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FINANCIAL SECTOR ASSESSMENT PROGRAM

DETAILED ASSESSMENT OF OBSERVANCE - ASSESSMENT OF THE CPSS–IOSCO PRINCIPLES FOR FINANCIAL MARKET INFRASTRUCTURES

EUROCLEAR BANK

This paper on Belgium was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on November 17, 2023.

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DETAILED ASSESSMENT OF OBSERVANCE

ASSESSMENT OF OBSERVANCE OF THE CPSS-IOSCO PRINCIPLES FOR FINANCIAL MARKET INFRASTRUCTURES

EUROCLEAR BANK

Prepared By
**Monetary and Capital
Markets Department**

This Detailed Assessment Report was prepared in the context of a standards assessment mission in Belgium, led by Padamja Khandelwal and overseen by the Monetary and Capital Markets Department, IMF. The findings and recommendations presented in this report are preliminary and subject to change as a result of the internal IMF review process. In addition, it is important to note that the assessment of Euroclear Bank and that of the authorities of Euroclear Bank are conducted against the CPSS-IOSCO Principles for Financial Market Infrastructures (PFMI) and the Responsibilities for authorities set out in the PFMI. A rating of Observed does not imply that there don't remain relevant risks related to the substance of each of the PFMI Principles and/or Responsibilities.

November 17, 2023

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Glossary

AML	Anti-Money Laundering
API	Application Programming Interface
BCP	Business Continuity Plan
BIC	Bank Identifier Code
BOE	Bank of England
BRRD	Bank Recovery and Resolution Directive
CBL	Clearstream Banking Luxembourg
CCP	Central Counterparty
CeBM	Central Bank Money
CEC	Center for Exchange and Clearing
CEO	Chief Executive Officer
CIA	Chief Internal Auditor
CISO	Chief Information Security Officer
CLS	Continuous Linked Settlement
CPMI	Committee on Payments and Market Infrastructures
CRD IV	Capital Requirements Directive (EU Directive 2013/36/EU)
CRO	Chief Risk Officer
CRR	Capital Requirements Regulation (EU Regulation No 575/2013)
CSD	Central Securities Depositories
CSDR	Central Securities Depositories Regulation (EU Regulation 909/2014 of 23 July 2014)
CSP	Critical Service Provider
CSSF	Commission de Surveillance du Secteur Financier
CTO	Chief Technology Officer
DTC	Depository Trust Company
DVP	Delivery versus Payment
EB	Euroclear Bank
EBA	European Banking Authority
EC	European Commission
ECB	European Central Bank
ECMS	Eurosystem Collateral Management System
EIOPA	European Insurance and Occupational Pensions Authority
EMIR	European Market Infrastructure Regulation (EU Regulation No 648/2012)
ERM	Enterprise Risk Management
ESA	Euroclear SA/NV
ESCB	European System of Central Banks
ESG	Environmental Social and Governance
ESMA	European Securities and Markets Authority
ETF	Exchange-Traded Fund
EU	European Union
EUR	Euro
FMI	Financial Market Infrastructure
FOP	Free of Payment
FSAP	Financial Sector Assessment Program

FSMA	Financial Services and Markets Authority
GBP	Pound Sterling
HR	Human Resources
ICSD	International Central Securities Depository
ICT	Information and Communication Technology
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
ISIN	International Security Identifier Number
ISO	International Standardization Organization
IT	Information Technology
KPI	Key Performance Indicator
KRI	Key Risk Indicator
KYC	Know Your Customer
LCR	Liquidity Coverage Ratio
LOC	Letter of Credit
MMI	Money Market Instrument
MOG	Multilateral Oversight Group
MOU	Memorandum of Understanding
MTF	Multilateral Trading Facility
NBB	National Bank of Belgium
NCA	National Competent Authority
NCB	National Central Bank
NRA	National Resolution Authority
OP	Operating Procedure
OTC	Over-the-Counter
PFMI	Principles for Financial Market Infrastructures
QLR	Qualifying Liquidity Resource
RRW	Recovery, Restructuring and orderly Wind-down plan
RTGS	Real-Time Gross Settlement
RTO	Recovery Time Objective
RTS	Regulatory Technical Standards
SFD	Settlement Finality Directive (EU Directive 98/26/EC)
SIPS	Systemically Important Payment System
SLB	Securities Lending and Borrowing
SSM	Single Supervisory Mechanism
SSS	Securities Settlement System
STP	Straight Through Processing
SWIFT	Society for Worldwide Interbank Financial Telecommunications
T2S	Target-2 Securities
T&C	Terms and Conditions
USD	United States Dollar

EXECUTIVE SUMMARY

1. Euroclear Bank (EB) is a large and highly interconnected international central securities depository (ICSD) that provides critical services for global financial markets. EB, domiciled in Belgium, issues and provides custody and settlement services for international bonds (i.e., Eurobonds) in its capacity as an ICSD. It shares this role primarily with Clearstream Banking Luxembourg (CBL). EB also settles and holds in custody a wide range of domestic and internationally traded securities. In December 2019, EB was authorized under the Central Securities Depository Regulation (CSDR) of the European Union (EU) to perform so-called *core* CSD services, as well as non-banking- and banking-type ancillary services. EB is also licensed as a credit institution under the Belgian Banking Act. To facilitate smooth settlement, EB provides uncommitted credit facilities to its participants on an intraday and fully collateralized basis. In 2021, the value of securities held on EB's books was EUR 17.1 trillion and it had settlement turnover of 147 million transactions with a value of EUR 653 trillion. This makes EB the most active CSD in the world (by settlement turnover), as well as the largest ICSD and third largest CSD in the world (by value of securities held).

2. EB has a global customer base—including central banks and other financial market infrastructures (FMIs)—and deals in over 100 currencies. EB has over 1700 participants, including commercial banks, broker-dealers, investment banks, as well as over 100 central banks, 31 CSDs, and 16 central counterparties (CCPs). EB is used by its participants as a gateway to local markets abroad via the links it maintains with CSDs. In this way, EB is connected to more than 50 foreign CSDs, either directly or indirectly through an intermediary. Of the over 100 currencies eligible in the system it operates, 47 are available for settling securities against payment. The vast majority of securities deposits and settlements are denominated in EUR, USD, and GBP.

3. EB is part of a large and multi-tiered group structure, that includes a set of domestic CSDs. EB is directly owned by Euroclear SA/NV (ESA), a financial holding company, that also directly owns all the CSDs in the Euroclear Group. In addition to the ICSD, Euroclear Bank, the Euroclear Group is comprised of a set of six national CSDs. These are Euroclear Finland, Euroclear Sweden, Euroclear UK & International, Euroclear Belgium, Euroclear France, and Euroclear Nederland. ESA is not only the direct owner of these CSDs, but also a support institution, that provides critical services, including those related to risk management and information technology. ESA also sets the strategic objectives at group-level, while the CSDs owned by ESA, including EB, set their own entity-specific objectives in line with those set at group-level. ESA is owned by Euroclear Investments SA, which is owned by Euroclear AG, which, in turn, is owned by the group's ultimate parent, Euroclear Holding SA/NV.

4. The assessment of EB against the CPSS-IOSCO Principles for Financial Market Infrastructures (PFMI) reveals that EB is in observance of 18 principles, and in broad observance of 3 principles (principles 3, 17, and 19). EB is an experienced FMI that employs highly professional and knowledgeable staff. It has a strong legal basis, clear and transparent rules and procedures for its participants, as well as for its critical operations and functions. EB operates in a transparent manner with abundant information available publicly on its website, as well as on a

secure portal that its participants and key stakeholders can access. There are, however, some key areas where deficiencies or issues of concern exist and that should be addressed.

5. While improvements have been made since the onboarding of the current CISO, in particular to Euroclear’s cyber posture, there remain critical deficiencies in the management of key operational risk elements which will require substantial efforts to address. Going forward, it is imperative for the CISO to focus on the effectiveness of fully-embedded security controls, and on improving asset management and identity and access management. While continued efforts by the CISO are paramount to achieving a stronger operational risk stance, it is also important that sufficient drive and steer be provided by the respective Boards of EB and ESA, as the former’s critical service provider and parent company. EB and ESA should therefore work on filling any gaps that exist in their IT and information asset management as a top priority and continue to improve its cyber posture in an effort to fully implement the CISO roadmap for addressing these critical risks. It is also paramount for there to be continued improvement in the cooperation and communication between the risk management function and the relevant management and governance bodies of EB and ESA.

6. Beyond relying on direct participant disclosure, EB should develop capacity for increasing the transparency with respect to the business of its direct participants’ clients. EB currently collects additional information and performs enhanced due diligence on only the underlying clients of large direct participants. This in particular is the case for underlying clients with a segregated account or concentrated activity in an omnibus account. Therefore, EB lacks basic information on underlying clients that could be responsible for significant activity with respect to the smaller direct participants of EB. Such clients could create risks in the system in case they facilitate the default of a direct participant. This would also have broader market access implications as such a default would also affect the other underlying clients that use the same direct participant to access EB’s services. To manage this risk, EB should put in place a mechanism that allows it to gather basic information on such clients, and in such a way that does not rely solely on periodic disclosures from its direct participants.

7. EB should also improve the breadth and rigor of its business continuity and default management testing by conducting simulation exercises based on well-defined scenarios. EB has in place well-defined rules and procedures for ensuring business continuity and managing a participant default. However, its testing of these procedures is rather weak. EB does not employ simulation exercises in its testing, nor does it conduct joint testing with linked FMIs and, where relevant, intermediaries that facilitate indirect linkages. Several participants have also noted the lack of rigor in EB’s testing of such procedures. As such, EB should put in place more robust testing of its business continuity and participant default procedures, develop a wide range of potential scenarios to facilitate testing, as well as involve a greater number of key stakeholders. In addition, a summary of test results should be shared among its entire customer base. EB should also involve its participants in the regular review of its participant default procedures.

8. The management of EB’s credit exposure to CBL—and thus the settlement activity across the interoperable link between the two entities—could be improved. Both EB and CBL secure the credit risk to which they are exposed from one another by means of a Letter of Credit (LoC). The LoC, however, is not sufficient to cover the settlement transactions and income and redemption payments that are effected over the link. To prevent settlement blockages, EB and CBL have both automated and manual processes in place to send to one another intraday, interim payments. This process could benefit from further automation to ensure smooth settlement and the processing of payments.

9. EB is subject to effective regulation, supervision, and oversight. The overall assessment of EB against the CPSS-IOSCO PFMI includes an assessment of the responsibilities of authorities, namely those of the National Bank of Belgium (NBB) and the Financial Services and Markets Authority (FSMA). The activities and powers of the NBB—as EB’s sole national competent authority (NCA) under the CSDR—and those of the FSMA are well-defined in relevant national laws, Belgian Royal Decrees and EU regulation. Authorities are deemed to have sufficient knowledge and expertise to carry out their regulatory, supervisory, and oversight activities. The NBB and FSMA observe all five responsibilities of authorities.

10. The NBB—as the National Resolution Authority (NRA)—should ensure that the resolution plan for EB is fully operationalized. The resolution plan for EB has been finalized but it is not yet fully operational. The preferred resolution strategy been decided. The operationalization of EB’s resolution plan should have appropriate FMI contingency and operational continuity plans that also take into account the interrelated nature of the Euroclear Group CSDs with their direct parent and service provider, ESA. Any resolution strategy for EB should therefore ensure that all Euroclear Group CSDs are able to continue to operate. It is envisaged that EB will be resolvable by 2024.

11. Action to seize frozen assets at Euroclear as a consequence of international sanctions imposed following the Russian invasion of Ukraine could have unintended consequences for EB and the Euroclear Group more broadly. In line with its compliance framework, EB has stated that it has implemented all applicable international sanctions imposed following the invasion. This has resulted in the freezing of significant amounts of securities and cash balances in its books. The cash proceeds from income and redemption payments on securities held in the Euroclear System by, or on behalf of, sanctioned entities are blocked by EB but appear on its balance sheet. Given the current high interest rate environment, Euroclear earns significant revenues from the investment of the frozen cash balances, which has led to increased operational and litigation risks. It would be important for any possible actions under consideration to confiscate the funds sitting at Euroclear to consider the financial stability implications, the continued smooth functioning of financial markets, the reputational risk for EB, as well as EB’s ability to remain solvent in case legal action taken by entities to collect frozen assets would create a financial obligation that could not be met due to a seizure of assets.

INTRODUCTION

A. Assessor and Objectives

12. This report contains the assessment of Euroclear Bank (EB) and its regulatory, supervisory and oversight authorities. It was conducted in the context of the IMF's Financial Sector Assessment Program (FSAP) for Belgium in March 2023. The assessor was Argyris Kahros of the IMF's Monetary and Capital Markets (MCM) Department. The assessor would like to thank the National Bank of Belgium (NBB), the Financial Services and Markets Authority (FSMA), EB, and other financial and non-financial institutions for their excellent cooperation and hospitality during the course of the assessment.

13. The objective of the assessment was to identify potential risks due to the activities and business of EB that could have implications for financial stability. EB's central position in the global financial system, its high degree of interconnectedness, and its provision of critical services makes its continued operation critical to the functioning of financial markets. It is thus imperative that EB have in place a firm legal basis for its operations, a comprehensive framework for managing the risks to which it is exposed, clear and transparent rules and procedures for its participants that facilitate fair and open access, and effective governance arrangements, among others. In addition, EB should be effectively regulated, supervised, and overseen by competent and knowledgeable authorities. This report therefore contains the assessment of EB and its authorities against international standards applicable for financial market infrastructures (FMIs).

B. Scope of the Assessment

14. EB and its authorities are assessed against the CPSS-IOSCO¹ Principles for Financial Market Infrastructures (PFMI).² EB is assessed against all relevant principles of the PFMI that relate to a central securities depository (CSD) and securities settlement system (SSS). For EB—as a CSD and operator of an SSS—this includes 21 of the 24 Principles of the PFMI. These in particular are Principles 1-5, 7-13, and 15-23. The Principles are organized under nine broad themes: general organization (Principles 1-3), credit and liquidity risk management (Principles 4-7), settlement (Principles 8-10), central securities depositories and exchange-of-value settlement systems (Principles 11-12), default management (Principles 13-14), general business and operational risk management (Principles 15-17), access (Principles 18-20), efficiency (Principles 21-22), and transparency (Principles 23-24). The three Principles that are out of scope of this assessment relate to central counterparties (Principles 6 and 14), and trade repositories (Principle 24). For the assessment of authorities, all five Responsibilities are in scope (Responsibilities A-E).

¹ As of September 1, 2014, the Committee on Payment and Settlement Systems (CPSS) was renamed under a revised mandate to the Committee on Payments and Market Infrastructure (CPMI). The CPSS-IOSCO PFMI may therefore also be referred to as the CPMI-IOSCO PFMI.

² Note that EB and its authorities are only assessed against the PFMI and not additionally against further guidances published by the CPMI and IOSCO, such as that on cyber resilience for financial market infrastructures.

C. Methodology and Information Used for the Assessment

15. This assessment is based on various sources of information. EB provided the assessor with a self-assessment report against the 21 relevant Principles of the PFMI. It also provided responses to a set of related questions and data requests. The authorities in turn provided the assessor with a self-assessment report against the 5 Responsibilities of authorities. In addition to the self-assessment reports provided by EB and its authorities, the assessor took into account and reviewed relevant documentation, including information available on the websites of EB and its authorities, as well as national laws, regulations, rules and procedures governing EB's systems and operations, and other available material. The assessor also benefitted from detailed discussions with authorities—namely the NBB, FSMA, and European Central Bank (ECB)—representatives from EB, as well as with relevant market participants. The vast majority of these discussions took place in person in Brussels during March 2023. Several virtual meetings also took place during this time period.

16. Ratings are based on the CPSS-IOSCO Disclosure Framework and Assessment Methodology. The methodology prescribes ratings that are built on the gravity and urgency of the need to remedy the issues of concern that were identified during the assessment. The ratings reflect the assessor's judgment regarding the type and material impact of the risks and other issues associated with any identified gaps or shortcomings when assessed against international standards. The ratings are assigned to reflect conditions at the time of the assessment. A positive assessment does not imply that there don't remain relevant risks related to the substance of the Principles and Responsibilities set out in the PFMI.

OVERVIEW OF THE PAYMENT, CLEARING, AND SETTLEMENT LANDSCAPE

A. Institutional and Market Structure

17. Belgium hosts several FMIs, custodians, payment service providers (PSPs), and critical service providers (CSPs).³ Several of these entities are of international systemic importance, including Euroclear Bank, Mastercard Europe, and the Society for Worldwide Interbank Financial Telecommunication (SWIFT).

18. Euroclear Holding SA/NV is incorporated in Belgium and is the ultimate parent of the Euroclear Group CSDs. The Euroclear Group is comprised of the international central securities depository (ICSD), Euroclear Bank, as well as six national CSDs. These are Euroclear Finland, Euroclear Sweden, Euroclear UK & International, Euroclear Belgium, Euroclear France, and Euroclear

³ For more information, see <https://www.nbb.be/en/publications-and-research/economic-and-financial-publications/fmi-payments-report> for the NBB's Financial Market Infrastructures and Payment Services Reports, which are published annually.

Nederland. The national CSDs of Belgium, France, and the Netherlands operate under a single settlement platform, the Euroclear Settlement of Euronext-zone Securities (ESES).

19. Three CSDs operate in Belgium: Euroclear Bank, Euroclear Belgium, and the National Bank of Belgium-Securities Settlement System (NBB-SSS). Euroclear Bank, the ICSD, provides services for international bonds—Eurobonds and international exchange-traded funds (ETFs)—as well as a range of foreign securities (see next section for more information on Euroclear Bank). Euroclear Belgium primarily deals in Belgian equities, and, in 2021, held EUR 219 billion in assets and settled 2.7 million transactions with a value of EUR 722 billion. The NBB-SSS, owned and operated by the NBB, holds and settles public sector debt, including securities issued by the federal government of Belgium and by regional and local municipalities. It also holds and settles private sector debt issued by corporates, credit institutions, and other entities. In 2021, the NBB-SSS held approximately EUR 727 billion in assets (mainly securities issued by the Belgian government), and settled 600,000 transactions with a total value of EUR 11.5 trillion.

20. The European banking entity of the global custodian, Bank of New York Mellon, is also domiciled in Belgium. In 2021, it held EUR 3.3 trillion in assets.

21. As is the case for other CSDs in Europe, settlement operations for Euroclear Belgium and the NBB-SSS have been outsourced to TARGET2-Securities (T2S). T2S is a common securities settlement platform, which is owned, operated, and overseen by the Eurosystem, of which the NBB is part. T2S facilitates the cross-border transfer of cash and securities. Market participants access T2S settlement by having a securities account with a connected CSD and a dedicated cash account at a connected central bank. As such, money settlement in T2S takes place in central bank money. In addition to the euro, the Danish krone is also available for settlement in T2S. Currently, 20 countries and 19 CSDs are connected to the platform.⁴ Euroclear Bank, however, operates its own SSS and does not currently outsource its settlement to T2S (see paragraph 35 below regarding EB's forthcoming connection to T2S). In 2021, T2S settled just over 187 million transactions with a value of EUR 178 trillion.

22. Two payment systems underpin the payments infrastructure landscape in Belgium. T2 (the successor of TARGET2 as of March 2023) is the Eurosystem's new wholesale payment system, which comprises a real-time gross settlement system (RTGS) and a collateral management tool. T2 settles payments related to the monetary policy operations of the Eurosystem and facilitates interbank payment transactions.⁵ The Centre for Exchange and Clearing (CEC) is Belgium's retail payment system and processes domestic payments between banks in Belgium. These payments include credit transfers, instant payments, direct debits, card payments, and checks. In 2021, the CEC processed 1.6 million payments with a value of EUR 1.4 trillion. Belgium also has a domestic debit card payment scheme called Bancontact. The global PSP, Worldline, is also domiciled in Belgium.

⁴ See https://www.ecb.europa.eu/paym/target/t2s/profuse/shared/pdf/List_of_CSDs_connected_to_T2S.pdf for a list of countries and CSDs connected to T2S.

⁵ See https://www.ecb.europa.eu/stats/payment_statistics/html/index.en.html for Eurosystem payment statistics.

23. Mastercard Europe—the European subsidiary of the Mastercard Group, owner of the international (credit) card payment scheme—is based in Belgium. Mastercard Europe operates the Mastercard Clearing Management System. In 2020, Mastercard Europe was designated by the ECB as a systemically important payment system (SIPS). It is one of five payment systems designated as such, alongside T2, EURO1, STEP2, and CORE-FR.

24. SWIFT—headquartered in Belgium—provides critical messaging services to financial institutions and FMIs worldwide. The services provided by SWIFT facilitate correspondent banking and FMI activities. Over 200 countries and 11,000 institutions are connected to the SWIFT network. In 2021, SWIFT facilitated the transmission of 10.6 million financial messages.

B. Overview of Euroclear Bank

Core Services and Systemic Importance

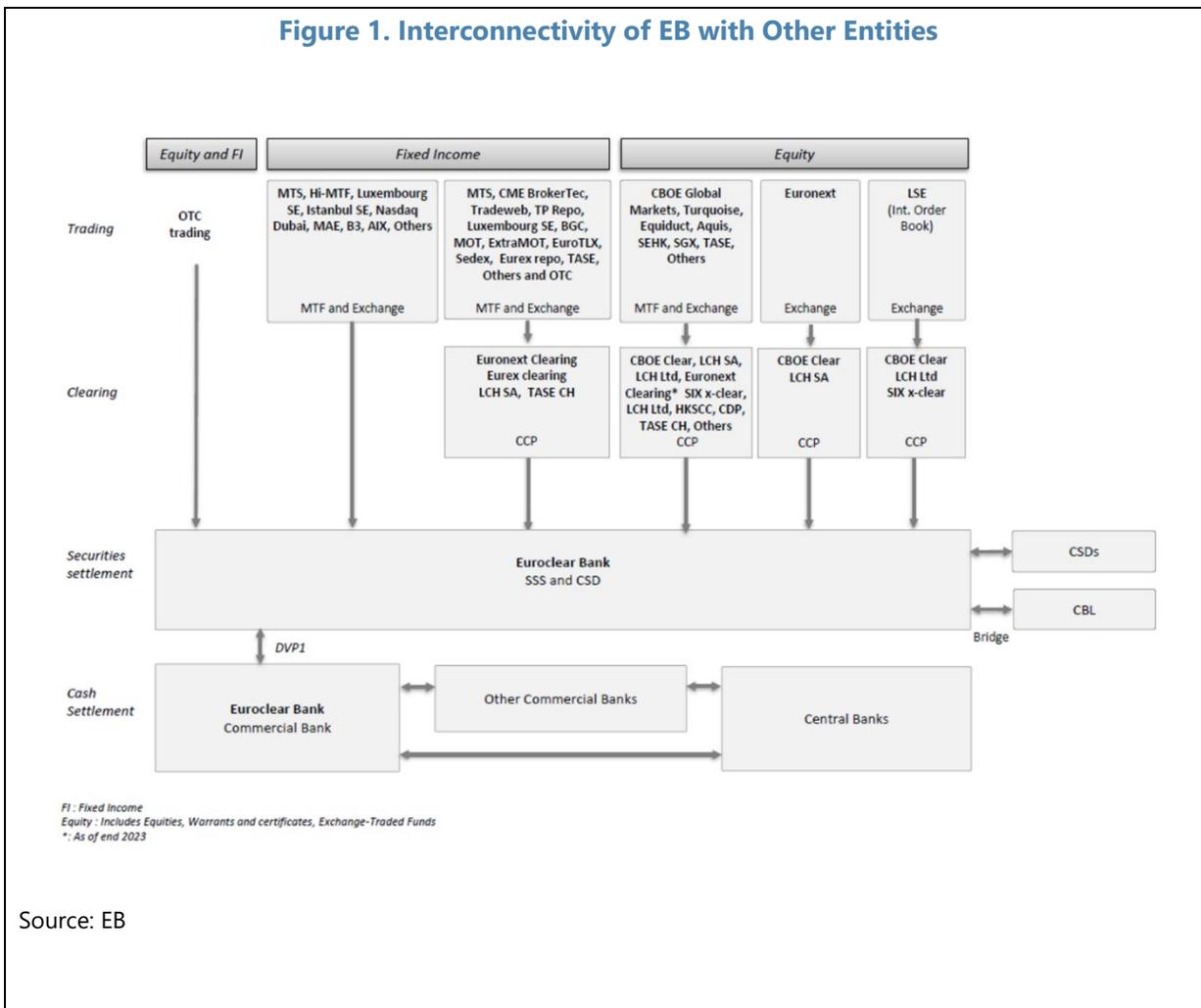
25. Euroclear Bank is an ICSD and operator of an SSS that also provides notary and central maintenance services. As an ICSD, EB provides a notary function for international bonds (i.e., Eurobonds)—bonds denominated in a currency different from that of the issuing country. This means that it is responsible for the initial admission and/or establishment of such securities, a function it primarily shares with another ICSD, Clearstream Banking Luxembourg (CBL). EB also provides securities settlement services for a wide range of internationally traded securities, including debt instruments, equities, convertibles, warrants, investment funds, ETFs, money market instruments (MMIs), and depositary receipts. Securities settlement is offered on a delivery versus payment (DvP) model 1 basis,⁶ as well as free of payment (FoP).⁷ EB settles in commercial bank money and in its own books. In addition, EB provides central maintenance services to its participants and their underlying clients, which entails providing and maintaining securities accounts, including processing corporate actions.

26. EB is a highly interconnected and globally systemic FMI that is directly connected to exchanges, multilateral trading facilities (MTFs), as well as other FMIs. EB provides securities settlement services for transactions conducted on exchanges, trading facilities, and over-the-counter (OTC). In addition, it is connected to other CSDs, including CBL, as well as prominent central counterparties, including LCH Ltd and Eurex Clearing. See Figure 1 for an illustration of EB's connectivity with other entities and its placement within the trading, clearing, and settlement landscape. In addition, see the Appendix for a table of CSDs and SSSs with which EB maintains links, as well as a table of FMIs that are EB participants.

⁶ The glossary provided by the Committee on Payments and Market Infrastructures (CPMI) defines DvP as a “settlement mechanism that links a securities transfer and a funds transfer in such a way as to ensure that delivery occurs if and only if the corresponding payment occurs.” The model 1 mechanism settles both the securities and funds transfer legs on a gross basis.

⁷ EB's FoP mechanism is primarily used for interaccount transfers and the provisioning of securities by participants of EB for collateralizing other financial transactions, e.g., derivatives trades cleared at a central counterparty (CCP).

Figure 1. Interconnectivity of EB with Other Entities



Source: EB

27. Three types of securities settlement services are provided by EB to system participants—internal, external, and via the interoperable link maintained with CBL. Internal settlement takes place among the (direct and indirect) participants of EB and within the SSS it operates. External settlement occurs in local markets at foreign CSDs to which EB has established FMI links. These links can be either direct—in which case EB is a direct participant of a foreign CSD—or indirect, whereby EB accesses the settlement services of a foreign CSD through an intermediary, i.e., a settlement agent. In the case of external settlement via links, EB settles either using central bank money or commercial bank money via its cash correspondents.⁸ EB also facilitates securities settlement between its own participants and those of CBL via an interoperable link maintained between the two ICSDs.

⁸ For settlement in many domestic CSDs connected to T2S, EB uses its central bank account with the NBB, as well as that at the Danmarks Nationalbank. It also uses its account at the Bank of England for settlements in Euroclear UK & International.

28. Over 1700 entities are participants of EB and around 100 currencies are eligible in the system it operates. Among EB’s participants are over 100 central banks, 31 CSDs, 16 CCPs, as well as other entities, such as commercial banks, broker-dealers, and investment banks. Of the approximately 100 currencies eligible in EB, 47 are available for settling securities against payment. The vast majority of securities deposits and settlements are denominated in EUR, USD, and GBP (in decreasing order of prominence).

29. EB is considered to be the most active CSD globally and one of the largest in terms of value of securities held. According to statistics published by the Bank for International Settlements (BIS),⁹ EB is the third largest CSD in the world after the Fedwire Securities Service and DTC in the United States. Via the links it maintains—be they direct or indirect—EB is connected to more than 50 foreign CSDs, facilitating access to local markets for its participants. In 2021, EB held on behalf of its customers EUR 17.1 trillion in value of securities deposits. Approximately 50 percent of this was in EUR, 28 percent in USD, and 10 percent in GBP. International bonds accounted for 51 percent of the value of held securities. By value of deliveries, EB is the most active CSD/SSS globally with settlement turnover in 2021 amounting to 147 million transactions with a value of EUR 653 trillion. In turnover value terms, EUR accounted for 65 percent, USD for 15 percent, and GBP for 10 percent. Table 1 shows EB settlement statistics over time in trillion EUR-equivalent broken down by instrument type.

30. Supporting its CSD and SSS activities, EB also provides banking- and non-banking-type ancillary services.

Table 1. Belgium: EB Settlement Statistics by Instrument Type (in trillion EUR-equivalent)

Instrument Type	2018	2019	2020	2021	2022
Domestic Debt	383.2	391.9	425.0	490.1	550.0
International Debt	132.6	137.8	140.7	148.7	130.3
Equities	14.6	13.8	11.6	15.3	10.3
Funds	1.9	2.7	3.8	4.3	5.0
Warrants and Depository Receipts	1.2	1.2	1.4	1.4	1.0
Other	0.002	0.002	0.002	0.3	1.0
Total	533.5	547.5	582.6	660	697.6

Source: EB

⁹ See https://www.bis.org/publ/qtrpdf/r_qt2003y.htm

31. As a licensed credit institution, EB provides banking services to its customers in multiple currencies. Money transfer services support participants' cash management in relation to their securities settlement and asset servicing. EB also provides its participants with uncommitted and fully collateralized credit to facilitate the smooth settlement of securities transactions. Participants may avail themselves of credit provided by EB in the case that, e.g., they do not hold sufficient cash reserves for settling the cash leg of securities transactions. Finally, EB provides treasury services, including liquidity management, and general collateral access to facilitate participants' borrowing securities from one another. To support its access to a multitude of currencies, EB maintains relationships with a network of cash correspondent banks.

32. The provision of other, non-banking services supports EB's core activities. These services include: new issues, whereby EB records an initial securities issue in book-entry form and facilitates its distribution; asset servicing for processing corporate events, proxy voting, market claims, tax services, as well as interest, dividend and redemption payments; securities lending and borrowing services; and funds-order processing.

33. EB maintains three branches and five representative offices around the world. EB has branches in Hong Kong, Krakow, and Tokyo. Its representative offices are located in Beijing, Dubai, Frankfurt, New York, and Singapore. These offices provide operational and client relationship services to Euroclear Bank for its customers in these regions. It is envisaged that the representative office in Singapore will be converted into a branch.

Governance and Group Structure

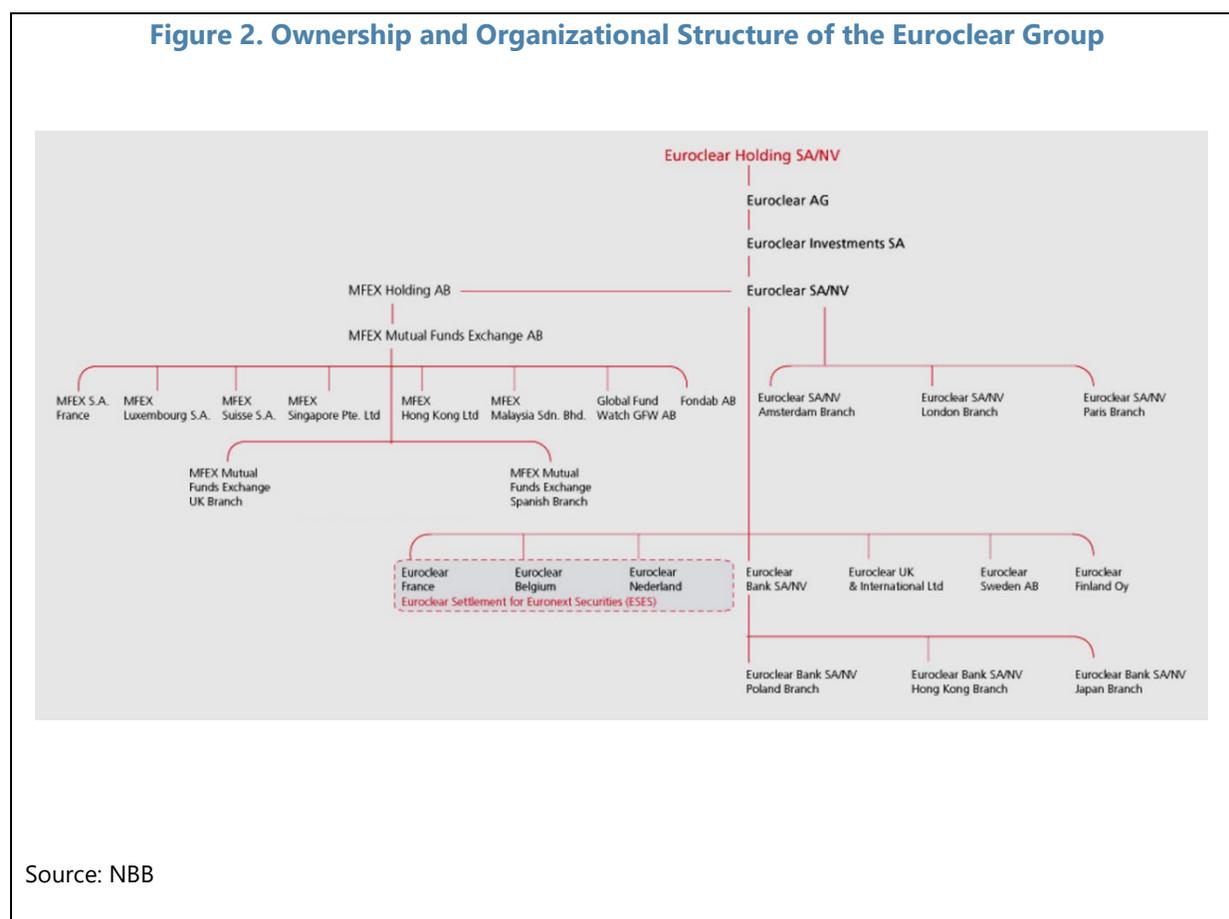
34. EB is part of a large and multi-tiered organizational structure. The ultimate parent of the Euroclear Group (EG) is Euroclear Holding SA/NV, a financial holding company domiciled in Belgium. Euroclear Holding SA/NV wholly owns Euroclear AG, which is a financial holding company established under the laws of Switzerland. Euroclear AG, in turn, wholly owns Euroclear Investments SA, a Belgian financial holding company. While neither Euroclear Holding SA/NV nor Euroclear AG serve any discernible purpose within the Euroclear Group, Euroclear Investments provides certain services to the EG related to reinsurance and real estate management. Euroclear Investments SA also issues bonds on behalf of the EG, and indirectly holds the investments of the ultimate parent in various EG entities. Euroclear Investments SA directly owns Euroclear SA/NV (ESA), a financial holding company, which is the direct parent of the seven EG CSDs.

35. ESA provides critical services to the Euroclear Group CSDs and is responsible for setting group objectives and monitoring performance. The services that ESA provides to its direct subsidiary CSDs are critical. They include risk management, internal audit, human resources, information technology, communication, and compliance, among others. As such, ESA is designated as a support institution under Belgian law, and is therefore subject to authorization and prudential supervision by Belgian authorities. ESA operates three branches in London, Paris, and Amsterdam, and undertakes its role as a group service provider via service level agreements between itself and its subsidiaries. EB monitors the performance of its parent entity in the provision of these critical services by setting quantitative and qualitative key performance indicators (KPIs) on an annual basis.

36. In 2021, the Euroclear Group acquired MFEX, a platform for the trading and distribution of funds. ESA is the direct owner of MFEX Holding AB, the holding company of MFEX Mutual Funds Exchange AB, both of which are domiciled in Sweden. MFEX Mutual Funds Exchange AB, in turn, owns several subsidiaries around the world, and maintains two branches and one representative office.

37. The entire Euroclear Group has over 2000 clients, holds EUR 37.6 trillion in assets, 1.7 million securities in its books, and conducts 295 million transactions per year with a value of EUR 1 quadrillion.

38. The Euroclear Group organizational structure is illustrated in Figure 2.



C. Regulatory, Supervisory, and Oversight Framework

39. In December 2019, EB was licensed by the NBB as a CSD under the Central Securities Depository Regulation (CSDR) of the European Union (EU). Pursuant to Article 16 of the CSDR, and according to the procedure set out in Article 17, the NBB authorized EB to provide so-called *core* CSD services. These include the initial recording of securities in a book-entry system (i.e., notary service), providing and maintaining securities accounts, and operating a securities settlement system

(see Section A of the CSDR Annex). EB was also authorized to provide other non-banking-type and banking-type ancillary services (see Sections B and C of the CSDR Annex, respectively). In addition to the CSDR, EB is subject to various Commission Delegated Regulations—such as regulatory technical standards issued by the European Securities and Markets Authority (ESMA) and the European Banking Authority (EBA)—as well as the Settlement Finality Directive (SFD), the Financial Collateral Directive, and related Belgian Royal Decrees. EB has also been a licensed credit institution in Belgium since July 2000 under the Belgian Banking Act, which transposes into Belgian law the Capital Requirements Directive (CRD) and the Banking Recovery and Resolution Directive (BRRD) of the EU.

40. The NBB and—to a lesser extent—the FSMA are the designated national authorities for EB. In accordance with Belgian law and EU Regulation, the NBB and FSMA cooperate and consult with one another in relation to the authorization and supervision of CSDs in Belgium. The practicalities of their cooperation is also supported by a *protocol* that was concluded between the two authorities in 2017.

41. The NBB is the competent authority responsible for the authorization and supervision of CSDs in Belgium, as well as the oversight of SSSs. The NBB Organic Law of 22 February 1998 grants the NBB its authorization and supervisory powers (see Article 36/26/1), as well as that related to its oversight of SSSs (see Article 8). The NBB is also designated as the sole national competent authority (NCA) for EB in accordance with Article 11 of the CSDR. As such, the NBB is entrusted with EB’s compliance with the CSDR and its related regulatory and implementing technical standards. This includes an obligation to conduct a regular review and evaluation of EB (and other CSDs) as specified in Article 22. The NBB is also the authority responsible for authorizing and supervising CSD support institutions—such as ESA—according to the NBB Organic Law and as further defined in the Belgian Royal Decree of 26 September 2005.

42. As a licensed credit institution, EB is also subject to the prudential supervision of the NBB. The NBB and ECB are responsible for the supervision of credit institutions in Belgium in accordance with the Belgian Banking Act and the Single Supervisory Mechanism (SSM) Regulation of the EU (EU Regulation 1024/2013). As EB has been designated as a Less Significant Institution (LSI) by the ECB, EB is under the direct supervision of the NBB. The NBB is also the National Resolution Authority (NRA) for EB, as well as all other LSIs in Belgium.

43. The supervisory powers of the FSMA are primarily related to investor protection and the proper functioning, integrity, and transparency of financial markets. The Law of 2 August 2002 on the supervision of the financial sector and financial services define the powers of the FSMA in relation to Belgian CSDs (see Article 23bis) and support institutions for CSDs and custodian banks (see Article 23ter).

44. Other authorities are also involved in the supervision and oversight of EB as relevant authorities. The CSDR lays out certain criteria for identifying relevant authorities for CSDs. In the case of EB, these include the Eurosystem (represented by the NBB), as well as the central banks of Denmark, Norway, and Romania. These authorities are consulted during the annual review and evaluation process of the core and non-banking-type ancillary services provided by CSDs. In

addition, they are informed of the outcome of the review related to EB's provision of banking-type ancillary services. Other authorities are also involved and/or informed in relation to the supervision and oversight of EB. These authorities include ESMA, the EBA, as well as those in Luxembourg (in particular with regard to the interoperable link between EB and CBL), Ireland, and competent authorities of EU Member States for which EB is considered to be of substantial importance in accordance with the CSDR.

45. Due to the global systemic relevance of EB—and in accordance with PFMI

Responsibility E—additional authorities are also consulted in relation to the oversight and supervision of EB.

The most significant cooperation arrangement related to the oversight of EB is the so-called Multilateral Oversight Group (MOG), which includes as members the United States Federal Reserve Board of Governors, Federal Reserve Bank of New York, Bank of England, Bank of Japan, Reserve Bank of Australia, and the ECB (as observer). The MOG uses the CPSS-IOSCO PFMI as a basis for the oversight assessment of EB. Other authorities are also involved and/or informed in relation to the supervision and oversight of EB.

46. Sanctions and countersanctions imposed as a consequence of the Russian invasion of Ukraine have led to large amounts of frozen assets sitting on the books of Euroclear.

In line with its compliance framework, EB has stated that it has implemented all applicable international sanctions, which has led to the freezing of significant amounts of securities and cash balances in its books. The cash proceeds from income and redemption payments on securities held by sanctioned entities are blocked by EB and appear on its balance sheet. EB's related growing balance sheet combined with the current high interest rate environment have led to large profits for EB to date. As a consequence of this, EB is exposed to increased operational and litigation risks. Any confiscation or misuse of these assets—or revenues therefrom—could pose a serious risk to the appropriate functioning of EB as an FMI and, more broadly, could impact financial stability and the functioning of financial markets globally. For example, legal action taken by entities to retrieve frozen assets and related interest earnings sitting with EB could create financial obligations not able to be met by EB in case of seizure of interest earnings or underlying assets. Also, any action taken beyond standard sanction measures should consider the impact of possible responses from Russia with an impact on EB. At its extreme, this could impact the credit rating of EB or lead to disruption in the services EB provides to its participants and linked FMIs, thereby affecting the global financial system. These services include custody, settlement, and central maintenance for international bonds and foreign securities, the provision of links to CSDs around the world facilitating access to local bond markets, and custody services for other FMIs, including for the collateral held by CCPs to manage counterparty risk. EB's continued operational and financial strength is therefore critical to facilitate market access to its participants, which include some of the world's largest financial institutions, as well as for the continued operation of linked FMIs. As such, any actions affecting frozen assets and interest earnings on them should carefully consider the financial stability implications and ensure that EB is able to continue to provide its critical services to financial markets.

D. Major Changes and Reforms and Other Initiatives

Major Changes and Reforms

47. In December 2021, EB signed the T2S Framework Agreement to become a T2S CSD.

Once the connection to T2S is operationalized, EB will provide its customers that have access to a euro central bank account the option to settle its securities transactions in central bank money. It is currently envisaged that the connection will be live in 2025. This will proceed in phases with the first step to connect EB to the Eurosystem Collateral Management System (ECMS), which will launch in April 2024. The ECMS will facilitate the management of assets used as collateral in Eurosystem credit operations, and will replace national systems currently in place. Relatedly, the Eurosystem's TARGET2-T2S consolidation went live in March 2023.

48. The ongoing CSDR Refit initiative entails a review of the existing CSDR. While amendments to the CSDR are not yet final, the CSDR Refit will likely introduce a number of changes to the existing regulation. Aspects that are currently under review include the settlement discipline regime, thresholds in place for providing banking-type ancillary services, the review and evaluation process, and the establishment of CSD supervisory colleges. It is expected that the CSDR Refit will continue through 2023. On a related note, and after several delays, most of the CSDR's settlement discipline regime provisions came into force in February 2022.

49. The NBB and the Bank of England (BoE) have agreed on a new MoU in order to facilitate EB's recognition as a non-UK CSD under the UK CSDR. The NBB and the BoE signed an original MoU in 2014 on cooperation and communication with regard to the oversight and supervision of EB. Since the UK's withdrawal from the EU—and considering EB's importance to the UK financial system—the BoE has identified EB as a non-UK CSD that requires recognition and authorization to continue to provide CSD services under the UK CSDR. Article 25 of the UK CSDR stipulates that prior to the recognition of a non-UK CSD, the BoE must establish a suitable cooperation arrangement with that CSD's home authority. As such, the BoE and NBB have agreed on a new MoU to reflect the BoE's additional responsibilities for the recognition and monitoring of non-UK CSDs, e.g., on-site inspections. As of May 2023, EB is a recognized third country CSD under the UK CSDR.

50. Revisions to the Belgian Banking Act in 2021 reflect the revised Capital Requirements Directive and Regulation of the EU. Particularly relevant for EB was a new requirement for the approval and supervision of financial holding companies. As a result, ESA—the direct parent of EB and the other Euroclear Group CSDs—was approved as a financial holding company in 2022. The sixth revision of the Capital Requirements Directive (and, relatedly, the third revision of the Capital Requirements Regulation) is currently ongoing and is expected to come into force by the beginning of 2025.

Fintech

51. The Distributed Ledger Technology (DLT) Pilot Regime of the EU—implemented in March 2023—is a regulatory sandbox that facilitates experimentation with DLT in FMIs. In December 2022, ESMA published guidelines on applying for authorization to operate market infrastructure based on DLT, in particular for trading, settlement, and regulatory data reporting. As part of authorization, FMIs can be granted a temporary exemption of up to six years from certain requirements in existing EU legislation on financial services. In addition, a Belgian law of 2021 makes it possible for CSDs and authorized account holders to hold securities using secure electronic registration mechanisms, including those that are distributed as with DLT. EB has launched its own DLT project (see paragraph 54 below), though not within the framework of the EU DLT Pilot Regime.

52. The Euroclear Group has ambitions to build an open, shared platform that facilitates the provision of data-enabled services to market players. The aim would be to create a centralized approach to facilitating the services provided by and/or to issuers, issuer agents, broker-dealers, CSDs, custodians, and investors. As the current market model involves direct bilateral arrangements between entities, information is currently decentralized and the provision of services inefficient. In the open shared platform, the aforementioned entities could connect directly to the centralized platform in order to avail themselves of and/or offer their services. The platform would not be solely available to the customers of the EG CSDs, but to all market participants.

53. To complement its own in-house developments, the Euroclear Group has also invested in a number of fintech companies. The investments line up with some of Euroclear’s strategic ambitions, including alleviating pain points in the post-trade process, streamlining the handling of data, the dissemination of relevant news to clients, and, more generally, driving innovation in capital markets and related processes, as well as expanding the range of the Group’s service offerings. To this effect, ESA has taken a majority stake in a number of companies, including: Taskize, which provides a web-based solution for customer service; Greenomy, a reporting platform in accordance with emerging Environmental, Social, and Governance (ESG) standards; Quantessence, which provides support for asset rebalancing; and Acadiasoft (majority stake pending), which provides risk management support for derivatives markets, including managing margin. ESA has also granted loans to other fintechs, including ImpactCube (ESG portfolio analytics), Goji (fund services platform for private securities), Fnality (DLT-based cash settlement platform), and Scorpeo (optimization of elective corporate actions).

54. The Euroclear Group has also taken part in initiatives related to emerging technologies. An example of this was Euroclear France’s involvement in the central bank digital currency (CBDC) experiment led by the Banque de France (BdF), and launched in March 2020. In the experiment, French sovereign debt securities were settled against a CBDC in an effort to assess the extent to which post-trade processes could run on DLT, and to assess the value added of emerging technologies and CBDC for use in capital markets. EB, in partnership with R3 Corda, has also launched an internal project involving the development of a new DLT platform for issuing native digital Eurobonds.

SUMMARY ASSESSMENT FOR EUROCLEAR BANK

A. General Organization (Principles 1-3)

55. The activities of EB are founded on a robust, transparent and enforceable legal basis.

EB is licensed as a CSD under the EU CSDR. The CSDR provides for the legal and regulatory underpinning for EB's core services, including the initial recording of securities in book-entry form, central maintenance, and settlement. In addition, under the CSDR, EB is authorized to provide other non-banking-type ancillary and banking-type ancillary services. EB is also licensed as a Belgian credit institution under the Belgian Banking Act and subject to relevant European banking legislation—including the Capital Requirements Regulation (CRR) and Capital Requirements Directive (CRD).

56. EB has in place clear and understandable rules and procedures for its participants and the material aspects of its business.

EB's main documentation, governed by Belgian law, include its *Terms and Conditions governing use of Euroclear* (T&Cs) and its *Operating Procedures of the Euroclear System* (OPs). Among others, EB's documentation sets out participation requirements and the rules governing its various services and activities. These include EB's collateral arrangements and management, credit facility, default procedures, as well as asset protection, settlement finality, and dematerialization and immobilization of securities. Before providing services in outside jurisdictions, EB carries out a legal analysis to ensure that its rules and procedures remain enforceable, as well as to identify and mitigate the risks that may arise in case of a conflict of laws.

57. The governance arrangements of EB and of the Euroclear Group are clear, transparent, and promote the safety and efficiency of EB and the broader financial system, although more emphasis could be placed on defining and managing key risks.

The EB Board defines and supervises the infrastructure's general policy and strategy, including for the management of risk. It is supported and advised on specific matters by various advisory committees, including for audit, risk, remunerations and nominations, and governance. The Management Committee of EB is responsible for the general management of the (I)CSD. In addition, and as required by the CSDR, the EB Board has established a User Committee, which represents the interests of EB's user base, including participants and issuers. Governance arrangements, including the roles and responsibilities of Board members, and lines of reporting, are well-documented, and disclosed to relevant stakeholders. In addition, members of the Board of EB have the appropriate set of skills to carry out their duties, are subject to approval by supervisory authorities, and their performance is regularly assessed. However, EB, and the Euroclear Group more broadly, have only begun to address the lack of sufficient steering and definition of IT and information asset management (more on this below) at the level of the Board. It is thus imperative that EB's Board and Management Committee—along with those of ESA as IT service provider for EB—ensure that the management of these risks continue to be a priority going forward.

