

I. Basic information

This section addresses a number of fundamental features of the Securities Settlement System (SSS) and provides the market context for its operation. The questions establish the basic functions of the SSS, including the securities for which it provides settlement services, as well as whether the SSS offers other services. Questions on the organisational and ownership structure of the SSS elicit information on its legal basis and corporate governance.

A wide variety of organisational structures and business functions are possible for SSSs. For example, systems may be owned by central banks, by their participants or by an independent private sector entity that may or may not be operated for profit. As a first step in clarifying the respective responsibilities of all relevant parties, it is helpful to distinguish the type of ownership, the organisational and decision-making structure and the financial resources of the SSS, as well as the supervisory oversight to which the system is subject.

A. What is the name of the SSS?

Clearstream Banking S.A.,

Clearstream Banking S.A. is a société anonyme incorporated in Luxembourg.

B. Where and in which time zone is the SSS located?

Clearstream Banking S.A., 42 Avenue J.F. Kennedy, L-1855 Luxembourg.

Time Zone 13: Central European Time (CET = GMT+1).

C. What functions does the SSS perform?

A variety of functions are performed for financial institutions across selected markets and financial instruments. Clearstream Banking S.A. clears and settles market transactions, ensuring that cash and securities are promptly and effectively delivered between parties. Alike custodians, Clearstream Banking S.A. takes care of any rights attached to the securities that our customers keep with us. Clearstream Banking S.A. also performs cash management and treasury services, as well as financing, lending and borrowing services. Clearstream Banking S.A. also offers investment funds related services.

Functions include:

- Settlement;
- Comprehensive custody management, including withholding tax and proxy voting services;
- Cash investment, same-day value withdrawal and deposits, automatic currency conversion of income and residual balances, automatic withdrawal of custody proceeds and foreign exchange services;
- Cash financing;
- Securities lending and borrowing and collateral management services;
- A Straight-Through Processing (STP) solution for investment fund processing (Vestima+);
- The Central Facility for Funds (CFF) which is a post-trade infrastructure.
- Related information distribution including customer reporting.
- Comprehensive New Issues services.

C.1. Does the SSS serve as a securities depository and/or provide securities settlement services?

Yes, Clearstream Banking S.A. acts as an international central securities depository and provides securities settlement services.

C.1.(a) What types of instrument are eligible for deposit at the SSS (for example, debt, equities, warrants etc.)?

Over 850,000 securities are currently accepted by Clearstream Banking S.A. for settlement. They include the following:

- Euro-instruments, including eurobonds (straight, floating rate, convertible etc.);
 - Foreign bonds;
 - Foreign-targeted bonds;
 - Money market instruments, including short and medium term notes, commercial paper and certificates of deposit;
 - Domestic bonds (government and corporate, including convertibles);
 - Equities;
 - Depository receipts;
 - Investment funds;
 - Warrants;
 - Asset-backed securities and other collateralised debt securities.
- Clearstream Banking S.A. also accepts gold bullion traded on the Luxembourg Stock Exchange.

C.1.(b) What types of instrument are eligible for transfer within the SSS?

All instruments referred to in C.1.(a) above, unless otherwise specified in the Governing Documents, are also eligible for transfer within the SSS.

C.1.(c) Please describe whether eligible securities are dematerialised, immobilised or transferred physically.

Within Clearstream Banking S.A., the International Central Securities Depository (ICSD), securities are held in book-entry form and transferred by book-entry. They are immobilised at least as long as they remain in Clearstream Banking S.A.. Most securities held in Clearstream Banking S.A.'s system are subdeposited with Clearstream Banking S.A.'s sub-depositories. Depending on the market served (e.g. Eurobonds, domestic securities) the underlying security may be held in certificated and/or immobilized form as well as being fully dematerialized.

With respect to Eurobonds for which Clearstream Banking S.A. acts as primary depository, 100% of the outstanding bonds are held in certificated form. Of that less than 2% are physically deliverable, the remainder being immobilized. Immobilised certificates may be withdrawn if this is allowed under the issuer terms and conditions.

International securities can be in the following forms:

- Global Certificate
 - The entire issued amount of a security is represented by a single certificate, also called a Global Note, of which there are two kinds:
 - Classical Global Note (CGN), which requires a physical annotation on an attached schedule to reflect the Issue Outstanding Amount (IOA). CGNs are deposited with and are serviced by common depositories appointed jointly by the ICSDs. CGNs can be bearer or registered.
 - New Global Note (NGN), which refers to the records of the ICSDs to determine the IOA. NGNs are deposited with common safekeepers and are serviced by common service providers, appointed jointly by the ICSDs. NGNs are bearer only.

A global certificate is normally issued as a temporary or permanent global note, according to the terms and conditions of the issue.

- Temporary Global Certificate
 - A global certificate (CGN or NGN) issued for the period between the closing of the underwriting agreement and the end of the TEFRA D restricted period, during which distributors generally may not sell the securities to a U.S. person or in the U.S.A. The restricted period is most often 40 days from the closing of the security.
 - The end of this “lock-up” period completes the seasoning of the bond, after which time restrictions on the sale of the bonds into the U.S.A. are lifted. The ICSDs collect certificates from bondholders confirming non-U.S. beneficial ownership before exchanging the temporary global certificate into a permanent global certificate or definitive bonds.
- Permanent Global Certificate
 - A global certificate (CGN or NGN) representing the amount of a security that has passed the restricted (“lock-up”) period and has been certified as being held by a non-U.S. beneficial owner. Permanent global certificates are also issued at the time of closing if the issue does not require a TEFRA D certification.
- Physical (Definitive) Certificates

The security is represented by a number of paper certificates (denominations) that evidence the rights of the holder as against the issuer. Physical securities can be bearer or registered.

Information on each of Clearstream Banking S.A.’s 53 domestic market links is available in comprehensive Creation Link Guides (CLGs) and Market Profiles on the website, www.clearstream.com

C.1.(d) Does the SSS provide safekeeping for physical certificates?

Yes, if not restricted and eligible for transfer; physical securities can be safekept and settled in Clearstream Banking S.A.

C.2. Does the SSS provide cash accounts and/or provide funds transfers in conjunction with securities transfers? If so, in what currencies?

Yes, in principle, each Clearstream Banking S.A. account can hold both cash and securities. Cash management services are therefore provided to customers for all currencies accepted by Clearstream Banking S.A. (A continuously updated list can be accessed on the web site www.clearstream.com.) The currencies accepted by Clearstream Banking S.A. can be used either for denomination-only or for full settlement purposes. Denomination-only currencies can be used to record issuance data and nominal amounts of a security in Clearstream Banking S.A. systems. Full settlement currencies can be used to make clean payments and to settle against payment transactions, irrespective of the currency in which the securities are issued.

C.3. Does the SSS provide a trade matching service? Do others provide such services for securities settled at the SSS?

Yes, for Internal and Bridge instructions matching is obligatory. On receipt of a settlement instruction from a Clearstream Banking S.A.’s customer, mandatory fields are compared against those entered by the counterparty. If they do not match then the trade will not be considered for settlement and will be reported as unmatched. This will be reflected to customers on various reports sent by Clearstream Banking S.A. via the CreationConnect communication channels.

For domestic settlement, matching prior to settlement depends on market requirements.

Matching is not restricted to the day before the specified settlement. The Creation settlement platform allows matching very close to the respective market deadlines.

C.4. Does the SSS provide a trade netting service (as distinct from undertaking the settlement of securities transfers on a net basis)? Do others provide such services for securities settled at the SSS? In either case, what types of netting (bilateral or multilateral), if any, are performed?

Clearstream Banking S.A. does not provide a trade netting service but may settle transactions that are the net obligations resulting from a trade netting service to which Clearstream Banking S.A. is not a party (that is, from Eurex Clearing AG or other Central Counterparties, CCPs).

C.5. Does the SSS offer a securities lending or borrowing programme?

Yes, Clearstream Banking S.A. offers two distinct but complementary securities lending and borrowing services.

Securities Lending and Borrowing is an integral part of Clearstream Banking S.A.'s settlement processing. It provides opportunities for borrowers to avoid settlement failures or to access liquidity in certain securities and for lenders to earn additional income from their securities portfolios held at Clearstream Banking S.A..

A first service named ASL (Automated Securities Lending) is a fails prevention service that enables settlement efficiency to be maximised and the predictability of settlement results to be improved. ASL carries only limited incremental counterparty risk because the repayment obligations of the borrower to lender upon the failure of the borrower to redeliver the lent securities is guaranteed by Clearstream Banking S.A. and are fully collateralised by the borrowers using securities as collateral.

Lenders recognise that an automated service increases the number of opportunities to lend, which increases revenues, and borrowers appreciate the ready availability of securities, which prevents settlement fails.

Customers of Clearstream Banking S.A. acting as ASL Lender and/or Borrower need only sign one legal agreement, the Automated Securities Lending Rules and Regulations, to start using this service.

The second service named ASLplus is complementary to the first mentioned ASL service.

ASLplus provides lenders with the opportunity to enhance their revenues by offering access to the wholesale securities lending market. This market is driven by demands from selected borrowers for strategic lending and is designed to increase revenues by matching the high demand in this market with the supply in the lender securities portfolios held at Clearstream Banking S.A..

in ASLplus, Clearstream Banking S.A. acts as single principal borrower to all the lenders, negotiating rates on a loan by loan basis with selected borrowers. Clearstream Banking S.A. undertakes both the settlement and the administration of the loaned securities including coupon payments and corporate actions. Clearstream International S.A. acts as collateral agent for the ASLplus service and takes on the responsibility of the daily mark-to-market of collateral and the active collateralisation of the loan exposure, including monitoring of the collateral and systematic margin call. Lenders can recall loans from Clearstream Banking S.A. at any time and securities will be returned to their account within the contractually agreed recall period.

Lenders must sign the Securities Lending Principal Agreement to start using the service to optimise the lending return on their securities portfolio.

Borrowers must execute with Clearstream Banking S.A. Banking S.A. a standard bilateral master securities lending agreement (i.e. GMSLA) and a collateral management agreement appointing Clearstream Banking S.A. Banking S.A. as collateral agent.

Although the ASLplus service differs from the ASL service in its underlying purpose, there is very little difference between the two in terms of customer reporting.

C.6. Does the SSS provide custodial and/or related services such as the collection of interest, dividends, principal or withholding tax reclaims? Which types of service are provided?

In addition to the safekeeping of securities, Clearstream Banking S.A. offers a wide range of custodial services:

- Collection and processing of interest and dividend payments and of payments of principal, with pre-advance of such payments;
- Withholding tax services, including tax relief at source, withholding tax reclaims and reporting;
- Administration of securities events: subscription offers, choice dividends, exchanges, bonus issues, put options, anticipated redemption options, conversion options, detachment and re-attachment of warrants, exercise of warrants;
- Proxy voting service;
- Foreign exchange services.

C.7. Does the SSS act as a central counterparty or principal to transactions with its participants?

Clearstream Banking S.A. never acts as a central counterparty or principal to securities transactions with its customers. The exception is ASLplus, where Clearstream Banking S.A. acts as principal and single borrower to the lender

C.8. Other? Please specify.

In addition to the services referred to in C.6. above, Clearstream Banking S.A. provides global securities financing services which are bundled under the Global Liquidity Hub. In addition to securities lending and borrowing it contains collateral management in cash, fixed income and equities.

The Global Liquidity Hub's sophisticated collateral management system allows a high degree of flexibility, enabling a broad range of participants to implement individual service requirements.

Clearstream Banking S.A. is constantly striving to extend the Global Liquidity Hub's reach through partnerships with electronic trading platforms, central counterparties (CCPs), central securities depositories (CSDs) and agent banks, so that customers can cover all their exposures from Clearstream Banking S.A..

The Global Liquidity Hub manages collateral to cover all types of exposures in real time, across currencies, asset classes and time zones. Outsourcing collateral management to Clearstream Banking S.A. as a neutral agent enables customers to focus on their core business, while benefiting from asset optimisation and full regulatory compliance.

Clearstream Banking S.A.'s ICSD customers can benefit from the full suite of Global Liquidity Hub services to make the most of their assets.

Triparty collateral services (Cmax)

- Triparty Collateral Management Service

Collateral refers to assets - cash or securities - pledged to back up a credit advance. Since financial transactions of almost any kind require some form of collateral, efficient collateral management has become essential for every customer. Clearstream Banking S.A. ensures that customers make the most efficient use of the collateral they hold through the Triparty Collateral Management Service. This service frees customers from collateral management and administrative tasks from the moment a transaction takes place through to final settlement. Clearstream Banking S.A. monitors the credit exposure and collateral coverage throughout the duration of a deal. Clearstream Banking S.A. marks positions to market daily, calls for margin and provides comprehensive transaction and settlement reports every day.

- Triparty Repo Service

Multi-currency repurchase agreements, known as “repos”, are short-term money market instruments in which sellers (“collateral givers”) offer fixed income financial instruments, for example, bonds, as collateral in exchange for a cash loan from buyers (“collateral receivers”). The Triparty Repo Service offered by Clearstream Banking S.A. is designed to simplify the process of administering multi-currency repurchase agreements for both collateral giver and collateral receiver, and to reduce the operational risks associated with some types of repurchase agreements by offering a comprehensive delivery versus payment and securities safekeeping service. As discussed in C.5. above in relation to the Securities Lending and Borrowing programme, collateral received in connection with a triparty repo agreement is monitored, reviewed and marked to market on a daily basis to ensure that collateral margin requirements are maintained.

- Triparty Securities Lending Service

Clearstream Banking S.A. offers its Triparty Securities Lending Service for the settlement, valuation and collateralisation of bilateral securities lending transactions.

- Collateral pledge to central banks

Clearstream Banking S.A. acts as an intermediary for international customers, allowing them to pledge assets in favour of various central banks mainly Banque centrale du Luxembourg, Deutsche Bundesbank and U.S. Federal Reserve.

- CCP margining

Regulators are pushing for an increasing number of trades to be cleared by CCPs. While this has the benefit of reducing counterparty risk, it also creates additional complexity, as each CCP has different clearing requirements. As a result, customers have to deal with a multitude of operational frameworks and collateral profiles.

As an experienced triparty collateral agent, Clearstream Banking S.A. helps customers to make the most of their assets through an efficient use of collateral, thereby making expensive cash margins redundant. Thanks to partnerships with selected CCPs such as CME Clearing, Eurex Clearing, ICE Clear Europe, LCH Clearnet and Oslo Clearing ASA, Clearstream Banking S.A. customers who are also clearing members can use the Global Liquidity Hub’s full suite of automatic allocation, optimisation and substitution services for their exposures.

This margining service is part of Clearstream Banking S.A.’s wider efforts to give customers the best possible access to collateral locations around the world: both through strategic partnerships and by linking to globally fragmented exposure locations such as CCPs. Customers can use the Global Liquidity Hub to cover multiple exposure types: bilateral, central bank and CCP margining.

OTC collateral services

- Bilateral collateral management solutions

OTC Collateral enables customers to cover all their derivative exposures from a single collateral pool out of the Global Liquidity Hub. The service covers all aspects of bilateral collateral management from CSA review and administration, mark-to-market, margining, dispute management and portfolio reconciliation to payment/settlement follow-up and reporting.

- Full triparty reuse

The collateral received from bilateral transactions under the OTC Collateral service can be readily reused within the triparty environment of the Global Liquidity Hub. The full range of triparty products is available for reuse, including triparty repo, GC Pooling, reinvestment in money market funds for cash collateral and collateral transformation. Our collateral transformation services include OTC and centrally cleared repos, securities lending and pledges to central banks.

- Overcome fragmentation

The integration of OTC Collateral into the award-winning Global Liquidity Hub helps customers overcome collateral fragmentation and optimise allocation by enabling them to cover over-the-counter, triparty and central counterparty (CCP) exposures from a single collateral pool.

While the focus is on OTC derivative exposures, OTC Collateral covers an entire suite of bilateral collateral management activities, including bilateral repo, securities lending and special collateral agreements which can be tailored to customers' individual business needs.

D. What type of organisation is the SSS?

Clearstream Banking S.A. is a duly licensed bank organised as a Société Anonyme (S.A.) under the laws of the Grand Duchy of Luxembourg.

D.1. Please indicate whether the SSS is a public sector or private sector entity.

Clearstream Banking S.A. is a private sector company.

D.2. Please indicate whether the SSS is organised on a for-profit or a non-profit basis.

Clearstream Banking S.A. is organised on a for-profit basis.

