

Principles for financial
market infrastructures
Disclosure framework
Committee on
Payments and Market
Infrastructures (CPMI)

Status as of 31 December 2023
LuxCSD S.A.

Document number: LU7503

March 2024

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Contents

PREFACE	4
PRINCIPLE 1: LEGAL BASIS	12
PRINCIPLE 2: GOVERNANCE	18
PRINCIPLE 3: FRAMEWORK FOR THE COMPREHENSIVE MANAGEMENT OF RISKS	32
PRINCIPLE 4: CREDIT RISK	37
PRINCIPLE 5: COLLATERAL	40
PRINCIPLE 6: MARGIN	42
PRINCIPLE 7: LIQUIDITY RISK	43
PRINCIPLE 8: SETTLEMENT FINALITY	47
PRINCIPLE 9: MONEY SETTLEMENTS	52
PRINCIPLE 10: PHYSICAL DELIVERIES	54
PRINCIPLE 11: CENTRAL SECURITIES DEPOSITORIES	55
PRINCIPLE 12: EXCHANGE-OF-VALUE SETTLEMENT SYSTEMS	63
PRINCIPLE 13: PARTICIPANT-DEFAULT RULES AND PROCEDURES	65
PRINCIPLE 14: SEGREGATION AND PORTABILITY	69
PRINCIPLE 15: GENERAL BUSINESS RISK	70
PRINCIPLE 16: CUSTODY AND INVESTMENT RISKS	73
PRINCIPLE 17: OPERATIONAL RISK	75
PRINCIPLE 18: ACCESS AND PARTICIPATION REQUIREMENTS	84
PRINCIPLE 19: TIERED PARTICIPATION ARRANGEMENTS	88
PRINCIPLE 20: FMI LINKS	93
PRINCIPLE 21: EFFICIENCY AND EFFECTIVENESS	98
PRINCIPLE 22: COMMUNICATION PROCEDURES AND STANDARDS	101
PRINCIPLE 23: DISCLOSURE OF RULES, KEY PROCEDURES, AND MARKET DATA	103

Preface

Responding institution: [LuxCSD S.A.](#)

Jurisdiction(s) in which the FMI operates: [Luxembourg](#)

Authorities regulating, supervising or overseeing the FMI: [Commission de Surveillance du Secteur Financier \(CSSF\) and Banque Centrale du Luxembourg \(BcL\)](#)

Date of this disclosure: [31 December 2023](#)

This disclosure can also be found at www.luxcsd.com

For further information, please contact: CSS-ClientDueDiligence@clearstream.com

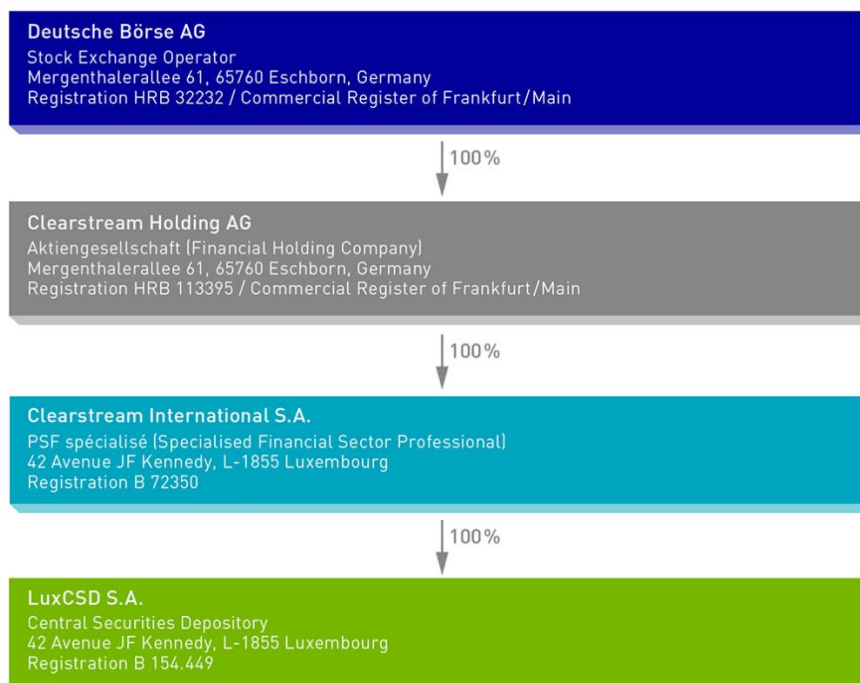
General background on the FMI

General description of the FMI and the markets it serves

LuxCSD S.A. (LuxCSD) was incorporated in July 2010 and is fully owned by Clearstream International S.A. (CI). As a CSD, LuxCSD provides services for settlement in EUR central bank money in TARGET2-Securities (T2S) as well as issuing and custody services for domestic and international securities (both as issuer CSD and as investor CSD) in the Grand Duchy of Luxembourg and abroad.

General organisation of the FMI

Shareholding structure of Clearstream group



Together with Clearstream International S.A., the ICSD Clearstream Banking S.A. (CBL) and the German CSD Clearstream Banking AG (CBF), LuxCSD form part of Clearstream group (hereinafter "Clearstream"). LuxCSD is highly integrated into the structure of Clearstream within Deutsche Börse Group.

Governance structure of LuxCSD

LuxCSD's governance structure is composed of a Board of Directors of the company and an Executive Committee that is in charge of the daily management (Comité Exécutif, referred to as "ComEx"). As at 31 December 2023, the company's Board of Directors and Executive Committee stand as follows:

Board of Directors: Jens Hachmeister (Chairperson), Denise Voss (Vice Chairperson), Marco Caligaris, Semra Kelles, Frédéric Perard

Executive Committee (Comité Exécutif, ComEx): Marco Caligaris (Chief Executive Officer), Carolyn Linnevers (Deputy CEO), and as at 30 January 2024 Gerd Riss (CSD Services)

Executive summary

LuxCSD provides Luxembourg's financial community with issuing and central bank settlement as well as custody services for a wide range of securities with a focus on T2S markets. LuxCSD offers custodians and distributors across Europe custody and added value services built on a highly efficient settlement process with access to many counterparties and as such contributes to the safety and efficiency of the financial market. It offers an exhaustive suite of connectivity to its participants and providers to access its platform.

LuxCSD discloses information about its governance structure publicly via the [Company Governance](#) section of its website. Information disclosed in this section includes:

- The company's [shareholder structure](#);
- The names and titles of the members of its [Board of Directors](#);
- The names and titles of its [Comité Exécutif](#) members;
- The roles and functioning of [LuxCSD committees](#).

Since April 2020, LuxCSD is a licensed CSD under CSDR in Luxembourg. LuxCSD is supervised by the CSSF and must comply with the financial, legal, regulatory and statutory reporting requirements as specified inter alia in the CSDR and the CSSF circulars. LuxCSD has also the status of a Securities Settlement System (SSS) and is supervised by the Central Bank of Luxembourg.

Risk management is an elementary component of the management and control of LuxCSD, effective and efficient risk management is fundamental to safeguarding its interests, both in terms of corporate goals and continued existence. The risk management policy documents LuxCSD's enterprise-wide risk management concept by describing the risk management framework in terms of processes, roles and responsibilities applicable to all staff and organisational units of the company, including the outsourced activities of LuxCSD. LuxCSD has developed its own corporate risk structure and distinguishes between operational, business and project risk. The exposure to financial risk is not significant in the case of LuxCSD.

LuxCSD has Default Management Process (DMP) rules and procedures in place, which define the circumstances under which a participant of LuxCSD is considered to be in default. Referring to the products and services offered, LuxCSD defines two types of default, general and contractual default. In order to identify a customer's default and classify it in accordance with the above-mentioned default types, LuxCSD has established early warning indicators (EWI) as an integral part of its DMP.

LuxCSD's Business Continuity Management (BCM) policy states that in case of business interruption, operations must be resumed within appropriate time scales in order to:

- Safeguard LuxCSD from significant losses, maintain revenue generation and shareholder value;
- Maintain participant confidence, market stability and liquidity and minimise systemic risk;
- Maintain management control, fulfil contractual obligations and regulatory compliance.

Summary of the major changes since the last update of disclosure

There have been the following main changes since the disclosure framework of 31 December 2021:

- 1 February 2022: Implementation of CSDR settlement discipline regime and related [regulatory reporting](#) as well as public disclosure of LuxCSD's settlement fails report;
- 31 March 2022: Termination of LuxCSD's LEI service and the company's role as Local Operating Unit;
- 2022/2023: Enhancement of service offering in T2S by adding the following markets within the scope of LuxCSD's CSD link with CBF: Eurobonds, Denmark and Finland;
- 2023: Appointment of new chairman and two new members to the Board of Directors.

List of publicly available sources

General website	www.luxcsd.com
General Terms and Conditions	https://www.luxcsd.com/luxcsd-en/keydocuments/general-terms-and-conditions
Client Handbook	https://www.luxcsd.com/luxcsd-en/keydocuments/client-handbook
Fee schedule	https://www.luxcsd.com/luxcsd-en/keydocuments/fee-schedule
Information about governance	https://www.luxcsd.com/luxcsd-en/about-luxcsd/companygovernance
Information on remuneration	https://www.luxcsd.com/luxcsd-en/about-luxcsd/companygovernance/companygovernance/luxcsd-committees/remunerationcommittee
Market Coverage section	https://www.luxcsd.com/luxcsd-en/products-and-services/market-coverage
Default Management Process	https://www.luxcsd.com/luxcsd-en/strategy-and-initiatives/asset-safety/clearstream-default-management
Becoming a LuxCSD client, Client and Access Acceptance Policy	https://www.luxcsd.com/luxcsd-en/about-luxcsd/becoming-a-luxcsd-client
CSDR Article 38 disclosure document	https://www.luxcsd.com/luxcsd-en/strategy-and-initiatives/asset-safety/csd-article-38-disclosure
Gender Diversity Policy	https://www.luxcsd.com/luxcsd-en/about-luxcsd/companygovernance/gender-diversity

List of abbreviations

This list is intended for information purposes only and is designed to help readers to understand the terminology used by LuxCSD in this document. In some cases, the way in which the terms are used in LuxCSD may differ from how the terms may be applied in another context. The descriptions given are not to be considered as legally binding definitions of the terminology used. LuxCSD gratefully acknowledges that some definitions given here are based on those used by the Group of Thirty, the International Society of Securities Administrators (ISSA), the European Central Bank (ECB) and in other market publications.

Abbreviation	Explanation
AMI-SeCo	Advisory Group on Market Infrastructures for Securities and Collateral; group that counsels the Eurosystem on issues related to the clearing and settlement of securities and to collateral management. The advisory group is composed of market participants (banks active in the EU, CCPs, CSDs and national central banks) and chaired by the ECB .
AML	Anti-money laundering
BCL	Banque centrale du Luxembourg
BCM	Business continuity management; all of the organisational, technical and staffing measures employed in order to ensure continuation of core business activities in the immediate aftermath of a crisis; and gradually ensure the continued operation of all business activities in the event of sustained and severe disruption.
BIA	Business impact assessment
BRRD	Bank Recovery and Resolution Recovery Directive; Directive 2014/59/EU Directive 2014/59/EU of the European Parliament and of the Council establishing a harmonised framework for the recovery and resolution of credit institutions and investment firms.
CAAP	Client and Access Acceptance Policy; set up by LuxCSD in accordance with the requirements of the CSDR and DR (EU) 2017/392 to support the management of the access to the company's SSS . The policy explains the approach adopted by CBL , CBF and LuxCSD to comply with the aforementioned requirements and provides guidance for the analysis and subsequent actions to be taken in order to identify, measure, monitor, manage and enable reporting on the risks incurred by CBF, CBL and LuxCSD and/or their customers and other participants.
CBF	Clearstream Banking AG, Frankfurt
CBL	Clearstream Banking S.A., Luxembourg
CCO	Chief Compliance Officer
CCP	Central counterparty; an entity that interposes itself, in one or more markets, between the counterparties to the contracts traded, becoming the buyer to every seller and the seller to every buyer and thereby guaranteeing the performance of open contracts.
CDM	Clearstream Default Management; unit within Clearstream group that maintains and continuously improves the default management process in order to prepare for a crisis situation in the most efficient manner.
CeBM	Central bank money; liabilities of a central bank, in the form of either banknotes or bank deposits held at a central bank, which can be used for settlement purposes.
CEO	Chief Executive Officer
CERT	Computer Emergency Response Team; central unit at Deutsche Börse Group for all cyber situational analysis (pro-active, detective and forensic). This includes information security (IS) incident management, IS monitoring, threat and vulnerability management and internet watch to identify new vulnerabilities.
CISO	Chief Information Security Officer
ComEx	Comité Exécutif (Executive Committee) of LuxCSD S.A.; in charge of the daily management of the company and the representation towards third parties in relation to such management; reports to the Board of Directors at least on a quarterly basis and on an ad hoc basis as required. It further proposes strategies and budgets to the Board of Directors.

COSO	Committee of Sponsoring Organisations of the Treadway Commission; voluntary private sector organisation in the U.S.A. that aims to help improve the quality of financial reporting through ethical conduct, effective internal controls and good corporate governance. COSO is supported by the most important U.S. organisations for control in finance and accounting.
CRC	Clearstream Risk Committee; internal committee at Clearstream group that steers risk, compliance and cyber security matters in order to foster an effective first line of defence across all Clearstream legal entities. The CRC plays an important role in identifying, mitigating and monitoring the company's risk exposures.
CRO	Chief Risk Officer
CRR	Capital Requirements Regulation; Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012. The CRR/CRD IV package transposes the global standards on bank capital (the Basel III agreement) into EU law.
CSD	Central securities depository; an entity that enables securities transactions to be processed and settled by book entry, provides custody services (for instance, the administration of corporate actions and redemptions), and plays an active role in ensuring the integrity of securities issues. Securities can be held in a physical (but immobilised) form or in a dematerialised form (that is, as electronic records).
CSDR	Central Securities Depository Regulation; Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014, as amended on improving securities settlement in the European Union and on central securities depositories, as amended.
CSSF	Commission de Surveillance du Secteur Financier
DCA	Dedicated cash account
DCP	Direct connected participant
DR 2017/392	Commission Delegated Regulation (EU) 2017/392 of 11 November 2016 supplementing Regulation (EU) No 909/2014 of the European Parliament and of the Council with regard to regulatory technical standards on authorisation, supervisory and operational requirements for central securities depositories
DvP	Delivery versus payment; the irrevocable exchange of securities (the delivery) and cash value (the payment) to settle a transaction. True DvP involves the simultaneous exchange of securities and cash.
EaR	Earnings at risk
EBA	European Banking Authority; based in Paris, has the aim of creating a common legal framework for the national banking supervisory authorities in the EU. Like ESMA and the European Insurance and Occupational Pensions Authority (EIOPA), EBA is part of the European System of Financial Supervision (ESFS).
EBIT	Earnings before interest and taxes
ECB	European Central Bank
ECSDA	European Central Securities Depositories Association
EPTF	European Post Trade Forum
ESMA	European Securities and Markets Authority; based in Paris, ESMA aims to create a uniform legal framework for the national supervisory authorities in the EU. It is one of the European Supervisory Authorities established on 1 January 2011, alongside EBA and the European Insurance and Occupational Pensions Authority (EIOPA).
EWI	Early warning indicator; parameter monitored within LuxCSD to identify triggers or events, which could potentially change the credit standing of a participant and as such jeopardise the fulfilment of contractual obligations to LuxCSD (i.e. scheduled repayment obligations) or even lead to default of a participant.
FATCA	U.S. Foreign Account Tax Compliance Act
FATF	Financial Action Task Force; inter-governmental body based in Paris. The FATF sets international standards that aim to prevent money laundering and terrorist financing activities and to ensure national authorities can effectively go after illicit funds linked to drugs trafficking, the illicit arms trade, cyber fraud and other serious crimes. More than 200 countries and jurisdictions have committed to implement the FATF's standards.

FMI	Financial market infrastructure; a multilateral system among participating institutions, including the operator of the system, used for the purposes of clearing, settling or recording payments, securities, derivatives or other financial transactions. Examples: central counterparty (CCP), central securities depository (CSD), clearing house, payment system, securities settlement system (SSS), trade repository (TR).
FoP	Free of payment; term for a securities transaction in which only securities are delivered but no counter value is paid.
GRM	Group Risk Management; central function at Deutsche Börse Group
GTCs	General Terms and Conditions
HQLA	High-quality liquid asset
ICMA	International Capital Market Association; created in July 2005 by the merger of the International Securities Market Association (ISMA) and the International Primary Market Association (IPMA). ICMA is an organisation with a broad franchise across the primary and secondary international capital market. This association has the mandate and the means to represent the interests of the investment banking industry in maintaining and developing an efficient and cost effective international market for capital.
ICMSA	International Capital Market Services Association
ICP	Indirect connected participant
ICS	<ol style="list-style-type: none"> 1. Internal control system 2. Individual client segregation
ICSD	International securities depository
IRRs	Internal rules and regulations
IS	Information security
ISO	International Organisation for Standardisation; international federation of standardisation bodies for various industries that seeks to set common international standards in a variety of fields.
ISSA	International Securities Services Association
KPI	Key performance indicator
KYC	Know your customer
L/C	Letter of credit
LPA	LuxCSD Principal Agent; appointed by the Issuer to provide the link between the Issuer and LuxCSD ensuring timely and accurate processing of the securities.
LuxCMA	Luxembourg Capital Markets Association
MCWG	Material Change Working Group
NTS	Night-time settlement
OCS	Omnibus client segregation
PFMI	Principles for Financial Market Infrastructures
PRIMA	Place of Relevant Intermediary Approach; defined by the Hague convention of 13 December 2002 providing that the law governing a cross-border securities transaction will be the law of the jurisdiction where the intermediary maintaining the account to which the securities are credited is located.
PSS	Physical security standard
QLR	Qualifying liquidity resource
RTGS	Real-time gross settlement; processing and settlement on a transaction-by-transaction basis in real time.
RTO	Recovery time objective; time period following a disruptive incident within which products, services or activities must be resumed or resources must be recovered in order to ensure fulfilment of contractual obligations.
RTS	<ol style="list-style-type: none"> 1. Real-time settlement 2. Regulatory technical standard
SFD	Settlement Finality Directive; Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems.

SIEM	Security Incident and Event Monitoring, used to monitor for suspicious or malicious activities on IT assets at Deutsche Börse Group.
SRD II	Shareholder Rights Directive II; Directive (EU) 2017/828 of the European Parliament and of the Council of 17 May 2017 amending Directive 2007/36/EC as regards the encouragement of long-term shareholder engagement.
SSS	Securities settlement system; a system which allows the transfer of securities, either free of payment (FoP) or against payment (DvP).
STP	Straight-through processing; the swift, safe and efficient processing of a securities transaction, from order placement to delivery versus payment (DvP) and to the subsequent safe custody of the securities.
Swift	Society for Worldwide Inter-Financial Telecommunications
T2S	TARGET2-Securities; the Eurosystem's single technical platform enabling CSDs and national central banks to provide core, borderless and neutral securities settlement services in CeBM in Europe.
U2A	User to application
UCoD	Unauthorised creation and or deletion of securities

Principle 1: Legal basis

An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.

Key consideration 1

The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.

Material aspects of LuxCSD's activities and relevant regulatory framework

LuxCSD is a central securities depository ("CSD") located in and operating from its registered office in Luxembourg, Grand Duchy of Luxembourg.

LuxCSD is authorized in accordance with Article 16 of Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories and amending Directives 98/26/EC and 2014/65/EU and Regulation (EU) No 236/2012, as amended (together with all related annexes, hereinafter referred to as "CSDR").

LuxCSD is:

- supervised by the Commission de Surveillance du Secteur Financier ("CSSF") in its capacity as designated competent authority in accordance with Article 11 of CSDR and the law of 6 June 2018 on CSDR (https://www.cssf.lu/wp-content/uploads/L_060618_CSD.pdf); and
- as operator of a securities settlement system ("SSS"), subject to the oversight supervision of the Banque centrale du Luxembourg ("BcL") in accordance with the article 127 (2) and (5) of the Treaty of the Functioning of the European Union and Article 110 of the law 10 November 2009 on payment services, as amended.

The different regulatory statuses of LuxCSD can also be found in the following databases maintained by:

- a. ESMA:
 - (i) for the CSD register, including the list of the authorised services (hereinafter referred to as the "CSD Register"): https://www.esma.europa.eu/sites/default/files/library/esma70-155-11635_csd_register_-_art_21.pdf
 - (ii) for the list of the designated payment and SSSs: https://www.esma.europa.eu/sites/default/files/library/sfd_designated_authorities_and_systems.xlsx
- b. European Central Bank for the list of the eligible SSSs for use in Eurosystem's credit operations: <https://www.ecb.europa.eu/paym/coll/coll/eligiblesss/html/index.en.html>
- c. CSSF for the list of the supervised CSDs: <https://edesk.apps.cssf.lu/search-entities/search?&st=advanced&entType=DCT>

- d. BcL for the list of the domestic payment systems and SSSs: https://www.bcl.lu/en/payment-systems/systemes_domestiques/index.html

The scope of the activities of LuxCSD is delimited by the scope of its authorization (limited scope license). These services are listed in the CSD Register and are categorized as follows:

- the core CSD services of the Section A of the CSDR Annex, such as the settlement of transactions in domestic and foreign securities, notary services (initial recording of securities in a book-entry system) as well as central maintenance services (providing and maintaining securities accounts at the top-tier level); and
- the added-value and non-banking type ancillary services of the Section B of the CSDR Annex, such as, among others, — CSD link and asset servicing.

Accordingly, the material aspects of LuxCSD's activities are:

- (i) Initial recording of the financial instruments confided to and held with LuxCSD;
- (ii) Registration of eligible financial instruments immobilized or in dematerialized form for book-entry transfer;
- (iii) Recording and servicing rights and interests in financial instruments under deposit and sub-deposit;
- (iv) Operating an SSS ensuring the finality of the settlement;
- (v) Integrity of the issues.

Legal basis for the material aspects of LuxCSD's activities

The Grand Duchy of Luxembourg is the principal jurisdiction of LuxCSD's operations.

The corporate structure and governance of LuxCSD as a public limited company, LuxCSD's contractual terms of participation and services (including liability), the deposit and circulation of securities, and LuxCSD's recovery, resolution, insolvency and winding-down proceedings are governed by Luxembourg Law.

The European Union's legal framework as well as the national laws, regulations and circulars ("Luxembourg Law") applicable to the financial services sector constitute LuxCSD's key legal basis relevant for the operations of LuxCSD as CSD and in particular:

- CSDR and its delegated regulations, such as Commission Delegated Regulation EU 2017/390 on certain prudential requirements for CSDs and designated credit institutions offering banking-type ancillary services, Commission Delegated Regulation EU 2017/392 on authorization, supervisory and operational requirements for CSDs ("**RTS 2017/392**") and Commission Delegated Regulation EU 2018/1229 on settlement discipline, as amended ("**RTS SDR**");
- from Articles 1915 to 1949 of the civil code, hereinafter referred to as the **Civil Code**;
- Law of 1 August 2001 on the circulation of the securities and other fungibles instruments as amended (*loi modifiée du 1er août 2001 concernant la circulation des titres et d'autres instruments fungibles*), hereinafter referred to as the **Securities Law**;
- Law of 5 April 1993 on the financial sector as amended (*loi modifiée du 5 avril 1993 relative au secteur financier*), hereinafter referred to as the **Banking Act**;
- Law of 10 November 2009 on payment services, as amended, on the activity of electronic money institution and settlement finality in payment and securities settlement systems as amended (*loi modifiée du 10 novembre 2009 relative aux services de paiement, à l'activité d'établissement de monnaie électronique et au caractère définitif du règlement dans les systèmes de paiement et les*

systèmes de règlement des opérations sur titres), hereinafter referred to as the **Payment Services Law**;

- Law of 6 April 2013 on the dematerialisation of the securities, as amended (*loi modifiée du 6 avril 2013 relative aux titres dématérialisés*), hereinafter referred to as the **Dematerialisation Law**;
- Law of 28 July 2014 of immobilisation of the bearer shares (*loi du 28 juillet 2014 relative à l'immobilisation des actions et parts au porteur*), hereinafter referred to as the **Immobilisation Law**;
- Law of 3 September 1996 concerning the involuntary dispossession of bearer securities as amended (*loi modifiée du 3 septembre 1996 concernant la dépossession involontaire de titres au porteur*).

The rules for the participation in LuxCSD's and applicable to the CSD services are set forth in the following main governing documents:

- **General Terms and Conditions** ("GTCs"): to be accepted by LuxCSD's participants.
- **Client Handbook**: sets out the technical and operational terms and conditions applicable to the services
- **Fee Schedule**: sets forth the fees applicable to the services and products of LuxCSD to its participants;
- **Market Link Guides**: present key features of LuxCSD's CSD links
- **Disclosure Guides**: compile the mandatory disclosure requirements, available with each Market Link Guide

The above-mentioned documentation is publicly available and published on LuxCSD's website in the "Key Documents" section.