58. The risk management framework of EB is largely comprehensive and allows it to identify and manage the various risks to which it is exposed.

EB has in place effective tools,

policies, procedures, and systems that support its ability to identify, measure, monitor, and manage its risks, and keep levels within the risk appetites set at Board-level. These risks include credit, liquidity, market, legal and compliance, fraud, business, operational, and information and communication technology security, among others. All of EB's risk policies and procedures are regularly reviewed and supported by its internal control functions, including audit. In addition, EB formulates an appropriate Recovery, Restructuring, and Orderly Wind-Down (RRW) Plan on an annual basis to assist in the case that it becomes financially non-viable and/or its continued ability to carry out its critical functions is threatened. However, EB continues to work on its resolvability, and should continue working with the NBB—as National Resolution Authority (NRA)—to fully operationalize its resolution strategy.

59. Recent initiatives have improved the effectiveness of the involvement of EB's Board in addressing key risks, but substantial additional work is needed. EB's supervisors have persistently pointed to a lack of sufficient definition and steer on the part of the Board for key risks faced by EB. This has been particularly the case for risks related to cyber security, IT and information security management. EB has attempted to tackle these deficiencies by improving the frequency and depth of communication between the Board and the risk management function, as well as strengthening existing frameworks and measures. For example, EB's cyber and IT risk appetite was updated in July 2023, new IT and cyber dashboards and indicators have been created to objectively assess progress against stated objectives, and there is regular review by the Board of EB's technology strategy and roadmap delivery. These recent initiatives have laid a suitable foundation for improving the managing of key risks, and it is to be determined how these will translate into a stronger operational risk posture for EB. There remains substantial work for EB, and the Euroclear Group more broadly, to ensure that the IT risk management control function continues to improve and strengthen, including risks posed to and from service providers, and for the risk strategy to be a top-of-mind priority for EB's Board and Management Committee.

B. Credit and Liquidity Risk Management (Principles 4, 5, and 7)

60. EB has in place a robust and effective credit risk management framework. EB is exposed to credit risk from its participants, issuers of financial instruments it holds, cash correspondent banks, treasury counterparties, and settlement banks. The credit facilities that EB offers to its participants are done so on an uncommitted and fully collateralized basis. In addition, credit is granted only for currencies for which it has adequate liquidity capacity. Credit exposure to cash correspondents and settlement banks is mitigated through the use of central bank accounts and is otherwise managed so as to ensure that any exposure remains within EB's risk appetite. End-of-day participant cash positions are invested in short-term, high-quality securities or placed with suitable counterparties. For managing credit risk more generally, EB has established a set of tools and credit risk mitigation controls, including credit limits (also on entity group-level), credit reduction initiatives, and sanctioning rates as a deterrent to the transformation of intraday credit into overnight lending. EB also has in place explicit rules and procedures for allocating covered credit losses, including the usage of participant cash and appropriation and liquidation of collateral.

61. The management of EB’s credit exposure to CBL could be improved. The credit risk arising from the interoperable link between EB and CBL is secured by means of a Letter of Credit (LoC), which is not sufficient to meet redirected transfers of income and redemption payments, as well as settlement activity that takes place between the two entities. Since increasing the value of the LoC to meet demand across the link is not a viable solution, and since exposures between EB and CBL are required to be secured, EB and CBL transmit interim, intraday payments to one another to prevent settlement blockages. The management of these interim payments, and thus of the LoC, involves manual processes, and could therefore be improved by way of further automation. This would require a joint effort involving both EB and CBL.

62. The collateral that EB accepts, and the management thereof, is governed by a set of enforced and effective rules as set out in its collateral framework. EB has in place strict rules on the quality and quantity of securities it accepts as collateral. EB’s collateral valuation system uses an internally-developed model to value collateral and set appropriately conservative haircuts—based on market, country, credit and liquidity risks—while also aiming to limit procyclicality. The adequacy of haircuts is assessed using stress testing and backtesting. The models used for valuing and determining haircuts on collateral are subject to annual review. EB’s fully-automated collateral management system also includes ex ante measures for ensuring that the collateral concentration limits set out in its Financial Risk Policy Handbook are not breached.

63. EB has tools in place to effectively measure, monitor, and manage its liquidity risk, and maintains sufficient qualifying liquid resources (QLR) to ensure the settlement of its payment obligations. EB is able to identify, monitor, and manage its liquidity risk in real-time using a range of analytical and operational tools and dashboards. As required by the CSDR, EB maintains sufficient QLR in the relevant currencies for its business—namely EUR, DKK, NOK, RON (the most relevant EU currencies under the CSDR), USD, and GBP—with a diversified set of high-quality counterparties (including via deposits at a central bank of issue). It sizes these resources through rigorous stress testing with intraday and multi-day horizons, as well as regular backtests. To monetize its QLR, EB maintains Pre-Arranged and highly reliable Funding Arrangements (PAFA) through a wide range of facilities, including committed swap lines for all currencies to which it has liquidity exposure, as well as committed and uncommitted repo.¹⁰ These facilities are regularly tested and EB has in place well-documented procedures for managing the relationship with its liquidity providers. A Contingency Funding Plan is also in place in case of a stress event that threatens the liquidity position of EB.

C. Settlement (Principles 8-10)

64. Settlement finality is governed by the Settlement Finality Directive of the EU, which is implemented in Belgium as the Belgian Settlement Finality Law. The relevant finality rules for the Euroclear System are laid out in EB’s T&Cs and in its OPs, which define the moment of entry,

¹⁰ EB maintains own QLR in the form of committed unsecured facilities for the following target currencies: EUR, GBP, USD, and JPY. Many other currencies are available via PAFAs in the form of committed swap—as well as committed and uncommitted repo—facilities.

irrevocability, and finality of transfer orders. EB's contractual framework also provides information on how local laws affect cross-border settlement and the impact on settlement finality. In the case of settlement within the Euroclear System or across the interoperable link with CBL, settlement can take place in real-time, intraday, or overnight. External settlement is subject to local rules on settlement and finality.

65. EB conducts its money settlement in commercial bank money and acts as its own settlement bank for the SSS it operates. EB has determined that conducting money settlement in central bank money is not practical for its current operations. This is because of the international nature of its business, and its settlement of almost 50 currencies. Hence, participants settle directly in the books of EB in commercial bank money, also for EUR. The management of risks associated with settling in its own books is covered in EB's overall risk management framework. For EUR, central bank money settlement within Euroclear Bank—taking into account a lack of T2S connectivity—can only currently be theoretically offered to participants with accounts at the NBB, although the necessary IT system to facilitate the DvP mechanism is also not in place. In any case, this would represent only a small fraction of EB's client base. However, in 2021, EB signed the T2S framework agreement to become a T2S CSD, which is currently envisaged for 2025. Once this is operationalized, EB plans to offer participants with accounts at any euro area central bank connected to T2S the option to settle in EUR central bank money. EB should, to the extent possible, encourage settlement in central bank money for connected participants. For settlement via links, EB conducts money settlement using central banks and/or a diversified set of cash correspondent banks for risk mitigation purposes.

66. The settlement services offered by EB are based on immobilized or dematerialized securities, and it does not offer settlement of commodities. EB holds physical securities in a network of depositories in immobilized form. Its OPs clearly state system rules regarding receipt and delivery of physical instruments. The number of physical securities represents less than one percent of its total settlement activity. EB identifies, monitors, and manages the risks associated with its physical securities through rigorous due diligence procedures for depositories, including an annual certification process, vault inspections, and insurance policies for covering any losses.

D. Central Securities Depositories and Exchange-of-Value Settlement Systems (Principles 11-12)

67. EB has in place effective rules and procedures for ensuring the integrity of securities issues and managing the risks associated with securities safekeeping and transfers. To aid in the prevention of the unauthorized creation or deletion of securities, EB applies Belgian and European accounting principles and has in place intraday controls for managing the risks associated with cross-border settlement. EB completely separates its own assets from those of its participants and their underlying clients, and conducts both securities movement and securities balance reconciliation on a daily basis. As clearly stated in the T&Cs, EB explicitly prohibits overdrafts and debit balances in securities accounts. EB provides book entry settlement exclusively for securities in

immobilized or dematerialized form. The protection of participant assets is ensured under Belgian law and relevant European regulation. Before offering ancillary services to participants, EB conducts a comprehensive and well-documented risk assessment.

68. Securities settlement within the Euroclear System takes place on a DvP Model 1 basis.

EB's DvP arrangement ensures that the delivery of securities takes place conditionally upon the receipt of cash. Such an arrangement is also in place in the case of settlement across the interoperable link between EB and CBL. Settlement via links with other CSDs also takes place on a DvP basis, but settlement is effected in the local market and reflected in the books of EB.

E. Default Management (Principle 13)

69. EB has effective and well-defined rules and procedures for managing participant default, although the testing of procedures could be strengthened. These rules and procedures are documented in EB's T&Cs and OPs and differentiate between contractual and financial participant default. In particular they set out the actions that EB may take as operator of the Euroclear System and as settlement agent, including the use and/or liquidation of the defaulted participant's assets. Additional documentation supplements the T&Cs and OPs with respect to participant default procedures, including collateral agreements, conditions governing extension of credit to participants, EB's insolvency policy, as well as internal handbooks and playbooks. All processes and procedures related to default management are reviewed and tested at least annually. However, EB's participants are not sufficiently involved in the review of default management procedures. In addition, the testing of procedures remains perfunctory and does not include relevant simulation exercises. As such, there is scope for improvement in the testing of participant default procedures, a point also highlighted by some participants of EB. Such testing should also include in scope the implementation of participant resolution, e.g., by way of simulating, upon instruction, the transfer of underlying client assets to another participant of EB. Finally, a summary of test results is currently shared only with members of EB's User Committee and could be shared more broadly across EB's client base.

F. General Business and Operational Risk Management (Principles 15-17)

70. The identification, monitoring, and management of general business risk is well covered by EB's Enterprise Risk Management framework. EB's Positive Assurance Report (PAR) is a primary means through which EB identifies, assesses and monitors its business and strategic risks. To cover its general business risk, EB holds high-quality assets, the amount of which is determined using outputs from statistical modeling and the consideration of potential future profit decreases. EB also has in place a recovery and orderly wind-down plan (RRW), and estimates that executing the plan would take no more than six months. Its dedicated liquid assets, related to the CSDR's imposed wind-down charge and separate from its Pillar 2 requirements, are sufficient to cover current operating expenses for these six months. EB's RRW plan is reviewed and updated annually. Should additional capital be required, EB's Contingency Funding Plan details measures that could be taken, including a group-level capital injection and asset restructuring.

71. When holding assets with another counterpart, EB conducts appropriate due diligence to ensure assets are protected and accessible, and custody risk is minimized. The procedures EB follows for monitoring such risks are outlined in its Network Management Policy Handbook, which is regularly reviewed and updated. The procedures in place include an analysis—and continuous monitoring—of relevant local legal frameworks, the determination of counterpart creditworthiness, and an evaluation of accounting and risk management practices, among others. External legal opinions are also obtained to aid in the analysis of local regulations with respect to asset protection and accessibility, and insolvency proceedings. In business as usual, EB ensures prompt access to securities for all links it operates through straight through processing (STP) channels. For assets held by EB itself, EB has in place a structure that segregates its own assets from those of its participants and their underlying clients. Cash deposited with EB is reimbursable upon request. EB has in place stringent criteria for its investment strategy, which is publicly disclosed and in line with CSDR requirements.

72. EB has in place a risk management framework for managing operational risk, and its operational reliability remains well above 99 percent. EB's risk management framework is complemented by a series of handbooks that support the risk policy set at the level of the Board. This set of documents facilitates the identification, assessment, monitoring, and management of relevant risks and clearly defines the roles and responsibilities of key actors. This includes the monitoring and management of the cyber threat landscape, which is complemented by internal (and external) penetration testing exercises. The approach of the Chief Information Security Officer (CISO) to cyber resilience follows the guidelines set out in the U.S. National Institute of Standards and Technology Cybersecurity Framework (NIST CSF). In addition, in 2021, EB participated in the European System of Central Banks (ESCB) Cyber Assessment Survey, which aimed to assess EB's cyber security maturity based on the CPMI-IOSCO *Guidance on Cyber Resilience for Financial Market Infrastructures*. IT resilience is supported by three data centers, two of which are synchronously mirrored in real-time, while the third receives data asynchronously and is meant to ensure continued operations in case of a regional disaster. The effectiveness of this set-up is regularly validated. In addition, EB has in place a *Business Resilience Management Policy Handbook*, which details procedures for ensuring resumption of critical activities within the two-hour recovery time objective (RTO). Risk policies and procedures are regularly reviewed and tested.

73. While improvements have been made since the onboarding of the current CISO, in particular to Euroclear's cyber posture, there remain critical deficiencies in the management of key operational risk elements which will require substantial efforts to address. Going forward, it is imperative for the CISO to focus on the effectiveness of fully-embedded security controls, and on improving asset management and identity and access management. While continued efforts by the CISO are paramount to achieving a stronger operational risk stance, it is also important that sufficient drive and steer be provided by the respective Boards of EB and ESA, as the former's critical service provider and parent company. These points have also been highlighted by authorities as outcomes to onsite inspections and supervisory reviews. As a sign of recent improvement, however, the Boards of EB and ESA deemed Euroclear's cyber posture to be within risk appetite at the beginning of 2023. Continued improvements, however, are necessary and

expected. It is also important for complacency to not set in as critical operational risk deficiencies are addressed. EB and ESA should therefore work on filling any gaps that exist in their IT and information asset management as a top priority and continue to improve their cyber posture in an effort to fully implement the CISO roadmap for addressing these critical risks.

74. In addition, the testing of non-IT-related business continuity plans and procedures could be made more robust and involve a wider range of stakeholders. Currently, EB does not conduct business continuity testing with linked FMIs, nor with the settlement agents it uses for its indirect CSD links. In addition, as in the case with the testing of participant default procedures, EB does not employ simulation exercises, nor does it share current testing result summaries with stakeholders who are not members of its User Committee. In developing such simulation exercises for testing business continuity plans and procedures, EB should consider including, among others, scenarios involving the unavailability of linked FMIs, and include in scope the implementation of contingency plans in the case of insolvency or operational unavailability of a settlement agent used to access local markets.

G. Access (Principles 18-20)

75. Access and participation requirements to the Euroclear System are fair, open, publicly disclosed, and subject to continuous compliance monitoring. EB defines a set of preadmission criteria for its prospective participants. These include considerations of adequate financial resources, operational and technological capacity, legal capacity, internal controls, risk management, and ethical standards. A risk-based approach is also in place to ensure ongoing compliance with participation requirements.

76. EB does not currently gather basic information on all underlying clients that account for a significant proportion of activity with respect to all of the direct participants through which they access the FMI. EB's T&Cs allow it to gather basic information on the underlying clients of direct participants (i.e., indirect participants). EB currently collects additional information and performs enhanced due diligence on underlying clients that have segregated accounts or concentrated activity in an omnibus account and are under large direct participants (i.e., Key Participants as defined in the CSDR, and those with so-called *Large Accounts*). EB therefore does not have in place participant-level thresholds for triggering basic information gathering for underlying clients of smaller direct participants, who may account for a significant proportion of the direct participant's activity. In addition, EB is overly reliant on participant disclosure to manage the risk to which it is exposed by tiered participation arrangements. It could therefore develop capacity for increasing the transparency with respect to the business of its direct participants' clients and could consider encouraging large underlying clients to have segregated accounts or ensure that they are subject to enhanced data collection and due diligence.

77. EB maintains almost 30 direct links, over 20 indirect links, and one interoperable link. To manage the set-up and maintenance of CSD links, EB has in place an effective framework, procedure, and governance arrangement. Currently, 85 percent of EB's assets are held in a direct

CSD account. In the case of indirect CSD links, EB maintains relationships with one or two settlement agents to facilitate access. By number, the majority of indirect CSD links employ only a single settlement agent. Most indirect settlement turnover activity, however, is secured via two settlement agents. EB should take steps to ensure that all indirect CSD links are secured using at least two intermediaries where practical and available. The single interoperable link EB maintains is with CBL. There is scope for improving the smoothness of settlement activity and the management of the consumption of the LoC which covers the credit risk to which EB is exposed across the interoperable link with CBL by means of automating interim intraday payments (see paragraph above for more details, as well as the assessment text below related to Principles 4 and 20). All link arrangements are subject to continuous monitoring, and targeted annual reviews and recertification of contractual arrangements.

H. Efficiency (Principles 21-22)

78. EB is effective at meeting the needs of its participants and the markets it serves, though there is scope for improvement in the way participants access EB’s services. As per CSDR requirements, EB established a User Committee, which serves as an effective means for participants, issuers, and other FMIs to voice their concerns to EB. Those participants that are not members of EB’s User Committee have stated that they deem existing communication channels—e.g., via a relationship manager—to be adequate and effective. EB also collects feedback annually from its participants via surveys that are open to its entire client base. However, several participants have voiced a desire to see an improvement in the web-based tool, EasyWay, that can be used—along with SWIFT messaging—to send settlement instructions and have an overview over their activities and account balances. Such improvements could be made, for example, by allowing access to the tool’s functionalities via an Application Programming Interface (API).

79. Internationally accepted communication channels and standards are used by EB to facilitate settlement and related services. EB employs International Organization for Standardization (ISO) standards via SWIFT for asset servicing and the settlement of securities. Counterparty identification is achieved through the use of the Bank Identifier Code (BIC). In addition, financial instruments are identified using the International Security Identifier Number (ISIN).

I. Transparency (Principles 23)

80. EB has in place clear and comprehensive rules and procedures that promote transparency on its business and operations to its participants and other stakeholders. The rules of the Euroclear System are laid out in EB’s T&Cs and OPs, which are made available to its participants. Key information and documents are also made public, including the CPMI-IOSCO Disclosure Framework, which is updated every two years, as well as a general description of EB’s business, operations, services, and fees. In addition, EB makes available to its client base a wide range of training options, including in-person and online courses, which are continuously expanded.

Rating Summary for Principles	
Assessment Category	Principle
Observed	1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 20, 21, 22, and 23
Broadly observed	3, 17, and 19
Partly observed	-
Not observed	-
Not applicable	6, 14 and 24

Prioritized List of Recommendations for Euroclear Bank				
Principles	Issue of Concern or Other Gap or Shortcoming	Recommended Action and Comments	Relevant Parties	Timeframe for Action¹¹
3, 17	EB's IT and information security risk management needs improvement in order to deal with emerging risks, e.g., cyber threats.	EB should undertake substantial efforts to continue to improve the comprehensiveness and sufficiency of its IT and information security risk management by focusing on having in place effective security controls, and on improving asset management and identity and access management.	EB, ESA	NT
2, 3, 17	The management of IT and information security risk can be improved at the level of EB management.	The EB Board and Management Committee should actively and proactively continue its nascent efforts to clearly define and steer the management of IT and information security risk, and ensure that the management of these risks remains a priority.	EB, ESA	NT

¹¹ Near Term (NT): < 12 months; Medium Terms (MT): 12 to 24 months; Long Term (LT): > 24 months.

19	EB is too reliant on participant disclosures to properly identify, monitor and manage the risks posed by underlying client activity.	Beyond relying on direct participant disclosure, EB should develop capacity for increasing the transparency with respect to the business of its direct participants' clients (e.g., via enhanced information collection of underlying client activity).	EB	NT
19	EB does not identify, monitor, and manage the risk posed by all underlying clients with significant activity in relation to the direct participants through which they access EB's services.	EB could consider putting in place explicit participant-level thresholds to trigger enhanced data collection of the activity of underlying clients.	EB	NT
13, 17	EB does not have in place robust testing of participant default and business continuity procedures.	EB should put in place more robust testing of procedures related to business continuity and participant default procedures, including through simulation exercises.	EB	NT
4, 20	To prevent settlement blockages, EB and CBL have both automated and manual processes in place to effect interim payments to facilitate settlement.	Considering the regular, daily use of interim payments between EB and CBL to manage the consumption of the Letter of Credit and prevent settlement interruptions, EB should consider putting in place more robust automated processes to facilitate the management of the interim payments necessary to prevent settlement blockages across the EB-CBL interoperable link.	EB, CBL	NT
19	EB is too reliant on participant disclosures to properly identify, monitor and manage the risks posed by	EB could consider encouraging or incentivizing assets associated with large underlying clients with concentrated activity to move to segregated accounts and/or	EB	MT

	underlying client activity.	have such underlying clients subject to enhanced data collection and due diligence.		
21	Participants find it inefficient to use EB's web-based interface tool, EasyWay, for monitoring their activity and managing the interaction between their business and EB.	EB should improve its EasyWay tool by offering API access to its functions in an effort to not have participants rely solely on a web-based interface.	EB	MT
9	EB settles in commercial bank money.	Once EB successfully connects to T2S, EB should, to the extent possible, encourage eligible participants to settle transactions in EUR central bank money, as well as provide an option for and encourage EUR central bank money settlement for CSD links as they become eligible for T2S settlement.	EB	MT/LT
20	For many indirect CSD links for accessing local markets, EB uses only a single settlement agent.	EB should further investigate having in place two settlement agents for contingency purposes—either both active or one as backup—for indirectly accessing local CSDs where practical and available.	EB	MT/LT
3	Resolution plans for EB are not yet fully operational.	EB should continue working on its resolvability with the NBB as the National Resolution Authority to fully operationalize its resolution strategy plans, including FMI contingency plans and operational continuity.	EB, NBB	NT

13, 17	EB only shares a summary of its participant default and business continuity testing results with members of its User Committee.	EB should share a summary of participant default and business continuity testing with all its participants and not only with those who are members of EB's User Committee.	EB	MT
13	EB does not involve its participants in the regular review of its default procedures.	EB should involve its participants in the regular review of its default procedures.	EB	MT

SUMMARY ASSESSMENT FOR AUTHORITIES

A. Responsibilities of the Authorities of Euroclear Bank (Responsibilities A-E)

81. EB is subject to effective supervision, regulation, and oversight by the NBB and the FSMA. The activities and powers of the NBB—National Competent Authority (NCA) of EB—and the FSMA are well-defined in relevant national laws, Royal Decrees, and EU Regulation, e.g., the CSDR. Belgian authorities explicitly adopted the PFMI as a basis for their oversight and supervisory activities in 2012 via a circular. Since the previous assessment of the authorities of EB—conducted in the context of the 2013 EU FSAP—the FSMA has increased the number of relevant full-time staff from one to four. The NBB currently has 13 full-time staff in its post-trade group. Staff of both the NBB and FSMA are professional and have sufficient expertise to carry out their supervisory and oversight activities.

82. The NBB has established a number of comprehensive and effective bilateral and multilateral cooperative arrangements with respect to the oversight of Euroclear Bank. Such arrangements cover, among others, information sharing, crisis protocols, consultation, and communication. These arrangements include the establishment of the Multilateral Oversight Group (MOG) for EB, bilateral agreements with a number of authorities (e.g., the United States, Japan, Ireland, and the United Kingdom), and a protocol with the FSMA on communication and consultation between the two authorities. Revisions to the existing MOU in place between Belgian and UK authorities have recently been agreed upon and completed and Euroclear Bank was recognized in May 2023 as a third country CSD under Article 25 of the UK CSDR.

83. The NBB could consider onboarding additional staff considering the large scope of its activities related to the prudential supervision and oversight of post-trade infrastructure. Relevant systems include several entities of the Euroclear Group, the NBB-SSS, CCPs domiciled in the

EU, TARGET2-Securities, and CLS. In addition, the NBB manages a number of bilateral and multilateral agreements related to the oversight of Euroclear Bank, as well as a dedicated arrangement with Luxembourg authorities on the interoperable link between EB and CBL. The NBB also conducts regular on-site inspections of FMIs, including for assessing resilience against cyber and information and communication technology risks. Table 4 provides an overview of the oversight and supervisory responsibility of the NBB.

84. The NBB should consider formalizing the process in place for assessing and approving action plans put forth by overseen / supervised entities to address shortcomings highlighted in inspection reports and evaluations. While inspection reports with identified shortcomings culminating in the lowest rating level are reported to the NBB Board, the approval and assessment of action plans for addressing shortcomings follow an informal process. This includes oral discussion between technical staff and management without formal approval by the Board. The NBB could, for example, produce and disseminate a short memo—approved by senior management—that provides a summary of the approval and assessment of action plans.

85. The NBB and FSMA publicly disclose and clearly define the scope and extent of their FMI policies, although the disclosures of the FSMA could be improved. The websites of both authorities provide abundant information on their respective activities with respect to FMI supervision and oversight, as well as the legal basis for such. Authorities publish an annual report that detail relevant activities. The annual report of the FSMA, however, could provide further information on its activities related to its supervision of FMIs, as well as the outcome of these activities. The FSMA should also make available an English translation of its annual report in a more timely manner. This currently takes over a year following publication in French and Dutch.

Table 2. An Overview of the NBB’s Oversight and Prudential Supervision of FMIs, CSPs, and Others

	International cooperation		The Bank acts as the sole authority
	The Bank acts as lead authority	The Bank participates in the supervision, under the direction of another authority	
Prudential supervision		<u>Custodian bank</u> The Bank of New York Mellon SA/NV (BNYM SA/NV)	Payment service providers (PSP) Payment institutions (PI) Electronic money institutions (ELMI)
Prudential supervision and oversight	<u>Central securities depository (CSD)</u> Euroclear Belgium <u>International central securities depository (ICSD)</u> Euroclear Bank SA/NV <u>Supporting institution</u> Euroclear SA/NV	<u>Central counterparties (CCP)</u> LCH Ltd (UK), ICE Clear Europe (UK) LCH SA (FR), Eurex Clearing AG (DE), EuroCCP (NL), Keler CCP (HU), CC&G (IT)	<u>Payment processor and payment institution</u> Worldline SA/NV
Oversight	<u>Critical service provider</u> SWIFT	<u>Other infrastructure</u> TARGET2-Securities (T2S) ¹	<u>CSD</u> NBB-SSS
	<u>Payment system</u> Mastercard Clearing Management System ²	<u>Payment system</u> TARGET2 (T2) ¹ CLS	<u>Card payment schemes</u> Bancontact ¹ Mastercard Europe ¹ Maestro ¹
			<u>Payment processors</u> Mastercard Europe equensWorldline <u>Payment system</u> Centre for Exchange and Clearing (CEC) ¹

Source: NBB.

86. The NBB—as the NRA for EB—should continue working with its relevant counterparts, including EB and other authorities, on operationalizing EB’s resolution plan. The resolution plan for EB has been finalized but has not yet been fully operationalized. Authorities should ensure the operational continuity of EB in the case of its resolution and have in place appropriate FMI contingency plans. As EB is licensed as a credit institution, it is subject to the Bank Recovery and Resolution Directive (BRRD) of the EU. The defined resolution group includes EB itself and its direct parent, Euroclear SA, which provides critical services to all Euroclear Group CSDs. If these two entities were to be separated from the remaining entities within the Euroclear Group, it could threaten the operational continuity of the non-bank Euroclear Group CSDs. It is acknowledged that such separation is not part of the preferred resolution strategy for EB, although it remains a possibility. Therefore, continued operations of all Euroclear Group CSDs should be ensured in any resolution strategy for EB.

Rating Summary for Responsibilities	
Assessment Category	Responsibility
Observed	A, B, C, D, E
Broadly observed	-
Partly observed	-
Not observed	-
Not applicable	-

Prioritized List of Recommendations for Authorities				
Responsibility	Issue of Concern or Other Gap or Shortcoming	Recommended Action and Comments	Relevant Parties	Timeframe for Action¹²
B	Resolution plans for EB are not yet fully operational.	The NBB—as the National Resolution Authority for EB—should continue working with its relevant counterparts, including EB and other authorities, on EB’s resolvability to fully operationalize its resolution strategy plans, including FMI contingency plans and operational continuity.	NBB, EB	NT
C	The NBB’s process for approving and assessing FMI action plans for addressing shortcomings remains rather informal.	The NBB should consider formalizing the process of approving and assessing any action plans put forth by overseen/supervised entities in addressing shortcomings highlighted in the R&E process and on-site inspection reports.	NBB	NT

¹² Near Term (NT): < 12 months; Medium Terms (MT): 12 to 24 months; Long Term (LT): > 24 months.

B	The NBB has a large range of oversight and supervisory responsibilities.	The NBB could consider onboarding additional staff considering the large scope of its activities related to the prudential supervision and oversight of post-trade infrastructure.	NBB	MT
C	The annual report of the FSMA has little to no information with regard to its FMI-related activities.	The FSMA should more explicitly disclose its activities related to FMI supervision in its annual report.	FSMA	MT
C	The FSMA requires well over a year to make its annual report available on its website in English.	The FSMA should more quickly make its annual report available on its website in English.	FSMA	LT

AUTHORITIES' RESPONSE

A. National Bank of Belgium

Framework for the Comprehensive Management of Risks / Operational Risk

87. The implementation of a dedicated cyber resilience roadmap, launched in 2021 and further being implemented during 2022, has resulted in good progress in terms of the Euroclear group's cyber risk posture and IT risk management, including the involvement and steering of the Board in addressing cyber risks. The NBB continues to emphasize the importance of maintaining this trajectory, the more since the cyber security landscape is ever-evolving. In that regard, a maintained cyber resilience top of mind mentality, including at the level of all relevant boards within the Euroclear group, is considered as key to ensure stability in past achievements regarding the internal control system and other ongoing cyber risk management projects. With cyber risk being one of the focus areas of the group's governance and risk management, project deliveries on risk reduction initiatives or requirements should be monitored closely in terms of defined scope and timeline.

Tiered Participation Arrangements

88. The NBB would like to express gratitude for the opportunity to provide some background related to the IMF's "broadly observed" Principle 19, on Tiered participation arrangements.

89. Most direct participants in Euroclear Bank (EB) hold accounts on behalf of underlying clients (either via omnibus accounts or via segregated accounts). EB has over 1700 direct participants serving global financial markets, among which a limited number of participants generate half of the activity. The PFMI require to identify, monitor, and manage the - material - risks posed to the FMI by "indirect participants responsible for a significant proportion of transactions processed by the FMI", but also, in case of few direct participants but many indirect participants that can affect the FMI, material risks posed by "indirect participants whose transaction volumes or values are large relative to the capacity of the [few] direct participants" that access EB's services.

90. The CSD Regulation (and related regulatory technical standards) - implementing the PFMI in European regulation¹³ - requires EB to carry out such analysis for key participants, a concept that includes risks related to tiered participation, namely "the CSD shall also identify [...] the participants' clients [referred to as indirect participants by the PFMI] responsible for a significant proportion of transactions processed by the CSD [and] the participants' clients [indirect participants] whose transactions, based on their volumes and values, are significant relative to the respective [direct] participants' risk-management capacity."

91. As explained in the assessment of Principle 19, EB makes use of the concept of large accounts: A due diligence process to identify underlying clients posing risks to the smooth functioning of the system as a whole on the basis of their transactions value and number.

92. To conclude, when a direct participant nor underlying client (potential large accounts) are not considered to be responsible for a significant proportion of activities, the NBB is of the opinion that risks to the smooth functioning of the system as a whole should be limited. EB's framework clearly focuses on identifying the material risks both at the level of direct participants and underlying large accounts.

93. Important to notice in the context of tiered arrangements, is the fact that EB only has a contractual relationship with its direct participants. The NBB points to the fact that EB is subject to limitations in collecting underlying clients' information, whether directly or indirectly, due to the applicable competition law and in case of absence of any material risks being posed to the FMI in line with CSDR (e.g., EB could be perceived by direct participants as attempting to onboard underlying clients as direct participants).

¹³ CSDR Art 45.6; ESMA RTS Art 67.4 2nd par.

Bridge Letter of Credit

94. Both EB and Clearstream Banking SA benefit from a letter of credit (LoC) provided by a consortium of creditworthy financial institutions that covers credit exposures across their interoperable link. To free up consumption of the LoC, both ICSDs can execute interim intraday payments making sure that settlement efficiency objectives across the Bridge are met. Should an ICSD not be able to execute interim payments, the exposure would remain topped by the LoC. From a credit risk perspective, the NBB has no concerns with such interim payments. The management of these interim payments, and thus the credit consumption of the LoC exposure between EB and CBL, involves manual processes, and could therefore be considered to be improved by way of further automation. This would require a joint effort involving both EB and CBL.

Central Bank Money Settlement

95. The NBB has developed a view on the meaning of 'practical and available' to settle in central bank accounts which can be summarised by the following:

- CeBM and commercial bank money (CoBM) can be offered in parallel, where CSDR does not prohibit a combination of both, and
- EB is not in a position to determine or control if in a specific situation, CeBM is actually practical and available for a participant; it is up to the participant to determine whether CeBM is actually practical and available for every considered transaction it is a party to and to decide to settle in CeBM or CoBM accordingly.

Business Continuity

96. With regard to testing of default / business continuity scenarios (for FMIs/CSDs), the NBB would welcome further (international) guidance on how real-time simulation exercises should be conducted, including the participation of relevant stakeholders.

Authorities' Resources

97. NBB recognises the important workload of the post-trade group and the burden this lays on existing staff. For the immediate future there are no plans for hiring extra staff although a change in workload of the group can change this assessment.

B. Financial Services and Markets Authority

98. The FSMA expresses its gratitude for the opportunity to provide a written response related to the IMF's observations. We agree with the advice to provide yearly information about the conducted activities in the FSMA annual report. Relevant information will be included in our overview of the main activities conducted over the year. In addition, we will publish also English translations on our website as soon as possible.

DETAILED ASSESSMENT OF EUROCLEAR BANK

Detailed Assessment of Observance of the Principles	
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.	
<p>Key Consideration 1</p> <p>The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.</p>	<p>Euroclear Bank (EB) is supervised by the NBB, competent authority, as a credit institution pursuant to the Law of 25 April 2014 on the legal status and supervision of credit institutions and stockbroking firms (the "Banking Law") and the Law of 22 February 1998 establishing the organic statute of the National Bank of Belgium (NBB) (the "Organic Law").</p> <p>EB has obtained a license under Regulation (EU) 909/2014 of the European Parliament and Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories (CSDR). EB also has the status of settlement institution under Royal Decree n°62 on the deposit of fungible financial instruments and the settlement of transactions involving such instruments.</p> <p>Pursuant to article 45 of the Law of 2 August 2002, EB is also subject to supervision by the Financial Services and Markets Authority (FSMA) for matters which fall within the competences of the FSMA.</p> <p>In addition, the NBB has designated EB as a domestic systemically important institution (referred to in the Capital Requirements Directive (CRD IV) as "other systemically important institution" or "O-SII") under Belgian banking law and CRD IV.</p> <p>The "Euroclear System", operated by EB, is also overseen by the NBB in accordance with Article 8 of its Organic Law.</p> <p>The material aspects for EB's activities that require a high degree of legal certainty are:</p> <ul style="list-style-type: none"> • asset protection – the protection of the holdings in financial instruments of the participants in the books of EB as well as in the books of its local depositories and local central securities depositories; • dematerialisation and immobilisation – legal basis for dematerialisation or immobilisation of securities; • finality – the settlement finality of securities and cash transfers; • collateral – the framework covering the guarantees (i.e., financial security interests) received from the participants to secure the credit lines granted by EB and that are ancillary

	<p>to its services of central securities depository in the meaning of the CSDR;</p> <ul style="list-style-type: none"> • contractual framework, rules and procedures – the material aspects of the services and activities of EB; • default procedures – the rules concerning default situations. Please refer to Principle 13 for details. <p>The relevant jurisdictions for EB's activities are:</p> <ul style="list-style-type: none"> • Belgium: Belgium is the place of incorporation of EB, and where the securities settlement system (Euroclear System) it operates is located¹⁴; • jurisdictions where financial instruments are held through links, from an asset protection point of view; • the actual location or place of incorporation of participants in case of insolvency or resolution proceedings affecting those participants; • jurisdictions which are elected as governing law of certain agreements; • those jurisdictions under which laws securities admitted in EB as Issuer CSD are governed. <p>Asset protection</p> <p><i>Belgian Law</i></p> <ul style="list-style-type: none"> • Belgian legislation provides for a clear and sound basis for admission and book-entry transfers of immobilised, dematerialised or registered securities, regardless of whether or not those are governed by Belgian law. Securities are held and transferred in the Euroclear System via book-entry, under various (but similar) regimes of fungibility, depending on the nature of the securities (Royal Decree 62 on the Deposit of Fungible Financial Instruments and the Settlement of Transactions involving such Instruments, Law of 2 January 1991 on the market in public debt securities and monetary policy instruments, Law of 22 July 1991 on commercial paper and certificates of deposit, and the Belgian Companies code). • Royal Decree 62 and the other relevant pieces of legislation referred to above provide for a two-tier structure of asset protection relevant for the participants of the Euroclear System and their underlying clients. The financial
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¹⁴ EB has set up branches in Poland, Hong Kong and Japan. The securities settlement system is located in Belgium.

	<p>instruments held with EB are protected against both the insolvency of EB and of its participants.</p> <ul style="list-style-type: none"> • By virtue of the above legislation, the securities deposited with EB never become part of the estate of EB and cannot be claimed by its creditors: the participants of EB are given by law a co-ownership right of an intangible nature on a pool of book-entry securities of the same category held by EB on behalf of all its participants holding securities of that category. Participants holding securities in the Euroclear System retain ownership of such securities, which implies they retain (i) 'in rem' rights on the securities, i.e., a right of 'revindication' of the relevant quantity of securities deposited in case of an insolvency event or bankruptcy affecting EB, and (ii) voting rights. • Such an asset protection regime does not apply to cash deposits where EB becomes the legal owner of the cash deposited with it and the depositor retains only an unsecured contractual claim against EB. • In any case, securities and cash held with EB are by virtue of law immune from attachment by creditors of account holders and any third party. • More details are available in Rights of Participants to securities deposited in the Euroclear System, published on www.euroclear.com. <p><i>Other jurisdictions</i></p> <ul style="list-style-type: none"> • Before opening links with other Central Securities Depositories (CSDs) or holding securities in the context of FundSettle, EB performs an initial verification of the local legislation to ensure that securities held with such CSDs/fund issuer (agent) benefit from a level of asset protection that has comparable effects to the Belgian regime. A review of the local legislation is performed periodically. • The legal opinions notably address the following legal issues: <ul style="list-style-type: none"> ○ the entitlement to the securities (law applicable to proprietary aspects, nature of the rights on the securities, permissibility of an attachment or freeze of the securities); ○ the impact of insolvency proceedings and of crisis measures (e.g., recovery or resolution) affecting the intermediaries used by EB and/or the local CSD (segregation aspects, settlement finality, procedures and deadlines to claim the securities).
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Dematerialisation and immobilisation

Article 3 of the CSDR imposes an obligation on issuers established in the EEA to arrange for securities admitted to trading or traded on trading venues to be issued in dematerialised form or immobilised.

In Belgium, the immobilisation of securities is also governed by Royal Decree 62 which provides for the possibility to hold securities with EB on a fungible basis and for a circulation of those securities via book-entry with a related asset protection regime (see above).

The dematerialisation of securities governed by Belgian law is implemented through the laws of 2 January 1991, 22 July 1991 and 14 December 2005. The law prohibits physical deliveries on Belgian territory, except when made between professionals and for immobilisation purposes.

Finality

Settlement finality is governed by the EU Settlement Finality Directive (SFD) 98/26/EC which is implemented into the Belgian Settlement Finality law of 28 April 1999. This legislation effectively ensures irrevocability and finality of transfer orders executed in a securities settlement system ('System'). The Euroclear System, operated by EB, is designated as a 'System' under Belgian law.

In case of insolvency proceedings affecting a participant of the System, the law refers to the rules of the System to determine the moment of (i) entry of transfer orders in such System, (ii) irrevocability of transfer orders (if any such moment is determined) and (iii) finality of transfer orders executed by the System. The finality rules of the Euroclear System are set out in the *Terms and Conditions governing use of Euroclear* and in the *Operating Procedures of the Euroclear System*, which detail the three moments mentioned above. The typology of participants and the access criteria to the Euroclear System are set out in the *Operating Procedures of the Euroclear System*.

For securities held through links with foreign CSDs (directly or through an intermediary), the laws that are applicable to the foreign CSD apply to the local settlement of operations concerning these securities. The contractual framework of the Euroclear System explains how local laws impact cross-border settlement and settlement finality.

	<p>Collateral</p> <p>Collateral arrangements are governed by the Belgian Law of 15 December 2004, implementing the Financial Collateral Directive (The Belgian Collateral law), and the Belgian Settlement Finality Law. Together these laws effectively ensure financial security interests by EB.</p> <p>EB obtains legal opinions (“Collateral Survey”) on jurisdictions where participants having credit lines secured by collateral arrangements to the benefit of EB are located. The opinions aim at confirming that (i) the Private International Law rules of those jurisdictions recognise that Belgian law governs the validity and enforceability of security interests granted to EB and (ii) the underlying securities in those jurisdictions would not be subject to any successful attachment or other encumbrance by or in favour of any adverse claimant. A periodic review of these opinions is performed.</p> <p>Contractual framework</p> <p>Please refer to KC 2 below.</p> <p>Default procedures</p> <p>Please refer to Principle 13.</p>
<p>Key Consideration 2</p> <p>An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.</p>	<p>All rules and procedures of EB, when relevant to its participants, are embedded in EB’s contractual documentation. The main contractual documentation of EB are the <i>Terms and Conditions governing use of Euroclear</i> supplemented by the <i>Operating Procedures of the Euroclear System</i>. Both documents are governed by Belgian law.</p> <p>The credit facilities granted by EB are documented via specific agreements, governed by New York law (or Belgian law in certain cases).</p> <p>The securities lending arrangements of the Euroclear System are documented via supplementary contractual documentation, part of which is governed by Belgian law, the other part being governed by New York law.</p> <p>The collateral agreements and the general pledge provision documented in the <i>Operating Procedures of the Euroclear System</i> are governed by Belgian law.</p>

	<p>The collateral management services are documented via specific contractual agreements which are governed by English law.</p> <p>While in general, EB does not have direct contractual relations with issuers, EB signs specific agreements with issuers for securities issued under the New Safekeeping Structure (NSS) or New Global Note (NGN) (Issuer-ICSD Agreements), which clearly set out the obligations of such issuers and the ICSDs in that regard.</p> <p>The consistency of the contractual framework with applicable law is ensured by scrutiny exercised by in-house lawyers and by legal opinions obtained on specific aspects, on an ad hoc basis.</p> <p>EB ensures that the contractual documentation is clear and understandable by:</p> <ul style="list-style-type: none"> • designing a clear contractual structure where the hierarchy and purposes of each document is unambiguous; • documenting legal and operational information in different and clearly distinguished parts of the documentation allowing to keep the documents clear for the targeted audience; • drafting legal aspects of the documentation according to professional legal drafting standards, such as Euroclear’s ‘Tone-of-Voice’ principles; • incorporating feedback from external and internal stakeholders as much as possible to enhance the clarity of such documents. <p>The contractual documentation of EB is subject to its standard internal governance and approved by the EB Management Committee and/or Board as the case may be. There is no formal regulatory approval process for EB’s contractual documentation.</p>
<p>Key consideration 3</p> <p>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.</p>	<p>The legal basis for the activity of EB is essentially articulated in the following documents:</p> <ul style="list-style-type: none"> • the <i>Terms and Conditions governing use of Euroclear and Operating Procedures of the Euroclear System</i> and other related contractual agreements (please refer to KC 2), • the Rights of Participants to securities deposited in the Euroclear System. <p>All these documents (as well as other relevant documents) are publicly available on www.euroclear.com</p>

	Concerning the fact that the legal basis is disclosed in a clear and understandable way, please see KC 2.
<p>Key Consideration 4</p> <p>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.</p>	<p>EB operates a Securities Settlement System. Article 280 §2 of the Belgian Banking Law of 25 April 2014 provides that resolution proceedings do not affect the rights and obligations linked to participation in the Securities Settlement System.</p> <p>In the Collateral Surveys, EB assesses the risks resulting from insolvency proceedings affecting a participant on the security interest securing the credit facilities granted by EB. Further to the implementation of crisis measures in certain jurisdictions, EB also assesses the risks resulting from resolution measures affecting a participant on the security interests securing the credit facilities granted by EB. In particular, EB assesses whether stays on enforcement of security interests may be applied, and whether the relevant provisions of its contractual documentation are enforceable in insolvency situations.</p> <p>See text in KC 1 and 2 for more information.</p>
<p>Key Consideration 5</p> <p>An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.</p>	<p>EB carries out its activities in Belgium and, consequently, its rights and obligations are governed by Belgian law. However, conflict of laws issues may arise in some cases:</p> <ul style="list-style-type: none"> • when EB holds securities via links (or in the context of FundSettle) in other jurisdictions: it then obtains legal opinions on specific aspects (please refer to KC 1 under Asset Protection above); • when EB accepts foreign securities as issuer CSD: EB performs an assessment of measures under Article 23 of CSDR to complement EB’s eligibility review of new securities issuances; • when insolvency proceedings are opened against a foreign participant and EB has granted secured credit to this participant: the granting of collateral is governed by Belgian law. EB nonetheless ensures that foreign law applicable to the participants does not impose restrictions or additional formalities. Such foreign law conditions are identified by a recurrent Collateral Survey (see above); • EB has branches in Poland (Krakow), Hong Kong and Japan¹⁵ (Tokyo) to which relationship management and/or operational activities are transferred; and representative offices in several other jurisdictions (Beijing, Dubai, Frankfurt, Singapore and New York) which only perform general representative activities for EB. EB has opinions for

¹⁵ EB’s Japan Branch is authorised to conduct foreign bank agency services under the Japanese Banking Act.

	its branches confirming that the holding and transfer of securities in the Euroclear System remain governed by Belgian law. EB also monitors that the limited activities of its branches and representative offices remain compliant with the local regulations.
Key Conclusions for Principle 1	<p>The activities of EB are founded on a robust, transparent and enforceable legal basis. EB is licensed as a CSD under the EU CSDR. It is also authorized to provide other non-banking-type ancillary and banking-type ancillary services. EB is also licensed as a Belgian credit institution under the Belgian Banking Act and subject to relevant European banking legislation.</p> <p>EB has in place clear and understandable rules and procedures for its participants and the material aspects of its business. EB's main documentation, governed by Belgian law, include its T&Cs and OPs, which include participation requirements and the rules governing its various services and activities.</p> <p>Before providing services in outside jurisdictions, EB carries out a legal analysis to ensure that its rules and procedures remain enforceable, as well as to identify and mitigate the risks that may arise in case of a conflict of laws.</p>
Assessment of Principle 1	Observed
Recommendations and comments	None

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.

