none"> • portfolio transfers within the accounts of a single entity; • transfers between members using a common clearer/sponsor where payments may be internalised; • benefit distributions; and • transfers between a CREST participant and a counterparty/client who wishes to receive or deliver in certificated form, and where payment takes place external to CREST.
<p>7.2 What "model" of DVP is followed?</p> <p>Are securities transfers settled on a gross or net basis?</p> <p>Are funds transfers settled on a gross or net basis?</p>	<p>For sterling and euro, CREST offers model 1 DvP in central bank money. For transfers against payment in US dollars, CREST offers model 2 DvP.</p> <p>All securities and funds transferred within CREST are settled on a gross basis.</p>
<p>7.3 Is the CSD linked to other CSDs within the jurisdiction?</p> <p>Do any of the links permit transfers of securities against payment?</p> <p>If so, how is DVP achieved?</p> <p>Are there any links to CSDs in other jurisdiction?</p>	<p>CREST is not linked to any other CSD – there is none – within the United Kingdom or Ireland.</p>

<p>Do the links permit transfers of securities against payment?</p> <p>If so, how is DVP achieved? If not, what alternative arrangements are in place?</p>	
<p>7.4 How are principal risk exposures between direct participants in the SSS and their customers controlled?</p>	<p>Risk exposures between participants in CREST are controlled by the participants themselves. CREST is not a counterparty within the settlement process. CREST maximises the opportunity for participants to settle transactions on due date through offering real-time settlement during daylight hours, but it does not measure or control participants' bilateral risk exposures. It does provide fully automated facilities by which a bank can limit its exposure to any member for which it offers settlement services, including valuing collateral pledged by the member to the bank. This may be amended in real time.</p>

8 *Timing of settlement finality*

<p>8.1 Does the CSD permit final settlement of securities transfers on a DVP basis by the end of the settlement day?</p> <p>Is the timing of settlement finality clearly defined for transactions within the CSD and for transactions over a link to another CSD?</p>	<p>Finality of securities transfers is clearly defined within statute and CREST's contractual structure. Transfers of UK securities are final at point of settlement within CREST. Transfers of Irish, Jersey, Guernsey and Manx securities confer statutorily backed equitable title on the transferee pending registration of legal title by the issuer's registrar. Registration must occur within two hours of CREST settlement and generally occurs within 30 minutes.</p> <p>The circumstances where a registrar may reject registration of transfers are heavily circumscribed and there has never been an incident within CREST. However, in the theoretical event, CREST maintains rules to manage the reversal of settlements (including payments, where relevant).</p> <p>The timing of finality of transfers across links is clearly defined. See 8.4.</p>
<p>8.2 Does the CSD permit final settlement of DVP transfers on a continuous basis throughout the day or at certain designated times during the day?</p> <p>If the latter, at what times do transfers become final?</p>	<p>CREST offers final settlement of DvP transfers continuously from 6.00am to 4.10pm (London time).</p>

<p>8.3 Is there a need for intraday or real-time finality to reduce risks?</p> <p>Do central banks use the SSS in monetary policy operations or to collateralise intraday credit extensions in a payment system?</p> <p>Do active trading parties or CCPs have a need for intraday or real-time finality to manage their risks effectively?</p> <p>Is there a need for intraday or real-time finality to facilitate settlement through links to other CSDs?</p>	<p>CREST already offers real-time finality for all transfers against sterling and euro. Limited usage means that there is low demand for intra-day or real-time finality for US dollar payments currently.</p> <p>The Bank of England, and potentially other ESCB central banks, uses CREST for official operations.</p> <p>Yes</p> <p>Provided</p>
<p>8.4 Does the CSD receive provisional transfers of securities from any other CSDs?</p> <p>If so, does it prohibit retransfer of these securities until they become final?</p> <p>If not, what would be the consequences of an unwind of such provisional transfers for the CSD's participants?</p>	<p>CREST operates cross-border links to DTCC, Euroclear and SIS. Currently the links to DTCC and Euroclear are on a free of payment basis. CRESTCo intends to develop cross-border DVP for these links in due course. The link with SIS is on a DVP basis for Virt-x settlement.</p> <p>CREST does not receive provisional transfers from other CSDs – as part of the due diligence performed by CRESTCo when setting up a link, checks are made on the overseas CSD to ensure any transfers into CREST are final and irrevocable.</p> <p>ECSDA standards (to which CREST links are built) do not allow provisional transfers.</p>