LuxCSD's main contractual documentation with its participants includes both explicit clauses of choice of law and jurisdiction designating respectively Luxembourg Law as the applicable law and the courts of Luxembourg-city as competent forum for the disputes arising from and in relation to its services.

Where LuxCSD conducts an activity in another jurisdiction or has to elect another governing law, such information is made available in the relevant section of its website, such as for the CSD links (within the meaning of CSDR, referred hereinafter as "**CSD Links**"). The relevant domestic laws and regulations governing the custody and the settlement are described in the "Market Coverage" section of LuxCSD's website and include the Market Link Guide, Market Taxation Guide and Disclosure Requirements (please refer to the following link: <https://www.luxcsd.com/luxcsd-en/products-and-services/market-coverage>).

The CSD Links are generally governed by contractual arrangements subject to the law and rules of the receiving CSD² (for the direct links) or the intermediary operating the direct links or involved in the indirect links (the "**Intermediary**") in accordance with Article 85 of RTS 2017/392 (referred hereto as "**Links Agreements**").

The Link Agreements set forth, among other things, the scope of the services, the entitlement and the nature of the rights in book-entry financial instruments deposited in LuxCSD's accounts with such Intermediary or receiving CSD, the liability rules as well as the rules of protection of the assets deposited, the segregation rules, the termination and the choices of law and jurisdiction.

For the purpose of the assessment of the CSD Links and the Links Agreements, legal opinions are requested annually. The purpose of such reviews is to verify whether the conditions applicable in the receiving jurisdictions are at least equivalent to the conditions applicable in Luxembourg to achieve the same level of protection offered by LuxCSD. These opinions should generally cover the following main legal topics:

- (i) the capacity and authority of the receiving CSD to enter into the Links Agreements;
- (ii) the validity and enforceability of the relevant Links Agreements;
- (iii) the nature of entitlement (i.e. confirming the recognition of the rights and interest of LuxCSD in respect of the financial instruments sub-deposited on behalf of its participants) and the law applicable to proprietary aspects;
- (iv) liability standards;
- (v) rules on the enforceability of netting, if applicable; and
- (vii) confirmation that there is no upper tier attachment.

In addition, the legal opinions shall also address the other legal aspects listed in Article 84 (1), last paragraph of RTS 2017/392, such as confirmations of the absence of encumbrances, liens, pledges and set-off rights on the securities deposited abroad; the impact of insolvency proceedings opened against the receiving CSD/depository regarding the segregation requirements, settlement finality; as well as procedures and time limits to claim the securities in the relevant jurisdiction.

Finally, LuxCSD entered into the T2S Framework Agreement with the Eurosystem for the participation in T2S and the outsourcing of its settlement of securities. This agreement governed by German law sets out the rights and obligations of the Eurosystem and each contracting CSD and covers the operation of T2S.

The terms of the T2S Framework Agreement have been subject to a legal assessment to determine any potential legal risks and gaps with respect to LuxCSD's applicable legal framework. Accordingly, corresponding rules dedicated to the T2S settlement have been included in the relevant LuxCSD's governing documents to ensure a level of certainty for the settlement activities.

Key consideration 2

An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.

LuxCSD has set up clear and understandable rules, procedures and contracts in accordance with Article 43 of CSDR.

LuxCSD's rules and contracts are published electronically in English-language version on LuxCSD's website (see list in key consideration 1). In order to ensure that LuxCSD's participation documentation remains consistent with relevant laws and regulations, the company generally reviews it on a regular basis and when:

- i. An update of a key law or regulation applicable to the financial services industry is relevant for LuxCSD and/or its participants;
- ii. The implementation of remedial measures is needed due to a claim affecting a participant or caused by a provision of the governing documents;
- iii. Typos or inconsistencies are detected in the governing documents and/or specific agreements;
- iv. A change of laws or regulations in the local markets shall be reflected;
- v. A court order or a decision from a regulator is taken in favour of the clarification of certain provisions of the governing documents;
- vi. There is a global enhancement of LuxCSD's technical system (such as change of deadlines);
- vii. (vii) There are changes of the professional standards at the level of the ECSDA, ICMA or, ICMSA, to be reflected in the governing documents and/or the specific agreements;
- viii. Major projects need to be implemented;
- ix. Any other events occur that the control functions (Audit, Risk, Compliance) and/or the legal department consider as essential to be incorporated in the customer documentation.

The review is carried out by LuxCSD's control functions teams and the legal department on a continuous basis. In addition, the company involves, whenever appropriate, independent external legal counsels to assist in the review and drafting of the documentation and/or updates.

In addition, LuxCSD's core governing document (such as the GTCs) and any amendments are reviewed, discussed and approved by the various competent internal committees and the management body of LuxCSD. Once the corporate approval is obtained, the document is communicated to the participants. The approved amendments are notified in writing by LuxCSD to its participants either by mail or by email prior to their effective date and are published on the company's website <https://www.luxcsd.com/>.

Key consideration 3

An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.

LuxCSD articulates the legal basis for material aspects of its activities by using well-reasoned legal opinions or analyses, carried out – where reasonably required – with the support of independent law firms of good reputation. Please see key consideration 1.

The rights and interest resulting from the participation to LuxCSD's system are addressed in the documentation supporting LuxCSD's activities and the Luxembourg legal and regulatory framework.

The contractual framework applicable to LuxCSD's settlement services reflects (i) the finality rules applicable by LuxCSD's system to the transfer orders, as prescribed by the directive 98/26/EC on settlement finality in payment and securities settlement systems ("Settlement Finality Directive" or "SFD") and the Payment Services Law, and (ii) the technical standards of the CSDR and RTS SDR.

LuxCSD's rules and their enforceability are tested from time to time during self-assessment review with the regulators which could be accompanied by legal opinions issued for such specific purposes by external lawyers.

Furthermore, LuxCSD maintains an inventory of the laws and regulations, as well as the main rules relevant for the material aspects of its activities and main business areas in the various markets to ensure proper articulation with the applicable legal framework. This inventory is set up and reviewed at least on an annual basis by the compliance function.

Key consideration 4

An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.

LuxCSD's operations are mainly located within the territory of the Grand duchy of Luxembourg. Its rules, procedures and contracts are governed by and are enforceable in accordance with Luxembourg Law. Please refer in this respect to the explanations provided under key considerations 1 and 2.

Regarding the high degree of certainty of its contractual documentation, LuxCSD's GTCs have a severability clause (Article 58) in order to maintain the legal substance of the relationship with the participants in accordance with Luxembourg contractual law practice should an article of a contract be declared invalid, illegal or incapable of being enforced.

For the settlement of participants' transactions, a high degree of certainty is achieved by the recognition of the finality of the settlement whereby transactions having reached the moment of irrevocability and finality cannot be revoked, respectively unilaterally (when the moment of irrevocability is reached) or by any third party (when the moment of finality is reached).

Reversals and stays in the execution of certain actions could however still be processed. They generally result, other than the contractual rights of LuxCSD set forth in its governing documentation, from (i) the default of a counterparty (for instance, in case of insolvency/liquidation); or (ii) court order; or (iii) resolution authorities' decisions under BRRD or equivalent laws; or (iv) laws, resolutions, market practices applicable in certain jurisdictions (in particular for those jurisdictions not recognising the finality of the settlement).

Key consideration 5

An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.

LuxCSD conducts business across jurisdictions, in particular:

- when it grants access to its system to participants or issuers incorporated under and subject to the laws and regulations of another jurisdiction;
- for the custody and settlement of securities held via a CSD link.

For such purposes, LuxCSD's documentation clearly outlines a choice of law for each aspect of its operations. The access to LuxCSD's system is subject to the "account agreement"³ or LuxCSD's governing documentation applicable to the securities accounts of LuxCSD's participants and their deposited securities. The law chosen by LuxCSD to govern this legal relationship and its services is Luxembourg Law (see also key considerations 1 and 4).

Accordingly, the nature of the entitlement over the deposited securities held with LuxCSD shall be determined by Luxembourg conflict-of-laws rules, as Luxembourg is the "place of the relevant intermediary" (or "PRIMA") and the jurisdiction of the "system" designated by the Banque centrale du Luxembourg as securities settlement system in accordance with SFD and Article 109 and ff of the Payment Services Law.

Regarding the identification and the mitigation of the legal risks arising from a potential conflict of laws for the custody and settlement activities carried out abroad via the CSD Links, please refer to the answer provided under Key consideration 1. The Links Agreements are generally not governed by Luxembourg Law, but by the law applicable to the receiving CSD: They are reviewed internally and submitted to the assessment of an external/local law firm qualified in the relevant jurisdiction to provide comments and issue legal opinions covering, among other things, the validity of the choice of law and jurisdiction and the identification of potential conflict of laws.

With such assessment, LuxCSD is aware of the applicable constraints on its abilities to choose the law that will govern its activities and when there is a difference in the substantive laws of the relevant jurisdictions. LuxCSD also informs its participants by publishing the main legal features applicable in these jurisdictions, in particular for the CSD Links (in the Market Link Guides), in order to enable them to assess their own risks by using such services in accordance with Article 34.5 of CSDR.

Principle 2: Governance

An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.

Key consideration 1

An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations.

LuxCSD provides Luxembourg's financial community with services for settlement in EUR central bank money as well as with issuing and custody services for a wide variety of domestic and international securities. In 2020, LuxCSD received its licence under the Central Securities Depositories Regulation (CSDR), aiming to increase the safety and efficiency of securities settlement and settlement infrastructures in the EU.

These objectives are anchored in Article 3 of LuxCSD's Articles of Association ("Articles"), which provides that the company's object is the custody, safekeeping, administration, clearing and settlement of securities and the provision of related financial services in the Grand Duchy of Luxembourg and abroad, acting as a central securities depository (CSD), and operating a securities settlement system under Luxembourg Law. It shall, in particular, a) enable securities transactions to be processed and settled by book entry, b) provide custodial services, for example, the administration of corporate actions and redemptions; and c) play an active role in ensuring the integrity of issues and securities.

As a CSD, LuxCSD offers custodian banks and other CSDs across Europe excellent custody and value-added services as well as a highly efficient settlement process with access to many counterparties. Settlement of securities transactions in central bank money reduces risk for financial market participants. LuxCSD fully supports dematerialised securities as these significantly reduce inefficiency, risk and cost for the financial services sector. In addition, LuxCSD advises issuers who are in the process of dematerialising their physical securities.

In order to support the above-mentioned objectives, LuxCSD has developed a business strategy that is guided by the following principles:

- LuxCSD will play a supporting role in market integration;
- LuxCSD will maintain a constant client focus as the unifying value while leveraging existing service offerings;
- LuxCSD will promote the establishment of services for new asset classes and markets, especially issuer activities.

Specific developments with the aim of progressing these goals are undertaken based on outsourcing arrangements, generally with Clearstream.

In this manner, LuxCSD strives to continuously develop new best-in-class products and services, enhance the efficiency of its operations and reduce overall processing costs. Specific developments with the aim of achieving its strategic goals are documented through a dedicated project management structure.

Furthermore, a systematic process is set up to ensure a comprehensive detection of quality deficits, facilitating their resolution.

LuxCSD's business strategy outlined above is accompanied by a comprehensive risk strategy to ensure that objectives are met in a secure and efficient manner and by respecting an appropriate risk appetite, the latter being defined as risk limitation, which protects and ensures continuity of operations. LuxCSD has developed a corporate risk structure distinguishing between operational, financial, business, pension, as well as winding down and restructuring risk (see [Principle 3](#) for details). For each of these five risk types, a risk appetite, that is, a maximum limit, is defined and reflected in the respective requirements for risk management, control and limitation.

Monitoring and controls of the above objectives are performed primarily by the Comité Exécutif (hereinafter referred to as the ComEx) of LuxCSD. The ComEx is itself supervised by LuxCSD's Board of Directors. The Risk Committee of the Board of Directors advises the Board on LuxCSD's overall current and future risk appetite, risk tolerance and risk strategy. In addition, LuxCSD's User Committee submits non-binding opinions to the Board of Directors and advises on key arrangements that may affect its members pursuant to the CSDR.

Furthermore, the following tools are used to ensure the quality of operations, respectively of the operations that are outsourced to other Deutsche Börse Group entities:

- i) Key performance indicators (KPIs): quantified, objective view on service delivery of operations, for example on effectiveness, efficiency, operational quality, and operational risk;
- ii) Key risk indicators (KRIs): early warning system for operational risk, periodically collected and analysed to observe the trend and, if necessary, initiate mitigating measures;
- iii) Report on the performance of the settlement system and committed service level targets.

Continuous documentation and reporting of the said indicators, tools and processes are key for LuxCSD to monitor and – wherever necessary – adjust its business and risk strategies or individual objectives. Please refer to [Principle 21](#) for more details on the mechanisms applied for the review of LuxCSD's efficiency and effectiveness.

Key consideration 2

An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.

LuxCSD's governance arrangements as well as the rules governing its activities are described in detail in a number of documents which are publicly accessible to all stakeholders on its website. These documents are reviewed regularly and include:

- Articles of Association;
- Internal Rules and Regulations for the Board of Directors;
- Internal Rules and Regulations for the Comité Exécutif;
- Terms of Reference of the User Committee;
- Internal Control Framework;
- Gender Diversity Policy.

To ensure proper conduct and compliance with regulatory and legal provisions throughout the entire company, LuxCSD has adopted further governance arrangements, such as the following:

- Deutsche Börse Group’s framework to manage conflicts of interest aims at addressing all types of – actual or potential – conflicts of interest within the Group, including (i) corporate conflicts of interests, (ii) personal conflicts of interests, as well as (iii) specific conflict situations, see [key consideration 3](#) for more details;
- Whistle-blower policy: provides guidance to employees for reporting non-compliant behaviour to an external ombudsman. The said policy specifies the types of behaviour and situations that can be reported and describes the protection and confidentiality framework offered to whistle-blowers; see [key consideration 3](#) for more details.

With regard to governance arrangements that may have a direct impact on LuxCSD’s clients and participants, the company’s Client Handbook provides an overview of the FMI, its organisation and operational procedures.

Governance Arrangements

As required by law, the Board of Directors is composed of a minimum of three members, each acting in an individual capacity. The Board of Directors, which is appointed by the General Meeting of Shareholders, is vested with the broadest powers to perform all acts of administration and disposition necessary or useful to accomplish the LuxCSD’s interests. Therefore, it administers the company and can delegate the day-to-day management to the ComEx. The ComEx determines and co-ordinates the day-to-day business of LuxCSD and also represents LuxCSD. The ComEx reports to the Board of Directors.

Currently, the composition of the Board of Directors of LuxCSD is as follows:

- Mr Jens Hachmeister, Chairperson, Clearstream Holding AG;
- Ms Denise Voss, Independent Director;
- Mr Marco Caligaris, LuxCSD S.A.;
- Ms Semra Kelles, Clearstream Banking AG;
- Mr Frédéric Perard, Independent Director.

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 LuxCSD’s Articles of Association expressly reserve to the General Meeting of Shareholders. In accordance with Article 60 of the law of 10 August 1915 on commercial companies (the “Companies’ Act”), the Board of Directors delegates the day-to-day management of the company as well as the representation of the company towards third parties in relation to such management to the ComEx.

The ComEx determines the daily management of the company in accordance with Article 10 of the Articles of Association and Article 7 (2) of the law of 5 April 1993 on the financial sector, as amended. The ComEx conducts a yearly assessment of the quality of the service offered by its providers in the framework of the Services Agreements. The ComEx is responsible for reporting to the Board of Directors at least on a quarterly basis and on an ad hoc basis as required by the business needs. It further proposes strategies and budgets to the Board of Directors. The ComEx shall have at least two (2) members, including the Chief Executive Officer. The ComEx has signatory authority for the company within the mandate given by the Board. For further information on the Board of Directors and ComEx’s tasks and responsibilities, see [key considerations 3 and 5](#).

In addition to the Board of Directors and the ComEx, LuxCSD has implemented an Audit Committee, a Remuneration Committee and a Risk Committee at the Board of Directors level, as well as a User Committee in accordance with the EU Central Securities Depositories Regulation (CSDR). For more information on the User Committee, please refer to [key consideration 7](#).

The internal rules and regulations (IRRs) are applicable to the Board of Directors and to the ComEx. The IRRs define the structure under which the Board of Directors and the ComEx respectively operate. They determine the terms of the corporate mandates at the level of the Board of Directors and the ComEx, and

define the main areas of responsibilities allocated to the managers of the company. They include (1) the role and composition of the Board of Directors and the committees (for example, sections 4 and 7 of the Board of Directors IRRs), (2) the daily management and senior management structure (for example, sections 5 and 6 of the Board of Directors IRRs), (3) the reporting lines between the ComEx and the Board of Directors (for example, section 6 of the Board of Directors IRRs), (4) the corporate status and organs (for example, section 2 of the Board of Directors IRRs), (5) procedures for the appointment of the Board of Directors and the ComEx (for example, sections 4 and 6 of the BoD IRRs for the Board of Directors). Processes for ensuring performance accountability are defined in the respective IRRs and also in internal policies. Furthermore, the design of the risk management and internal controls are defined in the corresponding risk management, internal audit and compliance policies/charters in order to provide clear and direct lines of responsibilities and accountability for key functions.

LuxCSD is accountable to (i) the company's shareholder, (ii) the Luxembourgish authorities and (iii) its participants pursuant to the provisions of its General Terms and Conditions (GTCs) and in accordance with the applicable provisions of Luxembourg corporate law:

- i) Shareholder: LuxCSD is wholly owned by Clearstream International S.A. (Luxembourg) which is owned by Clearstream Holding AG in Frankfurt (Germany), a wholly owned subsidiary of Deutsche Börse AG. Clearstream International S.A., as sole shareholder of LuxCSD, assumes all powers conferred to the General Meeting of Shareholders. The sole shareholder's decisions are recorded in a minutes' register held at the registered office.
- ii) Luxembourgish authorities: According to its authorization as a CSD in Luxembourg, LuxCSD is supervised by the Commission de Surveillance du Secteur Financier (CSSF) and complies with the applicable financial, legal, regulatory and statutory reporting requirements. As a securities settlement system (SSS), LuxCSD is overseen by BCL. These supervision and oversight relationships give rise to regular reports sent to authorities. Changes to the governance of LuxCSD are communicated to the authorities.
- iii) Participants: LuxCSD achieves accountability to its participants pursuant to the provisions of its GTCs. Accountability to participants is performed both by regular and ad hoc communication regarding any important decisions or changes in the products offered and the markets served by LuxCSD, and by approaching participants for the development of products and services. Specific services provided by LuxCSD (for example, for issuer and issuance agreements) are the object of the Specific Agreements.

Key Consideration 3

The roles and responsibilities of an FMI's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.

Please see [key consideration 2](#) for an introduction to the roles and responsibilities of LuxCSD Board of Directors and ComEx and how those are specified in LuxCSD's governing documents.

As the Articles do not expressly reserve specific power to the general meeting of the shareholders other than the power set out by the law in the Articles 67 to 70 of the Company Law and as there is no limitation in the Articles to the powers of the Board of Directors, the Board of Directors is entitled as per Article 53 of the Company Law to accomplish any act necessary or useful to realise the corporate objective.

The ComEx reports at least every quarter to the Board of Directors on the progress and foreseeable development of LuxCSD's business. In addition, the ComEx promptly passes to the Board of Directors any information on events likely to have an appreciable effect on the company's situation. In this context, the chairman of the Board of the Directors and the CEO maintain regular contact.

The permanent supervision and monitoring of the management of LuxCSD is incumbent on the Board of Directors, and it also appoints the members of the ComEx. The Board of Directors represents the company in legal proceedings either as plaintiff or as defendant. Writs served on behalf of or upon the company shall be validly served in the name of the company alone.

The Board of Directors regularly, at least once per year, assesses its efficiency. The results of the efficiency assessment are reported to LuxCSD's general meeting of shareholders. Furthermore, it assesses and approves the IRRs for both Board of Directors and ComEx in order to improve these rules and to verify whether they are complied with de facto.

How LuxCSD handles Board of Directors and ComEx members' conflicts of interest

LuxCSD has adopted Deutsche Börse Group's conflicts of interest framework, which is detailed within the group's Compliance Policy, and, more specifically, the Policy on Conflicts of Interest. The Policy aims to address all types of conflicts of interests that could arise, and has identified, among others, the following potential sources of conflicts:

- i) Corporate conflicts of interests: arising between Deutsche Börse Group (or a group entity, including LuxCSD) itself;
- ii) Personal conflicts of interests: originating from a source beyond the employee's professional obligations, and interfering the objectivity to make decisions or to participate in decision making processes in the course of professional obligations;
- iii) Specific conflict situations: examples might be misuse of information or misuse of relationships.

Article 4.13 of the IRRs for LuxCSD's Board of Directors details the procedure to identify, address and manage conflicts of interest with regard to respective board members.

In addition, a Conflict of Interests Register is set up and continuously maintained for each of Deutsche Börse Group's CSDs, including LuxCSD, to document and track potential and actual conflicts of interests. The Register is maintained by Group Compliance, who upon notification runs conflicts assessments and defines mitigating measures with the parties concerned by the (potential) conflict situation. The Chief Compliance Officer (CCO) of each CSD verifies on a regular basis the status of the potential or actual conflicts and that mitigation measures are enforced accordingly. LuxCSD's Chief Executive Officer (CEO) decides on the procedures to be followed and the measures to be adopted in order to manage conflicts of interest at the level of the company's Board of Directors. The CEO takes their decision in close cooperation with Group Compliance supported by LuxCSD's CCO.

LuxCSD currently runs a bi-annual survey of related parties, where the members of the LuxCSD Board of Directors and ComEx must disclose whether they or close members of their family have been related to any other entity of Deutsche Börse Group. Material legal transactions between companies within Deutsche Börse Group and members of the company's ComEx (including related parties or related enterprises) require the prior consent of the Board of Directors.

Role and responsibilities of LuxCSD Board of Directors committees

The Board of Directors has established three committees to provide the board with critical assessments with respect to the organisation and operation of LuxCSD in order to enable the Board members to fulfil their supervisory mission and to take on their responsibility pursuant to the applicable national and European laws, as well as the applicable CSSF circulars. These Board of Directors committees are:

- i) Risk Committee: advising the Board of Directors on the overall current and future risk tolerance and strategy of LuxCSD;
- ii) Audit Committee: assisting the Board of Directors with the fulfilment of its supervisory mission related to reporting and accounting, internal audit, and external audit; and
- iii) Remuneration Committee: assisting the Board of Directors in any tasks in relation to the remuneration of employees, remuneration policy and remuneration system.

The Board of Directors committee membership is as follows:

- i) The Audit Committee is composed of three non-executive members of the Board of Directors.
- ii) The Risk Committee is composed of members of the Board of Directors and, as appropriate, other external experts.
- iii) The Remuneration Committee is composed of at least two non-executive members of the Board of Directors.

To ensure separation between the committees, the chairpersons as well as most of their members are different.

As mentioned in [key consideration 2](#), LuxCSD has also established a User Committee, gathering participants and issuers of LuxCSD's SSS, in charge of advising the management body as laid down in Article 28 of the CSDR. See [key consideration 7](#) for more details.

Review of overall Board of Directors and ComEx efficiency and performance of individual members of Board and ComEx

Prior to any appointment, the Board of Directors conducts an assessment of the suitability of the potential members of the Board of Directors and the ComEx based on a set of criteria including knowledge, skills and experience, reputation, honesty and integrity and independence. Re-assessment is also performed whenever appropriate and at least every two years.

Key consideration 4

The board should contain suitable members with the appropriate skills and incentives to fulfil its multiple roles. This typically requires the inclusion of non-executive board member(s).

Members of LuxCSD Board of Directors and ComEx are subject to a thorough suitability assessment to ensure that they fulfil the criteria regarding skills and incentives. The guiding principles for such assessment are set out in the following documents:

- Deutsche Börse Group's Suitability Assessment Policy;
- Side letter to Deutsche Börse Group's Suitability Assessment Policy (adopted by LuxCSD; provides job descriptions for Board of Directors and ComEx members);
- Remuneration Policy of LuxCSD.

The Suitability Assessment Policy is reviewed by the Board of Directors at least once a year to check whether it is appropriate and complies with the legal and regulatory requirements applying to LuxCSD.[1]

The objective of the Policy is to ensure that members of the Board of Directors and ComEx are suitable in terms of reputation, honesty, and integrity, knowledge, skills, and experience and – for non-Executive members of the Board of Directors – time commitment and independence; and that the Board of Directors is collectively suitable as stipulated under Article 27 of CSDR. The Policy also describes the process for suitability assessments.

The Board of Directors is responsible for ensuring that the individual Board of Directors and ComEx members, as well as the Board of Directors, collectively, fulfils the above suitability criteria in case of a new assignment but also on an ongoing basis. To this end, individual and collective suitability assessments are conducted once a year and prior to any appointment by the Board of Directors. The assessment of the Board of Directors members' collective suitability will be initiated additionally in the following situations:

- When members of Board of Directors must be reappointed, the requirements of the position have changed, or the members are appointed to a different position within the respective board;
- When members cease to be members of LuxCSD's Board of Directors;
- Whenever appropriate, e.g. material change to the scope of LuxCSD's business model, risk appetite or strategy.