<p>Key Consideration 1</p> <p>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.</p>	<p>According to the Articles of Association of EB, the object (i.e., purpose) of the Company is to carry out for its own account and for the account of third parties, banking activities and securities-related activities in their broadest meaning.</p> <p>In this context, EB operates a securities settlement system (SSS) and is licensed as a credit institution allowing it to act as settlement agent of this SSS and to grant credit to participants of the SSS. EB offers a broad range of services: asset servicing, collateral management, securities lending and borrowing and establishment of links for the</p>
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	<p>purpose of cross-border settlement of transactions. The banking services are directly related to the operation of the securities settlement system.</p> <p>Euroclear's Corporate Strategy starts from its company's purpose: "Euroclear innovate to bring safety, efficiency and connections to financial markets for sustainable economic growth" and guides its strategic direction towards 2026 and beyond. One of the key enablers of Euroclear's five-year 'diamond strategy' is to integrate ESG into existing products across the value chain to help reduce reporting workload and facilitate standardisation for issuers and investors.</p> <p>ESG strategy and risk management require a consolidated, group-wide alignment and coordination within the Euroclear group in line with Euroclear SA's expectations as parent company and in accordance with regulatory requirements. To ensure coherence and alignment with Euroclear's group approach and governance set-up, the Euroclear Bank Board of Directors equally opted for an integrated governance approach to ESG, by (further) embedding ESG in their existing governance structure and with due consideration for the overall group framework.</p> <p>To this effect, the composition of a Board of a Euroclear company takes into account the individual suitability elements, the individual and collective skill, knowledge and experience elements, diversity aspects, and the need of a balance between independent directors, shareholders' representatives and executive representation. Below Euroclear emphasises a number of specific board governance aspects, in particular, Euroclear's approach to the suitability of Directors and the process for electing Board members, Euroclear's diversity policy in this respect, the process for induction and training of Board members and the process for dealing with conflicts of interest.</p> <p>Each Euroclear company has a policy promoting diversity of the Board including at least the following elements:</p> <ul style="list-style-type: none"> • A target of a minimum one third representation of the under-represented gender on its Board; • A reference to the different diversity aspects: educational and professional background, gender, age and, as necessary (depending on the span of the activity of the company) and permitted by law, geographical provenance; • At least annually the structure, size, composition, diversity aspects (including representation of the underrepresented gender) and performance of the Board and Board committees is
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	<p>reviewed and recommendations to the Board are made in this regard.</p> <p>Senior Management proposes a framework of strategic objectives, consistent with EB's strategy and legal and regulatory obligations, which are approved yearly by the EB Board and reviewed semi-annually.</p> <p>The EB Board, supported by the EB Management Committee, defines a robust Risk Appetite Framework to support the achievement of Euroclear's strategic objectives.</p> <p>For 2022, the EB objectives focused on the following areas:</p> <ul style="list-style-type: none"> ○ Being a Great Place to work ○ Growing profit in a Sustainable and Responsible way ○ Being a Preferred Business Partner ○ Being a Trusted FMI <p>The Chief Executive Officer (CEO) and the Management Committee, as a collegiate body, ensure that the objectives are met and that performance is measured regularly during the year and semi-annually by the Board.</p> <p>The 2022 operational and non-operational objectives focused specifically on enhancing Euroclear's role as a leading financial market infrastructure with regards to stability and security. This is further substantiated in corporate objectives, which include remaining a preferred business partner and trusted FMI, among other things by strengthening its IT, cyber security and business resilience, although key deficiencies remain. Contributing to the embedding of ESG in its multiple dimensions will be a key component of the objective of being a preferred business partner.</p> <p>The EB objectives, to the extent they focus on the activities performed in EB (i.e., not outsourced), are cascaded down to all relevant EB divisions and include detailed operational performance objectives.</p> <p>EB outsources a number of services to its parent company, Euroclear SA/NV (ESA), which acts as the group service provider. The arrangements for the provision of shared services by ESA are documented in the Shared Services Agreement (SSA) and monitored in a plan (Service Delivery Plan) which is reviewed yearly. Services centralised in ESA include Technology Services, Risk Management, Internal Audit, Finance, Legal, Corporate Secretariat, IT, Commercial, Group Strategy and Expansion (including Data Services and Innovation), HR, Communications and Sustainability Office Regulatory, Compliance and Public Affairs.</p>
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	<p>On an annual basis, the EB Management Committee sets qualitative and quantitative targets and specific Key Performance Indicators (KPIs) for the provision of the above services, including, targets for the availability and performance of EB's operational systems. These KPIs include detailed systems performance and availability applicable to the IT divisions, which are part of EB's operational reliability objectives.</p> <p>Agreed KPIs are assessed quarterly by the <i>EB's Risk & Operating Committee</i> (ROC) and by the Management Committee and are reported semi-annually to the Audit Committee and Remuneration Committee.</p>
<p>Key Consideration 2</p> <p>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.</p>	<p>The EB Board of Directors defines and supervises the general policy and strategy of EB and has the power to carry out all acts that are explicitly reserved by law to the EB Board.</p> <p>The EB Board has established a number of advisory committees which provide guidance and advice on specific matters, as listed in the terms of reference of each Board committee (i.e., Audit, Risk, Remuneration and Nominations & Governance committees).</p> <p>The EB Management Committee has been entrusted, by law, with the general management of EB with the exception of i) the determination of the strategy and general policy of EB and ii) the powers reserved to the EB Board by law or the Articles of Association. Furthermore, a User Committee has been set up and provides independent advice to the EB Board, on key arrangements that impact the EB users. The EB User Committee is composed of representatives of participants and issuers in EB (see Principle 21 for more details).</p> <p>The governance arrangements of EB are documented through the following documents:</p> <ul style="list-style-type: none"> • <i>Governance Charter</i> which describes the overall governance framework of EB and interaction with its mother company • <i>Articles of Association</i>: the articles of Association describe the Object, Capital, Administration & Supervision, the General Meeting, Annual Accounts and Winding-down procedures of EB • <i>Board Terms of Reference</i>: these Terms of Reference describe the composition, the functioning and the responsibilities and powers of the Board of directors • <i>Audit-, Risk-, Remuneration-, Nominations & Governance Committees Terms of Reference</i>: the Terms of Reference of each Board advisory committee describe the composition, the functioning and the responsibilities of such committee

	<ul style="list-style-type: none"> • <i>Management Committee Terms of Reference</i>: these Terms of Reference describe the composition, the functioning and the responsibilities of the Management Committee • <i>User Committee Terms of Reference and Standard Operating Procedures (SOP)</i>: these Terms of Reference and SOP describe the composition, the functioning and the responsibilities and powers of the EB User Committee • Some matters such as, among others, Group Strategic Objectives, Financial Policy Objectives, Corporate Risk management and Group governance framework are decided at the level of the parent of EB. They have been designed in compliance with relevant laws and regulations <p>EB's governance requirements are set out in Belgian and European Union legal and regulatory requirements and recommendations and other related matters.</p> <p>Disclosure and accountability</p> <p>EB is a limited liability company and a subsidiary of ESA. EB is accountable to its shareholders and to its supervisory authorities.</p> <p>EB makes relevant information to its stakeholders public via different channels.</p> <p>In addition to all publications in the Belgian State Gazette and in the financial/national newspapers pursuant to law requirements, EB makes the following data available to the owners, Participants and the public:</p> <ul style="list-style-type: none"> • Governance Charter which describes the overall governance framework of EB and interaction with its mother company. This document is posted on the Euroclear website • The Euroclear website provides information on Euroclear governance, activities and services, operating rules for each entity including EB, as well as business developments, press releases and annual reports • The EB stand-alone financial statements (including, for the annual accounts, the Board of Directors annual report) are posted on the Euroclear website and provide information including but not limited to financials, group strategy and corporate governance within the Group • The EB CPMI-IOSCO Disclosure framework, the EB ISAE 3402 and the Pillar III reports are also posted on Euroclear website
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	<p>From time to time, media releases, corporate brochures, and other documents are also made available to Participants and other financial market players and the broader public.</p>
<p>Key Consideration 3</p> <p>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.</p>	<p>Roles and responsibilities</p> <p>The EB Board of Directors defines and supervises the general policy and strategy of EB and has the power to carry out all acts that are explicitly reserved by law to the Board.</p> <p>In carrying out this role, each Board member acts in good faith in the way they consider would be most likely to promote the success of EB for the benefit of its shareholders as a whole, while having due regard to the interests of other stakeholders (e.g., customers, employees, and suppliers) and to public interest as well. The Board also has regard to the interests of the Group, provided the proper balance is reached between the financial charges imposed on EB and the eventual benefit to EB.</p> <p>The primary responsibilities of the Board are to define and oversee the implementation of the strategy and objectives of the Company, its risk framework (including risk appetite and policies) and to supervise EB's management.</p> <p>In defining the strategy of EB, the EB Board handles any individual strategic matters as and when they arise.</p> <p>The Management Committee reports to the Board on the implementation of the agreed strategy, risk profile and financial position of the Company and all other matters delegated by law and the Board to the Management Committee.</p> <p>The level of control over the Management Committee is assessed regularly by the Board as a whole as part of the Board self-assessment process which covers specifically management's relationship with the Board.</p> <p>The functioning and responsibilities of the Board have been defined in detail in the Articles of Association and its own Terms of Reference.</p> <p>Procedures for the Board's functioning and Conflicts of Interest</p> <p>The EB Board meets at least on a quarterly basis and may be called whenever the interest of EB requires it or whenever one Board member has asked for it.</p>

	<p>The EB Board is composed of suitable members of sufficiently good repute with an appropriate mix of skills, experience and knowledge of the Company and of the market. Additional information on the functioning of the Board is included in the Terms of Reference, which are reviewed annually.</p> <p>EB has adopted a comprehensive set of policies that Board members, the Management Committee and staff (including contractors) must follow in order to identify, notify, assess, properly manage and control potential and actual conflicts of interest including:</p> <ul style="list-style-type: none"> • EB Board Policy on Conflicts of Interest for Board Members • Euroclear Policy Handbook on Conflicts of Interest and External Mandates • Guidelines for categorisation, assessment and determination of management measures and controls for Conflict of Interest in Euroclear <p>These policies cover both personal and corporate conflicts, with due consideration of potential intra-group conflicts resulting from the group structure and its operating model entailing multiple outsourcing arrangements. Conflict of Interest Policy documents require the Board, management and staff members to consider and disclose the conflicts of interest they may have personally (including via persons directly or indirectly linked to them) or when acting upon a mandate. They are also expected to take reasonable steps to avoid engagement in activities which could create a perception of impropriety or jeopardise Euroclear's integrity or reputation.</p> <p>The Guidelines detail how to:</p> <ul style="list-style-type: none"> • categorise and assess the materiality of conflicts of interest identified or disclosed under the Conflict of Interest Board Policy or the Conflict of Interest and External Mandates Policy Handbook • assess the effectiveness of available management measures and controls in respect of any conflicts of interest • implement effective management measures and controls for identified and disclosed Conflict of Interest <p>EB seeks to limit the occurrence of material conflict of interest situations. Euroclear Board (Committees) composition rules form integral part of this objective.</p> <p>In case of an actual permanent conflict of interest, the Company will automatically apply the measures foreseen in relevant regulation (i.e., involved individuals will be excluded from the decision-making process and from the receipt of any relevant information concerning the matters affected by the permanent conflict of interest).</p>
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All potential or actual conflicts identified or disclosed in line with the Conflict of Interest Board Policy and the Conflict of Interest and External Mandates Policy Handbook must be recorded either in the Conflicts of Interest Inventory or Register along with the outcome of the categorisation and materiality and manageability assessments which are required by the Guidelines. Conflicts of interest, whether at the level of the Board of Directors or the Management Committee, are also reported in the Board of Directors annual report and notified to EB's statutory auditors.

Board Committees

In order to perform its responsibilities more efficiently and in line with legal and regulatory requirements, the Board has established the following committees exclusively composed of non-executive directors: the Audit Committee, the Risk Committee, the Nominations and Governance Committee and the Remuneration Committee.

The **Audit Committee** is an advisory committee of the Board, established to assist the Board in fulfilling its responsibilities relating to the oversight of the quality and integrity of the accounting, auditing and reporting practices of EB, the effectiveness of internal control systems and risk management systems, the adequacy and performance of EB's Internal Audit function and Compliance function, the independence, accountability and effectiveness of the External Auditor and such other duties as directed by the Board.

The **Risk Committee** assists the Board in fulfilling its oversight of EB's risk management governance structure, risk tolerance and strategy, management of key risks as well as the process for monitoring and mitigating such risks (including contingency planning, cyber security, recovery plans, board policies); and such other duties as directed by the Board.

The **Nominations and Governance Committee** reviews and makes recommendations to the Board in respect of nominations of the executive and non-executive directors of the Company, the composition of the Board and Board committees and corporate governance matters. It also sets a target for representation of the underrepresented gender on the Board and defines guidelines describing appropriate actions to reach this target.

The **Remuneration Committee** makes recommendations to the Board with respect to the total amount of remuneration and other benefits (other than those applicable to employees of the Company generally) paid by the Company to its executive Directors. It further

	<p>reviews recommendations and approves the amount of annual individual remuneration of each executive director (including incentive compensation, and changes to base salary, retirement and other benefits), subject to approval by the Board of the overall amount of executive director remuneration referred to above.</p> <p>The Management Committee is established by law (according to the Belgian Company Code) and is entrusted with the general management of the company with the exception of:</p> <ul style="list-style-type: none"> • the determination of the strategy and general policy of the Company • the powers reserved to the Board by law or the Articles of Association <p>The Management Committee acts in accordance with applicable laws and regulations and the rules set out in the Articles of Association and under the supervision of the Board.</p> <p>The Management Committee reports directly to the Board on matters which fall within the remit of the Board Committees, or to the Board's specific committees which in turn report their analysis on the same to the Board.</p> <p>Review of performance</p> <p>The Board carries out a self-assessment and effectiveness review of the Board as a whole, the Board Chairman and the individual members. This review endeavours to ensure that the Board has the necessary framework in place within which to make decisions, focusing on the optimum mix of skills and knowledge amongst the directors, clarity of goals and processes, a culture of frankness that encourages constructive evaluation, full disclosure of procedures and an effective relationship with the Management Committee. This annual review is carried out by completion of a questionnaire or by conducting interviews with Board members, as decided by the Board, depending on the specific needs of the Board in the year assessed. The Board can also decide to request an independent external assessment.</p> <p>The following elements are reviewed as part of the assessment process:</p> <ul style="list-style-type: none"> • the composition of the Board and the Board Committees, including its diversity and independence as defined above • the functioning of the Board (including the training of the Directors and the relationships of the Board with the Board Committees and with the Management Committee) • the role of the Board (including the way the strategic matters are treated by the Board and the control exercised by the
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	<p>Board over the Management Committee); as well as the Directors' involvement and attendance at meetings</p> <p>The consolidated results of the assessment are reviewed by the Nominations and Governance Committee, and the results are reported to the Board for discussion. Concerns raised are followed up appropriately. The outcomes of the Nominations and Governance Committee and Board discussions as well as any agreed follow-up actions are recorded in minutes.</p> <p>The Nominations and Governance Committee, while reviewing the Board composition as well as the list of candidates proposed for re-election at the Annual General Meeting, uses the results of the assessment as a basis for its analysis. The Chairman takes steps to ensure that any areas of weak performance in the assessment are taken up with the relevant individual Director as necessary.</p> <p>The performance of the Board of Directors as a whole is also assessed by EB's shareholders during the Annual General Meeting, through the review of the company's annual accounts.</p>
<p>Key Consideration 4</p> <p>The board should contain suitable members with the appropriate skills and incentives to fulfill its multiple roles. This typically requires the inclusion of non-executive board member(s).</p>	<p>In accordance with applicable legal and regulatory requirements, Board members are appointed by the shareholders, subject to approval by the supervisory authorities. The Board submits its proposals to the shareholders regarding appointment and renewal or non-renewal of Board members. These proposals are supported by a recommendation of the Nominations and Governance Committee which assesses the applicant director against relevant selection criteria and their availability to perform the role. All nominations are made against merit and on the basis of the applicant director's potential contribution in terms of knowledge, experience and skills, with a view to ensuring a balanced Board which, as a whole, has the optimum mix of skills and experience to ensure the proper fulfilment of the tasks of the Board that are appropriate for the requirements of EB's business.</p> <p>To adequately fulfil its role and responsibilities, the Board as a whole should possess the necessary balance of skills and experience to set the EB general policy and strategy and to properly supervise management in the implementation of such policy and strategy. The skills that should necessarily be represented on the Board are both generic (finance, accounting, management and organisation) and specific to the EB business (banking, operations, securities settlement, capital markets, IT). Appointments of new Board members are made against the background of the competences required to meet EB's strategic objectives.</p>

	<p>The Board of Directors is composed of the members of the Management Committee and non-executive directors. The Terms of Reference of the Board of Directors also foresee that at least one third of independent directors sit on the Board, in line with legal and regulatory requirements. The names of the independent Board members are disclosed in the annual report of EB.</p> <p>As from 1/1/2020, independence has been defined in accordance with the provisions of the Belgian Corporate Governance Code 2020 and taking into account the considerations of ESMA Q&A on the Implementation of the Regulation (EU) No 909/2014 on improving securities settlement in the EU and on Central Securities Depositories as well.</p> <p>The overall membership of the Board and Board Committees is reviewed by the Nominations and Governance Committee with a view to ensuring the Board remains appropriately composed. The review is performed at each new Board appointment, in addition to an annual overall review. The main responsibilities and operating procedures of the Nominations and Governance Committee have been defined in the Committee Terms of Reference available on the Euroclear website.</p> <p>External assessments are carried out periodically and internal ones yearly.</p> <p>Non-executive directors who are not members of the group management receive remuneration for their mandate, taking into account their level of responsibility and time required of them in fulfilment of their Board role. It comprises an annual gross fee, an additional fee (fixed amount) for additional meetings attended and a reduction (fixed amount) for scheduled meetings not attended. Non-executive directors do not receive incentive compensation (short or long-term) or stock options or employment benefits (other than reimbursement of expenses). Their remuneration is not linked to the performance of Euroclear which incentivises the non-executive directors to focus on the long-term achievement of EB's objectives.</p>
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<p>Key Consideration 5</p> <p>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.</p>	<p>Roles and responsibilities</p> <p>The Management Committee members are appointed by the Board, subject to the relevant suitability assessments and approval of the supervisory authorities. In accordance with the relevant laws and regulation, the Management Committee is entrusted with the general management of EB with the exception of (i) the determination of the strategy and general policy of EB and (ii) the powers reserved to the Board by law or the Articles of Association. The Management Committee acts in accordance with applicable law and the rules set out in the Articles of Association and its Terms of Reference and under the supervision of the Board.</p> <p>A CEO is appointed by the Board and is the Chair of the Management Committee. Subsequently the Management Committee delegates to the CEO the day-to-day management and the representation of the Company with regard to such day-to-day management, consistently with the allocation of responsibilities between Management Committee members decided by the Management Committee from time to time.</p> <p>The roles and objectives of the Management Committee (including the CEO) are reviewed and recommended by the Remuneration Committee and set by the Board and are evaluated during the remuneration review process (within the scope of the Articles of Association and Terms of Reference).</p> <p>Experience, skills and integrity</p> <p>All nominations to the Management Committee are reviewed by the Nominations and Governance Committee, in accordance with Euroclear suitability process, with a view to ensuring management has the appropriate skills and expertise to fulfil its tasks. An annual review process is in place and shared with the Nominations and Governance Committee. The nominations are made against merit and on the basis of the knowledge, experience and skills of the candidate, regardless of his/her gender or ethnic background. With respect to future potential members of the Management Committee, the Chairman of the Management Committee and the Chairman of the Board jointly propose to the Board the names of the candidates to be appointed as members of the Management Committee.</p> <p>The recruitment process includes a series of interviews of the candidate, an assessment of the candidate's profile carried by reputable external consultants where appropriate as well as a check of the candidate's professional references.</p> <p>In addition, the Management Committee as a whole should possess the necessary balance of skills and experience to fulfil its role and</p>
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	<p>responsibilities. Management Committee members receive induction training, where relevant and can request training, as needed.</p> <p>Appointment and removal of Management</p> <p>The Board of Directors appoints and dismisses the members of the Management Committee.</p>
<p>Key Consideration 6</p> <p>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.</p>	<p>Enterprise Risk Management Framework</p> <p>EB operates a robust and documented framework for the identification, measurement, monitoring, management and reporting of all types of risks relevant for EB.</p> <p>The Enterprise Risk Management framework is designed by the Risk Management division, approved by the EB & ESA Board and implemented and operated by the first line.</p> <p>The EB Board is committed to maintaining an overall low risk profile in line with EB’s role as a leading financial market infrastructure with a closely guarded reputation for safety and resilience. Reflecting this, the Board has defined clear Corporate Risk Management and Operational Risk Management Board policies including a Board risk appetite statement (risk tolerance) and supporting risk strategy, for its key risks. Frequent dedicated sessions on specific risks/risks topics are handled with the Risk Committee and Board of EB.</p> <p>Specifically for EB, the Enterprise Risk Management framework has been translated and documented into the EB Enterprise Risk Management Framework Policy Handbook and is applicable to all risk types EB faces. The EB Enterprise Risk Management Framework Policy Handbook acts as an umbrella reference document for all other risk specific frameworks operated by EB, including operational risk and business continuity risk frameworks. Other policy handbooks contain topic specific information and cross-reference the Enterprise Risk Management Framework Policy Handbook as necessary.</p> <p>EB’s risk appetite framework is developed by Risk Management working in close co-operation with the EB Management Committee and the EB Board. The EB Board approves a set of diverse entity-level risk appetite metrics and associated limits based on risk reward analysis and in line with Euroclear’s strategic objectives. The EB Management Committee and Risk Management report to the EB Board on the bank’s current risk profile by reference to EB’s calibrated risk appetite metrics and limits allowing the EB Board to determine</p>

	<p>what actions are needed to maintain EB's risk profile at the desired level.</p> <p>The Board has put in place a robust risk governance framework in which roles and responsibilities for managing risks are clearly defined. The three lines model operated by EB facilitates the effective operation of the Enterprise Risk Management framework. Each line plays a distinct role providing the Management Committee and the Board with confidence that EB is likely to achieve its key goals through the effective management of risks. See also Principle 3, KC 1 for further information on the Enterprise Risk Management framework.</p> <p>Authority and independence of the control functions</p> <p>EB has in place independent Risk Management, Compliance & Ethics and Internal Audit functions, according to the highest applicable standards in ensuring a robust and transparent management structure and control environment.</p> <p>The Risk Management, Compliance & Ethics and Internal Audit divisions are independent control functions, each with a dedicated Board-approved Charter.</p> <p>There are a number of mechanisms set up to safeguard their independence:</p> <ul style="list-style-type: none"> - decisions on appointment and removal of the heads of the internal control functions are made by the Board with input from the relevant Board Risk/Audit Committee, the CEO and the Group heads as appropriate, and are subject to the approval of EB's regulator - the Chief Risk Officer, the Chief Compliance Office and the Head of Audit have a direct reporting line to the Chairman of the relevant EB Board Risk/Audit committee - the heads of the control functions each regularly attend closed sessions of the relevant Board Risk/Audit Committee (i.e., without executive directors present). Additionally, they each have unmediated access to the Chairman of the EB Board, the Board itself and members of the relevant EB Board Risk/Audit Committee <p>In addition to local resources, the Chief Risk Officer, Chief Compliance Officer and Head of Audit each have access to well-resourced Centres of Excellence equipped to provide high quality support, advice and guidance on a range of specialist subjects and availability of staff in ESA. A Shared Service Agreement is in place between ESA and EB governing the provision of these services to EB and the local control functions of EB.</p>
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	<p>In addition, EB has established a local Chief Technology Officer function, reporting to the CEO and accountable to the EB Board. The EB Chief Technology Officer oversees the implementation of the Information Technology Framework Board Policy that sets out the principles for the governance and management of the end-to-end IT environment. The Chief Technology Officer regularly reports its findings to the EB Management Committee and the EB Audit Committee. Closed sessions are also organised with the EB Audit Committee and the EB Audit Committee Chair.</p> <p>Governance of Risk Management Models</p> <p>EB has developed an effective Model Risk Management framework, aligned with EB's Enterprise Risk Management Framework Policy Handbook. The EB Board has ultimate responsibility for overseeing the management of model risk at EB.</p> <p>The Management Committee develops and proposes to the EB Board appropriate model risk management arrangements - including risk appetite - that comply with laws, regulations and internal policies. This is achieved primarily through implementation and effective operation of EB's Model Risk Management framework. The Management Committee regularly reports to the EB Board Risk Committee on significant model risk and on compliance with this framework and arbitrates on issues reported by the EB Credit Asset and Liability Committee (CALCO) or EB ROC.</p> <p>Annually, EB's independent model validator function¹⁶ provides an overview of key model validation issues, including Internal Rating Based model (IRB) and the operational risk (AMA) model, to the EB Board Risk Committee to facilitate effective oversight.</p> <p>Crisis management</p> <p>The EB Risk Management framework also includes crisis management and incident escalation, to ensure that when a significant incident/crisis occurs, it is escalated rapidly to the appropriate governance bodies and appropriate measures are taken at the right level. EB's Business Continuity Management framework describes roles and responsibilities, and the adopted approach.</p> <p>The Risk Appetite Framework lays down roles and responsibilities and escalation mechanisms in case of risk appetite limit breaches.</p>
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¹⁶ The validation function is a separate department within Risk Management and reports to the Group Chief Risk Officer. The model validation function is an independent function and may not be in charge of model development, implementation or use.

	<p>For incidents, EB uses different levels of escalation depending on the severity of the incident (crisis). Each significant incident is assessed in terms of its (potential) impact on Euroclear activities or the wider market (systemic risk).</p> <p>Moreover, in accordance with legal requirements, EB's Business Continuity Management framework describes roles and responsibilities, and the adopted approach. It also includes objectives supporting the business targets for the timely resumption of critical operations. See Principle 17 for more details.</p>
<p>Key Consideration 7</p> <p>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.</p>	<p>Identification and consideration of stakeholder interests</p> <p>The user governance framework of Euroclear ensures that the interests of clients and other stakeholders are taken into account in the CSDs' design, rules, overall strategy and major decisions.</p> <p>EB has established a User Committee in accordance with the applicable legal and regulatory requirements. The User Committee is composed of representatives of participants and issuers in the securities settlement system. The User Committee provides independent advice to the Board on key arrangements which impact EB users and acts as a primary source of feedback and interaction between the user community and Euroclear management. The User Committee is independent from any direct influence from the EB Board or Management Committee.</p> <p>EB also replies to consultations that are relevant for its services and users, whether initiated by regulatory bodies or law makers and participates in industry forums to ensure it remains informed of markets needs and can adapt its services as FMI accordingly. Additionally, EB launches a client satisfaction survey on a regular basis.</p> <p>Disclosure</p> <p>Major decisions are communicated to owners (ESA up to the Euroclear Holding SA/NV shareholders) for information or endorsement as the case may be through the 'Notice to Shareholders' for the annual general meeting and for each extraordinary general meeting.</p> <p>Communications (including publication of legal contractual agreements, Newsletters, Disclosure Framework, ISAE 3402 etc.) are made to clients and other users via the channels contractually defined. In addition, the sales and relationship managers are at the disposal of clients and prospects for any information needed.</p>

<p>Key conclusions for Principle 2</p>	<p>The governance arrangements of EB and of the Euroclear Group are clear, transparent, and promote the safety and efficiency of EB and the broader financial system. The EB Board defines and supervises the infrastructure’s general policy and strategy, including for the management of risk. It is supported and advised on specific matters by various advisory committees, including for audit, risk, remunerations and nominations, and governance. However, EB’s Board and Management Committee should make efforts to continue to improve the definition and steer for managing risks related to IT and information security.</p> <p>Governance arrangements, including the roles and responsibilities of Board members, and lines of reporting, are well-documented, and disclosed to relevant stakeholders. In addition, members of the Board of EB have the appropriate set of skills to carry out their duties, are subject to approval by supervisory authorities, and their performance is regularly assessed.</p>
<p>Assessment of Principle 2</p>	<p>Observed</p>
<p>Recommendations and comments</p>	<p>The EB Board and Management Committee should continue its efforts in clearly defining and steering the management of IT and information security risk, and ensure that the management of these risks remains a priority</p>

<p>Principle 3. Framework for the Comprehensive Management of Risks</p>	
<p>An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.</p>	
<p>Key Consideration 1</p> <p>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.</p>	<p>Risks that arise in or are borne by the FMI</p> <p>EB describes the risk categories used to facilitate risk identification and analysis in the Enterprise Risk Management (ERM) framework. For each risk category, EB defines a risk strategy that outlines its broad approach to managing and mitigating those risks. The key sources of risk (whether direct or indirect) are defined in Euroclear’s Risk Library by level one, two and three categories. Below is the list of level one categories, supplemented by the most material level two risk categories aligned with the annual Internal Control System Report:</p>

	<ul style="list-style-type: none"> • Strategic & Business Risk: is the risks arising from strategic decisions and supporting business model, and risks that the company does not achieve its aimed and predicted financial results • Change & Project Risk: Change Risk is the risk of failure with respect to the change management process including the tools and techniques to manage the people side of change to achieve the required business outcome. Project Risk is defined as an uncertain event or condition that, if it occurs, has a negative effect on a project's objectives (including scope (value to stakeholders), budget and time to market) • Operational Risk is defined as the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events. Amongst the most material level two risks categories Euroclear identifies: <ul style="list-style-type: none"> ○ Clients, products & business practices: losses arising from an unintentional or negligent failure to meet a professional obligation to specific clients (including fiduciary and suitability requirements) or from the nature or design of a product. ○ Execution, delivery & process management: losses from failed transaction processing or process management, from relationships with trade counterparties or suppliers. ○ Fraud Risk: losses due to acts of a type intended to defraud, misappropriate property or circumvent regulations, the law or company policy, excluding diversity / discrimination events, which involve at least one internal / external party. ○ ICT & Data Risk is defined as the risk of loss related to the use of, or dependence on, information and communications technology (ICT), electronic data, and digital or electronic communications. ○ ICT Security Risk is defined as the risk of a loss due to unauthorised access to ICT systems and data from within or outside the institution (e.g., cyber attacks). ○ Business Disruption Risk is defined as the risk that business disruption arrangements are inadequate to ensure continuity in case of business disruption due to system failure or any other event. ○ Suppliers & Outsourcing Risk: risks arising from Euroclear's suppliers and outsourcing providers. • Legal & Compliance Risk is the risk of financial loss or reputational damage arising from failure to comply with
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	<p>legal and regulatory requirements and material contractual obligations necessary to maintain Euroclear's license to operate or protect the Euroclear Bank's rights and interests</p> <ul style="list-style-type: none"> • Conduct & Culture Risk is the risk arising from Euroclear Bank's corporate and risk culture, governance arrangements, conduct and dealings with stakeholders and shareholders, and Euroclear Bank's corporate responsibility as an international financial market infrastructure • Credit Risk is the risk to Euroclear's earnings or capital arising from Euroclear's obligor's failure to perform due to inability or unwillingness on its financial obligations to Euroclear on time and in full. • Liquidity Risk is the risk arising from being unable to settle a cash or securities obligation when due resulting from inappropriate and/or insufficient liquidity sources. • Market Risk is the uncertainty on the value of assets and liabilities (on- or off-balance sheet) and on the future earnings (linked to foreign exchange or interest rate movements) • Systemic Risk is the risk of disruption to financial services organisations that has the potential to have serious consequences for the financial system and/or the real economy. Systemic risk events can originate in, propagate through, or remain outside of Euroclear Bank/group <p>Enterprise Risk Management framework</p> <p>The Euroclear Group developed and maintains its ERM framework in line with market practices and regulatory expectations which provides a robust and consistent approach to risk management across the Group, including Euroclear Bank, and is based on six key components:</p> <ul style="list-style-type: none"> • business strategy, objectives, risk capacity and risk appetite • risk governance • risks in execution (covering risk identification, risk assessment, risk response and risk monitoring) • data & technology • risk culture • risk monitoring and reporting <p>The ERM framework is supported by a suite of Board policies, Management policy handbooks and guidelines which are reviewed periodically. This includes (but not limited to) policies on corporate</p>
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	<p>risk, operational risk, systemic risk, IT risk, model risk and business risk.</p> <p>Euroclear Bank's mission and objectives, and what the clients, the capital markets and other relevant stakeholders expect is to:</p> <ul style="list-style-type: none"> • support an open marketplace where scale and connectivity across the spectrum of market Participants are competitive strengths. Euroclear Bank is a trusted financial market infrastructure (FMI) that complies with laws and regulations • commit to invest in supporting market stability, delivering shared economies of scale and developing markets locally and globally while growing profit in a sustainable and responsible way • serve the public good by ensuring the efficiency of markets and actively enabling the reduction of risk • encourage a high performing culture that respects Euroclear's corporate values through Euroclear's diverse, global workforce <p>Euroclear Bank's strategy helps to achieve these objectives. It is reinforced by the regulatory framework in which Euroclear operates, which aims at minimising the risks associated with providing FMI services. The risk appetite reflects what the users and the market would expect from an FMI in line with Euroclear Bank's systemic risk role and strives to ensure financial system stability. The Board ensures that the strategy set is appropriate and adequately implemented.</p> <p>Euroclear Bank's risk appetite is set by the Board below the risk capacity and represents the maximum amount of risk the Board is willing to accept to achieve its objectives, including preservation of the long-term strength of the company and trust of all key stakeholders.</p> <p>Euroclear Bank articulates and monitors its risk appetite by way of metrics providing Senior Management and the Board with an indication of risk profile versus appetite. It is reviewed and adjusted on an ongoing basis in function of the strategy while also playing a key role in defining the strategy itself.</p> <p>Euroclear Bank defines its risk capacity as the loss absorption capacity and maximum capacity of available liquid resources without breaching regulatory requirements. The ERM Framework integrates risk appetite with the overall management of strategy, capital and recovery planning, along the continuum of risk. It also includes appropriate early warning signals to manage the risks and avoid the need to activate Euroclear's recovery plans.</p>
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	<p>Risk Governance</p> <p>Euroclear Bank operates a Three Lines Model. Each line plays a distinct role providing Senior Management and the Board with confidence that Euroclear Bank and the Group are likely to achieve their key goals through the effective governance and management of risks.</p> <p>The First Line comprises all businesses, departments, divisions, and functions across the Euroclear Bank (the Business), each of which manages risks arising from their respective activities and processes, in line with the risk appetite. The Business may be supported by EB Risk Management function as well as by first line Risk Champions, Compliance Champions, Business Resilience Champions and control units.</p> <p>The First Line must ensure that they have adequate and effective controls to manage their risks and that these controls are adequately monitored.</p> <p>Whilst part of First Line, certain divisions (e.g., Legal, Business Resilience, IT and HR) have a crucial role in supporting the management of specialist risks such as Legal Risk, Business Disruption Risk, Information and Communications Technology (ICT) Risk, Employment Practice Risk. Due to their expert knowledge, they have a role which includes being responsible for issuing Policy Documents (including Group Policies) in their area of expertise, monitoring and reporting on transversal risks as appropriate.</p> <p>The Second Line is performed by:</p> <ul style="list-style-type: none"> • Risk Management as responsible for providing independent oversight, challenge and opinion on the management of risk-taking activities and for advising the Board on the implications of the corporate strategy on the risk profile. The operating model of the Risk Management function is further detailed in the Risk Management Charter. • Compliance & Ethics (C&E) is responsible for providing independent oversight of (as detailed in the C&E Charter and Compliance Risk Group Policy): <ul style="list-style-type: none"> ○ Compliance Risks (including designing, implementing and overseeing the Compliance Risk Management framework, providing assurance on the identification, assessment and management of Compliance Risks) ○ Fraud Risks with exclusion of Fraud Risks that are primarily caused by a direct breach of cyber and IT
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	<p>controls (e.g., identity and access management) which are overseen by Risk Management. Risk Management is responsible for ensuring that there is a holistic view of Fraud Risks in its reporting</p> <ul style="list-style-type: none"> ○ Conduct & Culture Risks as per the Code of Business Conduct. <p>The Third Line is performed by Internal Audit. To add value and support Euroclear Bank in achieving its objectives, Internal Audit provides the Board with independent reasonable assurance and insight on governance, risk management and internal controls. The operating model of Internal Audit is further detailed in the Internal Audit Charter.</p> <p>Both Second and Third line are supported by ESA as service provider, which is further clarified in their respective charters.</p> <p>The Board oversees the effectiveness and independence of the control functions.</p> <p>Risk management systems</p> <p>A Positive Assurance Reporting (PAR) process is in place to ensure that the key risks and associated key controls are identified by the business in all divisions, and effectively monitored to allow timely management of risks and adjustment of the control system when necessary. The PAR enables EB management to evaluate whether key risks are appropriately mitigated through the effective operation of key controls.</p> <p>The PAR process feeds into the Internal Control System (ICS) report, providing the Board a view on the effectiveness of the EB's ICS.</p> <p>The ICS report includes the view of all the three lines and allows the Board to take a holistic view on EB's risk and control environment.</p> <p>EB promotes and encourages the pro-active identification and logging of risk issues. Each issue is populated with action plans that set out the specific steps to take in order to mitigate or reduce the risks to an acceptable level as per EB's risk appetite</p> <p>Issues are logged and tracked in the Itrack database. Incidents are logged and tracked in a new Integrated Risk Management (IRM) tool: the process of migrating issues and risks to the IRM tool will continue throughout 2023. The tools allow for effective assessment and follow-up of risks, control gaps and weaknesses that have been identified by the 1st, 2nd or 3rd lines. All risk management tools are subject to periodical internal audits.</p>
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	<p>Review of the risk management policies, procedures and systems</p> <p>The policy owners, in consultation with the relevant stakeholders and the Risk Management function, review policies at regular intervals, or as needed (e.g., material changes in regulation, market practices). Revised policies are reviewed by the relevant governance bodies in line with Euroclear's Policy Framework.</p> <p><u>Risk aggregation</u></p> <p>EB monitors all risks that arise in or are borne by EB, as described above under KC 1 - financial and non-financial. The PAR process ensures that material inherent risks and the key controls to mitigate them are monitored and assessed regularly. Residual risks are aggregated by risk category, as per the Euroclear's Risk Library, and feed the annual process of the ICS report.</p> <p>Additionally, for financial risk (liquidity, credit and market risks), the First Line monitors the exposures on its Participants and counterparts for all the roles they may have towards EB, such as Participant (credit facility for settlement activity, securities borrowing), treasury counterpart (for re-deposits of cash balances), issuer of securities (used as collateral by other Participants, or securities that are being redeemed/pay interest) and lead manager in the new issues process.</p> <p>The maximum credit limit ('Global Family Limit') caps the exposures from the treasury and Participant roles. Next to this, EB manages the cash correspondent intra-day credit risk through intra-day cash realignment between cash correspondents or to EB's central bank accounts, when available.</p> <p>The Risk Management division produces a quarterly Corporate Risk Report to the Management Committee and Board Risk Committee. This report outlines EB's risk profile vis-à-vis the risk appetite set by the Board and the Chief Risk Officer's key risk concerns (current and emerging).</p> <p>Effectiveness of the risk management policies, procedures and systems</p> <p>The Board Risk Committee</p> <p>The EB Board Risk Committee oversees the EB's Risk Management function and reviews its remit, monitors and periodically assesses its</p>
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	<p>effectiveness and independence and that it has adequate resources and appropriate access to information¹⁷.</p> <p>Risk Management</p> <p>The Risk Management division's and EB's Risk Management function's mission, as described in the Risk Management Charter, is to:</p> <ul style="list-style-type: none"> • deliver, maintain and support the embedding of the ERM framework • help foster a healthy risk culture throughout the Euroclear Group • provide the Board and senior management with high quality, independent risk challenge, advice and guidance • exercise leadership on risk management matters in the financial market infrastructure sector <p>On an annual basis the Group and EB Risk Management functions conduct a formal self-evaluation of the effectiveness of the Risk Management function, as well as assess the effectiveness of the ERM framework. The outcome of the self-assessment is reported and discussed at the Risk Committee. The assessment identifies actions where the required level of maturity, discipline or effectiveness was not reached and includes progress updates on such actions from previous effectiveness reviews.</p> <p>Internal Audit</p> <p>Internal Audit provides independent assurance over Euroclear's risk management and internal control processes, including periodically assessing the effectiveness of the Risk Management division. In performing its work, Internal Audit assesses whether the ERM framework is adequately designed and operating effectively and assesses whether risks are appropriately identified and fairly stated. If necessary, Internal Audit has access to specialist external (co-sourced) resources to assist in their work. Internal Audit provides summaries of key findings to the Audit Committee and also shares relevant information with the Board Risk Committee.</p> <p>Other assessing mechanisms: first line</p> <p>The First line is not responsible for monitoring the effectiveness of the risk management framework. However, First line management is encouraged to document and provide feedback observations or concerns on the design or effectiveness of the ERM framework</p>
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¹⁷ The oversight of the adequacy and effectiveness of the risk management systems is the responsibility of the Audit Committee and shall be undertaken based on reporting from Internal Audit and reported to the Risk Committee and Board.

	<p>through their local Risk Champion to Risk Management. A network of First line Risk Champions appointed by all EB services serves as a platform to embed the ERM within EB and as a feedback mechanism to Risk Management on the effectiveness of the framework.</p>
<p>Key Consideration 2</p> <p>An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.</p>	<p>EB continuously encourages participants to manage and contain the risks they pose to EB via a number of mechanisms such as:</p> <ul style="list-style-type: none"> • establishing a robust client admission process and regular review • keeping participants informed through user documentation, extensive operational reporting and training, relationship (via User Committee or client facing relationship) • putting in place measures to manage risks posed by the underlying clients of Euroclear’s clients (see Principle 19) • applying other types of measures (e.g., charges to deter riskier behaviour, regular reassessment of clients’ risk profile) <p>Client admission process</p> <p>EB has implemented a dedicated process consisting of an initial Know-Your-Customer (KYC) exercise to ensure that each Participant meets the admission criteria at the time of its admission and on an ongoing basis, via regular reviews. Euroclear elaborates on EB’s sponsorship process in Principle 18.</p> <p>Documentation and Information</p> <p>EB encourages its participants to use the system in the best way, by providing extensive information on their use and on the products and services available. This helps them to better manage their risks when dealing with EB and therefore minimise the risk they pose to EB. Information such as Terms and Conditions, Operating Procedures, Newsletters, Product / Service Descriptions are provided both via the Euroclear website and via dedicated trainings. The Euroclear Commercial Division keeps EB’s Participants informed of changes and evolution.</p> <p>Due diligence information is provided to (potential) Participants, giving information on how to work with EB, therefore providing</p>

	<p>additional elements for them to assess the risk they incur when doing business with EB.</p> <p>Euroclear’s Pillar 3 disclosure provides on a quarterly basis insight on the Group’s key risks and how they are managed. The annual disclosure includes information on risk management objectives and policies, and governance arrangements. These reports are published on the Euroclear website.</p> <p>Finally, EB has a User Committee that meets at least three times a year to exchange information with Participants.</p> <p>Other committees organised by Euroclear (i.e., FundSettle user group, Collateral Management) give the opportunity to exchange information with the Participants in a specific business line.</p> <p>In addition to the above documentation and information sharing, EB also provides operational reporting designed to enable Participants to monitor, manage and reduce the risks they face when using EB’s services. To this end, extensive information is provided to Participants including:</p> <ul style="list-style-type: none"> • data on the participant’s transactions • the participant’s cash and securities positions • the amount of credit facilities provided by EB, which are uncommitted, intra-day, secured and documented • the credit usage (only if the Participant has a credit line) • additional real time information allowing participants to anticipate their collateral and credit needs for the day and for the next overnight processing cycle <p>Furthermore, EB requires all participants to reconcile their positions daily.</p> <p>Other measures</p> <p>Credit that may be granted to participants by EB is intra-day and with the sole purpose to facilitate the settlement of transactions (for more details, please refer to Principle 4). EB deploys large sets of measures to disincentivise client’s own risk taking and the risks they may pose on EB, as defined in the Financial Risk Board Policy and Financial Risk Policy Handbook:</p> <ul style="list-style-type: none"> • all participants’ activity is fully collateralised and strict criteria on the quality of collateral are applied with adequate haircuts (see Principle 5 for more details)
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	<ul style="list-style-type: none"> reimbursement procedures and sanctioning rates act as an effective deterrent to discourage participant intraday credit exposures to translate into overnight credit exposures
<p>Key Consideration 3</p> <p>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.</p>	<p>EB has a robust risk management framework that supports EB in identifying and managing both the risks posed to EB by the wider financial system (e.g., other actors in the financial system, such as market participants, FMIs, liquidity providers, other service providers) and the risks EB might cause to other players of the financial system.</p> <p>Systemic risk considerations are therefore part of the day-to-day risk management activities (i.e., identification, assessment, response, monitoring, and reporting) across the three lines.</p> <p>Inbound systemic risks typically arise from operational, credit, liquidity and market events. Therefore, the First line remains the primary responsible for the integration of systemic risk considerations into their day-to-day risk management activities.</p> <p>Outbound systemic risk can arise from the same risk sources or from EB's operating model. The First line should thus systematically consider in their processes both the risks EB faces and the risks EB poses to the financial system. For details on credit, liquidity, market and operational risk management in EB, refer respectively to Principle 4, 7 and 17.</p> <p>EB has also established additional processes and tools to further grow its systemic risk management capabilities (e.g., through interdependency assessments).</p> <p>Risk management tools</p> <p>Beside existing tools and processes used for all risk types¹⁸, specific methods and tools are used, such as the horizon scanning process and regular contacts with other actors on the market, to further enhance the systemic risk framework and to challenge the First line's views on the potential systemic impacts their activities/processes might generate.</p> <p>Horizon scanning refers to a series of activities that Risk Management as Second line facilitates, aiming at the identification of potential emerging risks impacting EB or the financial system.</p>

¹⁸ See KC 1, Principle 3.

	<p>Interconnectedness is considered in Euroclear’s stress scenarios feeding into EB’s Internal Capital and Liquidity Adequacy Assessment (ICLAAP) and also when assessing the risks this presents to the need to activate EB’s Recovery, Restructuring and Orderly Wind Down Plan (RRW).</p>
<p>Key Consideration 4</p> <p>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.</p>	<p>As an FMI, EB provides critical functions to the financial markets. To identify criticality, EB considers the extent to which a disruption could have adverse real economy or financial stability implications, following the criteria indicated by the Single Resolution Board and the EU Regulation¹⁹.</p> <p>The Recovery, Restructuring and Orderly Wind Down plan</p> <p>In accordance with regulatory rules and guidelines, EB prepares a yearly RRW plan. This RRW plan is supported by a testing framework which includes the testing of the options.</p> <p>Building on a broader risk framework, EB’s RRW plan aims to assist the Board and Management in taking timely and appropriate actions should EB face a situation that threatens its financial viability as a going concern and its continued provision of critical functions to the market.</p> <p>In particular, the RRW plan presents the EB Board’s conclusions on:</p> <ul style="list-style-type: none"> • sources of residual risk and recovery scenarios: <ul style="list-style-type: none"> ○ the sources of risks or identified vulnerabilities which, in an extreme but plausible context, could threaten EB’s financial viability and hence its ability to continue providing its critical functions ○ how, using scenario analysis as a tool, residual risk might crystallise and undermine EB’s financial position, necessitating activation of the plan • capabilities and options: <ul style="list-style-type: none"> ○ calculation of the recovery capacity through the analysis of extreme measures (options) which may be viable – depending on the situation at hand – to financially recover and/or as required restructure EB ○ potential use of the options to deal with the crystallised impact of a series of simulated stress scenarios to demonstrate that EB has sufficient financial capacity to do so effectively

¹⁹ Single Resolution Board’s Guidance on the Critical Functions Report based on EU Regulation 2016/778 on criteria for the determination of the activities, services and operations with regard to critical functions, and for the determination of the business lines and associated services with regard to core business lines.

	<ul style="list-style-type: none"> ○ preparatory measures to enhance the effectiveness of the identified options ● governance and implementation: <ul style="list-style-type: none"> ○ the appropriate decision-making in the 'runway period' prior to, during and after the activation of the RRW plan ○ accompanying the RRW plan is a RRW Dashboard which contains a series of financial and operational indicators which are calibrated to ensure timely escalation to decision makers to determine the need to activate the RRW plan <p>The preparation of the RRW plan is coordinated by the Risk Management function, based on input from other divisions. The plan owner is the CEO, whose responsibility is to liaise with the different stakeholders to ensure the plan is valid, complete, properly reviewed, maintained and updated.</p> <p>The RRW plan is reviewed annually or when a significant change occurs that would impact the feasibility or materiality of a recovery option. As required by relevant regulations, the plan is shared with other relevant authorities.</p> <p>Recovery scenarios</p> <p>EB's RRW plan models the impact of various extreme but plausible hypothetical scenarios that span the range of risks to which EB is exposed. The scenarios modelled are selected based on their applicability impact (idiosyncratic vs. systemic), speed of crystallisation (slow burning vs. fast moving) and risks type (credit, liquidity, business, etc.).</p> <p>Each scenario is calibrated to ensure that it is sufficiently severe to threaten the viability of EB as a going concern if extreme measures are not taken. For each scenario modelled, reverse stress testing is also performed to assist in identifying the potential financial point of non-viability (where the capital resources and available recovery capacity has been exhausted), and thus activation of the accompanying Wind-Down plan will need to be considered. Various combinations of these hypothetical extreme scenarios are also considered.</p> <p>The scenario analysis presented in the RRW plan builds on similar analysis carried out routinely by EB to size and assess the sufficiency of its capital and liquidity resources, and thus a number of the scenarios modelled in the RRW plan are more extreme versions of those utilised in the preparation of the ICLAAP.</p>
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Scenario analysis also ensures that potential structural weaknesses to recoverability are identified and resolved, to the extent possible, ahead of a potential recovery situation.

Recovery options

The EB RRW plan describes in detail a range of measures which could be taken in an appropriate timeframe to restore the financial soundness of EB should a significant financial loss occur. The options strategy selected will be matched to the extremity of the stress EB is under.

The measures considered are categorised as:

- pre-recovery tools - the use of measures (if not already taken) in the EB Contingency Funding Plan (CFP) and insurance policies which can be utilised
- recovery options – recapitalisation measures to restore depleted capital and/or liquidity to the required level, or to generate additional capacity should losses arise beyond the level contemplated in capital-sizing decisions
- restructuring options - measures which can be used to preserve resources, avoid further losses, or address any structural weaknesses identified as either necessitating the need to activate the RRW plan, or during the ‘recovery period’.
- wind down options - to be implemented once EB is determined to have reached, or is likely to reach, the point of non-viability. The options aim to ensure that EB can exit its critical functions in an orderly manner

By supporting EB’s recovery or restructuring, or by facilitating an orderly sale or transfer of assets, it is EB’s assessment that the effective implementation of identified options and strategies would support financial stability in the markets it serves, by ensuring the uninterrupted provision of critical functions.

Resolution plan

EB supports the National Resolution Authority in the preparation of the resolution plan for the Euroclear Group by annually (and ad hoc as requested) submitting data via a series of dedicated templates. Euroclear is implementing a series of requirements to comply with resolution requirements as part of a multi-year programme.