9 *CSD risk controls to address participants failures to settle*

<p>9.1 Does the CSD extend intraday credit to participants?</p> <p>Are the credit extensions explicit (usually in a gross settlement system) or implicit (in a net settlement system)?</p>	<p>CREST does not extend intra-day credit to any participants.</p>
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<p>9.2 If the system is a net settlement system, would a failure of a participant to settle result in the reversal of transfers involving the defaulting participant and the recalculation of obligations of non-defaulting participants?</p> <p>Would all of the transfers involving the defaulting participant need to be reversed?</p> <p>When would the non-defaulting participants be informed of their recalculated obligations?</p> <p>When would they be required to meet the recalculated obligations?</p>	<p>CREST is not a net settlement system.</p>
<p>9.3 What risk controls are in place to limit the likelihood of participants' inability to settle and the losses and liquidity pressures in such settlement failures?</p>	<p>See question 3.5 above. CREST members control their own settlement performance: they are able to use CREST's real-time system to arrange, execute and settle stock-borrowing and collateral transactions through the settlement day to maximise settlement performance. The majority are regulated firms and need to satisfy the FSA or equivalent regulators in other jurisdictions. CREST monitors settlement performance and operates a settlement discipline regime that seeks to underpin market performance. Where market participants regularly fall below standards for matching and settlement of transactions they incur financial penalties.</p>
<p>9.4 Does the CSD ensure that timely settlement can be completed in the event of an inability to settle by the participant with the single largest obligation?</p> <p>If so, how?</p>	<p>CREST does not ensure settlement of any participant's transactions, but provides adequate opportunity for every member to control and successfully achieve timely settlement.</p> <p>See question 3.4. Some Exchanges may operate buying-in procedures to ensure the completion of transactions struck on the Exchange.</p>
<p>9.5 Are the credit exposures of the CSD fully collateralised?</p> <p>If not, to what extent and to which participants do the CSD extend uncollateralised credit?</p> <p>Does the CSD have the capacity to value (i.e. mark to market) the securities posted as collateral and apply haircuts?</p> <p>Are limits imposed on credit extensions by the CSD?</p>	<p>CREST does not extend any credit to members – either collateralised or uncollateralised.</p>

9.6 Does the CSD permit debit balances in securities?	CREST does not permit debit balances in securities.
9.7 Has any CSD participant been unable to settle any obligations to the CSD? How did the CSD handle the default?	Other than the payment of fees, participants have no direct obligations to CREST. Since CREST's inauguration in 1996, a small number of participants have been subject to insolvency (or equivalent processes). Where this has occurred, the appointed insolvency practitioner has acted to settle or close out the members' outstanding settlement obligations in accordance with standard insolvency law, the rules of the exchange (where relevant) and the overall contractual structure (eg, within the context of stock lending or repo agreements). CREST acts to support the actions of the insolvency administrator within these contexts.

10 *Cash settlement assets*

10.1 How is the settlement of the cash leg of securities transfers effected? Is the settlement effected through transfers on the books of a central bank, a CSD organised as a limited purpose bank, or one or more financial institutions?	CREST operates an intermediated banking model. It is a condition of membership that each CREST member maintains a relationship with a CREST settlement bank for each currency in which they act (e.g. sterling, euro and US dollars). The settlement bank guarantees the obligations of its members. At the point of settlement in CREST, the obligation of the purchaser to the seller is extinguished and replaced with an obligation from the purchaser bank to the seller's bank (where different). For sterling and euro, the inter-bank obligation is immediately discharged by central bank money transfers across accounts at the Bank of England; for US dollars the obligations are discharged at end day. The finality of payment between the member and their bank is determined in their private contractual arrangement. For sterling and euro, a settlement member has no exposure other than to their chosen settlement bank. CREST does not offer credit or banking facilities to its members.
10.2 If a single bank is used, is it the central bank that issues the currency? Is the CSD itself organised as a limited purpose bank? If the central bank is not used, what steps are taken to protect CSD members from failure of the settlement institution?	The Bank of England provides inter-bank settlement in sterling and euro. The Bank is also a CREST settlement bank. CREST is not organised as a limited purpose bank.