D.3. What is the legal basis for the establishment of the SSS and for securities transfers made through it?

Clearstream as a credit institution is mainly subject to the Luxembourg Law of 5 April 1993 on the financial sector as subsequently amended and the Grand Ducal Regulation of 13 July 2007 implementing the 1993 law, available online on the Commission de Surveillance du Secteur Financier's (CSSF) website: < www.cssf.lu >. The law sets forth the authorisation procedure and obligations of banks, operators of securities settlement systems and other professionals of the financial sector established in Luxembourg, including the prudential supervision regime to which they are subject.

Holding and safekeeping of assets is an activity regulated by the Commission de Surveillance du Secteur Financier (CSSF) under the Law of 5 April 1993 relating to the financial sector, as subsequently amended (the Law). Custody services require a license under this Law.

The transfer of securities is mainly governed by the Securities Law of 1 August 2001 on the circulation of securities as amended by the law of 6 April 2013 (the "Securities Law"). The provisions of the Securities Law apply to securities and other financial instruments in the widest sense of the word, materialised or dematerialised, in bearer or registered form, issued in Luxembourg or foreign countries, and whatever the form is in which they have been issued under their respective applicable law. According to the Securities Law, securities received for deposit or held by a depository without any indication of serial numbers or other individual identification elements are, or are deemed to be fungible. Fungible securities are booked in accounts and may be transferred from one account to another by book entry.

Financial collateral agreements are governed by the Law of 5 August 2005 as amended by the law , providing a state of the art legal framework for implementation and enforcement of pledges, repos, nettings, transfer of title operations.

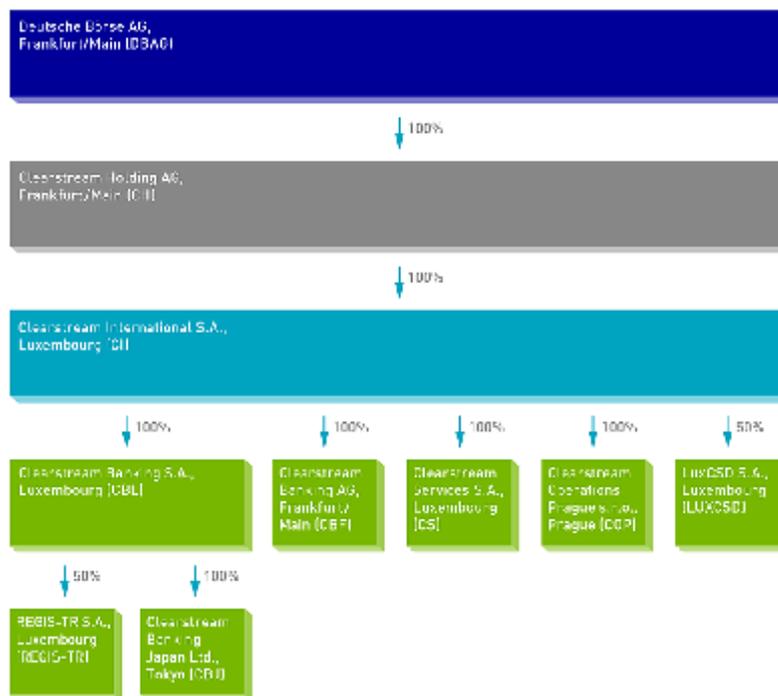
Clearstream as securities settlement system , is subject to Luxembourg Law of 10 November 2009 on payment services as amended by the law of 20 May 2011 (The "Payment Services Law"), which sets forth the authorisation procedure and settlement finality rules applicable to securities settlement systems. The Payment Services Law includes provisions that a transfer order can no longer be cancelled by a participant of a Luxembourg agreed settlement and payment system or challenged by any third party as from the moment such transfer order is introduced in the settlement system. The Payment Services Law furthermore specifies that the moment where the

transfer order is assumed or considered to have been introduced in the settlement system is defined through the governing documents of such settlement system itself.

E. Please describe and provide a diagram outlining the organisational and ownership structure of the SSS.

See a diagram of the legal structure of ownership of Clearstream Banking S.A. below.

The corporate structure of Clearstream International, S.A. and its subsidiaries (“Clearstream Banking S.A. Group”) particularly comprises the following institutions: Clearstream Banking AG of Frankfurt/Main (CBF) and Clearstream Banking S.A., Clearstream Services S.A. of Luxembourg, a provider of IT services, as well as holding companies and single-purpose companies as illustrated in the below diagram.



Note: This structure is a simplified statement

E.1. Who are the owners of the SSS?

Clearstream Banking S.A.’s voting capital is effectively wholly owned by Clearstream International S.A. Clearstream International S.A. is, in turn, and via Clearstream Holding AG a wholly owned subsidiary of Deutsche Börse AG.

E.2. What entity or entities operate the SSS? Which functions of the SSS, if any, are outsourced to third parties?

Clearstream Banking S.A. is the operator of the SSS. It has outsourced securities processing and related information technology processing and development to Clearstream Banking S.A. Services S.A., another wholly owned subsidiary of Clearstream International S.A.

Certain international securities processing operations are also handled by Clearstream Banking S.A. and Clearstream Banking S.A. Banking AG on a cross-outsourcing basis. In addition, Clearstream Banking S.A.

Operations Prague s.r.o. provides securities processing services to Clearstream Banking S.A. Corporate functions are provided on an outsourced basis by Clearstream Banking S.A. International S.A.

Clearstream Banking S.A. uses service suppliers such as depositories, cash correspondent banks, communications networks and information vendors to support Clearstream Banking S.A.'s provision of services to its customers.

E.3. Does the SSS have a Board of Directors?

Yes.

E.3.(a) What is its composition?

As required by law, the Board of Directors is composed of a minimum of three members, each acting in an individual capacity.

For the time being the composition of the Board of Directors of Clearstream Banking S.A. is as follows (staff representatives have not been taken into account):

Nr.	Board of Directors		Company
1	Tessler Jeffrey		Clearstream International S.A.
2	Andre Roelands		Clearstream International S.A.
3	Ernst Wilhelm Contzen		KBL European Private Bankers
5	Thompson Marcus		Deutsche Börse AG

E.3.(b) What are its responsibilities?

The Board of Directors has the power to perform all acts that are necessary or useful for the achievement of the corporate purpose of the company except those that the law or Clearstream Banking S.A.'s by-laws expressly reserve to the General Meeting of Shareholders.

The day-to-day management of Clearstream Banking S.A. is delegated by the Board of Directors to an executive body (the "Group Executive Management"), which determines and co-ordinates the day-to-day management of the various departments and business lines of the company and its major subsidiaries. The Group Executive Management reports to the Board of Directors for the overall day-to-day management.

F. Please describe the financial resources of the SSS.

Clearstream Banking S.A.'s financial resource is equity and subordinated liabilities.

Equity:

Total equity as at 31 December 2013 amounted to EUR 675,617 thousands, including:

- paid-in capital (EUR 75,000 thousands),
- share premium account (EUR 3,836 thousands),
- revaluation reserves (EUR 102 thousands),
- reserves (EUR 577,589 thousands),
- profit for the financial year ending 31 December 2013 (EUR 19,090 thousands).

In 2003, the Bank issued profit participation rights for a total amount of EUR 150 million, denominated in euro. The holder of these rights may require their redemption on a yearly basis with one year notice, but no earlier than 31 December 2043. Redemption can therefore only occur, at the earliest, on 31 December 2044.

These profit participation rights have been fully subscribed by the Bank's ultimate parent company, Deutsche Börse AG and transferred by the latter to Clearstream Holding AG on 25 June 2013. Remuneration of these rights is limited to 10% of the nominal value per annum. For 2013, it amounts to only EUR 4,823 thousand (2012: EUR 15,000 thousand, paid in May 2013).

F.1. Amount of paid-in capital and retained earnings?

Paid-in capital:

As at 31 December 2013, the share capital of Clearstream Banking S.A. consisted of 750,000 ordinary shares with a nominal value of EUR 100 per share, all fully paid.

Retained earnings:

Total reserves, including retained earnings and share premium, as at 31 December 2013 amounted to EUR 600,617 thousands.

F.2. Guarantees, insurance coverage or other similar arrangements?

Clearstream Banking S.A. Banking S.A.'s activities are covered by comprehensive insurance policies, including:

- A comprehensive crime and depository indemnity, up to EUR 20 million, with a deductible of EUR 5 million; and
- An insurance policy covering all risks of physical loss or damage. Coverage is up to EUR 75 million each and every loss per transport or at premises with an excess layer EUR 50 million. The level of deductible depends on the category risk.
- Additionally, Clearstream Banking S.A. has a line of cover for Directors and Officers of EUR 300 million.

F.3. Credit lines or letters of credit?

Clearstream Banking S.A. and Deutsche Börse AG have been granted a joint committed multi-currency revolving credit facility of USD 750 mn. This facility can be used for general corporate purposes.

Regarding Clearstream Banking S.A. operations with Euroclear Bank S.A. through an electronic link (the Bridge), Clearstream Banking S.A.'s exposure against Euroclear Bank S.A. is covered by a Letter of Credit in favour of Clearstream Banking S.A. of USD 2.5 billion (position as at 31 December 2013).

Another liquidity source available to Clearstream Banking S.A. is the Euro-commercial paper (ECP) programme of EUR 1 billion.

F.4. Powers to assess participants or equity holders?

Based on the contractual obligation of its customers and with regard to Article 4 and 55 of its General Terms and Conditions as amended from time to time (the "General Terms and Conditions"), Clearstream Banking S.A. reserves the right to assess the creditworthiness of its customers. This is undertaken as part of the application process for new customers to ensure whether a requested credit line can be granted and is also done in a continuous monitoring process. Clearstream Banking S.A. does not have powers to assess its shareholders.

G. *Please describe whether the SSS or its operator is subject to authorisation, supervision or oversight by an external authority.*

Holding and safekeeping of assets is an activity regulated by the CSSF under the Law of 5 April 1993 relating to the financial sector, as subsequently amended (the Law). Custody services require a license under this Law.

The CSSF is the prudential regulator with authority over all banks and financial services providers (Professionnels du Secteur Financier (PSF)) headquartered in Luxembourg. In particular it implements the Law and issues Circulars applicable to the supervised entities. The CSSF also integrates the responsibilities of monitoring of the stock markets and supervision of the Luxembourg Stock Exchange (only Stock Exchange in operation).

In addition to the above the Central Bank of Luxembourg - Banque Centrale du Luxembourg (BCL) - is responsible for implementing the monetary policy decided by the Governing Council of the European Central Bank (ECB). To do this, it disposes of open market operations, standing facilities and minimum reserves, instruments available to ESCB as well as the oversight of the Securities Settlement Systems (SSSs) to ensure systemic stability of payment and securities settlement systems. In its capacity as an SSS, Clearstream Banking S.A. is subject to BCL's oversight

II. Rules and procedures of the SSS

It is important that SSSs have clear rules and procedures governing all major aspects of their operations. If participants have access to these rules and procedures, they will be able to form clear expectations about the actions of the SSS and will be able to use their understanding to make decisions on that basis. This is particularly important with regard to the resolution of failures to settle or other potential disruptions to the operation of the SSS.

The rules and procedures also typically describe the structures and processes for taking decisions that are at the core of any organisation's corporate governance. For SSS operators, the integrity of the decision-making processes and of the means for communicating decisions is important to the level of confidence that participants have in the system's ability to manage risk fairly and effectively.

The questions below focus broadly on how participants can obtain copies of the SSS's rules and procedures, how participants can provide input to the rules and procedures, how they are notified of changes, the applicability of the rules and procedures to the SSS as well as to its participants, and the circumstances under which the rules and procedures can be overridden. Taken together, the questions are intended to provide participants with an understanding of the role that the system's rules and procedures play within the operation of the SSS.

A. Does the SSS maintain a complete list of the rules and procedures governing the rights and obligations of participants and the duties of the SSS?

The rights and obligations of Clearstream Banking S.A.'s customers and Clearstream Banking S.A.'s duties are determined in Governing Documents, which include, but are not limited to, Clearstream Banking S.A.'s General Terms and Conditions. The customer is requested to acknowledge acceptance of the General Terms and Conditions when an account is opened.

General Terms and Conditions, Customer Handbook, Fee Schedule, Creation Link Guides and other additional Governing Documents and updates are readily available on the web site, www.clearstream.com. Specific services provided by Clearstream Banking S.A. (for example, in relation to securities lending, credit lines) are the object of separate agreements agreed upon between Clearstream Banking S.A. and its customers.

A.1. How can participants obtain a copy of the rules and procedures?

All documents governing the relationship between Clearstream Banking S.A. and its customers are available to customers on the web site www.clearstream.com. who want to open an account (or, if only relevant to a particular service to which the customer is not obliged to subscribe, at the time when the customer applies to subscribe to such a service).

Subsequent updates and other customer information are made available to customers on the web site www.clearstream.com. The customer can subscribe via an alert service to receive the respective updates.

A.2. Does other documentation provided to participants (for example, user guides) have the same status as the rules and procedures?

Any document not labelled by Clearstream Banking S.A. as a Governing Document (for example, most announcements) will not have the legal status of Governing Document and therefore cannot be considered as binding.

A.3. Describe the process for changing rules and procedures, including any need for regulatory approval.

Clearstream Banking S.A. reserves the right to amend the General Terms and Conditions as well as any other Governing Document at any time. Amendments to Governing Documents (including the General Terms and Conditions) are notified to customers in accordance with the General Terms and Conditions.

Clearstream Banking S.A. reserves the right to amend the General Terms and Conditions as well as any other Governing Document at any time. Amendments to the General Terms and Conditions require the prior agreement of customers in accordance with the General Terms and Conditions. Amendments to other Governing Documents are notified to customers in accordance with the General Terms and Conditions.

A.3.(a) What authority is required, and how does this differ depending on the type of change involved?

Changes to rules and procedures require the approval of the managers responsible for any aspect of the services affected by the change. Depending on the nature of the change, the approval of the Group Executive Management and of the Clearstream Banking S.A. General Counsel may be required.

As mentioned above, amendments to the General Terms and Conditions require the prior agreement of customers.

Operational or market practice changes in the markets we serve will have to be reflected by Clearstream Banking S.A.

A.3.(b) How are participants notified of changes in rules and procedures?

For the General Terms and Conditions, Clearstream Banking S.A. notifies customers by registered mail of any such amendment and of the effective date thereof.

For the remaining Governing Documents, Clearstream Banking S.A. notifies customers by electronic means of any such amendments and of the effective date thereof in accordance with the General Terms and Conditions..

Subsequent updates and other customer information are made available to customers on the web site www.clearstream.com.

A.3.(c) Is there a procedure for participants or others to comment on proposed rule changes?

For the General Terms and Conditions, unless customers inform Clearstream Banking S.A. in writing to the contrary within ten business days following the date of receipt of Clearstream Banking S.A.'s notice, customers shall be deemed to have accepted such amendments, leaving thus the possibility for customers to comment, including refusal.

For the other Governing Documents, relevant changes are usually explained to customers in advance by the relationship officers. Depending on the type of rules or procedures being amended and on the urgency of the change, customers may or may not be able to comment on changes prior to their becoming definitive.

Proposed changes of major importance may also be presented to and discussed with the Customer Consultation Committee, a group of representatives of the user community that advises the SSS on its services.

B. Are the rules and procedures binding on the SSS as well as on its participants? Under what conditions and on whose authority can written rules and procedures be waived or suspended by the SSS?

Governing Documents are binding on Clearstream Banking S.A. and its customers. They cannot be waived or suspended unilaterally by Clearstream Banking S.A. unless in accordance with the provisions mentioned in this [Section II](#).

III. Relationships with participants

In evaluating SSSs, it is essential that participants understand the nature of the relationships that the systems have with their participants. The different types of membership that are available as well as the requirements for admission as a participant should be understood.

A knowledge of the account structure of the SSS is also important for an informed evaluation of the system. Participants should understand whether this structure allows or requires the segregation of their customers' cash or securities in separate accounts or sub-accounts at the SSS.

This section addresses these issues, as well as the procedures for and consequences of terminating participation in the SSS. Because of loss-sharing or other arrangements, termination of membership may not extinguish all obligations of participants with respect to the SSS. General limitations on SSS liability to participants are the subject of the final question in this section. These questions are obviously important in enabling participants to establish the magnitude of their exposure to different risks associated with the SSS.