In addition, the Board of Directors initiates a suitability assessment for individual Board of Directors or ComEx members whenever appropriate (for instance, in the following situations: reduction of worktime, change regarding the scope or nature of the mandate, or negative event with regard to the reputation of the appointed board member).

Should the suitability assessment conclude that a Board of Directors or ComEx member is not compliant with the requirements in total, LuxCSD will take appropriate measures to rectify the situation and will inform the competent authority (CSSF) accordingly.

LuxCSD's annual suitability assessments in 2021 and 2022 concluded that the company's Board of Directors is suitably skilled to perform the responsibilities entrusted to them.

With respect to the above criterion of independence of the Board of Directors, LuxCSD's Board of Directors includes both non-executive as well as independent members. In line with CSDR, LuxCSD considers a director as independent when he or she has no business, family or other relationship that raises a conflict of interests regarding the LuxCSD or its controlling shareholders or its management and who has had no such relationship during the five years preceding his membership of the board. The board is composed of at least one third, and in any case no less than two independent members.

Regarding the incentives that LuxCSD has in place for its ComEx to appropriately fulfil their multiple roles, the LuxCSD Remuneration Policy provides a framework for the design and implementation of the remuneration system for staff and advises on the rules applicable to the remuneration system for ComEx members, risk takers and other employees, including employees in control units.

The Board of Directors sets the guiding principles on Remuneration through the Policy in compliance with specific local requirements, while the ComEx carries the responsibility to implement the Policy and to elaborate respective procedures and practices. The Board of Directors drafts the Policy and organizes its regular review with the assistance of Human Resources and, as deemed necessary, other Control Units or departments at Companies of Deutsche Börse Group to whom the Company has outsourced these functions, as required. The LuxCSD Remuneration Committee is responsible for advising the Board of Directors on the Remuneration Policy. The Remuneration Committee deals with Remuneration-related matters within LuxCSD and directly oversees the Remuneration of the officers in charge of the internal Control Units in accordance with the regulatory requirements.

To ensure appropriateness of the incentives for LuxCSD's Board of Directors and ComEx members, the following principles and rules are anchored in the Remuneration Policy of LuxCSD:

- Employees engaged in control units must be independent from the business units they oversee, have appropriate authority, and are remunerated in accordance with the achievement of the objectives linked to their functions, independent of the performance of the business areas they control.
- Members of the ComEx, risk takers and other employees (including staff employed in control units), shall receive fixed and variable remuneration.
- The Fixed and Variable Remuneration of the employees who are Members of the ComEx shall be determined by the Board of Directors. The Fixed and Variable Remuneration of all employee groups except for the Members of the ComEx shall be determined by the ComEx.
- The Remuneration shall be designed in a way that incentives for incurring disproportionately high-risk positions are avoided. In light of this, there should not be a significant dependency on Variable Remuneration.

- In general, the fixed remuneration shall be the substantial part of the total annual remuneration.
- A fixed remuneration only (that means, without any variable element) is permissible.
- The Variable Remuneration shall take into account the overall performance of the Company (derived from segment) and DB Group, the performance of the areas of responsibility and individual Performance Contributions. The allocation of the Variable Remuneration components within the Company shall also take into account all types of current and future risks. When assessing individual performance, financial and non-financial criteria are taken into account. Further, for the assessment of the performance a multi-year framework may apply. The criteria for determining the Variable Remuneration shall be consistent with the objective of long-term sustainable performance.
- There shall be an appropriate ratio between the Fixed and the Variable Remuneration. The variable component shall not exceed 100% of the fixed component of the total Remuneration for each individual. The Board of Directors may approve a higher maximum level of the ratio between the fixed and variable components of Remuneration provided the overall level of the variable component shall not exceed 200% of the fixed component of the total Remuneration for each individual, if national regulatory requirements allow such approval.
- Members of the Board of Directors shall not receive Fixed or Variable Remuneration for their position as Board Members. Members of the Board of Directors are eligible to receive “directors fees”, the amount of which is fixed and therefore not linked to the business performance of the CSD.

Key Consideration 5

The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.

Roles and responsibilities of LuxCSD's Board of Directors and ComEx

The roles and responsibilities of LuxCSD's Board of Directors and ComEx are described in detail in several documents, notably in the company's Articles of Association and the Internal Rules and Regulations (IRRs) for the Board of Directors and for the ComEx (see also [key considerations 2](#) and [3](#)).

In accordance with Article 441-10 of the law of 10 August 1915, as amended, on commercial companies (the “Companies Act”), the Board of Directors has delegated the day-to-day management of LuxCSD as well as the representation of LuxCSD towards third parties in relation with such management to the ComEx. Without prejudice to the powers of the Board of Directors, the ComEx assumes, among others, the following tasks:

1. to ensure consistency of the activities of LuxCSD with the objectives and strategy of LuxCSD as determined by the Board of Directors;
2. to design and establish risk-management, technology and compliance procedures that promote the objectives of LuxCSD;
3. to subject the risk-management, technology and compliance procedures to regular review and testing;
4. to ensure that sufficient resources are devoted to risk-management, technology, compliance, and internal audit;

5. to ensure that LuxCSD's policies, procedures and controls are consistent with LuxCSD's risk tolerance and risk bearing capacity and that these policies, procedures and controls address how LuxCSD identifies, reports, monitors and manages risks;
6. to manage and monitor daily operations;
7. to retain and grow the client base, taking into account pricing strategies and compliance requirements;
8. to develop product strategies in the context of changing market and client requirements, competitors' moves and regulatory developments, including the necessary budget releases;
9. to prepare and implement policies and procedures, as well as to approve policies in first instance to recommend the policies to the Board of Directors for the final approval.
10. to make HR related decisions, such as hiring and promotions, in accordance with the relevant policies;
11. to manage interfaces with the different interest groups (internal and external);
12. to prepare and consult the Board of Directors in substantive decisions concerning the business of LuxCSD;
13. to review the policies and control procedures, in particular the anti-money laundering and anti-terrorist financing ones, as well as the research and transaction monitoring procedure;
14. to conduct a yearly assessment of outsourced activities by all providers, in the framework of the respective agreements;
15. to ensure that the Compliance policy is appropriate, to verify its implementation and, in case of failure to comply, to decide on corrective measures and, where applicable, on sanctions to be imposed;
16. to assess the internal control system at least once a year;
17. to propose strategies and budgets to the Board of Directors;
18. to perform its control mission in accordance with the relevant CSSF circulars;
19. to be responsible for the administrative and accounting organisation in accordance with the relevant CSSF circulars; and
20. to provide the declaration of compliance on behalf of LuxCSD under Article 22 of CSDR.

Where tasks are outsourced, the responsibility of the risk management associated with the outsourcing is incumbent on the ComEx. The ComEx reports to the Board of Directors at least four times per year and on an ad-hoc basis as required by the business needs.

Without prejudice to the delegation of the daily management to the ComEx and to the powers of the general meeting of the shareholders, the Board of Directors shall have the exclusive right to decide on the following items:

1. Annual budget, mid- and long-term financial planning;
2. Exceeding the annual budget of LuxCSD by 30 per cent or exceeding the budgeted expenses for a project of LuxCSD by 50 per cent of the annual budget of LuxCSD;
3. Approval and amendment of internal rules and regulations of the Board of Directors, the committees and the ComEx;

4. Commitment of LuxCSD to enter into any joint venture or partnership arrangement;
5. Purchasing or selling of any real estate assets and shareholding of LuxCSD from or to any company;
6. Commencement, termination or settlement of any legal action or proceedings before any jurisdiction or arbitration or administrative proceeding by or against LuxCSD;
7. Contracts or other transactions implying any conflict of interest of a shareholder, director or member of the ComEx;
8. Approval of the Compliance Policies and the Compliance Charter;
9. Approval of the Audit Policy and Audit Charter;

The Board of Directors also assumes the following tasks:

1. Establish well-documented policies, procedures and processes by which the Board of Directors, ComEx and committees shall operate;
2. Establish clear objectives and strategies for LuxCSD;
3. Effectively monitor the ComEx;
4. Establish adequate remuneration policies;
5. Ensure the surveillance of the risk-management function;
6. Take the decisions related to risk management;
7. Ensure the independence and adequate resources of a risk-management, technology, compliance, and internal audit functions;
8. Monitor outsourcing arrangements;
9. Monitor and ensure compliance with all relevant regulatory and supervisory requirements;
10. Be accountable to shareholders or other owners, employees, users and other relevant stakeholders;
11. Approve internal audit planning and review;
12. Review and update regularly the governance arrangements of LuxCSD;
13. Define, determine and document an appropriate level of risk tolerance and risk bearing capacity for LuxCSD and for all the services that LuxCSD provides;
14. Ensure that LuxCSD's policies, procedures and controls are consistent with its risk tolerance and risk bearing capacity and that these policies, procedures and controls address how LuxCSD identifies, reports, monitors and manages risks.

Where tasks are delegated, the Board of Directors and its members shall retain the responsibility for decisions that may affect the smooth provision of services by LuxCSD. The Board of Directors shall hold the final responsibility for managing LuxCSD's risks.

Experience, skills and integrity

As set out in Article 27 of CSDR, LuxCSD's Board of Directors and ComEx must fulfil certain criteria (see also [key consideration 4](#) for details). Among others, the members of the Board of Directors shall be of sufficiently good repute and shall have appropriate mix of skills, experience and knowledge of the entity and of the market.

The ComEx shall be of sufficiently good repute and experience so as to ensure the sound and prudent management of LuxCSD

In order to ensure that LuxCSD's members of the Board of Directors and ComEx meeting the requirements of Article 27 of CSDR, candidates and members of LuxCSD's Board of Directors and ComEx must run through a suitability assessment. This assessment is exercised for both the Board of Directors and ComEx on an annual basis but also on an ad-hoc basis when changes in membership occur. Please refer to [key consideration 4](#) for details on the conditions and implementation of the assessment procedure.

Key consideration 6

The board should establish a clear, documented risk- management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.

Control Framework

The ComEx is responsible for the review of internal policies and control procedures. An effective Internal Control System (ICS) is a fundamental component of the overall risk management culture and of corporate governance. It consists of safeguards and controls embedded in the organizational structures, in particular within the business processes, to ensure that business processes and activities run in an orderly fashion and minimise risks. Thus, the design and implementation of an effective ICS is vital for managing risks, preventing material losses, and achieving its corporate goals/business strategy and safeguard its continued existence.

The ICS approach applies to all business activities of LuxCSD. In accordance with the ICS approach, the duties of senior management of LuxCSD, comprise, inter alia, analysing and assessing the risk of the business process, implementing adequate safeguards and controls within the business processes, monitoring the application of safeguards and controls, reporting promptly if material shortcomings in the ICS have been identified and ensuring awareness of the employees regarding the ICS.

The Board of Directors of LuxCSD has approved the Deutsche Börse Group ICS policy which recognises the Integrated Framework 2013 of the Committee of Sponsoring Organizations of the Treadway Commission (COSO) as a leading framework for designing, implementing, and conducting internal control and assessing the effectiveness of internal controls. COSO outlines the components, principles, and factors also necessary to effectively manage its risks and controls to accomplish objectives, which it applies to all processes of LuxCSD, including the processes outsourced to third parties, since the risks remain with the risk owner. Some key aspects of internal control that are applicable to LuxCSD are:

- Integrity and ethical values;
- Segregation of duties;
- Policies, standards and procedures (including sound administrative and accounting procedures);
- Definition of coherent objectives defined by the ComEx;

- Definition of authorization levels; and
- Management information and control systems.

In addition, the three lines of defence model provides a common approach to enhance communications on risk management and control by clarifying essential roles and responsibilities. The three lines of defence model addresses how specific duties related to risk and control are assigned and coordinated. The three lines of defence are described below.

First line of defence: Functions that own and manage risks (Business Lines).

Second line of defence: Functions that oversee risks, i.e., the various control functions which support and advise the first line and senior management and the Board of Directors of LuxCSD. To leverage the expertise of the Clearstream Group, the LuxCSD Board has approved the intra group outsourcing of the positions of Chief Compliance Officer, Chief Risk Officer, Chief Technology Officer, and experts (e.g., the data protection officer, as well as the information security and Cloud officers). The control of their adequate performance is performed by the ComEx.

Third line of defence: Function that provides independent assurance, i.e., the Internal Audit function. To leverage the expertise of the Group, the LuxCSD Board has approved the outsourcing of the Chief Internal Auditor to Clearstream Banking S.A., who provides senior management and the Board of Directors of LuxCSD with reasonable assurance of the adequacy and effectiveness of the risk management and control framework. Internal Audit follows the market and product processes, as well as the support services, ensuring that common standards of control are applied across all processes. Audit engagements are conducted within the areas relevant for the defined process. The Chief Internal Audit Officer has direct access to and reports directly to the Board of Directors and the Audit Committee. The control of their adequate performance and completion of the audit plan is performed by the ComEx.

Key consideration 7

The board should ensure that the FMI's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.

LuxCSD has multiple stakeholders, which can be broadly categorised into four groups as follows:

Stakeholders to whom LuxCSD provides a service:

- Issuers
- Issuer agents (LuxCSD Principal Agent, LPA)
- Clients
- Other CSDs

LuxCSD regularly reviews its GTCs and other governing documents to reflect changes in legislation or regulatory environment. Any major changes to the SSS, its operations or its rules are communicated to participants; in general via announcements before they are integrated into the documentation, that is, General Terms and Conditions and the Client Handbook etc.

LuxCSD, either directly or with the support of other Clearstream group companies, assists issuers and issuer agents to make their securities eligible on its platform.

Furthermore, LuxCSD is a member of market associations such as LuxCMA and ECSDA which aim to promote standards and to define guidelines for the industry.

Additionally, the LuxCSD User Committee, composed of representatives of issuers and participants, advises the Board of Directors independently from any direct influence by the management of LuxCSD. The User Committee consults with and makes recommendations to the board with respect to relevant matters:

- The Committee advises the Board of Directors on key arrangements that impact its members, including the criteria for accepting issuers or participants in their respective securities settlement systems and on service level;
- The Committee may submit non-binding opinions to the Board of Directors, containing detailed reasons regarding the pricing structures of LuxCSD.

Stakeholders who provide a service to LuxCSD:

- Other CSDs;
- LuxCSD Principal Agents (LPAs); and
- Swift.

Existing relationships with CSDs, LPAs and connectivity providers are reviewed on an ongoing basis, and may be completed by on-site visits to review the relationship and ascertain that all governing documents remain relevant to the activities and regulations of the market/relationship. The service level agreement contracts with LPAs are updated as and when necessary, on average this is being done on an annual basis. In addition, a legal opinion on each CSD link is obtained on an annual basis.

Stakeholders involved in the formation of the legislative and regulatory framework in which LuxCSD operates:

- Market associations;
- National governments;
- Eurosystem;
- Supranational legislative bodies (such as the EU Commission);
- LuxCSD's regulators; and
- Others.

Via Clearstream group or directly, LuxCSD is represented in a high number of market organisations on a global level, through which it is able to identify and take into consideration a wide range of stakeholders' interests with regard to the design, rules and strategy of the company. Examples of such organisations are the following:

- International Capital Markets Association (ICMA);
- International Securities Services Association (ISSA);
- International Capital Markets Services Association (ICMSA);
- International Securities Market Advisory Group (ISMAG);
- Securities Market Group (SMPG);
- Society for Worldwide Interbank Financial Telecommunications (Swift);
- Association of National Numbering Agents (ANNA).

This effort is accompanied by the representation through Clearstream on a global level.

LuxCSD additionally contributes to financial stability by bringing its expertise to the table to benefit industry and regulatory discussions on post-trade activity. In this context, LuxCSD is represented in national and European market organisations. Like the company's representation in organisations on a global level, this allows LuxCSD to identify and take into consideration stakeholders' interests relating to its design, rules and strategy. Examples of associations where LuxCSD is active are the following:

- LuxCSD is a member of ECSDA (the European CSD Association);
- National User Group (NUG);
- Institut Luxembourgeois des Administrateurs (ILA);
- Association des Banques et Banquiers de Luxembourg (ABBL);
- Luxembourg Capital Markets Association (LuxCMA);
- T2S Governance Bodies – CSD Steering Group;
- ECB's Advisory Group on Market Infrastructure for Securities and Collateral (AMI-Seco).

This effort goes hand in glove with the representation of Deutsche Börse AG in both Berlin and Brussels to inform the European legislative process.

LuxCSD additionally consults and, in accordance with CSDR, notifies or obtains approval from its regulators of significant changes to its governance, rules and procedures and service offering.

Stakeholders with a direct influence on LuxCSD's equity

Clearstream International S.A. is the sole shareholder of LuxCSD. Thus, it assumes all powers conferred to the General Meeting of Shareholders. The sole shareholder's decisions are recorded in a minutes register held at the registered office.

Principle 3: Framework for the comprehensive management of risks

An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.

Key consideration 1

An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.

Since LuxCSD is part of Clearstream group, the Clearstream Risk Management function is responsible to develop strategies, policies, procedures and handbooks to identify, measure, monitor and report risks that arise in or are borne by the company. Clearstream Risk Management comprises (second line of defence) coverage of the group's three CSDs being CBF, CBL and LuxCSD.

Effective and efficient risk management is fundamental to safeguarding LuxCSD's interests (both in terms of corporate goals and continued existence). Therefore, LuxCSD has established a comprehensive risk management framework in terms of processes, roles and responsibilities applicable to all staff and organisational areas including the outsourced activities of LuxCSD to ensure that risk development can be identified and dealt with at an early stage.

The risk management framework of LuxCSD aims to ensure that all threats as well as causes of loss and potential disruption are properly and timely identified, centrally recorded, assessed (that is, quantified in financial terms to the greatest extent possible) and that the most adequate treatment is applied.

Assessments, recommendations and risk reports are provided regularly to the company's governing bodies, the Board of Directors and the Executive Committee (ComEx).

The Board of Directors holds the final responsibility for managing the company's risks, whereas the ComEx is responsible for the daily management of all risk-related activities as per LuxCSD's internal rules and regulations. Both bodies approve the company's risk strategy, which is updated annually in line with the update of the overall business strategy of LuxCSD.

The ComEx members perform the roles of Risk Owner, Risk Representative and Information Owners (first line of defence) for the company.

Risk management key documents

The following documents are the key documents in place which form an integral part of the LuxCSD risk management framework:

- LuxCSD Risk Strategy;
- Group Risk Management (GRM) Policy;
- GRM Procedure;
- Operational Risk Procedure;

- Operational Risk Handbook;
- LuxCSD Business Risk Handbook;
- LuxCSD recovery plan;
- LuxCSD restructuring and wind-down plan.

The risk management framework of LuxCSD sets adequate and comprehensive risk management standards to ensure the sustainability of the company's operations and thereby smooth and efficient market operations. The framework ensures that LuxCSD:

- Can identify, measure, monitor, manage and report risks that it may be exposed to, and limits the risks it poses to others;
- Applies appropriate risk control and monitoring measures to safeguard the integrity of financial markets and limit potential exposures and systemic risks.

Key consideration 2

An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.

LuxCSD has put in place a wide range of internal control processes and procedures, including security, technical and operational organisational arrangements, as well as risk control measures, to ensure that its participants and, where relevant, their underlying clients, properly manage and address the risks they pose to LuxCSD, and to assure ensure the protection of both LuxCSD itself, and the interests of the external stakeholders, that is:

- Its participants and their respective clients;
- The respective CSD links, CCPs, trading venues, payment systems, settlement banks, liquidity providers and investors.

Key consideration 3

An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.

The oversight and controls of LuxCSD's activities, whether performed directly or via outsourcing agreements, are monitored by the company's Corporate and Outsourcing team, composed of five persons.

LuxCSD has outsourced most of its CSD operations, as well as some of the support and second-line-of-defence functions, to Clearstream and Deutsche Börse. Therefore, LuxCSD relies on the internal control system and risk management framework of Clearstream and Deutsche Börse Group. The companies that provide business services to LuxCSD are responsible for identifying risks and for reporting them promptly to the Risk Management function.

LuxCSD has implemented controls to ensure that the Chief Officers for Risk, Compliance, Technology, Cloud, Information Security (all of them second line of defence), as well as the Data Protection Officer and staff, exercise their functions as per the inter-company contractual agreements, approved policies and regulatory requirements. The Chief Internal Auditor (third line of defence) coordinates the independent

assessments of the Chief Officers (second line of defence) and of the company's activities to monitor adequacy of the risk control and management functions. The results of these audits are also entered into the SAP Group Risk Control Management System (SAP GRC). Systems, operational policies, procedures and controls are subject to review, testing, and audit periodically and on ad hoc basis, if needed (for instance, after a significant change).

The reports of the Chief Officers and experts are submitted to LuxCSD's committees and governing bodies on a regular basis or ad hoc should a specific concern arise. Key performance indicators (KPIs) are also collected by LuxCSD's Corporate and Outsourcing team and reviewed by the ComEx to identify performance issues and/or risks related to the outsourced processes.

The Risk Management function assesses all new and existing risks. The LuxCSD Chief Risk Officer (CRO) has a direct reporting line to the Board of Directors and is a permanent guest of the LuxCSD Risk Committee. The CRO oversees the annual risk assessments and reports at least semi-annually, if necessary, ad hoc to the ComEx and Board of Directors. Risk control in the insourcing Clearstream operational units is performed by Operational Risk Representatives, who are responsible for identifying, notifying and controlling any risk in their area whereas the Clearstream Risk Management function is responsible for the assessment and reporting of risks.

The second line of defence, following the Deutsche Börse Group-wide Internal Control System (ICS) Policy, supports the reporting covering all areas where risk might occur. The ICS Policy is based on the recognised standards of the Committee of Sponsoring Organisations of the Treadway Commission (COSO) framework.

LuxCSD's approach to risk management aims to ensure that the execution of the business strategy includes the identification, assessment, monitoring and mitigation of possible risks and controls. Information Security (IS) risks are managed according to the Information Security Policy and standards to protect information assets in terms of safety, integrity, confidentiality, authenticity, and availability. IS risk management tasks and procedures are based on the requirements published as the ISO 27000-standard series for information security management systems.

The Internal Audit function is outsourced to Clearstream Banking. LuxCSD's Board of Directors ensures the independent audits of the company and the monitoring of risk control and management functions. The results of these audits are provided in regular meetings to the LuxCSD ComEx, Board and Audit Committee. They are also entered into the SAP GRC risk management system. See [Principle 2](#) for details on the functions of the Executive Committee of LuxCSD.

Risk types

The following risk types are identified:

Operational risk

Operational risk is defined as the risk of losses resulting from inadequate or failed internal processes, people and systems or from external events. LuxCSD has adopted a definition that is in line with Basel definitions of operational risk which is the risk that deficiencies in information systems or internal processes, human errors, management failures, or disruptions from external events will result in the reduction, deterioration, or breakdown of services provided by LuxCSD.

Operational risk comprises the following sixteen risk clusters: compliance risk, contagion risk, corporate tax risk, custody risk, information security risk, information technology risk, legal risk, model risk, operational project risk, people risk, physical security risk, processing and execution risk, product tax risk, risk management risk, secondary reputational risk and third-party risk.

Operational risks that LuxCSD does not want to run and that can be insured against at reasonable cost are transferred by closing insurance policies. All insurance policies are coordinated centrally for entire Deutsche Börse Group thereby ensuring the uniform risk-cost benefit insurance coverage.

Finally, it should be noted that the capital requirements for operational, legal and custody risks are calculated based on the basic indicator approach as per articles 315 and 316 of Regulation (EU) 575/2013 CRR.

Financial risk

Financial risk comprises credit risk, market risk and liquidity risk.

As far as credit risk is concerned, LuxCSD does not provide any cash management or collateral management services. Consequently, this type of risk is only relevant with regard to the credit risk LuxCSD accepts on the banks where it maintains cash accounts for own funds. This risk is deemed to be low due to the good quality of LuxCSD's counterparts.

Market risk can arise because of fluctuations in interest rates, foreign exchange rates or through corporate transactions. As LuxCSD does not have any long positions in foreign currencies, no capital requirement is calculated for market risk.

Liquidity risk is not relevant for LuxCSD's business model because the company does not provide any cash management or credit services.

Business risk

Business risk is the unexpected residual loss, which arises when earnings at risk (EaR) exceed anticipated net income after tax, which may be due to the competitive environment or erroneous strategic management decisions. It reflects sensitivity to macroeconomic evolution and vulnerability to prevent risk arising from external threats, such as regulatory adjustments or changes in the competitive, macroeconomic, regulatory or political environment, regulatory changes or internal weaknesses. This may be translated into a potential revenue decrease and a cost increase as compared to the planned revenue and costs. Business risk, one of the leading risks posed to LuxCSD, is being captured in scenarios. More information on business risk scenarios can be found in [Principle 15, key consideration 1](#).

Winding-down and restructuring risk

Winding-down and restructuring risk is defined as the risk of losses due to insufficient capital being held for an orderly winding-down or restructuring of operation and services, in the case where new capital cannot be raised. This risk type is addressed by the capital requirements outlined by CSDR. Winding-down and restructuring risk is considered material for LuxCSD.