<p>10.3 If multiple settlement institutions can be used in principle, how many are used in practice?</p> <p>Who determines which institutions can be used as settlement institutions?</p> <p>What are the criteria?</p> <p>How concentrated are payment flows?</p> <p>Which institution is used by the highest percentage of CSD members?</p> <p>On an average day, what percentage of total payments is credited to accounts at that institution?</p> <p>What is the financial condition of that institution (for example, its capital ratios and its credit ratings)?</p>	<p>There are twelve CREST settlement banks providing sterling payment facilities, eleven for euro and nine for US dollars. A settlement bank needs to be able to enter into the multilateral contractual structure and to be able to effect the necessary inter-bank transfers. All these banks are high quality credit institutions and there has never been a failure. For sterling and euro, the settlement bank must maintain an operating account at the Bank of England and manage the liquidity necessary to support this. The Bank of England sets transparent guidelines for access to operational accounts. (See also the Bank of England’s Consultation Paper on “Settlement Accounts”, available from their website)</p> <p>For US dollars, settlement banks have intra-day exposure until the obligations are discharged at end day. Consequently, banks need to be of acceptable credit quality to all other settlement banks.</p> <p>Almost 50% of the interbank payments within CREST are concentrated in two settlement banks (Barclays and HSBC). These banks are also those used by the highest percentage of CREST members. Barclays and HSBC maintain long term Standard & Poors credit ratings of “AA”, and “AA-“ respectively.</p> <p>There is a competitive market for the provision of intra-day credit and CREST members have the opportunity to select their chosen provider: assessment of credit worthiness will be one element of this.</p>
<p>10.4 How quickly can CSD members retransfer the proceeds of settlement?</p>	<p>The finality and irrevocability of payments between members and their settlement bank are defined within their bilateral contracts. CRESTCo believe that larger members generally have arrangements for immediate finality allowing them to extract the proceeds of settlement to other purposes in real time.</p> <p>Proceeds can invariably be reused within CREST immediately (as debits and credits to the Cash Memorandum Account)</p>

10.5 If multiple settlement institutions are used, are the resulting obligations between settlement institutions settled through a payment system that adheres to the Core Principles for Systemically Important Payment Systems?	Sterling and euro inter-bank payment obligations are discharged through the Real-Time Gross Settlement processor operated by the Bank of England.
10.6 If the system is a multicurrency system, how are non-domestic funds transfers effected?	Inter-bank US dollar payments are effected at end day by means of settlement banks' New York correspondent banks.

11 *Operational reliability*

11.1 Does the system operator have a process to identify and manage its operational risks?	<p>Operational Risk is the responsibility of all CRESTCo managers. The Compliance Department collates risk assessments completed regularly by operational management. Any issues identified in the assessments are reported to the Audit and Compliance Committee.</p> <p>CREST has an independent Internal Audit department, which reviews operational risks and controls across the CREST services. External auditors undertake an annual SAS70 assessment against a statement of internal controls. This SAS70 Assessment is made available to CREST participants and is summarised in the Company's Annual report and Accounts.</p> <p>The Company's Operational Risk profile is reviewed at Board level by a committee of the Board (the Audit and Compliance Committee).</p>
<p>11.2 Does the system operator have internal control policies and procedures, including security measures, designed to limit operational risk?</p> <p>How are they enforced?</p>	<p>A team within CRESTCo is dedicated to procedure writing: it maintains detailed and version controlled company procedures, which are available to all staff on the company's intranet.</p> <p>Security measures include: controlled access to premises; physical, firewalled and password controlled entry to operating systems; dual controlled access functions; full hot remote backup contingency site subject to regular live testing; regular reviews of procedures and controls by line managers plus internal and external auditors.</p>
11.3 Does the system operator have contingency plans and backup facilities for the failure of key systems and are these rehearsed/tested?	<p>Contingency plans are in place for the loss of key systems (including business premises). Contingency plans for various components are tested out of hours, and a full intraday test is normally conducted annually. The last test was successfully conducted on 13 Dec 2001.</p>

<p>How long does it take to recover operations through backup systems?</p> <p>Do the procedures provide for preservation of all transaction data?</p> <p>How does the system operator ensure the integrity of messages?</p>	<p>Hot backup ensures systems are available within minutes and complete office live operations are resumed within one hour.</p> <p>The system's design ensures all transaction data are preserved in the event of a switch to the standby site. In-built system controls with supporting procedures are in place to ensure the integrity of messages.</p> <p>Data encryption and message authentication codes ensure the integrity of messages transmitted over the networks accredited by CRESTCo (currently provided by SWIFT and Syntegra)</p>
<p>11.4 How many times during the last year has a key system failed?</p> <p>How long did it take to resume processing?</p> <p>How much transaction data, if any, was lost?</p>	<p>Like any complex real-time system with significant interdependencies with other systems (e.g. SWIFT, Bank of England) there are occasional interruptions to service. These interruptions have been rare and have not led to loss of data or ultimate failure to settle. All issues have been resolved during the working day, often very quickly.</p>
<p>11.5 Does the system operator have capacity plans for key systems and are key systems stress tested periodically?</p>	<p>In mid-2001, the CREST system was updated to a new scalable platform based on Compaq NSK Supercluster technology. The new system was stress tested before implementation, and constant monitoring of the live system ensures capacity requirements are reviewed. All major software upgrades are subject to volume test before release to live.</p>
<p>11.6 Are the matters above approved and reviewed regularly by senior management, including review by persons not responsible for the relevant operations?</p> <p>Are periodic external audits of the IT (information technology) system conducted?</p> <p>Is there an independent internal audit function and does it review operational risk controls?</p>	<p>Senior managers regularly review system controls, capacity and contingency processes, and CRESTCo's IT security team reviews controls and procedures within its area of expertise.</p> <p>CRESTCo also has an independent Internal Audit department, which reviews operational risks and controls across the CREST services. External auditors undertake an annual SAS70 assessment against management's statement of internal controls.</p> <p>The work of Internal and External Audit is reviewed by the Audit and Compliance Committee which includes non-executive CRESTCo board directors and two professional audit co-optees from the banking sector.</p>