Senior representatives of EB are also represented on the Resolution Programme Steering Committee which has been established to

	ensure the Euroclear Group’s resolution readiness in-line with the expectations of the National Resolution Authority.
Key Conclusions for Principle 3	<p>The risk management framework of EB allows it to identify and manage the various risks to which it is exposed. EB has in place effective tools, policies, procedures, and systems that support its ability to identify, measure, monitor, and manage its risks, and keep levels within the risk appetites set at Board-level. These risks include credit, liquidity, market, legal and compliance, fraud, business, and operational, among others. All of EB’s risk policies and procedures are regularly reviewed and supported by its internal control functions, including audit. In addition, EB formulates an appropriate RRW Plan on an annual basis.</p> <p>However, deficiencies remain in EB’s management of critical operational risk elements, including cyber security, IT and information asset management.</p>
Assessment of Principle 3	Broadly Observed
Recommendations and comments	<p>EB and ESA should put in substantial efforts to fill any gaps that exist in security controls, as well as in asset, and identity and access management as a top priority. EB should also continue to improve its cyber posture and work to fully implement the CISO roadmap for addressing critical risks.</p> <p>In addition, EB should continue to work on its resolvability and should continue working with the NBB—as National Resolution Authority (NRA)—to fully operationalize its resolutions strategy.</p>

Principle 4. Credit Risk

An FMI should effectively measure, monitor, and manage its credit exposures 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 participants and their affiliates that would potentially cause the largest aggregate credit exposure to 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 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.

The Policy Framework

EB has established a robust policy framework which enables it to identify, monitor and manage credit risks it is exposed to.



Policy Framework Hierarchy

The Corporate Risk Management Board Policy sets the minimum requirements on Euroclear’s approach to risk management. These are further elaborated in the ERM Policy Handbook which provides a generic framework for the identification, assessment, response, monitoring and reporting of all risks relevant to EB. The underlying EB Financial Risk Board Policy and Policy Handbook set out the guiding principles for managing financial risks including financial resources, capital, credit, liquidity, funding and market risks, as well as limits and collateralisation rules. This overarching policy is further complemented by Implementing Procedures which translate the guiding principles into detailed processes and procedures.

The Credit Risk Framework

As a Central Securities Depository operating an SSS with a limited purpose banking license, EB provides uncommitted multi-currency credit facilities to its participants to support their activity in the Euroclear system. As such credit risk is mainly taken on borrowing participants. However, credit risk is also taken on cash correspondents and other counterparts when performing the day-to-day balance

	<p>sheet management, when re-depositing or investing Participant's long cash balances, the proceeds of own debt issuances or capital.</p> <p>The credit risk framework, described in the FRPH, sets limits and thresholds based on EB's credit risk appetite, and addresses among others the size and conditions of facilities for (borrowing) Participants and facilities to support treasury activity, concentrations and collateral quality.</p> <p><u>Main principles:</u></p> <ul style="list-style-type: none"> • Credit facilities are intraday, uncommitted and may be multi-currency and extended principally to support settlement efficiency. • Credit facilities are communicated in USD. • No credit or collateral value is granted for currencies in which EB has no liquidity capacity. • Granting of a facility is a discretionary decision based on an appropriate assessment of the creditworthiness and risk profile of the (borrowing) Participant or another counterpart. • The active monitoring of currency fluctuations may require an adjustment to the size of the credit facilities from time to time. • The size and conditions of the facility reflects the financial soundness of the (borrowing) Participant or other counterpart, must be in line with its EB activity and internal and regulatory limits. • Although credit facilities are denominated in USD, there is a system-embedded limit (at Participant family level) per currency, determined by the Qualifying Liquidity Resources (QLR) of EB per currency. • Credit facilities are fully secured with collateral²⁰ for which strict collateralisation rules apply (see Principle 5). Collateral is held and pledged in EB and a collateral agreement must be in place to allow monetisation and liquidation of the collateral in the event of a borrowing Participant default. <p>Governance</p> <p>Framework documents are approved by the EB Board or the EB Management Committee and are reviewed at least annually or in case of material changes. Additionally operational processes are designed</p>
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²⁰ Unsecured credit facilities are only provided when allowed under CSDR i.e., to exempt entities in accordance with Article 23(2) of Regulation (EU) 390/2017, and central banks, multilateral development banks and international organisations (other than exempt entities) of which the exposures are covered by EB's eligible capital after deduction of the regulatory CSDR capital requirement.

	and reassessed on a regular basis to actively monitor and minimize credit risks.
<p>Key Consideration 2</p> <p>An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.</p>	<p>Sources of credit risk</p> <p>Credit risk is defined as the risk to EB's earnings or capital arising from EB's obligor's failure to perform due to inability or unwillingness on its financial obligations to EB on time and in full. EB has identified the following sources of credit risk:</p> <ol style="list-style-type: none"> 1. <u>Credit risk arising from Participants:</u> <ul style="list-style-type: none"> ○ <i>Settlement activities:</i> settlement credit exposure (due to primary and secondary market activity) occurs when EB debits a Participants' cash account to execute a transaction for an amount above the cash available in that currency, provided that such Participant has been granted a credit facility and has sufficient collateral. ○ <i>Securities lending and borrowing (SLB):</i> in order to support settlement activity, the Securities Lending and Borrowing program automatically generates a borrowing for the account of the Participants who adhered to the program, provided that sufficient securities are available in the lending pool (i.e., securities held by lenders that are available for lending on an automatic basis) and that the applicable risk management measures are met on the securities borrower side (respect of the credit limit and full collateralisation of the position). ○ <i>GC Access:</i> General Collateral (GC) Access is a service which allows Participants to borrow high-quality sovereign and supranational securities on demand (primarily for collateral management purposes). All GC Access loans are fully collateralised and borrowers have an amount reserved for this activity within their global family limit. ○ <i>Cash services:</i> EB provides cash services to its Participants allowing them to transfer funds in/out. EB may also allow Participants to use their credit facility (based on currency limits) to wire out expected proceeds linked to EB services (due to different time zones and currency deadlines). ○ <i>FundSettle Non-cleared²¹ Nominee²² activity:</i> EB provides a service which allows participants to place subscription orders held through a Nominee account in the books of the issuer or the CSD (see Principle 16, KC1). Non-cleared

²¹ Non-cleared funds do not require an up-front cash payment to place a valid subscription order in the fund. The settlement of the subscription usually takes place a few days later, as indicated in the fund prospectus.

²² EB holds the fund's shares or units in the books of the issuer (register generally held by a transfer agent) or the CSD (for funds distributed via a CSD) in the name of Euroclear Bank SA/NV or under FundSettle EOC Nominees Ltd, a wholly owned subsidiary of EB.

	<p>FundSettle Nominee activity is self-collateralising due to the rights that EB holds over the subscribed Funds until payment by the Participant has been reconciled and any residual risks (potential price difference between redemption and purchase price plus incurred costs) are covered by assets the Participant holds in the Euroclear system.</p> <ul style="list-style-type: none"> ○ For SLB and GC Access, the (risk arises from the guarantee that EB provides to the lender on the sufficiency of the collateral should the borrower fail to return the lent securities. For FundSettle, the risk arises from account opening/application forms signed by EB or local laws and regulations requiring EB to assume the settlement obligation. <ol style="list-style-type: none"> 2. <u>Credit risk from cash correspondents & settlement banks²³</u>: Credit exposure can arise from any long cash positions that EB has throughout the day (intraday credit risk) due to income, redemption, and money transfer activity, and/or on any residual long cash position left overnight. Within EB, the role of Treasury is to manage its cash flows such that the end of day positions at the cash correspondent are within risk appetite and regulatory requirements. Additionally, EB further uses its central bank accounts to mitigate risks on its cash correspondents and settlement banks. 3. <u>Credit risk from Treasury counterparties</u>: EB has treasury exposures resulting from Participants' end-of-day cash positions. These long cash positions are placed in the market with high-quality counterparties for a short duration, preferably by using reverse repurchase agreements (reverse repos) or invested in very high-quality securities with relatively short-term maturities. Unsecured treasury credit exposure is allowed but kept limited. More information is included in Principle 16, KC 4. 4. <u>Bridge with Clearstream Banking S.A. in Luxembourg</u>: EB is exposed to credit risk in the context of settlement taking place over the interoperable link (i.e., the Bridge) with Clearstream Banking S.A. in Luxembourg (CBL). The credit exposure resulting from the Bridge with CBL is secured by means of a letter of credit (LoC) issued by a consortium of creditworthy financial institutions in EB's favour. EB is therefore also exposed to the syndicate of banks that have
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²³ Settlement Bank is considered to be an entity appointed by EB or EB itself, that supports simultaneous Delivery versus Payment (DvP) settlement and/or asset servicing activities.

issued the LoC, but only in the event of a CBL default (for further details please refer Principle 20 'FMI links'). No credit institution is allowed to commit to a share of the total outstanding LoC above 10%.

5. Issuers: EB purchases securities for its investment, treasury and liquidity books, although the securities are highly rated, EB is exposed to the credit risk of these issuers. More information is included in Principle 16, KC 4.

As part of the ongoing management of risks, new sources of credit risk may be identified through the following processes:

- risk & control self-assessments
- project risk assessments
- new product & services risk assessments
- new client admission process
- new link risk assessments
- scenario analysis and stress testing

Any newly identified source of credit risk follows a governance process described in the Corporate Risk Management Board Policy and relevant policy handbooks.

Measuring & monitoring credit exposures

Facilities are only granted once an assessment of the creditworthiness has been carried out and an internal rating has been assigned by the Credit Department. The size and conditions of facilities are determined based on risk appetite and the desired risk profile in accordance with the risk management framework.

The Credit Department performs ongoing market monitoring to capture and mitigate any deteriorating credits. It also performs regular reviews (at least annually and more frequently for lower rated Participants) on the size of the facilities to ensure that they remain consistent with the creditworthiness and activity of the participant or counterpart. Any request for a new or increased facility is subject to a credit review and is only granted in accordance with the defined approval process and respective credit authority levels.

Credit exposure arises when the participant or counterpart uses its facility. Credit exposure is measured either on a gross (before mitigation and protective measures) or on a net (or residual) basis (after consideration of all mitigation and protective measures). Specifically for securities borrowing (SLB program and GC Access) an

	<p>add-on is applied to the gross credit exposure to reflect the potential appreciate in the value of the lent security. Such exposures (gross or net) are then monitored against regulatory limits, internal limits and/or thresholds. Any exposures that are incurred outside of these limits follow a strict governance process, dependent on their nature.</p> <p>The credit principles are system-embedded: for example, if, when settling a participant's transaction, credit is required above the Participant's credit facility or the quality and amount of collateral held by the Participant is not sufficient to cover the transaction, the instructions are blocked by the system. Any extension of credit beyond the recorded limit (which would be considered only under exceptional circumstances) requires specific approval as outlined by the EB Policy. Similar system-embedded limits exist to limit the credit EB extends to any client in a particular currency, such limits are aligned to EB's ability to generate liquidity in that currency should the client default. Additionally, to ensure participant wire transfers are related to EB activity, EB controls participant wire transfers.</p> <p>On a daily basis, EB monitors intraday peak exposures ex-ante, in real time, and ex-post to borrowing participants (i) at legal entity, family²⁴ and at EB aggregated level and (ii) at individual currency level. For other counterparties, based on anticipated balances, exposures are diversified with different counterparties within pre-approved limits set by the Credit department in line with EB's risk appetite. Cash correspondent balances are monitored real time, to ensure the balances remain within risk appetite and regulatory requirements. The end of day cash correspondent positions are then controlled ex-post.</p> <p>Credit risk related to counterparties and financial issuers in the treasury, investment and liquidity books is monitored daily against predefined limits (see Principle 16 - KC 4 for more details). Finally, system-embedded limits are in place to manage the exposure on Clearstream Banking S.A. in Luxembourg (for more information please refer to Principle 20 'FMI links').</p> <p>Non-compliance with predefined limits or thresholds are escalated to the relevant governance bodies as defined by EB Policy.</p>
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²⁴ A 'family' is a group of connected entities, identified internally by a common Global Family Number (GFN), the top of the account hierarchy. Group of connected entities is defined in Article 4(1)(39) of Regulation (EU) 575/2013.

Risk Management tools to control credit risk

EB employs the following set of tools to control and mitigate credit risk in addition to its regulatory capital requirements (Article 395 of Regulation (EU) 575/2013, also referred to as CRR - Capital Requirements Regulation):

Concentration limits – Credit extended by EB to its participants is subject to system-embedded family and individual credit limits. A Global Family Limit (GFL) is put in place to cap the maximum expected loss EB may experience on any single family. Additionally, to preserve EB's capital and liquidity, minimum rating criteria and concentration limits are defined for counterparties and financial issuers in the treasury, investment and liquidity books (see Principle 16 - KC 4 for more details).

Mitigation – Different recourses are used to cover any credit exposure that EB may incur due to default following a credit event e.g., a bankruptcy of a Participant.

As standard recourse type, EB uses *collateralisation i.e.*, facilities are secured with pledged collateral held in the Euroclear System. The availability is dependent on the minimum between the level of the facility and the amount and quality of pledged collateral. In accordance with Articles 10-11 of Regulation (EU) 390/2017, strict collateralisation rules apply concerning the quality and quantity of securities used as collateral. EB uses a four-category collateral classification system. The internal rating as well as a series of credit, market and liquidity indicators are used to determine the category allocation. Any collateral that cannot be categorised in one of the four categories, is not accepted as collateral. Collateral is valued conservatively in accordance with EB's collateral valuation model (See Principle 5).

In the event of a participant default, EB has the right to immediately appropriate the Participants pledged securities (appropriation is included in the standard collateral agreement) to offset any credit exposure.

In addition, the following additional recourse types are available to cover potential Participant exposures even if no facility was granted. *Set-off* – EB benefits from a unity of account provision and a contractual right of set-off, which allows it to set-off the overall credit balance of Participants' single and indivisible current accounts at any time against its debts that have not been paid when due. This means in case of default, EB has the possibility to set off participants'

	<p>exposures in one currency with long cash balances in another currency.</p> <p><i>General pledge</i> – to the extent permitted by applicable law, EB has the right to consider as collateral all securities and cash deposited in the Euroclear System (by a participant, whether or not on behalf of its underlying clients), unless agreed otherwise in writing with a participant. EB can enforce the collateral to secure any claim that EB might have against the participant in relation with its use of the Euroclear System (the general pledge is documented contractually in the Operating Procedures of the Euroclear System).</p> <p><i>Statutory lien</i> – EB can rely on the Belgian statutory lien on participants' proprietary assets held in the Euroclear System; it only secures any claim against them arising from the settlement of transactions through or in connection with the System.</p> <p>EB has discretionarily waived the general pledge and statutory lien over the balances of all securities that have been separately and expressly identified in writing by the participant as an account to which solely customer securities are credited, except where it secures claims arising in connection with the clearance or the settlement of transactions through, or in connection with, the System, carried out on behalf of participants' customers (including but not limited to claims resulting from fees, charges, loans, reversals or advances).</p> <p>EB has a right to debit participants that have transactions that have settled over the bridge on a pro-rata basis. The right to debit could lead to both a temporary and permanent debit in Participants' accounts. For more information related to the credit mitigation recourse linked to the exposure vis-à-vis Clearstream Banking S.A. in Luxembourg, please refer to Principle 20 'FMI links'.</p> <p><i>Credit reduction initiatives</i> – EB has developed mitigation actions and tools aiming at reducing counterparty and credit risks both for Participants and EB e.g., EB is running a DVP Model 1 settlement system providing immediate finality of transactions in most cases. The development of mitigation actions and tools aiming at reducing counterparty and credit risks remains an ongoing exercise, either by collaborating with participants to reduce credit usage or by making changes to its systems.</p>
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	<p>Sanctioning rates – EB applies deterrent interest rates to discourage Participant overnight credit exposures resulting from short (overdrafts) or long cash positions.²⁵</p> <ul style="list-style-type: none"> • Overdraft rates are composed of 3 elements (1) a central bank rate, (2) a currency factor to capture market volatility and liquidity risk and (3) a credit factor to capture the creditworthiness of the overdrawn Participant. EB has a framework in place which ensures that its overdraft rates (central bank rate and currency factor combined) are more punitive than (1) borrowing rate at the Central bank, (2) overnight market rates and (3) own funding cost. • In principle, standard credit interest rates are set at 0% but EB can apply negative standard credit interest rates taking into consideration (1) the reinvestment rates, (2) the cost of capital and (3) a market liquidity buffer. <p>The effectiveness of these credit risk management tools is assessed through the on-going monitoring and reporting against EB’s risk appetite and limits/thresholds. Any breaches or excesses will be escalated to the appropriate decision-making body in line with the applicable policy.</p>
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²⁵ Please refer to myeuroclear.com for the most recent debit and credit interest rates.

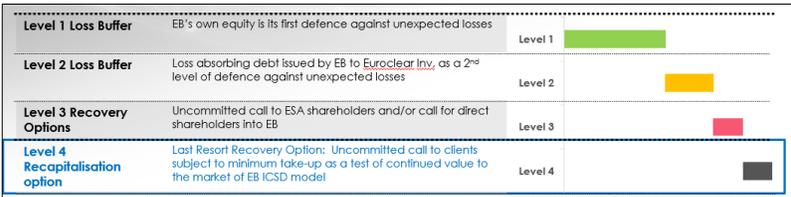
<p>Key Consideration 3</p> <p>A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS payment 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.</p>	<p>As a rule, all participant credit facilities are fully secured with collateral held and pledged in Euroclear Bank. Collateral is valued in accordance with EB's conservative collateral valuation model at least on a daily basis with possible real-time adjustments when required. Any reduction in the collateral value of the Participants' pledged portfolio automatically results in a reduction of its credit usage capacity.</p> <p>Potential future exposure can arise if the collateral value is not sufficient to cover the credit exposure. To reduce the likelihood of any potential residual credit exposure:</p> <ul style="list-style-type: none"> • EB manages down exposures as creditworthiness decreases • EB applies collateral haircuts to all securities according to a conservative collateral valuation model • EB applies a currency margin to all cash and securities used as collateral • EB applies an add-on to the value of any securities that are borrowed • EB monitors the collateral concentration in Participant accounts <p>To test the adequacy of the haircuts and currency margins, EB performs regular back-testing and yearly collateral stress tests. The stress tests aim at assessing whether EB can withstand severe impairments of collateral values. One of the scenarios consists in better assessing the risks in case the collateral liquidation period takes longer than envisaged in the standard collateral valuation model (i.e., 10 days). For further details, see Principle 5 on Collateral, Principle 15 on General Business Risk and Principle 7 on Liquidity Risk for the composition of financial resources to cover current and potential future exposures.</p>
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<p>Key consideration 4</p> <p>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.</p>	<p>Not Applicable</p>
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<p>Key Consideration 5</p> <p>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.</p>	Not Applicable
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<p>Key Consideration 6</p> <p>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.</p>	<p>Not Applicable</p>
<p>Key Consideration 7</p> <p>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</p>	<p>KC1 describes the policy framework hierarchy. The rules and procedures that address credit losses are described in the Financial Risk Policy Handbook and its underlying implementing procedures. In addition, EB assesses its capital adequacy under stress scenarios during the annual ICLAAP and replenishment of financial resources during a stress event is described in the RRW.</p> <p>Allocation of credit losses</p> <p>As mentioned under KC 3, as a rule, all Participants' credit is fully secured, Participants generally post high quality collateral in excess of their credit usage, which is continuously monitored with haircuts regularly reviewed as necessary. EB Participants are also subject to close monitoring by EB's credit officers and the Participant credit exposures are managed within a strong credit risk framework. Accordingly, in all but the most extreme circumstances, losses would be addressed on a defaulter-pays basis via the appropriation/liquidation of Participant securities collateral and other available cash balances. As set out in more detail under Principle 20 'FMI links', where a loss relates to credit exposures across the Bridge, bespoke loss allocation tools are available.</p> <p>Despite being considered beyond extreme but plausible, Management acknowledges that there remains the potential of a remote risk in case of a sudden failure of a cash correspondent (e.g.,</p>

<p>continue to operate in a safe and sound manner.</p>	<p>default) without early warning signs with which EB could have a positive balance; or the liquidation value of collateral pledged by a defaulting Participant, and other available cash balances, may not fully cover the credit exposure. After exhausting the available client collateral, EB would rely on its own capital to absorb any residual losses arising in such circumstances; and, in the most extreme circumstances, EB would ultimately rely on its recapitalisation and recovery capacity (see below). Though EB did not establish a comprehensive credit loss allocation mechanism, it applies risk transfer mechanism in case of the default of certain central banks (listed on Euroclear’s website in the Market basics page) or the default of Euroclear’s cash correspondent in a country where the application of sanctions or orders affects Euroclear’s capacity to properly manage the risks attached to the holding of long cash balances in such a country.</p> <p>EB’s capital is sized with reference to EB’s risk profile, contemplating multiple Participant or market counterparty defaults. Routine assessments of capital adequacy are performed, including under the annual ICLAAP. These assessments are based on model outputs, validated by scenario analysis. The ICLAAP examines, among other things, EB’s ability to withstand severe impairment of collateral values.</p> <p>Replenishment and recapitalisation of financial resources and rules and procedures to address uncovered losses</p> <p>Depending on the severity of the loss, EB might need to trigger its RRW Plan. The RRW plan identifies EB’s potential recovery capacity through the identification and assessment of a series of extreme measures which could be taken in an appropriate timeframe – depending on the situation at hand – to restore the financial soundness of EB, should a significant financial loss occur. The sufficiency of the recovery capacity is verified through the modelling of a series of hypothetical severe stress scenarios.</p> <p>The options in the RRW plan include:</p> <ul style="list-style-type: none"> • recapitalisation measures to restore depleted capital and/or liquidity either via a capital injection from the Euroclear group, via an external issuance of additional capital or via a disposal of assets • restructuring measures such as a reduction in services offered or headcount, these measures can be used to preserve resources, avoid further losses, or address structural weaknesses <p>More details of the RRW plan are included under Principle 3, KC 4.</p> <p>At a high-level EB foresees the following loss waterfall:</p>
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	 <p>Loss waterfall</p> <p>In respect of Level 1 and Level 2 it should be noted that EB’s capital is sized based on its ICLAAP and Regulatory requirements, further details of which can be found in Euroclear’s Pillar 3 disclosure.</p> <p>EB’s final measure in its ‘loss waterfall’ is primarily focused on recapitalisation post-loss absorption. In this respect EB envisages a call to Participants on an uncommitted basis to subscribe to new equity directly in EB. Such a subscription would require enough Participants to be willing to subscribe to the equity call in sufficient size in order for EB to meet the minimum regulatory capital requirement that would be required at that time. If insufficient Participants were willing to subscribe to reach the required equity level, then EB would be forced to cancel the call and if not already done so, trigger the RRW plan.</p> <p>EB’s RRW plan documents the process for the transfer of assets which would be conducted by EB to perform an orderly wind down. An orderly wind-down is one whereby the ceasing of the critical functions of EB does not cause a sudden disruption to the wider financial markets. Therefore, as the orderly wind-down plan of EB is implemented EB’s critical functions are gradually phased out. Capital and liquidity to support the period of the orderly wind-down are segregated from EB’s day-to-day Risk Appetite and other regulatory requirements to ensure they are always available for this specific purpose.</p>
<p>Key Conclusions for Principle 4</p>	<p>EB has in place a robust and effective credit risk management framework. EB is exposed to credit risk from its participants, issuers, cash correspondent banks, treasury counterparties, and settlement banks. The credit facilities that EB offers to its participants are done so on an uncommitted and fully collateralized basis. In addition, credit is granted only for currencies to which it has adequate liquidity capacity. Credit exposure to cash correspondent and settlement banks is mitigated through the use of central bank accounts where available and is otherwise managed so as to ensure that any exposure remains within EB’s risk appetite. End-of-day participant cash</p>

	positions are invested in short-term, high-quality securities or placed with suitable counterparties. For managing credit risk more generally, EB has established a set of tools and credit risk mitigation controls, including credit limits (also on entity group-level), credit reduction initiatives, and sanctioning rates as a deterrent to the extension of intraday credit overnight. EB also has in place explicit rules and procedures for allocating credit losses, including the usage of participant cash and liquidation of collateral.
Assessment of Principle 4	Observed
Recommendations and Comments	<p>The management of EB’s credit exposure to CBL could be improved. The credit risk arising from the interoperable link between EB and CBL is secured by means of Letter of Credit, which is not sufficient to meet the income and redemptions payments, and settlement activity that takes place between the two entities.</p> <p>The management of the redirected interim payments used to prevent settlement blockages across the interoperable link involves manual processes, and should therefore be improved by way of further automation. This would require a joint effort involving both EB and CBL.</p>

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.	
<p>Key Consideration 1</p> <p>An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.</p>	<p>Collateral framework</p> <p>The general principles and framework under which financial assets can be accepted as collateral for credit exposures are set out in the Financial Risk Board Policy and Policy Handbook. The framework of policies and procedures is reviewed on a regular basis (see KC 1 Principle 4).</p> <p>As a rule, all Participants’ credit facility is fully secured. This is generally obtained via a pledge of the participant’s proprietary assets held with EB or other recourses that may be agreed upon on a case-by-case basis.</p> <p>The collateral framework sets strict rules concerning the quality and quantity of securities used as collateral. EB only accepts collateral to secure credit</p>

exposures that meets the requirements of the Commission Delegated Regulation EU 390/2017 (implementing CSDR), which defines four collateral categories. A series of credit, market and liquidity indicators are used to determine the category allocation. Any collateral that cannot be categorised in one of the four categories is not accepted as collateral to secure credit exposure. Additionally, EB (i) sets rules for the type of collateral that can be used to cover its liquidity and credit risk, and (ii) defines concentration limits for the different collateral categories. Collateral concentration limits can also be set to avoid over-concentration on a specific type of collateral. The collateral concentration limits are system embedded, any exception follows a well-defined framework.

The key principles for collateral acceptance (securities and cash) are as follows:

- EB has a reliable valuation methodology to derive the collateral value for each type of security, ensuring collateral value is adequately assessed under normal and stressed conditions (cf. KC 2 below)
- EB assesses the legal risks resulting from the acceptance of collateral (per relevant jurisdiction) and obtains an opinion on the enforceability of the collateral agreement
- EB actively monitors collateral to ensure that the accepted collateral covers market, credit and liquidity risk both in normal and stressed situations

Once the above aspects are covered, the security/cash goes through the normal collateral valuation process. Securities that are not eligible for collateral purposes (such as those which are not eligible in the four collateral categories) are valued at zero.

The results from the initial eligibility, collateral valuation and categorisation processes are then reviewed/updated on a daily basis, based on market data collected from data vendors, rating agencies and other departments within Euroclear.

EB does not block specific assets as collateral but calculates the collateral value of all assets held in pledged accounts and ensures that sufficient collateral is available at any time in the participant's account to cover its credit exposure on the latter.

Should the collateral value fall below the credit facility limit, the available credit for that participant is automatically reduced to the level of available collateral.

Standard recourse collateral

	<p>Participants with a credit facility have the following options to secure their credit exposure in EB:</p> <ul style="list-style-type: none"> • Proprietary collateral: Participants pledge assets (i.e., assets that may be used as collateral) that are segregated from assets that cannot be pledged (e.g., underlying Participants' assets). The vast majority of Participants use this type of recourse • Pledged cash deposits: a participant deposits a certain amount (agreed upfront) of cash in one of its pledged cash accounts for a fixed period of time • Related/unrelated party arrangements: a borrowing participant pledges proprietary collateral to support a credit facility extended to another borrowing participant (of the same and/or different family²⁶) provided that the appropriate documentation is in place (subject to legal enforceability validation by Legal Division) • Customer assets pledge: a borrowing participant pledges collateral which belongs to the borrowing participant's customers provided such participant has received the customers consent (subject to legal enforceability validation by EB's Legal Division) <p>In the event of a participant default, EB has the right to immediately appropriate pledged securities to offset any credit exposure that the defaulting participant has. EB will then monetise and sell ("liquidate") the appropriated securities as soon as possible.</p> <p>Furthermore, with other counterparts, EB uses other mechanisms for securing its credit exposure such as:</p> <ul style="list-style-type: none"> • Reverse repurchase agreements, used for treasury activity (and for one non-exempt central bank acting as a borrowing participant) • a Letter of Credit (LoC), used to secure the exposures EB has to Clearstream Banking S.A. in Luxembourg relating to the interoperable link they mutually maintain (the Bridge) [see Principle 20]
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²⁶ A 'family' is a group of connected entities, identified internally by a common Global Family Name (GFN), the top of the account hierarchy. Group of connected entities is defined in Article 4(1)(39) of Regulation (EU) 575/2013

	<p>Wrong-Way Risk</p> <p>Wrong-way risk can be categorised as either “specific”, which arises when future exposure to a specific counterparty is positively correlated with the counterparty’s probability of default due to the nature of the transactions with the counterpart or “general”, which arises when the likelihood of default of a counterparty is positively correlated with general market risk factors.</p> <p>To address “specific wrong-way risk” EB does not grant collateral value to securities belonging to the same family as the borrower (applicable for both borrowing Participants and treasury counterparties).</p> <p>EB is mainly exposed to “general wrong-way risk”, which arises from a decrease in market value of the collateral used to cover credit exposure, upon default of the borrowing participant. EB’s credit department monitors on an ongoing basis the Participants’ creditworthiness and their collateral portfolio through collateral concentration limits and thresholds to identify any significant wrong-way risk. Depending on the situation, remedial actions include additional haircuts, specific concentration limits and/or limiting the credit facility.</p>
<p>Key Consideration 2</p> <p>An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.</p>	<p>Valuation Practices</p> <p>EB assesses the collateral value of securities held in the Euroclear System on a daily basis by obtaining prices and determining the haircut that has to be applied on each security.</p> <p>The EB collateral valuation system is based on an internally developed model, which enables it to automatically calculate haircuts on all securities, taking into account credit, country, market and liquidity risks. It protects EB against a drop in prices with a confidence level of 99% over a 10 days period (Value-at-Risk).</p> <p>The market value of a security is the basis for the collateral calculation. EB marks its collateral using:</p> <ul style="list-style-type: none"> • observed market prices published by official sources and received from external providers • evaluated prices computed by external providers • internal quotation – based on transactions settled within the system • theoretical quotation – internal calculation based on Net Present Value methodology <p>There is an internal selection and control process, which selects the “best” quotation from among all the supplied quotations. The best quotation is</p>

defined as the quotation with the most recent quotation date and the most important priority level.

The primary model used to compute the collateral value to secure a participant's borrowing (cash collateral and securities collateral value) is described below.

Cash collateral value

$$\text{Collateral value} = \text{Market value} \times (1 - \text{currency margin})$$

The valuation of cash collateral depends mainly on the currency margin and the FX rate used.

The currency margin aims at covering the FX risk that exists if the collateral is in a different currency from the exposure it covers. For settlement currencies, a 10-days VaR based on FX volatilities of each currency is calculated. The minimum currency margin is currently set at 5% (e.g., for EUR and USD).

In addition to this 10-days VaR, EB can include an additional margin reflecting the liquidity of the currency.

Securities collateral value

$$\text{Collateral value} = \text{Market value} \times \text{SVE factor} \times (1 - \text{currency margin}) \times \text{Own Account Margin} \times \text{PVE}$$

EB defines the collateral value based on the following parameters:

- the security's market value
- the Security Value Estimation (SVE) factor: it computes a haircut to protect EB from the credit, country, market and liquidity risks related to each security
- the currency margin: as for cash collateral
- the 'own security' margin: it is set to '0' if the participant belongs to the same family as the issuer of the security
- the Portfolio Value Estimation (PVE): if necessary, it allows to decrease the overall collateral value at participant portfolio level to compensate for some elements such as a lack of collateral diversification

Valuation is done based on both static and dynamic information received from external data providers and reviewed and controlled on a daily basis.

EB can override the automated valuation if it has reasons to consider that the current or future market price does not represent the true value (e.g., default or market stress).

Model parameters and methodologies are regularly reviewed. A series of actions has been implemented to ensure model adequacy. As an example, a review of liquidity risk module has been implemented to further improve this risk measure.

For reverse repurchase agreements used for treasury activity, collateral eligibility criteria are set based on instrument type, issuer, country of issuance, rating, maturity and currency risk, haircuts are then defined based on these criteria. On a daily basis at counterparty level, the effectiveness of the haircuts used for the reverse repo transactions are tested by comparing the evolution of the market value of the collateral (i.e., securities leg) with the counter cash value of the reverse repo transaction (cash leg) over 10 days, to identify any significant deviations.

Sufficiency of haircuts and validation of haircut practices

- **Security/currency haircuts back-test**

The accuracy of the haircut valuation at security and portfolio level is verified via a back-testing exercise performed daily in order to identify overall model weaknesses and take actions on defects. The haircut valuation and currency back-tests aim at ensuring that the model continues to perform within a 99% confidence level over a 10-day period in order to cover normal and stressed market conditions.

To ensure validity of the model, back-testing methodologies are regularly reviewed to be in line with market's practices or to further improve model's monitoring as per internal guideline. A series of actions has been implemented to further improve adequacy of the back-test.

- **Collateral stress test**

The collateral stress test looks at the adequacy of Participants' collateral portfolio submitted to extreme events. The purpose is to verify if such portfolios are adequately diversified and if they would cover the credit exposures under extreme but plausible market conditions or whether credit exposures would become (partly) unsecured.

The potential impact on Participants' collateral portfolio is assessed when considering the observed collateral level but also when removing the over-collateralisation effect by capping the collateral at the level of the exposure.

	<p>The scenarios to simulate different possible extreme but plausible events include:</p> <ul style="list-style-type: none"> ○ Default of several issuers ○ Country in financial distress ○ Currency depreciation ○ Interest rate shock ○ Stock indices shock ○ Model risk <ul style="list-style-type: none"> ● Model review <p>The Model Validation team of the Risk Management division reviews EB’s collateral valuation model at least annually, in line with the “Model Risk Management Framework Policy Handbook”, and provides recommendations, if needed. Identified gaps are closely followed up and addressed as appropriate.</p>
<p>Key Consideration 3</p> <p>In order to reduce the need for pro-cyclical 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.</p>	<p>As detailed under KC 2, EB applies stringent upfront selection criteria and conservative haircut criteria aimed at ensuring the continuity and stability of its policy through various economic cycles even under stressed market conditions.</p> <p>For securities eligible as collateral with a Central Bank, EB applies the central bank haircut as a minimum. Additionally, markets are monitored daily, this allows to take progressive measures before abrupt market movements i.e., avoiding pro-cyclicality.</p>
<p>Key Consideration 4</p> <p>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.</p>	<p>Collateral concentration relates to the diversity and quality of the collateral EB is relying on to mitigate both its credit and liquidity risk arising from exposure on borrowing Participants and treasury counterparts. The Financial Risk Policy Handbook provides the key principles for the management of collateral concentration limits and thresholds, which are set in line with EB’s risk appetite to ensure EB’s ability to liquidate securities pledged as collateral is not impaired and apply to the aggregate exposure on entity and/or family level. The internal policy framework foresees an annual review.</p> <p>To ensure adequate quality and diversification of collateral, the EB Credit Department is responsible to monitor:</p> <ul style="list-style-type: none"> ● the composition of participant’s collateral at portfolio level ● the composition of collateral received from treasury counterparties <p>On a daily basis, concentration thresholds and limits are used to identify potential concentration issues for the collateral received from borrowing Participants, as well as for the collateral received from treasury counterparties</p>

	<p>(monitoring is done both ex-ante and ex-post). EB also performs ongoing market monitoring (e.g., financial press, evolution of stock prices, bond yields, CDS²⁷ spreads, etc.) that allows it to identify and anticipate issues and take mitigating measures if deemed necessary e.g., increasing haircuts and implementing additional concentration limits.</p> <p>Any excesses or breaches will be escalated to the appropriate decision-making body in line with the applicable policy.</p>
<p>Key Consideration 5</p> <p>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.</p>	<p>Collateral enforceability</p> <p>As per CPMI IOSCO, cross border collateral has at least one of the following foreign attributes: (a) the currency of denomination, (b) the jurisdiction in which the assets are located, or (c) the jurisdiction in which the issuer is established.</p> <p>Financial collateral arrangements between EB and its Participants are governed by Belgian law. Relevant accounts for the purpose of financial collateral arrangements are maintained with EB in Belgium.</p> <p>When accepting cross-border collateral, EB assesses legal risks resulting from conflict of laws regarding the validity of collateral arrangements and the enforceability of such collateral. These legal assessments are performed, with the assistance of external independent law firms, such that EB has a legal opinion for each of the jurisdictions in which Participants with a credit facility are located. These legal opinions (“collateral surveys”) are renewed periodically taking a risk based approach.</p> <p>Also, in order to mitigate the impact of foreign exchange risk on cross-border collateral, a currency margin (which varies dependent on the currency) is applied to all collateral.</p> <p>Ensuring collateral can be used in a timely manner</p> <p>The timing to use (cross-border) collateral depends on the mechanism relied upon by EB and on the type of enforcement method:</p> <ul style="list-style-type: none"> • Sale under the Collateral Agreement: in case of a default, the Collateral Agreement allows EB to sell (“liquidate”) the collateral of the defaulted borrowing participant, after observing a 24 hours’ notice period. If the securities are appropriated (see below) they can be sold immediately. • Appropriation under the Collateral Agreement: in case of a default, the Collateral Agreement allows EB to appropriate the collateral of the defaulted borrowing participant. The appropriated collateral can

²⁷ Credit Default Swaps.

	<p>be monetised immediately. After appropriation, EB will sell (“liquidate”) the appropriated securities as soon as possible. No further formality or time period is required before proceeding with such sale after appropriation.</p>
<p>Key Consideration 6 An FMI should use a collateral management system that is well-designed and operationally flexible.</p>	<p>EB’s collateral management process is automated and fully system-embedded and the collateral management team operating it is sufficiently staffed. The following tools contribute to a highly automated process:</p> <ul style="list-style-type: none"> • collateral valuation system. This tool is system-embedded and is automatically refreshed daily, however, it does allow for human intervention (to adapt parameters) when required; • a system-embedded tool which sets collateral criteria (such as concentration rules) at participant level; and • a tool which enables EB to appropriate and liquidate collateral when a participant is in default.
<p>Key Conclusions for Principle 5</p>	<p>The collateral that EB accepts, and the management thereof, is governed by a set of enforced and effective rules as set out in its collateral framework. EB has in place strict rules on the quality and quantity of securities it accepts as collateral. EB’s collateral valuation system uses an internally-developed model for valuation and for setting appropriately conservative haircuts—based on market, country, credit and liquidity risks—while also aiming to limit procyclicality. EB’s fully-automated collateral management system also includes ex ante measures for ensuring that the collateral concentration limits set out in its Financial Risk Policy Handbook are not breached.</p>
<p>Assessment of Principle 5</p>	<p>Observed</p>
<p>Recommendations and Comments</p>	<p>None</p>

Principle 6. Margin	
A CCP should cover its exposure to its participants for all products through an effective margin system that is risk-based and regularly reviewed.	
<p>Key Consideration 1</p> <p>A CCP should have a margin system that establishes margin levels commensurate with the risks and particular attributes of each product, portfolio, and market it serves.</p>	Not Applicable
<p>Key Consideration 2</p> <p>A CCP should have a reliable source of timely price data for its margin system. A CCP should also have procedures and sound valuation models for addressing circumstances in which pricing data are not readily available or reliable.</p>	Not Applicable

<p>Key consideration 3</p> <p>A CCP should adopt initial margin models and parameters that are risk-based and generate margin requirements sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of positions following a participant default. Initial margin should meet an established single-tailed confidence level of at least 99 percent with respect to the estimated distribution of future exposure. For a CCP that calculates margin at the portfolio level, this requirement applies to each portfolio's distribution of future exposure. For a CCP that calculates margin at more-granular levels, such as at the subportfolio level or by product, the requirement must be met for the corresponding distributions of future exposure. The model should (a) use a conservative estimate of the time horizons for the effective hedging or close out of the particular types of products cleared by the CCP (including in stressed market conditions), (b) have an appropriate method for measuring credit exposure that accounts for relevant product risk factors and portfolio effects across products, and (c) to the extent practicable and prudent, limit the need for destabilising, procyclical changes.</p>	Not Applicable
Key consideration 4	Not Applicable

<p>A CCP should mark participant positions to market and collect variation margin at least daily to limit the build-up of current exposures. A CCP should have the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants.</p>	
<p>Key consideration 5 In calculating margin requirements, a CCP may allow offsets or reductions in required margin across products that it clears or between products that it and another CCP clear, if the risk of one product is significantly and reliably correlated with the risk of the other product. Where two or more CCPs are authorised to offer cross-margining, they must have appropriate safeguards and harmonised overall risk-management systems.</p>	<p>Not Applicable</p>

Key consideration 6 A CCP should analyse and monitor its model performance and overall margin coverage by conducting rigorous daily backtesting – and at least monthly, and more-frequent where appropriate, sensitivity analysis. A CCP should regularly conduct an assessment of the theoretical and empirical properties of its margin model for all products it clears. In conducting sensitivity analysis of the model's coverage, a CCP should take into account a wide range of parameters and assumptions that reflect possible market conditions, including the most-volatile periods that have been experienced by the markets it serves and extreme changes in the correlations between prices.	Not Applicable
Key consideration 7 A CCP should regularly review and validate its margin system.	Not Applicable
Key Conclusions for Principle 6	Not Applicable
Assessment of Principle 6	Not Applicable
Recommendations and Comments	Not Applicable

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.

<p>Key Consideration 1</p> <p>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.</p>	<p>The Policy framework</p> <p>EB has established a robust policy framework which enables it to identify, monitor and manage financial risks it is exposed to.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <pre> graph LR A[Corporate Risk Group Policy] --> B[Enterprise Risk Management Framework] B --> C[Financial Risk Policy Handbook] C --> D[Banking Implementing Procedures] </pre> </div> <p>Policy framework hierarchy</p> <p>The Corporate Risk Board Policy lays down the key principles on risk appetite and expectations on risk culture. These are further elaborated in the ERM Framework which provides a generic framework for the identification, measurement, monitoring and reporting of all risks relevant to EB. The Financial Risk Board Policy and Policy Handbook support both policies, setting out guiding principles for credit, liquidity and market risks as well as limits and collateralisation rules. This overarching policy is further complemented by Implementing Procedures which translate the guiding principles into detailed processes and procedures.</p> <p>Euroclear elaborates on the policy framework under Principle 3 (Risk Management Framework).</p> <p>The Liquidity risk framework</p> <p>EB's FRPH sets out the overall framework and guidelines/principles with regards to the management of both liquidity and funding risks in all relevant and non-relevant currencies arising from Participants, from treasury activities as well as those arising from relations with cash correspondents, custodian banks and liquidity providers. The Financial Risk Board Policy is updated at least every 3 years and the FRPH is reviewed and updated at least annually.</p> <p>The EB Board of Directors defines EB's risk appetite framework, including the liquidity and funding risks tolerance levels. In that respect EB has a framework in place under which it defines and deploys limits per currency and family²⁸.</p> <p>EB's Banking Division implements the overall Liquidity Risk Management framework through its Implementing Procedures which are reviewed yearly. EB also reviews its Contingency Funding Plan (CFP) annually (see KC 10 for further elaboration on the CFP).</p> <p>EB sizes its qualifying liquidity resources (QLR) on the basis of regular back-tests and stress tests as elaborated further below under this</p>
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²⁸ A 'family' is a group of connected entities as defined in Article 4(1)(39) of Regulation (EU) 575/2013.

	<p>Principle. Back tests and stress tests results are regularly reported to EB's CALCO ²⁹, as Euroclear details it further in the next Key considerations.</p> <p>To manage its liquidity risk, EB has implemented:</p> <ul style="list-style-type: none"> • System-embedded currency limits within the credit facility, based upon EB's capacity to generate liquidity for each currency and EB's risk appetite. • Minimum Collateral quality criteria for Participants to secure their line (e.g., ensuring a minimum percentage of assets monetisable same day to mitigate liquidity risks). • Measures to further reduce the needs stemming from Participants' activity (e.g., reducing credit usage by adapting settlement instruction practices). • Structural measures such as Appropriation of Pledged Securities (APS) clauses in case of the default of the participant. • Warm standby facility with a liquidation manager to cope with large scale sale of collateral, in case of a participant default, even under stressed market conditions. <p>EB has implemented procedures to manage the day-to-day and intraday needs arising from the various entities it interacts with – e.g., participants, settlement banks, cash correspondents and liquidity providers.</p> <p>As one entity may play simultaneously multiple roles, EB is measuring on an ongoing basis the exposures on each entity across roles. Client exposure is managed using ex-ante limits determined on an aggregate and on a currency basis. Market facilities are in place for Treasury counterparts and facilities are also defined for cash correspondent exposure. All the facilities and limits are controlled ex-post. In case an exposure on a specific entity represents a risk beyond EB's appetite, additional measures will be taken.</p> <p>Considering that EB settles transactions in multiple currencies, EB has identified the list of relevant currencies for liquidity management purposes, based on the requirements set under Article 36(8) of Regulation (EU) 2017/390. The list of relevant currencies is re-assessed on a monthly basis and is published on the EB website.</p>
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²⁹ The CALCO is a sub-committee of the EB MC with some delegated authority and which provides assurance to the EB MC on liquidity, credit and market risks as well as capital matters in line with EB's risk appetite (see Principle 2 for more details).

	<p>EB's liquidity needs are mainly intraday, resulting from secured intraday credit extended to Participants, in order to ensure smooth settlement and absorb the time gap between cash debits and credits. Other potential sources of intra-day liquidity needs stem from EB's treasury activities.</p> <p>Liquidity needs may also occur over a multi-day horizon, for example linked to operations settling in the future, such as Securities Lending and Borrowing activity and outstanding Treasury activity. These operations are considered in the multi-day liquidity stress test.</p> <p>In KC 3, Euroclear describes how the minimum liquidity resources for both relevant and non-relevant currencies are sized.</p> <p>EB, being subject to European banking legislation, complies with additional requirements related to liquidity risk management such as the Internal Capital and Liquidity Adequacy Assessment Process (ICLAAP) and the Liquidity Coverage Ratio (LCR).</p> <p>Stress testing framework</p> <p>The EB Corporate Risk Board Policy contains the high-level principles of the stress-testing framework and was approved by the EB Board of Directors. The EB Corporate Risk Board Policy is in line with the minimum requirements set by the Corporate Risk Group Policy. Also, a dedicated Stress Testing Policy Handbook is in place.</p> <p>Please also see KC7 which provides more details about a stricter testing framework that has been implemented since 2021 and which ensures that EB Treasury regularly tests its procedures for accessing its liquid resources from the different liquidity providers.</p> <p>Governance</p> <p>Framework documents are approved by relevant governance bodies, such as EB's Management Committee, the EB Board and are reviewed at least every three years or in case of material changes. Additionally, operational processes are designed and reassessed on a regular basis to actively monitor and minimise credit and liquidity risks. Euroclear elaborates on governance aspects in Principle 2 (Governance) and Principle 3 (Risk management framework).</p>
<p>Key Consideration 2</p> <p>An FMI should have effective operational and analytical tools</p>	<p>EB uses a Liquidity Management Solution, which allows the Treasury Department to identify, monitor, steer and control cash flows in a real-time mode, assisting it to manage its flows within pre-established boundaries and to prioritise critical payments.</p>

<p>to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.</p>	<p>The Liquidity Management Solution, measures the actual and projected cash positions, resulting from movements from different activities (Money Transfer, Settlement, Custody, etc.). It is used to monitor the cash positions, identify issues throughout the day and anticipate the liquidity impacts from upcoming events in the next couple of days.</p> <p>As part of the intraday monitoring, EB can consult its capacity linked to the availability of the various liquidity resources (committed and uncommitted) and compare them with its needs, to better assess the liquidity risk, in case of stress.</p> <p>EB has the following tools to identify, measure and monitor its intraday liquidity needs:</p> <ul style="list-style-type: none"> • Analytical tools – in real time <ul style="list-style-type: none"> ○ Report assessing intra-day current and remaining capacity by currency ○ Report forecasting the intra-day liquidity evolution based on historical events and patterns • Operational tools – in real time <ul style="list-style-type: none"> ○ Liquidity Dashboard (LD): The LD tool gives a parallel view on actual and projected balances; ○ Nostro flow control (NFC): The NFC tool performs the liquidity check and releases the payment if there is sufficient liquidity available at cash correspondent side. The NFC provides ex-ante liquidity control (i.e., prior to payments' release) at currency level (i.e., payment) and/or nostro level (i.e., actual balance + credit line) and makes it possible to take preventive action to manage the liquidity risk; ○ External GUI's (Graphic User Interface) provided by Central Banks and CSDs which assist in managing the actual and projected balances and complement the use of the Liquidity Dashboard. • Analytical tools – ex-post <p>EB measures and monitors available QLR (start of the day), peak long and short balances, outflows and overnight liquidity risk</p> <p>EB ensures that cash positions are well within the limit of cash correspondent facilities and that the cash is in the right place at the right time, in order to support its obligations.</p>
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	<p>In case of excessive cash balances (long or short), EB will follow-up with the relevant party (participant, cash correspondent, etc.) to ensure the cash position can be brought in line with the risk appetite.</p>
<p>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.</p>	<p>EB does not employ a DNS mechanism. The Euroclear securities settlement system is a Delivery vs. Payment (“DVP”) Model 1. More information is provided within these disclosures under Principle 12.</p> <p>Minimum liquidity resource requirements</p> <p>EB sizes its QLR in order to withstand the liquidity needs resulting from a defined liquidity stress event (i.e., default at family level). This is tested using back-testing scenarios:</p> <ul style="list-style-type: none"> • “Cover 1” (i.e., a CPMI-IOSCO requirement) back-tests performed on a daily basis, simulating the default of a participant with the largest payment obligation at family level by currency and across currencies (aggregated). • “Cover 2” (i.e., a CSDR requirement) back-tests performed on a daily basis, simulating the default of two Participants with the largest payment obligations at family level by relevant currency (as defined by CSDR) and across currencies (aggregated). <p>EB has policies, procedures and controls in place, to ensure on an on-going basis that sufficient liquid resources are available, in order to comply with the liquidity risk framework set forth by CSDR and CRR and its own Risk Appetite.</p> <p>In order to have sufficient funding sources under stress, EB relies on QLR, as follows:</p> <ul style="list-style-type: none"> • own QLR: the liquidity buffer funded from its capital and the debt issuance program, committed unsecured facilities and the intragroup contingent loan; and • in case of stress linked to the default of participant(s): pledged securities from participants that can be appropriated and monetised same-day through committed facilities, central bank access and, in case of Cover 2, also through PAFAs³⁰ matching collateral eligibility criteria. <p>While measures are taken to avoid such a situation, Policy requires any gap identified in a liquidity back-test or a stress-test, whether at currency or aggregate levels, should be reviewed and an action plan will be defined and approved by the relevant governance body.</p>

³⁰ PAFAs: Prearranged and highly reliable Funding Arrangements.