Although these questions provide the basic framework of the relationship between participants and the SSS, many of the most important aspects of these relationships concern the resolution of failures to settle or events of default. Specific questions on these topics are discussed in [Section VII. Securities overdrafts, securities lending and back-to-back transactions](#) below.

A. Please describe the types of membership offered by the SSS.

Clearstream Banking S.A. does not have members; users of the Clearstream Banking S.A. settlement system are referred to as "customers".

In principle, all customers are regulated financial institutions, including banks, CSDs, supranationals, central banks and broker/dealers. All customers are bound by the General Terms and Conditions and Governing Documents.

A.1. How do the types differ?

There are no differing types or categories of customers. All customers are bound by the same General Terms and Conditions and Governing Documents.

A.2. Within each membership category, are all participants subject to the same rules and procedures? Please describe important exceptions, including both differences in rules across participants and the rationale for these differences.

All customers are subject to the same rules and procedures.

B. Can participants establish accounts for their customers' assets that are segregated from their own asset accounts at the SSS?

Customers of Clearstream Banking S.A. are permitted to establish separate accounts to segregate their clients' assets from their own assets.

B.1. If so, is this accomplished through a single omnibus customer account or through a multiplicity of accounts and/or sub-accounts?

The customer may open a segregated account or may operate with one omnibus account.

B.2. Is the segregation optional or compulsory?

Under Clearstream Banking S.A.'s General Terms and Conditions (Article 3), segregation is mandatory between proprietary and non-proprietary assets.

The opening and the nature (omnibus or segregated) of non-proprietary accounts is subject to the discretion of Clearstream Banking S.A. and is based on information delivered by its customers.

In addition, Clearstream Banking S.A.'s customers may be obliged to have segregated accounts as a result of the laws or regulations to which Clearstream Banking S.A. customers are themselves subject.

B.3. Does the fact that a sub-account at the SSS bears the name of a third party give any rights to that third party as a participant under the rules of the system?

No, the right would remain vested with the main account holder. Third parties (the customer's clients) have no rights under the rules of the system as they are not the holders of the segregated account.

C. Please describe participant requirements for each type of membership.

Clearstream Banking S.A. has only one type of participant: customers (see A. above).

The account opening process requires that extensive research and evaluation takes place prior to the opening of an account. The process largely involves sales, credit, and compliance. The final decision is based on the decision of the GEM members and requires the submission and evaluation of comprehensive documentation including the list of authorized signatures, the company's and parent company's most recent Annual Report, and the originals or certified copies of Financial License, Company By-laws, Statutes or Regulations. Clearstream Banking S.A. performs the following checks: that documents are up-to-date, that they are originals or certified copies, whether they are issued by the appropriate regulatory bodies and whether or not the existing governance structures are acceptable.

In addition to the set of required information stipulated above, supplementary information on the institution is assembled and reviewed. Once all the documentation has been received and examined and is judged satisfactory, the account opening is subject to approval by senior management.

C.1. Are participants required to be domiciled or resident in a particular jurisdiction?

No, although sovereign risk is a consideration during the acceptance process.

C.2. Are participants required to be subject to a supervisory regime? If so, please describe.

As a rule Clearstream Banking S.A. only accepts Central Banks and AML regulated financial institutions (including banks, CSDs, supranationals, central banks and broker/dealers). A limited number of corporate customers that operate as the financial arms of large corporates are an exception to this requirement.

C.3. Are participants required to hold an equity stake in the SSS?

No, there is no requirement for the customers to hold an equity stake in Clearstream Banking S.A.

C.4. Are there financial, economic, personal or other requirements (for example, minimum capital requirements, "fit and proper" tests)? If so, please describe.

Each potential customer undergoes a review prior to admission acceptance as a settlement participant in terms of creditworthiness, capital, sovereign risk and legal structure, as well as customer due diligence which with regards to financial crime.

D. Does the SSS engage in oversight of its participants to ensure that their actions are in accordance with its rules and procedures? If so, please describe.

Yes. Ongoing checks of customers and their documentation available have to be carried out. Measures have been defined to allow that Clearstream Banking S.A. constantly has sufficient information on the customers' identity and transaction behaviour. Therefore the documentation, prepared within the customer acceptance process, has to be reviewed on a regular basis. The frequency of the review depends on the risk classification of the customers (country, customer group).

Clearstream Banking S.A. carefully examines customer transactions on an ongoing basis. Therefore, an adequate research and monitoring program, based on the group-wide risk analysis, has been implemented. It will help to detect for all accounts unusual or suspicious patterns of activity while acknowledging the specific business of Clearstream Banking S.A.

E. Under what conditions can participants terminate their membership in the SSS? Does this mark the end of all liabilities of the participant? If not, please describe what liabilities could remain.

Customers of Clearstream Banking S.A. may terminate their relationship with Clearstream Banking S.A. upon one month's prior notice (Article 56 of the General Terms and Conditions) for any reason. The customer is only released from its obligations vis-à-vis Clearstream Banking S.A. when the customer has provided the necessary information for Clearstream Banking S.A. to be able to transfer out the remaining securities of the customer (Article 57 of the General Terms and Conditions). Any liability due to the holding of securities may remain, such as, for example, when a stop order has been issued on securities previously held in the Clearstream Banking S.A. system by the customer that wishes to terminate the agreement.

Notwithstanding termination, the customer may be held liable for a period of ten years for any negligence or fault committed during its contractual relationship with Clearstream Banking S.A.

F. Under what conditions can the SSS terminate a participant's membership in the SSS?

Clearstream Banking S.A., like its customers, may terminate the agreement upon one month's prior written notice. However, Clearstream Banking S.A. is also entitled to terminate the agreement with immediate effect and without prior notice if the customer would be in material breach of any obligation incumbent upon it, or in the event of circumstances that would materially affect the customer's ability to fulfil its obligations vis-à-vis Clearstream Banking S.A. (Article 56 of the General Terms and Conditions).

G. Please describe the scope of the SSS's liability to participants, including the standard of liability (negligence, gross negligence, wilful misconduct, strict liability or other), the "force majeure" standard and any limitation to the scope of liability of the SSS (for example, indirect or consequential damages). Where are these liabilities and their limitations set out (for example, in statute or contract)?

Clearstream Banking S.A. undertakes to perform such duties and only such duties as are specifically set forth in these General Terms and Conditions or in the Governing Documents. Its liability regime is described in Article 48 of the General Terms and Conditions.

In the absence of negligence or wilful misconduct on its part, Clearstream Banking S.A. shall not be liable to the Customer for any loss, claim, liability, expense or damage arising from any action taken or omitted to be taken by Clearstream Banking S.A., in connection with the provision of services contemplated hereby and by the Governing Documents. Clearstream Banking S.A., however, shall not be liable for any indirect or unforeseeable loss, claim, liability, expense or other damage unless such action or omission constitutes gross negligence or wilful misconduct on the part of Clearstream Banking S.A.

Clearstream Banking S.A. shall not liable in case of events beyond its control (as listed in Article 48).

IV. Relationships with other SSSs and commercial intermediaries

Many SSSs have relationships with intermediaries that perform critical tasks for the SSS and indirectly, therefore, for the system's participants and their customers. In particular, relationships or linkages between SSSs can be important for an understanding of the implications of settlement arrangements. For example, in those instances where the linkage includes using another SSS or a commercial intermediary as a securities sub-custodian, the disclosure of information concerning the linkage would be essential for customers to fully evaluate the associated risks. The appraisal of risks may differ depending on whether the linkage allows only free deliveries or whether cash accounts at the two SSSs are also involved. The latter types of linkage deserve particular attention to ascertain whether they increase the potential for settlement disruptions to spread quickly between different systems.

Agreements are negotiated and concluded with third parties by the SSS and not by its participants. It is, therefore, important for customers to be fully advised on the relevant aspects of the system's various intermediary relationships, including the standards used by the SSS in the selection and monitoring of intermediaries, the functions that the intermediaries perform and any specific risk management mechanisms in place specifically to protect against the risks posed by these relationships. It is also important to identify instances in which the SSS advances funds or securities on behalf of third parties or intermediaries, as these actions can pose risks to the SSS and its participants.

A. Does the SSS maintain linkages (including sub-custodian or cash correspondent relationships) or other relationships with other SSSs?

Clearstream Banking S.A. maintains an electronic link via the Bridge to Euroclear Bank S.A. Clearstream Banking S.A. has also developed direct interfaces with securities settlement systems in domestic markets, providing a direct book-entry settlement mechanism - as an alternative to an indirect link to the domestic settlement network through a depository bank - or a direct account with the CSD, operated by a local agent. In each case, the choice between a direct, an operated direct and an indirect link maintained by an agent is determined by the market environment and the service facilities available in each market. All links, including the link to Euroclear Bank S.A., are settlement links.

In addition, a network of cash correspondent banks administers external cash transactions for the various settlement currencies accepted. The operations carried out by the correspondent banks include, but are not limited to, the receipt and confirmation of acceptance of funds remitted for credit to customers' accounts at Clearstream Banking S.A. and the execution of payments.

A.1. Please identify each of the other SSSs used and the type of securities transferred via the linkages.

Clearstream Banking S.A. maintains links to the international and 53 domestic markets representing relationships with various different depositories and agents (domestic CSDs, custodians and agents, common depositories, common service providers, common safe keepers, specialised depositories). Clearstream Banking S.A. will always look to expand its current network in response to market needs. Further details on these links are available at the Clearstream Banking S.A.'s web site, www.clearstream.com

A.1.(a) What is the name of the other SSS? Where is it located?

See [A.1](#) above.

A.1.(b) What securities are eligible for transfer via the linkage to the other SSS?

See [A.1](#) above.

A.1.(c) Are transfers of securities made via the linkage to the other SSS limited to only those that are free of payment or are transfers against payment also made via the linkage to the other SSS? If against payment, please describe the timing of the transfers and the corresponding payments.

Transfers against payment are in principle possible for the international and the carbon market as well as the 53 domestic markets served by Clearstream Banking S.A. Please refer to the Settlement Timings Matrix and the Creation Market Guides. A continuously up-dated list can be accessed at Clearstream Banking S.A.'s website www.clearstream.com.

A.1.(d) Does the other SSS provide custody services to the SSS and, if so, who bears any credit or custody risks?

Custody services may be provided by other SSSs, either directly or via an agent.

In such cases Clearstream Banking S.A. uses its best effort to mitigate the custody risk at the SSS. It has policies in place to obtain representation from its suppliers to protect the assets held in custody from the insolvency risk. Clearstream Banking S.A. has selected and works with supervised and regulated entities as SSS complying with prudential principles and protecting the assets. Clearstream Banking S.A.'s customers are informed of where the assets are held in custody. The custody risk of the deposit of assets with the other SSS is borne by Clearstream Banking S.A. customers.

The credit risk that results from cash balances being held with the other SSS resulting from the acts and omissions of the SSS as sub-custodian is, borne by Clearstream Banking S.A. customers in accordance with Clearstream Banking S.A. Banking SA general terms and conditions.

B. Does the SSS use securities custodians (other than the other SSSs addressed in the previous question) and/or commercial cash correspondents? Please identify the custodians or cash correspondents used and the duties that each performs.

Under Article 13 of the General Terms and Conditions, Clearstream Banking S.A. reserves the right to re-deposit securities elsewhere. Customer assets are deposited in a world-wide network of designated depositories, according to the nature of the securities (eurobonds, domestic bonds, equities etc.). When securities are deposited directly with another SSS, Clearstream Banking S.A. generally appoints an agent bank to operate its account at the SSS. Clearstream Banking S.A.'s customers know where their securities are deposited. Cash is deposited with designated cash correspondent banks according to specific currency.

Clearstream Banking S.A. monitors and maintains its relationships with the designated depositories, agents and cash correspondent banks. A continuously updated list can be accessed at Clearstream Banking S.A.'s web site, www.clearstream.com. The main duties of Clearstream Banking S.A.'s securities custodians and agents are summarised below:

- Liaison with relevant central securities depository (if applicable);
- Execution of securities transfers and settlement operations;
- Administration of Clearstream Banking S.A.'s securities and cash account;
- Record keeping and reporting (transaction and holdings);
- Custody administration services (for example, collection of interest, dividend and redemption proceeds, handling of corporate events, physical custody where applicable);
- Proactive provision of information (for example, related to new issues, custody events); and
- Tax services.

Clearstream Banking S.A.'s cash correspondents perform the regular services of a cash correspondent bank (that is, execution of payment, receipt of funds, reporting (cash statements, transaction reports), handling of claims and investigations, interest calculation and posting).

C. Please describe the standards used in approving or reviewing relationships with other SSSs, custodians or cash correspondents, including any financial or operational requirements or the presence of insurance or public supervision.

Clearstream Banking S.A. Network Management team is constantly reviewing the existing relationships and analysing new business opportunities and service enhancements that can be considered.

Should Network Management decide to access a new market, they will request proposals from leading banks for that market, who meet our stringent requirements for either a cash or securities depository or agent bank, along with criteria such as rating, industry rank, management competence, liquidity, etc. Elements of our selection process include the candidate's operational efficiency (deadlines, turnaround times), credit lines granted, fees, the candidate's connectivity and STP standards (ISO15022 compliance) and his capacity to lobby the market on behalf of foreign market participants.

Upon review of the proposals received, a short list is formed, and Network Management then performs a physical due diligence visit to each organization in order to select a final candidate.

The contractual arrangements include:

The Legal Opinion

Clearstream Banking S.A., when setting up a new link, requires a legal opinion from an external counsel to represent independent and neutral confirmation of the depository's ability to perform as required under the Depository Agreement and the Manual of Procedures without the risk of being superseded by local regulations or practices. It represents a confirmation of key legal requirements in respect to the market served, including, inter alia:

- Enforceability of the depository's obligations;
- Enforceability of the judgment of the relevant Courts;
- Segregation from the depository's own assets and recoverability of assets in case of bankruptcy;
- Legal status and authority of the depository.

The Depository Agreement

The Depository Agreement sets forth the contractual expectations and responsibilities between the principal and the agent. It clarifies the Choice of Law and the potential risks assumed by the parties on each other as well as on agents outside the contract. The Agreement is the establishment of a legal framework that identifies and clarifies:

- Eligible instruments;
- Authorised parties;
- Defined terms and procedures for settlement, safekeeping, record keeping and administration;
- Required insurance coverage;
- Establishing the supplier's standard of care;
- Liability of supplier to Clearstream Banking S.A. ;
- Representation and warranties;
- Confidentiality requirements;
- Incorporation of Service Level Agreement.

The Service Level Agreement

This document sets forth the expected action, reaction, deadline and communication format for each individual operational process. It specifies procedures to help limit exposures and define responsibilities as an integral part of the supplier Agreement including:

- Authorised instructions and deadlines;
- Expected actions and contingency action plans;

- Reporting structures to manage positions, projections, exceptions with their resolution and inquiries. In this part Clearstream Banking S.A. clearly defines together with the supplier the procedure how to deal with reconciliations.
- General announcements related to custody operations.

These relationships are reviewed on an on-going basis as needed based on Clearstream Banking S.A.'s continuous review of market developments in procedures, practices, regulations or other infrastructure-related developments. Clearstream Banking S.A. may choose to visit a supplier at any time to review the relationship and ascertain that all governing documents remain relevant to the activities and regulations of the market. Clearstream Banking S.A. also monitors the performance of its network of supplier banks by maintaining statistical reports on the performance of the suppliers in relation to the Service Level Agreement and in relation to other providers. Clearstream Banking S.A. also maintains a data base of incident reports that are used to document deviations from the agreed procedures. These statistics and data are used in scheduled service reviews undertaken by Clearstream Banking S.A.'s Network Management team.

D. Does the SSS advance funds or securities to or on behalf of other intermediaries, such as issuing or paying agents? If so, please identify the circumstances in which such exposure could arise.

To a certain extent, in general, coupon and redemption proceeds are credited to Clearstream Banking S.A.'s customer accounts before Clearstream Banking S.A. receives confirmation that the funds have actually been received from the paying agent. These payments are released at the start of the real-time processing of the relevant payment date (21:30 CET, PD-1) and are, therefore, immediately available on payment date. The funds are paid either directly by the paying agent to Clearstream Banking S.A.'s cash correspondent for the relevant currency, or to the sub-custodian of the relevant securities, the sub-custodian paying the corresponding amount to Clearstream Banking S.A.'s cash correspondent.

Payments on issues presenting a potential risk of default are not released until confirmation of receipt of funds is obtained from Clearstream Banking S.A.'s cash correspondents for the relevant currency. In addition, paying agents have been urged to inform Clearstream Banking S.A. if there is any doubt concerning the payment.