	The scope of Internal and External Audit work encompasses all aspects of the Company's operations.
<p>11.7 Does the system impose minimum operational or performance standards on third parties (for example, communications providers)?</p> <p>If the system operator has outsourced its operations to other entities, what measures are taken to ensure that outsourced operations meet the same standards as if they were provided directly by the system operator?</p>	<p>Yes. Contracts and service level agreements are in place with service partners and outsourced facilities providers. These are constantly monitored and reviewed at regular meetings to the same standards as if they were provided directly by CRESTCo.</p> <p>The operation of key service providers is also subject to CRESTCo Internal Audit review.</p>

12 *Protection of customers' securities*

<p>12.1 What arrangements are used to protect customers' securities from theft, loss or misuse and to ensure that they will not become subject to claims of the custodian's creditors (for example, is segregation used)?</p> <p>Are those arrangements based upon specific laws and regulations?</p>	<p>This section's answers relate specifically to CRESTCo's international service which operates on a standard custodian model (see question 1.2(b)). Underlying international securities are held in a pooled nominee name via a sub-custodian network. (The question does not apply to CREST's domestic service where members hold their securities directly)</p> <p>The mechanism for settlement of international securities in CREST is that the CREST Depository Limited, a wholly owned subsidiary of CRESTCo, holds the international securities on trust for the relevant CREST members. English law governs this trust. The CREST Depository issues a security in the form of a dematerialised depository receipt called a CREST Depository Interest ("CDI"), which represents an interest in the underlying international security. A CDI has exactly the same characteristics and benefits as the underlying security, on a one-for-one basis, except that it is an English law instrument. The CDI is issued under English law and therefore brings the CREST member's rights within the framework of the Uncertificated Securities Regulations (and, in particular, the important provisions relating to investor protection and the legal robustness of the settlement infrastructure).</p>
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<p>In the event of the custodian's insolvency, do those arrangements enable a customer's positions to be moved by a receiver to a solvent intermediary?</p>	<p>Arrangements are subject to local laws/regulations and are augmented by CRESTCo's own control checks geared towards fulfilling our responsibilities.</p> <p>Yes. The local law of the sub-custodian determines the process.</p>
<p>12.2 Are the entities holding securities in custody subject to mandatory internal or external audit, or both, to determine if there are sufficient securities to satisfy customer claims?</p> <p>On how many occasions during the past year have investors suffered losses as a result of their custodian?</p> <p>How large were the losses?</p> <p>What were the causes of such losses?</p>	<p>Overseas holdings are subject to internal and external audit in accordance with market practice. An annual SAS70 Report is issued to shareholders and summarised in the Annual report and Accounts.</p> <p>None.</p> <p>N/A</p> <p>N/A</p>
<p>12.3 How often do the entities holding securities in custody reconcile their records?</p>	<p>Such reconciliation is carried out in accordance with regulatory requirements and market practice. Namely balances are reconciled monthly, with a full reconciliation conducted quarterly. CRESTCo reconciles the CDI register and CSD positions daily.</p>
<p>12.4 Are the entities holding securities in custody subject to prudential supervision or regulation?</p> <p>Do audits or regulatory reviews examine the procedures and internal controls used in the safekeeping of securities?</p>	<p>Offering custody services is a regulated activity in the UK under the Financial Services and Markets Act 2000. Custodians operating in overseas jurisdictions are subject to local law and local regulation.</p> <p>Yes. An annual SAS 70 report is issued to CRESTCo's shareholders and is made available to all CREST participants.</p>
<p>12.5 What responsibilities does national law or regulation place on a custodian to determine the adequacy of the accounting and safekeeping practices used by its sub-custodians?</p>	<p>These vary depending on the local legislation covering the sub-custodian, and the domestic law that governs the main custodian. CRESTCo take responsibility for the custodian activities of CDL. FSA therefore include CDL activities within the scope of the supervision of CRESTCo. In our instance the UK Uncertificated Securities Regulations 2001, the CREST terms and conditions, and the CREST International Reference Manual set out the details of the service which CREST offers in this area.</p>