	<p>To cover the day-to-day liquidity needs stemming from granting credit to Participants, EB mainly relies on other clients' long balances, complemented by uncommitted and unsecured intra-day credit facilities from its cash correspondent banks and settlement banks. In case of stress, EB will activate its contingency facilities, both uncommitted and committed. To ensure these facilities are available and work in practice when needed, EB has a regular program of testing both committed and uncommitted facilities.</p> <p>Other stress tests</p> <p>EB assesses the adequacy of its QLR in a range of stress events impacting negatively EB's liquidity and/or funding position. The outcome of liquidity stress-testing scenarios is analysed and recommendations are made accordingly (e.g., on the size of liquidity resources).</p> <p>The range of other stress tests includes the following scenarios:</p> <ul style="list-style-type: none"> • The temporary failure or inability of one of EB's liquidity providers, cash correspondents, or any related infrastructure, including CSDs with whom it has an interoperable link; • Simultaneous pressures in funding and asset markets, including a decrease in the value of the QLR; • Stress in foreign exchange convertibility and access to foreign exchange markets; • Adverse changes in reputation causing sudden flight of participant cash balances or certain liquidity providers to withdraw liquidity; • Relevant peak historic price volatilities of collateral or assets as recurrent events; • Changes in the credit availability in the market; • Collateral valuation stress test.
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<p>Key Consideration 4</p> <p>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.</p>	Not Applicable
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<p>Key Consideration 5</p> <p>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.</p>	<p>EB has the following (non-exhaustive) own QLR³¹:</p> <ul style="list-style-type: none"> • Own cash deposited at a central bank of issue or other creditworthy financial institutions, not stemming from Participants' long cash balances • Committed lines of credit or similar agreements • Assets and collateral which fulfil credit, market and liquidity requirements and which are readily available and convertible into cash on a same day basis through PAFAs or central bank access. <p>Minimum quality requirements set on collateral deposited by Participants allow EB, in stress events linked to default of participant(s), to monetise same-day high quality collateral with its central bank (ESCB eligible securities³² or BOE eligible securities³³) or with committed repo facilities and pre-arranged and highly reliable funding arrangements.</p> <p>EB relies on different liquid resources to cover its liquidity needs arising from day-to-day operations and to comply with the "stress scenarios" listed in KC 3 above.</p> <p>EB takes multiple initiatives on an ongoing basis to mitigate liquidity risks and ensure its capacity is sufficient to withstand a stress scenario by (1) decreasing the liquidity needs and (2) increasing the liquidity resources.</p> <p>To increase liquidity resources and meet the requirements set under the Principles for Financial Market Infrastructure, EB has taken several initiatives such as:</p> <ul style="list-style-type: none"> • signing of committed unsecured facilities, to increase the capacity under stressed conditions • signing of committed FX swap lines, to address the multi-currency risk and the mismatch between currency of exposure and currency of the collateral • signing of committed secured facilities, to increase the capacity to monetise EB's securities and Participants' pledged collateral under stressed conditions
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³¹ In line with FRPH definition, and aligned with Art. 34 of Commission Delegated Regulation (EU) 2017/390

³² Marketable financial securities accepted as collateral by the Eurosystem as assessed by the national central banks according to the criteria specified in the Eurosystem legal framework for monetary policy instruments.

³³ Securities eligible with the Bank of England to support the Operational Standing Facilities, Level A collateral consists of assets expected to remain liquid in almost all market conditions, such as high-quality sovereign debt trading in very deep markets.

	<ul style="list-style-type: none"> • implementing a strong operational set up to access the Repo market by signing Global Master Repurchase Agreements with a diversified base of counterparts. • implementing system-embedded collateral criteria, ensuring a minimum percentage of monetisable same-day assets being pledged for the purpose of a secured credit line • ensuring that sufficient cash is invested on an overnight basis (next-day availability) and more secured investments are executed against same-day monetizable assets • optimising the composition of EB's portfolio of securities <p>In order to establish that the pre-arranged funding arrangements are highly reliable in extreme but plausible market conditions, EB ensures that each liquidity provider:</p> <ul style="list-style-type: none"> • has a central bank access to the currency of the facility, which increases the likelihood of receiving the cash from such entities in times of stress • is considered a creditworthy financial institution • is tested regularly (quarterly for committed facilities and semi-annually uncommitted for PAFA). <p>Based on the "Appropriation of Pledged Securities" (APS agreement), EB can immediately appropriate and monetise pledged collateral from defaulted Participants, with:</p> <ul style="list-style-type: none"> • the NBB for ESCB-eligible collateral • the BOE for level A collateral criteria • liquidity providers via committed repo arrangements and pre-arranged and highly reliable funding arrangements. <p>The effective availability of the committed and uncommitted liquidity sources depends on:</p> <ul style="list-style-type: none"> • the quality of the securities (from Participants, reverse repos, treasury book and investment book) • the cut-off time by liquidity provider and/or by currency • the activation time required for committed and uncommitted facilities for the nominal currency of the securities and of the committed facilities
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<p>Key Consideration 6</p> <p>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.</p>	<p>EB's supplemental liquid resources are composed of:</p> <ul style="list-style-type: none"> • borrowing capacity and uncommitted cash correspondent lines • Participants' long balances (as cash or invested in assets). In case of an Unforeseen Liquidity Shortfall event (see KC 10), EB may rely on Participants' long balances until such shortfall is resolved, as set in the Terms and Conditions. <p>In addition, even if they do not create extra liquidity capacity, the uncommitted FX swap facilities allow to convert a cash amount in a currency into another currency.</p> <p>These liquid resources may not be available under stressed conditions and may not be considered when assessing EB's capacity to cope with a liquidity/funding stress event as part of the different stress testing scenarios.</p> <p>A methodology has been implemented to assess on a semi-annual basis, the uncommitted liquidity capacity through repo and FX swap.</p> <p>EB ensures a close follow-up of the additional liquidity capacity and can decide whether actions are required to maintain or adapt this capacity.</p> <p>In both day-to-day and stress situations, EB would first try to use the uncommitted facilities (i.e., the supplemental liquid resources) before using the QLR even if, in stress situations, the likelihood of using uncommitted facility is lower than in a day-to-day situation.</p>
<p>Key consideration 7</p> <p>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</p>	<p>EB manages provider relationships with a wide range of liquidity providers consistent with its Network Management Policy Handbook.</p> <p>EB ensures the ability of its liquidity providers to manage associated liquidity risk through a thorough due diligence process.</p> <p>EB imposes the following rules on its committed liquidity providers:</p> <ul style="list-style-type: none"> • the entity or another entity of the group must have access to credit from the central bank of the currency of the facility • the entity is a credit worthy financial institution (cf. Due Diligence Process) • a written contract is put in place with detailed rights and obligations of both parties

<p>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.</p>	<ul style="list-style-type: none"> • the liquidity facility provided is regularly tested <p>A new and more strict testing framework has been implemented in 2021 which includes a regular multi-activation of committed and uncommitted (PAFAs) facilities, yearly testing of a Cover 2 scenario and repo market deepness assessments to evaluate the availability of liquidity to Euroclear Bank and potentially adjust the repo market access assumptions that are used to calibrate the currency limits to Participants. The testing results are presented to the CALCO on a regular basis.</p> <p>All committed facilities contracted with liquidity providers are tested on a quarterly basis to make sure that the liquidity can timely be sourced when needed and to ensure the liquidity providers understand and manage their associated liquidity risk. Once a year all the committed facilities are tested on the same day and also during the Cover 2 scenario testing, the multi activation of some facilities in order to close the liquidity shortfall on the same day is tested. For the latter, EB CALCO validates the scope and adequacy of the CFP testing.</p> <p>In addition, the uncommitted PAFA set-up in the Repo Market with counterparts with central bank access is tested regularly: every Tri-party PAFA is tested at least once every six months from an operational point of view and on a semi-annually basis, a repo market deepness access assessment is performed as well to estimate funding capacity (volumes and prices) from all Tri-party counterparts. Also, true cash givers are identified and developed by executing real cash taking transactions. Every 6 months the Liquidity Management Desk confirms the Cash Correspondent lines in the relevant currencies, in particular with Cash Correspondents with whom Euroclear have a GMRA in place.</p> <p>Operational readiness, training and documentation is validated during the combined testing of facilities and supporting tools, the latter being tested yearly as well.</p> <p>For committed facilities, the test is deemed successful if the provider has respected the rules set in the contract.</p> <p>EB's FRPH defines concentration limits to avoid over-reliance on specific liquidity providers, both at the level of major³⁴ currencies and at aggregated level across all currencies, especially on those entities that are borrowing participant in EB.</p>
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³⁴ Currencies are considered as major when they represent at least the top 50 percent of the most relevant currencies (Article 38(5) of Commission Delegated Regulation (EU) 2017/390).

<p>Key consideration 8</p> <p>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.</p>	<p>EB has access to the Eurosystem through accounts at NBB, both in T2 and TARGET2-Securities (T2S) and is its own settlement bank in the major markets (France, Germany, Netherlands, Belgium, Italy, Spain, Austria, Luxemburg, Finland, etc.). To further mitigate intraday risks on the cash correspondent banks Euroclear has:</p> <ul style="list-style-type: none"> • further centralised the incoming payments in EUR from clients through Euroclear’s NBB accounts. • further shifted the EUR redemptions of securities held by Euroclear’s Participants to Euroclear’s T2S Dedicated Cash Account (NBB). <p>EB has an account with the Bank of England to manage its cash and Participant settlement in Crest³⁵. Intraday and end of day secured credit is allowed. In addition, Euroclear has shifted the receipt of GBP Eurobonds redemptions of securities held by Euroclear’s Participants to Euroclear’s CHAPS account.</p> <p>EB has an account with the Central Bank of Denmark to manage its intraday cash and Participant settlement in T2S. To mitigate intraday risk on the cash correspondent banks Euroclear centralises Euroclear’s cash in DKK with the Central Bank of Denmark.</p> <p>EB has direct access to DTC³⁶, which allows to manage Euroclear’s USD liquidity more timely and efficiently. As such, Euroclear relies less on commercial banks and reduces Euroclear’s intra-day risk on them.</p> <p>EB seeks to further increase the number of central banks to which it can have direct access to raise liquidity (intraday and overnight), or has the possibility to leave cash overnight to mitigate the risk linked to cash correspondents (e.g., TRY, ARS, AED, SAR). Euroclear’s strategy is to maximize the services and access to central banks and assesses EB’s minimum central bank access requirement for a given link. For new market links, EB sets the central bank access as a prerequisite.</p> <p>In addition, EB will attempt to become its own Settlement Bank where settlement of cross-border volumes are substantial.</p>
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³⁵ CREST: Settlement system of Euroclear UK and International.

³⁶ DTC: The Depository Trust Company a US Central Securities Depository.

<p>Key Consideration 9</p> <p>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.</p>	<p>EB uses stress testing and sensitivity analysis to assess the potential liquidity impact and the adequacy of its QLR in each currency under a variety of extreme but plausible scenarios, based on both observed exposures (back-tests) and stressed exposures/situations (stress tests). Stress testing is an integral part of the ICLAAP annual review of the adequacy of the liquidity framework and resources.</p> <p>EB runs a daily back-test assessing whether the QLR are sufficient to withstand the liquidity needs resulting from a defined liquidity stress event:</p> <ul style="list-style-type: none"> • “Cover 1” (i.e., a CPMI-IOSCO requirement) back-tests performed on a daily basis, simulating the default of a participant with the largest payment obligation at family level by currency and across currencies (aggregated) • “Cover 2” (i.e., a CSDR requirement) back-tests performed on a daily basis, simulating the default of two Participants with the largest payment obligations at family level by relevant currency and across currencies (aggregated) <p>At group entity level, exposures considered in the back-tests arise from the liquidity exposure in their role of Participants, treasury counterparts and cash correspondents. If an entity of the group in default is also a liquidity provider, the liquidity facility is disregarded accordingly.</p> <p>EB seeks to ensure on an on-going basis to have sufficient liquid resources to cope with a “Cover 1” scenario in all currencies (relevant and non-relevant) in which credit is granted to borrowing Participants, and a “Cover 2” scenario for relevant currencies.</p> <p>The results of the back-testing exercise are reported daily to the EB Management Committee and reviewed and reported monthly by the Risk Management Division to the CALCO and semi-annually to the Management Committee. The governance bodies determine whether remediating action is required for any gaps identified by the back-tests.</p> <p>In addition to the daily back-test, EB assesses the adequacy of its QLR in a range of stress scenarios, as part of the annual stress testing program which feeds its ICLAAP. The outcome of liquidity stress-testing scenarios is analysed and recommendations are made accordingly (e.g., on the size of liquidity resources).</p> <p>The FRPH sets the list of minimum stress events that need to be considered. In addition, annually, EB assesses the feasibility to extend the list of scenarios to incorporate additional stress events that would be relevant for EB. EB also combines multiple scenarios/stress tests to build master scenarios dealing with either concomitant or</p>
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	<p>subsequent stress across the entire risk catalogue (including liquidity and funding risks).</p> <p>The range of stress tests includes the following scenarios:</p> <ul style="list-style-type: none"> • The temporary failure or inability of one EB's liquidity providers, cash correspondents, or any related infrastructure, including interoperable CSDs; • Simultaneous pressures in funding and asset markets, including a decrease in the value of the Qualifying Liquid Resources (QLR); • Stress in foreign exchange convertibility and access to foreign exchange markets; • Adverse changes in reputation causing sudden flight of participant cash balances or certain liquidity providers to withdraw liquidity; • Relevant peak historic price volatilities of collateral or assets as recurrent events; • Changes in the credit availability in the market. <p>Before performing a stress test, all assumptions and parameters are systematically and completely reviewed during the stress test scenario definition and are approved by the relevant governance bodies.</p> <p>Although focus is set on a 1-day horizon for the back-tests, stress tests assess the potential liquidity and funding implications over a longer period of time, when relevant (e.g., up to the expected liquidation period in case of default and collateral appropriation).</p> <p>Stress-tests are not only allowing the assessment of the adequacy of liquid resources vis-à-vis intraday liquidity needs but also to address the operational processes to cope with the liquidity stress events.</p> <p>In its recovery plan, EB assesses the expected implications of each scenario to capture the second round/contagion effects from both a qualitative and quantitative perspective.</p> <p>If the results of the liquidity back-tests and stress tests highlight some shortfalls or shortcomings, the Banking Division and/or Risk Management provide recommendations to the EB CALCO as to the measures that could be taken to address the situation, as appropriate.</p> <p>In the context of the scenario analysis methodology, Euroclear has rolled out a structured process for gathering systematically relevant insights in order to generate a scenario. An important part of this is horizon scanning (monitoring of the global macro environment).</p>
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Horizon Scanning is performed throughout the year to identify the most relevant developments, which are then reported annually to Management and Board Committees. Relevant developments are also discussed with scenario experts (during the annual scenario review in the context of the ICLAAP and RRW plan).

In the context of a program to improve its stress testing framework and infrastructure, EB is further elaborating its capacity to assess second round effects (enabling stress testing over several days, increasing the frequency and flexibility of stress testing).

<p>Key consideration 10</p> <p>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.</p>	<p>EB has a Contingency Funding Plan (CFP) that will be triggered following, amongst other scenarios, an individual or a combined default among its Participants, if this threatened its liquidity position.</p> <p>The Contingency Funding Plan (CFP) is approved by the EB Management Committee and the EB Board. It sets a series of stress events that EB should be able to cope with, without the need to activate its recovery procedures (i.e., all liquidity generating and liquidity preservation actions available to manage a liquidity/funding crisis) and is reviewed annually.</p> <p>The purpose of the CFP is to:</p> <ul style="list-style-type: none"> • establish a monitoring program to identify, analyse, report, escalate and respond to, in a timely manner, EB-specific or market-wide events (triggers) that could lead to a liquidity strain under progressively worsening stress conditions, where different levels of escalation and required responses incorporate both objective measures and management discretion; • provide an overview of the governance process in place in crisis situations; • identify significant Liquidity Stress Events and outline a framework for assessing their impact on EB's ability to maintain access to funding markets, preserve its liquidity position, meet its financial obligations and continue to perform its role as a CSD, including the provision of ancillary banking services; • provide a flexible menu of management actions aligned with EB's role as a CSD based on current and potential sources of liquidity and a framework to assess the availability and liquidity value of such sources during Liquidity Stress Events; • describe the process for selecting, prioritising and executing management actions, including replenishment of liquidity sources, during Liquidity Stress Events and the monitoring of such actions effectiveness when executed; • establish the governance process for the maintenance, review and approval of this CFP, including the role of the EB Board and Board Committees; • establish the roles of EB Management Committee, EB CALCO and the Liquidity Crisis Management Team (LCMT) to direct the execution of management actions and the EB divisions to execute such actions and report back on their effectiveness; • establish and maintain an EB CFP Communication Plan; and
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- establish the requirement for a CFP testing program, including the periodic liquidation of liquid securities and testing of committed lines (including repos and foreign exchange swaps) on a sample basis.

The CFP is a multi-layered plan comprising a Board level document (framework document), which is complemented by:

- the daily liquidity dashboard for monitoring EB's liquidity situation, and
- a related procedure on management actions and replenishment actions in case of crisis (i.e., a Replenishment Plan).

At a high level EB foresees the following liquidity waterfall:

Level 1 Liquidity	EB's own liquidity pre-funded on balance sheet	Level 1		Cover 2
Level 2 Liquidity	Defaulting Participants' collateral that can be monetised same day	Level 2		
Level 3 Liquidity	Agreement by non-defaulting participants to have a limited access to part of their long cash balances in the EB system at the time of the liquidity need.	Level 3		

In respect of Level 1 and Level 2 it should be noted that EB's liquidity is sized based on its Internal Liquidity Adequacy Assessment Process and Regulatory requirements. Specific regulatory requirements include the Liquidity Coverage Ratio Requirements as required by the Capital Requirement Regulation (EU 2013/575), as well as the "Cover 2 test" required by the Central Securities Depository Regulation (EU 2017/390). The latter drives EB's requirements under Level 2 Liquidity and ensures that EB can by design survive the default of the two Participants to which it has the largest intraday liquidity exposure.

The Level 3 liquidity measure is designed to address unforeseen liquidity shortfall scenarios and would only be used when the other two Levels have been exhausted. EB will only resort to the unforeseen liquidity shortfall measure if it has exhausted its own liquidity, after taking all possible measures to reduce its liquidity needs (e.g., credit line management and debit positions management) and increase its available liquidity (e.g., through committed and uncommitted facilities). This measure is a contractual arrangement with Participants as stipulated in the EB Terms and Conditions governing use of Euroclear and EB Operating Procedures of the Euroclear System.

To cover the amount of such liquidity shortfall, EB will use the funds available from its Participants at the time of such shortfall and until the liquidity shortfall is resolved. In such case, the cash will be paid-in in the currency(ies) of the shortfall, on a pro-rata basis, across Participants.

	In addition, as part of the EB Recovery Plan, EB assesses annually the liquidity impact of a beyond cover 2 scenario, taking into account the 2 largest Participants' exposures plus the CCP with the largest exposure.
Key Conclusions for Principle 7	<p>EB has tools in place to effectively measure, monitor, and manage its liquidity risk, and maintains sufficient QLR to ensure the settlement of its payment obligations. EB is able to identify, monitor, and manage its liquidity risk in real-time using a range of analytical and operational tools and dashboards.</p> <p>On top of its QLR, EB maintains Pre-Arranged and highly reliable Funding Arrangements (PAFA) through a wide range of regularly-tested facilities, including committed swap lines for all currencies to which it has liquidity exposure, as well as committed and uncommitted repo. A Contingency Funding Plan is also in place in case of a stress event that threatens the liquidity position of EB.</p>
Assessment of Principle 7	Observed
Recommendations and comments	None

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.

<p>Key Consideration 1</p> <p>An FMI's rules and procedures should clearly define the point at which settlement is final.</p>	<p>Settlement finality is governed by the EU Settlement Finality Directive 98/26/EC which is implemented into the Belgian Settlement Finality law of 28 April 1999. This legislation effectively ensures protection of irrevocability and finality of transfer orders executed in a securities settlement system ('System'). EB operates a securities settlement system (Euroclear System) and offers settlement as an issuer CSD. The Euroclear System, operated by EB, is designated as a 'System' under Belgian law.</p>
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	<p>In case of insolvency proceedings affecting a participant to the System, the law refers to the rules of the System to determine the moment of (i) entry of transfer orders in such System, (ii) irrevocability of transfer orders and (iii) finality of transfer orders executed by the System. The finality rules of the Euroclear System are set out in the <i>Terms and Conditions governing use of Euroclear and in the Operating Procedures of the Euroclear System</i>. This documentation is available on the Euroclear website.</p> <p>The Euroclear securities settlement system is a Delivery vs. Payment (“DVP”) Model 1. More information is provided within these disclosures under Principle 12.</p> <p>EB also maintains links with other CSDs (directly or through an intermediary) to enable its Participants and Participants of such other CSDs to transfer securities to one another. One of those links (link with Clearstream Banking S.A. in Luxembourg) qualifies as interoperable in the meaning of CSDR. For securities held through links with other CSDs (directly or through an intermediary), the laws that are applicable to the local CSD apply to the local settlement of operations concerning these securities. The contractual framework of the Euroclear System explains how local laws impacts cross-border settlement and its impact on settlement finality. For fund shares deposited with EB using the FundSettle service, the contractual framework also specifies the settlement process for settlement of such fund shares.</p> <p>For the links it maintains, EB does not make provisional credits of either cash or securities on EB client accounts with the exception of some specific cases of credit of securities for the link to the DTC. In this case, EB prohibits retransfer of these securities until they become final.</p> <p>The reader can find further considerations on links in Principle 20.</p> <p>The point of finality of a transfer depends on whether the transfer is done within the Euroclear System (i.e., transfer between two Participants having an account in EB, referred to in the rules of the System as internal settlement), via the Bridge (i.e., transfer between an EB and a Clearstream Banking S.A. in Luxembourg participant, referred to in the rules of the System as Bridge settlement), via another link (i.e., transfer between an EB participant and a participant of the other CSD with whom EB maintains a link, referred to in the rules of the System as external settlement) or through the FundSettle service:</p> <ul style="list-style-type: none"> • Internal settlement: the settlement of an internal Instruction is final upon execution and the credit/debit of Accounts. As such, the simultaneous transfer of securities
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	<p>and transfer of cash (if against payment) is final at such time. Provided that all conditions for settlement are fulfilled (e.g., instructions are matched, sufficient cash/credit or securities are available, settlement date has been reached), this execution of internal settlement instructions and generation of records occurs either:</p> <ul style="list-style-type: none"> ○ at the end of an overnight securities settlement processing during the night, or ○ in real time, during the day, for the real-time processing. <ul style="list-style-type: none"> • Bridge settlement: EB’s Operating Procedures detail the finality rules for receipts and deliveries from and to Clearstream Banking S.A. in Luxembourg over the Bridge. Securities transfers over the Bridge in the overnight batch are final upon confirmation of acceptance of securities by the receiving CSD. Securities transfers over the Bridge in the real-time processing are final upon successful execution and credit to the Securities Clearance Account (for receipts) or when Clearstream Banking S.A. in Luxembourg records the credit of securities (for deliveries). • External settlement: settlement and finality occur in the local market in accordance with local market rules and practice. This is also the case for fund shares deposited with EB in the FundSettle service. For links, the online market guides provide detailed documentation available on www.euroclear.com.
<p>Key Consideration 2</p> <p>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.</p>	<p>EB’s settlement process consists of an overnight securities settlement process followed by a real time gross settlement process.</p> <p>The overnight securities settlement process runs from around 22:30 on the day before the settlement (“S-1”) to around 01:30 on the settlement day (S), Settlement finality occurs at the end of the overnight process.</p> <p>The daytime process runs from around 01:30 to 19:30 Central European Time and provides final settlement in real-time.</p> <p>The Euroclear System recycles unsettled instructions from one process and one day to another until the settlement or the cancellation of the instruction.</p> <p>Participants will receive real-time notifications of this settlement through the communication channel they subscribed to.</p> <p>To facilitate settlement efficiency, EB offers the following services/features:</p>

	<ul style="list-style-type: none"> • Credit facilities: EB may - under certain conditions and subject to limits (see Principle 4) - provide credit to the participant; • Securities Lending and Borrowing Programme: Participants may also - under certain conditions - borrow securities by subscribing to the Lending and Borrowing Programme; • Settlement optimisation features, such as technical netting and partial settlement which enable earlier settlement • Hold and release: which enables earlier matching
<p>Key Consideration 3</p> <p>An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.</p>	<p>Internal, Bridge and external instructions are irrevocable when they can no longer be cancelled unilaterally by Participants as described in the Operating Procedures which are publicly available on Euroclear's website.</p> <p>Once an instruction is matched it can only be cancelled bilaterally i.e., only if the counterparty also requests the cancellation. The rules relating to cancellation are described in the Operating Procedures.</p>
Key conclusions for Principle 8	Settlement finality in the Euroclear System is governed by the Settlement Finality Directive of the EU, which is implemented in Belgium as the Belgian Settlement Finality Law. The relevant finality rules for the Euroclear System are laid out in EB's T&Cs and in its OPs, which define the moment of entry, irrevocability, and finality of transfer orders. EB's contractual framework also provides information on how local laws affect cross-border settlement and the impact on settlement finality.
Assessment of Principle 8	Observed
Recommendations and Comments	None

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 minimize and strictly control the credit and liquidity risks arising from the use of commercial bank money.

Key Consideration 1	EB does not conduct its money settlements in central bank money.
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<p>An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.</p>	<p>EB is a central securities depository established under the laws of Belgium that operates a securities settlement system (governed by Belgian law) and that is also authorised as a credit institution (limited purpose banking license). EB indeed acts as settlement bank of the securities settlement system it operates. Therefore, money settlement in all eligible settlement currencies is carried out in the books of EB itself in commercial bank money.</p> <p>Settlement through accounts opened with the National Bank of Belgium (euro) would not have been practical and available for the following reasons:</p> <ul style="list-style-type: none"> • EB offers new issues distribution and settlement in over 47 different currencies to an international participant base. This makes settlement in central bank money not a practical option as all EB Participants have cash accounts in all of the available settlement currencies where they perform settlement activity in the books of EB (where settlement of the cash leg is effected by crediting and debiting the available Participants' cash accounts in the available currency); • central bank money settlement in euro could only be offered to those clients having a cash account with the National Bank of Belgium. However, a limited number of EB Participants have access to central bank money euro liquidity or credit through the National Bank of Belgium, and in any case, the necessary IT infrastructure to ensure the DvP mechanism is lacking. • access to the central bank for Participants is primarily required for monetary policy operations, where securities are pre-deposited on a free of payment basis with the relevant central bank and liquidity made available in the central bank's system T2. This means that, for the participants needing those, monetary policy operations can be handled without using a delivery versus payment mechanism central bank money in the securities settlement system. <p>Notwithstanding the above, EB has signed end 2021 the T2S framework agreement to become a T2S CSD. The aim in the future is to offer the option to its participant, where practical and available to them, to settle in Euro central bank money settlement via T2S through cash accounts at any Euro central bank connected to T2S.</p> <p>For the links it maintains with other central securities depositories, EB operates using central banks and/or cash correspondents.</p> <p>For the main currencies, EB has more than one cash correspondent in place for risk/contingency purposes.</p>
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	<p>For settlement in most domestic CSDs on T2S (in Austria, Belgium, France, Germany, Luxemburg, the Netherlands, Spain, Italy and Denmark), EB uses its central bank account at the National Bank of Belgium or at Danmarks Nationalbank. Additionally, for settlement in Euroclear UK & International, EB uses its account at the Bank of England.</p> <p>EB is undertaking discussions with a number of central banks to enable it to make and receive money transfers in central bank money.</p>
<p>Key Consideration 2</p> <p>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.</p>	<p>As settlement takes place in the books of EB, the settlement asset used is a claim on EB itself, an AA+ rated bank. EB is subject to the CSDR and its banking license is a limited purpose banking license.</p> <p>Credit and liquidity risks stemming from the use of cash correspondents and depositories are covered under Principles 4 (Credit Risk) and 7 (Liquidity Risk). Details on how EB manages collateral to mitigate credit risk can be found in Principle 5 (Collateral).</p>
<p>Key Consideration 3</p> <p>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, capitalization, 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.</p>	<p>This Key consideration is not applicable, as no settlement banks are used in EB to support money settlements for participants in the Euroclear System. All Participants have a cash account directly with EB.</p> <p>Aspects related to FMI links are covered under Principle 20.</p>
<p>Key Consideration 4</p> <p>If an FMI conducts money settlements on its own books, it should minimize and strictly</p>	<p>EB has a limited purpose banking license that allows it only to offer banking services and credit facilities that are ancillary to its core services as central securities depository under Belgian law and under CSDR. All EB Participants have cash accounts in the available settlement currencies in the books of EB. Money settlements are</p>

<p>control its credit and liquidity risks.</p>	<p>conducted by debiting or crediting the cash accounts of the Participants that are counterparties in a securities transaction or for the sake of making payments related to corporate actions affecting the securities held in the Euroclear System.</p> <p>EB has established an enterprise risk management framework which provides for a robust and consistent approach to risk management across the organisation and covers all key sources of risk including credit and liquidity risks.</p> <p>For more details on Euroclear’s risk management, please refer to Principle 3 (Risk Management Framework). EB’s liquidity risk management is explained in Principle 7 including aspects of liquidity management per currencies, while credit risk is covered under Principle 4 (Credit Risk). Details on how EB manages collateral to mitigate credit risk can be found in Principle 5 (Collateral).</p>
<p>Key Consideration 5</p> <p>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.</p>	<p>This Key consideration is not applicable, as EB acts as settlement bank of the securities settlement system it operates. All participants have a cash account directly with EB.</p>
<p>Key Conclusions for Principle 9</p>	<p>EB conducts its money settlement in commercial bank money and acts as its own settlement bank for the SSS it operates. EB has determined that conducting money settlement in central bank money is not practical for its current operations. This is because of the international nature of its business, its settlement of almost 50 currencies, and participants settling directly in the books of EB. The management of risks associated with settling in its own books is covered in EB’s overall risk management framework.</p>

	For settlement via links, EB conducts money settlement using central banks and/or a diversified set of cash correspondent banks for risk mitigation purposes
Assessment of Principle 9	Observed
Recommendations and Comments	<p>In 2021, EB signed the T2S framework agreement to become a T2S CSD, which is currently envisaged for 2025. Once this is operationalized, EB plans to offer participants with accounts at any euro area central bank connected to T2S the option to settle in EUR central bank money.</p> <p>EB should, to the extent possible, encourage settlement in central bank money for relevant participants once the connection to T2S is operationalized.</p>

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.

<p>Key Consideration 1</p> <p>An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.</p>	<p>EB does not offer settlement services relating to commodities.</p> <p>EB securities settlement services are based on immobilisation or dematerialisation of securities. Please refer to Principle 1 – Legal basis for more details.</p> <p>EB holds physical securities through its network of depositories in immobilised form. The Operating Procedures of the Euroclear System clearly state the specific rules in relation to the receipt and delivery of physical instruments. These procedures are available on the Euroclear website. Additional information is available on www.my.euroclear.com – Physical settlement.</p> <p>Relevant delivery addresses for physical settlement on local markets are provided on my.euroclear.com > My Apps > Market directory.</p> <p>The number of physical securities considered here is particularly marginal (representing well below 1% of settlement).</p>
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<p>Key Consideration 2</p> <p>An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.</p>	<p>As stated above, EB is not involved in the settlement of commodities.</p> <p>EB identifies the physical form of securities and adapts its processes for their receipt and delivery accordingly (see KC 1 above). When securities are held in physical form, EB's due diligence procedures foresee:</p> <ul style="list-style-type: none"> • a yearly vault inspection that includes a physical verification of securities in the vault, or • self-assessments from international depositories/agents. <p>EB's insurance policies include coverage for losses of physical securities.</p> <p>For physical securities, EB appoints depositories to safekeep the securities in their vaults, and to service them on behalf of EB and its Participants. Contractually, EB requires those depositories to protect physical securities and use vaults whose design and location ensure high level of protection against a series of disasters (floods, earthquakes, fire, and other disasters). Such depositories are being regularly monitored as defined in the EB Network Management Policy Handbook. For instance, EB performs annual vaults inspections on entities maintaining immobilised physical securities on its behalf. The vault inspection ensures that agreed standards are effectively in place in terms of protection of securities.</p> <p>EB requires an annual certification from the depositories detailing the securities which are being held in the vaults in accordance with the depository agreement.</p> <p>In case of shipment of physical securities (for example in case of a change of depository), strict procedures are being followed to ensure compliance with insurance requirements of both EB and the depository making the shipment.</p>
<p>Key Conclusions for Principle 10</p>	<p>The settlement services offered by EB are based on immobilized or dematerialized securities, and it does not offer settlement of commodities. EB holds physical securities in a network of depositories in immobilized form. Its OPs clearly state system rules regarding receipt and delivery of physical instruments. The number of physical securities represents a less than one percent of its total settlement activity. EB adequately identifies, monitors, and manages the risks associated with its physical securities.</p>
<p>Assessment of Principle 10</p>	<p>Observed</p>

Recommendations and comments	None

Principle 11: Central Securities Depositories

A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimize and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilized or dematerialized 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 unauthorized creation or deletion of securities, and conduct periodic and at least daily reconciliation of securities issues it maintains.

For all securities held in the Euroclear System, EB has appropriate rules, procedures and controls to safeguard the rights of the securities issuers and holders and prevent unauthorised creation or deletion of securities. EB complies with the (accounting) principles under the CSDR and applies Belgian and European accounting principles. Participants' assets and own assets are completely separated. The following accounting principles are used:

- accounts are of the type of assets and liabilities accounts
- double-entry accounting according to the debit-credit principle
- balance between debit and credit at all times
- daily booking, without delay, of transactions
- simultaneous booking of the securities and cash leg

The initial setup of the ISIN code in the Euroclear system is managed by separate and stand-alone processes. Securities' credit or debit are executed by other processes managed by the transactional teams. There is a clear segregation of access and duties between both processes (setup and transactions) and teams who manage these processes.

EB performs two reconciliations:

- **Securities movement reconciliation**, between the movements recorded at EB and those reported by the depository of a transaction (Settlement, Corporate Action), or by the transfer agent (for funds in nominee registration). EB performs this reconciliation on a daily basis for all the security categories in the Euroclear System, covering all counterparts.
- **Securities balance reconciliation**, between the balances recorded at EB and those reported by the depository, or by the transfer agent (for funds in nominee registration). EB performs this reconciliation on a daily basis for all the

	<p>securities categories in the Euroclear System, covering all counterparts.</p> <p>Where relevant and needed, immediate corrective actions are taken in case EB identifies a mismatch.</p> <p>Booking of securities positions is only performed upon receipt of securities for further credit to participant accounts. Removal of these securities positions is performed upon final maturity or in the context of a corporate event (e.g., exchange). Both credit and debit of securities are processed in an automated manner³⁷ at EB upon participant instruction and depository confirmation. The 4-eyes or key & re-key³⁸ principles are applied to manual processes. In case of an incorrect booking, internal controls performed by the transactional teams or the reconciliation process will detect the case and appropriate actions will be taken by means of a reversal process³⁹. EB reports on a daily basis to Participants, the movements in their accounts, as well as opening and closing balances of the securities they hold. Contractual documentation with Participants reflects their obligation to do daily reconciliation.</p> <p>Additionally, the accounting practices are part of the contractual framework between Euroclear Bank and its Participants and are incorporated into the Terms and Conditions governing the use of Euroclear.</p> <p>Euroclear’s Internal Audit regularly reviews these procedures and controls. External Auditors audit those on a yearly basis. The yearly ISAE (International Standard on Assurance Engagements) 3402 report, which is available to Participants and authorities, includes the results of such external reviews. This report of EB provides assurance on the key operational processes impacting customers. It describes the controls performed end-to-end (in particular new issues, settlement or custody instructions and reconciliation procedures) to ensure there are sufficient securities to satisfy customer rights. The effectiveness of controls is tested by the external auditors.</p>
<p>Key Consideration 2 A CSD should prohibit overdrafts and debit balances in securities accounts.</p>	<p>EB’s processing systems are designed to prevent securities overdrafts, debit of balances and securities creation.</p>

³⁷ For the biggest part, credit and debit movements are processed automatically.

³⁸ Another user re-performing the same task.

³⁹ Described in Section 3.2 of the Operating Procedures.

	<p>The <i>Terms and Conditions governing use of Euroclear</i> clearly provide that ‘Debit balances or overdrafts in Securities Clearance Accounts are prohibited in the Euroclear System’.</p> <p>In practice, the system therefore controls the availability of the cash and securities provisions before executing the instructions. If the cash and/or the securities are not available, the transaction will not be settled. EB only credits securities positions upon receipt of securities for further credit to client accounts.</p> <p>In EB’s cross-border settlement activity, several intraday controls are in place, aiming at prevention, detection, and mitigation actions in case of a mismatch between the external and internal status of a settlement instruction.</p> <p>In addition, there is a daily monitoring to detect any exceptional short positions, triggering immediate corrective actions in the relevant operational team. Such exceptions are recorded and managed in accordance with the risk management principles.</p>
<p>Key consideration 3</p> <p>A CSD should maintain securities in an immobilized or dematerialized form for their transfer by book entry. Where appropriate, a CSD should provide incentives to immobilize or dematerialize securities.</p>	<p>EB provides book entry settlement exclusively for securities in an immobilised or dematerialised form. In other words, securities are never delivered physically for settlement to take place in EB’s books.⁴⁰</p> <p>Physical securities can either be global notes (representing the total issued amount deposited in the Euroclear System) or physical certificates which can possibly circulate outside of market infrastructures.</p> <p>In EB, physical securities may only be physically delivered at the moment they enter or exit the Euroclear system, i.e., either at the moment of issuance/redemption (typically for global notes) or as a result of physical deposit/withdrawal by a participant. A deposit in the Euroclear System implies the immobilisation of physical securities (safekeeping in a vault) while a withdrawal implies a physical delivery of securities⁴¹. Once securities are in EB’s system, transactions involving such securities only take place by book-entry.</p> <p>To be eligible in EB, physical securities need to be immobilised with a CSD or with a depository:</p> <ul style="list-style-type: none"> • for securities issued in a Common Depository structure or securities issued as Eurobonds but not held in Common Depository structure, and for which EB holds a balance, the

⁴⁰ Please refer to Principle 1.

⁴¹ In Belgium, physical deliveries can only take place between professionals and for immobilisation purposes.

	<p>vast majority is issued under global form, a physical certificate representing the entire issuance (e.g., Classical Global Notes, New Global Notes, etc.) and immobilised in the vaults of the depositories.</p> <ul style="list-style-type: none"> • for the domestic securities recorded in the Euroclear system (held through the links), the majority are issued in dematerialised form or in the form of a global note. The remaining are issued in a physical form and therefore immobilised. <p>Practically, the volumes of physical deposits and withdrawals are negligible and such services are only offered through a limited number of EB's depositories.</p>
<p>Key Consideration 4</p> <p>A CSD should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.</p>	<p>Participants' assets are protected against custody risk through the following:</p> <p>A. Participants' assets are legally protected (under the Royal Decree N°62) against EB's creditors, including in case of bankruptcy of EB.</p> <p>B. The current legal framework (among others Capital Requirements Regulation ⁴² (CRR) and CSDR ⁴³) prohibits EB from using participants' assets without their consent.</p> <p>C. Protection of participants' assets from loss due to EB itself is achieved through:</p> <ul style="list-style-type: none"> • EB's accounting practices and internal controls: Euroclear's accounting practices and internal controls impacting participant services are audited on a regular basis by Internal Audit and on a yearly basis by an external auditor. The result of such external annual audit is disclosed on a yearly basis in the ISAE 3402 report. More detailed descriptions can be found in KC 1 of this Principle. Please refer also to point D below. • Segregation of EB participants' securities from EB's proprietary securities: see KC 5 hereafter for more details. <p>D. Reconciliations are designed to identify any error in order to avoid erroneous/undue creation or deletion of securities, whichever the cause thereof. Reconciliation and investigation measures are further described in KC 5 of this Principle. In case:</p> <ul style="list-style-type: none"> • EB is at the source of the incorrect processing, it has appropriate insurance coverage in place

⁴² Regulation 575/2013 of 26 June 2013 on prudential requirements for credit institutions and investment firms IV.

⁴³ Regulation 909/2014 of 23 July 2014 on improving securities settlement in the European Unions and on CSD.

	<ul style="list-style-type: none"> An FMI counterpart or link is at the source of the incorrect processing, the counterpart's insurance should come into play. This is being monitored by the Network Management department of Euroclear as part of the annual due diligence exercise (including vault inspections, where relevant), during which EB raises a set of questions on the insurance coverage and requests insurance recertification. Residual damages uncovered by an insurance claim payment will remain the liability of the counterpart. <p>E. EB has procedures to select its counterparts (see Principle 16). EB contractually imposes on its counterparts a requirement to maintain insurance coverage with respect to securities held on behalf of EB. Before opening links with other CSDs, EB performs an initial verification of the local legislation to ensure that securities held with such CSDs benefit from a level of asset protection that has comparable effects to the Belgian regime. A review of the local legislation is performed periodically (see Principle 1 and Principle 20).</p>
<p>Key Consideration 5</p> <p>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.</p>	<p>In line with regulatory obligations under the CSDR, segregation at participant-level on EB's books is based on participants' specific account structure requirements, so participants can segregate their securities and cash as they require.</p> <p>EB offers to its participants the possibility to choose the level of segregation (omnibus accounts or client dedicated accounts) they require in its books. Such client choice will have no impact on the level of asset protection granted to the participant under Belgian law.</p> <p>At EB, Participants can structure their accounts according to their needs and those of their underlying customers: i.e., ranging from one omnibus account to separate accounts (single or several securities accounts) per function, business line or underlying customer. Participants must indicate whether accounts contain proprietary or customer's assets.</p> <p>EB has set up an appropriate structure for the purpose of holding its proprietary securities in the Euroclear System, which ensures adequate legal segregation.</p>
<p>Key Consideration 6</p> <p>A CSD should identify, measure, monitor, and manage its risks from other activities that it may perform; additional tools may be</p>	<p>To support its services of notary and central maintenance and settlement services, EB offers two types of ancillary services (in the meaning of the CSDR):</p> <ul style="list-style-type: none"> Non-banking type ancillary services related to Custody and Asset Servicing (corporate actions, proxy voting, tax

<p>necessary in order to address these risks.</p>	<p>services, collateral management services and other services related to settlement)</p> <ul style="list-style-type: none"> • Banking type ancillary services (including credit facilities and money transfer) <p>Before being offered to participants, every potential new service has to go through an approval process documented in the EB policy framework, during which the impact of this new service on the risk profile of EB is assessed. The risk assessment (performed by the business with the assistance of the Risk Management Division) identifies all potential risks and mitigating actions. The full process is described in EB's "New Initiative, Product & Pricing Policy Handbook".</p> <p>The impact on the capital requirements is also analysed.</p> <p>The EB ROC and, for banking type ancillary services, the EB CALCO, review the risk assessment paper and the contemplated new services, adding conditions or recommendations as relevant, for consideration by the relevant decision-making body.</p> <p>For more information regarding risks related to the banking type ancillary services offered by EB, please refer to the other Principles in this disclosure and in particular Principles 3 (Risk Management Framework), Principle 4 (Credit Risk), Principle 5 (Collateral) and 7 (Liquidity Risk).</p> <p>The continuous identification, measurement, monitoring and management of EB's risks (including those linked to the related services) occur via Euroclear's Enterprise Risk Management Framework (see Principle 3). Principles 4 and 7 include the description of potential credit and liquidity risks respectively. In case there are financial risks (credit, liquidity and market risks) it requires a separate review by the EB CALCO.</p>
<p>Key conclusions for Principle 11</p>	<p>EB has in place effective rules and procedures for ensuring the integrity of securities issues and managing the risks associated with securities safekeeping and transfers. EB applies Belgian and European accounting principles and has in place intraday controls for managing the risks associated with cross-border settlement. EB conducts reconciliation on a daily basis and provides book entry settlement exclusively for securities in immobilized or dematerialized form. The protection of participant assets is ensured under Belgian law and relevant European regulation. Before offering</p>

	ancillary services to participants, EB conducts a comprehensive risk assessment.
Assessment of Principle 11	Observed
Recommendations and Comments	None

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.

<p>Key Consideration 1</p> <p>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 when finality occurs.</p>	<p>EB operates a securities settlement system (Euroclear System) and offers settlement as an issuer CSD. The Euroclear System is a designated securities settlement system notified to ESMA.</p> <p>The Euroclear securities settlement system is a Delivery vs. Payment (“DVP”) Model 1: internal and Bridge instructions are settled between participants on a transaction (gross) basis. The finality of the transfer of securities from the seller to the buyer occurs at the same time as the finality of transfer of funds from the buyer to the seller.</p> <p>EB maintains links with other CSDs, to facilitate transfer of securities between its participants and the participants of the other CSDs. Those links are DVP links. When settlement occurs through links, the settlement does not take place in EB. Rather, the settlement takes place in the local market and is then reflected in EB’s books. For cross-border instructions, local rules apply.</p> <p>The DVP arrangement in the Euroclear System operated by EB is supported by the relevant legal and contractual framework as well as the technical framework. It ensures that delivery of securities takes place if, and only if, cash is received. Practically, the system controls the availability of the cash and securities provisions before executing the instructions (i.e., so-called ‘positioning’). If the cash and/or the securities are not available, the transaction will not be settled (but will be recycled later on in accordance with the system’s rules). If the cash and/or the securities are available, the instructions will settle and the cash and securities will be transferred simultaneously.</p> <p>Settlement over the Bridge with Clearstream Bank Luxembourg is also organised on a DVP Model 1 basis. Securities transfers over the Bridge with CBL are final based on different rules for the overnight</p>
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	<p>and real-time settlement process as described in the Operating Procedures of the Euroclear System which form part of EB's Terms and Conditions, available on Euroclear's website. Detailed documentation is also provided in the online market guides, available on www.euroclear.com</p> <p>Participants can also settle transactions via Free of Payment (FoP) instructions.</p> <p>Please also refer to Principle 8 on Settlement finality.</p>
Key conclusions for Principle 12	<p>Securities settlement within the Euroclear System takes place on a DvP Model 1 basis. Such an arrangement is also in place in the case of settlement across the interoperable link between EB and CBL. Settlement via links with other CSDs also takes place on a DvP basis, but settlement is effected in the local market and reflected in the books of EB.</p>
Assessment of Principle 12	Observed
Recommendations and Comments	None

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.

<p>Key Consideration 1</p> <p>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.</p>	<p>EB's contractual documentation covers both participants' operational default and financial default as meant by CPMI-IOSCO. Additionally, its various internal financial risk policies and procedures comply with the requirements with regards to defaults as set in the European Capital Requirements Regulation (CRR).</p> <p>Operational default</p> <p>Participants in the Euroclear System are subject to admission criteria, one of which is regarding the operational and technological capability aiming to ensure business continuity (see Section 2.1.2(e) of the Operating Procedures of the Euroclear System). Operational capability is monitored via the Commercial recertification process. Non-compliance with the admission criteria can result in suspension or termination of access.</p>
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Access rules and procedures (to the extent relevant to Participants) are documented in the *Terms and Conditions Governing Use of Euroclear*, which encompass the *Operating Procedures of the Euroclear System*.