Clearstream Banking S.A. revisits historical performance of issuers/paying agents to provide a history of payment timeliness and accuracy underpinning the definition of the different Upon Receipt of Funds (URF) statuses explained here below.

- URF1: 'Payment upon receipt of funds – Timely payment expected'
- URF2: 'URF2: 'Payment upon receipt of funds - Late payment expected'
- URF3: 'Payment upon receipt of funds – Reversal risk'.

Should Clearstream Banking S.A. not receive the coupon or redemption proceeds that would have been paid to Clearstream Banking S.A.'s customers, Clearstream Banking S.A. has the right - as per its General Terms and Conditions - to debit the customer's account accordingly.

Clearstream Banking S.A. does not credit securities to a customer's account unless Clearstream Banking S.A. has already received them. At the moment when the customer's account is credited, the receipt has already become final.

E. Please describe measures in place to protect the SSS and its members against the failure of other SSSs or commercial intermediaries to meet obligations to the SSS, including risk controls and collateral or alternative sources of funds and securities.

See [C.](#) above.

V. Securities transfers, funds transfers and linkages between transfers

At the heart of the operations of SSSs are the transfers of securities and funds that actually comprise the settlement process. The questions in this section begin by focusing on the process, if any, for matching settlement instructions prior to beginning the settlement process itself. In some markets, matched settlement instructions are binding, which may impose additional obligations on participants that are important for them to understand.

This section considers issues raised by the practice of securities registration. Because the laws of different countries vary widely in this regard, this Disclosure Framework has not been designed to substitute for the legal analysis of the implications of registration; for example, the issue of the nature of the title to securities that is transferred in the SSS if the system itself is not also the registrar. The questions are instead focused on the circumstances in which the SSS itself becomes involved in the registration process, as well as the risks that may arise if participants fail while securities are in the process of being re-registered in the buyer's name. In particular, it is important to understand whether the rules and procedures of the SSS would require transactions to be unwound in such an event.

The mechanics of securities and funds transfers are then addressed, including the issue of where cash transfers associated with securities transfers at the SSS take place. These questions also address the circumstances under which the SSS extends credit to participants as an aspect of providing funds transfer capability at the SSS. It is clearly important for participants to understand what types of cash account are offered at the SSS and on whom they take a risk with respect to cash deposits, as well as whether the SSS itself bears credit risk in conjunction with these accounts.

The questions then explore the timing of processing within the SSS, whether the SSS is a DvP system, and what type of DvP model, if any, has been adopted by the SSS. DvP is a mechanism that ensures that final delivery occurs if and only if final payment occurs, which eliminates principal risk and contributes to reductions in liquidity risk.

The issues that arise in the practical implementation of DvP were outlined in the DvP Report referred to in the Introduction, and mainly concern the finality of the securities and funds transfers that together constitute DvP settlement. Transfers are final if they are both irrevocable and unconditional. A transfer is irrevocable when the parties to it can no longer revoke their instructions; and it becomes unconditional when there are no longer any circumstances that could cause the SSS to unwind it. If transfers are provisional at the time of processing, even if DvP is achieved, the risk remains that transfers may have to be unwound later if finality cannot be achieved.

If not properly recognised and controlled, this "finality risk" could have systemic effects. Customers of SSSs are often provided with immediate availability of securities received, even if the transfer is not final. If these customers then sell the securities again, or make them available to custodial customers, and the original transfer is subsequently unwound, additional transfers by the customer or the customer's clients may also have to be unwound, spreading the impact of the unwind to unrelated parties. It could also ultimately lead to losses to be shared among participants. For these reasons, the questions below attempt to clarify precisely the circumstances under which transfers become final.

The questions also address the provision of settlement guarantees by the SSS. If guarantees exist, it is necessary for participants to understand the events that trigger a guarantee as well as the coverage that is provided by the guarantee, including the liability of the SSS with respect to the guarantee.

A. Please discuss whether and how settlement instructions are matched between participants prior to processing by the SSS.

On receipt of a trade instruction from a customer, mandatory fields are compared against those entered by the counterparty. If they do not match, then the trade will not be considered for settlement and will be reported as unmatched. Once scheduled for the reports, customers will be notified by MT536, MT537, MT548 and MT578 reporting through SWIFT or CreationOnline. It should be noted that there is a USD 25 tolerance in the cash consideration, applicable to internal and Bridge instructions; the procedure applied for domestic markets might differ, details are available in the Creation Link Guides.

Clearstream Banking S.A.'s matching service is automatic and electronic for securities transactions that are due to settle between two accounts in Clearstream Banking S.A., or between an account in Clearstream Banking S.A. and an account in Euroclear Bank S.A.

For external transactions (that is, transactions between a Clearstream Banking S.A. customer and a participant of another SSS), matching occurs, as a general rule, in such SSS and Clearstream Banking S.A. "adjusts" to the matching rules of such SSS. The process for external transactions is as follows:

- For receipt of securities, customer instructions are transmitted to the local SSS (either directly or via the local depository or agent bank, as the case may be) provided that cash provision is available either on the customer's account or through financing facilities.
- In the case of deliveries, securities provision must be available on the customer's account or through securities borrowing facilities.
- For non-binding markets, a pre-advice message is generally sent for matching purposes while a settlement instruction is sent after successful provisioning earliest with beginning of the provisioning period.
- Matching with the corresponding domestic instructions is then performed by the local SSS according to the rules of the SSS.
- Thereby, the matching status is provided by the supplier and Clearstream Banking S.A. updates the external instructions accordingly.

A.1. Is matching required for all transactions without exception?

No. Deliveries of securities free of payment between two Clearstream Banking S.A. customer accounts are generally settled without matching being required. If the two parties are both customers of Clearstream Banking S.A. or if one is a Euroclear Bank S.A. participant, and if the parties themselves require that a delivery free of payment should not settle unless their respective instructions are matched, they can use a receive free or deliver free instruction in Clearstream Banking S.A..

In the case of deliveries to or receipts from a counterparty outside Clearstream Banking S.A. and Euroclear Bank S.A., Clearstream Banking S.A. will, if the customer has sufficient securities or cash on his account, send settlement instructions to its supplier (another SSS, a depository or agent bank) to participate in the matching of the domestic market if this is local market practice.

A.2. What procedure is used when instructions do not match?

Unmatched instructions for which matching is a prerequisite for settlement remain unsettled. Information on customer's unmatched instructions, whether due for settlement already or in the future, is made available via MT537 and MT548 after each settlement processing.

If an instruction is received from another party, indicating the said customer as counterparty, but no instruction has been received from the customer, such received instruction is also reported to the customer in the MT578 Settlement Allegement. Furthermore, the MT536 and MT537 reports enable customers to monitor both the matching and the settlement status of the customer's instructions.

A.3. Are matched settlement instructions binding on participants?

Not in the case of instructions for settlement between two accounts in Clearstream Banking S.A. or between an account in Clearstream Banking S.A. and an account in Euroclear Bank S.A. Whether they are binding in the case of deliveries to and receipts from counterparties in domestic markets will depend on the local market rules of each domestic market.

A.3.(a) If so, please describe the consequences of failure by participants to meet obligations (for example, forced settlement, penalties, short positions).

As a rule this is not applicable in the case of internal instructions or for instructions between accounts at Clearstream Banking S.A. and Euroclear Bank S.A.

For domestic settlement it will depend on the local market rules of each domestic market.

A.3.(b) Please describe whether this is a feature of the SSS's rules and procedures or of national law or regulations.

Not applicable in the case of internal instructions or for instructions between accounts at Clearstream Banking S.A. and Euroclear Bank S.A.

For domestic settlement this depends on the market where the settlement takes place.

A.3.(c) Please provide a time line indicating the points at which matched instructions become binding, as well as any pre-matching process that takes place.

Not applicable for internal and instructions or for instructions where Euroclear Bank S.A. is acting as counterpart

For domestic settlement this depends on the market where the settlement takes place.

B. Are securities transferred within the SSS registered?

Yes, depending on the type of security and the place of deposit.

B.1. Who is the registrar?

For international instruments (deposited with a specialised depository or a common depository), it can be the issuer itself or a variety of financial institutions appointed by the issuer.

For domestic instruments (deposited with a depository/registrar located in a domestic market or a local SSS), it can be the issuer itself, a financial institution, agent or registrar appointed by the issuer or the local SSS.

B.2. Is it normal practice to register the securities in the name of the SSS (or its nominee) or in the name of the beneficial owner? Are there instances in which securities housed within the SSS are registered to neither the SSS (or its nominee) nor the beneficial owner?

Securities deposited in an omnibus account within Clearstream Banking S.A. are in principle held either:

- In the name of Clearstream Banking S.A. or its nominee;
- In the name of Clearstream Banking S.A.'s sub custodian bank or its nominee;
- In the name of the Securities Settlement System (SSS) in which the securities are sub-deposited or its nominee;
- In the case of securities received from Euroclear Bank S.A. over the electronic Bridge but not yet delivered from the Euroclear Bank S.A. sub custodian to the Clearstream Banking S.A. sub custodian, in the name in which such security is held while deposited in Euroclear Bank; or
- If required, in the name of the final beneficiary (for example, in the case of Swiss registered shares or U.S. restricted securities).

B.3. If the SSS offers custodial services, will it hold securities registered in the name of the beneficial owner?

Yes, if this is required as stated under [B.2.](#) above.

B.4. Under what circumstances does the SSS initiate registration of securities in the buyer's name?

This depends on the market practice. In some markets (for example, Spain), it is market practice that the

delivering party registers the securities in the name of the receiver. Furthermore, if physical delivery to participants outside the custodian is required, securities are registered in the beneficiary's or receiver's name.

B.5. How long does the registration process typically take? Are participants notified when registration is complete?

The registration process can be immediate or take up to several weeks, depending on the market. Upon finalisation of registration customers are notified that the securities have been credited on their account.

B.6. Can securities be transferred within the SSS before registration in the buyer's name is complete? If so, do the rules and procedures of the SSS provide for an unwind or reversal of such transfers in case of bankruptcy or other events that result in the buyer's name not being entered on the register?

When the buyer is a Clearstream Banking S.A. customer, securities are credited into the customer account and a second instruction will block the concerned securities in order to avoid onward delivery before the registration process is completed. During the crediting and blocking in the system, the depository arranges the re-registration in parallel. If registration cannot be completed, the receipt of the securities is reversed.

Along with the receipt of securities, a final and irrevocable credit is given to the customer. However, the instruction will be blocked during the registration process. If registration cannot be completed, the securities will be debited from the customer's account and the customer will be provided with a reason for the rejection.

Depending on the domestic market, it may be necessary to register securities with the Depository's nominee. In such cases, it is possible that the credit of the securities may be delayed (by the Registrar in charge) or that securities are credited as blocked until the completion of the registration process.

During such period, the securities would not be available for onward deliveries. If it is determined that the securities received do not constitute good delivery, Clearstream Banking S.A.'s Depository bank will refuse the delivery and return the securities unless they have been reported lost or stolen or are subject to a Stop Order in which case the Depository may be obliged to seize them.

Any security found to be not of good delivery at any time after its deposit with Clearstream Banking S.A. may be debited to the account of the Customer for whose account the security was most recently deposited in the Clearstream Banking S.A. system. The Customer will bear the costs of the return of such securities.

C. Please describe how securities transfers are processed within the SSS.

Clearstream Banking S.A. settles transactions between customers by simultaneous book-entry debits and credits in their respective securities and/or cash accounts. These book entries are passed after completion of a processing run that considers customers' instructions transaction by transaction, in an iterative process, to determine which of the transactions can settle in such a way as to optimise settlement while remaining within predefined limits.

C.1. Please indicate whether the transfers are processed as debits and credits to members' accounts or via some other method.

Transfers are processed as debits and credits to customers' accounts.

C.2. On a continuous (real-time) basis, or in one or more batches?

The Clearstream Banking S.A. "settlement day" consists of one main settlement processing, the real-time processing, followed by the end of day processing

Real-time processing begins after the scheduled start of the Settlement cycles at 21:30 CET in the evening of the business day preceding settlement date, and runs continuously until 20:05 CET on settlement date, and is followed by the end of day processing, which is scheduled to be completed by 20:35 CET. It includes further file exchanges over the Bridge with Euroclear Bank and simultaneous exchanges of instructions with depository banks, domestic clearing systems and cash correspondent banks. Provided that the customer has selected the

option to have their instructions considered for settlement beyond the mandatory period, all internal instructions that remain unsettled at the end of the mandatory settlement period are retried during the remaining real-time settlement cycles. Bridge instructions for which the customer has selected the option for settlement consideration beyond the mandatory period are retried during the file exchanges with Euroclear Bank which take place during the optional settlement period.

C.3. If continuous, during what hours does the processing occur? If in batches, at what time or times is the processing initiated and completed?

Clearstream Banking S.A.'s real-time processing runs from approximately SD-1 at 21:30 hrs (CET) until approximately 20:35 hrs (CET) on SD.

C.4. Do securities settlements occur daily? Please identify securities for which settlement occurs only on specific days of the week or month.

Securities settlement occurs daily for all eligible securities.

D. Please describe whether final funds transfers in conjunction with the SSS are made as debits and credits to balances held at the SSS, at one or more commercial banks, at the central bank or via some other method.

Cash processing is a fully integrated process in the settlement of transactions at Clearstream Banking S.A. such that final funds transfers are made as debits and credits to customers' accounts. Clearstream Banking S.A. holds its customers' cash via a network of cash correspondent banks.

D.1. Does the SSS maintain cash accounts for its participants? Are these accounts equivalent to deposit accounts at a commercial or central bank or do they serve only as "cash memorandum" accounts?

Yes, Clearstream Banking S.A. maintains cash accounts for its customers. For every Settlement currency, a Cash Correspondent (several for the euro) is appointed to handle the external payment and receipt of funds between the domestic banking system for the currency and Clearstream Banking S.A...

Details of the Cash Correspondent banks for each market Link are provided in the Market Guide.

D.2. On what entity (SSS or other) does the participant bear cash deposit risk?

On Clearstream Banking S.A.

D.3. Under what circumstances does the SSS provide credit extensions or advances of funds to its participants and thereby expose itself to credit risk?

Clearstream Banking S.A. only extends credit to selected customers who are able to meet its stringent requirements. When it does so, Clearstream Banking S.A. extends credit:

- Only for the purpose of settling securities transactions, not, for example, to enable the customer to finance interbank payments; and
- Only within the limits of the customer's credit facilities; and
- Only to the extent that there is sufficient collateral available to secure the customer's obligation.
- The credit facilities which may be granted by Clearstream Banking S.A. to its customers are:
 - Technical Overdraft Facilities (TOF)
 - Unconfirmed Funds Facilities (UCF), enabling customers, within certain limits and always subject to sufficient collateral being available to secure the obligation to use for settlement purposes funds which are due to be received on the customer's account but for which the receipt has not yet been confirmed by Clearstream Banking S.A.'s correspondent bank.

Limits are applied to all credit facilities extended to customers, and are always individually negotiated. It should be stressed that not all customers are eligible to receive credit facilities and credit is never an automatic entitlement.

Risk mitigation

Collateral agreements are governed by the Law of 5 August 2005, on financial collateral agreements, as amended.

Clearstream Banking S.A.'s General Terms and Conditions are governed by Luxembourg law and provide for set-off of credit and debit balances of the customer and for a general right of retention and set-off on all assets held on any of the customer's proprietary account to secure obligations towards Clearstream Banking S.A. by the customer for the services rendered by Clearstream Banking S.A. In addition, under the General Terms and Conditions all proprietary assets held by the customer in Clearstream Banking S.A. are pledged in favour of Clearstream Banking S.A. to the extent of any credit facilities granted to the customer.

Credit agreements (including their collateral provision) under TOF are also submitted to Luxembourg law.

The customer is required to notify Clearstream Banking S.A. if there are any assets, held with Clearstream Banking S.A. in any account, that the customer is not entitled to use as collateral against his own obligations towards Clearstream Banking S.A. This may apply, for example, to securities held on behalf of the customer's own clients.

Clearstream Banking S.A. Banking S.A monitors collateral to support:

- Clearing and settlement activity;
- Technical overdraft facilities or temporary overdrafts;
- The ASL programme;

Securities and other holdings that are pledged against a credit facility provided for securities borrowing are excluded from the calculation of collateral to cover any other credit arrangements. Collateral values are calculated on the basis of recent market prices less the deduction of haircuts in line with international banking standards.