<p>What responsibilities does national law or regulation place on a CSD to determine the adequacy of the accounting and safekeeping practices used by CSDs or ICSDs to which it is linked?</p>	<p>That relevant controls are in place to meet domestic legal and regulatory requirements and that all reasonable steps are taken to ensure these are applied through any subsequent links.</p>
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13 *Governance*

<p>13.1 How is the composition of the board determined?</p> <p>What steps are taken to ensure that board members have the necessary skills, and represent or take into account in their deliberations the full range of shareholder and user interests as well as the public interest?</p>	<p>The Board comprises 14 members, two of whom are executive directors. A Nominating Committee (which consists of three directors – one of whom is the senior independent director – and three members who are not directors but are regarded by the board as being of high competence and standing) meets to review the criteria which it must apply to new board appointments. These are prescribed in the articles and require that each director shall be of high competence and standing in his/her field and is likely to function effectively as a director.</p> <p>Further, the board as a whole must comprise directors with appropriate skills and experience who are, except in the case of two independent directors, drawn from the system's users. The board is also balanced to reflect the diverse range of users of the company's services and therefore the directors have a thorough understanding of users' interests.</p> <p>The interest of the public has a considerable influence on the deliberations of the board: some significant system developments have been driven by public interest rather than by CREST users.</p> <p>A list of CREST directors is available in the Annual Report or from the CREST website</p>
<p>13.2 What steps are taken to ensure that management has the incentives and skills needed to achieve the system's objectives and is accountable for its performance?</p>	<p>The management lead a focused and motivated team of highly qualified staff who are appraised annually by appropriate line management (and reviewed against their appraisal targets half yearly) against objectives matched to the business's needs. Personal bonus arrangements are linked to the delivery of these objectives.</p> <p>Key managers make monthly reports to a senior executive committee (Exco) and identify, inter alia, key achievements, threats to the achievement of targets and priority tasks in the following month. Exco meets weekly and focuses on strategic, operational (including risk) and business</p>

	objectives. (Members of Exco are individually appraised by the CEO, who in turn is appraised by the Chairman.)
<p>13.3 Are the system's public interest, financial and other objectives clearly articulated?</p> <p>What are they?</p> <p>Do the objectives reflect the needs of users as well as owners?</p> <p>How is the public interest taken into account?</p>	<p>These are elucidated within the Annual Report and Accounts and reinforced in the monthly newsletters sent to all customers and interested parties.</p> <p>CRESTCo espouses values consistent with a customer-driven (as opposed to shareholder-driven) not-for-profit organisation which continuously delivers low cost, low-risk high capacity, real-time domestic and international settlement services, and seeks to develop these services for the good of all sectors of the market.</p> <p>All CREST shareholders are system users, with shares being rebalanced according to use of the system every two years. Feedback from customers is obtained and acted on by CRESTCo's Relationship Management team and through stakeholder surveys.</p> <p>The public interest is upheld through regular meetings between CREST and government, the Bank of England, the FSA, other authorities and key industry bodies.</p>
<p>13.4 Are the system's public interest, financial and other objectives publicly stated?</p> <p>How are major decisions communicated to owners and users?</p> <p>What information is publicly available regarding the system, its ownership and its board and management structure, and the process by which board members are appointed, major</p>	<p>Yes, in the Articles of Association, Annual Report and Accounts, through regular customer-presentations and road shows and through the monthly newsletter to customers.</p> <p>Newsletters are sent to users (NB all our shareholders are users – though not all users are shareholders). Newsletters contain details of all intended and delivered developments, details of any consultation processes and a wide-ranging editorial from the CEO. Any person or entity can be added to the mailing list, which is free. CRESTCo currently has over 4,000 individuals on its main mailing list. More targeted mailings are used for particular products and for time-critical operational information.</p> <p>The Annual Report and Accounts describe the system, show CRESTCo's ownership, board and management structure. It also contains a corporate governance section that states the responsibilities of the board, defines risk management procedures and the role of the board's committees including the Audit & Compliance Committee. The forthcoming report and</p>

decisions taken and management made accountable?	account will also include the operational details of the Nominating Committee. This information is available through public documents issued by CREST and is also available on CRESTCo's website.
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14 *Access*