For more details on Access, please refer to Principle 18.

Financial default

EB, as operator of the Euroclear System, has effective and clearly defined rules and procedures to manage the financial default of one or more of its Participants. The default rules and procedures are embedded in the T&Cs and OPs, which differentiate two types of default (see section 3.8 of the OPs):

- the inability to fulfil the obligations imposed to participants under EB's contractual documentation, i.e., a contractual default, which includes inter alia the obligation to have adequate financial resources (see section 2.1.2(e) of the OPs) and to pay EB's fees (see section 13 of the T&Cs);
- insolvency proceedings, defined in accordance with the Settlement Finality Directive (SFD) 98/26/EC, implemented by the Belgian Settlement Finality Law of 28 April 1999 (SFA).

EB also acts as settlement agent for participants in the Euroclear System and provides banking-type ancillary services in this capacity. The rights and obligations of EB as settlement agent granting credit to participants are documented in the T&Cs as well as in separate agreements between EB and the participant (the *Collateral Agreement Governing Secured Borrowings by Participants in the Euroclear System* and the *General Conditions Governing Extensions of Credit to Participants in the Euroclear System*). The actual actions taken by EB, as settlement agent, when managing the consequences of a participant's default are determined on a case-by-case basis, depending on the situation.

EB's detailed contractual framework (the rules):

- reflects the principles and requirements provided in the Settlement Finality Act (SFA) in relation to insolvency proceedings and sets out principles for the other types of default in the meaning of this Principle;
- sets out the actions EB must take as operator of the Euroclear System (T&Cs and OPs) and may take as settlement agent upon occurrence of default events (T&Cs,

	<p>OPs and relevant additional credit and collateral documentation);</p> <ul style="list-style-type: none"> • sets out the rights and responsibilities of defaulted participants. <p>EB further implements the rules with internal procedures. The objective of default management procedures is to:</p> <ul style="list-style-type: none"> • ensure compliance with the SFA principles with regard to the refusal of incoming instructions and processing of pending instructions (for both proprietary and customer transactions, which are treated the same way. EB only has a contractual relationship with its direct participant. For more details, please refer to Principle 19) and thereby limit disruptions to the functioning of the Euroclear System; • avoid or minimise losses for EB resulting from the outstanding exposures of a defaulted participant, by appropriation of pledged securities, monetisation and liquidation of defaulted participant's collateral (replenishment of resources) in a prudent and orderly manner. <p>For more details on settlement finality, please refer to Principle 8. For more details on credit risk, collateral and liquidity risk, please refer to Principles 4, 5 and 7.</p> <p>Identification of default</p> <p>EB has in place an active monitoring to identify a participant's default and take remedial actions as contractually available, or as mandated by the SFA where applicable. The objective is to capture any deterioration in creditworthiness of the participant, well ahead of its potential default and proactively reduce exposures. Mitigating actions target to minimise any credit risk and consequently any liquidity risk. These actions will vary according to the severity of the crisis and can include amongst others a reduction in the available facilities, an increase in haircuts, a strengthening of the required collateral profile, etc.</p> <p>EB collects information allowing to identify potential crisis (either idiosyncratic or market-wide) or default, takes mitigating measures and, where legal or contractual conditions are met, will put the participant in default. The collected information includes:</p> <ul style="list-style-type: none"> • market signals, external and/or internal rating changes, press reports and other market information; • direct notification by other relevant channels (e.g., authorities);
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	<ul style="list-style-type: none"> notification by the participant itself (as required by the T&Cs). <p>Management of default</p> <p>Once a participant default (financial or operational) is identified and confirmed, the Crisis Management Process is activated to coordinate the default management responses, including the prevention of incoming instructions where applicable and the monetisation and/or liquidation of the participant's assets, where relevant.</p> <p>The roles and responsibilities of internal departments involved in the default management are described in the <i>Financial Risk Policy Handbook</i>, the <i>EB Insolvency Policy</i>, and the <i>EB Playbook "Default or Insolvency of Client or Business Partner of EB"</i>, which are regularly reviewed and updated. They also highlight the interaction of the internal stakeholders with external stakeholders such as the defaulting participant's administrator or curator or the liquidation agents and counterparties, which would be used for the execution of defaulting participant's assets or to generate liquidity.</p> <p>The default management procedures include a close cooperation and communication with the appointed insolvency administrator/liquidator/curator to support a smooth liquidation of the assets held by the defaulting participant in the Euroclear System. The authorities will also be informed of the situation.</p> <p>The process is regularly reviewed, tested and amended, where necessary.</p> <p>Use of financial resources</p> <p>EB acts both as operator and as settlement agent of the Euroclear System for DvP (delivery versus payment) transactions. As settlement agent of the Euroclear System, EB extends credit to its participants. All credit facilities are fully secured with collateral⁴⁴. In the event of default, and as documented in the Rules, collateral posted by the defaulting participant would be monetised (following appropriation of pledged securities) and/or liquidated to meet any existing/arising obligations which cannot be covered by EB's right</p>
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⁴⁴ Unsecured credit facilities are only provided when allowed under the CSDR i.e., to exempt entities in accordance with Article 23(2) of Regulation (EU) 390/2017, and central banks, multilateral development banks and international organisations (other than exempt entities) of which the exposures are covered by EB's eligible capital after deduction of the regulatory CSDR capital requirement.

	<p>of set off under the T&C (Section 16(a)). For more details, please refer to Principles 4 and 5.</p> <p>Please refer to Principle 7 on Liquidity risk for more details on how EB manages liquidity risks stemming from the default of one or more of its participants, including the Contingency Funding Plan which describes the order in which the financial resources can be used for the replenishment of resources.</p> <p>For more details on the measures EB could take in the context of a financial default affecting Clearstream Banking S.A. in Luxembourg, please refer to Principle 20 on FMI links.</p> <p>EB has also established a Recovery, Restructuring and Orderly Wind-down (RRW) plan in accordance with applicable requirements stemming from the banking legislation and CSDR. Such RRW plan elaborates on stress scenarios with related recovery options (including capital increase, intragroup funding, etc).</p>
<p>Key Consideration 2</p> <p>An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.</p>	<p>For operational⁴⁵ and financial defaults, the T&Cs and OPs detail the conditions applicable to such defaults, their consequences and the options available to EB (including the procedural aspects like notifications to the concerned participant). Internal guiding principles are documented in the Financial Risk Policy Handbook.</p> <p>As operator of the Euroclear System, EB has documented in its T&Cs and OPs the rules it applies in the context of insolvency proceedings affecting a participant for processing of pending instructions (entry, irrevocability and finality of instructions). In respect of a participant’s insolvency situation, EB always applies a set of standard actions:</p> <ul style="list-style-type: none"> • preventing the entry into the system of new instructions; • blocking the Accounts, cash and securities positions; • handling pending instructions; and • informing the receiver/administrator/trustee/curator, if any. <p>The process may however be complemented by other actions depending on the type of services the defaulted Participant uses and whether it has a credit facility.</p>

⁴⁵ An operational default or “operational past due” occurs when a participant (borrowing or other) or other counterpart is temporarily not able to meet in a timely manner any of its obligations towards Euroclear Bank due to an operational problem on the participant (borrowing or other) or other counterpart’s side, such as a failure in information technology systems (definition from Financial Risk Policy Handbook).

	<p>For credit facilities granted by EB as settlement agent of the Euroclear System, the consequences of insolvency proceedings and of a contractual default are documented in the <i>Collateral Agreement Governing Secured Borrowings by Participants in the Euroclear System</i> and the <i>General Conditions Governing Extensions of Credit to Participants in the Euroclear System</i>.</p> <p>As part of its risk management framework, EB has established a global business continuity management strategy and procedural framework to ensure adequate awareness and readiness for EB's crisis management response in a series of incidents, including the default of a participant. To meet the Euroclear Business Continuity Management objectives defined by the Board, the Group Business Resilience division ensures the coordination and readiness of the relevant internal stakeholders (e.g., by defining the sequencing of actions in the context of an operational/financial crisis). For more details on the risk management framework, please refer to Principle 3.</p> <p>The <i>EB Insolvency Policy</i> details the specific steps to be taken by EB in compliance with applicable legislation and contractual arrangements to manage the consequences of insolvency proceedings affecting a Participant of the Euroclear System.</p> <p>EB maintains internal procedures and processes to manage financial defaults that do not originate from insolvency proceedings.</p> <p><i>EB Playbook "Default or Insolvency of Client or Business Partner of EB"</i> and <i>EB Insolvency Policy</i> define the communication path of a Participant default to all relevant internal and external stakeholders, including the authorities.</p> <p><i>Banking Implementing Procedures ("Default - Credit Crisis Management" and "Liquidity Crisis Management")</i> provide details of the respective end-to-end processes, according to the guiding principles of the Financial Risk Policy Handbook.</p> <p>All default management processes and procedures are reviewed and tested at least annually to ensure their adequacy and effectiveness.</p>
<p>Key Consideration 3</p> <p>An FMI should publicly disclose key aspects of its default rules and procedures.</p>	<p>EB's T&Cs and OPs are publicly available (www.euroclear.com) and detail all aspects that are relevant for participants in case of default when EB acts as the operator of the Euroclear System:</p> <ul style="list-style-type: none"> the OPs set out the admission criteria to become a Participant in the Euroclear System that the participants must meet on an ongoing basis;

	<ul style="list-style-type: none"> • the T&Cs list the events that may trigger the suspension or termination of the participation of a Participant in the Euroclear System; • the OPs clarify the rules governing entry and irrevocability of instructions as well as finality of transactions (for both proprietary and customer transactions, which are treated the same way). EB only has a contractual relationship with the Participant. For more details, please refer to Principle 19; • the OPs clarify the rules applicable to defaulted Participants. <p>Credit facilities granted to participants by EB, acting as a settlement agent, are governed by a specific bilateral contractual documentation which is disclosed to participants benefiting from such facilities and which cross-refers on some aspects to the T&Cs and OPs. This bilateral contractual documentation details the relevant aspects for participants in case of default:</p> <ul style="list-style-type: none"> • pursuant to the <i>General Conditions Governing Extensions of Credit to Participants in the Euroclear System</i>, each (cash) overdraft is payable immediately upon demand by EB; • the <i>Collateral agreement governing Secured Borrowings by Participants in the Euroclear System</i> (i) defines the “Events of Default” under the provisions of the credit arrangements entered into between EB and a Participant benefiting from a credit facility granted by EB and (ii) sets out the remedies available to EB in case such “Events of Default” occurs, which includes EB’s right to appropriate the collateral provided by the Participant to secure its borrowings; • the <i>Supplementary conditions governing extensions of credit to borrowers of securities through the Euroclear System</i> (including GC Access service) defines additional “Events of Default” applicable to borrowings of securities by a Participant under the securities lending and borrowing services of EB. <p>Prior to the declaration of an “Event of Default”, EB will send a ‘payment notice’ to the participant in writing. If no payment is received within a reasonable timeframe, EB will declare the default of the relevant participant by sending a default notice. EB can then enforce the collateral agreement and trigger the Appropriation of Pledged Securities to either:</p> <ul style="list-style-type: none"> • liquidate the securities to realise cash to discharge the participant’s indebtedness; or • bridge the temporary liquidity gap pending the collateral liquidation of a participant in default.
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	<p>Actions taken by EB following insolvency proceedings affecting a participant</p> <p>The OPs describe the actions taken by EB upon the opening of an insolvency proceedings against a participant. EB will always take four key actions:</p> <ul style="list-style-type: none"> • cutting off the insolvent participant’s communication means (i.e., preventing the entry into the system of new instructions); • temporarily blocking the account(s) of the insolvent participant (mainly to prevent system generated instructions from settling when generated post-bankruptcy and facilitate the implementation of other actions); • handling pending instructions already entered into the system at the time of the opening of the insolvency proceedings following the finality rules documented in the T&C as per the provisions of the SFA; • contacting the administrator/liquidator of the defaulted participant. <p>Other Participants</p> <p>No specific mechanisms need to be disclosed as EB’s actions will be limited to the exchange of information on the defaulted participant to the extent the default affects or may affect other participants in the Euroclear System.</p>
<p>Key Consideration 4</p> <p>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.</p>	<p>The Business Continuity procedures are regularly tested with the involvement of all relevant internal stakeholders.</p> <p>For insolvency management, the internal policy framework of EB also foresees such testing with a relevant sample of external stakeholders including participants, market infrastructures (such as CCPs and other CSDs), relevant trading venues, if any, and any other entities, as appropriate (such as central banks and EB in its capacity as settlement agent).</p> <p>Additionally, the test assessment report is shared with the NBB, as competent authority, and the relevant authorities of EB. A summary of the results is also disclosed to participants via the User Committee.</p>
<p>Key Conclusions for Principle 13</p>	<p>EB has effective and well-defined rules and procedures for managing participant default. These rules and procedures are documented in EB’s T&Cs and OPs and differentiate between contractual and financial participant default. Additional</p>

	documentation supplements the T&Cs and OPs with respect to participant default procedures, including collateral agreements, conditions governing extension of credit to participants, EB’s insolvency policy, as well as internal handbooks and playbooks. All processes and procedures related to default management are reviewed and tested at least annually.
Assessment of Principle 13	Observed
Recommendations and comments	<p>The testing of participant default procedures could be strengthened as it does not include relevant simulation exercises. Such testing should also include in scope the implementation of participant resolution. Summaries of test results should also be shared more broadly across EB’s client base and not limited to members of the User Committee.</p> <p>EB should also involve its participants in the review of default management procedures.</p>

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.	
<p>Key Consideration 1</p> <p>A CCP should, at a minimum, have segregation and portability arrangements that effectively protect a participant’s customers’ positions and related collateral from the default or insolvency of that participant. If the CCP additionally offers protection of such customer positions and collateral against the concurrent default of the participant and a fellow customer, the CCP should take steps to ensure that such protection is effective.</p>	Not Applicable

<p>Key Consideration 2</p> <p>A CCP should employ an account structure that enables it readily to identify positions of a participant's customers and to segregate related collateral. A CCP should maintain customer positions and collateral in individual customer accounts or in omnibus customer accounts.</p>	Not Applicable
<p>Key Consideration 3</p> <p>A CCP should structure its portability arrangements in a way that makes it highly likely that the positions and collateral of a defaulting participant's customers will be transferred to one or more other participants.</p>	Not Applicable
<p>Key Consideration 4</p> <p>A CCP should disclose its rules, policies, and procedures relating to the segregation and portability of a participant's customers' positions and related collateral. In particular, the CCP should disclose whether customer collateral is protected on an individual or omnibus basis. In addition, a CCP should disclose any constraints, such as legal or operational constraints, that may impair its ability to segregate or port a participant's customers' positions and related collateral.</p>	Not Applicable
Key conclusions for Principle 14	Not Applicable
Assessment of Principle 14	Not Applicable
Recommendations and comments	Not Applicable

Principle 15. General Business Risk	
<p>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.</p>	
<p>Key Consideration 1</p> <p>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.</p>	<p>Definition</p> <p>EB defines Business Risk as the risk that the company is not achieving its aimed, predicted financial results or risk to its solvency or ability to meet capital requirements, for instance due to unexpected decrease in profitability, improper business decisions, lack of responsiveness towards changes impacting Euroclear's business objectives, inadequate management of its product/client portfolio.</p> <p>EB also defines Strategic Risk as a risk arising from strategic decisions and supporting business model, and risks that the company does not achieve its aimed and predicted financial results.</p> <p>Risk Identification, measurement, monitoring and management</p> <p>The responsibility to establish and operate an effective risk management system of business risk is with the EB Board and Management. Principle 3 (Framework for the comprehensive management of risks) elaborates on EB's Enterprise Risk Management framework and on how it helps management to identify, measure, monitor and manage risks.</p> <p>Multi-year strategic objectives are set by the Board in dialogue with Senior Management. The Board also defines a robust Risk Appetite framework and risk appetite limits to support the achievement of those strategic objectives. The Board of Directors also sets EB's annual business objectives (referred to as the 'CEO and Management Committee Objectives') derived from the multi-year strategic objectives. The CEO and the Management Committee, as a collegiate body, ensure that the objectives are met and that the performance is reviewed regularly during the year and at on a semi-annual basis by the Board (See also Principle 2 - Governance KC1).</p> <p>Objectives are translated into business plans (including capital planning and funding strategies), which are regularly updated.</p> <p>The First line (in their area of business) uses the Enterprise Risk Management framework to identify, assess, monitor and manage risks that might impact the achievement of EB's key objectives:</p>

	<ul style="list-style-type: none"> • The Group Strategy and Product Expansion division, among others, are required to identify, assess, monitor, manage and report on the risks resulting from poor execution of the strategy. The identification and assessment process are supported by strategic workshops at Senior Management level and interactions with the Board; • The Finance division coordinates a yearly forecast exercise, on revenues and costs, receiving input from all key internal stakeholders and taking into account external market evolution and potential risks. Market intelligence, regulatory changes and external sources of market statistics are used to evaluate internal revenue projections (i.e., a combination of qualitative and quantitative elements are taken into consideration in the forecasting exercise, market benchmarks are considered together with qualitative elements like policy changes on the market, etc.); • Client needs are captured, evaluated, reviewed, notably via User Groups or relationship via the Commercial division. The Commercial division holds regular meetings at senior level with the users to make sure EB products and services continue to fit their business needs, in line with the <i>New Product and Significant Changes Board Policy</i> ⁴⁶; • EB's Risk Champions in the First line promote, among others, the early identification and monitoring of new risks or the evolution of existing risks. <p>EB has a number of means to facilitate the identification, assessment and monitoring of Strategic & Business risks. Key among them is the positive assurance report (PAR) which facilitate identification of key Strategic & Business risks (amongst others) that might undermine the achievement of business objectives, along with identification and assessment of relevant key controls. Further information on the PAR process is in Principle 3 (Framework for the comprehensive management of risks), Principle 17 (Operational Risk) and Principle 21 (Efficiency & Effectiveness).</p> <p><i>Business Risk management</i></p> <p>At group level, transversal business lines Management Teams, acting as advisory bodies, are established to ensure focus and</p>
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⁴⁶ The New Product and Significant Changes Board Policy provides the key principles specific to the identification, monitoring and management of risks associated with the introduction of new products/services, significant changes and exceptional transactions. It covers as well as the monitoring of risks of existing product/services. This policy is a revision of the previous New Initiative, Product & Pricing (NIPP) Policy. A Policy Handbook lays down how those principles are applied, as set by the EB Management Committee.

	<p>ownership of the business plans for each of the business lines, including their strategy, (new) product developments, sales, service delivery, and bottom-line P&L. Although they are not formal governance bodies as such, they facilitate the cross-divisional and entities coordination to ensure consistency and alignment with the overall group strategy.</p> <p>Monitoring of the overall business plan is done by the Financial Division and the P&L is actively followed-up by the EB Management Committee. The financial results are compared to the financial plan on a monthly basis.</p> <p>Business risk assessment is an integral part of the capital and liquidity assessment process performed yearly by Risk Management via the Internal Capital and Liquidity Adequacy Assessment (ICLAAP), which ensures that adequate capital and liquidity is provided to support Euroclear's business plan execution. The ICLAAP objective is to assess and maintain on an ongoing basis the amounts, types and distribution of internal capital that Euroclear considers adequate to cover, in a current and forward-looking mode, the nature and level of the risks to which EB is or might be exposed.</p> <p>Additionally, Finance performs a capital and cash flow projection and planning (Capital Planning) for the next five years. In this exercise, the evolution of the capital requirements over a five-year horizon is compared with the evolution of the capital supply (based on financial multi-year plan) over the same period under both baseline and stressed conditions.</p> <p>For the revenue side, the Commercial division monitors business at risk and opportunities for new business on a monthly basis and Group Strategy and Product Expansion division drives the quarterly review of Market Outlook and quarterly assessment of business risks and threats over a five years horizon.</p> <p>The Finance division monitors the cost side (yearly performance review of suppliers and monthly reviews on implementation sourcing strategies and savings).</p> <p>The key controls around revenues/costs are described in the Financial Internal Control Accountability ("FICA") control framework.⁴⁷</p>
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⁴⁷ FICA is a process aimed at evidencing execution of the control activity.

	<p>The EB Management Committee and Board (and its Risk Committee) monitors and regularly discusses EB's financial performance and capital adequacy. Additionally, EB MC monitors quarterly a series of prudential ratios and on a selected number of them quarterly reports to the EB Board.</p> <p>Risk Management is responsible for facilitating and challenging the first line on the identification, assessment, monitoring and management of Strategic & Business risks. It does this through a combination of continuous risk monitoring and analysis combined with a rolling programme of independent risk assessments. Key Risk Management concerns are highlighted to the EB Management Committee and the Board Risk Committee through the quarterly Corporate Risk Report. Dedicated underpinning dashboards have been implemented for business risk.</p> <p>Furthermore, the Internal Control System (ICS) report is prepared yearly to report to the Board on the effectiveness of the EB internal control system including controls effectiveness of the strategic and business risks.⁴⁸</p>
<p>Key Consideration 2</p> <p>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 achieving a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.</p>	<p>EB holds high quality assets to cover its general business risk, as described under KC 4. The business and strategic risk capital charge is equal to the larger of the following two approaches:</p> <ol style="list-style-type: none"> 1. a statistical approach, which models the uncertainty of the pre-tax operating profit by forecasting safekeeping income, settlement income and net interest income 2. a scenario based approach, which captures the business and strategic risk and result in a potential decrease in net profit, developed as part of the group-wide capital planning exercise <p>A CSDR minimum requirement, corresponding to three months of operating expenses⁴⁹ is used to floor the business risk capital charge.</p> <p>EB's RRW plan models the impact of various extreme but plausible hypothetical scenarios that span the range of risks to which EB is exposed. Each scenario is calibrated to ensure that it is sufficiently severe to threaten the financial viability of EB as a going concern if extreme measures are not taken. To demonstrate that EB has sufficient recovery capacity, a potential mix of recovery and/or</p>

⁴⁸ See also Principle 17, KC 1

⁴⁹ Article 6 of Regulation (EU) 390/2017.

	<p>restructuring options documented in the RRW plan are ‘overlaid’ to demonstrate an example of how EB may use its recovery capacity to recover from the crystallised losses. In performing this exercise, the time taken to restore financial viability is also demonstrated.</p> <p>Further information on EB’s RRW plan can be found in Principle 3, KC 4.</p>
<p>Key Consideration 3</p> <p>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.</p>	<p>Recovery and orderly wind-down plan</p> <p>EB’s RRW plan documents the process for the transfer of assets which would be conducted by EB to perform an orderly wind-down. An orderly wind-down is one whereby the ceasing of the critical functions of EB does not cause a sudden disruption to the wider financial markets.</p> <p>EB has assessed that the timeframe required to execute an orderly wind-down would be no more than six months. In accordance with the CSDR, to ensure the successful implementation of the orderly wind-down, EB holds sufficient liquid net assets funded by equity to cover six months of operating expenses.</p> <p>The six months of current operating expenses are added on top of the Pillar 2 requirements⁵⁰ to ensure that the capital assigned to fund an orderly wind-down is clearly separated from capital to cover other risks contemplated in sizing the Pillar 2 requirements.</p> <p>EB’s wind-down plan is updated annually and reviewed and approved by appropriate governance body.</p>
<p>Key Consideration 4</p> <p>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.</p>	<p>EB’s capital is invested in EUR-denominated sovereign, supranational, agency and other sub-sovereign or state guaranteed debt instruments, which are freely transferable and without any regulatory constraint or third party claims that could impair EB’s ability to access them on the same business day when a decision to liquidate such financial instruments is taken. The issue or issuer are rated AA- or higher by at least two out of the three rating agencies (Moody’s, S&P and Fitch) and confirmed by EB’s internal rating. All instruments need to be ECB eligible. Detailed criteria for the investment of own funds are described in Principle 16 – Custody and investment risk.</p>

⁵⁰ As a credit institution, Euroclear Bank complies with the requirements formulated in the transposition of the Basel Accord into European regulation – the European Capital Requirements Regulation and the European Capital Requirements Directive.

	<p>Financial instruments shall allow to obtain liquidity via an outright sale, by pledging the securities to the NBB or, alternatively, to use them in the repo market. Pledging the securities to the NBB and/or use them in the repo market ensures EB same-day monetisation.</p> <p>The quality and liquidity of the assets are assessed monthly by EB.</p>
<p>Key Consideration 5</p> <p>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.</p>	<p>EB Management and EB Board closely monitor EB's capital adequacy on an on-going basis. A dedicated Risk Appetite Framework (RAF) and Recovery, Restructuring and Wind-down (RRW) Dashboard are in place to ensure that any developing stresses are captured in a timely manner. Both the RAF and RRW Dashboard contain forward looking core financial indicators.</p> <p>Should one or more of these core financial indicators be outside of the Board's appetite for the associated risk, then EB has a Board approved RRW plan. This plan complements EB's Contingency Funding Plan, and provides a number of extreme internal and external measures (e.g., a capital injection from the Euroclear group, an external issuance of additional capital or the disposal and/or restructuring of assets) that could be implemented should EB be facing a severe financial stress, and thus need to replenish its capital and/or liquidity.</p> <p>The EB RRW plan is updated annually as a minimum and submitted to the EB Board for approval prior to onward submission to the NBB and other relevant regulators.</p>
<p>Key Conclusions for Principle 15</p>	<p>The identification, monitoring, and management of general business risk is well covered by EB's Enterprise Risk Management framework. To cover its general business risk, EB holds high-quality assets. EB also has in place a RRW, which is reviewed annually, and estimates that executing the plan would take no more than six months. EB has adequate resources to cover operating costs during this period. Should additional capital be required, EB's Contingency Funding Plan details measures that could be taken.</p>
<p>Assessment of Principle 15</p>	<p>Observed</p>
<p>Recommendations and Comments</p>	<p>None</p>

Principle 16. Custody and Investment Risks

An FMI should safeguard its own and its participants' assets and minimize 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.

EB recognises custody risk as a key source of risk under the operational risk category (see Principle 3 for a description of the Enterprise Risk Management Framework) and as such, integrated in the Euroclear Risk Library.

Euroclear defines custody risk as the risk of loss on securities held in custody in the event of a custodian's (or sub-custodian's) insolvency, negligence, fraud, poor administration, or inadequate recordkeeping. Custody risk relates to both the risk of a loss of own and participants' assets held through various counterparties.⁵¹

For securities held by the participant with EB, EB is either acting as issuer CSD (where securities are primarily issued with it) or as investor CSD (where EB holds the securities with another CSD, directly or indirectly). EB maintains both direct and indirect links with CSDs inside and outside of the European Union. When EB holds securities with another counterpart, it performs a verification of the local legislation to ensure that securities held with such counterpart are eligible in the Euroclear System for settlement by book-entry movements and benefit from a level of asset protection that has comparable effects to the Belgian regime (e.g., the securities held by EB cannot be claimed by the creditors of the counterpart, even in the context of insolvency of such counterpart). A review of the relevant aspects of local legislation is performed periodically. For more details, please refer to Principle 1 on Legal basis.

For securities the participant holds in FundSettle⁵², securities can be held through EB. EB holds the fund's shares or units in the books of the issuer (register generally held by a transfer agent) or the CSD (for funds distributed via a CSD) and the participant benefits from the asset protection regime offered under Belgian law. Alternatively, securities can be held by the participant directly in the books of the issuer (register generally held by a transfer agent) and EB only reflects the position of the participant via a non-deposit account.

⁵¹ While the EB T&C refer to the generic concept of "depository", when referring to issuer CSD activity or investor CSD activity, EB uses a series of concepts which are regrouped here under the generic name of "counterparts".

⁵² FundSettle is the dedicated fund service of Euroclear which supports both the buy and sell sides of fund distribution, providing automated order routing, settlement and asset servicing.

Investments of own and clients' cash are done along high standards of financial soundness, to mitigate respectively the associated credit, liquidity and market risks. EB recognises investment risk across the Liquidity, Credit and Market Risk categories. Please see KC 3 and 4 below for more details.

Procedural framework

EB has a framework for the set-up and the maintenance of EB's network of counterparts for the issuer CSD activity, the investor CSD activity and their respective market environment. The principles of the set-up and monitoring of the links, its counterparts and the market they operate in are described in the EB Network Management Policy Handbook, which is updated and reviewed when applicable and is approved on a yearly basis by the EB Management Committee.

Besides verifications on the legal framework, EB performs a risk-based eligibility review on the counterpart before being accepted.

As a prerequisite, EB's Compliance & Ethics (C&E) department is also involved and a counterpart cannot be considered unless C&E has provided a positive feedback on the compliance framework of such counterpart in respect of anti-money laundering and anti-terrorist financing regulations.

Once this is obtained, additional criteria are assessed, amongst others:

- creditworthiness
- regulatory status
- accounting practice
- safekeeping procedures
- control environment
- risk management principles

All these criteria are monitored on an ongoing basis to capture and assess any changing parameters and mitigate any new risk identified or existing risk which has deteriorated.

Please refer to Principle 20 on FMI links for further details on the set up and maintenance of CSD links.

	<p>Protecting EB's assets and Participants' securities</p> <p>Asset protection is ensured through different measures.</p> <p><i>For issuer and investor CSD activity</i></p> <p>EB obtains an external legal opinion on a number of key local practices and regulations. These include asset protection, insolvency proceedings and asset accessibility as the case may be.</p> <p>EB sets up contractual agreements with the relevant counterpart and ensures asset protection through specific provisions:</p> <ul style="list-style-type: none"> • the right to inspect and audit the records at any time • confirmation of the absence of encumbrance on the assets (absence or waiver of lien except if mandatory under local law) • understanding on when settlement is final • clear description of insolvency proceedings under the laws of the counterpart • segregation of assets • strong record-keeping processes and accounting practices • daily reconciliation of balances and movements with the counterpart • confirmation that adequate insurance coverage is in place <p>An annual due diligence review process is in place. EB also uses reports from the external auditor of the counterpart (such as ISAE 3402) for its annual assessment.</p> <p>In case of physical securities, such securities are kept in the vaults of depositories which are selected and monitored for this additional purpose, including through regular vault inspections. For the issuer CSD activity, physical securities are in global or physical individual notes kept through common depositories, specialised international depositories and common safekeepers in immobilised form.</p> <p><i>For securities held in FundSettle</i></p> <p>EB obtains an external legal opinion on a number of key local practices and regulations. These include, asset protection, insolvency proceedings and asset accessibility.</p>
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	<p>For funds units held through EB, an annual due diligence review process is in place to get a positive assurance on the Transfer Agent on a number of criteria. EB also uses reports from the external auditor of such entities (such as ISAE 3402) for its assessment.</p> <p>For funds units held in non-deposit accounts, EB ensures an adequate recording of the positions in the funds register.</p>
<p>Key Consideration 2</p> <p>An FMI should have prompt access to its assets and the assets provided by participants, when required.</p>	<p>EB has set up an appropriate structure for the purpose of holding its proprietary securities in the Euroclear System, which ensures adequate legal segregation in the books of EB. EB's portfolio of own securities consists of sovereign, supranational or agency debt instruments.</p> <p>EB is a credit institution. Cash deposited with it is reimbursable upon request (participants have a claim against EB). For cash, when required, EB can instruct (access) transfers on the cash accounts it holds through its network of cash correspondents.</p> <p>Client deposits in cash can be re-invested on a secured basis through reverse repos or unsecured via outright purchases of high quality securities, deposits at the central bank or to limited extent deposits with EB cash correspondents or other market counterparts. Forex Swaps may be used to convert one currency into EUR, USD or GBP and can then be re-invested on a secured basis via reverse repos or left with the NBB (EUR) or BoE (GBP).</p> <p>EB ensures daily it has sufficient cash and/ or monetizable assets to support both day-to-day and potential stress scenarios. EB mainly invests long balances in assets that either contractually mature the next day, can be monetised same day through the NBB, BoE, committed repo facilities, uncommitted readily available repo arrangements or liquidated via a liquidation manager.</p> <p>Participants' securities</p> <p>Part of EB's requirements for the establishment and maintenance of a link is asset accessibility, meaning that EB gets prompt access to the assets when required (in business as usual and contingency mode/insolvency situation).</p> <p>In the normal course of business, EB ensures prompt access to securities through relevant account structure for each link allowing access to securities without undue delay and through straight through processing (STP) communication channels allowing EB to settle transactions and get access to the relevant reporting promptly.</p>

	<p>In case of participant insolvency, EB relies on the strict collateral criteria imposed, in combination with central banks access, access to the repo market and committed facilities to ensure quick access to liquidity.</p> <p>In case of insolvency situations of a counterpart, the external legal opinions collected by EB for each link and for funds held by EB stipulate the proceedings to claim securities from the receiver and avoid undue delays in accessing the securities. With regards to access to securities and communication channels, EB has implemented a dual communication channel, allowing EB to communicate/instruct directly to the CSD if needed. These channels are tested on a yearly basis.</p>
<p>Key Consideration 3</p> <p>An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.</p>	<p>EB monitors its exposures on stakeholders for all the roles they may have in the system, such as participant (credit line for settlement activity, securities borrowing), issuer of securities (used as collateral by other Participants, or securities that are being redeemed/pay interest), cash correspondent and treasury counterpart (for re-deposits of cash balances), common depository, CSD and counterpart (for indirect links).</p> <p>For more information regarding the measurement and monitoring of credit and liquidity exposure please refer to Principle 4 on Credit risk section KC 2 and Principle 7 on Liquidity risk section KC 1.</p> <p>Securities</p> <p>EB's strategy is to convert, where possible, indirect links to direct links to minimise the risk on custodian banks. Currently, more than 80% of EB depot is held through direct links with the local CSD. For indirect CSD links, two depositories are appointed per country and securities are split amongst them, if considered appropriate.</p> <p>Cash</p> <p>The management of the credit risk on the cash correspondents is based on three pillars:</p> <ul style="list-style-type: none"> • a rigorous selection process of cash correspondents • monitoring of long balances with all cash correspondents • monitoring on a continuous basis of the exposures on cash correspondents versus risk thresholds (market risk limits, credit limits and large exposures/concentration limit) <p>Please refer to Principle 4 (Credit Risk) on Risk Management tools to control credit risk (KC 2).</p> <p>For the majority of currencies, EB has accounts with multiple cash correspondents in order to avoid concentration of credit and</p>

	liquidity risks.
<p>Key Consideration 4</p> <p>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.</p>	<p>General investment strategy</p> <p>EB's investment strategy is in line with CSDR requirements and is consistent with its overall objective, as an FMI, to keep a low risk profile, especially when considering the broad characteristics of the assets EB is exposed to.</p> <p>The general principles of EB's investment strategy are mentioned in its Annual Report and detailed more in-depth in its Pillar 3 disclosure.</p> <p>Investment guidelines</p> <p>EB has defined different investment guidelines and restrictions for the reinvestment of its capital and proceeds from loss absorbing debt (Investment book), debt issuance proceeds (Liquidity book) and of the client deposits (Treasury book).</p> <p>The objective of the Investment book is capital and liquidity preservation. The criteria for assets in the Investment book are:</p> <ul style="list-style-type: none"> • financial instruments are invested in EUR-denominated and ESCB-eligible⁵³ sovereign, supranational, agency and other sub-sovereign or state guaranteed debt instruments, freely transferable and without any regulatory constraint or third party claims that could impair EB's ability to access them on the same business day when a decision to liquidate them is taken • the issue or issuer must be rated AA- or higher by at least two out of the three rating agencies (Moody's, S&P and Fitch)⁵⁴ and confirmed by the internal rating • the remaining time-to-maturity of the Investment book must not exceed five years and the Investment book must not bear foreign-exchange risk • temporary cash positions to bridge cash flow gaps are allowed. They must however be re-invested with the central bank • strict concentration limits apply and are monitored (e.g., credit rating, issuer, custody, etc.); predefined thresholds are in place at the level of the issuer and credit rating

⁵³ Eligibility criteria are defined by the European Central Bank and covered by the user standards in terms of eligible links.

⁵⁴ The lowest rating provided by each agency must be used, except if decided otherwise by the EB CALCO.

	<p>concentration level, in addition to the regulatory credit concentration limits</p> <p>The objective of the Treasury book is to manage the day-to-day (reinvestment of long balances) cash flows and the objective of the Liquidity book (reinvestment of debt issuance) is to manage the liquidity needs under stress (intraday and end-of-day) and ensure EB can continue to respect its obligations.</p> <p>Client deposits in cash can be invested on a secured basis through reverse repos or unsecured via outright purchases of high quality securities, deposits at the central bank or to limited extent deposits with EB cash correspondents or other market counterparts. Forex swaps may be used to convert one currency into EUR, USD or GBP and can then be re-invested on a secured basis via reverse repo or left with the NBB (EUR) or BOE (GBP).</p> <p>The criteria for the re-investment of client deposits of cash in assets are:</p> <ul style="list-style-type: none"> • multiple currency-denominated sovereign (or assimilated as such), supranational or agency debt instruments with minimum AA- rating that EB can monetise same day via a central bank or a committed repo facility • financial instruments of the Treasury securities portfolio need to be eligible for the High Quality Liquid Asset buffer of the Basel III LCR ratio • the securities can have a remaining time-to-maturity of maximum 6 months • strict concentration limits (per issuer and rating category) apply and are monitored <p>The risk appetite with respect to investment of client cash deposits in the Treasury book is calibrated via regulatory capital usage (operational limit implemented).</p> <p>In addition, EB sets limits to manage credit exposures on individual Participants or counterparts.</p> <p>The criteria for the re-investment of issuance proceeds in assets are:</p> <ul style="list-style-type: none"> • no currency mismatch • financial instruments of the Treasury securities portfolio need to be eligible for the High Quality Liquid Asset buffer of the Basel III LCR ratio • reinvestment maturity up to remaining maturity of debt
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	<ul style="list-style-type: none"> • align rate index between debt and re-investment • apply and monitor strict concentration limits (per issuer and rating category) <p>Daily reporting is generated to report any excesses vis-à-vis the investment guidelines and restrictions to the CALCO⁵⁵ and EB Management Committee.</p> <p>At least annually, the Credit Department assesses the creditworthiness of the treasury counterparts, countries and issuers of securities held in the investment book by assigning an internal credit rating to them. EB Management Committee defines, per counterpart/credit rating, the limits (i.e., limits to market facilities) within which EB can undertake treasury transactions such as redeposits, reverse repos, and foreign exchange swaps. Management and operational limits and thresholds are cascaded from the risk appetite to ensure that EB remains within the risk appetite boundaries. No market facility can be granted to a counterpart without an appropriate assessment of the creditworthiness.</p>
Key Conclusions for Principle 16	<p>When holding assets with another counterpart, EB conducts appropriate due diligence to ensure assets are protected and accessible, and custody risk is minimized. The procedures EB follows for monitoring such risks are outlined in its Network Management Policy Handbook, which is regularly reviewed and updated. External legal opinions are also obtained to aid in the analysis of local regulations with respect to asset protection and accessibility, and insolvency proceedings.</p> <p>In business as usual, EB ensures prompt access to securities for all links it operates through STP channels. For assets held by EB itself, EB has in place a structure that segregates its own assets from those of its participants and their underlying clients. Cash deposited with EB is reimbursable upon request. EB has in place stringent criteria for its investment strategy, which is publicly disclosed and in line with CSDR requirements.</p>
Assessment of Principle 16	Observed

⁵⁵ CALCO is a sub-committee of the EB Management Committee with some delegated authority and which provides assurance to the EB Management Committee on liquidity, credit and market risks as well as capital matters in line with EB's risk appetite.

Recommendations and Comments	None

Principle 17. Operational Risk	
<p>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 fulfillment of the FMI’s obligations, including in the event of a wide-scale or major disruption.</p>	
<p>Key Consideration 1</p> <p>An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.</p>	<p>Overview of the operational risk management framework</p> <p>Euroclear defines Operational Risk as the risk of loss resulting from inadequate or failed internal processes, people and systems, or stemming from external events.⁵⁶</p> <p>EB’s ERM Framework sets an operational risk taxonomy based on industry standards including the Basel Committee’s recommendations and EBA Guidelines:</p> <ul style="list-style-type: none"> • Employment Practices & Workplace Safety Risk • Client, Product and Business Practice Risk • Execution, Delivery & Process Management Risk • Fraud Risk • Information and Communication Technology (ICT) & Data Risk • ICT Security Risk • Business Disruption Risk • Damage to or loss of physical assets Risk • Custody Risk • Model Risk <p>The EB Operational Risk Management Board Policy (Board Policy), set by the EB Board, defines the Operational Risk Management Framework, setting key principles for identifying, assessing, monitoring and managing operational risk at all levels and is developed and maintained in accordance with market practices and regulatory guidelines for risk management. Supporting the Board</p>

⁵⁶This definition excludes legal and compliance risk, a separate risk type in Euroclear, see also Principle 3 KC1.

Policy, there are several Operational Risk Policy Handbooks (Handbooks) that describe the roles and responsibilities for managing these risks, all relevant risk processes and the information needed to make sound management decisions.

The Handbooks are supplemented as appropriate by practical implementing and operating procedures set by the First Line.

Examples of Operational Risk Policy handbooks:

- Human Resources Security Policy Handbook
- New Products & Significant Changes EB Board Policy
- Portfolio, Programme, Project and Change Management Policy Handbook
- Admission Policy Handbook
- Anti-Fraud Policy Handbook
- Anti-Bribery and Corruption Policy Handbook
- Information Security Management System Policy Handbook
- Physical Security Policy Handbook
- Outsourcing and Critical Service Providers Group Policy
- Network Management Policy Handbook
- Code of Ethics and Business Conduct
- Business Continuity Management Policy Handbook
- Model Risk Management Policy Handbook

Principle 2 of the EB Operational Risk Management Board Policy states that EB needs to identify, assess, manage and report its Operational Risks on an ongoing basis in line with its and the Group's Risk Appetite, as well as the Enterprise Risk Management framework and applicable legal and regulatory requirements.

Identification

In order to identify and assess Operational Risks EB must adopt and apply the processes, tools, templates and methodologies developed and made available by the Risk Management Division.

Amongst others these tools, techniques, templates and methodologies are:

- monitoring performance and risk indicators in the business (e.g., settlement volumes, settlement failures, service availability, number of operational incidents, etc.)
- performing systematic risk assessments of new products or services

- identifying single points of failures (SPOFs). A SPOF is defined as part of a system, people, processes, IT, including critical utilities and critical service providers, with no alternative or redundancy in place that, if it fails, would result in a critical operation or services being stopped
- identifying, analysing and recording of operational risk events (including Near Misses) caused, for instance, by inadequate or failed processes, people and systems, or by external factors
- performing on an annual basis a Risk, Control and Self-Assessment (RCSA)

Management and monitoring

In order to manage the risk, EB designs, implement and operates adequate internal controls. These controls need to be reviewed, monitored and tested on a regular basis to provide effective risk mitigation.

When needed, EB uses appropriate, change management and project management processes to mitigate operational risk arising from modifications to its operations, systems and controls.

EB tracks relevant Operational Risk data (e.g., operational risk events, control gaps, risks) in risk repository databases or the GRC tool. This data is used to report whether established objectives and targets are met and timely shared with internal/external stakeholders to enable sound risk management and decision making.

Risk Management Tools

EB's key controls are identified, monitored and regularly assessed in the Positive Assurance Report. Any defects identified (e.g., incidents, control failures, external events) results in an adjustment of the control system and is recorded in the Positive Assurance Report. This report demonstrates whether controls are adequate and effective. The most important control weaknesses and the related action plans are pulled together for the bi-annual review of the Internal Control System in the "ICS report".

Management of operational risk events (incidents) is managed through dedicated databases for logging IT and non-IT operational incidents across EB.

	<p>All issues, risks and control gaps identified by any of the 3 lines of defence are recorded in a dedicated tracking tool (with detailed information and action plan) allowing for effective assessment and follow-up. EB promotes pro-active identification of issues and risks.</p> <p>The effectiveness of EB's tools, controls and procedures at mitigating the impact of operational risks is also assessed and evidenced in EB's annual ISAE 3402 report.</p> <p>Fraud related policies, processes and controls</p> <p>EB has an Anti-Fraud Framework, described in the Anti-Fraud Policy Handbook, which complements amongst others the Code of Ethics and Business conduct, the Speak Up Policy Handbook, Legal and Compliance Risk Board policies, and the Anti-Bribery and Corruption Policy Handbook.</p> <p>All staff is informed on how to report any evidence or suspicion of fraudulent activities. All staff must on a regular basis, follow awareness sessions and complete a compliance test including questions related to fraud prevention.</p> <p>EB has implemented specific fraud risk related controls (e.g., physical segregation and security on high risk areas and access badge, controls centred on Information Security, like password protection, segregation of duties, access management, clean desk policy, endpoint security⁵⁷ (see also KC 5), data leakage prevention monitoring).</p> <p>HR related policies, processes and controls</p> <p>EB has several procedures currently in place to employ, train and retain qualified personnel, as well as mitigate the effects of personnel turnover or overreliance on key personnel. For each location EB recruits candidates that match the qualifications, skills, experience and expertise relevant for the vacant position. For each type of profile an adequate sourcing strategy is developed. A series of competency-based interviews, both by business persons and Human Resources division, ensure a rigorous selection process.</p> <p>All applicants for employment are subject to pre-employment screening prior to employment by Euroclear. The level or type of</p>
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⁵⁷ The security around devices -accessing the network of Euroclear.