D.4. How long can such credit extensions last? How long do they typically last?

The TOF is an intraday credit line made available for the purchase of securities at the start of the settlement day against covering funds to be confirmed by the end of real-time processing on value date. The time limit applies at two levels:

- To individual currencies;
- To the overall net positions across all debit and credit balances on the accounts, through Clearstream Banking S.A.'s right of set-off.

Debit positions must not continue beyond the end of real-time processing on value date.

A currency or the account may be blocked from the start of the third settlement day if either the individual currency overdraft or the overall net overdraft balance on the account (offsetting debit and credit balances in each currency) is not repaid within that timeframe, either by proceeds from against payment deliveries or by pre-advised funds.

Overdrafts under the Unconfirmed Funds Facility are also intraday and typically repaid within 24 hours.

E. Is the SSS a DvP system? If so, please describe the DvP model used according to the models outlined in the DvP Report (see the Introduction). Please also provide a diagram indicating the timing of events in the processing of securities and funds transfers in the SSS. Where the SSS provides more than one alternative for settlement processing, please provide a response for each alternative and indicate the relative importance of each alternative.

Clearstream Banking S.A. is a Model 1 DvP system, ensuring simultaneous final settlement of securities and funds transfers on a gross (trade-by-trade) basis.

E.1. Are funds transfers and securities transfers processed within the same system or in different systems? If different, how are they linked?

Funds transfers and securities transfers are processed within the same system.

E.1.(a) Please describe whether each securities transfer is linked to a specific funds transfer on a trade-by-trade basis or on a net basis or via some other method.

When customers give instructions to deliver or receive securities against payment, each securities transfer is linked to the specific payment.

E.1.(b) Does the SSS "split" large transactions into multiple transactions or require participants to do so?

Clearstream Banking S.A. processes customers' instructions as received and does not split transactions. However in some domestic markets there might be a requirement to split large transactions into multiple transactions. Details are available in the Creation Link Guides on www.clearstream.com.

E.2. When do securities transfers and funds transfers become final?

Internal settlement Instructions

Internal instructions are deemed to be entered into the settlement system and become irrevocable under the Clearstream Banking S.A. securities settlement system rules in accordance with article 111 of the Law of 10 November 2009 on Payment Services, as of their extraction from the applicable transactional system for processing in the Clearstream Banking S.A. settlement system.

Internal instructions that have settled in the Clearstream Banking S.A. settlement system are final. Instructions are reported to Customers as settled via CreationOnline, CreationConnect MT536 (Statement of Transactions), MT54x and an additional MT950 (Money Statement) to report the cash leg of against payment transactions.

External Settlement instructions

The irrevocability of external instructions and the finality of deliveries of securities to or from a domestic counterparty are determined by specific domestic market rules. Please refer to the respective Creation Market Guide.

An external instruction is settled in either of the following circumstances:

- If it has been settled in the domestic market; or
- If it has been reported as settled via CreationOnline, CreationConnect MT536 (Statement of Transactions), MT54x and additional MT950 (Money Statement) for against payment or MT537 (Statement of Pending Transactions) and additional MT94x (Money Suspense report) for against payment.

E.2.(a) At what time do securities transfers become final? After what event or events?

Please refer to the answer given to question no. E1 in this section

E.2.(b) At what time do funds transfers become final? After what event or events? Does this timing allow for same-day re-transfer of funds received in exchange for securities?

For the finality of funds please refer to the answer given to question no. E1 in this section. In principle, same-day re-transfer of funds is possible.

E.2.(c) If final delivery of securities precedes the final transfer of funds, can participants dispose freely of such securities prior to funds finality? If so, what actions will be taken if funds are not received?

Not applicable.

E.2.(d) If final delivery of funds precedes the final transfer of securities, can participants dispose freely of such funds prior to securities finality? If so, what actions will be taken if securities are not received?

Not applicable.

E.2.(e) Does the timing of finality differ depending on the type of security transferred or the currency in which payment is to be made? Please describe.

The timing of finality is determined first by the type of settlement.

If a transfer of securities against payment is settled between accounts in Clearstream Banking S.A. (internal settlement) or between an account in Clearstream Banking S.A. and an account in Euroclear Bank S.A. (bridge settlement), the transfer of securities and the transfer of funds become simultaneously final. Settlement with Euroclear Bank S.A. is processed by exchanging 15 settlement- and 30 data files per day.

If a transfer of securities against payment is settled between an account in Clearstream Banking S.A. and a counterparty's account outside Clearstream Banking S.A. (external settlement), the transfer of securities and the transfer of funds each become final at the time they do become final in accordance with local rules in the domestic market in which they are settled. Clearstream Banking S.A. will confirm finality to its customers once such confirmation has been received from the local market.

E.3. Please discuss whether participants are notified of securities or funds transfers while they are still provisional, only when they are final, or both.

Customer will only be notified about the settlement of a transaction once it is final.

F. Does the SSS itself "guarantee" funds or securities transfers?

No.

F.1. Under what circumstances and at what point are transfers guaranteed by the SSS?

Not applicable.

F.2. What actions does the guarantee obligate the SSS to take?

Not applicable.

F.3. Please indicate whether the guarantee is a feature of the SSS's rules and procedures or of national law or regulations.

Not applicable.

VI. Default procedures

Events of default are among the most difficult and stressful occurrences that market participants and SSSs may experience. The IOSCO Report underscores the need for transparency in the area of default procedures on the grounds that it will provide more certainty in the operation of critical market mechanisms during these stressful events, and thereby reduce the risk that a single default will cause further disruptions.

Because the definition of a default event may differ across systems, the IOSCO Report recommends disclosure with regard to the circumstances in which action may be taken, as well as who may take it, and the scope of the actions that may be taken. In some cases, the term "default" may not be used by the SSS in its rules and procedures or in contracts with its participants. In these instances, SSSs should attempt to spell out for their participants both how they would address the insolvency of a participant and any other circumstances in which they would initiate exceptional measures to fulfil settlement or other obligations to their participants.

In this regard, this section attempts to lay out in one place the available resources of the SSS with respect to meeting obligations in the event of a default or other events that would trigger exceptional measures. It is important for participants to understand what these resources are as well as the order in which they will be accessed. The questions also address the possibility that securities or funds transfers will be unwound by the SSS. Because unwinds are a way to reallocate liquidity pressures and credit losses, it is vital that participants understand all the possible circumstances in which an unwind could occur.

A. Please discuss the events or circumstances that would constitute default of a participant under the rules and procedures of the SSS or that would lead the SSS to make use of exceptional settlement arrangements or unwind procedures.

Article 56 of the Clearstream Banking S.A. General Terms and Conditions includes any circumstances that Clearstream Banking S.A. reasonably believes would materially affect the customer's ability to fulfil its obligations towards Clearstream Banking S.A. or any agreement between Clearstream Banking S.A. and the customer. Such events include, but are not limited to:

- a) if in Clearstream Banking S.A.'s opinion:
 - (i) the Customer is in breach of any obligation incumbent upon it under the Governing Documents or any other agreement between Clearstream Banking S.A. and the Customer;
 - (ii) the financial position of the Customer is threatened;
 - (iii) the guarantees obtained are insufficient, or the guarantees requested have not been obtained;
 - (iv) by continuing its relationship with the Customer, Clearstream Banking S.A. may be subject to a liability claim;
 - (v) the operations of the Customer appear to be contrary to public policy or standards of decency;
 - (vi) the Customer fails in its duty of good faith,
 - (vii) the Customer is subject to criminal investigations;
- b) b) in each case where Clearstream Banking S.A. is entitled to block the Customer account(s) or to refuse to execute instructions of the Customer pursuant to Article 35 of these General Terms and Conditions;
- c) if circumstances arise which Clearstream Banking S.A. reasonably believes would affect the Customer's ability to fulfil the obligations incumbent upon it under the Governing Documents or any other agreement between Clearstream Banking S.A. and the Customer, including, but not limited to, the occurrence of any of the following events:
 - (i) the commencement by the Customer, or by any other person (including any supervisory or regulatory authority) with respect to the Customer, of a case or other proceeding seeking liquidation, reorganisation or other similar relief with respect to the Customer or its debts under any bankruptcy, composition, receivership, conservatorship, insolvency or other similar law now, or hereafter, in effect or seeking the appointment of a trustee, receiver, conservator, liquidator, custodian, administrator or other similar official of it or any substantial part of its property under any such law;
 - (ii) the authorisation of a measure described in (i) by a corporate governing body of the Customer;
 - (iii) an admission by the Customer of its inability to pay its debts generally as they become due;
 - (iv) the calling by the Customer of a general meeting of its creditors for the purpose of seeking a compromise of its debts;
 - (v) a general assignment by the Customer for the benefit of its creditors;

- (vi) the attachment or execution upon or against any asset or property of the Customer; or
 - (vii) the suspension of operations, the assumption or substitution of management, or any other change in control in the affairs of the Customer resulting from the action of any court, tribunal, government, governmental authority, regulatory or administrative agency or governmental commission.
- d) d) if any change occurs in the circumstances under which the contractual relationship between Clearstream Banking S.A. and the Customer was concluded, which could not reasonably have been taken into account at the time of such conclusion and which exposes Clearstream Banking S.A. to a risk which it is not, under the contractual relationship normally required to bear.

A.1. Failure by a participant to meet a test of its solvency under the applicable laws of its jurisdiction?

Such an event would fall under Article 56 of the General Terms and Conditions (as described in section A. above), allowing Clearstream Banking S.A. to terminate or suspend the provision of services to a customer with immediate effect and without prior notice.

A.2. Failure to make payments or deliveries of securities within the time specified?

Under Article 12 of the General Terms and Conditions, if a customer instructs Clearstream Banking S.A. to deliver or transfer an amount of securities of a given issue that, after giving effect to any outstanding credits or applicable securities lending provisions, exceeds the available and freely transferable amount of such securities standing to the customer's credit, Clearstream Banking S.A. may refuse to execute the instruction or execute it only to the extent of the securities standing to the credit of the customer's account.

More generally, Clearstream Banking S.A. reserves the right not to execute any instruction if it would cause a debit balance to exist in any customer's account (or any subdivision) or if a debit balance exists on one or more accounts (or any subdivision).

Failure to make payment or deliveries of securities would fall under Articles 12 and 21 of the General Terms and Conditions, as detailed below.

Except to the extent otherwise governed by a separate written agreement between the customer and Clearstream Banking S.A., the customer shall not have the right to cause or permit any of its cash accounts or any sub-division to have a debit balance. In the event of such a debit balance, the customer shall immediately deliver for credit (or otherwise cause to be credited) to such cash account a supply of sufficient freely available funds in the relevant currency to eliminate such debit balance (Article 23 of the General Terms and Conditions).

In the event that any of the customer's accounts has a debit balance in currencies in excess of the amount or of the time allowable under a separate written agreement between Clearstream Banking S.A. and the customer, the customer must immediately deliver for credit or cause to be credited to such account sufficient securities, precious metals, currencies or other assets, as appropriate, to eliminate such debit balance. If the customer does not cause the account to be so credited within seven business days, Clearstream Banking S.A. may purchase the required assets on the market at the expense of the customer (Article 12 of the General Terms and Conditions).

A.3. To the extent that the rules and procedures grant discretion in the determination of the use of default or other exceptional procedures, please discuss where the authority to exercise such discretion resides and the circumstances in which this authority would be used.

The source of such authority and circumstances where such authority can be exercised (General Terms and Conditions) has been indicated in the answers to the relevant questions above.

B. What procedures are followed by the SSS once it has determined that a default event has occurred or that exceptional settlement arrangements are to be employed?

B.1. How and at what point are participants notified that this has occurred?

The customer that has failed to fulfil its obligations is reminded of its obligations by telephone or fax and by authenticated SWIFT message as soon as he has exceeded his right. He is again notified when Clearstream Banking S.A. decides to adopt exceptional measures.

In the case described under [A.2.](#) above, Clearstream Banking S.A. will inform all potentially impacted customers holding securities of the measures it deems necessary to take after an initial investigation.

Typically, customers are always notified by the general statement and reporting regime about securities and cash entries booked on the customers' accounts. Furthermore, customers will receive, where necessary, additional information about a default event.

B.2. Would the SSS be expected to continue to meet all its obligations to participants under these circumstances? Please discuss the resources in place to ensure that this would occur (for example, collateral, participants' fund, insurance, loss-sharing arrangements etc.).

Yes, for relevant provisions applicable to the customer in default (see above), Clearstream Banking S.A. would be expected to continue to operate its settlement system and to meet all its obligations to its customers, within the limits of the resources available to it.

In the case of a failure of a customer to meet its obligations towards Clearstream Banking S.A., any assets that are in the customers' accounts secure these obligations, unless the customer has given Clearstream Banking S.A. prior notification that the assets concerned are not its own and cannot be pledged to Clearstream Banking S.A. More details are provided under Section VIII. D.

Clearstream Banking S.A. activities are covered by comprehensive insurance policies, including a comprehensive crime and depository indemnity up to EUR 20 million and an insurance policy covering all risks of physical loss or damage up to EUR 75 million.

The Clearstream Banking S.A. liquidity is enhanced by a USD 750 mn committed revolving credit facility and a EUR 1 billion Euro-commercial paper program.

B.3. Please describe and provide a time line indicating the order in which these resources would be used as well as the timing of participant notifications and important deadlines (for example, when the SSS's obligations to participants would be met, when participants would need to cover their loss-sharing obligations).

Please refer to [Section VI. B.2.](#)

B.4. Please describe all conditions under which provisional transfers of securities or funds could be unwound by the SSS.

Provisional transfer of securities and funds do not happen within Clearstream Banking S.A. The Model 1 DVP system ensures true delivery versus payment, eliminating the risk of unwinding.

B.4.(a) How and on what authority would a decision to unwind securities or funds transfers be made by the SSS?

Not applicable, please refer to [B.4.](#) above.

B.4.(b) When and how would participants be notified of a decision to unwind provisional securities or funds transfers?

Not applicable, please refer to [B.4.](#) above.

B.4.(c) How long would participants have to cover any debit positions in their own securities or funds accounts resulting from an unwind?

Not applicable, please refer to [B.4.](#) above.

B.4.(d) In the event of an unwind, would all transfers be unwound or would only a subset of transfers (for example, only securities purchases or only those of a subset of participants) be unwound?

Not applicable, please refer to B.4. above.

B.4.(e) If only a subset of transfers, what procedure would be followed to determine which transfers and in what order?

Not applicable, please refer to B.4. above.

B.5. Can bankruptcy or insolvency be declared retrospectively in the SSS's jurisdiction (for example, under a "zero-hour" rule), and could this cause provisional securities or funds transfers to be unwound?

The Law of 10 November 2009 on Payment services provides that an insolvency procedure of a participant does not have any retroactive effect on the rights and obligations of a participant to a SSS

As Clearstream Banking S.A. operates a Model 1 DVP system ensuring simultaneous settlement of securities and funds transfers on a gross basis, there is no risk of unwinding in case of a customer default. Settlement would thus technically be ensured in such case.

B.6. Please describe any circumstances in which transfers of securities or funds that were defined as final in response to question V.E.2. above would ever be unwound.

As Clearstream Banking S.A. operates a Model 1 DVP system ensuring simultaneous settlement of securities and funds transfers on a gross basis, there is no risk of unwinding. However, under article 51 of its General Terms and Conditions, "Clearstream Banking S.A. reserves the right to reverse any erroneous debit or credit entries to any account at any provision time. An erroneous debit or credit entry shall include, but not be limited to, a debit or credit made in connection with a transaction that becomes subject to a reversal order."

A reversal order as defined in article 1 of the General Terms and Conditions is

a) any Act (any national or foreign laws, decrees, regulations, order, judgment, injunction, asset freeze or other action of, or by, any national or foreign government, court, (self-) regulatory organisation or other instrumentality of government, the legal effect of which is to:(i) Deprive Clearstream Banking S.A., the customer, the customer's counterparty, or any clearance system, depository, sub-custodian or any agent, acting on behalf of any of the foregoing, of the ability or authority to deliver securities, funds or precious metals or to make credits or debits to the account of one of the foregoing;

(ii) Constitute a determination that an entity listed in clause (i) did not have such ability or authority; or

(iii) Require an entity listed in clause (i) to revoke, reverse, rescind or correct such debits or credits or both, or to transfer or turnover any assets to a third party. Or

b) Clearstream Banking S.A.'s general business practice.