Pension risk covers all aspects affecting the pension debt obligations. The expected pension payments and therefore the overall pension risk is influenced by several factors: longevity in terms of unexpected changes compared to the anticipated life expectancy, inflation in terms of unexpected changes compared to the anticipated inflation rate, salary growth in terms of unexpected changes compared to the forecast salary growth and discount rate in terms of unexpected changes compared to the anticipated discount rate.

Risk management systems

To be able to duly identify, measure, monitor, manage and enable reporting on the risks LuxCSD faces or poses to other entities several systems and data sources are used for the different risk types. The internal processes for operational and business risk are based on the IT systems and data sources used. These systems and data sources are used to support the risk processes driven by Clearstream Risk Management throughout.

Incident notification mailbox for internal incident reports

The incident notification mailbox allows the Risk Management function to be quickly notified whenever an incident occurs. Furthermore, Risk Management regularly receives data from different operational units through this channel. The "Production Event Reporting Log (PERL)" and "Production Issue Log System

(PILS) incident reports are a key source of operational risk-related data, for example, the PILS reporting provides consolidated information of all incidents, which impacted LuxCSD/Clearstream business processes. It reports incidents from low (blue) to very high (red) criticality.

Consequently, the incident notification mailbox serves as a central repository for production events and production incidents. It is used by Risk Management access incident data, to follow up the incidents and perform risk assessments. Information stored in the incident notification mailbox are summarised and documented in a risk report, which is issued as a "Monthly Pre-Analysis".

IT systems supporting business risk quantification

For the quantification of its business risk, LuxCSD uses an Excel VBA-based tool (Local Application) to evaluate the likelihood of a loss event and its potential extent in multiple scenarios.

The Local Application uses business risks and their probabilities as input factors in the model and calculates the risk distribution based on binomial probability distribution. In addition, a minimum threshold of loss is provisioned. The model uses these input data to calculate the post- and cumulative probability of all probable combinations of loss events to finally aggregate the clusters of events into sub-scenarios.

Key consideration 4

An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.

LuxCSD has identified scenarios, which could potentially prevent it from being able to provide its critical operations and services as going concern. The scenarios are based on plausible near-default events taking into account the requirements of the CSDR EBA RTS Annex, particularly points 6 and 7. The scenarios are developed in accordance with LuxCSD's risk profile.

LuxCSD developed a recovery plan, as well as a restructuring and wind-down plan, in which critical operations and services have been identified.

To ensure resolvability if a near-default stress scenario occurs, LuxCSD has identified and assessed several recovery options within its recovery plan. The recovery options are designed to respond to financial stress scenarios and could reasonably be expected to contribute to maintaining or restoring the company's viability and financial position. They include both measures that are extraordinary in nature as well as measures that can be taken during LuxCSD's usual business. Additionally, in accordance with Article 47 (2)a of Regulation (EU) No. 909/2014 the recovery options ensure that LuxCSD is able to raise additional capital should its equity capital fall below the thresholds of the recovery indicators.

LuxCSD has also compiled a restructuring and wind-down plan, which forms the basis for the company's decisions on potential strategies to follow in a restructuring or wind-down scenario, identify applicable tools which are possible to implement and ensure the orderly winding-down or restructuring of LuxCSD operations and services where the CSD is unable to raise new capital.

LuxCSD distinguishes between requirements for a recovery plan (near-default situation) and restructuring and wind-down plan (solvent wind-down). The recovery and restructuring and wind-down plans serve the purpose to list available actions to overcome financial and operational problems with the potential to undermine the sustainability of the company's business.

Principle 4: Credit Risk

An FMI should effectively measure, monitor, and manage its credit exposure to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two largest participants and their affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions. All other CCPs should maintain, at a minimum, total financial resources sufficient to cover the default of the one participant and its affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions.

Key Consideration 1

An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.

As far as credit risk is concerned, LuxCSD does not provide any cash management or collateral management services. Consequently, this type of risk is only relevant with regard to the credit risk LuxCSD accepts on the banks where it maintains cash accounts for own funds. This risk is deemed to be low due to the good quality of LuxCSD's counterparts.

Key consideration 2

An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.

As far as credit risk is concerned, LuxCSD does not provide any cash management or collateral management services. Consequently, this type of risk is only relevant with regard to the credit risk LuxCSD accepts on the banks where it maintains cash accounts for own funds. This risk is deemed to be low due to the good quality of LuxCSD's counterparts.

Key Consideration 3

A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources ([see Principle 5](#) on collateral). In the case of a DNS payment system or DNS SSS in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such an FMI should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.

As far as credit risk is concerned, LuxCSD does not provide any cash management or collateral management services. Consequently, this type of risk is only relevant with regard to the credit risk LuxCSD accepts on the banks where it maintains cash accounts for own funds. This risk is deemed to be low due to the good quality of LuxCSD's counterparts.

Key consideration 4

A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources (see [Principle 5](#) on collateral and [Principle 6](#) on margin). In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. In all cases, a CCP should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount of total financial resources it maintains.

As far as credit risk is concerned, LuxCSD does not provide any cash management or collateral management services. Consequently, this type of risk is only relevant with regard to the credit risk LuxCSD accepts on the banks where it maintains cash accounts for own funds. This risk is deemed to be low due to the good quality of LuxCSD's counterparts.

Key consideration 5

A CCP should determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A CCP should have clear procedures to report the results of its stress tests to appropriate decision makers at the CCP and to use these results to evaluate the adequacy of and adjust its total financial resources. Stress tests should be performed daily using standard and predetermined parameters and assumptions. On at least a monthly basis, a CCP should perform a comprehensive and thorough analysis of stress testing scenarios, models, and underlying parameters and assumptions used to ensure they are appropriate for determining the CCP's required level of default protection in light of current and evolving market conditions. A CCP should perform this analysis of stress testing more frequently when the products cleared or markets served display high volatility, become less liquid, or when the size or concentration of positions held by a CCP's participants increases significantly. A full validation of a CCP's risk-management model should be performed at least annually.

As far as credit risk is concerned, LuxCSD does not provide any cash management or collateral management services. Consequently, this type of risk is only relevant with regard to the credit risk LuxCSD accepts on the banks where it maintains cash accounts for own funds. This risk is deemed to be low due to the good quality of LuxCSD's counterparts.

Key Consideration 6

In conducting stress testing, a CCP should consider the effect of a wide range of relevant stress scenarios in terms of both defaulters' positions and possible price changes in liquidation periods. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.

As far as credit risk is concerned, LuxCSD does not provide any cash management or collateral management services. Consequently, this type of risk is only relevant with regard to the credit risk LuxCSD accepts on the banks where it maintains cash accounts for own funds. This risk is deemed to be low due to the good quality of LuxCSD's counterparts.

Key Consideration 7

An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.

As far as credit risk is concerned, LuxCSD does not provide any cash management or collateral management services. Consequently, this type of risk is only relevant with regard to the credit risk LuxCSD accepts on the banks where it maintains cash accounts for own funds. This risk is deemed to be low due to the good quality of LuxCSD's counterparts.

Principle 5: Collateral

An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.

Key Consideration 1

An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.

As far as credit risk is concerned, LuxCSD does not provide any cash management or collateral management services. Consequently, this type of risk is only relevant with regard to the credit risk LuxCSD accepts on the banks where it maintains cash accounts for own funds. This risk is deemed to be low due to the good quality of LuxCSD's counterparts.

Key Consideration 2

An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.

As far as credit risk is concerned, LuxCSD does not provide any cash management or collateral management services. Consequently, this type of risk is only relevant with regard to the credit risk LuxCSD accepts on the banks where it maintains cash accounts for own funds. This risk is deemed to be low due to the good quality of LuxCSD's counterparts.

Key Consideration 3

In order to reduce the need for procyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.

As far as credit risk is concerned, LuxCSD does not provide any cash management or collateral management services. Consequently, this type of risk is only relevant with regard to the credit risk LuxCSD accepts on the banks where it maintains cash accounts for own funds. This risk is deemed to be low due to the good quality of LuxCSD's counterparts.

Key Consideration 4

An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.

As far as credit risk is concerned, LuxCSD does not provide any cash management or collateral management services. Consequently, this type of risk is only relevant with regard to the credit risk LuxCSD accepts on the banks where it maintains cash accounts for own funds. This risk is deemed to be low due to the good quality of LuxCSD's counterparts.

Key Consideration 5

An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.

As far as credit risk is concerned, LuxCSD does not provide any cash management or collateral management services. Consequently, this type of risk is only relevant with regard to the credit risk LuxCSD accepts on the banks where it maintains cash accounts for own funds. This risk is deemed to be low due to the good quality of LuxCSD's counterparts.

Principle 6: Margin

A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.

Not applicable to LuxCSD

Principle 7: Liquidity risk

An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.

Key consideration 1

An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.

Liquidity risk is not relevant for LuxCSD's business model, because LuxCSD does not provide any cash management or credit services.

Key consideration 2

An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.

Liquidity risk is not relevant for LuxCSD's business model, because LuxCSD does not provide any cash management or credit services.

Key consideration 3

A payment system or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.

Liquidity risk is not relevant for LuxCSD's business model, because LuxCSD does not provide any cash management or credit services.

Key consideration 4

A CCP should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments, and meet other payment obligations on time with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources sufficient to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions.

Liquidity risk is not relevant for LuxCSD's business model, because LuxCSD does not provide any cash management or credit services.

Key consideration 5

For the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.

Liquidity risk is not relevant for LuxCSD's business model, because LuxCSD does not provide any cash management or credit services.

Key consideration 6

An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not assume the availability of emergency central bank credit as a part of its liquidity plan.

Liquidity risk is not relevant for LuxCSD's business model, because LuxCSD does not provide any cash management or credit services.

Key consideration 7

An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, a liquidity provider's potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.

Liquidity risk is not relevant for LuxCSD's business model, because LuxCSD does not provide any cash management or credit services.

Key consideration 8

An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.

Liquidity risk is not relevant for LuxCSD's business model, because LuxCSD does not provide any cash management or credit services.

Key consideration 9

An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.

Liquidity risk is not relevant for LuxCSD's business model, because LuxCSD does not provide any cash management or credit services.

Key consideration 10

An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.

Liquidity risk is not relevant for LuxCSD's business model, because LuxCSD does not provide any cash management or credit services.

Principle 8: Settlement Finality

An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.

Key Consideration 1

An FMI's rules and procedures should clearly define the point at which settlement is final.

LuxCSD offers securities settlement services (i) in T2S with Euro central bank money covering all Euro-denominated securities issued through LuxCSD and (ii) in domestic markets outside T2S, supported using selected direct CSD links (as defined in [Principle 1](#)), hereinafter referred to as "external settlement".

As required by Articles 39 (2) and 39 (3) of CSDR, LuxCSD has rules and procedures to clearly define the point at which settlement becomes final in its system. Accordingly, LuxCSD ensures that its securities settlement system rules define and disclose the moments of entry, irrevocability and finality of transfer orders in accordance with Articles 3 and 5 of SFD, implemented under Luxembourg Law in the Article 111 of the Payment Services Law (as these terms and expressions are defined in [Principle 1](#)).

For more information on the legal basis of LuxCSD's settlement services, please refer to [Principle 1](#).

LuxCSD's rules and procedures applicable to the settlement finality are defined in LuxCSD's [Client Handbook](#) ("Handbook"). Chapter 3.4 "Settlement Finality" of the Handbook provides its participants with rules and information on the processing of the instructions, in particular the rules determining the ability of a client to revoke or amend its settlement instructions and the moments in time when the instructions become irrevocable, binding and unconditional.

The Handbook is a governing document that is binding upon all participants and LuxCSD. It is published on the website of LuxCSD, www.luxcscd.com, in the Key Documents section.

LuxCSD distinguishes between T2S (intra-CSD and cross-CSD settlement) and external transactions. For each type of transaction, LuxCSD has established precise definitions for the moments of entry, irrevocability and finality of an instruction. The term "instruction" is used to refer to a "transfer order" within the meaning of Article 2 (i) of SFD, which is defined as "any instruction by a participant to place at the disposal of a recipient an amount of money by means of a book entry on the accounts of a credit institution, a central bank, a central counterparty or a settlement agent, or any instruction which results in the assumption or discharge of a payment obligation as defined by the rules of the system."

Moments of entry, irrevocability, and finality of instructions in T2S

For this sub-section in relation to settlement and instructions in T2S, the following terms and expressions shall be read as follows:

- "insolvency proceedings" or "insolvency" refers to any collective measure provided for in any laws governing any participants, either to wind up a participant or to re-organise it, where such measure involves the suspending of, or imposing limitations on, transfers or payments.
- "transfer orders" shall refer to any instructions:

- by, or on behalf of, a participant holding a DCA operated by a central bank, to place at the disposal of a recipient an amount of money by means of a book entry on the account of another participant holding a DCA operated by the same or another central bank, or any instruction which results in the assumption or discharge of a payment obligation as defined by LuxCSD’s governing documents; or
- by a participant to transfer the title to, or interest in, a security or securities to another participant or a participant to any other CSD using the T2S platform, by means of a book entry in a register or otherwise.

The moments of entry and irrevocability are the moments in time defined by the T2S platform.

– Moment of entry

For any instructions to be settled on the T2S platform that are subject to matching shall be deemed entered into the system at the moment at which such transfer orders have been declared compliant with the technical rules of T2S by the T2S platform.

The occurrence of the moment of entry of the transfer order is fully automated, identifiable, and retrievable in T2S. The moment of entry (that is, acceptance timestamp) of instructions in T2S is reported to the participants via the communication means agreed for T2S services (such as Xact Web Portal or SWIFT statement).

– Moment of irrevocability

Any instructions to be settled on the T2S platform shall be deemed irrevocable at the moment they have been given a “matched” status on the T2S platform.

Matched T2S instructions can only be bilaterally cancelled. The participant cannot cancel their matched instructions unilaterally, even if the requested settlement date has not been reached. Once both counterparties have sent their cancellation requests, both instructions are immediately cancelled and reported accordingly.

The occurrence of the moment of irrevocability of a transfer order is fully automated, identifiable and retrievable in T2S. Such moment (that is, matching timestamp) of instructions in T2S is reported to the participants via the communication means agreed for T2S services (such as Xact Web Portal or Swift statement).

– Moment of finality

The moment of finality is reached when settlement becomes irrevocable and enforceable between the parties. It corresponds to the moment in time when the transfers, that is, the credit and debit of the securities and cash in the accounts, are irrevocable, binding and unconditional.

Regarding T2S instructions, as soon as the transfer orders are irrevocable as described in the above paragraph, and with this binding matching in the relevant accounts, the transfer orders will then be processed in T2S for settlement to become final.

Any matched instruction that has not been settled and has not been bilaterally cancelled will remain in the system for further reprocessing attempts until such instruction is successfully settled or the cancellation requests are received from both counterparties.

When LuxCSD is informed of a participant’s insolvency proceedings, any transfer order impacted by such insolvency proceedings which has been entered into the LuxCSD system after the moment of being informed shall not be submitted for settlement unless required to do otherwise by law, a competent court, an administrative authority, or the insolvency trustee.

If a transfer order deemed impacted by the above insolvency proceedings of the holder of a DCA (either a participant or the holder of the account designated by a participant), LuxCSD will follow the instructions given by the central bank operating such DCA with a view to comply (or allow the central bank to comply) with any orders that the central bank may receive from a competent court, administrative authority or the insolvency trustee.

Final instructions in T2S are reported to the participants as settled via the communication means agreed for T2S services (such as Xact Web Portal or Swift statement).

External instructions

The rules in this sub-section are not applicable to T2S instructions. Transactions settling with a domestic counterparty (in a context of CSD links) are considered by LuxCSD as relating to external instructions for the finality of deliveries of securities. These can be settled in the domestic markets either against or free of payment. The respective Market Link Guides provide participants with further details as to the settlement rules applicable in each market. These guides are available on LuxCSD's website in the section "Market Coverage".

For the purpose of this sub-section, "Depository" shall refer to another central securities depository (or a securities settlement system operated by a CSD, that is, a linked issuer SSS) or a bank to which LuxCSD entrusts the safekeeping and administration of securities that LuxCSD holds, either directly with local CSDs or indirectly with intermediaries, on behalf of the participants. For the avoidance of doubt, the term "Depository" shall be understood as the entity with which LuxCSD has its securities account for the deposit of the securities on behalf of its participants.

— Moments of entry, irrevocability and finality of external instructions

The rules governing the moments of entry and the irrevocability of external instructions, as well as the enforceability of deliveries of securities and cash to or from a domestic counterparty are defined by each of the Depositories (or, for the avoidance of doubt, the local issuer SSSs) in accordance with the domestic rules applicable to such market. The irrevocability and enforceability of the external instructions are achieved in the books of the Depositories or local issuer SSSs. This information is published in the respective Market Link Guide available on LuxCSD's website.

Once the external instructions are final (that is, irrevocable and unconditional) with the Depository (or, for the avoidance of doubt, the local issuer SSS) and upon notice of credit/debit of the relevant account of LuxCSD with such Depository, LuxCSD will update the participants' accounts accordingly. As per Article 7.2 of the Securities Law (as defined in [Principle 1](#)), participants acquire the interest in domestic securities as soon as the securities are credited to the securities account of LuxCSD with the Depository and before credit to the participants' securities accounts.

— Amendment and cancellation of external instructions

For domestic markets in which matching is "binding", an instruction can only be cancelled upon bilateral agreement between the parties to the trade. External instructions that are final in the external market but not yet reported to the participants as settled are final.

Any specific rules for the cancellation of unsettled transactions with external counterparties are published in the respective Market Link Guide.

— Amendment and cancellation of external instructions

For domestic markets in which matching is "binding", an instruction can only be cancelled upon bilateral agreement between the parties to the trade. External instructions that are final in the external market but not yet reported to the participants as settled are final.

Any specific rules for the cancellation of unsettled transactions with external counterparties are published in the respective Market Link Guide.

Key consideration 2

An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.

The processing day varies depending on the type of settlement instruction, being T2S or external with a domestic counterparty.

Final settlement on value date

T2S settlement

Real-time gross settlement (RTGS) applies. Settlement on value date or same-day settlement can be completed if both counterparties fulfil their settlement obligations for processing on the intended settlement day.

It should be noted that LuxCSD cannot influence the point in time when settlement transactions actually settle as this depends on the instructing participants' cash and/or securities resources as well as their settlement priorities (including putting instructions "on hold" to block settlement on the intended settlement date or after for reasons unknown to LuxCSD).

For further information on the completion of final settlement, please refer to the section "[Intraday or real-time final settlement](#)" below.

External settlement

Local market rules apply. The respective Market Link Guides provide further details on the final settlement on value date.

Intra-day or real-time final settlement

T2S settlement

Instructions transmitted to T2S are processed in different settlement cycles in T2S. For cash and securities settlement, T2S offers a sequential night-time settlement (NTS) with two cycles and up to two real-time processing cycles (real-time settlement, RTS). Cash entries which result from securities settlement are booked on the Dedicated Cash Accounts (DCA).

Settlement can take place in both NTS and RTS. T2S NTS is the first settlement cycle with final settlement on the next business day. All valid instructions that are due on the next day or that were already due at an earlier point in time but could not be successfully processed are included in NTS processing.

The settlement timing slots in T2S are according to business days, that is, start of day for a new business day takes place at about 18:45 CET on the calendar day when the T2S business day ended. Settlement in T2S starts with the NTS at about 20:00 CET and ends with the RTS at about 18:00 CET.

After 16:00 CET, FoP and DvP settlement for specific transactions is still possible until 18:00 CET and 17:40 CET, respectively. Cash settlement takes place via participants' T2 DCAs when payments are made in EUR and through the LuxCSD participants' ICSD linked accounts when payments are made in other currencies.

For further details please refer to Chapter 3.2 "T2S eligible securities instructions" of the Handbook.

External settlement

For external settlement, local market rules apply. The respective Market Link Guides provide further details on the settlement timings as well as the use of RTGS or batches processing, as applicable.

Key consideration 3

An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.

T2S settlement

Unmatched instructions can be revoked (cancelled) anytime.

Matched instructions can only be bilaterally cancelled by the participants. Participants cannot cancel their matched instructions unilaterally even if the requested settlement date has not yet been reached. If no matching cancellations are received by then and the instruction has not settled by the end of day processing on settlement date, LuxCSD will, in the name and on behalf of the participant, issue a renewed cancellation request for the new instruction for settlement on the next settlement date; such new cancellation request must be matched by the participant's counterparty on the same settlement date.

Under certain conditions, T2S will automatically cancel matched instructions 60 days after the intended settlement day of the settlement instruction.

Settled instructions cannot be cancelled.

For further details please refer to section "Cancellation of instructions" of chapter 3.2 of the Handbook.

External settlement

Local market rules apply, these are described and publicly available in the respective Market Link Guides for further details.

Principle 9: Money Settlements

An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.

Key consideration 1

An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.

LuxCSD makes use of the T2S platform provided by the Eurosystem for its securities settlement. Cash payments related to against payment (DvP) transactions are settled in central bank money (CeBM) on the T2S platform through the Dedicated Cash Accounts (DCAs) of LuxCSD's participants. LuxCSD does not offer any settlement services in commercial bank money.

Key consideration 2

If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.

Not applicable to LuxCSD, see [key consideration 1](#).

Key consideration 3

If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.

Not applicable to LuxCSD, see [key consideration 1](#).

Key consideration 4

If an FMI conducts money settlement on its own books, it should minimise and strictly control its credit and liquidity risks.

LuxCSD does not conduct money settlement on its own books because it does not offer any cash services to its participants. Every LuxCSD securities participant account is associated with a DCA account at the central bank of their choice. LuxCSD direct participants must fund their DCA to cover their net cash settlement requirements.

Key consideration 5

An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.

Within the securities settlement, T2S takes over the entry and the processing of instructions, the validation, the matching and the settlement of the transmitted instructions, the administration of positions as well as the reporting of transactions and of positions for the securities accounts on the T2S platform (Security Accounts, SAC). Thereby, the settlement, that is, the exchange of the securities and cash side, takes place directly on the T2S platform. The cash leg of DvP settlement settles on the associated DCAs. Instructions transmitted to T2S are processed in different settlement cycles in T2S. For cash and securities settlement, T2S offers a sequential night-time processing (night-time settlement, NTS) with two cycles and up to two real-time processing cycles (real-time settlement, RTS).

The settlement services offered by LuxCSD which are non-T2S based are free of payment only. Therefore, these services are out of scope for this question.

Finally, LuxCSD does not have any legal agreements with settlement banks.

Principle 10: Physical Deliveries

An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.

Key consideration 1

An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.

LuxCSD's obligations and responsibilities with respect to the immobilisation and delivery of physical instruments or commodities are prescribed by Luxembourg Law.

As depository and CSD subject to Luxembourg Law and CSDR, LuxCSD's obligation is mainly to receive physical deliveries for immobilisation purposes in order to represent such securities as book entries. Circulation of the securities in LuxCSD's system is performed exclusively in book-entry format in accordance with Article 3 of CSDR. The obligations and responsibilities regarding safekeeping and delivery of physical instruments and commodities are defined in LuxCSD's governing documents, in particular in the [GTCs](#), the [Client Handbook](#) and the [Market Link Guides](#). Article 10.2 of the GTCs provides that "*transfers of securities to or from accounts within the LuxCSD system shall be effected by book-entry only*".

In order to facilitate participants' understanding of their obligations and procedures for effecting physical deliveries, if any, LuxCSD maintains, in addition to the information publicly disclosed in the said governing documents, an active relationship with its participants; please refer to [Principle 23](#) for details.

Key consideration 2

An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.

The main risks associated with the immobilisation, storage and delivery of physical instruments are the loss of certificates during the process and the receipt of fraudulent certificates. The costs associated with the immobilisation, storage and delivery of physical instruments or commodities typically include postal costs, insurance costs, physical handling and re-registration fees, as well as custody fees.

LuxCSD has defined processes, procedures and controls to monitor the risks and costs associated with the handling and immobilisation of physical instruments or commodities, where relevant. These processes are defined in LuxCSD's internal operational procedures and published in its documentation. Processes implemented aim to minimise the risk of loss of certificates during their shipping and safekeeping.

Principle 11: Central securities depositories

A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.

Key consideration 1

A CSD should have appropriate rules, procedures, and controls, including robust accounting practices, to safeguard the rights of securities issuers and holders, prevent the unauthorised creation or deletion of securities, and conduct periodic and at least daily reconciliation of securities issues it maintains.

According to the requirements set forth by Articles 26, 37 and 38 of CSDR, LuxCSD has implemented rules, procedures and controls to safeguard the rights of the securities issuers and holders as well as the integrity of issues by preventing the unauthorised creation or deletion of securities (UCoD). These rules are described in LuxCSD's CSDR authorisation file and are designed to comply with the Luxembourg law framework which includes, among others, the CSDR, the civil code and the Securities Law as described in [Principle 1, key consideration 1](#).

Safeguarding the rights of securities issuers and holders

The legal obligations under statutory law, as well as the rights and obligations of LuxCSD vis-à-vis its participants are documented in the GTCs (as defined in [Principle 1](#)) and the other governing documentation. The GTCs can be downloaded in English from the [LuxCSD website](#).