	<p>screening varies, depending on applicable laws and the degree of access that the successful applicant will have to sensitive information. Personnel security measures reduce the risks of theft, fraud, or misuse of facilities by ensuring that potential employees are suitable for their prospective roles.</p> <p>Projects, programmes and change management</p> <p>As part of its operational risk management framework, EB has defined guidelines - outlined in EB's Portfolio, Programme, Project and Change Policy Handbook - for portfolio, programme, project and change management policy.</p> <p>The objective of this policy handbook is to help enable successful business and IT change, so Euroclear can achieve its strategic objectives. It supports the organisation in increasing the predictability of delivering change initiatives across people, processes, technology and data, and mitigating the risks arising from these changes, which can be IT and non-IT related.</p> <p>They reference recognised industry standards (i.e., MoP©, MSP©, Prince 2®, SCRUM, KANBAN (Lean), SAFe, Prosci® Research) and approaches which have been tailored to meet Euroclear's needs. To enable further maturity increase, this policy handbook is complemented with additional procedures, providing more details on the different steps of these methodologies.</p> <p>Urgent changes to the systems lately identified in the context of programs and projects are managed by processes relying on standard risk assessment practices to authorise or reject such requests.</p> <p>Changes to operational applications and their supporting systems and networks are planned, developed and implemented in a controlled manner as defined in EB's Portfolio, Programme, Project and Change Policy Handbook. The System Development Life Cycle (SDLC) methodology takes into account the resilience of the infrastructure and applications which need to be respected for all critical infrastructure components and applications.</p> <p>In accordance with the SDLC methodology, each project establishes a project quality plan describing all elements related to the management of quality, including roles and responsibilities and any justified deviations from the standard Managed Projects process and methods. Project quality assurance teams define the project's High-Level Test and Launch Strategy (HLTLS) and production acceptance criteria are evaluated before launching in production.</p>
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	<p>SDLC IT Controls are established to help mitigate project risks, increase project quality and verify adherence to the methodology. These controls are continuously tested by the Control Assurance team to evaluate their effectiveness, remediating actions are followed up with project teams and results are reported to management.</p> <p>IT teams test changes within specific environments, depending on the nature of the changes and in line with the SDLC methodology and the project's HLTLs to validate changes and ensure non-regression before launching in production. The types of tests and associated environments used include development (unit test), functional testing (integration and system validation), permanent test infrastructure environment (non-functional requirements) and pre-production environment (acceptance).</p> <p>IT prepares, reviews and signs-off launch scenarios for any planned change. A roll-back strategy and associated actions must be defined and included in the launch scenarios.</p>
<p>Key Consideration 2</p> <p>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.</p>	<p>Roles, responsibilities and framework</p> <p>The governance structure of EB is documented under Principle 2.</p> <p>EB is a Central Securities Depository (with a limited purpose banking license) and operates a securities settlement system. Most of its services rely on automation and use IT systems and applications.</p> <p>The primary responsibilities of the Board are to define and oversee the implementation of the strategy and objectives of EB, set its overall risk strategy (including risk appetite), establish the EB Risk Management framework and desired risk culture and regularly review and oversee the implementation of the policies and to supervise EB's management (decision-making, actions and performance of the Management Committee). This encompasses the framework for identification, management and monitoring of Operational Risk for which the EB Board has approved a dedicated policy, further implemented by the different EB and ESA divisions under the supervision of the EB Management Committee. For more details on the risk management framework, please refer to Principle 3.</p> <p>The business objectives of EB, as endorsed by its Board, encompass systems safety, efficiency, resilience and reliability.</p>

	<p>The EB Management Committee is accountable to the EB Board for the management of operational risk and has set up a specific committee, the EB Risk Operating Committee (ROC), to ensure day to day follow up, composed of representatives of all functions (business, support and control).</p> <p>The ROC has the delegated authority from the EB Management Committee to:</p> <ul style="list-style-type: none"> • review the risks introduced by new or changed services or products, validate mitigating actions and accept or reject the residual risk (up to medium risks). The EB Management Committee reviews high and critical risks. Residual risks rated as critical must be mitigated and cannot be accepted unless approved by the Board; • monitor the evolution of the risk profile and control environment, including e.g., the risk review of operational issues with a financial or reputational impacts, business continuity matters, compliance and ethical topics and issues arising during the implementation phase of new projects, etc.; • monitor the service level management of outsourced services; • monitor business continuity matters as well as local security matters (e.g., health and safety, personnel security). <p>Finally, the three lines of defense model designed by the EB Board and managed by the EB Management Committee facilitates the effective operation of EB operational risk. Each line plays a distinct role in the effective management of risks:</p> <ul style="list-style-type: none"> • the first line is the owner of the risk and takes all necessary actions to manage them • in the second line, <ul style="list-style-type: none"> ○ Compliance & Ethics ensures there is adequate monitoring of compliance with legal and regulatory requirements ○ Risk Management provides a robust and independent oversight of management's risk-taking activities • the third line (Internal Audit) provides the ultimate level of independent assurance to the EB Management Committee and EB Board on the adequacy and effectiveness of governance, risk management and internal controls. <p>More information regarding EB's three lines of defense model and Risk Management Framework is provided in Principle 3.</p>
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	<p>Review and testing</p> <p>There are various mechanisms in place to ensure regular review and testing of risk policies and procedures, and control systems at large.</p> <p>Policies, handbooks and implementing procedures are reviewed as per the defined frequency or as needed (due to changes in regulation, market practices or business evolution) and are approved by relevant governance body.</p> <p>Updated policies and procedures are reviewed with adequate related governance processes, and followed by roll-out and implementation.</p> <p>Regular business control and monitoring processes are in place, supporting the adequate and effective risk and control environment, in line with policies. Their outcome is reported and discussed in management performance meetings at different levels in the organisation (from first line shop floor meetings and processes monitoring to reviews by the ROC and EB Management Committee).</p> <p>First line testing covers a broad range of topics (for instance business continuity as part of the Business Continuity Plan tests (see KC 6), IT testing (see KC 1, and KC 4).</p> <p>Testing of control design and effectiveness is performed by first line control units applying a risk-based approach to derive the nature and frequency of control testing. The results are integrated into the PAR and reported to Management.</p> <p>The Operational Risk Management framework is subject to both internal and external audits. Control testing is performed by Internal Audit as part of their annual audit plan and by external auditors, both as part of the ISAE 3402 review and in the context of the semi-annual review of EB's financial statements.</p>
<p>Key Consideration 3</p> <p>An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.</p>	<p>Operational reliability objectives</p> <p>The EB Risk Appetite, as approved by the EB Board, includes objectives for business disruption risk. EB Board objectives are cascaded down to define operational reliability objectives, which include, amongst others, uptime minutes of the systems supporting critical functions as well as system recovery time.</p> <p>ESA supports EB by providing IT services under an outsourcing arrangement. The performance of ESA is assessed and monitored on a regular basis through the use of qualitative and quantitative</p>

	<p>Key Performance and Risk Indicators. Executive Management and CTO regularly meet their IT representatives, where relevant evidence is provided by IT to monitor and control the performance and compliance against agreed-on directions and control objectives. Each operational reliability objective is reviewed and cascaded for management reporting purposes.</p> <p>Qualitative objectives are stated in the EB Operational Risk Board Policy and other policies and policy handbooks related to operational risk management and published on the intranet for employees. Further quality statements can be found in the sets of control objectives used and within the departments' own internal process and standards documentation.</p>
<p>Key Consideration 4</p> <p>An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.</p>	<p>Capacity Management</p> <p>Capacity management is in place to ensure that capacity meets current and future business requirements. There is a continuous monitoring of defined infrastructure services (daily review and dashboards) to identify potential issues ahead of time. Actions are taken to increase capacity (or re-balance workload) as thresholds are approaching.</p> <p>Since 2020, the Capacity and Performance Assessment of Business Services is managed via a continuous assessment cycle and included in the reporting produced by IT teams and discussed with CTO office. In case a risk is identified during the assessment, an ad hoc report including findings and remediation action plans will be presented to the ROC for information and for monitoring purposes.</p> <p>Capacity monitoring and management follow the ITIL⁵⁸ framework. The management of capacity and scalability is part of the Audit Universe, hence audits are performed in this area</p> <p>Capacity management within project lifecycle</p> <p>The Project Life Cycle methodology, developed and adopted by EB, is designed to ensure that both functional and non-functional requirements of EB (including resilience, stress testing, capacity, expected service-levels, etc.) are taken into account in the design and implementation of IT systems, and that the necessary testing is performed in accordance with the project's test and launch strategy. At the launch of a new technology, a test summary report is produced for sign-off.</p>

⁵⁸ "Information Technology Infrastructure Library," an international standard for IT service management.

<p>Key Consideration 5</p> <p>An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.</p>	<p>Physical security</p> <p>Depending on the criticality of the information/data to be protected, requirements for physical security are defined in the Information Security Management System Policy Handbook and further documented in the Physical Security implementing procedure. This is being complemented by the creation of a set of Group Physical Security Standards and process guidelines.</p> <p>EB ensures the implementation of physical security measures to prevent unauthorized physical access, loss, damage, theft, interference to EB's information assets and processing facilities and interruption of EB's operations. The facilities where critical information is stored or processed are constructed and arranged in a way that information is protected from physical and environmental threats</p> <p>The physical security takes into account applicable legislation, general best practices, both as defined by the group and as recommended by international standards like ISO 27001 and 27002.</p> <p>Information security</p> <p>Consistent with the Basel Committee's recommendations, information security risk is a component of operational risk. Information security is defined within Euroclear group-wide Operational Risk Board Policy as the protection of client's data as well as Euroclear critical logical and physical assets, resources and critical data by preserving their:</p> <ul style="list-style-type: none"> • confidentiality: ensuring that information is accessible only to those authorised to have access and is not misused • integrity: safeguarding the accuracy and completeness of information • availability: ensuring that authorised users have access to information when they need it • compliance: ensuring that relevant legal and regulatory requirements in relation to the protection of information are adhered to <p>EB's Information Security Management System Board Policy:</p> <ul style="list-style-type: none"> ○ sets the principles on how EB maintains the required level of information security and how EB safeguards its information assets; ○ describes the high-level scope of EB's control framework as well as roles & responsibilities; ○ is holistic and addresses threats to confidentiality, integrity and availability in line with its low risk appetite for operational risks;
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	<ul style="list-style-type: none">○ is based on market best practices and recognised industry standards such as ISO27001:2013;○ is designed to address information security's legal requirements for financial market infrastructures; and○ describes controls covering the different domains of information security in line with ISO 27002, such as Human Resources security, Information Asset security, Access control, Cryptography, Operations security, etc. <p>In addition, EB uses other frameworks where they bring value in terms of control definition, implementation or measurement. For example, CIS controls for technical implementation on platforms or CCM controls for Cloud deployments. All these references are mapped with the ISO to obtain global and homogenous assurance.</p> <p>The supporting documents (Standards and Procedures) are being developed in alignment with the ISO 27002:2013 list of controls.</p> <p>Euroclear monitors and manages the cyber threat landscape, regularly reviews and actively mitigates cyber risks. Euroclear aims to achieve a level of cyber resilience commensurate to its role as critical financial market infrastructure. However, at this stage, EB's cyber resilience posture remains inadequate with key deficiencies in its management of cyber and related IT risks.</p> <p>Together with EB management, the Chief Information Security Officer oversees and coordinates information security efforts across EB and supports the development of information security policies that are consistent with business objectives, risk appetite and the Enterprise Risk Management framework. The EB Management Committee retains responsibility for monitoring and overseeing policies, issues and exceptions that are relevant to EB and reports any relevant issues to the Business Resilience and Information Security team.</p>
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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.

Please refer to Principle 13 (“Participant-default rules and procedures” for further elaboration on the cases of Participants default which is a specific type of possible incident that could cause disruption).

Business Resilience Management framework

The Business Resilience Management framework comprises different documents:

- **EB Operational Risk Board Policy:** This Policy sets the minimum requirements for EB for the effective management and independent oversight of operational risk - including business disruption risk - in accordance with Euroclear Group’s Risk Appetite. It defines key principles for business disruption risk management and the key controls that cover scenario analysis, business impact analysis, response plans and recovery measures.
- **EB Business Resilience Management Policy Handbook:** This Policy Handbook introduces the Business Resilience Management System and its key principles, risk scenarios and governance rules. As part of these principles, it defines Recovery Time Objectives (“RTO”) for critical activities within 2 hours and specifies that EB must take all reasonable steps to ensure that settlement is completed by the end of the business day even in case of a disruption. It also details the requirement for IT and offices resilience and the incident escalation and crisis management processes.
- **EB Corporate Business Continuity and Disaster Recovery Plan** which outlines the main components of EB’s response structure to any business disruption. This document is complemented by playbooks providing guidance to crisis management teams and detailed transversal and departmental response plans and procedures. Collectively, this whole set of documents assists the organisation with response and recovery and constitutes a comprehensive, robust, and complete business continuity plan.

In accordance with legal requirements, EB’s Business Resilience Management framework describes roles and responsibilities, and the adopted approach.

Threat assessment: Considering internal and external sources, ESA and EB identify and monitor threats that may impact its assets and lead to a business disruption and on an annual basis, EB performs a threats’ assessment with the objectives to:

	<ul style="list-style-type: none"> • Identity, monitor and assess the threats that may disrupt its functions and business services and potentially cause severe impact/ consequences; and • Identify gaps in prevention / protection measures that reduce the likelihood of the threats to cause impacts and in detection, response and recovery measures that reduce the impact of the specific threat. <p>Risk scenarios are an important part of EB Business Resilience Management Framework. EB identifies and regularly evaluates several impact-based risk scenarios (“Extreme but Plausible Scenarios”) of large-scale disruptions to which it may be exposed. Internal and external threats are considered in this assessment and mapped to the scenarios to ensure the adequate coverage of all risks. These scenarios and the business resilience threats are assessed against the adequacy of EB response plans and the ability to recover critical activities within 2 hours.</p> <p>EB is driving initiatives to improve its readiness to respond to some extreme scenarios.</p> <p>The EB Management Committee approves the key business resilience management principles and controls.</p> <p>Business Impact Analysis</p> <p>The Business Impact Analysis is an important component of Euroclear’s business continuity management and therefore the EB Business Resilience Framework.</p> <p>A formal Business Impact Analysis is used to identify the critical activities and their recovery time objectives for each of the business processes. During the Business Impact Analysis, threats and risks associated with business process’ interruptions are identified and assessed by determining the effect of loss, interruption, or disruption to business on the function of each department and thus on the organisation as a whole. The Analysis considers both the short and long-term effects of an incident, and identifies dependencies on people, information, IT and facilities. The output of the Business Impact Analysis is used to form business continuity strategies and solutions.</p>
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Data centres

Euroclear has three data centres (DC):

- two data centres (DC1 and DC2) provide real-time synchronised data mirroring and act as the primary and secondary data centre. The distance between these two data centres is sufficient to prevent both data centres from being affected by the same event (such as unplanned utilities outage, damage to or loss of facilities systems, damage or loss of physical assets, incidents in office areas/external exposures, fires or certain natural hazards). EB's critical services are supported by resilient/adequate:
 - IT platforms (hardware and software)
 - networks configurations
 - communication means
 - capacity to process all transactions before the end of the day even in circumstances where a major disruption occurs.

- a third data centre (DC3) receives asynchronously replicated data. It allows recovery of critical services in a few hours in the unlikely event where both other data centres are unavailable (like a coordinated attack or a major earthquake).

The risk profile of the three data centres is reviewed regularly and more specifically as part of the threats assessment.

Synchronous mirror production

The core processing systems synchronously mirror production data between DC1 and DC2. Hence, the status of all transactions is known even in case of a disruption affecting one data centre.

The core processing systems also asynchronously mirror production data between the active data centre and DC3. In the extreme case that both DC1 and DC2 would fail, a data loss of less than one minute (dependent on system volumes at time of failure and excluding rolling disaster) could occur.

Data Loss Response plans have been developed to minimise the impact of data loss whilst aiming to resume computerised operations in a time period which does not cause unnecessary strain on market stability. Depending on the circumstances, EB could decide to resume operations while some reconciliation activities are still being run in parallel (see EB's Terms & Conditions for more details).

The Data Loss recovery principles are:

	<ul style="list-style-type: none"> • records of transactions held by National Central Banks (NCBs), and Central Securities Depositories (CSDs) occurring during the suspected period of data loss will be considered by Euroclear to be the 'master' source • at all times Euroclear is the 'master' source for clients. This may result in previously executed transactions requiring re-execution by clients following resumption of operations • clients will be informed of their obligation to evaluate the status of trades throughout and following recovery. <p>System resilience</p> <p>The system development methodology adopted by the IT division includes principles and guidelines with regard to resilience of the infrastructure and applications which need to be respected for all critical infrastructure components and applications. Compliance with these principles and guidelines is evaluated for every project or change as part of the production acceptance criteria. The core processing systems and networks are designed to provide resilience through the use of mechanisms such as the mirroring (synchronous) of production data, the use of fault tolerant computers or the resolution of single points of failure. The provision of the communication lines is split across a number of telecommunications suppliers thereby providing additional protection against a single point of failure.</p> <p>Secondary site</p> <p>Euroclear has permanently deployed staff 'dual offices' with geographically dispersed business operation sites to limit the risk that a single event will impact the two locations. In addition, Euroclear has implemented a hybrid work model (combining office work with remote work), thus further reducing the risk associated with the loss of an office building. Business resumption is tested on a regular basis to make sure that in case one site or its office building is unavailable, all critical activities can be operated from a different site and remotely.</p> <p>Crisis management</p> <p>In order to ensure a systematic and coordinated response to unexpected events, Euroclear established a three-tiered Bronze-Silver-Gold crisis management structure. These three levels deal with operational - tactical - strategic issues respectively.</p> <p>Communication to internal and external parties during and after an incident forms an essential part of the incident response. The Crisis Management teams are required to assess the need for communication and if so, to communicate to clients, clients facing</p>
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	<p>staff, other staff, and, from Silver on, also to supervisory authorities and in case of Gold to the press.</p> <p>Client communication is to be initiated as soon as possible after the calling of the crisis management meeting.</p> <p>Seeing that business and technical environments become more and more complex, Euroclear developed crisis management playbooks to support and guide its crisis management teams on how to efficiently identify impacts, coordinate, respond to and communicate during an incident. All "Extreme but Plausible Scenarios" have been covered by the relevant playbooks.</p> <p>Review and testing</p> <p>To ensure that business continuity plans and arrangements are consistent with Euroclear's business resilience management principles, all components are regularly reviewed and tested.</p> <p>EB maintains a multi-year programme of testing and exercising that covers all risk scenarios. It consists of different types of tests and exercises (walkthrough, tabletop, live tests etc.) and can target different levels of the crisis management structure (Bronze and Silver).</p> <p>Examples of regular testing include:</p> <ul style="list-style-type: none"> • IT disaster recovery testing: Production is transferred from DC1 to DC2 on a regular basis throughout the year and a test is performed once per year with DC3 • Loss of office simulations and live tests organised at least once a year for each department running any critical function • Crisis management exercises and walkthrough sessions organised each year for crisis management teams • Testing of contingency arrangements with external parties (clients, business partners, critical providers, other FMIs...) • Involvement in market-wide exercises where and when they are organised. <p>Tests of business continuity solutions and recovery plans including the switch of processing between sites are designed to not impact clients (when relevant). This means that clients will not know from which centres and sites EB services are provided, or if there was a switch of the processing site. There is no particular action for a client to take during such a business continuity test.</p> <p>Reporting of the testing and its outcome is shared with the EB Risk Management function and Operating Committee, EB Management Committee, and with Audit and Risk Committee (when relevant).</p>
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<p>Key Consideration 7</p> <p>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.</p>	<p>Risks to the FMI’s own operations</p> <p>EB continuously seeks to identify and manage risks posed to its business and the effective delivery of its services. EB also endeavours to limit its own contribution to systemic risk and to ensure it remains within its risk tolerance.</p> <p>The EB Operational Risk Management Board Policy sets out key operational risk management principles, while the Operational Risk Management Policy Handbook defines specific methods for the identification, measurement, monitoring and reporting of operational risks, in line with the general risk framework.</p> <p>EB has also developed tools and techniques for the handling of specific risks⁵⁹, e.g., single points of failures, incidents, manual intervention, etc.</p> <p>The operational risk management is further elaborated in dedicated frameworks, including, among others,;</p> <ul style="list-style-type: none"> • business continuity management • client admission & on-going monitoring • information security management • services by Third Parties (covering Outsourcing/Critical Service Providers and Links, Market infrastructure and Agents⁶⁰) <p>Key Participants, Outsourcing/Critical Service Providers and key agents (network management) are covered by the Business Continuity Plan arrangements where relevant.</p> <p>EB has set up a systemic risk framework, both from the perspective of its own resilience to systemic risk (i.e., a systemic risk crystallising in the market and hitting EB) and its potential contribution to systemic risk (i.e., a systemic risk coming from EB and impacting the market).</p> <p>Critical Service Providers (CSP)</p> <p>Euroclear may outsource certain services and activities to third party providers, wherever those providers are, inside or outside of the Euroclear group.</p>
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⁵⁹ See Principle 17, KC 1.

⁶⁰ The Euroclear Bank Network Management Policy Handbook defines the criteria for the set-up and evolution of a CSD link or counterpart.

Euroclear has designed a robust outsourcing framework, which consists of a defined life cycle which relies on a strong governance, an internal control system and Euroclear best practices around the management of risks, including conflicts of interests.

Service delivery is reviewed on a regular basis. Services are measured and compared with targets to identify whether the objectives are met, and where applicable, what actions need to be taken to improve the service and mitigate identified risks to an acceptable level.

IT Services

The IT services have been outsourced to a service provider: ESA which is the parent company of EB. The relationship with the provider is defined in a formal agreement including service level agreements. Service delivery is reviewed on a regular basis through qualitative and quantitative Key Performance Indicators (KPI). Corrective actions are requested when the agreed KPIs are not met.

Users and links

EB has defined robust admission criteria to avoid that a Participant could be disruptive for the Euroclear system (see Principle 18 for more information).

EB furthermore continuously invests to encourage participants to manage and contain the risks they pose to EB, by keeping them informed through user documentation, extensive operational reporting and training, relationship management (via user committee or client facing relationships) and by applying other types of measures (i.e., charges to deter riskier behaviour, sponsorship process at admission), as detailed in Principle 18 and Principle 3 KC 2.

In the framework of its links reviews, EB reviews operational risks aspects, including the business continuity plans of all counterparts involved in the CSD link. See earlier in the text, under Business Continuity considerations and Principle 20 for more details.

Risks posed to other FMIs

As an FMI, EB sits at the centre of international financial flows and provides services to many market players. Managing systemic risk is thus an essential part of EB's job. The first line is fully aware of this and is managing risks which could lead to systemic risks on a day-to-

	<p>day basis, in line with guidelines outlined in policy handbooks. High-level systemic risk principles were introduced in the Corporate Risk Group Policy and have been further detailed in a Systemic Risk Group Policy. While the Corporate Risk Group Policy defines the principles and minimum requirements of the main risk areas, specific risk policies (such as the Systemic Risk Group Policy) further develop such principles and minimum requirements.</p> <p>EB is also monitoring activities of other FMIs (e.g., CCP) on a regular basis to increase awareness on their activities and the business evolution.</p> <p>EB discusses systemic risks with other FMIs, either in the context of the “FMI Forum” (a group of a dozen of FMIs spanning all the post-trade layers) or ECSDA (the European CSD Association). EB also performs ad hoc analyses based on past and on-going crises, where systemic risks sometimes feature prominently.</p> <p>Specifically for financial and operational risks posed in the context of the Bridge link with Clearstream Banking S.A. in Luxembourg (CBL), the main risks that EB can pose to CBL (and vice-versa) are:</p> <ul style="list-style-type: none"> • a scenario where one of the CSDs is not operational and cannot process settlement transaction files from the other. To mitigate this risk, EB has together with CBL developed common operating contingency procedures. In addition, the Business Continuity Management framework consequences of a scenario where one of the CSDs is not operational at all have been analysed and dedicated joint contingency scenarios have been developed accordingly • Credit risks as elaborated in Principle 4 • Liquidity risks as elaborated in Principle 7 <p>Principle 20 (“FMI links”) further elaborates on the risks posed to or by other FMIs.</p>
<p>Key Conclusions for Principle 17</p>	<p>EB has in place an operational risk management framework that is complemented by a series of handbooks that support the risk policy set at the level of the Board. This includes the monitoring and management of the cyber threat landscape to ensure cyber resilience.</p> <p>However, deficiencies remain in EB’s management of critical operational risk elements, including IT and information asset management. Addressing these deficiencies will require substantial</p>

	<p>efforts. In addition, while Euroclear’s cyber posture has now been deemed to fall within the risk appetite set by the Board, further improvement is still needed.</p> <p>IT resilience is supported by three data centers, two of which are synchronously mirrored in real-time, while the third receives data asynchronously and is meant to ensure continued operations in case of a regional disaster. The effectiveness of this set-up is regularly validated. Risk policies and procedures are regularly reviewed and tested.</p>
Assessment of Principle 17	Broadly Observed
Recommendations and Comments	<p>EB should put in substantial efforts to continue to improve its cyber posture and, going forward, the CISO should focus on the effectiveness of fully-embedded security controls, and on improving asset management and identity and access management.</p> <p>In addition, the testing of non-IT-related business continuity plans and procedures could be made more robust and involve a wider range of stakeholders. Currently, EB does not conduct business continuity testing with linked FMIs, nor with the settlement agents it uses for its indirect CSD links. In addition, EB does not employ simulation exercises, nor does it share current testing result summaries with stakeholders who are not members of its User Committee.</p> <p>EB should develop simulation exercises for testing business continuity plans and procedures, and include, among others, scenarios involving the unavailability of linked FMIs, and the implementation of contingency plans in the case of insolvency or operational unavailability of a settlement agent used to access local markets.</p>

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.	
<p>Key Consideration 1</p> <p>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.</p>	<p>Euroclear's access rules allow fair and open access to applicants for participation in the Euroclear system. The rules apply evenly to all applicants on the basis of objective and non-discriminatory criteria. Also, access rules are published and generally accessible on Euroclear's website, and prospective applicants are kept informed in a timely manner of any possible changes.</p> <p>Fair and open access</p> <p>EB is licensed as a CSD and it operates a securities settlement system (SSS) governed by the laws of Belgium. Access to the system is subject to legal requirements outlined in:</p> <ul style="list-style-type: none"> • the law of 28 April 1999 implementing Directive 98/26/EC (also referred to as Settlement Finality Directive) (SFA); • article 33 of CSDR supplemented by Article 89 of Commission Delegated Regulation (EU) 2017/392 of 11 November 2016 with regard to regulatory technical standards on authorisation, supervisory and operational requirements for central securities depositories ("CSDR RTS"); • EU Directive 2018/843 of 30 May 2018 ('Fifth AML/CTF Directive') on the prevention of money laundering and terrorist financing. <p>EB operates an open and transparent access and participation process, with publicly disclosed, non-discriminatory participation requirements.</p> <p>All participants with whom EB has a contractual relationship are direct participants.</p> <p>Governance of the admission process</p> <p>The admission process is documented in the Operating Procedures of the Euroclear System that form part of the <i>Terms and Conditions governing the use of Euroclear</i> and the Internal Operating Procedure - EB Admission Process. The EB Management Committee has the decision on granting or refusing access to any applicant, based on a recommendation made by a multidisciplinary internal steering committee (the Group Admission Committee or GAC).</p>

Minimum requirements for applicants

Applicants need to comply with three pre-admission conditions and five admission criteria (see below) to become a participant of the Euroclear system. These admission criteria are risk-based. Upon admission, the participant must comply with the admission criteria on an ongoing basis.

Access to EB is granted on business, legal and risk considerations, which take into account the regulatory environment governing EB and the limited risk profile EB aims to maintain as an FMI. As such, EB must:

- not admit natural persons, as those may not participate in a securities settlement system (SSS) according to the SFA;
- allow fair and open access to legal persons intending to become a participant in the Euroclear System with due regard to risks to financial stability and orderliness of the financial markets;
- set risk-related admission criteria to control the risks that could arise from participants using the Euroclear System and ensure that participants meet these admission criteria on an on-going basis;
- identify and assess specific risks resulting from the admission of entities that are not subject to supervision in the EU;
- comply with applicable legislations and regulations to EB (e.g., Anti-Money Laundering (AML) legislation, applicable CSDR articles, reporting obligations under MIFID).

EB will at all times look to protect the integrity of the Euroclear System as an SSS with a broad variety of participants. EB will therefore take into consideration any relevant risk for EB, the Euroclear System or its participants when assessing any application file.

Participation criteria and requirements

Prerequisite to admission to Euroclear Bank

An applicant must meet the following preliminary conditions:

- be established in a jurisdiction that is not subject to sanctions or not subject to a call for action from the Financial Action Task Force (FATF) in the context of the fight against money laundering and terrorism financing;

	<ul style="list-style-type: none"> • its participation in the Euroclear System will not cause EB to breach any law, order, sanctions or regulation; • provide adequate information enabling EB to meet the applicable anti-money laundering and terrorism financing requirements that apply to EB <p>Categorisation of applicants</p> <p>An applicant must demonstrate that it meets the five admission criteria listed below. These are the same for all applicants, with additional requirements applicable in certain circumstances depending on whether the applicant is a standard client, a specific regulated client or a specific⁶¹ client to reflect the relative risks associated with the client-type.</p> <table border="1"> <tr> <td>Standard Participants</td> <td> <ul style="list-style-type: none"> ○ are licensed as a credit institution or investment firm, whether or not in the EU ○ are a public authority or a publicly guaranteed undertaking, whether or not in the EU ○ are located in the EU and licensed as a CSD in the meaning of the CSDR ○ are located in the EU and licensed as a central counterparty in the meaning of EMIR ○ otherwise fall under the supervision of a competent authority in the meaning of the EBA Regulation, the EIOPA Regulation, the ESMA Regulation or EMIR. </td> </tr> <tr> <td>Specific Regulated Participants</td> <td> <ul style="list-style-type: none"> ○ are subject to supervision in a jurisdiction outside the EU (other than as a credit institution or investment firm), or ○ are listed on a stock exchange. </td> </tr> <tr> <td>Specific Participants</td> <td>Neither subject to supervision in their jurisdiction nor listed on a stock exchange.</td> </tr> </table>	Standard Participants	<ul style="list-style-type: none"> ○ are licensed as a credit institution or investment firm, whether or not in the EU ○ are a public authority or a publicly guaranteed undertaking, whether or not in the EU ○ are located in the EU and licensed as a CSD in the meaning of the CSDR ○ are located in the EU and licensed as a central counterparty in the meaning of EMIR ○ otherwise fall under the supervision of a competent authority in the meaning of the EBA Regulation, the EIOPA Regulation, the ESMA Regulation or EMIR. 	Specific Regulated Participants	<ul style="list-style-type: none"> ○ are subject to supervision in a jurisdiction outside the EU (other than as a credit institution or investment firm), or ○ are listed on a stock exchange. 	Specific Participants	Neither subject to supervision in their jurisdiction nor listed on a stock exchange.
Standard Participants	<ul style="list-style-type: none"> ○ are licensed as a credit institution or investment firm, whether or not in the EU ○ are a public authority or a publicly guaranteed undertaking, whether or not in the EU ○ are located in the EU and licensed as a CSD in the meaning of the CSDR ○ are located in the EU and licensed as a central counterparty in the meaning of EMIR ○ otherwise fall under the supervision of a competent authority in the meaning of the EBA Regulation, the EIOPA Regulation, the ESMA Regulation or EMIR. 						
Specific Regulated Participants	<ul style="list-style-type: none"> ○ are subject to supervision in a jurisdiction outside the EU (other than as a credit institution or investment firm), or ○ are listed on a stock exchange. 						
Specific Participants	Neither subject to supervision in their jurisdiction nor listed on a stock exchange.						

⁶¹ As per the implementation of the SFA.

	<p>This approach takes into account the applicant's exposure to anti-money laundering regulations and applicable sanction regimes, regulatory/supervisory status and place of permanent establishment.</p> <p>As provided in the Operating Procedures of the Euroclear System, Specific Regulated Participants and Specific Participants must comply with specific additional requirements to mitigate potential additional risks resulting from their participation in the Euroclear System. They must bring additional appropriate evidence enabling EB to adequately consider and handle their application.</p> <p>Admission Criteria</p> <p>Any applicant is required to meet the following five admission criteria:</p> <ul style="list-style-type: none"> • Adequate Financial resources <p>Demonstrate the possession of adequate financial resources to run its business on a 'going concern' basis and meet its obligations towards EB, the Euroclear System and its Participants.</p> <ul style="list-style-type: none"> • Operational & technological capacity <p>Demonstrate adequate operational and technological capacity to participate in the Euroclear System, to ensure business continuity and avoid material adverse impact on the integrity of the Euroclear System.</p> <ul style="list-style-type: none"> • Legal capacity <p>Demonstrate its legal capacity and its ability to accept and comply with the <i>Terms and Conditions governing use of Euroclear</i> (i.e., the rules of the Securities Settlement System in the meaning of the Settlement Finality Directive 98/26/EC).</p> <ul style="list-style-type: none"> • Internal control & risk management <p>Have an appropriate internal control and risk management framework in place to preserve the integrity of the Euroclear System.</p> <ul style="list-style-type: none"> • Ethical standards <p>Have implemented adequate ethical standards that protect the integrity and reputation of the Euroclear System.</p>
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	<p>The adequacy of the admission criteria is regularly reviewed taking into account both regulatory changes as well as business evolution.</p> <p>EB may also impose additional conditions on applicants on a risk-based basis. For instance, additional conditions may be imposed in order to avoid that EB becomes exposed to additional reporting, disclosure or other legal, tax or regulatory requirements.</p> <p>Notification process</p> <p>The admission is notified in writing no later than one month after the application file has been received.</p> <p>Upon positive decision:</p> <ul style="list-style-type: none"> • the applicant should promptly open an account. • the admission is valid for 6 months. If during that period, the participant did not open an account, the applicant will be subject to a re-admission process prior the opening of its first account. The flow of a re admission is exactly the same as an admission. <p>Any applicant can be refused for non-conformity with one or several admission criteria. If an application is refused, the applicant is informed in writing explaining the reasons for its rejection based on a comprehensive risk assessment. The applicants have the right to complain to EB's competent authority (the National Bank of Belgium).</p>
<p>Key Consideration 2</p> <p>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.</p>	<p>EB admission criteria mentioned in KC 1 comply with the SFA, CSDR, AML & Sanctions regimes, amongst other applicable regulations. The criteria are justified by safety and aim to limit either specific risks, including financial risks (financial resources requirement), operational risks (technology capability criterion) and legal risks (legal capacity requirement), or risks in general (internal controls and risk management and ethical standards).</p> <p>The admission process and criteria are documented in the Operating Procedures of the Euroclear System, which form part of the <i>Terms and Conditions governing use of Euroclear</i> and are publicly available on www.euroclear.com.</p>
<p>Key Consideration 3</p>	<p>Sponsorship process</p>

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.

EB has set up a risk-based Sponsorship process to ensure ongoing monitoring of and compliance with the Admission Process described under KC 1.

A sponsorship consists of an initial know your customer (KYC) exercise upon admission, which is followed up by a regular risk-based KYC process according to the specific admission criteria and the type of participant. This process results in a review of the three pre-conditions to admission and the five admission criteria with the final aim of either confirming that a participant continues to comply with the criteria or identifying non-compliance that can ultimately lead to exclusion from the Euroclear System.

Further, it aims to:

- identify and assess potential financial and non-financial risks arising from business relations with participants and, if indicated, escalate these to take action;
- regularly monitor certain issues that have affected individual Participants since the last review;
- avoid damage to Euroclear's reputation and limit financial losses or liabilities deriving from external events that impact the Participants.

In line with EB's risk based approach, different types of sponsorship reviews are performed in parallel by different experts and at an agreed frequency as follows:

- the review of the financial resources and internal control and risk management is performed on all Participants on an annual basis;
- the review of operational and technological capacity and the legal capacity is performed at a frequency depending on the type of Participant (ranges from yearly to every three years) and the possible source of operational risks these can cause;
- the review of the Ethical standards criterion is performed at a frequency that varies according to the type of Participant and its AML/compliance risk profile (ranges from yearly to every three years).

The detailed analysis for each criterion triggers a score for the criteria (usually three possible values: sufficient, insufficient or watch).

	<p>The different sections of the sponsorship file containing the analysis, the documentation (including evidences) of the assessment and the scoring of the five criteria are completed by different departments and following the relevant governance (see below).</p> <p>Aside from the above regular and comprehensive sponsorship review of existing Participants, several alerting mechanisms, such as adverse media information, are in place to react to specific events as soon as they occur or are detected.</p> <p>Governance of the Sponsorship Process</p> <p>The Sponsorship process relies on the assessments performed by experts in each domain including Commercial, Legal, Risk Management, Compliance & Ethics and the Credit department. Depending on the assessment, the outcome of these reviews may flow through the GAC and further to the EB Management Committee for decision making on participants for which assessment has revealed weaknesses.</p> <p>The GAC regularly reviews the participant profiles and their impact on the overall business portfolio; annually reviews participants with insufficient scores of compliance with the admission criteria and recommends required actions to the EB Management Committee (for both sponsored and refused entities), if necessary and proposes possible changes to the admission strategy or process following regulatory, market or business developments.</p> <p>The EB Management Committee is responsible for taking the decision to refuse or accept a participant's sponsorship considering the GAC recommendation and, in case of refusal, for taking the decision to suspend or terminate the participation in the Euroclear System of the Participant.</p> <p>Participant obligations</p> <p>EB's participants are contractually required to:</p> <ul style="list-style-type: none"> • notify EB in writing, with appropriate supporting documents, of any material event or change which may affect the information supplied by them as part of their application or which may affect their ability to comply with the criteria listed above; • comply with any request, which EB may reasonably make from time to time, for additional documentation which may evidence such continued compliance or to carry out
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	<p>additional tests in relation to their technical and operational capacity.</p> <p>Suspension & orderly exit</p> <p>The Terms & Conditions governing use of Euroclear, which are publicly disclosed, state that EB may terminate participation in the Euroclear system by giving at least 30 calendar days' notice, provided that EB may effect such termination upon notice effective immediately either if:</p> <ul style="list-style-type: none"> • any of the following events shall occur: <ul style="list-style-type: none"> ○ liquidation or bankruptcy or initiation of any proceedings with respect thereto ○ application for composition with participant's creditors, whether in or out of court, or for deferment of its debts ○ attachment or execution upon or against any of the participant's assets or property • the participant no longer meets any of the admission criteria set out in the Operating Procedures and continued participation in the Euroclear system could be materially prejudicial to the interests of the Euroclear system, EB or other participants generally. <p>EB details in its Operating Procedures, the consequences of any suspension or termination of the participation in the Euroclear System. Such rules primarily aim to minimise any disruption that a suspension or termination could have on other participants or the Euroclear System generally.</p> <p>For more details, please refer to Principle 13 KC 2.</p>
Key Conclusions for Principle 18	Access and participation requirements to the Euroclear System are fair, open, publicly disclosed, and subject to continuous compliance monitoring. EB defines a set of comprehensive preadmission criteria for its prospective participants. A risk-based approach is also in place to ensure ongoing compliance with participation requirements.
Assessment of Principle 18	Observed
Recommendations and Comments	None

Principle 19. Tiered Participation Requirements

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.

EB has contractual relationships with its participants only. Securities and Cash accounts are opened in the name of the participants and only participants have entitlement to the securities and cash credited to those⁶². Credit lines are only granted to participants and are fully collateralised (see Principles 4 & 5). As such, EB neither opens accounts with nor contractually recognises any indirect or tiered participations. Indirect participants do exist in that they access EB's services via direct participants.

EB owes a duty of redelivery or restitution of assets deposited by a participant uniquely to that participant or to its legal successor even if EB is aware that its participant owes generally corresponding duties to its underlying clients.

Disruptions in the activity of a large underlying client of a participant could possibly affect the efficiency of settlement in the Euroclear System. Hence identifying these large underlying clients and ensuring that the concerned participant have the adequate operational set-up in contingency situations is important.

The *Terms and Conditions governing use of Euroclear* explicitly allow EB to gather information on the underlying clients from all its participants as part of its ongoing risk management, and sponsorship process (See Principle 18 for further details). Participants must comply with any request for additional information about their clients which EB may reasonably make for the purpose of identifying, monitoring and managing any material risks that they or their clients may cause to the Euroclear System, to EB or to other participants generally.

EB's framework allows also to identify, monitor and mitigate risks from underlying clients of participants to anticipate risks participants may have on their underlying clients that could ultimately have repercussions on EB and the Euroclear System in general.

⁶² Except to the extent any cash or securities balance is posted as collateral in favour of EB.

EB may receive information on the underlying clients of direct participants via the following means:

- **Account Opening**

Participants may open several accounts and organise segregation as per their preference or requirements applicable to them. Account opening forms reflect whether the securities are:

- proprietary securities via the opening of an “own” account;
- or client securities via the opening of a client “omnibus” account or client “segregated” account.

Where a client account is segregated, EB’s participant has the obligation to disclose the identity of its underlying client as defined under applicable Anti Money Laundering (AML) regulations, in order to enable EB to comply with its obligations under those regulations. This information is stored in the systems of EB.

Where a client account is opened in omnibus form, the participant is commingling the assets of several of its underlying clients. EB has a process in place to collect from its direct participants:

- the confirmation if they have in their omnibus account underlying clients whose volume or value of transactions are large relative to their own capacity;
- additional information on high risk omnibus accounts as defined under the applicable AML regulations.

- **Key Participants**

EB has a framework in place to identify and monitor operational risks linked to Key Participants. It aims to:

- identify its Key Participants on an ongoing basis;
- ensure that its rules, procedures and agreements allow it to gather relevant information about its Key Participants’ underlying clients to manage material operational risks to the CSD arising from tiered participation arrangements. Such operational risks are managed in line with the Corporate Risk Board Policy;
- identify whether a Key Participants’ underlying clients would be responsible for a significant proportion of transactions processed by the CSD.

The criteria to be considered a Key Participant (in the meaning of CSDR) are based on the following dimensions:

	<ul style="list-style-type: none"> ○ transaction volumes and values: as half of the activity in the Euroclear System is generated by a limited number of participants, EB qualifies a Participant as a Key Participant if it belongs to that group of Participants; ○ potential impact on other participants and the Euroclear System as a whole in the event of an operational problem affecting the smooth provision of services by the CSD. <p>Through a well-defined methodology, EB determines the inherent and residual operational risk each of its Key Participants may pose on EB using a number of risk factors that influence such operational risk.</p> <p>EB performs an enhanced due diligence on the identified Key Participants using a risk-based methodology taking into account the residual risk of each Key Participant. This includes the detailed understanding of the operating model of each Key Participant⁶³, the review of the type of accounts held by the Key Participants and:</p> <ul style="list-style-type: none"> ○ in case of a segregated account, based on the name of the individual account owner, EB assesses any risk of concentration across multiple direct Participants; ○ in case of an omnibus account, EB identifies any concentration risk on a single underlying client behind the Participant's omnibus account. <ul style="list-style-type: none"> ● Large accounts <p>EB has extended the operational risk assessment to a second group of participants who own large accounts. These are also identified on the basis of their transactions value and number. The threshold is set as such that a large underlying client would need to appoint at least 3 custodians, all direct participants of Euroclear, to potentially represent an activity equivalent to the one of a Key Participant if summing up its settlement activity through different custodians in Euroclear. The purpose is to identify any of their underlying clients which could be significant for EB.</p> <p>For each Large account, EB identifies the type of account the direct participant holds with EB and:</p>
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⁶³ This includes the understanding of outsourcing or offshoring arrangements made by the Key Participant in addition to Power of Attorneys provided to third parties to operate the account on its behalf.

	<ul style="list-style-type: none"> - in case of a segregated account, based on the name of the individual account owner, EB assesses any risk of concentration across multiple direct participants; - in case of an omnibus account, EB identifies any concentration risk on a single underlying client behind the participant's omnibus account. <p>Applying a risk-based approach, EB performs an enhanced due diligence on the participants owning the large accounts in a similar manner than on the Key Participants.</p> <p>One of the requirements of EB's admission and ongoing monitoring of participants (the Admission Process and the Sponsorship Process - see Principle 18), is for participants to have <i>"appropriate internal control and risk management framework in place, commensurate with the risk profile, capital strength and business strategy of the company in order to preserve the integrity and reputation of the Euroclear System"</i>.</p>
<p>Key Consideration 2</p> <p>An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.</p>	<p>For both Key Participants and Large accounts, EB reviews every six months the activity levels, on the basis of the aggregated activity of the last 12 months, to identify whether there is a material concentration of activity with one or more of their Participants or a material change compared to the previous assessment. Based on the results, EB performs a number of identification and assessment duties (e.g., account type analysis, KYC reviews).</p> <p>All other EB participants are subject to a cyclical due diligence review ensuring that any risk a direct participant could cause on EB (whether linked to underlying client or not) is identified, assessed, monitored and managed (please see Principle 18 for more details).</p>
<p>Key consideration 3</p> <p>An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the FMI in order to</p>	<p>EB identifies and monitors Key Participants and Large accounts i.e., those responsible for a significant portion of the transactions processed by EB. For these, material dependencies on large underlying clients are identified and monitored via EB's direct Participants, including concentration risk.</p>

manage the risks arising from these transactions.	
<p>Key consideration 4</p> <p>An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.</p>	<p>Although, as detailed in KC 1, it is understood that underlying clients of participants do not create significant risks for EB, EB has developed a number of co-existing risk-based frameworks allowing it to assess any remote or unlikely risk linked to underlying clients of participants and monitor them. As described above, an assessment is done every 6 months and the outcome is shared, reviewed and endorsed according to the standard EB governance for participant admission and monitoring.</p> <p>So far, the outcome of the assessments performed confirms that operational risks linked to underlying clients of participants (including concentration risk) is remote for EB and appropriate measures are taken to monitor the few identified “large underlying clients”.</p>
Key conclusions for Principle 19	<p>EB’s T&Cs allow it to gather basic information on the underlying clients of direct participants (i.e., indirect participants). EB currently collects additional information and performs enhanced due diligence on underlying clients that have segregated accounts or concentrated activity in an omnibus account and are under large direct participants.</p> <p>EB therefore does not have in place participant-level thresholds for triggering basic information gathering for underlying clients of smaller direct participants, who may account for a significant proportion of the direct participant’s activity.</p>
Assessment of Principle 19	Broadly Observed
Recommendations and Comments	<p>EB does not currently gather basic information on all underlying clients that account for a significant proportion of activity with respect to the direct participants through which they access the FMI.</p> <p>In addition, EB is overly reliant on participant disclosure to manage the risk to which it is exposed by tiered participation arrangements. It should therefore develop capacity for increasing the transparency with respect to the business of its direct participants’ clients and could consider encouraging large underlying clients to have</p>

	segregated accounts or ensure that they are subject to enhanced data collection and due diligence.
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Principle 20. Financial Market Infrastructure Links	
An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.	
<p>Key Consideration 1</p> <p>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.</p>	<p>Governance</p> <p>EB has established a framework and governance for the set-up and the maintenance of EB's CSD links, related network of counterparts, and their respective market environment. The EB Management Committee is accountable for the approval/refusal of links and counterparts. The principles of the set-up and maintenance of such links are described in the EB Network Management Policy Handbook, which is updated and reviewed periodically and is approved by the EB Management Committee.</p> <p>The various types of links are as follows:</p> <ul style="list-style-type: none"> • Direct: a 'direct link' means a CSD link whereby EB becomes a participant in the securities settlement system of another CSD under the same terms and conditions as applicable to any other participant in the securities settlement system operated by the CSD. • Indirect: an 'indirect link' means an arrangement between EB and a third party other than a CSD that is a participant in the securities settlement system of another CSD. Such link is set up by EB in order to access the other CSD. • Interoperable: an 'interoperable link' means a CSD link whereby two CSDs agree to establish mutual technical solutions for settlement in the securities settlement systems that they operate. To date, EB only manages one interoperable link i.e., the "Bridge" with Clearstream Bank Luxembourg. • Relayed: a 'relayed link' means a CSD link whereby EB accesses a CSD through another CSD. Such arrangement is composed of: i) a direct link between Euroclear and a so called intermediary CSD and, ii) a direct or indirect link between the intermediary CSD and the so called relayed CSD.

	<p>Process</p> <p>Before setting up a new link, EB conducts a high level risk assessment of the prospective link based on the market environment criteria. This risk assessment, called the pre-clearance process, assesses criteria such as credit risk, financial stability, compliance risk, legal and regulatory risk as well as operational risks linked to the political environment.</p> <p>Based on the result of this risk assessment, EB Management Committee can approve or refuse the set-up of the prospective link.</p> <p>If approved, the details of the future link are further assessed and developed.</p> <p>The detailed assessment and subsequent maintenance of the link are conducted on two levels: at market environment level and on the contemplated counterparts⁶⁴ level. The detailed assessment of links and the counterparts involved, is made against EB's criteria in line with CSDR requirements.</p> <p>These criteria apply to both the set-up and the maintenance of the links thereafter.</p> <ul style="list-style-type: none"> • Market environment level: <p style="text-align: center;"><i>Set up of a new market</i></p> <p>Following the approval of the pre-clearance assessment, a detailed market risk assessment takes place, requiring positive assurance on a wide range of criteria including, amongst others, a good understanding of the local regulatory requirements, ownership restrictions, asset protection mechanisms with a focus on insolvency situations, tax implications, disclosure requirements, account structure, requirements around anti-money laundering and anti-terrorist financing, political stability and government effectiveness and economical and financial stability of the country.</p> <p>Based on the above assessment, a recommendation is submitted to the EB MC who is responsible for the approval</p>
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⁶⁴ While the EB T&C refer to the generic concept of "depository", when referring to issuer CSD activity or investor CSD activity, EB uses a series of concepts which are regrouped here under the generic name of "counterparts".