C. Has a participant in the SSS ever been declared in default or become insolvent?

There have been cases where customers have been insolvent or declared bankrupt. Clearstream Banking S.A. did not experience any credit or financial loss as a result of these situations.

C.1. Have loss-sharing procedures been invoked?

No.

C.2. Please describe whether any of these defaults or insolvencies resulted in losses for the SSS or its participants and how they were absorbed.

These defaults or insolvencies have never resulted in losses for Clearstream Banking S.A. or, to the extent of our knowledge, for its customers.

VII. Securities overdrafts, securities lending and back-to-back transactions

In recent years, SSSs have implemented a variety of approaches aimed at satisfying increasing demands for more rapid securities settlement, particularly in the cross-border context. This section focuses on several related issues that can arise in conjunction with these procedures.

The first set of questions in this section relates to the possibility of debit positions in participants' securities accounts at the SSS. Because such positions indicate instances where participants have been allowed to transfer securities that they do not have on deposit at the SSS, they clearly involve substantial risk that the SSS may not be able to obtain the actual securities and complete all necessary settlements. For this reason, it is vital for participants to understand the conditions, if any, under which such debit positions can arise, and what actions the SSS will take to rectify them. The questions also address measures that SSSs can take to reduce or prevent such debit positions.

The existence of a securities lending programme at the SSS and the conditions under which securities loans are triggered represent another important topic covered by the questions in this section.

Participants need to understand both when the SSS will arrange for securities to be lent to them and when securities they hold on deposit at the SSS will be made available for lending to others. The existence and terms of a securities lending programme may also have implications for the SSS's ability to facilitate settlement in a variety of circumstances, particularly for back-to-back transactions.

Back-to-back transactions were a major focus of the Cross-Border Report and involve a pair of transactions that require a counterparty to receive and re-deliver the same securities on the same day. They have the major advantage of avoiding unnecessary funding costs to the party buying and then selling the securities.

This practice poses no particular risk when the delivery follows an actual final receipt of the securities, as there is then no risk that this receipt would have to be unwound. Especially in the cross-border context, differences in the timing of settlement cycles or of finality have led to the development of practices whereby SSSs in some circumstances allow onward-deliveries under back-to-back transactions before the initial securities receipts are final, in effect extending temporary (often intraday) securities loans. The questions in this section attempt to clarify the circumstances under which this occurs, so that participants can understand the risks entailed by these practices.

A. Is it possible for debit positions (overdrafts) in securities accounts at the SSS to arise?

Clearstream Banking S.A. systems will not debit a customer's account for securities that are not on the customer's account in order to settle a transfer of securities. However, Clearstream Banking S.A. does provide a securities lending and borrowing service to ensure settlement: The portfolio of lending services provides an infrastructure to support settlement system ('fails lending'), i.e. an infrastructure of lending of last resort with the ultimate goal of increasing the settlement efficiency (ASL = Automated Securities Lending). Such fails lending is completely automated and embedded into the settlement system.

A.1. Under what conditions could such debit positions occur?

Not applicable. Please refer to [A.](#) above.

A.1.(a) Do these conditions always result in debit positions in securities accounts rather than failed transactions? If not, please explain the basis for differential treatment by the SSS.

Not applicable. Please refer to [A.](#) above.

A.1.(b) Are these situations covered explicitly by the rules and procedures of the SSS?

Not applicable. Please refer to [A.](#) above.

A.2. How long can such debit positions last? How long do they typically last?

Not applicable. Please refer to [A.](#) above.

A.3. How are debit positions in securities accounts prevented, rectified or managed?

Debit positions are generally prevented in the normal settlement process, as the customers cannot onward-deliver securities unless these have been credited in the customer's account.

A.4. What procedures would be followed by the SSS in case the debit cannot be rectified (for example, failure by a participant with a debit balance in a securities account or unavailability of the securities in the market)?

Not applicable. Please refer to [A.](#) above.

A.4.(a) Application of loss-sharing provisions allocating the loss to participants?

Not applicable. Please refer to [A.](#) above.

A.4.(b) Absorption of the loss by the SSS?

Not applicable. Please refer to [A.](#) above..

A.4.(c) Other? Please specify.

Not applicable.

B. Under what circumstances, does the SSS provide for the lending of securities to ensure settlement?

Clearstream Banking S.A. does provide a securities lending and borrowing service to ensure settlement: The portfolio of lending services provides an infrastructure to support settlement system ('fails lending'), i.e. an infrastructure of lending of last resort with the ultimate goal of increasing the settlement efficiency (ASL = Automated Securities Lending). Such fails lending is completely automated and embedded into the settlement system.

B.1. Is the process for lending securities automatic? If not, please describe the procedures used by the SSS to determine whether a securities loan will be made.

Customers participating in ASL as lenders can sign up as automatic lenders or as case-by-case lenders. For automatic lenders, the decision to open and close the securities loan is made within the settlement process, taking into account all the predefined criteria and parameters applicable to these securities lending services. For case-by-case lenders, the opening of a loan requires not only compliance with the same predefined criteria and parameters but also the lender's explicit approval.

B.2. At what point are participants notified that securities are being lent to them in order to complete their settlements?

The settlement reports sent to customers after each settlement process show the borrowings and loans that have settled as well as all other transactions settled.

When inventory reports are produced, outstanding borrowings and loans are also reported.

B.3. Which securities on deposit at the SSS are eligible for lending? Do participants have the option to make securities available for lending or is it mandatory?

Equities, investment fund units and debt instruments (namely, straight bonds, convertible bonds, warrants, cum warrants, floating rate notes and zero coupon bonds) are eligible for lending in Clearstream Banking S.A. Banking. As a rule, securities eligible as collateral are investment grade issues, with the exception of some subinvestment grade sovereign debt and domestic securities.

Excluded are non-fungible securities, securities for which the conditions of the issue specifically exclude lending and/or borrowing and/or any securities that may not fall under the Clearstream Banking S.A. eligibility criteria. The ASL programme will not automatically open a loan for less than USD 100 countervalue.

B.4. Are lent securities identified by the SSS with specific participants as lenders or only with a common pool of securities available for lending? Does the participant whose securities are lent become a principal to the transaction?

When considering whether a security required by a borrower for ASL and ASLplus is available for borrowing, the settlement system initially considers the total pool of the relevant security available. If the loan is effectively booked, the system will then open the loan with one lender or several lenders. Borrowers have access to a large and diverse pool of lendable securities as just one contract has to be signed to access all lenders.

In the Clearstream Banking S.A. ASL programme, the lending participant and the borrowing participant are principals to the transactions. Clearstream Banking S.A. acts as agent not as principal to the transaction. The undisclosed nature of ASL allows customers anonymity, giving no direct interaction between the Lender and the Borrower. In ASL, borrowers provide collateral and the guarantor is Clearstream Banking S.A.

In ASLplus, loans are negotiated and there is a direct relationship between Clearstream Banking S.A. and the Borrowers; and Clearstream Banking S.A. and the Lenders. Clearstream Banking S.A. Banking is acting as Principal in the Loan transaction both towards lenders and towards borrowers.

C. How does the SSS settle back-to-back transactions?

The same securities can be received and delivered ("back-to-back") several times during a settlement cycle. These transactions are processed in "transaction chains". Transaction chains are made up of all transactions in the same security within the same settlement cycle. Unsettled securities transactions are recycled in several settlement cycles as new information is received from depositories and from Euroclear Bank over the Bridge.

If, in each chain, the initial deliverer has securities provision and the final receiver has cash provision, all internal transactions can be settled by netting through the flow of securities and cash in the chain. If provision is lacking on either side or on both sides, the chain is retried, taking the counterparty or counterparties next to the failing deliverer and/or receiver. At Clearstream Banking S.A.'s discretion, settlement processing takes into account, for credit purposes, any unconfirmed funds that are due to be confirmed on the value date.

The domestic market back-to-back service comprises the following features for against payment and free of payment domestic transactions:

- Linkage of a single domestic receipt with a single domestic delivery;
- Verification that the domestic receipt and delivery constitute a valid back-to-back transaction;
- Simultaneous release of the receipt and the delivery to the depository.

In general, settlement of the delivery leg will only be possible once the related back-to-back receipt leg is confirmed.

Settlement of both instructions will be achieved where both the Clearstream Banking S.A. customer and the domestic counterparty meet their settlement obligations and fulfil the market back-to-back requirements within the relevant deadlines.

C.1. Under what conditions are delivery instructions by participants receiving and re-delivering securities on the same day under back-to-back transactions settled for same-day value?

Clearstream Banking S.A. settles transactions between customers by simultaneous book-entry debits and credits in their respective securities and/or cash accounts. These book entries are passed after completion of a processing cycle that considers customers' instructions transaction by transaction in a reiterative process to determine which of the transactions can settle in such a way as to optimise settlement while remaining within predefined limits.

Assuming that the settlement instructions of the two parties are matched, a delivery of securities cannot settle unless:

- The delivering customer has the securities in its account, or receives them in its account in the same settlement processing run;
- The receiving customer has sufficient cash in its account, or receives it in its account in the same settlement processing run, or has sufficient credit facility available.;
- Both parties will have enough collateral in their accounts to secure their outstanding obligations after settlement of the transaction.

If the above conditions can be fulfilled for each of the two transactions, a back-to-back receipt and delivery can settle in the same settlement run or in separate settlement runs on the same day.

C.1.(a) Only if the participant has securities on deposit with the SSS that have been received pursuant to a final securities transfer?

Yes. Customers of Clearstream Banking S.A. can only onward-deliver securities if they have received them in their account.

C.1.(b) If the participant has securities on deposit with the SSS that have been received pursuant to a provisional securities transfer?

Not applicable as Clearstream Banking S.A. is a pure DVP model 1 settlement system.

C.1.(c) Before securities have been received either provisionally or finally, but when a matched receipt instruction exists for the same or greater value? Is such a practice limited to markets where matching is binding?

No, Clearstream Banking S.A. does not credit securities to a customer's account if they have not yet been received. Consequently, they cannot be onward-delivered either.

C.1.(d) Before securities have been received either provisionally or finally, but when a third party has promised to deliver to the SSS securities of the same or greater value? Must the provider of the guarantee have itself received the securities through a final transfer? Please describe how the SSS evaluates such promises, and whether they are addressed by the written rules and procedures of the SSS.

No, Clearstream Banking S.A. does not credit securities to a customer's account based on a third party's promise to deliver them. Only securities actually received are credited to customers' accounts and made available for onward-delivery.

C.1.(e) Other? Please specify.

Not applicable.

C.2. Please describe limits or controls in place with respect to any of the above arrangements for the settlement of back-to-back transactions, including limits on amounts involved or related to the liquidity of the underlying securities.

The limits are the conditions for settlement explained in [C.1.](#) above.

C.3. Under what conditions are payment instructions by participants in the SSS under back-to-back transactions settled for same-day value? Can participants use the proceeds of an onward delivery of securities without the need for an extension of credit?

Please refer to the answer given to question C.1 in this section.

VIII. Risk control measures

This section of the Disclosure Framework is intended to provide a description of the risk management systems employed by the SSS. Sound risk management encompasses a number of aspects, including assessment of risks and input into the risk management process from senior management and the Board of Directors, particularly with respect to the review of new products and services by the SSS. Internal and external audits as well as supervisory oversight can also play a vital role in ensuring that the risk management approach is sound and implemented with integrity.

A range of different risks can arise in conjunction with the different services that SSSs may provide. For example, in the course of providing settlement services, the SSS may become exposed to credit, custody or liquidity risks if, either explicitly or implicitly, it extends funds credit or lends securities to participants. In the provision of custody services, the SSS may take on credit risk if it extends funds to or on behalf of third parties. A variety of risk management approaches to these risks are possible, including in particular the use of collateral or limits on risk exposures. The questions also address several other provisions or tools that may be helpful to SSSs in managing or containing the different risks that they face, but are not meant to exhaust all the possible approaches that SSSs may employ.

A. Please describe the roles and responsibilities of those areas of the SSS responsible for risk management and control.

Risk management is an elementary component of the management and control of Deutsche Börse Group (DBG) as the ultimate parent company of Clearstream Banking S.A. Effective and efficient risk management is fundamental to safeguarding DBG's interests (both in terms of corporate goals and continued existence). Therefore, DBG. has established a groupwide risk management concept in terms of processes, roles and responsibilities applicable to all staff and organisational entities of DBG. to ensure that risk development can be identified and dealt with at an early stage.

The risk management framework of DBG., as stated in the Group Risk Management Policy, aims at ensuring that all threats as well as causes of loss and potential disruption are properly and timely identified, centrally recorded, assessed (quantified in financial terms to the greatest extent possible), that the most adequate treatment is applied and that a consolidated report is submitted to the Executive Boards in a timely manner.

The members of Executive Management of Clearstream Banking S.A. are responsible for the management of all risks. The organisation of Clearstream Banking S.A.'s risk management is decentralised. The business areas are responsible for identifying risks and for reporting them promptly to Group Risk Management, a central function unit with group-wide responsibilities.

The Risk Management function assesses all new and existing risks. It also reports on a monthly basis and, if necessary, ad-hoc to the particular Executive Management.

Risk control in the Clearstream Banking S.A. operational units was enhanced by nominating "Operational Risk Representatives", who are responsible, as mentioned above, for identifying, notifying and controlling any risk in their area whereas the Risk Management function is responsible for the assessment and reporting of risks.

The risk management framework of Clearstream Banking S.A., as stated in the Group Risk Management Policy, aims at ensuring that all threats, causes of loss and potential disruptions are properly identified as soon as possible, centrally recorded, assessed (that is, quantified in financial terms to the greatest possible extent), reported in a timely manner and consistently, together with suitable recommendations to the respective Executive Management, and controlled.

The risk management processes are: the identification, notification, assessment, control and reporting of risks.

Risk identification involves - to the most complete extent possible - the identification of all threats, as well as causes, of loss and potential disruption as described in the risk tree. Risks may arise as a result of internal activities or external factors and, when concluding new business or entering new service areas, risk examination must be performed with regard to both existing and new processes.

The risk identification process can be reactive, following an incident. It should also be proactive, based on the regular review of processes in order to identify weak areas, or based on scenarios of failure taking into consideration all sources of issues.

All organisational units and individual employees are in principle required to identify and quantify by themselves potential risks in their area of responsibility.

Risk notification is the step in the risk management process that ensures that risks are centrally recorded at Group Risk Management.

Risk assessment of an incident or of a potential risk development aims at quantifying the risk in financial terms using the "Value at Risk" methodology and comparing the result with the available risk cover. It is performed by Group Risk Management and takes into account mitigation measures currently in place, such as business continuity measures, insurance policies etc.

A qualitative approach may be used whenever it adds value or is deemed more adequate.

Clearstream Banking S.A. has been using the Advanced Measurement Approach (AMA) since 1 January 2008 to calculate its capital requirements with regard to operational risk.

Risk control involves determining and implementing the most appropriate treatment for the identified risk. It encompasses the following: risk avoidance, risk reduction, risk transfer and intentional risk acceptance.

All organisation units and employees must perform risk control and implement mitigating action according to the established escalation process.

Risk reporting of any material risks to the responsible Executive Board members and committees is performed by Clearstream Banking S.A.'s Risk Management Function. Reporting to the Audit, Compliance and Risk Management Committee (ACRC) covers all areas where risk might occur. At least once a year, the Audit, Compliance and Risk Management Committee reviews a compliance status report obtained from executive management.

Internal Audit ensures through independent audits, that the adequacy of risk control and management functions is monitored. The result of these audits is also fed into the risk management system.

Clearstream Banking S.A. has installed a standardised approach for measuring and reporting all operational and financial business and project risk across its organisation: the concept of "Value at risk" (VaR). The purpose is to allow the overall risk appetite to be expressed in a comprehensive and easily understandable way and to facilitate the prioritisation of risk management actions.

A.1. Please describe the process for the internal review of risk management policies and procedures.

The risk management policies and procedures are regularly reviewed by Clearstream Banking S.A. Risk Management. If necessary, changes are approved by the Executive Management and the Audit, Compliance and Risk Management Committee (ACRC). Furthermore, results are confirmed and discussed within the Executive Managements of all DBG entities.

A.2. Is there a risk management policy that addresses the review and approval of new products and services offered by the SSS? At what level of the organisation is risk management approval given for a new product or service?

According to Clearstream Banking S.A.'s Risk Management Policy, all organisational units and individual employees must in principle notify Group Risk Management in a timely manner of the risks they have identified and quantified. This also applies to the development of new products and services or alterations to existing products and services.