Article 3 of the GTCs describes the rules applicable to the opening of accounts and the notification by the participant of the nature of the assets held in the accounts for segregation purposes. The Article provides for the following main principles:

- LuxCSD shall establish in its books accounts for the participants, when required, for the provision of services by LuxCSD.
- All such accounts shall be opened in the name of the participants, who are solely responsible and liable for the fulfilment of all corresponding obligations pertaining to the participation in an SSS and a CSD.
- The participants are responsible to opt for the level of segregation to be applied to the assets deposited with LuxCSD and shall inform LuxCSD accordingly. They undertake to segregate the assets held on a proprietary basis from the assets deposited on a non-proprietary basis in separate accounts and to apply a specific designation accordingly.
- The opening of accounts on a non-proprietary basis and the nature of such non-proprietary accounts shall be subject to the prior approval of LuxCSD and can be subject to the provision of additional information, including information relating to the underlying clients of the participant, as set forth in the GTCs.

There are two levels of segregation offered by LuxCSD:

- Omnibus client segregated account or “OCS”;
- Individual client segregated account or “ICS”.

In order to carry out the safekeeping and settlement of securities transactions, a participant can maintain a collective account at LuxCSD, in which the securities holdings of all of its underlying clients are booked together. This level of segregation corresponds to the omnibus client segregated account (OCS) as set out in Article 38 (3) of CSDR.

Alternatively, the participant may choose to set up separate deposit accounts at LuxCSD to segregate the securities of its individual clients from the holdings of the participant and of its other clients. This level of segregation corresponds to the individual client segregated account ICS as set out in Article 38 (4) of CSDR.

The participant is required under CSDR to offer its underlying clients the choice between OCS or ICS. Depending on the level of segregation chosen by the participant, the costs associated may differ. The ICS is indeed associated with additional costs [see LuxCSD’s [fee schedule](#), section 6.1 Standard Account Service Fee] due to the number of additional accounts that employing such a structure necessitates.

Luxembourg Law (Securities Law) provides that securities holders benefit – up to the amount of securities held on their securities account – from

- a right in rem of an intangible nature in all the securities of the same description held on an account with LuxCSD. This principle set out in Article 3 (1) of the Securities Law covers the securities held; as well as
- the rights attached to these securities and the rights provided by the Securities Law; and
- the rights provided for in the Securities Law.

According to Article 4 (1) of the Securities Law, the legal ownership of the participant over the securities results from the credit of such securities to the participant’s securities account. Hence, the legal entitlement towards LuxCSD is vested with the owner of the securities accounts, which is the participant. Such proprietary right applies to a portion of securities corresponding to its holding with LuxCSD against the pool of securities of the same kind and denomination representing the whole issuance, irrespective of the level of segregation chosen.

LuxCSD books for either account type (ICS or OCS) the securities and any other fungible financial instruments received as a deposit or held in an account separately from his own proprietary positions, off-balance sheet (that is, independently of ICS or OCS).

Safeguarding the integrity of issues by preventing UCoD and daily reconciliation

To safeguard the integrity of issues by preventing UCoD and protecting the right of both securities holders and issuers, LuxCSD as account keeper and CSD, applies the requirements set out in Article 14 (1) of the Securities Law. The company has implemented rules, procedures and controls to hold, in its own books or with another (foreign) account keeper, securities that are, in number and description, equal to the number and description of the securities credited on the securities accounts it maintains for its account holders.

LuxCSD has in place operational measures, internally and with linked CSDs, to properly safeguard, record, reconcile and report the assets deposited with it, and notify the relevant stakeholders when required. Thus, Article 47 of the GTCs provides for the following obligations:

- Obligation for LuxCSD to report the positions to participants on a daily basis by providing them with statements of accounts as specified in its governing documents. For further details see chapter 8.2 of LuxCSD’s [Client Handbook](#).

- Obligation for participants to reconcile their statements of accounts with their own books. The participants remain solely responsible for their internal reconciliation processes.
- Obligation for participants to report back to LuxCSD any inconsistencies or errors in any of the statements of accounts or related information provided to ease any remedial actions. These reports shall be provided to LuxCSD by the end of the business day following the day on which such statement or information was made available by LuxCSD.

Prevention of the unauthorised creation or deletion of securities

LuxCSD has implemented rules, procedures and controls to prevent UCoD of securities:

- Authorised creation of securities positions in the LuxCSD system is only performed upon receipt of securities to be credited to the participants' accounts either through a new issue distribution (issuing agent) or the settlement of a corporate action.
- Authorised removal of securities positions is generally performed upon final maturity or in the context of a corporate event.
- Integrated securities provisions checks are exercised before release of a settlement instruction.

Daily reconciliations are performed to ensure the correct application of the rules to prevent UCoD of securities. The various reconciliation measures as well as the handling of differences are detailed below in the "Periodic reconciliation of securities issues" and "Reconciliation frequency" sections of this key consideration.

Periodic reconciliation of securities issues

The internal and external reconciliation procedures and controls ensure on a daily basis that rules are adhered to.

As required by Articles 37 (1) and 37 (3) of CSDR, appropriate reconciliation measures are performed automatically within the systems to verify that the number of securities making up a securities issue or part of a securities issue submitted to LuxCSD is equal to the sum of securities recorded on the securities accounts of the LuxCSD participants of the SSS, and on owner accounts maintained by LuxCSD. Such reconciliation measures are conducted daily. As required by Article 59.1 of RTS 2017/392, LuxCSD ensures that these measures are performed for each securities issue recorded in all securities accounts maintained by LuxCSD (centrally and not centrally).

The validation of securities positions covers the following key processes:

- Validation of the number of securities making up a securities issue or part of a securities issue submitted to LuxCSD versus the total position recorded on the securities accounts of its participants and validation against a negative securities balance (that means that no negative securities balance exists on a participant account);
- Comparison of the previous end-of-day balance with all settlements processed during that day and the current end-of-day balance on LuxCSD's books; and
- Usage of double-entry accounting.

Automated alerts are generated when a mismatch or divergence from established rules is detected.

For settlement activities using the Eurosystem's T2S platform, the validation measures are supported through the operative processes of this platform.

Reconciliation frequency

LuxCSD performs automated daily internal securities reconciliation processes that it maintains centrally. It involves functional and non-functional processes performed on LuxCSD's books or in its systems,

respectively, ensuring the integrity of a security issue (as explained in the [“Periodic reconciliation of securities issues”](#) section of this key consideration).

LuxCSD also maintains daily securities reconciliation processes with various external parties. This refers to daily reconciliation of movements and positions that relies on reporting to be received from an external party, and securities positions which therefore are not (fully) maintained centrally by LuxCSD. The main purpose of reconciliation is to ensure the integrity of the issue and to minimise operational risk related to open differences in the respective holdings.

The automated daily securities reconciliation process ensures that the LuxCSD holding for each security received from external parties and the LuxCSD internal records for these securities are identical. Upon detection of a difference, the securities reconciliation team starts an investigation to either reconcile the item or find the root cause of the reconciliation break and then, allocate it to the right internal operational unit or to the relevant external party for investigation and correction.

To perform reconciliation of securities positions recorded in LuxCSD’s system with the securities positions held at linked CSDs, as per contractual agreement, the linked CSDs are required to send to LuxCSD Statements of Holding (MT535) and Statements of Transactions (MT536) on a daily basis. LuxCSD will compare its records with the positions provided by the linked CSDs, using a dedicated reconciliation application using pre-defined matching criteria. Non-matched securities positions will be investigated and, if identified as a reconciliation break, will be allocated to the relevant business unit or linked CSD for prompt investigation and/or resolution. A list of the identified discrepancies is sent to the linked CSDs on a daily basis, as well as to internal business units and management on a weekly basis. Business units may also check for open items allocated to their area in the reconciliation application where real-time updates are available.

Each remaining difference following reconciliation is reported as open until it is fully resolved, that means corrective actions have been taken or missing movements have been booked. Once these movements have been reported or respectively transmitted to the reconciliation application, open breaks can be reconciled and the open items authorised and closed. This is documented in the internal reconciliation procedure.

Where the reconciliation break reveals a UCoD, and LuxCSD fails to solve this reconciliation break by the end of the following business day, LuxCSD will suspend the affected securities issue from settlement until the UCoD of securities is resolved. In such cases, LuxCSD will inform internal and external stakeholders without undue delay of the fact that settlement in the relevant securities issue is suspended. Stakeholders will also be informed without undue delay when the UCoD of securities is resolved, and settlement in the affected securities issue is resumed.

As stated in LuxCSD’s governing documents, in order to allow its participants to perform their daily reconciliation obligations, the company makes daily statements of holdings and transactions available to participants.

The robustness of the system and the daily reconciliation processes are reviewed also by internal and external auditors on an annual basis.

Key consideration 2

A CSD should prohibit overdrafts and debit balances in securities accounts.

LuxCSD does not provide any cash accounts and cash management to its participants. Therefore, this key consideration is not relevant. Moreover, provisioning checks form an integrated part of the custody cash flows processing, which is based on a true “upon receipt of funds” principle.

Key consideration 3

A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry. Where appropriate, a CSD should provide incentives to immobilise or dematerialise securities.

LuxCSD's obligations and responsibilities with respect to the immobilisation or dematerialisation are defined in accordance with Article 3 of CSDR, the Securities Law (including the Dematerialisation Law) and the Immobilisation Law (see [Principle 1](#)). As stipulated in Article 5 of the GTCs, all securities eligible in LuxCSD are represented in book-entry form as immobilised or subsequent to a direct issuance in dematerialised form.

For those securities issued by LuxCSD as issuer CSD, please refer to chapter 5 of LuxCSD's Client Handbook that describes in detail the operational aspects related to the admission and distribution of new issues.

With regard to securities held for participants in the domestic markets to which LuxCSD maintains CSD links, the large majority is in book-entry form. For the residual portion of securities, which are still in physical form, these are immobilised and the certificates are not physically transferable as described in [Principle 10](#). In these cases, ownership is transferred on the books of the CSD and the certificate remains in the CSD's vaults.

Please refer to [Principle 10](#) for further details.

Key consideration 4

A CSD should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.

As mentioned in [key consideration 1](#), LuxCSD has implemented rules and procedures to safeguard the rights of securities issuers and holders (integrity of the issue) and to prevent undue creation or deletion of securities. These rules and procedures are in line with LuxCSD's applicable legal framework described in [Principle 1](#) and imply the following:

- i) LuxCSD's own assets are segregated from participants' assets in accordance with Article 38 (1) of CSDR;
- ii) Internal reconciliation within LuxCSD's system between the books of the CSD and participants' securities account, in accordance with Article 37 (1) of CSDR, and external reconciliations between LuxCSD's and linked CSDs' books are run on a daily basis to detect any mismatch timely. Any inconsistencies are adequately investigated and resolved in accordance with CSDR and Luxembourg Law principles (see key consideration 1 for further details). LuxCSD's reconciliation process is audited on a yearly basis, the audit scope includes the full review of the reconciliation process (cash and securities);
- iii) Creation of securities positions in LuxCSD's system is only performed upon receipt of securities to be credited to participants' accounts either through new issue distribution or settlement of participants' transactions;
- iv) Removal of securities positions is generally performed upon final maturity or in the context of a corporate event;
- v) LuxCSD performs KYC and due diligence reviews to ensure that LuxCSD's network of issuance agents has sound and robust processes and procedures in place and to verify that the service level delivered is as per the service level agreements in place.

LuxCSD regularly assesses and reviews the custody risk associated with the decision to entrust the securities to the respective CSD. Moreover, the safekeeping of securities by linked CSDs is indirectly covered by the reconciliation audit and is also reviewed as part of the Network Management CSD link arrangement review with these CSDs.

Protection against upper tier attachment

Under Luxembourg Law, LuxCSD's participant assets cannot be seized by their creditors (referred to in legal terms as being protected against "upper tier attachments"). Article 11 (1) of the Securities Law provides that no attachment of securities of a participant shall be made on, or to affect:

- A securities account of any person other than that participant;
- The issuer of any securities credited to a securities account of that participant; or
- A person other than the participant or LuxCSD. Any attachment made in violation of this rule is void.

Accordingly, any such attachment proceedings requested or to be executed in Luxembourg in violation of this paragraph of the Securities Law is considered as void.

For the purpose of the above, "attachment of securities of an account holder" means any judicial, administrative or other act or process to freeze, seize, restrict or impound securities of that account holder in order to enforce or satisfy a judgement, award or other judicial, arbitral, administrative or other decision or in order to ensure that availability of such securities to enforce or satisfy any future judgement, award or decision.

The same principle is reinforced for the accounts held with an SSS. Article 111 of the Payment Services Law provides that "No settlement account held with a system operator or settlement agent, as well as no transfer, via a credit institution incorporated under Luxembourg law or foreign law to such settlement account, may be seized, sequestered or blocked in any way by a participant (other than the system operator or settlement agent), a counterparty or a third party."

Loss sharing

As described under Article 45 of the GTCs, losses in a collective holding of a particular class of securities are to be borne jointly and on a pro-rata basis by the co-owners of the collective holding. This concept is applied regardless of the level of segregation that has been applied to the participant and the account structure(s) employed. Consequently, the following applies:

- In case of loss or total destruction by act of God of a pool of securities of the same type, LuxCSD shall formulate the necessary objections and arrange for the reconstitution of the securities lost or destroyed. If the loss or destruction by act of God was partial and if the reconstitution of the securities lost or destroyed could not be achieved, the pool of securities or other financial instruments of the same type shall be distributed among the injured participants in proportion to their rights.
- If the loss or destruction resulted from facts which cause LuxCSD to be liable and if the reconstitution of the lost or destroyed securities could not be achieved, claims of the injured participant on the remaining securities shall be exercised according to the above paragraph.

The injured participant will become unsecured creditor of the account provider for any outstanding part of their rights. This constitutes, therefore, a potential risk to the participant and the balance of securities held via accounts opened on either an ICS or OCS basis.

Prevention of the usage of the securities

According to Luxembourg law principles applicable to the depositories of financial instruments, and Article 38 (7) of CSDR, LuxCSD has a duty of safeguard, protection and restitution of the assets deposited and is prevented from using any assets deposited by its participants without their express written prior consent.

Such principles are reflected in LuxCSD's contractual documentation (Article 11 of the GTCs) as well as through internal control processes for the purpose of protection of the participant assets and their entitlement rights.

Key consideration 5

A CSD should employ a robust system that ensures segregation between the CSD's own assets and the securities of its participants and segregation among the securities of participants. Where supported by the legal framework, the CSD should also support operationally the segregation of securities belonging to a participant's customers on the participant's books and facilitate the transfer of customer holdings.

As a matter of principle, LuxCSD does not hold any proprietary positions in securities.

However, LuxCSD has robust arrangements to ensure a segregation with and among the securities of its participants in line with CSDR and Luxembourg Law (as defined in [Principle 1](#)):

- Under Article 38 (1) of CSDR, LuxCSD has the obligation to keep records and accounts that enables the company, at any time and without delay, to segregate in the accounts held with it, the securities of one participant from those of any other participant and, if applicable, from LuxCSD's own assets.
- In addition, following the Securities Law, LuxCSD has the obligation to segregate its own assets and the securities of its participants. Article 17 of the Securities Law enables LuxCSD to deposit securities with other (foreign) account keepers, through book transfer or otherwise, the securities credited or transferred to the securities accounts it maintains, or it may be registered directly or indirectly on the securities register of the relevant securities. LuxCSD shall hold these securities separately from its own securities with these other account keepers or depositories. In addition, in its function as an SSS, LuxCSD keeps the securities held by it in relation to the system it operates separately from the other securities deposited with it in line with Article 19 of the Securities Law.

The segregation of securities belonging to LuxCSD's participants and to their underlying clients is reflected in the CSD's contractual framework.

Articles 3 and 42 of the GTCs stipulate that LuxCSD's participants shall segregate entitlements to securities deposited for their own account (proprietary assets) from entitlements deposited on behalf of third parties (client assets). At the core of the arrangements governing the deposit of client assets is the allocation of all participants' accounts opened in LuxCSD's system by the direct participants to one of the following classifications:

- i) Participant's own account;
- ii) Individual client segregation (ICS) account, as set out in Article 38 (4) of CSDR. In this case, participants may choose to set up separate deposit accounts with LuxCSD to segregate the securities of their individual clients from their own holdings and from their other clients;
- iii) Omnibus client segregation (OCS) account as set out in Article 38 (3) of CSDR. Participants can here opt for a collective account with LuxCSD, where securities holdings of multiple underlying clients of LuxCSD's participants are booked together.

For either account type (ICS or OCS), LuxCSD books the securities and any other fungible financial instruments received as a deposit or held in an account, separately from its own proprietary positions and off-balance sheet. For more information, please refer to LuxCSD's [CSDR Article 38 disclosure document](#), available at the company's website.

Such account segregation structures implemented by LuxCSD enable it to safeguard participants' ownership rights, especially in the event of its own insolvency, and to prevent the use of participants' financial instruments on own account except when the participants have provided their express consent.

Key consideration 6

A CSD should identify, measure, monitor, and manage its risks from other activities that it may perform; additional tools may be necessary in order to address these risks.

See [Principle 3](#) for a detailed description of LuxCSD's risk management framework that applies to the company's core services, as well as to its ancillary services.

Principle 12: Exchange-of-value settlement systems

If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.

Key consideration 1

An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.

LuxCSD settles transactions that involve the settlement of two linked obligations and which are known as delivery versus payment (DvP), notably DvP Model 1, that is, final (irrevocable and unconditional) transfer of the securities from the seller to the buyer only upon final transfer of funds from the buyer to the seller.

The legal framework applicable to LuxCSD's services and settlement activities is defined in [Principle 1](#).

Principle risk is avoided thanks to the irrevocable and simultaneous exchange of securities (the delivery) and cash value (the payment) to settle a transaction.

- The legal framework applicable to LuxCSD's services and settlement activities, the Payment Services Law and the Securities Law, defines the finality of settlement. Please refer to [Principle 8](#) for further information.

By providing that (1) a transfer order can no longer be revoked or challenged by a system participant or by a third party from the moment of its introduction to said system and (2) from this moment the settlement can no longer be challenged for whatever reason, notwithstanding any legal, regulatory, contractual or usual provision which provides for the cancellation of contracts and transactions entered into before the opening of an insolvency procedure, Article 111 of the Payment Services Law targets principal risk that may arise when one obligation of a participant is settled but the other obligation is not.

- In LuxCSD's governing contractual framework (Client Handbook, chapter 3.4), the above-mentioned provisions of the Payment Services Law are implemented: [The Client Handbook](#) sets out the settlement mechanisms and rules applicable and binding upon LuxCSD and its participants to eliminate principal risk in the system pursuant to Luxembourg Law. In addition, the Client Handbook defines the enforceability, irrevocability, and finality points of the instructions. For details, please refer to [Principle 8](#). As Governing Document, the Client Handbook is publicly available via LuxCSD's website.

LuxCSD makes use of the T2S platform provided by the Eurosystem for its securities settlement in central bank money.

From a technical perspective, the T2S platform processes all instructions in real time ensuring a simultaneous exchange of delivery and payment. Securities are matched and provisioned prior to settlement to ensure the adequacy of cash and securities for settlement. Timely processing is assured by regular mitigating measures, such as system developments as soon as potential system performance issues are detected. The high level of system performance is being ensured by regular system regression testing activities.

Within the securities settlement, T2S executes the following steps for provided instructions:

- Acceptance of the instruction entry (Settlement Finality 1);
- Processing;
- Validation;
- Matching (Settlement Finality 2);
- Settlement of the transmitted instructions;
- Administration of positions;
- Reporting of transactions and of positions.

A real-time interface between T2S and LuxCSD ensures the exchange of settlement information and the consistency of the instructions in T2S and LuxCSD.

The order in which transactions are considered for provisioning and settlement is generally determined by:

- The transaction priority (assigned by the customer or by LuxCSD); and
- The settlement sequence option on the account.

Please refer to LuxCSD's Client Handbook, chapter 3 Settlement Services, for detailed information.

Principle 13: Participant-default rules and procedures

An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

Key consideration 1

An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.

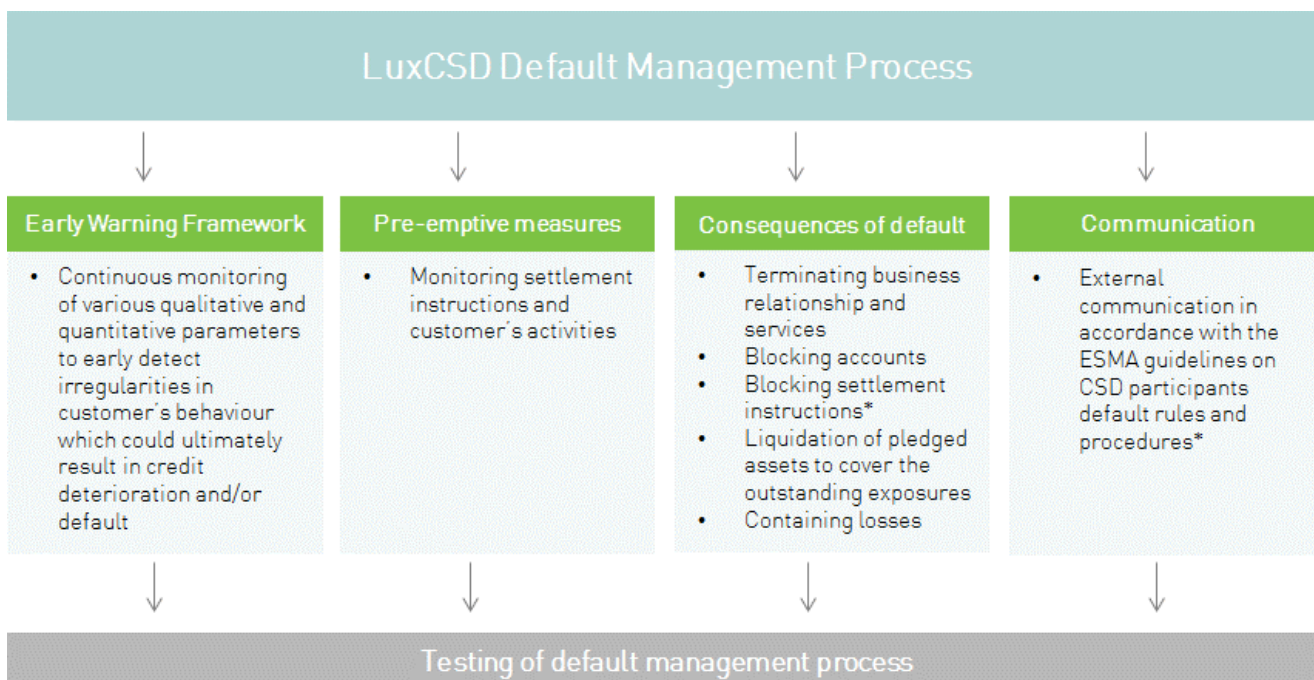
LuxCSD has Default Management Process (DMP) rules and procedures in place, which define the circumstances under which a participant of LuxCSD is considered to be in default.

Referring to the products and services offered, LuxCSD defines two types of default:

- (i) Legal default: When a participant is unable to fulfil its contractual obligations according to an agreement with LuxCSD where insolvency proceedings, as defined in Article 2 (j) of SFD, are opened against a participant. "Insolvency proceedings" shall mean any collective measure provided for in the law of a EU Member State, or a third country, either to wind up the participant or to reorganise it, where such measure involves the suspending of, or imposing limitations on, transfers or payments.
- (ii) Contractual default: When a participant is unable or unwilling to fulfil, in a timely manner, one or more of its scheduled obligations according to an agreement with LuxCSD.

In order to identify a default and classify it in accordance with the above-mentioned default types, LuxCSD has established the Early Warning Framework which is based on early warning indicators and their monitoring thresholds. The continuous monitoring of identified indicators and their thresholds ensures an early detection of irregularities in a participant's behaviour, which could ultimately result in a participant's credit deterioration or default. As such, LuxCSD could take pre-emptive measures even before the default occurs.

The following figure describes different stages of the DMP, which consist of both (i) monitoring (identifying participant's default at an early stage and taking some preliminary measures), (ii) taking corrective measures (liquidation of defaulting participant's pledged assets in order to cover any outstanding exposure) and (iii) communicating, as per ESMA guidelines, to the competent authority and the defaulting participant the actions to be taken or taken by the CSD following the default and to any other person the actions taken following the default.



*applicable only to insolvency

Key consideration 2

An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.

The DMP of LuxCSD incorporates a sequence of predefined processes in order to enable all relevant DMP stakeholders to be familiar with their tasks, roles and responsibilities at all times and react promptly in case of a participant default.

LuxCSD's DMP is outsourced to the Clearstream Default Management team (CDM) who is the owner of the DMP. The DMP is initiated and coordinated by CDM, which regularly reviews, tests and amends the process, where necessary. In case of a participant default, CDM would initiate the DMP. Upon approval of default, the DMP foresees the liquidation of the defaulting participant's assets for the purpose of covering their outstanding exposures (if any). Liquidation of assets is a corrective measure in the DMP. The key objectives of liquidation are to (i) minimise the losses for LuxCSD, (ii) limit disruptions to the market by ensuring timely completion of settlement even under stressed market conditions, as well as (iii) sell pledged assets in a prudent and orderly manner.