<p>14.1 What rules determine who may access the system?</p> <p>Are they clearly disclosed to all potential applicants?</p> <p>Can restrictions on access to the system be justified in terms of the need to limit risks to the system operator or to other users?</p>	<p>Access to the system is by a CREST admission agreement and subject to CRESTCo's Terms and Conditions.</p> <p>Yes, an admission pack containing agreements and the Terms and Conditions are sent to all potential applicants. Additionally the Terms and Conditions are accessible through the CRESTCo website.</p> <p>Yes, CRESTCo may restrict or remove access to the system but only on the basis that participation by a particular member could represent a threat to the security, integrity or reputation of the system.</p>
<p>14.2 Are the same rules applied regardless of the identity, type and location of the applicant?</p> <p>If not, what variations apply and why?</p>	<p>No, the rules differ somewhat, but not in a discriminatory way, according to the identity, type and location of the applicant. Different rules apply to corporate applicants and personal applicants. As a condition for admission, applicants which are incorporated outside the United Kingdom or are individuals who are resident outside the United Kingdom must (unless it is a body corporate incorporated within the EU or an individual resident within the EU) appoint an agent for service of process who is a body corporate incorporated in England or Wales. Additionally, CRESTCo may require a legal opinion from an external legal adviser in terms acceptable to CRESTCo regarding, inter alia, the applicant's capacity to execute and be bound by the provisions of the CREST Terms and Conditions. These variations are in place to ensure that in the event of a dispute CRESTCo is not prevented or hindered from serving notices on members incorporated outside the United Kingdom and to ensure that the legal agreements are recognised and enforceable in the jurisdiction in question.</p>
<p>14.3 What steps are taken to confirm whether an applicant satisfies the relevant access rules?</p>	<p>In the admission documents, which the applicant initially executes, the applicant undertakes and confirms that the relevant access rules have been and will remain satisfied.</p>

<p>Initially?</p> <p>On an ongoing basis?</p>	<p>The member is under an obligation to inform CRESTCo of any changes in the information supplied to CRESTCo as part of the membership application.</p>
<p>14.4 Under what conditions can participants terminate their membership?</p> <p>What arrangements does the system have in place to facilitate the exit of members who no longer meet the participation requirements?</p> <p>How quickly could any such exit take effect?</p> <p>How would the system ensure that any exit was as orderly as possible?</p>	<p>Participants may terminate their membership by giving written notice to CRESTCo. The membership terminates on the expiry of 30 days from the date on which notice is treated as served.</p> <p>Upon the termination of membership, the manner of transferring securities or of withdrawing securities from the CREST system shall be as prescribed in the CREST Manual.</p> <p>Internal procedures exist to ensure that a member's termination, whether effected by CRESTCo or the member itself, is as orderly as possible and the integrity of the system is always protected.</p>
<p>14.5 Are participants which do not satisfy access rules nevertheless able to access the system indirectly?</p> <p>What information does the system operator receive regarding their activities and the risk controls applied to them?</p>	<p>Such participants may choose to use a custodian or another third party to access CREST.</p> <p>CREST does not and can not monitor the underlying clients of its members.</p>

15 *Efficiency*

<p>15.1 Does the system have sufficient capacity to meet existing operating demands and anticipated peak volumes without maintaining unnecessary levels of excess capacity?</p> <p>Does the system operator have in place procedures to periodically review its capacity levels against projected demand?</p>	<p>Yes. CREST continually monitors the capacity of the system. The capacity of the current configuration is known and the adaptive nature of the application allows for short term adjustments to be made for days of exceptional capacity requirements. Also the application has been formally benchmarked on a larger hardware cluster so that we can be confident that capacity can be increased by additional hardware.</p> <p>CRESTCo has both a short-term capacity management function (based on the profile of volume on trade date) and a team that looks at medium and long term capacity projections.</p>
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<p>15.2 Does the system operator have in place procedures to benchmark its costs and charges against other systems and, if so, does this show whether the costs are higher or lower than those of comparable systems?</p> <p>Does the system operator have in place procedures to periodically review its pricing levels against its costs of operation?</p>	<p>CRESTCo regularly analyses its financials and tariffs in comparison with publicly available information from its peers and competitors. We believe that our all-in costs taking account of all the charges borne by a user, are the lowest in Europe.</p> <p>CRESTCo part-sponsored the recent Centre for European Policy Studies (CEPS) report into the cost of clearing and settlement in Europe (available from the CEPS website www.ceps.be).</p> <p>CRESTCo's tariff is constructed on the basis of the user paying for the services that they consume and is designed to reflect as accurately as possible the costs of delivering individual services.</p>
<p>15.3 Does the system give participants the mechanisms and management information to enable them to manage their liquidity effectively?</p>	<p>CREST operates a real-time settlement system and offers a full range of flexible enquiry management and reconciliation functions. Full details of all CREST messages can be found in the CREST Manual available on the CRESTCo website.</p> <p>Participants are able to enquire on the system either interactively or by file transfer at any time from 04:00 to 22:00 (London time).</p>
<p>15.4 Does the system operator have in place procedures to determine whether participants are satisfied with the service levels they receive (for example, by regularly surveying its users and/or benchmarking its service levels against those of similar systems)?</p>	<p>CRESTCo maintains an active and high-profile liaison with all its customers. A proactive Relationship Management team is dedicated to dealing with the operational and strategic needs of CREST's customer base. CRESTCo conducted an Attitudes Survey of key stakeholders in 2000. This was managed by an experienced City research firm. CRESTCo intends to repeat this exercise on a regular basis.</p> <p>CRESTCo is also an active member of various industry groups that meet regularly to discuss customer and industry issues.</p>
<p>15.5 Does the system operator have in place procedures to review system and technical interface issues with users and assess the costs to users of different system configurations?</p>	<p>Yes. CREST's internal procedures include the review of technical interface issues. These can apply to particular firms, trade bodies or general groups. The structure of the systems and the provision of service options mean that users can configure their own system configuration, independent to the underlying system configuration.</p>