In all cases, the proposed change must also be submitted to the management of the areas affected by the change, including the relevant units in Operations, and must ultimately be reviewed and approved by the Product Development and Investment Committees at the various stages of the product pre-life cycle. The Corporate Project Coordination unit is reviewing all projects that involve significant investment, bear high complexity or have impact across Clearstream Banking S.A.. Based on reference guidance provided by Group Risk Management, they may alert Group Risk Management, who in turn will produce a risk assessment and escalate to relevant executive management if necessary.

While primary responsibility lies with the business units for the monitoring of their own risks (identification, notification to Group Risk Management and risk control), Clearstream Banking S.A. Risk Management, whether routinely or on an ad-hoc basis, is performing risk assessments and is in charge of producing adequate reporting to the relevant management boards and committees.

A.3. Does the SSS have a risk management function with clear independence from and authority over operational or marketing functions?

Yes. Clearstream Banking S.A. follows a holistic risk management approach as described in the Clearstream Banking S.A.'s Risk Policy

Reporting directly to the executive management, the Audit, Compliance and Risk Management Committee (ACRC) covers all areas where risk might occur. The Chief Internal Auditor and the External Auditor will attend the meetings at the request of the chairman of the committee. The President and CEO may attend as a guest.

The ACRC reviews the Company's financial statements and makes recommendations to the board of directors, approves annually the internal audit functions, objectives, the audit plan, staffing and financial budgets, ensures true and proper accounting and reporting of financial results, oversees the proper financial management of the Group, reviews the adequacy and effectiveness of accounting systems and internal financial controls, monitors the efficiency and independence of the internal audit function and meets regularly with the external auditor.

A.4. Does the Board of Directors review risk management policies and procedures? Does the Board have a risk management or audit committee?

Yes, please refer to the answer above.

B. Please describe any internal or external audits or supervisory/regulatory examinations that are performed with respect to the SSS. For each such audit or examination, please address the following questions.

As a licensed credit institution, Clearstream Banking S.A. is subject to the prudential supervision of the Commission de Surveillance du Secteur Financier (CSSF) and of the the Banque centrale du Luxembourg (BCL). In addition, the BCL is responsible for the oversight of payment and securities settlement systems.

Clearstream Banking S.A. must provide all reporting required for banks by CSSF and BCL regulations and Luxembourg legislation, in line with EU legislation. In addition to the regular audit by the external auditor (KPMG) of the annual report (short form), KPMG also prepares an analytical report (long form).

Reporting requirements include the following, among other things:

- Daily liquidity report;
- Balance sheet (monthly);
- Liquidity ratio (monthly);
- Foreign currency position (quarterly);
- Solvency ratio (quarterly);
- Profit and loss account (quarterly);
- Large loans - concentration of risk (quarterly);
- Participations and subordinated loans (quarterly);
- Report on liquidity risk management (quarterly);
- Stress testing on interest rates (semi-annual);
- Various internal management reports (monthly or quarterly);

Furthermore, Clearstream Banking S.A. must provide the CSSF and/or BCL with the following:

- Chief auditor's report;
- Management report on internal controls;
- Report Internal Capital Adequacy Assessment Process (ICAAP)
- External audits by its statutory external auditors

In addition to the regulatory reporting Clearstream Banking S.A. conducts audits for the following reasons:

- At the request of Clearstream Banking S.A., of the control systems associated with operational risks and their effectiveness, resulting in an Statement on ISAE 3402 that is made available to customers;
- At the request of the Board of Directors;
- Periodic reviews by Standard & Poor's and FitchRatings, who have granted Clearstream Banking S.A. short-term and long-term credit ratings; and
- Self-assessments against international securities settlement systems standards (to the BCL).

B.1. Who performs the audit or examination?

Audit and examination are performed by a) Clearstream Banking S.A.'s Internal Audit section, b) KPMG as the external auditors appointed by the Board of Directors, and c) the institutions mentioned in [B.](#) above.

B.2. What is the scope of the audit or examination?

Internal Audit is an independent objective assurance and consulting function designed to add value and improve the operations of Clearstream Banking S.A. It helps Clearstream Banking S.A. to accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control and governance processes.

The objective of Internal Audit is to assist the General Manager and the Board of Directors in the effective discharge of its responsibilities. The internal audit function provides management with analysis, appraisals, recommendations, counsel and information concerning the risk management and control framework and governance processes covering all business activities

Towards the achievement of this objective, Internal Audit is authorised to have unrestricted access to all records, personnel and physical properties.

The Chief Auditor prepares a rotational Audit Plan based on a risk analysis that ensures that all areas are covered on a three-year cycle, in accordance with regulatory requirements, and that focuses coverage on high-risk areas each year.

1. Corporate Internal Audit is authorised with unrestricted access to all records, personnel and physical properties determined relevant to the performance of assigned audits.
2. The scope of audits by Clearstream Banking S.A.'s statutory external auditors is determined in accordance with International Standards on Auditing and specific regulatory requirements of the CSSF. Those standards require that they plan and perform the audit to obtain reasonable assurance about whether the annual accounts are free of material misstatement.
3. There is no limit to the scope of audits that may be requested by the Board of Directors.
4. External audits by the Clearstream Banking S.A. statutory auditors carried out at the request and with the mandate of the supervisory authority of Clearstream Banking S.A. and the CSSF, include annual audits and exceptional audits of specific areas. The scope of the former is set by CSSF regulations; the scope of the latter is set by the CSSF on a case-by-case basis.

B.2.(a) Please indicate whether and how it addresses the sufficiency of and compliance with internal controls.

Management is responsible for establishing operating objectives, developing and implementing control procedures and accomplishing appropriate operating results. Internal Auditing ascertains whether such objectives have been defined, the controls are implemented and effective and the operating results are met by;

- The review of the viability, effectiveness, efficiency and adequacy of the internal control systems, of the processes for the management of risks, and the governance framework;
- The review of the reliability, integrity, and confidentiality of management, operating and financial information systems;

- The review of the financial and operating records and reports containing accurate, reliable, timely, complete and useful information;
- The review of compliance with applicable legal and regulatory requirements including reporting, codes of conduct etc;
- The review of compliance with operational guidelines, instructions and standards as well as the orderliness of all operational and business procedures and the rules and precautions taken to protect assets;
- The review of the efficiency of business management processes;
- The review of the existence, and the means of safeguarding assets, including fraud aspects, of Clearstream Banking S.A. and of its customers;
- The review of the adequacy of Business Continuity Management;

In addition, they are responsible for providing to all levels of management of the organisation:

- Objective and independent evaluations of internal controls;
- Recommendations to improve controls and processes;
- Suggestions to improve the economy, efficiency and effectiveness of controls and procedures within the units' activities;
- Regular updates of the status of open audit recommendations.

B.2.(b) Please indicate whether and how it addresses the SSS's compliance with its own rules and procedures.

Clearstream Banking S.A. has implemented a variety of policies and procedures to ensure that the management within each department implements and monitors the effectiveness of the control environment and that the internal audit functions in an appropriate capacity. Clearstream Banking S.A. has an Internal Audit Section, which is created as an independent appraisal function to provide the Group Executive Management and the Board of Directors with the relevant information concerning adequacy and effectiveness of the risk management and control framework and governance processes. The Chief Auditor is independent and reports directly to the CEO and the Audit Committee of the Board of Directors.

B.3. What is the frequency of the audit or examination?

1. Internal audits are carried out according to the annual internal audit plan and, in addition, whenever the Chief Auditor considers that an audit is necessary. Detailed findings and recommendations are distributed to Line Management and full reports provided to the responsible member(s) of the Group Executive Management and to the CEO. All major items are reported to the the General Manager and the Board of Directors.
2. External audits are undertaken at least annually by the Clearstream Banking S.A. statutory external auditors and include detailed analytical requirements determined by the CSSF.
3. External audits of specific areas may be undertaken on a case-by-case basis at the request of the Board of Directors.
4. External audits by the Clearstream Banking S.A. Banking S.A statutory auditors at the request and with the mandate of the Clearstream Banking S.A. Banking S.A supervisory authorities may be undertaken at any time.
5. Periodic reviews by Standard & Poor's and Fitch, Inc., who have granted Clearstream Banking S.A. short-term and long-term credit ratings, are at least annual, and may be requested at any time by Standard & Poor's or Fitch, Inc.
6. Examinations by the supervisory authority of Clearstream Banking S.A., the CSSF, may occur at any time.

B.4. Are audit or examination reports available for review by participants?

Some reports are available for consultation, such as the rating agencies reports are available to customers and other parties. The consolidated DBG Annual Report is publicly available and includes KPMG's opinion letter which also covers Clearstream Banking S.A. as a subsidiary of DBG. Additionally, the ISAE3402 report can be accessed on our web site: www.clearstream.com.

C. Please discuss whether the SSS has the capacity to value (that is, mark to

market) the securities that it holds.

Clearstream Banking S.A. Banking has the capacity to revalue the securities that it holds as collateral on a daily basis.

Most of prices are updated once a day, in the morning, but

- Some securities are priced in different Bloomberg files, so they are updated once a day
- Pricing users can update prices at any time

For credit purposes, securities without recent market price are applied a higher haircut or rejected as valid collateral.

C.1. Please describe how these valuations are used by risk control systems at the SSS.

In the settlement process, whenever a transaction of any kind is considered for settlement, the system checks, among other things, whether settlement of the transaction would cause the customer's account to have a total exposure that would need to be secured but that would be in excess of the exposure that can be secured by the collateral available in the account pledged (or to be pledged) to the lender(s) (if the customer has or would have outstanding borrowings through ASL) and to Clearstream Banking S.A.

- If the resulting exposure would be in excess of the exposure that can be secured by the collateral available in the account, the settlement system will not settle the transaction.
- If the resulting exposures are each within the limits of the relevant credit facility available to the customer and all other conditions for settlement are met, the settlement system will settle the transaction.

When evaluating the collateral available in an account to secure a given exposure, the Clearstream Banking S.A. system takes into account the following details:

- Which securities holdings are available in the account and eligible as collateral to secure the particular exposure considered;
- The market price of the securities stored in the system;
- The exchange rates, where relevant, stored in the system;
- The relevant haircut to be applied to each security when used as collateral to secure the type of exposure considered for the relevant creditor.

At the beginning of the settlement process, the settlement system re-evaluates the outstanding exposures and collateral available based on the securities prices and exchange rates stored in the system at that time.

C.2. How frequently are securities revalued?

Securities prices are automatically collected, on a daily basis, from several recognised external information providers, such as Bloomberg, IDC (Interactive Data Corporation) and SIX Financial. Prices of bonds, equities and warrants are automatically updated with the Bloomberg or IDC prices of the previous business day. Clearstream Banking S.A. may use evaluated prices from external providers if market prices are not available for bonds.

If, on a given date, no new price for a security is received from the above sources, Clearstream Banking S.A. will maintain the most recent available price.

C.3. What are the sources for security valuations?

The valuation of securities is based on prices obtained from external independent sources.

C.3.(a) What outside price or data sources are used?

Clearstream Banking S.A. obtains price information from independent external sources globally collected during the business day:

- IDC (Interactive Data Corporation)
- Bloomberg
- SIX Financial
- Reuters

IDC and SIX Financial provides theoretically evaluated prices. If a security cannot be priced by the regular data feed, an evaluated price is requested from IDC. If IDC is not in the position to provide a price, the request will be

re-routed to SIX Financial.

As Clearstream Banking S.A. uses multiple external pricing sources, it uses a complex and conservative selection algorithm to obtain the most appropriate available price to replace the previous one.

C.3.(b) If pricing models are used, please describe how the models are chosen and how the model inputs are obtained.

Theoretical prices are obtained from IDC and SIX Financial

D. Please discuss whether the SSS has a lien on the securities held in or transferred through it.

Article 1948 of the Luxembourg Civil Code grants the depository a right of retention over the deposit that is owed to it for reasons of the deposit being unpaid. It should be noted that the amounts due to the depository must directly relate to the deposit. This includes the fees to the depository.

Under Article 17 of the Law of 1 August 2001, as subsequently amended, Clearstream Banking S.A. enjoys the benefit of a privilege over all securities, claims, assets and other rights booked to accounts held with Clearstream Banking S.A., as own assets of a customer, to the extent that such assets are free of any collateral security notified to or accepted by Clearstream Banking S.A. This privilege secures the claims of Clearstream Banking S.A. against a customer that have arisen in connection with the clearing or settlement of transactions on securities or other financial instruments or of the netting of such transactions effected by the customer for its own account or for account of its clients, including claims arising under loans or advances.

Under the same provision Clearstream Banking S.A. equally enjoys the benefit of a privilege over all securities, claims, assets and other rights booked to "client assets" accounts of its customers. This privilege exclusively secures the claims of Clearstream Banking S.A. against the customer arising in connection with the settlement or liquidation of transactions on securities or other financial instruments or of the netting of such transactions effected by the customer for the account of its clients, including claims arising under loans or advances.

Article 44 of the General Terms and Conditions foresees that all securities, currencies and precious metals held by the customer within the Clearstream Banking S.A. system, now or in the future, whether at Clearstream Banking S.A. or at another location, are pledged in favour of Clearstream Banking S.A. to secure the entire present or future obligations of the customer towards Clearstream Banking S.A. If deposited securities, currencies and precious metals are held by the customer on behalf of its clients and may not be pledged, then the customer must notify Clearstream Banking S.A. In the absence of such notification, Clearstream Banking S.A. shall be entitled to assume that all securities, currencies and precious metals are held for the account of the customer.

D.1. Does the lien apply only to the securities owned by the participants themselves or does it extend to the securities beneficially owned by customers of participants?

If the customer does not notify Clearstream Banking S.A. that the securities are held in the Clearstream Banking S.A. system on behalf of one of the customer's clients, the general pledge granted to Clearstream Banking S.A. under Article 44 of the General Terms and Conditions (see D. above) applies. In the absence of such notification, Clearstream Banking S.A. is entitled to assume that those securities are held for the account of the customer.

The privilege under Article 17 of the Law of 1 August 2001 applies in the terms and under the conditions mentioned in D. above.

D.2. Under what circumstances and in what manner would such a lien allow the SSS to use the securities?

If the customer defaults on the execution of its obligations towards Clearstream Banking S.A., the general pledge granted to Clearstream Banking S.A. under Article 44 of the General Terms and Conditions (see D. above) can be enforced. The pledge grants a right of retention to Clearstream Banking S.A. and can be enforced in accordance with the Law of 5 August 2005 on financial collateral agreement; that is, without prior notice to the pledger or by way of appropriation, sale over an exchange, private sale or netting. The privilege under Article 17 of the Law of 1 August 2001 applies in the terms and under the conditions mentioned in D. above.

E. Please discuss the circumstances in which the SSS requires collateral to limit or mitigate risks.

Collateral is required to secure credit lines used for securities settlement purposes as well as in securities financing transactions.

E.1. Does the SSS manage its own collateral system?

Yes.

E.2. Does the SSS share a collateral system with another SSS or payment system?

Depending of the definition of 'sharing', Clearstream Banking S.A. shares its collateral management system with other CSDs in the sense of providing collateral management services to these entities from its collateral management system. This is the case for the sister company Clearstream Banking AG to achieve the mobilisation of assets from two SSS's. Further, it is also the case for partner CSDs around the globe under the outsourcing/white-labelling Liquidity Hub GO offering (currently already used in Australia, Brazil, South Africa and Spain - Canada, Singapore and Norway under Letter of Intent). Clearstream enables the partners to deliver sophisticated Collateral Management Services to their client base mobilising assets from their respective SSSs. This contributes to the development of a sustainable financial market infrastructure in these countries.

E.3. Can collateral at the SSS be posted and returned on the same day?

Yes.

E.4. What types of transaction at the SSS involve the use of collateral?

Collateral is required for:

1. All settlements in which Clearstream Banking S.A. extends credit to a customer, except where a customer has an uncollateralised credit facility;
2. All securities borrowings through ASL.
3. All securities borrowings through ASLplus and
4. All transactions settled through the Triparty Collateral Management Service.

E.5. What are the policies with regard to the type of collateral used or haircuts required?

For the transactions referred to in [1.](#), [2.](#) and [3.](#) in [E.4.](#) above, Clearstream Banking S.A. determines which securities are eligible as collateral and which haircuts apply to them. To facilitate the collateral management process, the same securities are eligible and the same haircuts are applicable to Clearstream Banking S.A.'s settlement credit facility and ASL, although the party to whom the collateral is pledged differs.