LuxCSD ensures a clear segregation of the participants' proprietary and their underlying clients' assets. Only participants' proprietary assets are subject to liquidation in case of default. The underlying clients' assets are segregated on dedicated accounts. They cannot be pledged under the pledge permitted by Article 41 of LuxCSD's GTCs and therefore underlying client assets are not subject to liquidation or off-setting in case of a participant default.

Upon default of a participant of LuxCSD, there are two types of treatment for underlying client assets:

- (i) In general, should a LuxCSD participant default contractually, it will be able to continue its operations at LuxCSD once the outstanding exposure of LuxCSD on the given participant has been covered in accordance with the rules and procedures of the DMP. As such, the defaulting participant

will also be able to continue the operations of its underlying clients as its assets remain on the accounts opened with LuxCSD. However, LuxCSD could decide on case-by-case basis to terminate the relationship in accordance with the GTCs, Article 54, point 2.

(ii) Should a LuxCSD participant default legally, LuxCSD would follow the instructions of the appointed administrator in order to transfer the remaining proprietary assets of the defaulted participant as well as the assets of its underlying clients to the dedicated accounts opened by the insolvency administrator. Should an underlying client wish to open a direct account with LuxCSD, LuxCSD would apply the standard due diligence under the participant acceptance criteria and decide whether an underlying client meets the criteria to be accepted as a new LuxCSD participant.

With regard to the participant's underlying client transactions, LuxCSD applies the settlement finality rules, provided the provisioning rules are respected. Should a participant of LuxCSD default, the DMP would be activated, and the accounts of the defaulting participant would be blocked. Under the settlement finality rules, LuxCSD would allow manual release of the relevant pending transactions.

LuxCSD's GTCs govern the right of pledge over participants' proprietary assets and the enforcement of those assets in case of a participant's default. Based on this, the DMP of LuxCSD defines the operational processes which enable the company to promptly access the above-mentioned pledged assets in case of a participant's default and liquidate them in order to cover any potential outstanding exposure of the defaulted participant.

In compliance with the ESMA guidelines on CSD participant default rules and procedures, LuxCSD would communicate a participant's default and/or the measures taken following the default to all relevant stakeholders. LuxCSD's default management procedures define the communication path in case of a participant default to the relevant internal and external stakeholders. The communication of default to the competent and relevant authorities of LuxCSD is part of the communication plan. In order to inform the non-defaulting participants of the actions taken following a participant's default, LuxCSD will publish a press release on its website as well as an alert on Xact Web Portal.

All default management processes and procedures are reviewed, tested, updated, and approved by the Executive Board at least annually in order to ensure their quality and functionality.

Key consideration 3

An FMI should publicly disclose key aspects of its default rules and procedures. LuxCSD publishes the overview of its main default management rules on the LuxCSD website.

LuxCSD publishes the overview of its main default management rules on the LuxCSD [website](#).

Key consideration 4

An FMI should involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.

CDM conducts the default management testing in order to ensure a continuous improvement of the DMP and the best possible level of preparation for a crisis situation, which can be triggered either by a participant default or a market crisis. In addition to the regular maintenance of the DMP, CDM undertakes the default management testing following any substantial changes to LuxCSD's default rules and procedures or upon the request from its competent authority. Depending on the type of test, CDM involves different

stakeholders. In accordance with the ESMA guidelines, these can be internal stakeholders, LuxCSD participants, relevant market infrastructures and any other entities, as appropriate, for the securities settlement system it operates. The competent authority may also request to take part in such tests. CDM tests the DMP also to ensure that all relevant stakeholders are familiar with their roles and responsibilities in the DMP. Additionally, the objective of default management testing is to provide training and guidance to LuxCSD personnel on how the default rules and procedures should be implemented.

CDM also discloses on the LuxCSD website a summary of the results of performed tests and the contemplated changes to its default rules and procedures, if any.

Additionally, LuxCSD offers participants the opportunity to be involved in the LuxCSD default management framework by going through the company's default rules and procedures as well as the testing activity with the Clearstream Default Management unit.

Principle 14: Segregation and portability

A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.

Not applicable to LuxCSD

Principle 15: General business risk

An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

Key consideration 1

An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.

Risk management is an essential component of the management and controls of LuxCSD. In general, LuxCSD has commissioned CBL to perform the second line risk management function. The organisation of LuxCSD's risk management is decentralised in line with the outsourcing structure among Clearstream group companies. The insourcing business areas of Clearstream are responsible for identifying risks and for reporting them promptly to the Risk Management function. Please refer to [Principle 3](#) for a comprehensive description of LuxCSD's overall risk management policies, procedures and systems.

Business risk reflects sensitivity to macroeconomic evolution and vulnerability to prevent risk arising from external threats, such as regulatory adjustments or changes in the competitive, macroeconomic or political environment or internal weaknesses. It comprises, for example, threats from competition, a negative economic environment, regulatory changes and other aspects, which lead to revenues that are lower than projected or costs that are higher than anticipated. It is expressed as a negative deviation from planned earnings before interest and taxes (EBIT). LuxCSD's business risk methodology is also applied to quantification of the business capital requirements as per CSDR.

For the relevant business risks, a scenario analysis method is used with the objective of:

- Documenting and assigning the business risk and major potential events;
- Establishing a sound basis for risk management, that is, determining likelihood and effects of potential generic events;
- Allowing a follow-up on the success of implemented measures;
- Inclusion of the macroeconomic and regulatory environment, as well as internal factors.

LuxCSD's financial performance is directly or indirectly subject to the evolution of several macroeconomic factors and related effects. Both internal and external factors as well as the CSDR capital requirements are analysed and assessed with regard to the company's business risk.

LuxCSD has developed an internal model for calculating business risk based on the company's individual risk profile. The overall approach to business risk management and the basic principles are defined in LuxCSD's risk strategy.

The framework to manage and control business risk comprises several instruments to enable LuxCSD to fulfil its roles and responsibilities within the business risk management process. These instruments are the scenario analysis and an early warning system based on key risk indicators (KRIs).

Assessments and estimations of business risk scenarios are performed by LuxCSD with the support of Clearstream Risk Management and are based on the Group-wide scenario catalogue to ensure

consistency. LuxCSD business experts are responsible for identification and quantification of all business risk scenarios. Each year, they update the scenarios and identify new ones where relevant.

At least on an annual basis (plus an ad hoc basis, if needed), Clearstream Risk Management organises joint workshops with business owners and performs scenario analysis workshops, along with capital requirement calculations. During a scenario analysis workshop, LuxCSD business experts' opinions on the severity and frequency of business risk events are collected. Clearstream Risk Management will document and validate the results, challenge the underlying severity and frequency estimations, and address all changes and deviations accordingly.

Details on responsibilities, processes and procedures with regard to risk management are documented in the LuxCSD Business Risk Handbook. The Handbook is reviewed annually and updated on an ad hoc basis. Internal Audit ensures compliance of the Business Risk Handbook procedures within LuxCSD.

Key consideration 2

An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.

LuxCSD holds a sufficient level of own funds to cover all capital requirements deriving from CSDR, that is, for operational, legal and custody risk, investment risk, business risk, as well as for winding-down or restructuring risk. The level of capital ensures that LuxCSD can continue operations and services as a going concern, if it incurs general business losses.

The amount of capital is determined based on LuxCSD's risk profile and the time horizon required to achieve a restructuring or winding-down of the company's operations. Should the level of capital fall below the requirements, LuxCSD maintains a recovery plan for raising additional equity in order to recover from any financial disruptions and continue to operate as a going concern.

Key consideration 3

An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.

LuxCSD maintains viable recovery, as well as restructuring and winding-down plans.

For situations where the company is unable to raise new capital in accordance with CSDR, LuxCSD holds sufficient equity to implement its restructuring and winding-down plan. The plan outlines potential strategies to follow in a restructuring or winding-down scenario and provides applicable tools which shall ensure the orderly winding-down or restructuring of operations and services. The main objective of the restructuring and winding-down plan is to show how critical business functions will be maintained to ensure the continuation of systemically important business activities until those can be substituted or taken over by another entity or competitor if recovery cannot be ensured. The time frame needed for restructuring or winding-down of LuxCSD's business has been assessed as nine months. Therefore,

LuxCSD holds capital for a time horizon of nine months of current operational expenses in order to restructure or wind down its operations.

Key consideration 4

Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.

LuxCSD's own funds cover operational risk, business risk, pension risk, financial risk, liquidity risk. In addition, a specific amount is fixed for business risk. The own funds are mainly invested in high-quality liquid assets (HQLA). The capital borrower for LuxCSD is Clearstream Banking S.A. (CBL). CBL's investment portfolio is composed of issuers whose bonds have a remaining life to maturity less than five years. These assets are exclusively ECB-eligible HQLA Level 1 assets denominated in Euros (CBL's equity is only in EUR currency). They are kept unencumbered in a separate account under the direct management of the liquidity management function (CBL's Treasury). The assets may only be used as a source of contingent funds during stress periods and qualify as qualifying liquid resources (QLR) under CSDR. During such stress periods, cash would be generated via the ECB's marginal lending facility or alternatively by using repo markets. Uninvested own funds are also kept unencumbered in a separate account at the central bank under the direct management of CBL's Treasury and, like securities assets, may only be used as a source of contingent funds during stress periods.

Key consideration 5

An FMI should maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the board of directors and updated regularly.

LuxCSD maintains a recovery plan for raising additional equity if its equity falls close to or below the requirements. The recovery plan is updated on an annual basis, reviewed by Subject Matter Experts and approved by the ComEx as well as the Board of Directors. The final version is submitted to the competent authorities, that is, BCL and CSSF.

The recovery plan of LuxCSD assesses different potential stress scenarios with a focus on the company's main risk drivers. To ensure a resolvability in case the near default stress scenario materialises, LuxCSD has identified and assessed a number of recovery options. These options are designed to respond to financial stress scenarios and could reasonably be expected to contribute to maintaining or restoring the viability and financial position of LuxCSD. They include both measures that are extraordinary in nature as well as measures that can be taken in the course of the company's usual business. Additionally, in accordance with Article 47(2)a of Regulation (EU) No. 909/2004, the recovery options ensure that LuxCSD is able to raise additional capital should its equity capital fall below the thresholds of the recovery indicators.

The recovery plan is fully embedded into and forms an integral part of the company's overall risk management framework.

Principle 16: Custody and investment risks

An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.

Key consideration 1

An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.

The safekeeping of securities by CSDs to whom LuxCSD has a CSD link is the responsibility of those CSDs. The safekeeping procedures, along with accounting practices and internal controls, are indirectly reviewed by LuxCSD during the reconciliation process audit. Furthermore, LuxCSD verifies the compliance of linked CSDs with the relevant provisions as part of the annual Network Management CSD link arrangement review with these CSDs.

LuxCSD has appropriate rules, procedures and controls in place to safeguard the securities issuers' and holders' rights and prevent undue creation or deletion of securities:

- Creation of securities positions in LuxCSD's system is only performed upon receipt of securities to be credited to participant accounts either through new issue distribution or settlement of participant transactions;
- Removal of securities positions is generally performed upon final maturity or in the context of corporate events;
- Reconciliations between LuxCSD's books and those of its linked CSDs are run daily with any mismatch timely and adequately investigated and resolved;
- LuxCSD performs know-your-customer (KYC) and due diligence reviews to ensure that the network of LPAs has sound and robust processes and procedures in place and to verify that the service levels delivered is as per the respective service level agreements in place.

Key consideration 2

An FMI should have prompt access to its assets and the assets provided by participants, when required.

Please refer to [Principle 11](#) for LuxCSD's access to its assets.

LuxCSD has a prompt access to the assets provided by its participants in accordance with CSDR and Luxembourg Law (as defined in [Principle 1](#)). LuxCSD is entitled:

- for the assets sub-deposited on behalf of its participants legal and contractual rights against the linked CSD to promptly recover the assets as confirmed by the local law legal opinions assessing the CSD Links (please see [Principles 1, 11](#) and [20](#));

- to recover any potential business losses caused by the participants' default to satisfy their obligations towards LuxCSD a general right of pledge (Article 41 of the GTCs, as defined in [Principle 1](#)) and a right of retention (Article 40 of the GTCs).

Regarding the access of the CSD Links related assets, LuxCSD holds such assets in account(s) at the local CSDs (also see [key consideration 3](#)). In all cases the elements necessary for asset protection are reviewed internally but also by an external legal opinion to ensure that they are compliant with LuxCSD's obligations towards its participants.

In case of a participant's default, LuxCSD will ensure that all accounts holding pledged positions will be immediately blocked to avoid any transfer of positions. If the decision to liquidate a participant's portfolio is taken, the pledged assets are segregated to enable the liquidation process. In order to enable prompt access to LuxCSD's participants' assets, the company monitors the quality of the services provided by its suppliers and their adherence to the standards defined in the contractual arrangements as outlined in [key consideration 1](#).

Key consideration 3

An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.

Not applicable to LuxCSD.

Key consideration 4

An FMI's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.

LuxCSD does not have any investments that would require to be secured by, or be claims on, high-quality obligors. Instead, the company has cash deposits at the central bank (BCL) and at a AA rated bank ensuring immediately available funds. LuxCSD does not hold any proprietary positions in securities. The company closely monitors the creditworthiness of the bank at which the cash is deposited. Should the rating deteriorate, LuxCSD would be able to move the cash deposit to an alternative bank, or alternatively to a BCL account. This procedure could be carried out immediately.

Principle 17: Operational risk

An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.

Key consideration 1

An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.

Operational risk is generally defined as the risk of losses resulting from inadequate or failed internal processes, people and systems or from external events. More specifically, LuxCSD has adopted a definition that is in line with Basel definitions of operational risk which is the risk that deficiencies in information systems or internal processes, human errors, management failures, or disruptions from external events will result in the reduction, deterioration, or breakdown of services provided by LuxCSD.

LuxCSD established appropriate systems, policies, procedures and controls which are described within the adopted risk management framework (see also [Principle 3](#)). LuxCSD applies a five-step process for risk management including identification, notification, assessment, mitigation and monitoring. Risk identification involves, to the most complete extent possible, potential threats, causes of losses and disruptions. Risk Management at LuxCSD applies the basic principle that all organisational units and individual employees are responsible with regard to this step. The company's Risk Management function will be notified after identification in order to be able to:

- Assess the risk exposure in a quantitative and a qualitative manner; and
- Accompany the business areas in close monitoring (including the implementation of mitigation actions) and provide them with guidance from a risk management perspective.

On regular and also on ad-hoc basis, relevant boards and committees are informed about material risks, potential early mitigation measures, assessment and recommendation, in order to take appropriate action.

IT tools support the identification, monitoring and management of operational risks and ensure that the technical environment of LuxCSD remains stable (for example, the tools are used to ensure processing and monitoring of the infrastructure). In particular, with regard to operational risk, LuxCSD uses IT tools and processes to minimise operational risks for its securities settlement system (SSS).

Key consideration 2

An FMI's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI's operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.

LuxCSD's Board of Directors is empowered to set the company's strategy, objectives and overall direction, overseeing and monitoring management decision-making and effectively directing the business of the company.

The Board of Directors is vested with the broadest powers to perform all acts of administration and disposition in the interest of the company, ensuring its sound and prudent risk management, except where such powers have been expressly reserved by law or by the Articles of Association to the general meeting of shareholders and without prejudice to the daily management delegated to the Executive Committee (ComEx) in accordance with Article 10 of the Articles of Association and the rules set out in [key considerations 5 and 6](#) and any other relevant internal rules applicable to the ComEx approved by the Board of Directors. Please refer also to [Principle 3, key consideration 3](#) for a comprehensive description of LuxCSD's systems, procedures, policies review, testing and audit.

Key consideration 3

An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.

From a business perspective, LuxCSD's operational reliability objectives are documented within a set of key performance indicators (KPIs) that allow a quantifiable and qualitative view of service delivery provided by Business Operations. Such KPIs deliver information on effectiveness, efficiency, degree of automation, turnaround times, operational quality and operational risks for business processes. The operational reliability objectives are, among others:

- Automate processes and operate in STP mode wherever possible, for instance, in the areas of income, corporate actions, reconciliation;
- Reduce operational errors to a minimum in all areas;
- Provide competitive deadlines;
- Reduce reversals to a minimum;
- Set up new client accounts as soon as possible;
- Meet the recovery time objective (RTO) of two hours for time critical systems;
- Provide self-explanatory documentation to decrease number of calls to Client Services.

The above-mentioned KPIs are both of qualitative and quantitative nature and can be classified in three different categories with focus on:

- Quality and risk aspects;
- Capacity and volume aspects;
- Process efficiency aspects.

Key consideration 4

An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.

All of LuxCSD's reliability objectives stated in [key consideration 3](#) aim at delivering services to clients at the highest level possible while ensuring a robust service resilience. This also includes the operation of systems at defined service levels.

LuxCSD ensures continuously highest levels of system availability for its core systems (Occasional downtimes are scheduled on weekends for essential system maintenance.). The Creation and ClearstreamXact platforms are designed to cope with settlement volume peaks 50% greater than the average daily activity. Higher peaks can be directly handled by assigning further infrastructure capacity.

LuxCSD has set up specific monitoring processes for volumes in business and IT: Volume information is collected on a daily basis. This is supported by the monitoring of KPIs and deadlines, as defined in service level agreements. In case of deviation, an analysis is performed. If deviation is due to increasing volumes (changes in the market environment), capacity increases are performed immediately and backed by capacity-on-demand arrangements with infrastructure providers in order to ensure the performance. Changes follow the company's IT change management process including impact assessments and subsequent stress tests if necessary.

Furthermore, LuxCSD monitors the capacity of its systems to ensure that a capacity buffer (also known as "headroom") is maintained. The following key internal indicators are used to monitor the CSD's IT system performance: system availability, external deadlines and load/resource consumption. Each month, a capacity management report including a volume trends analysis is produced. If one or more of the said indicators fall below specific thresholds, LuxCSD will take appropriate actions to improve or upgrade its systems in order to maintain the capacity buffer.

From a control perspective, during each application audit, KPIs and latest capacity management reports are reviewed and compared with the latest incidents reports. The capacity management process itself is also part of the audit plan.

Thanks to a comprehensive change management and release management process, IT systems go through a structured development and testing process before being put into production. Robust tests are also performed throughout the lifetime of the IT systems, for example, whenever material changes are implemented to a system or when a system has suffered a major operational disruption, as applicable on the basis of the underneath root cause.

LuxCSD practices a BCM risk mitigation and avoidance strategy by identifying and assessing the risks and taking preventive precautionary measures to address and mitigate adverse effects in infrastructure or data centre services in the form of developing and upholding business continuity and disaster recovery procedures. By maintaining a dual data centre strategy and keeping all key components redundant and identical between the two data centres for LuxCSD-hosted applications, it is warranted that mainframe servers operated under full sysplex, enterprises disk storage systems and the tape library infrastructure including peripheral hardware such as storage area network and network components are always fully operational in both locations. This is perpetuated by continuously employing both data centres with running production and test workloads. Running production workloads in both locations will always fully allocate and demand the underlying infrastructure in its entirety for both data centre locations.

Business volume is monitored throughout the day and during night-time batch operations. Systems are equipped with additional headroom of unallocated resources to accommodate to higher workloads, should this be necessary due to a significant increase in business volume.

Business Operations has a high level of process automation and therefore a massive, sudden jump of settlement volumes has only a limited impact on Business Operations. Key mitigation actions will be limited to resource measures like extended working hours or temporary allocation of resources from non-impacted business areas to impacted areas.

Key consideration 5

An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.

Physical security

As LuxCSD has a leasing agreement to utilise the same premises as Clearstream in Luxembourg, the company has outsourced its physical security management to Clearstream. The latter has implemented physical security standards which are defined in Deutsche Börse Group's Corporate Security Policy.

Physical vulnerabilities and threats, resulting risks thereof and adequate countermeasures are defined on an ongoing basis. Various sources, such as internet and media research, security information providers and governmental institutions are consulted when evaluating physical vulnerabilities and threats.

The Corporate Security Policy is the main framework and is complemented by:

- Security Manual;
- Physical security standard (PSS);
- Security assessments;
- Penetration test concept;
- Access control work instructions;
- Data centre access procedure (in cooperation with data centre team).

A major component of the defined processes derived from the Corporate Security Policy is the use of the Security Manual which describes operational and administrative tasks, segregated in a general part and a location-specific part. In addition to this Manual, various other processes and procedures are established to ensure the highest possible safety for people and assets. For example, Corporate Security has developed a physical security standard (PSS) which applies to all locations. A distinction is made between data centres, headquarters and office buildings. A further distinction is made regarding a single or multi-tenant usage of the building. The PSS was developed on basis of different generally accepted security standards.

All processes are subject to permanent monitoring and verification which is guaranteed amongst others by security assessments, intelligence and monitoring, risk analysis, internal and external auditing, penetration testing as well as awareness campaigns and trainings.

The main corporate security elements are listed below:

- An access control system is in place for all premises and respective logs are kept. A card access system is in place for all areas, monitored 24/7. There are additionally armoured doorways to high sensitivity areas CCTV cameras are installed inside and outside the buildings. They operate in real time 24 hours, 7 days per week via CCTV and infra-red of all critical areas. Security guards are on site 24/7 and all entrances are checked by cameras.

- A security management system (SMS) is connected to the fire control centre and its fire detectors. Furthermore, the SMS is connected to an intrusion alert system. Surveillance of technical installations (temperature etc.) is also installed. Visitors are required to sign in at reception providing valid proof of identity and must be accompanied by staff onsite. The building is therefore restricted to authorised personnel and accompanied visitors.
- Finally, computer facilities have no windows facing outside, ensuring data confidentiality.

All projects have to follow the Corporate Security Policy framework to address sources of physical vulnerability as described in the Security Manual, like the monitoring of third-party providers (for example, access to buildings), information security and data protection principles, fire protection guidelines etc.

Information security

Information security governance, objectives, oversight accountabilities and organisational structures are in place at LuxCSD to support conscious, proactive and effective risk-based decisions that ensure high standards of information security.

This information security framework provides the basis for carrying out information security internal control across all Deutsche Börse Group entities. The policies, standards and processes are regularly enforced, reviewed and updated where deemed necessary. The framework is structured in a hierarchy composed of three tiers with the Group Security Charter as the single highest-level information security charter (Tier 1). Tier 2 is made up of policies covering information security, incident management, application security, infrastructure security, suppliers security and corporate security. Tier 3 expands upon the previously mentioned policies into a set of security standards and guidelines.

In addition, a cyber resilience framework is put in place to provide guidance on how cyber resilience objectives are rolled out, and to outline people, processes, and technology requirements for managing cyber risks and to effectively respond to and recover from cyberattacks. This framework is aligned with Clearstream's cyber resilience strategy.

A governance structure is in place to enable a reasonable level of assurance on the design adequacy and operating effectiveness of the information security framework:

- i) The Risk Committee, with escalating authority, advises the ComEx and Board of Directors on LuxCSD's overall current and future risk tolerance and strategy. In addition, the Committee regularly performs reviews of the company's risk mitigation strategy.
- ii) The Board of Directors and the ComEx are responsible for setting the "tone from the top" regarding the importance of internal control of information security, including compliance with internal policies and external regulatory requirements.
- iii) LuxCSD's Chief Information Security Officer (CISO), outsourced to Clearstream Banking, is responsible for the organisation and management of LuxCSD's second line of defence information security function and reports to the ComEx and Board of Directors. More specifically, key responsibilities of the CISO are the following:
 - Reviewing and enforcing applicable information security policies, regulations and standards;
 - Steering of the information security processes, controls and compliance activities;
 - Monitoring and reporting on the effectiveness of the information security services provided to LuxCSD by Clearstream Banking as per the outsourcing agreements;
 - Identifying, evaluating and tracking of any information security risk relevant for LuxCSD. ;
 - Taking the necessary steps for effective management of risks, resolution of vulnerabilities and improvement of the overall information security risk posture;
 - Overseeing the effective resolution of internal and external audit findings and recommendations related to information security including flagging up any issues or risks, which may prevent the company from meeting agreed timelines or level of quality;

- Reporting to the Board of Directors and relevant Committees as well as to external auditors and regulators as required;
- Supporting the Board of Directors in meeting their fiduciary duties in relation to information security; and
- Liaising with the responsible regulator(s) for information security matters.

In the context of the existing outsourcing framework, several security services are provided by Deutsche Börse Group Information Security. The outsourcing agreement in place defines the agreed KPIs which are measured and monitored.