	As part of its strategic customer delivery, the company is implementing a series of changes to the customer interface designed to create more flexible arrangements for customer access, using standard networks, message and interface technologies (eg, HTTP).
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16 *Communication procedures and standards*

<p>16.1 Does the securities settlement system use international communication procedures or standards or is it able to easily convert domestic procedures and standards into the relevant international communication procedures and standards for cross-border securities transactions?</p>	<p>Customers can communicate either using ISO 15022 standard messages or CREST's proprietary standards: interface specifications for both are available on our website. Generic and open interface and network protocols will supplement the CREST proprietary standards from mid-2002.</p> <p>To communicate with other CSDs and ICSDs, international communications procedures and standards are used for cross-border securities transactions. The SWIFT FIN network is used and the messages conform to the ISO 15022 standard.</p>
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17 *Transparency*

<p>17.1 Do entities that provide the clearing, settlement and custodial infrastructure of securities markets make clear disclosures to market participants about their rules, regulations, relevant laws, governance procedures, risks, steps taken to mitigate risks, and the rights and obligations of participants?</p>	<p>The rights and obligations of CREST participants arise primarily from a combination of the Uncertificated Securities Regulations 2001, the CREST agreements entered into by CREST participants and the CREST Manual (which incorporates the CREST Rules). All CREST members are informed directly of any changes to these rules and regulations.</p> <p>LCH rules and regulations are similarly available to members directly and to other interested parties via their website</p>
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<p>17.2 How is this information made available?</p> <p>In what language or languages?</p> <p>In what form? Is it available on the internet?</p> <p>Has the system completed the questionnaire set out in the CPSS/IOSCO disclosure framework?</p> <p>Have the authorities responsible for regulation and oversight publicly disclosed their answers to the key questions regarding implementation of the recommendations?</p>	<p>All new users receive a copy of the complete CREST Manual on CD-ROM, as well as a printed copy of the agreement(s) they have to sign when joining. Updates to the Manual are posted on the CREST website and are available on CD-ROM upon request. Updates are publicised through the regular CREST newsletter.</p> <p>All CREST documentation is written in English.</p> <p>The Uncertificated Securities Regulations 2001 are published on the HMSO website, and there is a direct link from the CREST website.</p> <p>Yes. The full text of the CRESTCo response is set out on the CRESTCo website.</p> <p>Not as yet.</p>
<p>17.3 What steps are taken to ensure that the disclosures are complete and accurate?</p> <p>Are there periodical reviews to ensure they remain current?</p>	<p>Line managers complete all relevant sections of the disclosures. The questionnaire is reviewed by senior management before being forwarded to the Financial Services Authority (FSA).</p> <p>Yes.</p>

18 *Regulation and oversight*

<p>18.1 How is the system regulated/overseen?</p>	<p>By the FSA.</p>
<p>18.2 Are the objectives and responsibilities of the securities regulator, central bank and, where relevant, banking supervisor clearly defined with respect to securities settlement systems?</p>	<p>Yes. FSA has four statutory objectives under the Financial Services and Markets Act 2000, including to maintain market confidence and protect consumers. These objectives underpin the regulatory approach.</p>