Haircuts may range from 1% to 100%. As a rule, securities eligible as collateral are investment grade issues, with the exception of some subinvestment grade sovereign debt. Collateral is marked to market daily.

E.6. How are collateral valuation methodologies developed and reviewed?

Decisions on changes of eligible collateral, applicable haircuts and valuation methodologies for the purposes of securing credit granted by Clearstream Banking S.A. and for securities lending and borrowing programmes are developed and reviewed by the Credit Department.

Changes of eligible collateral or haircuts in the Triparty Collateral Management services suite can be done at anytime based on a mutual agreement of the counterparties(collateral receiver and collateral giver) involved in the transaction.

E.7. To what extent are collateral policies described in the written rules and procedures of the SSS?

Collateral policies are defined in Clearstream Banking S.A.'s Customer Handbook and in Clearstream Banking S.A.'s announcements whenever there is a change. Collateral policies concerning ASL and ASLplus are covered in the legal agreements for these services.

Collateral policies concerning the Triparty Collateral Management platform are an integral part of the Collateral Management Service Agreement (CMSA) signed by the collateral receiver and the collateral giver

F. Please describe the SSS's use of limits on exposures to monitor or control risks.

For each customer that is granted credit by Clearstream Banking S.A., Clearstream Banking S.A. sets a maximum amount of secured intraday credit available in the form of an Unconfirmed Funds Facility (UCF) that enables the customer to use funds that Clearstream Banking S.A. expects to receive for that account for settlement purposes only, if the customer has sufficient collateral on its account. Clearstream Banking S.A. may also grant a Technical Overdraft Facility (TOF), another intraday limit that may be used for settlement purposes only.

F.1. Please explain the types of limit used and the exposures to which they apply.

1. Clearstream Banking S.A. establishes placement limits for major banks.
2. Securities lending limits are guaranteed by Clearstream Banking S.A. For ASL and ASLplus, this is dictated by the Clearstream Banking S.A. Credit Department. All loans are fully collateralised by the borrowers.
- 3 As a bank, Clearstream Banking S.A. is subject to regulatory limits on its exposures at all times and must maintain its solvency and liquidity ratios above the mandatory threshold, in accordance with Luxembourg banking regulations implemented in line with legislation.

F.2. Do the limits apply to all participants and/or to other SSSs with which the SSS is linked? What are the exceptions to the limits?

Customer credit limits apply to all customers, although the amounts of the limits differ. It should be stressed that not all customers are eligible for cash credit facilities.

F.3. Do limits apply to participants individually or in the aggregate or both?

Both, as explained in [F.1.](#) above.

F.4. Do limits apply to implicit as well as explicit extensions of credit or securities (for example, when onward deliveries of securities are permitted pursuant to provisional XXX but not final delivery of securities)?

Limits apply to explicit extensions of credit and to implicit credit based on unconfirmed funds.

Securities are not onward-delivered unless already credited to the customer's account.

F.5. Does the SSS automatically reject transactions that exceed limits or is compliance determined ex post?

Clearstream Banking S.A. automatically rejects transactions that exceed limits. Exceptions to limits require prior approval from the Clearstream Banking S.A. Credit Department and manual intervention.

Generally, cash and securities are monitored against credit limit usage. Clearstream Banking S.A. runs fully automated monitoring systems to ensure secured credit lines do not exceed established limits. All securities are reviewed for collateral eligibility in terms of issues, liquidity and market risk. Positions pledged as collateral are reviewed in accordance with fluctuations in market values. Pledged collateral is also monitored to identify whether the securities pledged are required to execute forthcoming deliveries. If this is the case, alternative collateral is sought in order to release the pledged securities for settlement.

F.6. How are limit policies developed and reviewed?

Credit limits are approved by the Clearstream Banking S.A. Credit Department according to credit policy approved by Group Executive Management.

F.7. To what extent are limit policies described in the written rules and procedures of the SSS? Where does additional authority to set or amend limit policies reside?

Clearstream Banking S.A. credit policy guidelines formally describe the rules and procedures applicable to the

approval of credit lines. It also describes the limits applicable and the form in which authorised persons can perform this task.

G. Please describe other controls to mitigate or reduce risks at the SSS.

In addition to the measures described in the answer to question A. in this section a fully automated monitoring system is available to ensure credit limits are not exceeded. Clearstream Banking S.A.'s staff can consult customer accounts on line and identify potential shortfalls.

Customer credit risk is regularly reassessed, and may lead to cancellation of credit facilities or blocking of the account.

G.1. Does the SSS or its participants have the capacity to monitor participants' accounts continuously during processing?

The Clearstream Banking S.A. settlement system checks the situation of the customer's account each time it considers settling a transaction in that account. Clearstream Banking S.A. staff can consult customers' accounts between settlement runs. Each customer can check his own account(s) between settlement runs.

Additionally, Clearstream Banking S.A. maintains a fully automated monitoring system to ensure secured credit lines do not exceed established limits.

G.2. Is there a special risk control regime that the SSS would apply to a participant known to be experiencing financial difficulties?

Yes, Clearstream Banking S.A. can unilaterally cease to extend any form of credit (if applicable) to such a customer and/or block their account.

G.3. Does the SSS maintain or administer loss-sharing arrangements other than those applicable to events of default and addressed in Section VI. above? Are these loss-sharing pools pre-funded by participants?

No.

IX. Operational risks

Operational failures at the SSS could limit the ability of participants to access their assets held at the SSS and prevent them from honouring their commitments to others, with potential spill-over effects on other payment, clearance and settlement systems. Furthermore, prolonged problems could reduce or eliminate trading activity with respect to the affected securities, with substantial consequences for market participants.

It is good practice to mitigate operational risks through redundancy and the maintenance of strong internal controls over the operations of the SSS. In the event of an unavoidable problem or natural disaster, the SSS should also have in place a well-rehearsed plan for business continuity that addresses all the business functions and resources that the SSS would need in order to renew operations.

A. Please provide assessments of the operational reliability of the computer and other systems used by the SSS, including any criteria that the SSS uses internally for this purpose.

The Risk Management function assesses all new and existing risks. It also reports on a monthly basis and, if necessary, ad-hoc to the particular Executive Management. Risk control is performed in the decentralised business areas, that is, in the areas where the risks occur.

Risk control in the Clearstream Banking S.A. operational units was enhanced by nominating "Operational Risk Representatives", who are responsible, as mentioned above, for identifying, notifying and controlling any risk in their area whereas the Risk Management function is responsible for the assessment and reporting of risks.

The risk management framework of Clearstream Banking S.A., as stated in Clearstream Banking S.A.'s Risk Management Policy, aims at ensuring that all threats, causes of loss and potential disruptions are properly identified as soon as possible, centrally recorded, assessed (that is, quantified in financial terms to the greatest possible extent), reported in a timely manner and consistently, together with suitable recommendations to the respective Executive Management, and controlled.

A.1. What is the percentage uptime of the systems used by the SSS?

The average system availability for the core system in 2013 as of 99.98% scheduled time. (Occasional downtime was scheduled on Sunday mornings for essential system maintenance.)

A.1.(a) Whole system overall?

The average system availability for the core system in 2013 as of 99.98% scheduled time. (Occasional downtime was scheduled on Sunday mornings for essential system maintenance.)

A.1.(b) Broken down by major components? (for example, communications network, central processing facility)

Core processing Services	[99.98%]
Customer connectivity - Proprietary Network	[99.99%]
Customer connectivity - SWIFT	[99.99%]
Funds Services	[99.93%]

A.1.(c) During critical processing periods?

These above figures represent an average for 24x6 (24 hours per day, 6 days per week) excluding scheduled downtime. Clearstream Banking S.A. offers a 24-hour service and considers the entire day to be critical.

A.2. Has the SSS experienced major operational problems during the past two years?

The SSS has experienced operational problems that have had minor or no impact and have been managed using defined Contingency Action Plans (CAPs) to minimise disruption to services.

A.2.(a) Have settlements been delayed, been disrupted or otherwise failed because of operational problems during this period?

Please refer to A.2. above.

A.2.(b) Please describe the nature of any such problems.

Clearstream Banking S.A. occasionally encounters problems that have little or no impact. The causes of disruption are categorised as either internal (Clearstream Banking S.A.) or external (delay at external suppliers). Each incident is analysed to ensure that the root cause is identified and resolved to prevent any recurrence. Hardware failure can easily be resolved by using redundant machines or by switching to the hardware at the contingency site.

B. Please describe contingency or disaster recovery planning at the SSS.

A business continuity management policy exists that outlines Clearstream Banking S.A.'s objective to be able to continue to operate under adverse conditions and in the face of unexpected events or disasters.

The policy prescribes a business continuity organisation with defined responsibilities. This includes a central team, organisationally independent from the Operations and IT departments, whose responsibilities include the direction and co-ordination of a business continuity plan and the provision of a framework for coherent planning in all other units and departments.

Business functions and systems are classified by varying degrees of criticality in accordance with the risk management framework. This analysis identifies the point in time when non-delivery of all or part of a service will have a non-tolerable impact on the business. It also determines services, staff, systems, facilities and other dependencies that are mission-critical and that must be included in the business continuity plan.

B.1. Does the SSS have a formal plan for business continuity in place?

Yes.

B.2. Is this plan available for review by participants?

Specific information not disclosed in this document can be requested and is typically shared with customers in their routine due-diligence reviews.

B.3. How often is this plan tested? Does this involve participants in the SSS?

Business continuity plans are tested at least annually. Clearstream Banking S.A. applies a component-based approach that includes technical infrastructure testing, data centre disaster recovery testing, backup processing and customer connectivity testing, backup workspace testing, internal user training and testing. Based on this approach, a test program is established for each year and includes planned as well as unannounced live activities. Customers are regularly invited to participate in the technical infrastructure testing. Findings are reported to Group Executive Management.

B.4. What are the major elements of the business continuity plan?

The Clearstream Banking S.A. business continuity plan contains information, guidelines and procedures that are developed and maintained for use in the event of an emergency or disaster, including the loss of IT, workspace, staff or suppliers, in order to maintain the continuity of critical services. It comprises a crisis management process, business unit, IT and facilities recovery plans.

The data centres are duplicated remotely to form primary and secondary centres acting as backup to each other. The data centres are equipped with similar capacity data processing and communications equipment and are inter-connected with high-speed optical data links that are themselves duplicated. Communications networks are routed via separate exchanges of the network provider to allow for the failure of one exchange. Data is written to multiple disks in real time across the two data centres. Should an event occur that disables the primary data centre, the secondary could be brought into operation without loss of data. The data centres are equipped with environmental protection devices including intrusion, fire and humidity detectors, fire suppression systems, UPS and backup generators.

Moreover, dedicated backup facilities are established to provide backup office space for mission critical staff in the event that their normal office location would become unavailable. The backup office facilities are fully equipped and networked to both the primary and the backup data centre.

Business continuity measures have also been developed to address the loss of very significant numbers of staff in order to ensure the continuity of the most critical operations also in catastrophic scenarios.

Service Level Agreements and/or Manual of Procedures describe the minimum service level expected from, and the contingency procedures with, suppliers, such as cash correspondent banks or depositories.

B.5. How long would it take the SSS to resume operations if primary systems become unusable?

The business continuity plan recovery time objective is 2 hours. Depending on the nature of the incident, recovery can be achieved more quickly or may be influenced by factors not under the control of Clearstream Banking S.A.

C. What are the key features of the internal controls covering operations and security at the SSS (for example, change controls or those covering remote access)?

Physical and logical access to systems is controlled by both technical and organisational means. Access right management is formalised. Access right changes can only be approved by the line manager and where applicable, the business, system or application owner must also give prior approval. Password management restrictions have been defined. Security is monitored by the use of tools.

The IT security architecture implemented consists of a number of components:

- The native operating system, including security subsystems, provides a secure operative basis.
- Features of the operating system and/or application provide authentication and authorisation mechanisms.
- Network traffic is segregated by the use of firewalls, where sensible (for example, internet).
- Intrusion detection is performed as a second level of defence for incoming connection.
- A control framework is in place to protect against malicious code, where applicable.
- Switched network and VLAN technology is used internally to reduce the risk associated with "sniffing".
- A cryptographic architecture based on PKI technologies is in use in certain applications.

C.1. Please describe controls or security procedures in place to ensure that the SSS acts only on authentic settlement instructions from valid participants.

Clearstream Banking S.A. Banking S.A accepts settlement instructions through CreationConnect, its proprietary communications system, by authenticated SWIFT and through CPU-CPU links. CreationConnect products provide real-time access to enhanced information provision, instruction input, position and transaction reporting and offer a choice of web browser (CreationOnline), file transfer (CreationDirect) and SWIFT access (Creation via SWIFT).

Most instructions are processed without human intervention. Certain transactions may be processed or entered into the system by Clearstream Banking S.A. staff, based on the customer's instructions; any such entries must be keyed and re-keyed and authorised by authorised persons. Policies and procedures are implemented to ensure segregation of tasks and to reinforce controls.

C.2. Are internal operational and security controls included in the internal and/or external audits of the SSS?

Yes.

C.3. Are internal operational and security controls covered by regulatory requirements applicable to the SSS?

Yes.

D. Does the SSS impose minimum operational or performance standards on third parties (for example, communications providers)?

Clearstream Banking S.A. has outsourced some operational functions to its sister company Clearstream Banking S.A. Banking AG, Frankfurt. IT development and maintenance for systems are being handled by Clearstream Banking S.A. Services S.A. Luxembourg and the IT department of Deutsche Börse AG in Frankfurt.

In addition Clearstream Banking S.A. works with a network of sub custodians and cash correspondent banks in the international market and in each of the 53 domestic markets for which it offers asset servicing and settlement services. Agreements in place clearly set out the contractual expectations and responsibilities between Clearstream Banking S.A. and its Suppliers. The agreement establishes a legal framework which identifies the eligible securities, the authorised parties, the defined terms and procedures on settlement, safekeeping and administration, the required insurance coverage, the supplier's standard of care, the liability of the supplier to Clearstream Banking S.A., the representations and warranties, the confidentiality requirements and the incorporation of a comprehensive and tailored Service Level Agreement.

The legal opinion which is required from the depository is appended to the agreement, and represents independent and neutral confirmation of their ability to perform as required under the agreement without risk of being superseded by local regulations or practices. It represents a confirmation of key legal requirements.

D.1. How does the SSS ensure that such standards are met on a continuing basis and what sanctions are available to the SSS if they are not?

These relationships and their respective Service Level Agreements are reviewed on a continuous basis and as needed. Clearstream Banking S.A. exercises a continuous review of the services provided, market developments, procedures, practices, regulations or other infrastructure-related developments. Clearstream Banking S.A. executes regular due diligence visits and service reviews throughout the year to ascertain that the services contracted are being met and that all governing documents remain relevant to the activities and regulations of the market.

D.2. How would the SSS allocate losses incurred due to operational problems caused by third parties?

Clearstream Banking S.A. has covered the risks inherent to its activities with a very broad insurance programme. As stated in D. above, the coverage is satisfactory where Clearstream Banking S.A. has concluded specific procurement agreements. The insurance of Clearstream Banking S.A. does not cover failures of mandatory infrastructure services or goods providers, such as telecommunications services, electricity and power supply services, or SWIFT services. Operational losses resulting in customer claims or other losses suffered by Clearstream Banking S.A., incurred due to deficiencies from providers lead to:

1. An indemnification in compliance with the contract terms; or
2. Where the contract does not foresee an indemnification, an amicable settlement; or
3. If a settlement cannot be reached, to a court's allocation of damage awards. Such cases have not occurred in since the incorporation of Clearstream Banking S.A.

However, it may be realistically stated that indirect losses (that is, losses that cannot be immediately and naturally attributed to the event having caused the loss) will not be indemnified by those providers and will not be awarded by a court. Only direct losses will be likely to be considered.

According to Article 48 of the Clearstream Banking S.A. General Terms and Conditions, Clearstream Banking S.A. shall not be liable towards its customers for losses that would result from any act or omission of, or the bankruptcy or insolvency of, any of the Clearstream Banking S.A. depositories, sub-depositories, custodians, sub-custodians, or of any other clearance system, or of any carrier transporting securities between Clearstream Banking S.A. and/or any of the foregoing, provided Clearstream Banking S.A. has not acted with negligence or with wilful misconduct.

Disclaimer:

This questionnaire is prepared for general information purposes only. The information contained herein is not intended to provide professional legal advice and should not be relied upon in that regard. Readers should seek appropriate professional advice where necessary before taking any action based on the information contained in this document.

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