Group Information Security's organisational structure includes the following units:

- IS Governance & Risks: focusing on governance, risk, policies and standards, compliance and security awareness;
- Identity & Access Management: focusing on identity management, access management, information asset management and cryptography;
- Cyber Protection: aims to provide services to ensure confidentiality, integrity, availability. Furthermore, the section contributes to the risk reduction of cyberattacks by early identification of security threats. This is achieved, for example, through regular scans of the infrastructure and applications, dedicated penetration tests as well as constant activity monitoring and state-of-the-art intrusion detection and anti-malware systems;
- Cyber Defence: focuses on sensing, detecting and engaging adversaries in order to assure mission success. This requires a strong emphasis on intelligence and reconnaissance (alert management, incident management via CERT, detection capabilities via SIEM and threat intelligence);
- Strategy & Architecture (S&A): ensures compliance with existing security cornerstones through project consulting. Furthermore, S&A works on technology topics such as cloud, hardware security module (HSM) and single sign-on (SSO) approaches.

Key consideration 6

An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The FMI should regularly test these arrangements.

LuxCSD has approved the Deutsche Börse Group Business Continuity Management System (BCMS) Policy and the LuxCSD BCMS Policy Appendix. The purpose of the Policy is to determine the company's approach and organisational roles and responsibilities with regard to BCM in order to provide clear direction for the development, implementation, validation and maintenance of a business continuity framework within LuxCSD.

Due to the nature, size and complexity of the business of the CSD, the company's Business Continuity Plan (BCP) is composed of multiple documents:

- Approval presentation of the annual BCM Report, which includes and highlights the key components of the BCP of the CSD (for example, recovery strategies, BIA, testing etc..);

- Business continuity plans (BCPs) of the different business functions, which may be produced at Unit, Section or Department level as appropriate. BCPs are an essential part of the business continuity concept. BCPs are a collection of information, guidelines and procedures which are compiled, developed, and maintained by the relevant organisational units for use in the event of an emergency or disaster to maintain the continuity of the unit's vital business functions. Each mission critical unit must establish, implement, and maintain a BCP to describe its critical business activities, associated business recovery requirements and business recovery action plan.

The functions which are indispensable for the critical daily operations are called mission critical and must be resumed within a recovery time objective (RTO) of two hours following a disruptive incident, crisis, or large-scale disaster. The RTO is the time period following a disruptive incident within which products, services or activities must be resumed or resources must be recovered in order to ensure fulfilment of contractual obligations.

LuxCSD's IT systems are hosted in dual data centres in Luxembourg and to some extent in Frankfurt and can be remotely operated. All types of components are duplicated between the two centres and are running in parallel. Full data synchronisation between the dual data centres is in place to ensure that no data loss occurs (recovery point objective = 0). In the event of an incident in one data centre, a failover mechanism ensures that all processing is taken over by the second centre. The arrangements in place protect the company against the loss of one data centre in one location. This recovery mechanism is ensured by the yearly IT Disaster Recovery testing which simulates the loss of systems in one data centre by validating that critical systems can effectively run in the remaining centre. The IT units have to provide the test results and required information to the BCM function for the test assessment.

With regard to the secondary site, backup facilities in Luxembourg and Frankfurt provide alternative office space for Clearstream mission critical units in the event that their usual office location would become unavailable. The backup office facilities are exclusively dedicated to Clearstream mission critical units including LuxCSD units. These locations are fully equipped in terms of capabilities, functionalities, staffing arrangements and are operational at any time. Furthermore, business transfer mechanisms to other locations of the company are in place as recovery concept to ensure continuity of operations in the event of workspace unavailability.

Key consideration 7

An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.

Risks to the FMI's own operations

Potential risks caused by key participants are mainly related to operational problems of the key participants themselves and have no direct and significant impact on LuxCSD. Nevertheless, this may pose risks to their counterparts and subsequently pose risks to LuxCSD's settlement system efficiency. To appropriately identify, monitor, manage and report on the key participants' risks, the CSD has implemented a key participant procedure that primarily focuses on:

- Identification of key participants and their related material dependencies;
- Performance of periodic enhanced key participant due diligence reviews (which assess key participants' risk control and management capacities to address and manage fraud, cyber, information security, business continuity, disaster recovery, infrastructure technology and application system risk elements);
- Monitoring potential key participant operational risk exposures and assuring appropriate mitigation measures;

- Ensuring that LuxCSD’s key participants’ underlying key participants have sufficient measures in place to properly manage and address the risks they pose to LuxCSD’s key participants and to thereby minimise to the maximum extent possible the potential risks posed for the CSD, other participants and thus the market as a whole.

Additional measures include:

- Clear and stringent criteria to become a LuxCSD participant; please refer to the “[Becoming a LuxCSD client](#)” section of the LuxCSD website and the Client Access and Acceptance Policy published on this page;
- Continuous monitoring of system usage and the global settlement efficiency level;
- Detailed Market Link Guides documenting the established rules for participants, market practice across the Clearstream network and instruction specifications as well as potential risks;
- Choice between LuxCSD proprietary connectivity or Swift;
- Participant training support;
- Clear and timely announcements to participants for system changes with impact on participants;
- Periodic enhanced due diligence on identified key participants.

Risks posed by LuxCSD to others

The CSD’s interconnectedness to other FMIs (for example, stock exchanges, CCPs) in principle makes substitution difficult thereby increasing its interdependencies and subsequent potential operational and financial risks that could be posed to others as a whole.

Risk mitigating measures include due diligence reviews performed on the CSD by its participants and service providers to assess their risk and regulatory control framework capacities put in place to manage all related risks. A major element of these reviews is that LuxCSD shares relevant information with other entities that allow them to adequately assess the risks posed to them by LuxCSD.

In addition, LuxCSD has implemented many layers of precaution and protection of its processes and services (regular tests of BCPs), and operates a comprehensive risk management framework built on established standards and best practices.

Outsourcing of critical operations

For the provision of products and services to participants, LuxCSD uses a system of mainly intra-Group outsourcing agreements to work effectively and efficiently. All entities within the Group are subject to the same requirements on reliability and contingency. The service delivery to LuxCSD is subject to a framework agreement and a formal service definition agreement (“SDS”). The latter also defines qualitative requirements (for example, service features, quality and performance standards, escalation mechanisms). The SDSs also contain KPIs to measure the quality of the respective service.

Any outsourcing is to be based on an initial analysis of the proposed outsourcing (including a pre-assessment, initial outsourcing risk assessment) ensuring compliance with at least current standards as well as fulfilling all legal obligations (that is, being compliant with existing regulation, ensuring banking secrecy, data protection requirements etc.).

Outsourced services and documentation are constantly monitored, and a regular risk assessment is done according to the Outsourcing Policy. The Outsourcing Coordinator, as part of the Central Outsourcing Management, discusses the initial score of the risk assessment with the other second line of defence functions, which are Compliance, Risk Management, Information Security, Data Protection and Internal Audit (as third line of defence). After the review of each participant the Outsourcing Coordinator informs LuxCSD’s Board of Directors of the results.

Apart from the Central Outsourcing Management, LuxCSD might in regular reviews identify several operational and business risks that could arise from service providers, as well as from other FMIs. The outsourced services are included in an appropriate manner in the operational risk management framework.

Principle 18: Access and participation requirements

An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.

Key consideration 1

An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.

According to Article 33 (1) of CSDR, LuxCSD's admission and participation criteria are publicly disclosed in the "[Becoming a LuxCSD client](#)" section of its website. The criteria fulfil the requirements of the regulation to be transparent, objective, and non-discriminatory so as to ensure fair and open access to LuxCSD with due regard to risks to financial stability and the orderliness of markets. The criteria are described in detail in LuxCSD's [Client and Access Acceptance Policy](#) (CAAP) that can be found in said section of the company's website.

The terms of the services that LuxCSD provides are driven by, but not limited to, the following three key obligations of the company:

- Legal obligations as a CSD under Article 16 of CSDR;
- Compliance, at all times, with the legal and regulatory obligations whilst remaining above any justified criticism in the eyes of the CSD's participants, regulators and the public;
- Consideration of the credit, operational and IT security risks undertaken and the obligation to mitigate any systemic risk that could be encountered.

Participation criteria that restrict access are permitted only to the extent that their objective is to justifiably control a specified risk for LuxCSD: pursuant to Article 33 (3) of CSDR, LuxCSD denies access only where duly justified based on a comprehensive risk assessment. Article 89 of DR 2017/392 stipulates the criteria and risks on which basis LuxCSD may refuse access to a requesting party such as a participant or another CSD. Accordingly, LuxCSD shall only consider legal risk (as defined by Article 89 (2) of DR 2017/392), financial risk (as defined by Article 89 (7) of DR 2017/392) and operational risk (as defined by Article 89 (11) of DR 2017/392) when conducting the risk assessment. In addition, requirements from rules on the prevention of the use of the financial system for the purpose of money laundering and terrorist financing and financial sanctions are taken into account.

LuxCSD considers access requests by applicants who are regulated financial institutions, sovereign and supranational institutions (public authorities), and trading venues/central counterparties. Pursuant to No. 3.4. of the CAAP, LuxCSD has defined criteria for persons who are prohibited from participating in the securities settlement system, for example, natural persons, residents of any country that is subject of a "call to action" by the Financial Action Task Force (FATF) and persons causing LuxCSD to breach sanction regulation. Lastly, LuxCSD does not foresee indirect participation.

LuxCSD's admission process

As a first step, LuxCSD ensures that the applicants are validly incorporated and existing under the relevant jurisdiction of incorporation and have the capacity to enter into agreements with LuxCSD and to perform the activities provided therein.

In this respect, LuxCSD requests from its participants to be provided with the following documents, together with the [account opening forms](#):

- Articles of association and, if the articles are not available in German, English or French, a legal English translation;
- Proof of regulation, for example business licence or official authorisation to conduct (financial) business; if the licence is not available in German, French or English, a legal English translation needs to be provided;
- Excerpt of the applicant's register including certificate of residency;
- Applicant's most recent audited annual reports. In the case, the applicant is a subsidiary, the latest audited annual report of the parent company;
- Due diligence questionnaire (Enhanced Due Diligence Questionnaire and ISSA Questionnaire or Financial Crime Compliance Questionnaire or the Wolfsberg CBDDQ or FCCQ) duly filled in and signed;
- FATCA self-certification form, duly filled in and signed;
- Entity's tax residency self-certification form duly filled in and signed;
- Controlling persons' tax residency self-certification form, duly filled in and signed (if applicable);
- U.S. Patriot Act certification (if applicable);
- Ownership/shareholding structure indicating the natural person(s) who own(s) or control(s) 25% or more of the shares and the main shareholders who own 10% or more of the shares;
- Organisational chart (diagram of the high-level management functions);
- Copy of the ID card of the ultimate beneficial owner/notional beneficial owner (if applicable);
- Copy of the ID card of the person acting on behalf of the participant/proxy holders (if applicable);
- General, complete and up-to-date list of all of the applicant company's authorised signatories with specimen signatures.
- Detailed report written on the applicant by a recognised rating agency (if available).

Please also refer to the [Becoming a LuxCSD client](#) section on LuxCSD's website.

Key consideration 2

An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit.

LuxCSD's criteria for participation as set out in the CAAP allow fair and open access for all legal persons that intend to become participants in the SSS operated by LuxCSD and are applied in a non-discriminatory manner, nonetheless with due regard to risks to financial stability and the orderliness of markets. Criteria restricting access always relate to a specified risk.

Justification and rationale of participation criteria

LuxCSD's participation criteria are geared towards avoiding undue legal, financial and operational risk for the safety and efficiency of the SSS the company operates.

When assessing legal risks, LuxCSD will take into account in particular the following criteria:

- Compliance with the legal requirements for participation in the SSS, including any required legal opinions or legal arrangements;
- Assurance with the rules on the confidentiality of the information provided through the SSS;
- Where a party is established in a third country, either of the following:
 - (i) Party is subject to a regulatory and supervisory framework comparable to the regulatory and supervisory framework that would be applicable to a party if it were established in the European Union;
 - (ii) Rules of the CSD concerning settlement finality referred to in Article 39 of the CSDR are not enforceable in the jurisdiction of a party.

When assessing financial risks following a request for access by a party, LuxCSD will take into account whether said party holds sufficient financial resources to fulfil its contractual obligations towards LuxCSD. LuxCSD will also assess the financial resources of the party in order to ensure it has the capacity to contribute to a sustainable level of settlement efficiency. As to the financial conditions of a potential new participant, the applicant's credit standing is reviewed taking into account various qualitative and quantitative factors such as operating environment, liquidity, capitalisation, asset quality, profitability, financial support by the parent etc.

When assessing operational risks following a request for access, the following criteria are relevant:

- Operational capacity to participate in the SSS, including connectivity, communication and cyber risk considerations;
- Compliance with the risk management rules;
- Existence of business continuity policies or disaster recovery plans;
- Potential changes of its operations and risk management procedures in order to ensure the smooth functioning of the SSS.

As long as the applicant is meeting the criteria defined above, and once the application forms are validated internally, LuxCSD's participants will have in principle access to the full range of services offered by LuxCSD, under the specific terms of each service, subject to credit, operational and legal risk assessments that in some cases are product-specific.

LuxCSD cannot have relations with indirect participants. Indirect participants would be the underlying client of a participant of LuxCSD whose contractual relation with and contractual obligations to is uniquely to the participant. Such parties would therefore only have benefit from the services LuxCSD offers through LuxCSD's participants, their own custodians, under the same terms. LuxCSD endeavours to identify the participants' clients responsible for a significant proportion of transactions processed by the company and the participants' clients whose transactions, based on their volumes and values, are significant relative to the respective participants' risk management capacity.

LuxCSD considers the risks that an actual or prospective participant may represent and ensures that the applicants and the participants meet appropriate operational, financial and legal requirements to allow them to fulfil their obligations.

Least restrictive access

A review of the Compliance policies and procedures are at least run annually in order to ensure that the controls and obligations in place remain accurate. A review of the participant relations is organised by each risk-related area such as Compliance, Credit etc. as per their internal process.

The implementation of the above-mentioned access criteria is also geared towards having the least restrictive impact on access that circumstances permit.

Additional risk assessments are performed when existing participants seek access to higher risk products. This is typically the case when an existing participant requests the opening of an additional account for a specific purpose. The whole relation will be considered in the decision to open or not such account. Such review process will trigger the review of the level of access restriction for the services offered, and the different requirements that may be imposed, or lifted, on the participant. Essential required information on LuxCSD's products and services is publicly available in the [Client Handbook](#).

Key consideration 3

An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.

Monitoring compliance

LuxCSD has the obligation to ensure that the documents, data and information regarding a business relationship are kept up to date at all times. According to CSSF Regulation No 12-02 of 14 December 2012 on the fight against money laundering and terrorist financing, LuxCSD must continuously monitor the business relationship and the transactions carried out within this relationship. In scope of the ongoing monitoring LuxCSD must ensure that the relevant documents, data or information are updated at appropriate intervals considering the level of money-laundering and terrorist financing risk. Therefore, a periodic review cycle applies to all participant relationships and accounts and a prescribed set of documents are collected on an ongoing basis according to the Client Due Diligence Requirements Procedure. Such documents are also collected to review participation requirements and initial risk assessments (for example re-collection of proof of regulation, extracts from company's register, annual reports, financial statements). The frequency of the review cycle depends on the risk classification of the participant.

The Compliance department is responsible for the continuous monitoring of transactions and product usage of a participant. LuxCSD has the obligation to ensure that the documents, data and information regarding a business relationship are kept up to date at all times. A periodic review cycle applies to all relationships and accounts. The frequency of the review cycle depends on the risk classification of the participant.

Suspension and orderly exit

In line with Article 54 of its [General Terms and Conditions](#), LuxCSD reserves the right to terminate or suspend the provision of services to a participant with immediate effect, and without prior notice, if in LuxCSD's opinion the participant is in material breach of any obligation incumbent upon it under the governing documents or any other agreement between LuxCSD and the participant. For the purpose of the GTCs, a material breach shall be interpreted as a breach to an essential obligation of the participant under the GTCs, that is, a breach that would affect the consideration of the contractual relationship ("la cause du contrat").

Possible suspension of the service to the participant is covered by Articles 32 and 35 of the GTCs.

Principle 19: Tiered participation arrangements

An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.

Key consideration 1

An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.

Tiered participation arrangements

LuxCSD has contractual relationships covering the delivery of its products and services including settlement and custody services uniquely with its direct participants. It therefore maintains only direct participation arrangements. LuxCSD neither opens accounts for, nor recognises any indirect or tiered participants. LuxCSD owes a duty of redelivery or restitution of assets deposited by a direct participant uniquely to that participant or to its legal successor even if LuxCSD is aware that its direct participant owes generally corresponding duties to their underlying clients and that its direct participants routinely deposit securities entitlements which are ultimately owed to other intermediary firms and to investors.

LuxCSD's direct participants are obliged under LuxCSD's General Terms and Conditions (GTCs) to segregate securities deposited for their own account (proprietary assets) from securities deposited on behalf of third parties (client assets). One of the key provisions of the arrangements governing the deposit of participant assets is that each participant account opened in LuxCSD's system must be designated by its direct participant into one of three categories:

- Proprietary
- Client – Segregated
- Client - Omnibus

On specific occasions, LuxCSD has a right to collect information on its participants' clients as defined by Article 36 of the GTCs. LuxCSD may request declarations and representations from a participant's client as to the purpose of an intended transaction and compliance with legal regulations.

LuxCSD gathers information relating to assets deposited on participant accounts through four primary mechanisms:

- Participant onboarding process;
- Opening of additional accounts of existing direct participants;
- Regular KYC reviews
- Periodic key participant due diligence review.

The process is conducted by LuxCSD's Relationship Management teams and reviewed by its Compliance team. In the case of participant segregated accounts, LuxCSD seeks to identify the party to whom its direct participant owes the securities deposited on the account and records this information in its KYC file.

In the case of any direct participant depositing assets on participant accounts whether in segregated or in omnibus form, LuxCSD collects information relating to the regulatory, business and control arrangements that its direct participant has in place in order to service or to support third-party business. LuxCSD also obtains information on the geography, products and type of client that its direct participant supports through any participant accounts held with LuxCSD. LuxCSD aims at updating this information on an annual basis.

LuxCSD evaluates its risks arising from participant accounts in terms of its exposure to the conduct of the clients of its direct participants with regard to AML obligations and to sanctions compliance. LuxCSD's compliance risk assessment identifies the conduct of its direct participants' clients as a significant component of its overall operational risk. These risks are mitigated in the following manner:

- Upon onboarding and during regular KYC review, the competence and the capacity of direct participants depositing underlying clients assets are assessed including the regulatory capacity of the direct participant to accept such assets and, in the case of omnibus accounts, to maintain these with LuxCSD. That assessment includes a determination of whether or not the direct participant is AML regulated in a jurisdiction applying standards equivalent to those that apply in Luxembourg. New client accounts – whether of existing or of new participants – are subject to the prior review of LuxCSD's compliance officers and the prior approval of the ComEx;
- Identity of any underlying client that has been disclosed to LuxCSD is screened against EU, U.S. and UN sanctions lists, adverse media lists and lists of politically exposed persons both upon onboarding and during regular KYC review. Findings are reported to LuxCSD's compliance officers and resolved in accordance with LuxCSD's compliance policies and procedures;
- Settlement instructions, income payment instructions and static reference data related to corporate actions and tax services processing are also screened against EU, U.S. and UN sanction lists, adverse media lists and lists of politically exposed persons.

LuxCSD's screening strategy aims to ensure that the identity of such investor does not expose it to undue compliance risk.

In cases where the identity of the underlying client or information relating to the direct participant's client franchise in general triggers heightened AML, sanctions or related risk concerns, LuxCSD may employ a number of specific mitigation strategies including requiring the direct participant to disclose additional information (including, where not previously known, the identity of the underlying client or the beneficial owner), blocking the securities entitlements and disclosure to LuxCSD's regulators, foreign authorities or LuxCSD's agents in third countries. LuxCSD's contractual right to pursue and to enforce such mitigation strategies is derived from its GTCs.

Risks to LuxCSD

The principal risks in particular from undisclosed beneficial owners result from potential violations of regulations relating to the prevention of money laundering and terrorist financing, and in particular financial sanctions. Therefore, LuxCSD continuously monitors all of its participants' transactions, including those resulting from underlying clients, with an IT-based compliance monitoring tool, which is supplemented in justified individual cases by manual checks conducted. If the review identifies irregularities, LuxCSD will obtain further clarification as it deems necessary. LuxCSD may cease or temporarily suspend execution of a participant's instructions or the provision of other services (such as collection and payment of interest, dividends, repayments of capital or other amounts owed by the issuer to the client), without notifying the participant in advance, if:

- Executing the instruction or providing another service violates applicable legal regulations relating to the prevention of money laundering and terrorist financing or financial sanctions (for example, of the UN, EU or U.S.A.);

- Executing the instruction or providing another service would, as a result of legal regulations relating to the prevention of money laundering and terrorist financing or financial sanctions, materially jeopardise the proper provision of LuxCSD's services to its participants or, as a result of such requirements, put LuxCSD's or its participants' assets at significant risk; or
- LuxCSD's participant has not or has not yet provided the declarations and representations that LuxCSD may request

Key consideration 2

An FMI should identify material dependencies between direct and indirect coverages that might affect the FMI.

LuxCSD owes a duty of redelivery or restitution of securities deposited by a direct participant uniquely to that client or to its legal successor. It equally owes a duty of information regarding positions on participant accounts uniquely to its direct participant or its legal successor even when LuxCSD is aware of the identity of its direct participant's underlying client. Therefore, there is an implicit reliance on the regulated status of direct participants holding client accounts and the insolvency and resolution regimes to which they are subject. It is those regimes that will determine how, and under which conditions the underlying clients of a direct participant may gain access to assets deposited on participant accounts opened with LuxCSD in the event of the direct participant's failure.

For that reason, LuxCSD evaluates the general level of credit risk of each prospective direct participant prior to onboarding irrespective of whether the participant will benefit from credit facilities. LuxCSD additionally evaluates the capacity and competence of those of its direct participants depositing assets on participant accounts to do so on a continuing basis in the regular KYC review.

LuxCSD seeks to assess the regulatory and legal competence and the capacity of its direct participants to control and to manage deposits of and transactions in securities to which entitlements are ultimately owed to third-party participants. LuxCSD tracks on a continuing basis the proportion of each of its direct participant's business volumes that is conducted on behalf of its own accounts and on behalf of participants. The continued capacity to support its current volume of participant account business is determined on a case-by-case basis in the KYC review.

In addition to the identification based on volumes and values, there is an identification process for "indirect coverage" (for example, transaction volumes and values from participants and its participants' clients).

The analysis to identify potential material dependencies of the indirect participation is performed at the level of all participants of LuxCSD, that is, considering all settled volumes and values for all participants.

LuxCSD's Risk Management sends out a formal letter to LuxCSD participants identified as key participants. This letter targets primarily their indirect participation client scope that represents a threshold of 10% or more of the overall volume/value of transactions processed by the legal entity. If applicable, the identified key participant will provide respective details and confirm that appropriate measures have been imposed on their clients to ensure that any operational risk potentially arising from the participant's clients are adequately managed.

In addition, an enhanced due diligence will be carried out. Thus, LuxCSD can determine material dependencies between its participants and its participants' clients, where the clients are known to LuxCSD, that might affect LuxCSD.

LuxCSD can also identify the following:

- Participants' clients responsible for a significant proportion of transactions processed by LuxCSD;
- Participants' clients whose transactions, based on their volumes and values, are significant relative to the respective participants' risk management capacity.
- Risk arising from the conduct of LuxCSD's direct participants' clients is evaluated on an annual basis as part of the compliance risk assessment. The policies and procedures supporting the mitigation of those risks are also reviewed annually by LuxCSD's ComEx. The following topics are assessed and evaluated:
 - Whether the client accounts of the direct participant have triggered specific AML or sanctions-related concerns;
 - Whether the direct participant's own business franchise has been the subject of adverse media commentary or enforcement action in areas pertinent to the direct participant's client accounts held with LuxCSD;
 - Whether the direct participant has been the subject of regulatory action;
 - Whether the direct participant has modified the use or the apparent purpose of participant accounts opened with LuxCSD.

Risk Management identifies and monitors the key participants on a quarterly basis. A report is run at the end of each quarter covering the last six months of settlement activities. When a key participant is identified, he keeps that status for at least the next twelve months. In addition to the said report, Risk Management may, on an exceptional basis, run ad hoc reports under abnormal market conditions or events (for example, this could be the case when a financial crisis is ongoing, high volatility is observed or geopolitical changes are foreseen). For each case, Risk Management will decide to run ad-hoc reports to assess a potential impact of the event on one of the securities settlement systems.

Key consideration 3

An FMI should identify indirect coverage responsible for a significant proportion of transactions processed by the FMI and indirect coverages based on transaction volumes or values that are large relative to the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.

Where a client account is segregated, the LuxCSD direct participant is required to disclose to LuxCSD the identity of its underlying client; the party to which it owes the entitlements to the securities deposited. The account name may or may not incorporate this disclosure at the discretion of LuxCSD's direct participant.

Where a client account is opened in omnibus form, the direct LuxCSD participant is commingling the assets of several of its underlying clients. LuxCSD requires that no single interest in a participant omnibus account should exceed 25% of the total value of assets deposited on that account over time as represented by its direct participant. When a single interest does exceed that threshold, LuxCSD requires the direct account holding participant to segregate the corresponding assets onto a participant segregated account.