<p>Are their roles and major policies disclosed publicly?</p> <p>Are they written in plain language so that they can be fully understood by designers, operators and participants of securities settlement systems, and other relevant parties?</p>	<p>Yes, publications, consultation documents and the FSA's responses to market comment on such documents are available through the FSA website.</p> <p>Yes</p>
<p>18.3 What is the regulatory and oversight framework based on?</p> <p>Is it a statute-based approach where specific tasks, responsibilities and powers are assigned to specific public authorities?</p> <p>Or a non-statute-based approach?</p> <p>If the latter, should consideration be given to establishing a new regulatory and oversight framework based on statute?</p> <p>Do the securities regulator and the central bank have experienced staff, proper resources and funding to carry out regulatory and oversight functions effectively?</p>	<p>The Financial Services and Markets Act 2000 and the Uncertificated Securities Regulations 2001.</p> <p>Yes, the FSA is the sole financial services regulator in the UK.</p> <p>Yes.</p>
<p>18.4 Have the authorities assessed the extent to which securities settlement systems observe the recommendations?</p> <p>Has the assessment been documented? What were the conclusions?</p>	<p>Yes, the FSA have seen CRESTCo's completion of the BIS/IOSCO disclosure framework.</p> <p>FSA have not documented their assessment of the completion of the BIS/IOSCO disclosure framework, but intend to document their response to the current CPSS/IOSCO framework</p>
<p>18.5 Is there a framework for co-operation between the securities regulator and the central bank, such as for the exchange of information and views on securities settlement systems?</p>	<p>Yes. There is a memorandum of understanding between FSA, the Bank of England and the Treasury, details of which are available from all three organisations' websites</p>

Is there such a framework for co-operation with relevant authorities both within and outside the country?	Yes
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19 *Risks in cross-border links*

<p>19.1 Has a CSD in your jurisdiction established a link with one or more non-domestic CSDs?</p> <p>What functions are provided by the CSDs in connection with the operation of the link?</p>	<p>Yes.</p> <p>The links involve settlement (free of payment and, in some instances, DvP), reconciliation and corporate actions.</p>
<p>19.2 Was a risk analysis of the design of the link undertaken?</p>	<p>Yes.</p>
<p>19.3 How does the design of the link address each of the recommendations?</p> <p>How are systems, capacity or other operational issues addressed by the design of the link?</p>	<p>CREST links to other CSDs follow ECSDA standards and principles, which are clearly documented on the ESCDA website (www.ecsda.com). The ECSDA standards are designed to eliminate risk from the cross border settlement process, and the ECSDA principles mirror the recommendations of BIS, albeit at a lower level of detail. As part of the ESCDA standard for DvP, the requirement for a CSD to extend credit is removed by the design of the link, which envisages real euro payments being made through TARGET (the “Buyer Model”).</p> <p>In the cases where the Buyer Model is not followed, payments still occur through the local central bank (e.g. for sterling or Swiss Francs). Were credit to be required to support a link, any credit extension would be fully backed up by a letter of credit (or similar instrument), and restricted by credit limits.</p> <p>The ECSDA links are all fully automated, with full STP, removing any capacity constraints.</p>
<p>19.4 Have the respective rules and procedures of the linked CSDs regarding the operation of the link been published and made available to system participants and the public generally?</p>	<p>Yes. The rules and procedures are contained in the “CREST International Manual” which is available on the CREST website.</p>

<p>19.5 Identify the design features or other mechanisms by which the operation of the link reduces or eliminates the credit and liquidity risks associated with cross-border settlements identified in these recommendations.</p>	<p>In all CREST cross-border links, no settlement is initiated unless stock or cash has been blocked (positioned) from use by the CREST member. CRESTCo therefore has effectively segregated the resource required to settle in the other CSD, and has protected both itself and its member from default by either the other CSD or the counterparty. The level of settlement finality within a CSD to which CREST is considering linking is a major part of the due diligence that CRESTCo performs.</p>
<p>19.6 How have any credit and liquidity interdependencies between the linked CSDs been addressed?</p>	<p>To date, DvP links (with SIS for Virt-x settlement) rely on clean payments being made, rather than credit being extended.</p>
<p>19.7 Does the link permit provisional transfers of securities across the link?</p> <p>If so, is the retransfer of these securities prohibited until the first transfer is final</p>	<p>No.</p> <p>N/A</p>
<p>19.8 Has each relevant local regulatory authority evaluated and assessed the legal framework governing the link?</p> <p>Is there a framework for co-operation among relevant local authorities?</p> <p>What steps were taken to assure enforceability of rules of the link and conclusion of linked transactions with finality in each linked jurisdiction?</p>	<p>CRESTCo conducts extensive legal due diligence prior to the establishment of a link with another CSD. Obtaining any necessary authorisations from local authorities forms part of this process. Establishing when transactions in a CSD are final is also a crucial element of the due diligence process. The CREST document “International Legal Framework”, available on the CREST website, explains the work we have undertaken in detail.</p>
<p>19.9 Do the legal frameworks applicable in the jurisdictions of the linked CSDs support the design of the link?</p>	<p>Yes, the “International Legal Framework” describes the features of the different jurisdictions CRESTCo operates in.</p>