In line with CSDR, LuxCSD has set up a specific key participant procedure for the appropriate identification, monitoring analysis and management of the operational risks that key participants may pose to LuxCSD's operations. The scope covers LuxCSD settlement activities.

Analysis reviews

In respect of the risk arising from key participants, Risk Management runs a process to identify key participants in the SSS on an ongoing basis. The identification process is based on the following factors:

- Participants' transaction volumes and values;
- Material dependencies between participants and the participants' clients, where the clients are known to LuxCSD and that might affect LuxCSD;
- Their potential impact on other participants and LuxCSD's SSS as a whole in the event of an operational problem affecting the smooth provision of services by LuxCSD.

Key consideration 4

An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.

As explained above, LuxCSD has no tiered participation arrangements. However, participants maintaining client segregated or omnibus accounts are reviewed on a periodic basis (KYC review). Periodicity of these reviews depends on the risk classification of the participant:

- High risk → review cycle: one year;
- Medium risk → review cycle: three years;
- Low risk → review cycle: five years.

Key participants are reviewed on a quarterly basis. In addition, ad hoc reviews are performed and mitigating measures are taken when and where appropriate.

Principle 20: FMI links

An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.

Key consideration 1

Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.

LuxCSD has implemented processes to identify, monitor and manage all potential sources of risk arising from new market links in its internal procedures.

New CSD link identification

The identification of a new market by LuxCSD covers the following main dimensions (the same dimensions may also apply to some extent to link enhancements depending on the type of enhancement):

- Markets and intermediaries;
- Legal status of securities;
- Finality of settlement;
- Regulatory environment and controls;
- Market sizes and statistics;
- Specific participant requests;
- Initial projections;
- Risks for LuxCSD and/or its participants.

Where available, the dimensions listed above are combined with an initial assessment of potential deposit levels based on feedback from participants and a high-level estimation of percentages of foreign investment.

The aim of the process is to obtain sufficient knowledge and understanding of local market infrastructures, market mechanics, available instruments, key market practices (including disclosure requirements), possible market risks and non-resident investor restrictions in order to make an informal assessment.

Requests may also be received from market infrastructures that are interested in improving their own ability to attract foreign investment. Nevertheless, markets must be attractive on their own before LuxCSD will consider developing a link.

New CSD link assessment

When a new CSD link is established, the following elements and documents are collected, reviewed, verified and documented:

- Rules and participation requirements of the receiving CSD as appropriate contractual arrangements setting out the respective rights and obligations of the parties including unambiguous choice of law governing each aspect of the link;

- Compliance with regulations concerning anti-money laundering (AML) and terrorism financing;
- Financial soundness, governance arrangements, processing capacity, operational reliability, and any reliance on a third-party critical service provider – mandatory for links to non-EU/European Economic Area (EEA) CSDs, optional for links EU/EEA CSDs;
- Risks that are identified following the analysis of the financial soundness, governance arrangements, processing capacity, operational reliability, and any reliance on a third-party critical service provider of the receiving CSD;
- Confidentiality of information and data protection in connection with the operation of the link;
- Rules governing the moment of entry and irrevocability of transfer orders and the finality of cash and securities transfers;
- Protection of the linked CSDs and their participants as regards possible credits taken by CSDs and the concentration and liquidity risks as a result of the link arrangements;
- Prohibition of a retransfer of securities prior to the provisional transfer of securities becoming final;
- Connectivity, communication arrangements and compliance with Swift standards;
- Local legislation applicable to the receiving CSD including legal assessment of entitlement to the securities including the law applicable to property aspects, nature of the rights of LuxCSD on the securities, the possibility of encumbering the securities, impact of insolvency proceedings opened against the receiving CSD regarding the segregation requirements, settlement finality, procedures and time limits to claim the securities in the relevant country;
- Practicality and feasibility of delivery versus payment settlement (including possible market demand, evidenced, for example, through a request from a user committee of one of the linked CSDs), review of fees (reasonable commercial fee for the provision of DvP settlement), safe and efficient access to cash (in the currencies used by the receiving CSD for settlement of securities transactions of the requesting CSD and its participants), mitigation of additional risk resulting from settlement of cash. LuxCSD will decide to permit DvP settlement on the link if said aspects are verified; if DvP is not practical and feasible, LuxCSD will request details on the reasons;
- Practicality and availability of DvP settlement in central bank money: For CSD links of LuxCSD where DvP settlement is practical and feasible, LuxCSD ensures that it is conducted in central bank money via the cash accounts of LuxCSD's participants and that, as part of the settlement process, LuxCSD does not receive any credit and that prefunding mechanisms covered by LuxCSD participants are used;
- Robustness of reconciliation procedures;
- Process for securities suspended from settlement;
- Process for transmitting information on processing of corporate actions;
- If physical securities are held at the receiving CSD: Measures to protect the physical securities from theft, fraud, and destruction. The vaults should ensure a high level of protection against floods, earthquakes, fire and other disasters;
- Other relevant information deemed necessary.

The CSD link arrangement questionnaire covering the above subjects is sent to the receiving CSD. The following review focuses on the responses which are entered in the CSD link arrangement scoring tool, providing an assessment of the respective CSD on selected elements. Where applicable, an on-site visit of the vault areas of the CSD is conducted.

Based on the responses provided, the CSD link assessment is completed in the "CSD regulatory checklist" to ensure that the necessary requirements are met.

Any new link is subject to approval by LuxCSD's Board of Directors.

Maintenance of a CSD link

Risks from LuxCSD direct links are assessed on an ongoing basis, through the continuous oversight of market developments in the areas of procedures, practices, regulations or other infrastructure-related developments.

Each market is supervised by a dedicated Network Manager, a backup is also designated. Each Network Manager performs an “end-to-end” role, covering all suppliers and infrastructures for a given market including:

- Monitoring and maintenance of legal documentation;
- Policies and guidelines regarding risk and contract management;
- Process definition;
- Market review process;
- Management statistical reporting and business targets;
- Key performance indicator reporting, analysis and action planning;
- Issue management;
- Incident management;
- Benchmark development and maintenance;
- Monitoring and communication of market changes – internally, across impacted areas, and externally, towards participants.

To ensure that each link provides adequate protection to LuxCSD and its participants the following reviews are performed on an annual basis at least:

- Contractual arrangements review;
- Renewal of legal opinions;
- Participant documentation updates;
- Link arrangement reviews.

Key consideration 2

A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link.

LuxCSD only has direct links in place (including interoperable links with other CSDs in T2S for T2S-related aspects). The following documentation is available for every link to support its design and provide adequate protection for LuxCSD and all other parties involved.

The link agreement

LuxCSD’s CSD links are governed by contractual arrangements subject to the law and rules of the receiving CSD.

The link agreement sets forth, among other things, the scope of the services, the entitlement and the nature of the rights in book-entry financial instruments deposited in LuxCSD’s accounts with the receiving CSD, the liability as well as the rules of protection of the assets deposited, the segregation rules, termination and the choices of law and jurisdiction.

Further details on the link agreements and their scope are available under [Principle 1](#).

The legal opinion

The legal opinion is requested from an external counsel on an annual basis to represent independent and neutral confirmation of the CSD's ability to perform as required under the link agreement without the risk of being superseded by local regulations or practices.

Further details on the legal opinions and their scope are available under [Principle 1](#).

Key consideration 3

Linked CSDs should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between CSDs should be covered fully with high-quality collateral and be subject to limits.

Not applicable to LuxCSD.

Key consideration 4

Provisional transfers of securities between linked CSDs should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.

Provisional transfers of securities do not happen within LuxCSD. The Model 1 DvP system ensures true delivery versus payment, eliminating the risk of unwinding. LuxCSD provisions (blocks) such securities in its participants' accounts until they are final in the local market, thereby prohibiting their re-transfer. Please refer to [Principle 12](#) for details.

Key consideration 5

An investor CSD should only establish a link with an issuer CSD if the arrangement provides a high level of protection for the rights of the investor CSD's participants.

LuxCSD respects a strict procedure when setting up new links. This procedure includes, but is not limited to, risk and compliance reviews, as well as external legal advice (legal opinion). It is complemented by a strong contractual framework for the link arrangement. Each step of the setup of a new link is reported to and approved by the appropriate committees such as the Material Change Working Group (MCWG) and LuxCSD's ComEx.

Please see [key considerations 1, 2 and 3](#) for more details.

Key consideration 6

An investor CSD that uses an intermediary to operate a link with an issuer CSD should measure, monitor, and manage the additional risks (including custody, credit, legal, and operational risks) arising from the use of the intermediary.

Not applicable to LuxCSD.

Key consideration 7

Before entering into a link with another CCP, a CCP should identify and manage the potential spill-over effects from the default of the linked CCP. If a link has three or more CCPs, each CCP should identify, assess, and manage the risks of the collective link arrangement.

Not applicable to LuxCSD.

Key consideration 8

Each CCP in a CCP link arrangement should be able to cover, at least on a daily basis, its current and potential future exposures to the linked CCP and its participants, if any, fully with a high degree of confidence without reducing the CCP's ability to fulfil its obligations to its own participants at any time.

Not applicable to LuxCSD.

Key consideration 9

A TR should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.

Not applicable to LuxCSD.

Principle 21: Efficiency and effectiveness

An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.

Key consideration 1

An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to a choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.

LuxCSD engages with participants to determine which new product and services require development either in response to the changing market environment or to specific (bespoke) participant needs. In addition, ongoing assessment of the product portfolio inventory and monitoring of competition allows the company to anticipate participant needs before approaching them for feedback.

In addition, LuxCSD has implemented a [User Committee](#) which is composed of representatives of issuers and participants to advise the Board of Directors independently from any direct influence by the management of LuxCSD. The User Committee consults with and makes recommendations to the Board of Directors with respect to relevant matters, which are the following:

- Key arrangements that impact LuxCSD's participants, including the criteria for accepting issuers or participants in their respective securities settlement systems and on service level;
- Pricing structures of LuxCSD. (The Committee may submit non-binding opinions to the Board of Directors, containing detailed reasons regarding this matter.)

Further information can be found on the [LuxCSD website](#).

Key consideration 2

An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.

The Board of Directors is empowered to set LuxCSD's strategy, objectives, and overall direction, overseeing and monitoring management decision-making and effectively directing the business activities. The Board of Directors shall also hold the final responsibility for managing LuxCSD's risks and ensure that LuxCSD's policies, procedures and controls are consistent with its risk tolerance and risk bearing capacity and that these policies, procedures and controls address how LuxCSD identifies, reports, monitors and manages risks.

LuxCSD's risk strategy is aligned to its business strategy and its goals of continuously developing new services, enhancing the efficiency of its operations, and reducing overall processing costs. The company's risk strategy defines the risk appetite as a risk limitation, which protects and ensures continuity of operations. LuxCSD's risk appetite framework constitutes the tools and concepts that are used to manage risks. The aim is to be able to monitor risks continuously and thereby manage risks according to the risk appetite. A systematic process is set up to ensure a comprehensive detection of quality deficits, leading to their resolution.

LuxCSD strives to operate at the lowest cost while at the same time delivering best in class products and services that meet participants' needs and specifications. LuxCSD defines its service level and consequent goals and objectives in service level agreements and operational arrangements which are reflecting market standards and are the basis for operational procedures and publications of applicable operational processes to LuxCSD participants.

Key consideration 3

An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.

LuxCSD has engaged and works on the basis of a continuous improvement process and has established strict service level measurement requirements. The company measures the performance of its securities settlement system and operations and the results are regularly reported to LuxCSD's ComEx, the Board of Directors and the User Committee. They form the basis for the continuous improvement of the service. The tools used for continuous improvement are the following:

- i) Key performance indicators (KPIs): quantified, objective view on service delivery of operations, for example on effectiveness, efficiency, operational quality, and operational risk;
- ii) Key risk indicators (KRIs): early warning system for operational risk, periodically collected and analysed to observe the trend and, if necessary, initiate mitigating measures;
- iii) KPI engine: data warehouse, linked to major production systems, enabling standard and ad hoc reporting and detailed data analysis;
- iv) Report on the performance of the settlement system and committed service level targets.

By applying the above tools, a systematic process is set up to ensure a comprehensive detection of quality deficits, leading to their resolution.

Furthermore, LuxCSD strives to provide products and services with utmost reliability. Thus, the company's resilience against incidents and disasters is of highest importance as the unavailability of core processes and resources represents a substantial risk for LuxCSD and potential systemic risk to the markets as a whole. Therefore, LuxCSD aims to reassure the markets of its ability to continue operations under adverse conditions or in the face of unexpected events or disasters.

In case of business interruption, operations must be resumed within appropriate time scales primarily in order to:

- Safeguard LuxCSD from significant losses, maintain revenue generation and shareholder value;
- Maintain client confidence, market stability and liquidity and minimise systemic risk;
- Maintain management control, fulfil contractual obligations and regulatory compliance.

The functions, which are indispensable for the critical daily operations in view of the above objectives, are called mission critical and must be resumed within a recovery time objective (RTO) of two hours following a disruptive incident, crisis or disaster.

In order to minimise the impact of unavailable key resources, such as information (electronic or other), IT systems and networks, workspace and facilities, staff and suppliers, LuxCSD implements and maintains effective and efficient business continuity plans in line with its needs and regulatory requirements. The business continuity plans specify how services, processes and resources will be reinstated to a predetermined level within pre-defined time scales after an incident or disaster, by taking into consideration the RTO for mission critical functions. The resilience and disaster tolerance of critical processes and resources must be commensurate with the business impact and the prevailing risks.

Business continuity plans are tested regularly in the most realistic way, without causing unacceptable business impact, to ensure their effectiveness and viability and in order to provide assurance that a real incident could be successfully managed. All relevant staff must be competent in the execution of the incident and crisis management plans and business recovery procedures. To ensure that LuxCSD is able to respond to an incident in a rapid, controlled and effective manner, an incident and crisis management process is in place for the timely detection, escalation and assessment of incidents and the prompt activation of the business continuity plans.

The systems architecture is designed to satisfy high availability requirements. The systems infrastructure is duplicated between two distant data centres. Components such as network communications, servers and storage are running in parallel in the two centres. Core systems are clustered and load-balanced between the two centres to allow quick take-over in case of failure. All data is synchronously mirrored in real-time between the two centres.

The design described above in combination with the RTO of two hours facilitates the completion of settlement by the end of the day also in extreme circumstances such as the full loss of one data centre. The last systems unavailability test, based on the scenario of the full loss of one data centre, was conducted in October 2023. The availability of LuxCSD's business critical applications was validated within the RTO period and the infrastructure's security was always maintained.

Additionally, LuxCSD implemented a default management process in order to weather the default of a major participant in an orderly manner, even under stressed market conditions. For details, please refer to [Principle 13](#).

Principle 22: Communication procedures and standards

An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.

Key consideration 1

An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.

LuxCSD fully endorses standardisation and has been leading in standards implementations. All connectivity channels are fully compliant with ISO 15022, and ISO 20022, respectively, for SRD II Shareholders Identification Disclosure Requests, IP based and in line with European Post Trade Forum (EPTF) Barrier 2 (former Giovannini barrier 1) on communication protocols as stipulated in the “Giovannini File Transfer Rulebook” of 2007.

In particular, instructions can be processed via ClearstreamXact suite of connectivity products as described below:

- Xact Web Portal: Xact Web Portal is a screen based, user-to-application (U2A) connectivity channel based on proven, up-to-date portal technology. The harmonised security and user management streamlines clients’ access to a range of services. Xact Web Portal is based on ISO 15022 and ISO 20022 message structure and terminology.
- Xact File Transfer offers bi-directional high-volume data transfer, both ISO 15022 and 20022 messages as well as human readable messages. It can be seamlessly integrated with a client’s in-house systems and is fully automated, making it an ideal component in an STP environment. Xact File Transfer can also be used via internet, virtual private networks (VPNs) or SwiftNet.
- Xact via Swift: ClearstreamXact is also available via Swift. This solution is preferred by clients that have large transaction volumes and automated interfaces between their in-house back-office systems and LuxCSD. As LuxCSD’s processing is fully STP, in the vast majority of cases for correctly formatted instructions, no manual intervention is required.

LuxCSD settlement services are fully STP compliant.

The company will continue to expand its ISO 20022 offering according to the market standards and timelines for adoption of the new format.

In terms of reference data standards, LuxCSD has adopted the main applicable ISO standards. In order to make processes and systems work efficiently, LuxCSD is engaged in promoting the use of ISO standards across the industry. For LuxCSD clients acting in ICP (Indirect Connected Participant) mode or DCP (Direct Connected Participant) mode, the following connectivity standards are implemented:

- Xact File Transfer for the transmission of ISO 15022 and ISO 20022 messages to LuxCSD;
- Swift ISO 15022 messages to LuxCSD via the Swift network;
- ISO 15022 messages to LuxCSD via MQ; Xact Web Portal (based on ISO 20022 standards and terminology);
- Xact via SwiftNet FINplus (also supports Shareholders Identification Disclosure Requests seev.045 and seev.046 in ISO 20022 format).

LuxCSD clients acting in DCP mode can also communicate their instructions online via the web-based T2S GUI via Swift or SIA-Colt network. In addition, they can send ISO 20022 messages to T2S via Swift or SIA-Colt.

Principle 23: Disclosure of rules, key procedures, and market data

Key consideration 1

An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.

LuxCSD's rules and procedures are set out in a series of documents as defined in Principle 1 that enable the clients to identify clearly and understand fully the risks and responsibilities as participant in LuxCSD, in line with CSDR prescriptions.

These documents are written in a comprehensive and clear manner to help clients understand the following:

- Fees applied to the services (the fees are published in the Fee Schedule);
- System design and operations (set out in the Client Handbook, the Market Link Guides and Connectivity Manuals);
- Clients' rights and obligations (stipulated in the GTCs and Special Conditions); and
- Risks of participating in the system (described in the Client Handbook and the Market Link Guides).

The documents are made available publicly to all current and prospective clients and updated regularly and can be found on the company's website www.luxcsd.com

The main indicators used by LuxCSD to determine whether its rules and procedures are clear and comprehensive are the following:

- Clients' feedback collected by Relationship Managers and Client Services.
- Based on the continuous flow of questions received from the clients, LuxCSD is assessing whether the current documentation provided to the clients is sufficiently clear;
- Training offers: For new products or major changes to the system, Relationship Managers provide detailed information to clients, via presentations and - if needed - also in personal meetings. During these sessions and via direct access to Client Services, LuxCSD collects the comments and takes the necessary steps to rectify any perceived lack of understanding by the clients. Especially for Connectivity products LuxCSD offers its clients dedicated training sessions, to which they can subscribe;
- Operational information review: Review of operational information is performed at least twice per year, whenever there is a major IT release bringing new and enhanced product and service functionalities, but can also be updated on an ad hoc basis, when clients via Client Services or internal control bodies request a clarification. The same applies to Market Link Guides as well as the Tax Guides.

Furthermore, an overview of LuxCSD's default rules and related procedures, that is, the company's [default management process](#) is available online.

LuxCSD also publishes some general information on its business continuity framework in [Principle 17](#) and the [Association of Global Custodians questionnaire](#).

Key consideration 2

An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.

LuxCSD's as well as the clients' contractual rights and obligations are clearly described [in LuxCSD's General Terms and Conditions \(GTCs\)](#), publicly available on the company's website. These rules comprehensively consider LuxCSD's role as a central securities depository (CSD), and a recognised SSS (the main legal provisions relevant for the establishment and the operation of LuxCSD are described under [Principle 1](#)).

The descriptions and information on system design and operations are provided in [LuxCSD's Client Handbook](#) which sets out the technical and operational terms and conditions applicable to services provided by LuxCSD. Information in LuxCSD's Client Handbook can be consulted in conjunction with other LuxCSD online publications ([Xact Web Portal User Manual](#), [ClearstreamXact Security Guide](#), [Xact File Transfer User Manual](#), [Xact via SWIFT User Guide](#)), LuxCSD's announcements and other user manuals on connectivity, which contain further details concerning the use of LuxCSD's services.

The said connectivity manuals provide details of the communication processes and messages supported by LuxCSD, including the messages that clients may use for sending and processing instructions and the messages that LuxCSD uses for reporting to clients (for details on these communication standards, see [Principle 22](#)).

Announcements give details of changes in custody, clearing and settlement, changes in taxation, changes to fees and charges, and other information about changes in the markets, as well as LuxCSD's products and services. The information given to clients in announcements is integrated, where applicable, into the client, the Market Link Guides, the Market Taxation Guides and other reference documents as appropriate.

The Market Link Guides, presented in the [Market coverage section](#) on the LuxCSD website, give details of the links that have been established between LuxCSD and domestic markets for which LuxCSD offers settlement and custody services. Details include, among others, types of securities eligible on the link, types of link, settlement rules and times and custody services. In addition to information on operational arrangements, these Guides provide, in accordance with CSDR, information on the legal terms and conditions of the link arrangements including key elements of the local legislation such as recognition of nominee concept, nature of rights on the securities and impact of insolvency laws. The information is based on legal opinions issued by external law firms appointed by LuxCSD. In this context, the company also provides information on the rules governing the finality of transfers of securities and cash (settlement finality).

Finally, LuxCSD discloses information on its [governance](#) (composition of the management bodies, [shareholding structure](#) and [internal control framework](#)), as well as the [regulatory status](#). This information helps clients to evaluate the risks regarding LuxCSD's services, but also on the company's legal, regulatory, corporate, commercial and operational environment.

On a non-binding basis, LuxCSD also provides [information related to tax regime](#) (under each market links) in connection with the services provided in relation to each market, highlighting that clients shall make their own tax assessment with respect to any aspects of the activities performed with LuxCSD.

Additional information and documentation supporting participants in their risk assessment include:

- [Default management process](#)
- [Internal Control Framework](#)
- [CSDR Article 38 disclosure document](#)
- [AGC Questionnaire, ISSA Compliance Questionnaire & the Wolfsberg Questionnaire](#)

Key consideration 3

An FMI should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.

The documentation made available through the website provides information related to, without limitation:

- full range of activities and operations performed in LuxCSD's environment;
- the accounts (opening and closing of accounts), the segregation of the assets;
- the type of assets, their eligibility and any circumstances that could affect their fungibility;
- the execution of the instructions and communication means, including the key times and dates;
- the liability regime (including the degree of discretion under which LuxCSD is exercising its rights, the exclusion of liability and the mitigating measures);
- the securities interest that LuxCSD may have over the assets held in custody, such as the rights of pledge, retention and set off;
- the record keeping and data protection regimes;
- the settlement services, including the settlement finality and cancellation;
- new issues and custody business services, including the timelines, the procedures and dates;
- the fees applicable to the services;
- the market covered and the specificities of each market, including the local settlement rules and times;
- the impact on clients' assets;
- the conditions leading to a suspension or a termination of the services by LuxCSD;
- the termination of the services by the client;
- the disclosure requirements applicable in each market.

Within its world-wide Client Services structure, LuxCSD maintains a proactive relationship model. Clients are constantly informed about any changes and enhancements to LuxCSD's systems via announcements on the company's website. Clients can also subscribe to receive email alerts of the publication of such announcements. The Client Services team is the general point of contact for daily operational queries. The Client Services Officers – available on a 24-hour basis through Clearstream's global office presence – provide a single point of entry for queries and issues. Clients are also given the possibility to perform a due diligence visit on LuxCSD, which would allow them to increase their understanding of LuxCSD's rules and procedures. LuxCSD's relationship managers meet with their clients in person on at least an annual basis. This provides an opportunity for clients to bring to their attention potential issues. Furthermore, a regular statistical report, showing, for example, the client's STP rate puts relationship management in the position to address a possible lack of understanding at the client's side.

Clients are offered training on ad hoc basis on subjects of their choice. Specific training is offered by the Client Connectivity team to help clients understand the technical setup in place and to ensure they are fully aware of the functionalities available and their limitations, contributing to establishing risk awareness on LuxCSD's products.

Relationship Managers produce call reports of their interactions with clients. These reports form documentary evidence of the judgment of Relationship Managers based on these interactions, and where relevant will include elements demonstrating whether clients have a clear understanding of LuxCSD's rules, procedures and understanding of risk, and would lead to further interaction on the part of the Relationship Manager or escalation within LuxCSD where any of these elements were felt to be insufficient.

Key consideration 4

An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.

Fees are published – in accordance with Article 34 (1) and (2) of the CSDR – at the level of individual services in [the Fee Schedule](#) and are intended to help clients understanding the fees applied to the services. The Fee Schedule also contains a statement on LuxCSD's pricing policy and available discounts.

Key consideration 5

An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.

LuxCSD publishes its reply to CPMI-IOSCO disclosure framework every second year on its website. Annual financial figures and statistics are published on the [Luxembourg Business Registers](#) website, the trade and company register of Luxembourg, after being reviewed by the external auditor. This information is available to participants upon request.

Furthermore, statistics including settlement volumes, assets under custody and corporate actions are available in industry documents, like through [ECSDA](#) in the Annual CSD Factbook of the World Forum of CSDs.

Published by

LuxCSD S.A.

www.luxcsd.com

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Document number: LU7503