	<p>of establishing new markets/links and for the appointment of counterparts.⁶⁵</p> <p><i>Maintenance of a market</i></p> <p>Once the market is set up, EB monitors on a continuous basis the compliance with the above set criteria and performs:</p> <ul style="list-style-type: none"> ○ a country risk assessment (i.e., continuous monitoring of compliance and ethical risks, macro-economic situation and financial risks, market initiatives and their impacts) ○ an end-to-end risk assessment on links (including CSD links, confirming market practices, set-up and flows, reassessing any counterparts, enforcement of contractual arrangement, business continuity processes and IT security measures) <ul style="list-style-type: none"> ● Counterpart level: <p>Prior to setting up a link with a new CSD or appointing a new counterpart, EB performs a rigorous risk assessment (including the custody risk aspect) on a number of criteria in line with the CSDR. These criteria include requirements related to account structure, asset accessibility, compliance, legal, business continuity, and operational capacity amongst others.</p> <p>Based on the outcome of this assessment, a recommendation is submitted to the EB Management Committee which is responsible for the approval of the appointment of counterparts (with the exception noted above).</p> <p>Once the CSD link is established and the relevant counterparts appointed, EB monitors the compliance with the above-mentioned criteria on a continuous basis.</p> <p><i>Selection of counterparts</i></p> <p>The selection and (risk) assessment of any new counterpart is performed with the input from the different relevant internal stakeholders.</p> <p>The selection and (risk) assessment are done through:</p>
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⁶⁵ The Head of Banking and Network is responsible for the appointment of a counterpart on an existing link whereby such appointment has limited impact and involves no material or significant change to the link set up itself

	<ul style="list-style-type: none"> ○ a “Request for proposal” process, whereby the identified and short-listed candidates are reviewed against EB’s criteria in case of an indirect link, which include, among others, a strong local market presence with the ability to influence the development of the markets towards international investors, account structure, access to assets, anti-money laundering processes, financial strength, business continuity practices, operational and Straight Through Processing (STP) capacity and service quality requirements. The assessment against these criteria need to allow EB to comply with its regulatory obligations ○ a due diligence visit of the selected candidate, prior to its appointment, in order to obtain evidence on the compliance of the entity with the above-mentioned criteria <p>The risk assessment is submitted for review to the EB ROC which issues a recommendation to the EB Management Committee for approval, the latter being accountable for the approval of CSD links and appointment of counterparts (with the exception noted above).</p> <p><i>Monitoring of CSD link/ counterparts</i></p> <p>Once the CSD link is established and the relevant counterparts appointed, EB has a monitoring framework and governance in place to ensure on-going compliance with the above-mentioned criteria to:</p> <ul style="list-style-type: none"> ○ identify and manage any changes in any of the selection criteria and ○ ensure that the counterpart(s) fulfil(s) its obligations on an ongoing basis towards EB. <p>This monitoring is done through different processes:</p> <ul style="list-style-type: none"> ○ annual certification of contractual arrangements ○ annual due diligence review and ad hoc on-site visit with a focus on obtaining evidence ○ annual performance reviews to ensure that service levels are in line with EB requirements ○ continuous monitoring of financial strength and creditworthiness ○ CSD link review ○ where applicable, annual vault inspections are performed.
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	<p>Should any material change be identified compared to the initial or last assessment, a formal review of the new or changing risks takes place to ensure appropriate governance depending on the type/level of such risks in accordance with the risk management framework established by EB. For more details on the risk management framework, please refer to Principle 3.</p> <p>Every year, all the CSD links and network of counterparts are reviewed and the outcome of such review is submitted to the EB Management Committee for re-approval of the existing links and counterparts.</p> <p>Any material changes to the CSD links and counterparts are reported to the EB Board.</p>
<p>Key Consideration 2</p> <p>A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMI involved in the link.</p>	<p>As part of the assessment described under KC 1, EB assesses the applicable local legal framework including elements amongst others: standard of care and liability undertaken by each of the parties, asset protection/insolvency proceedings and absence of encumbrances on assets, assets accessibility, securities/services review, confidentiality, data confidentiality and tax analysis. This assessment is reviewed on a regular basis to ensure changes in law are captured.</p> <p>At individual links and counterparts' level, EB ensures the establishment of a contractual arrangement with an unambiguous choice of law, clearly setting out the respective rights and obligations of all parties.</p> <p>The contractual framework supporting the links includes all contractual documentation with all counterparts (the number of counterparts varies depending on the type of link, direct or indirect). These documents are governed by the laws of the jurisdiction where the counterparts are located. They cover elements such as representations made by the parties (such as the possibility for such parties to validly commit to the terms of the contract), terms and procedures for settlement, record keeping and safekeeping, insurance coverage, standard of care, liabilities of each party to the contract, confidentiality measures and data protection and operational service description, including eligible instruments.</p> <p>For all links it maintains, EB obtains a legal opinion from a law firm with expertise in that jurisdiction, which covers the validity and enforceability of the contracts, asset protection and security eligibility matters amongst others. Revisions of contracts are performed when needed e.g., due to changes in local legislation or legislation applicable to EB, new instruments or services being added to the link, set up of the link being changed.</p>

	<p>The legal and operational terms and conditions applicable in the context of the Bridge link are governed by the joint Euroclear-Clearstream Bridge Agreement which is governed by Luxembourg law.</p>
<p>Key consideration 3</p> <p>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.</p>	<p>EB ensures it has sufficient liquidity (either directly or through the use of a settlement agent) to settle DVP instructions on the CSD links it maintains.</p> <p>EB does not obtain credit from CSDs with which it establishes links.</p> <p>EB does not grant credit to the CSDs that are participants in the Euroclear System. If credit would be required, the CSD would have to meet the criteria and conditions for the granting of credit as described in Principle 4.</p> <p>For the interoperable link EB maintains with Clearstream Banking S.A. in Luxembourg, called “the Bridge”, EB and Clearstream Banking S.A. in Luxembourg have credit exposures on each other, arising from the settlement and custody activity.</p> <p>To cover the credit exposures EB and Clearstream Banking S.A. in Luxembourg have on each other, each of the CSDs has a Letter of Credit in favour of the other, backed by a syndicate of international banks. The LoC is renewed at least annually, taking into account the evolution of Bridge activity. The LoC complies with article 16 of European Banking Authority (EBA) RTS⁶⁶ (“Other equivalent financial resources for exposures in interoperable links”). As such, it is considered to be equivalent to high-quality credit protection, complying with applicable regulatory requirements.</p> <p>In addition to the regulatory buffer foreseen under article 16 of EBA RTS, additional system-embedded buffers on the Letter of Credit were introduced, in order to strengthen the risk management on the Bridge.</p> <p>Liquidity exposures on Clearstream Banking S.A. in Luxembourg are managed through the introduction of ex-ante controls, to ensure that EB’s exposure over the Bridge, in a particular currency, does not exceed the qualifying liquid resources for that currency.</p> <p>As measure of last resort in extreme circumstances, such as a Clearstream Banking S.A. in Luxembourg default scenario and as part of the contractual framework between EB and its participants</p>

⁶⁶ EBA regulatory technical standards 390/2017 supplementing CSD Regulation (EU) 909/2014

	<p>(documented in the Operating Procedures of the Euroclear System), EB has the right to reverse any cash credits to the participants involved in Bridge transactions, in order to cover any unpaid amounts due by Clearstream Banking S.A. in Luxembourg. The debit is provisional, subject to the resolution of any claims towards CBL, including but not limited to the Letter of Credit, but can become final for the portion of the exposure that cannot be recovered. This mechanism has never been used to date.</p>
<p>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.</p>	<p>Provisional transfers of securities are not possible as EB only books securities once they have obtained final receipt of securities on its account in the local CSD.</p> <p>An exception exists for EB's link with Depository Trust Company (DTC) in the US, where newly-issued money market instruments are credited provisionally by DTC. EB prohibits the retransfer by blocking such securities in the participants' accounts until the booking is final on EB's account in the local CSD.⁶⁷</p>
<p>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.</p>	<p>The initial selection process for the opening of a CSD link is primarily based on the existence of a high level of protection of participants' assets under the local market standards and legal framework (Please refer to KC 1 above).</p> <p>EB obtains legal opinions that confirm among others that the local CSD's and, where applicable, the depository's creditors do not have a claim on EB's participants' securities held at the local CSD or at the depository. Further details with regard to asset protection and custody risk are available in the sections covering Principle 1, 11 and 16.</p> <p>The contractual agreements include provisions aiming at the protection of participants' assets (such as segregation of EB's participants' assets from those of the depository or those of other clients/participants of the depository, a prohibition of sub-deposits without prior approval by EB, and/or the existence of an insurance coverage for the securities held via the link).</p> <p>To ensure a high level of protection, EB also ensures control processes are in place to reconcile on a daily basis with relevant counterparts depending on the type of link. This is done through receipt and validation of daily statement of balances and movements by EB.</p>

⁶⁷ Euroclear Bank Operating Procedures, Section 2.3 Entries in Participant Account and Online Market Guide – USA.

	<p>With regards to the Bridge, EB performs daily reconciliation for securities and cash positions.</p>
<p>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.</p>	<p>All selection criteria for intermediaries used to operate a link are meant to avoid any risk, covering risks ranging from custody risk to financial, operational and reputational risk when selecting an intermediary and on an ongoing basis.</p> <p>On a regular basis a re-approval report is provided to the EB Management Committee, highlighting any changes if any, and request the EB Management Committee to approve the current links EB has within its network.</p> <p>Intermediaries must have a good reputation and be financially sound. They must comply with data protection and confidentiality, operational risk management, security measures and business continuity requirements. Other criteria include anti-money laundering requirements, operational readiness and service quality requirements.</p> <p>EB has different tools to monitor and manage the risks during the lifecycle of a link through the link assessment framework which includes:</p> <ul style="list-style-type: none"> • Global overview of all the CSD links and counterparts in the network; • Country Risk Dashboard monitoring compliance of the various risk assessment criteria; • Annual due diligence which reviews the compliance of the CSD link and/or counterparts against the different set up/monitoring criteria; • Annual certification of contractual arrangements; • Market Link Review that includes an overview of all the market initiatives impacting the link; • Daily reconciliation between EB and the counterpart, with EB requesting the counterpart to perform a reconciliation with the CSD. <p>The liabilities of the counterparts are defined in their agreements with EB. Intermediaries are liable for losses caused by the non- or mis-performance of their duties and obligations and the holding of securities by it or with the CSD, subject to the usual force majeure clauses and other limitation of liability clauses.</p>

<p>Key Consideration 7</p> <p>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.</p>	<p>Not Applicable</p>
<p>Key Consideration 8</p> <p>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 fulfill its obligations to its own participants at any time.</p>	<p>Not Applicable</p>
<p>Key Consideration 9</p> <p>A TR should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.</p>	<p>Not Applicable</p>
<p>Key Conclusions for Principle 20</p>	<p>EB maintains a number of direct and indirect links, as well as one interoperable link. To manage the set-up and maintenance of CSD links, EB has in place an effective framework, procedure, and governance arrangement. In the case of indirect CSD links, EB maintains relationships with one or two settlement agents to facilitate access. The single interoperable link EB maintains is that with CBL.</p> <p>All link arrangements are subject to continuous monitoring, and targeted annual reviews and recertification of contractual arrangements.</p>

Assessment of Principle 20	Observed
Recommendations and Comments	<p>There is scope for improving the smoothness of settlement activity and the management of the consumption of the LoC in place which covers the credit risk to which EB is exposed across the interoperable link with CBL. Continued and uninterrupted settlement across the interoperable link with CBL is ensured by numerous interim, intraday payments sent to/from CBL. This process could be improved by further automation.</p> <p>EB should also further investigate having in place two settlement agents for contingency purposes—either both active or one as backup—for indirectly accessing local CSDs, where practical and available.</p>

Principle 21. Efficiency and Effectiveness	
An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	
<p>Key Consideration 1</p> <p>An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.</p>	<p>EB’s services evolve to meet its participants’ needs. Examples include the roll-out of the web-based communication channel EasyWay replacing the legacy EUCLID system and extending the scope of Taskize as a communication channel to support a collaborative client service approach or, more recently, by responding to market trends towards central bank money settlement by signing the Target2-Securities (T2S) Framework Agreement in December 2021. As part of its monitoring of goals and objectives, EB also follows up generic objectives, e.g., adherence to agreed budgets, maintaining/improving the control environment (both on internal activities and activities outsourced).</p> <p>EB’s User Committee and its role</p> <p>EB has a User Committee, which is a body that forms part of the internal governance of EB. Its objective is to voice the opinions of the several Participants’ groups, as per the mandate the User Committee received in line with regulatory requirements. To ensure that the suggestions of the User Committee accounts for the variety of participants in EB’s system, the committee’s membership reflects EB’s client base, and it is composed of representatives of the main relevant markets segments.</p>

Its purpose is to possibly:

- provide independent advice to EB's Board on key arrangements that impact EB's members (including criteria for accepting issuers and Participants; service level; review and/or testing of the default procedures of EB);
- provide non-binding opinions to EB's Board on pricing structure;
- make request for implementation of new Delivery versus Payment (DVP) settlement through links.

To support them providing independent advice to the Board on EB's service level, the User Committee is regularly informed of the performance of the Euroclear system, as well as audit findings relating to the topics covered by its mandate.

Participant surveys

Feedback from EB's users is collected and evaluated yearly via the "Client Survey", open to all EB participants. This survey enables EB to periodically assess the level of satisfaction and needs of participants for the various existing services offered by EB. This is complemented by regular reviews throughout the year, i.e., limited scope surveys where clients assess the quality of EB's services.

Based on this feedback, EB assesses the market's need for further key service enhancements that may be introduced over the next months and years.

Other initiatives

To understand the needs of participants and their evolution, EB performs regular competition analysis, and follows up on market developments and product/service evolution through the review of press articles and specialised publications, their presence in various conferences and round tables and ad-hoc consultation with participants and market players. These actions are key triggers to support the conception and the development of EB's business strategy.

EB is also a member of a series of advisory groups in the financial and post-trade industry. It enables EB to adapt to market evolution and to the needs of its Participants. EB answers to consultations on regulatory evolutions that can impact EB and the services it offers to its Participants.

<p>Key Consideration 2</p> <p>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.</p>	<p>Mission Statement</p> <p>EB's mission statement sets clear goals and general objectives to meet the requirements of EB's participants. The mission statement (publicly available on the Euroclear website) is to:</p> <ul style="list-style-type: none"> • support an open marketplace where scale and connectivity across the spectrum of market participants are competitive strengths; • support market stability, deliver shared economies of scale and develop markets locally and globally; • serve the public good by ensuring the efficiency of markets and actively enabling the reduction of risk; • encourage a high performing culture that respects EB's corporate values through its diverse and dedicated workforce worldwide. <p>Corporate objectives and the Positive Assurance Report</p> <p>EB's corporate objectives provide high-level qualitative targets setting up the business priorities. These objectives are assessed semi-annually by the EB Management Committee and Board.</p> <p>The Positive Assurance Report (PAR) reflects EB's corporate objectives and the associated risks and controls, and covers all parts of the organisation including those functions that are outsourced to ESA.</p> <p>The PAR being a key component of EB's Risk Management Framework is further discussed in other sections of this document including Principle 3 (Risk Management Framework), Principle 15 (General Business Risk), Principle 17 (Operational Risk).</p> <p>EB's KPIs</p> <p>Operational performance is measured through the Business Performance Report, which is produced and validated by business owners and shared with EB Operations Management every quarter. Banking and Network Management performance is also regularly reported to and reviewed by EB Management.</p> <p>With respect to all support functions (including Risk Management), service levels and measurable KPIs have been identified and are</p>
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	<p>monitored quarterly, with the outcome reviewed by the ROC and MC.</p> <p>In case a KPI is missed, the business owner investigates the root cause and defines an action plan.</p> <p>In case material issues are detected (e.g., system incidents), immediate escalation occurs involving senior business managers, IT representatives and other stakeholders, and immediate actions are taken. These cases are also reported to the ROC and include post-mortem assessment and remediation plans.</p> <p>These KPIs are consistent with the EB objectives that are set by the Board of Directors, on an annual basis (referred to as the 'CEO and MC Objectives'; cf Principle 2 above), and they are monitored and reviewed quarterly by the ROC and the EB MC, where action plans and remediation are also discussed.</p> <p>Example: IT Performance</p> <p>Euroclear monitors a large set of IT KPIs for its different businesses, covering among others:</p> <ul style="list-style-type: none"> • the availability (uptime) of the systems; • the ability to meet deadlines; • the overall performance of the systems. <p>The KPIs for key systems are set by the start of each year, daily checked, monitored monthly and discussed with management quarterly.</p>
<p>Key Consideration 3</p> <p>An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.</p>	<p>The efficiency and effectiveness are measured at different levels. The high-level objectives for the Management Committee and CEO are approved by the EB Board at the start of the year, and progress toward achieving the objectives assessed by the Board twice during the year.</p> <p>All support divisions that are relevant for the efficiency and effectiveness of EB have identified KPIs which are tailored to their specific functions (e.g., IT departments monitor system performance, availability and deadline indicators, Finance monitors invoice processes, Legal monitors their capability to provide timely legal advice). EB's CEO and his direct reports evaluate on a quarterly basis the efficiency and effectiveness across all operations and across the support activities based on these KPIs as well as a qualitative assessment of the services received. On an annual basis, these KPIs are reviewed for their relevance among other as part of</p>

	<p>the service delivery plans the divisions of ESA prepare as service provider for other group entities, including EB.</p> <p>An evaluation by participants is done every year during the annual "Client Survey" mentioned above, and includes a full-scope review of participants' feedback with respect to all aspects of services provided. The EB User Committee also enables users of EB to voice client feedback on the efficiency and effectiveness of the CSD's processes via formal advice to the EB Board of Directors.</p>
Key Conclusions for Principle 21	<p>EB is effective at meeting the needs of its participants and the markets it serves. As per CSDR requirements, EB established a User Committee, which serves as an effective means for participants, issuers, and other FMIs to voice their concerns to EB. Those participants that are not members of EB's User Committee have stated that they deem existing communication channels to be adequate and effective. EB also collects feedback annually from its participants via surveys that are open to its entire client base.</p>
Assessment of Principle 21	Observed
Recommendations and Comments	<p>There is scope for improvement in the way participants access EB's services. Several participants have voiced a desire to see an improvement in the web-based tool, EasyWay, used to send settlement instructions and have an overview over their activities and account balances. Such improvements could be made by allowing access to the tool's functionalities via an API.</p>

Principle 22. Communication Procedures and Standards	
<p>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.</p>	
<p>Key Consideration 1</p> <p>An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.</p>	<p>Interaction between EB and its participants is either application-to-application (i.e., STP communication solutions) or user-to-application (i.e., screens). International standards are used in both but are – for integration purposes – more relevant or needed for the application-to-application channels.</p> <p>This fully automated interaction on application-to-application channels is possible today in International Organization for Standardization (ISO) standards and proprietary formats. EB continues to invest in ISO standard automated communication, it</p>

	<p>does so through the yearly SWIFT releases (thus adopting the most recent ISO changes relevant to EB's business) and by ensuring that new products and evolutions of existing products use the appropriate ISO standards.</p> <p>Asset servicing</p> <p>In the area of asset servicing, ISO 15022 and ISO2022 standards are available (ISO20022 is used for general meetings and shareholder identification only, ISO15022 is supported for all corporate actions). EB has invested over the last few years to increase Securities Market Practice compliance and it will continue to do so. EB intends to use the new ISO 20022 standards, when required by the participant community or other key stakeholders (e.g., Eurosystem).</p> <p>Securities identification</p> <p>EB uses the International Security Identifier Number (ISIN) code to identify financial instruments. Participants can use the ISIN to instruct and receive reporting with the ISIN if they wish. In addition, the Common Code (a securities identification code shared by EB and Clearstream Banking S.A. in Luxembourg) is used to identify securities.</p> <p>Settlement</p> <p>In the area of settlement, ISO 15022 standards are available, in addition to legacy support on ISO 7775. These standards are applied both for internal and external settlement (at other CSDs, through direct or indirect links). Additional standardisation within settlement instruction and reporting is achieved through the use of the Bank Identifier Code (BIC) to identify a counterparty. Another possibility is a five-digit EB code corresponding to a local counterparty as identified in the EB online counterparties database available via my.euroclear.com > Counterparties.</p>
Key Conclusions for Principle 22	Internationally accepted communication channels and standards are used by EB to facilitate settlement and related services. EB employs ISO standards via SWIFT for asset servicing and the settlement of securities. Counterparty identification is achieved through the use of the BIC, and financial instruments are identified using the ISIN.
Assessment of Principle 22	Observed
Recommendations and comments	None

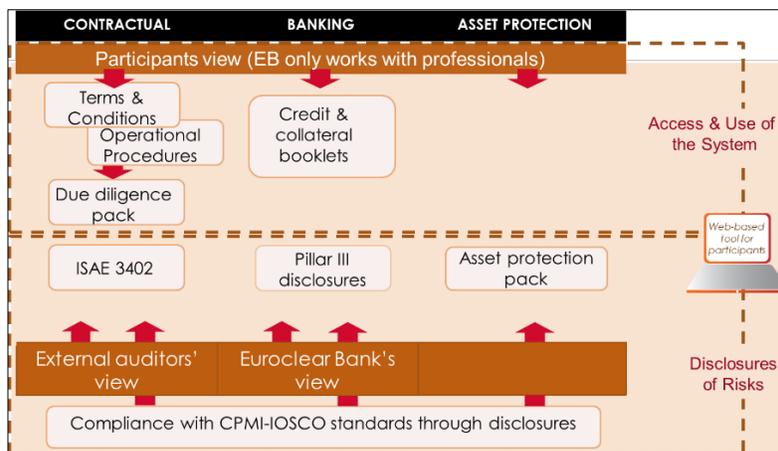
Principle 23. Disclosure of Rules, Key Procedures and Market Data

An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks and fees and other material costs they incur by participant in the FMI. All relevant rules and key procedures should be publicly disclosed.

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.

The structure of EB’s public disclosures can be summarised by the following:



The rules of the Euroclear System operated by EB are documented in the Terms and Conditions which are made of two documents:

- the *Terms and Conditions governing use of Euroclear*, containing the description of the key rights and obligations of EB and its participants when using the Euroclear System;
- the *Operating Procedures of the Euroclear System*, which provide additional details among others with regard to the requirements for becoming a participant, the functioning of the Euroclear System, the rights and responsibilities of participants, the connectivity to and from the Euroclear Platform and the functioning of EB’s various services.

Euroclear elaborate on other contractual documentation in the section covering Principle 1 (Legal Basis).

The Terms and Conditions are available on Euroclear’s website (login and passwords are provided upon request) and detail a.o.:

- the rules for amending the contractual documentation
- admission rules
- suspension and termination events, including the procedural aspects thereof

	<ul style="list-style-type: none"> • the standard of care applied by EB and the related liability • rules in case of loss of securities • rules in case of default of a participant (including insolvency proceedings affecting a Participant) in the Euroclear System • exceptional measures available to EB in case of default of Clearstream Banking S.A. in Luxembourg (“right to debit”) • exceptional measures available to EB in case of unforeseen liquidity shortfall in a stress situation <p>The Terms and Conditions contain dedicated sections on the rights and responsibilities of participants and of EB, respectively.</p> <p>The readability as a whole is ensured through the use of plain language.</p> <p>EB manages two distinct websites to inform the general public and its participants:</p> <ul style="list-style-type: none"> • euroclear.com – the corporate website • my.euroclear.com – the operational knowledge portal <p>EB also publishes on its website a set of important documents to provide deeper information on its services and potential risks borne by the participant including a.o.:</p> <ul style="list-style-type: none"> • Due diligence pack which elaborates on the due diligence checks performed on third parties • ISAE 3402 report, that provides substantive information on the operation of controls and procedures implemented at EB along the ISAE 3402 standard • Pillar 3 disclosures, that provide substantive information on risk management methods and practices, and the organisation of the risk management function at EB, as well as among other things, the actual data relating to exposures and associated capital requirements. Pillar 3 disclosures obey the requirements set in the European Capital Requirements Regulation (CRR) • Asset protection pack regarding the protection of the holdings in financial instruments of the clients in the books of EB as well as in the books of the EB counterparts or CSDs for the links it maintains; • CPMI-IOSCO Disclosure Framework <p>EB User Committee meeting minutes provide additional information on the topics discussed at the User Committee.</p>
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<p>Key Consideration 2</p> <p>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.</p>	<p>EB's website contains high-level information about the system's design and operations:</p> <ul style="list-style-type: none"> • the 'About us' section provides a general description of EB's business, mission, participants, structure, history and rules • in the 'Services' section, the participants can find relevant information about the various services <p>More detailed information about these services can be easily retrieved through the Euroclear Knowledge base on the Euroclear website (e.g., on Collateral Management, an overview of all operational, tariff and legal documentation).</p> <p>These documents, among others, complement the Terms and Conditions and give participants a view on the design and operations of the specific services. EB's CPMI-IOSCO Disclosure Framework also provides useful information about EB's operations.</p> <p>The degree of discretion that EB has in applying the Terms and Conditions governing the use of Euroclear and Operating Procedures of the Euroclear System are specified in those two documents.</p> <p>The EB User Committee forms part of the organisational arrangements aiming at maintaining a dialogue between the FMI and its users on a series of topics, including access, service level, relevant audit findings and efficiency of the System.</p>
<p>Key Consideration 3</p> <p>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.</p>	<p>New Participants receive a 'Welcome Pack', including the Operational Procedures (OPs), that provides a complete set of information allowing them to understand Euroclear Bank's rules and procedures. As mentioned on the website, EB offers various training options to help them get the best out of its range of products and services:</p> <ul style="list-style-type: none"> • local courses • online training • e-Learning • on-site visit <p>This is complemented by regular newsletters, brochures and other material published regarding specific topics. For example, operational newflashes are published on the website regularly, available to participants only via the password-protected part of the website. Registered participant subscribers to these newflashes also receive emails to alert them of the newflash. To promote adequate understanding of its rules and procedures as well as the risk they may face from participating in the FMI, EB provides</p>

	<p>training to participants either bilaterally or collectively (including the training options and documents mentioned in EB's Welcome Pack).</p> <p>Relationship Management and the Users Committee allow Euroclear's participants to raise any concern and at the same time allows Euroclear to ensure participants understand the content of the documents they sign and the risks they face. Should Euroclear notice a lack of understanding with a participant, it will provide additional training.</p>
<p>Key Consideration 4</p> <p>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.</p>	<p>EB tariff information is publicly available on www.euroclear.com (Menu > Euroclear's group > Euroclear Bank > Euroclear's tariff)</p> <p>The brochures set out the fees that are charged for the services provided by EB and, where relevant, the applied volume discounts. Price examples are provided to help clients reconciling invoices with the published tariff.</p> <p>In its tariff brochures, EB publishes the applicable fee for each type of service, including for core services referred to in Section A of the Annex of the CSDR in relation to a securities issue and for ancillary services referred to in Section B of the same Annex. It facilitates the comparison of offers and allows clients to anticipate the price they shall have to pay for the use of services.</p> <p>EB will update its tariff brochures before the implementation of a tariff change. EB aims, as a matter of good practice, to publish the tariff change at least 10 business days in advance. Updates of tariff brochure are announced through newsflash published on the website and sent by e-mails to registered clients. Depending on the nature, magnitude and topic of the tariff change, EB may elect to further inform its clients through newsletters and User Committee. This is a judgment call rather than a set procedure.</p>
<p>Key Consideration 5</p> <p>An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO Disclosure framework for FMIs. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.</p>	<p>EB publishes an updated Disclosure Framework on a regular basis.</p> <p>EB discloses material information on the company itself and the services it provides to participants, predominantly available through its digital channels. Such information includes high-level overviews, updates on new service developments or relevant market news, as well as detailed descriptions of its services, procedures and the rights and obligations of participants. The information is updated on a regular and timely basis.</p> <p>EB also discloses risk management information such as the CRR Pillar 3 disclosures and information on Euroclear's business continuity.</p>

	<p>Statistical data is published regularly (quarterly) comprising statistics on turnover, collateral management and assets under custody, in addition to statistical information provided to supervisors (see on Euroclear website).</p> <p>The media will vary according to the nature, magnitude and significance of the information. At a minimum, the information will be disclosed in a Newsletter, posted on the website and an alert sent to registered participants and users by e-mail to announce the availability of new information. Some brochures also exist in paper format.</p> <p>EB may also use other media that are more promotional in nature, but still have a role to play in disclosure. These media include:</p> <ul style="list-style-type: none"> • press releases (as part of a communications plan to support the business. Articles with ‘news value’ (e.g., on new or expanded services, operating results or tariff reductions) may appear in the financial trade press and/or on the Euroclear website) • social media • adverts • commercial presentations • speeches at industry events • videos/banners on the website and elsewhere • marketing brochures (in electronic and in paper format) • internal communications channels <p>All information mentioned in this Principle is available in English.</p>
Key Conclusions for Principle 23	<p>EB has in place clear and comprehensive rules and procedures that promote transparency on its business and operations to its participants and other stakeholders. The rules of the Euroclear System are laid out in EB’s T&Cs and OPs, which are made available to its participants. Key information and documents are also made public, including the CPMI-IOSCO Disclosure Framework, and a general description of EB’s business, operations, services, and fees. In addition, EB makes available to its client base a wide range of training options.</p>
Assessment of Principle 23	Observed
Recommendations and Comments	None

Principle 24. Disclosure of Market Data by Trade Repositories	
A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.	
Key Consideration 1 A TR should provide data in line with regulatory and industry expectations to relevant authorities and the public, respectively, that is comprehensive and at a level of detail sufficient to enhance market transparency and support other public policy objectives.	Not Applicable
Key Consideration 2 A TR should have effective processes and procedures to provide data to relevant authorities in a timely and appropriate manner to enable them to meet their respective regulatory mandates and legal responsibilities.	Not Applicable
Key Consideration 3 A TR should have robust information systems that provide accurate current and historical data. Data should be provided in a timely manner and in a format that permits it to be easily analyzed.	Not Applicable
Key Conclusions for Principle 24	Not Applicable
Assessment of Principle 24	Not Applicable
Recommendations and Comments	Not Applicable

DETAILED ASSESSMENT OF AUTHORITIES' RESPONSIBILITIES

Detailed assessment of observance of the responsibilities	
Responsibility A: Regulation, Supervision, and Oversight of Financial Market Infrastructures	
FMI should be subject to appropriate and effective regulation, supervision, and oversight by a central bank, market regulator, or other relevant authority.	
<p>Key Consideration 1 Authorities should clearly define and publicly disclose the criteria used to identify FMIs that should be subject to regulation, supervision, and oversight.</p>	<p>The NBB Organic Law,⁶⁸ the Law of August 2, 2002 on the supervision of the financial sector and on financial services, and the (Belgian) Royal Decree of 26 September 2005 on institutions providing support to CSDs contain criteria to identify FMIs—such as EB and ESA—that should be subject to regulation, supervision, and oversight. These laws are published in the Belgian National Gazette (<i>moniteur belge</i>) and available on the websites of the NBB and FSMA.</p> <p>The EU's CSDR also defines central securities depositories, including those with limited purpose banking activities, that are subject to its provisions. FMIs with a banking licence are subject to a separate CSDR authorization procedure and are therefore identified to pose additional risks to the financial system. Banking licenses are granted by the banking supervisor and entails that such FMIs are also identified as a credit institution subject to all applicable EU banking regulations and directives as transposed into Belgian law.</p> <p>The Royal Decree of September 26, 2005 on support institutions⁶⁹ provides a legal framework for supervision and includes distinct provisions related to the authorization of (equivalent) settlement institutions (i.e., licensing criteria) and their ongoing supervision.</p> <p>The NBB has established a Resolution College which is designated as the resolution authority authorized to apply the resolution tools and exercise the resolution powers in accordance with the Law of 25 April 2014 on the legal status and supervision of credit institutions (Article 21ter Organic Law).</p> <p>The NBB has been designated as the financial sector authority and inspection service, within the meaning of the Law of 1 July 2011, on the security and protection of critical infrastructures. Members of the Euroclear Group have been designated as critical national infrastructures in seven</p>

⁶⁸ Law of 22 February 1998 establishing the organic statute of the National Bank of Belgium.

⁶⁹ Upon implementation of the CSDR, the concept of *settlement institution* was replaced by *central securities depository*. The Royal Decree is currently under review to reflect this.

	<p>countries. Additional information on this law can be found here: http://www.ejustice.just.fgov.be/eli/loi/2011/07/01/2011000399/justel.</p> <p>In addition, EB has been identified as a clearing agency by the US SEC and received an exemptive order conditional to, e.g., regular information sharing.</p> <p>Recently, EB was identified as a third-country CSD under the UK CSDR, has requested to the BoE an authorisation to be recognised given its UK activities.</p>
<p>Key Consideration 2 FMIs that have been identified using these criteria should be regulated, supervised, and overseen by a central bank, market regulator, or other relevant authority.</p>	<p>The below covers actors with direct responsibility for the oversight and supervision of EB.</p> <p><u>NATIONAL BANK OF BELGIUM (NBB)</u></p> <p>Oversight</p> <p>Based on Article 8 of the NBB Organic Law, the NBB is responsible for the oversight of securities settlement systems. This is to ensure that they operate effectively and to make certain that they are efficient and sound following international standards, such as the April 2012 CPMI-IOSCO Principles for Financial Market Infrastructures (PFMI). The NBB oversees securities settlement systems operated by Belgian CSDs (e.g., Euroclear Belgium and Euroclear Bank).</p> <p>In line with PFMI Responsibility E, several cooperation agreements have been developed. Please see below.</p> <p>Prudential supervision</p> <p><i>Central Securities Depositories ('CSD')</i></p> <p>According to Article 36/26/1, §1 of the NBB Organic Law, the NBB is the national competent authority responsible for the supervision (including authorisation) of Belgian Central Securities Depositories, such as Euroclear Belgium and Euroclear Bank.</p> <p>The NBB, which is the competent authority for EB under the CSDR, is responsible for the day-to-day monitoring of EB's compliance with the CSDR. In addition, the NBB is also tasked with conducting an annual review and evaluation process which includes a consultation and the sharing of an outcome report, ex-post, with a range of other competent and relevant authorities.</p> <p><i>Institution providing support to Central Securities Depositories</i></p>

	<p>According to Article 36/26/1, §4 and §5 of NBB Organic Law and the Royal Decree of 26 September 2005,⁷⁰ the NBB is in charge of the prudential supervision (including authorisation) of institutions providing support to Central Securities Depositories with the provision of services of important operational functions to ensure the performance of the CSD's services and activities. The legal statute of an institution providing support to CSDs covers ESA acting as the main service provider of services or activities outsourced by the CSDs of the Euroclear Group, in accordance with Article 30 of the CSDR.</p> <p>Banking supervision</p> <p>The NBB is also the competent authority for banking supervision and resolution. The NBB and the ECB are responsible for the supervision of Belgian credit institutions considering the Banking Act and the SSM Regulation ((EU) 1024/2013). Both make sure that the credit institution and the consolidated levels comply with all provisions of the Banking Act.</p> <p>Since November 2014, the SSM is operated by the ECB and the national bank supervisors from the EU member states. The ECB is the most important prudential supervisor, directly supervising the biggest credit institutions of the banking union, ensuring compliance with EU banking rules. The ECB and national supervisors continue to oversee the smaller ones. The SSMFR sets out the legal framework on cooperation within the SSM and contains arrangements for the implementation of supervisory tasks and responsibilities of the ECB and the national competent authorities. The framework regulation also defines the methodology for the supervision of institutions and their classification as significant or less significant. The regulation covers, i.a., rules on organisational matters, administrative procedures and sanctions, the process for adopting ECB decisions, establishment of cooperation between the ECB, NCAs and national designated authorities on macro-prudential tasks and tools.</p> <p>The ECB supervises significant institutions (Art. 6 SSM Regulation). The ECB also has additional powers, irrespective of the size of the credit institution, such as the assessment of a transfer and/or acquisition of qualifying holdings. The NBB is directly responsible for the supervision of less significant institutions including all levels of consolidation, which is the case for EB and its financial holding companies.</p>
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⁷⁰ Royal Decree of 26 September 2005 on the legal status of settlement institutions and assimilated settlement institutions, as amended from time to time.

FSMA

Without prejudice to the powers of the NBB, the FSMA has been recognized under Belgian law (Article 23bis of the law of 2 August 2002 on the supervision of the financial sector and financial services (hereafter "Law of 2 August 2002")) to have a responsibility in the supervision of CSDs related to the protection of the CSD's participants. The FSMA supervises central securities depositories established in Belgium with respect to compliance with the rules referred to in Article 45, §1, 1° of the Law of 2 August 2002 and with respect to compliance with the rules guaranteeing the fair, equal and professional treatment of participants and their clients. In this respect, FSMA monitors compliance by central securities depositories established in Belgium with Articles 26(3), 29, 32 to 35, 38, 49 and 53 of CSDR.

Furthermore, the FSMA is the sole competent authority to supervise compliance with Articles 3(1) and (2) first paragraph, 5(2) and 6(1) and (2) of Title II of CSDR. Without prejudice to the powers of the NBB, the FSMA has also competence to ensure compliance with Articles 6 (3) and (4) and Article 7 of Title II of CSDR.

The FSMA supervises compliance with these articles on a day-to-day basis and assists the NBB during the annual review and evaluation process by providing an opinion.

According to Article 23ter of the law of 2 August 2002, the FSMA also supervises the institutions that provide support to central securities depositories and the custodian banks established in Belgium, with respect to its powers as referred to in Article 45, §1, 1°, and with respect to compliance with the rules that must guarantee the fair, equal and professional treatment of participants and their customers.

Bank of England (BoE)

Article 25 of the UK CSDR requires that the BoE must establish suitable co-operation arrangements with a non-UK CSD's home authority before the BoE can recognise that non-UK CSD. The BoE and the NBB intend the MoU to satisfy that requirement in respect of EB.

Securities and Exchange Commission (SEC)

The SEC is the agency of the United States Government that supervises the securities market in the United States and persons acting in a professional capacity in those securities markets, including securities depositories and clearing agencies. EB operates under an SEC exemption that allows EB to perform certain clearing agency activities for its U.S. participants without having to register as a clearing agency with the SEC. The exemptive relief

	sets forth a number of conditions that EB must satisfy in order to remain eligible for exemption from registration with the SEC.
Key Conclusions for Responsibility A	<p>EB is subject to effective supervision, regulation, and oversight by the NBB and the FSMA.</p> <p>The NBB is the sole National Competent Authority for Euroclear Bank and is responsible for its prudential supervision and oversight. The supervisory responsibilities of the FSMA are related to the protection of the interests of EB's participants. The FSMA is also the supervisor of CSD and custodian bank support institutions.</p>
Assessment of Responsibility A	Observed
Recommendations and Comments	None

Responsibility B. Regulatory, Supervisory, and Oversight Powers and Resources	
Central banks, market regulators, and other relevant authorities should have the powers and resources to carry out effectively their responsibilities in regulating, supervising, and overseeing FMI.	
Key Consideration 1 Authorities should have powers or other authority consistent with their relevant responsibilities, including the ability to obtain timely information and to induce change or enforce corrective action.	<p>All regulatory frameworks described in the section 'Responsibility A' provide the competent authorities such as the NBB and the FSMA, and other authorities, with the powers to obtain all relevant information needed to fulfil their duties including, i.a., financial statements, board policies, policy handbooks, operating procedures, terms and conditions of the contractual frameworks, terms of reference of all governance committees, risk assessments performed by the risk management function, the Internal Capital and Liquidity Adequacy Assessment report, internal audit opinions, ad hoc data sets, mandatory and ad hoc CSDR and banking-related reportings and opinions provided by the accredited auditor.</p> <p>All regulatory frameworks described in the above section 'Responsibility A' also provide the NBB and the FSMA with the possibility to impose sanctions and induce change.</p> <ul style="list-style-type: none"> • Title V 'Sanctions' of the CSDR. Competent authorities can apply administrative sanctions and other measures, to CSDs and, subject to the conditions laid down in national law, the members of their management bodies and any other persons who effectively control their business as well as to any other legal or natural person who under

national law is held responsible for an infringement. The CSDR also allows for the application of criminal sanctions. Art 63 of the CSDR lists the relevant provisions considered for sanctions in case of non-compliance, e.g., failure of CSDs to hold the required capital and to comply with the organisational requirements and conduct of business rules.

- Banking rules. Following each Supervisory Review and Evaluation Process (SREP), the NBB decides on mandatory supervisory capital add-ons (Pillar 2 Requirement or P2R) above the Pillar 1 requirements and provides (a non-mandatory) guidance on additional capital add-ons to protect against adverse scenarios (Pillar 2 Guidance or P2G) which have been derived from the NBB's stress testing exercises. The NBB can also impose stricter liquidity requirements in case of concerns, to induce change. The NBB performs both on- and off-site assessments of inherent and residual risks and can request any information needed, including by involving third-party experts, to come to conclusions. Any on- or off-site assessment leading to material findings will lead the NBB to send out letters to senior management with recommendations to induce change, at the same time requesting a roadmap and an action plan to tackle the issues at stake. The NBB has powers to appoint a commissioner to take over the institutions' decision-making, to replace, sanction and appoint members of the board or executive committee, to suspend activities and revoke the banking licence. Title IV and V of the (Belgian) Banking Act (as amended) lists all possible measures the NBB can take including penalties for non-compliance.
- Chapter 5 of Royal Decree of 2005 includes supervisory measures and sanctions that can be imposed.

Sanctions Committee

The Sanctions Committee rules on the imposition by the NBB of administrative fines and penalties provided for by the laws that apply to the institutions supervised by the NBB (<https://www.nbb.be/en/about-national-bank/administration-and-control/sanctions-committee>).

The FSMA has also a Sanctions Committee for the imposition of administrative sanctions where such sanctions are provided for by law.

<p>Key Consideration 2</p> <p>Authorities should have sufficient resources to fulfill their regulatory, supervisory, and oversight responsibilities.</p>	<p>National Bank of Belgium</p> <p>Prudential supervision and oversight of post-trade infrastructures is conducted by “the Post-trade Group,” a subgroup of the “Surveillance of Financial Market Infrastructures, Payment Services and Cyber risks” department. Since 2019, prudential supervision and oversight of post-trade infrastructures has been merged within one team. The NBB has now allocated a budget of 13 FTE to the supervision and oversight of post-trade infrastructures. In 2022, about 75% of the group’s resources were allocated to the entities of the Euroclear group subject to the NBB’s supervision and oversight. Activities of the Post-trade group also include oversight/supervision of other FMIs (T2S, CLS, NBB-SSS) and policy related work (CPMI-IOSCO, ESCB, ESMA/EBA, EC).</p> <p>The Post-trade Group team members have different backgrounds and work domains (economic/IT/legal backgrounds; risk/institutional/financial analysts). In addition, the “Post-trade Group” collaborates with other teams of the NBB on:</p> <ul style="list-style-type: none"> • cyber risk, financial and institutional analyses • banking policy matters • model and transversal function inspections • IT risk inspections • CSD Regulation-specific inspections • TIBER exercises • AML/CFT supervision • CSDR/PFMI and banking-related legal risk assessments <p>The NBB makes use of Business Intelligence tools (such as Qlikview) to process quantitative data reports covering business activity and banking-type ancillary services.</p> <p>FSMA</p> <p>In 2022, a new division ‘Markets and Post-Trading’ was created at the FSMA tasked with the supervision of market infrastructures in Belgium. This division is headed by a director and daily managed by a coordinator. As of February 2023, the division has 4 FTEs. The division can also benefit from the support of a secretariat. The coordinator of the team is the person who is also responsible for the supervision of the Belgian CSDs given that this person has been supervising Euroclear entities since 2013 and has a solid financial background. The division can also count on the support of the legal department of the FSMA with a key expert on CSD matters. With respect to on-site visits, the division conducts these itself on an ad hoc or</p>
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	<p>periodic basis but can count on the expertise of the central inspection team of the FSMA.</p> <p>Finally, other relevant actors and stakeholders also contribute resources to the oversight and supervision of EB. Representatives of these authorities join the fora implementing the cooperative arrangements or contribute resources for joint assessments (cf. MoU with BoE).</p>
Key Conclusions for Responsibility B	<p>The activities and powers of the NBB—NCA of EB—and the FSMA are well-defined in relevant national laws, Royal Decrees, and EU Regulation, e.g., the CSDR.</p> <p>Since the previous assessment of the authorities of EB, the FSMA has increased the number of relevant full-time staff from one to four. The NBB currently has 13 full-time staff in its post-trade group. Staff of both the NBB and FSMA are professional and have sufficient expertise to carry out their supervisory and oversight activities.</p>
Assessment of Responsibility B	Observed
Recommendations and Comments	<p>The NBB—as the National Resolution Authority for EB—should continue working with its relevant counterparts, including EB and other authorities, on fully operationalizing EB’s resolution plan, including FMI contingency plans and operational continuity.</p> <p>In addition, the NBB could consider onboarding additional staff considering the large scope of its activities related to the prudential supervision and oversight of post-trade infrastructure. These activities include the management of the numerous bilateral and multilateral agreements in place related to the oversight of EB, as well as the dedicated arrangement with Luxembourg authorities on the interoperable link between EB and CBL.</p>

Responsibility C. Disclosure of Policies with Respect to Financial Market Infrastructures	
Central banks, market regulators, and other relevant authorities should clearly define and disclose their regulatory, supervisory, and oversight policies with respect to FMIs.	
<p>Key Consideration 1</p> <p>Authorities should clearly define their policies with respect to FMIs, which include the authorities' objectives, roles, and regulations.</p>	<p>The description in section F of this report covers the various objectives and roles of the different authorities involved in the supervision and oversight of EB, as well as the regulations.</p> <p>The policies of the NBB and the FSMA are based on and defined by the legal framework in Belgium (see Responsibility A).</p> <p>They are reflected in regulations, circulars and communications that include the authorities' objectives and expectations towards the institutions under supervision. Reference on the website is also made to ESMA guidelines that the authorities adhere to.</p> <p>In July 2012, the NBB issued a circular (NBB_2012_06) stating that the Principles for financial market infrastructures or PFMIs drafted in April 2012 by the Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO) are used as guiding principles for oversight and supervision.</p>
<p>Key Consideration 2</p> <p>Authorities should publicly disclose their relevant policies with respect to the regulation, supervision, and oversight of FMIs.</p>	<p>All relevant regulations, oversight frameworks and related guidance for the supervision of FMIs are published on both the NBB's and FSMA's website.</p> <p>On an annual basis, the NBB publishes its "FMI and Payment Services Report" which provides a detailed overview of the changes in the regulatory environment for FMIs, custodians, payment and critical service providers, the development of their activities, the Bank's oversight and prudential supervisory approaches and main priorities (https://www.nbb.be/en/publications-and-research/economic-and-financial-publications/fmi-payments-report).</p> <p>The FSMA published an annual report in which there is a section about FMI supervision and material changes, if any.</p>

Key Conclusions for Responsibility C	<p>While inspection reports with identified shortcomings culminating in the lowest rating level are reported to the NBB Board, the approval and assessment of action plans for addressing shortcomings follow an informal process.</p> <p>The NBB and FSMA publicly disclose and clearly define the scope and extent of their FMI policies. The websites of both authorities provide abundant information on their respective activities with respect to FMI supervision and oversight, as well as the legal basis for such. Authorities publish an annual report that detail relevant activities.</p>
Assessment of Responsibility C	Observed
Recommendations and Comments	<p>The annual report of the FSMA could provide further information on its activities related to its supervision of FMIs, as well as the outcome of these activities.</p> <p>The FSMA should also make an English translation of its annual report available in a more timely manner, as it currently takes over a year following publication in the local languages.</p> <p>In addition, the NBB should consider formalizing the process of approving and assessing any action plans put forth by overseen/supervised entities in addressing shortcomings highlighted in the R&E process and on-site inspection reports.</p>

Responsibility D. Application of the Principles for Financial Market Infrastructures	
Central banks, market regulators, and other relevant authorities should adopt the CPSS-IOSCO Principles for financial market infrastructures and apply them consistently.	
Key Consideration 1 Authorities should adopt the CPSS-IOSCO Principles for financial market infrastructures.	<p>The NBB and FSMA adopted the PFMI as principles for their oversight and supervision, including further guidance published by the CPMI and IOSCO concerning, e.g., cyber resilience for FMIs, Although EB's compliance in this area remains insufficient.</p> <p>In July 2012, the NBB issued a circular (NBB_2012_06) stating to adopt the Principles for financial market infrastructures drafted in April 2012 by the Committee on Payment and Settlement Systems (CPSS) and the Technical</p>

	<p>Committee of the International Organization of Securities Commissions (IOSCO).</p> <p>The EU CSD Regulation (Regulation (EU) No 909/2014) is based on the PFMI and implements them in the EU.</p>
<p>Key Consideration 2</p> <p>Authorities should ensure that these principles are, at a minimum, applied to all systemically important payment systems, CSDs, SSSs, CCPs, and TRs.</p>	<p>The scope of the NBB circular on the adoption of the PFMI encompasses all central securities depositories as defined in Art. 36/1 and Art 36/26 of the NBB Organic Law.</p>
<p>Key Consideration 3</p> <p>Authorities should apply these principles consistently within and across jurisdictions, including across borders, and to each type of FMI covered by the principles.</p>	<p>Consistency within Belgium is pursued given the NBB circular adopting the PFMI apply to all FMIs within its borders. Consistency across jurisdictions in the EU is assured for CSDs considering the advent of the CSDR, and is an implementation of the PFMI across the EU. The definition of both competent and relevant authorities and the roles each assume during authorization and the regular review and evaluation are all intended to pursue harmonization across the EU. ESMA conducts peer reviews of practices and concludes on guidance for harmonization, e.g., via Q&A procedures related to the CSDR's technical standards. The latter is done by the EBA concerning banking-type ancillary services.</p> <p>Consistency beyond the EU is pursued by means of cooperation agreements with authorities located in non-EU jurisdictions having an interest in the proper functioning of EB. These cooperation agreements are (in general) based on EB's adherence with the PFMI. For a complete picture of the cooperation agreements, see the section on Responsibility E below.</p>
<p>Key Conclusions for Responsibility D</p>	<p>Belgian authorities explicitly adopted the PFMI as a basis for their oversight and supervisory activities in 2012 via a published circular.</p>
<p>Assessment of Responsibility D</p>	<p>Observed</p>
<p>Recommendations and Comments</p>	<p>None</p>

Responsibility E. Cooperation with Other Authorities

Central banks, market regulators, and other relevant authorities should cooperate with each other, both domestically and internationally, as appropriate, in promoting the safety and efficiency of FMIs.

Key Consideration 1
Relevant authorities should cooperate with each other, both domestically and internationally, to foster efficient and effective communication and consultation in order to support each other in fulfilling their respective mandates with respect to FMIs. Such cooperation needs to be effective in normal circumstances and should be adequately flexible to facilitate effective communication, consultation, or coordination, as appropriate, during periods of market stress, crisis situations, and the potential recovery, wind-down, or resolution of an FMI.

The CSDR and banking regulatory frameworks foresee cooperation with a wide range of competent and relevant authorities.

Below are described different cooperation agreements going beyond the regulatory frameworks.

MoU: Memorandum of Understanding

MULTILATERAL COOPERATION AGREEMENTS

EB Multilateral Oversight Group (EB MOG)

The EB MOG, chaired by the NBB, is a cooperation arrangement regarding the oversight of EB's SSS operated by EB among the following signatories: The US Federal Reserve Board of Governors, the Federal Reserve Bank of New York, the BoE, the BOJ, the Reserve Bank of Australia and the ECB (as observer). The MoU allows each signatory to carry out its individual responsibilities in pursuit of their shared public policy objectives for the safety and efficiency of payment and settlement arrangements and the stability of the financial system. This MoU covers the interactions between EB as operator of EB's SSS and Euroclear SA (ESA), or any other entity taking over the ESA functions, as provider of key services, such as IT Infrastructure and risk management. The MoU reflects the common understanding between the signatories as to the specific arrangements to be established for organising information sharing, cooperation, consultation and communication regarding the cooperative arrangement of the oversight of EB's SSS.

For the purpose of this cooperation, the signatories agree that the CPMI-IOSCO PFMI and related assessment methodology will be used as a general assessment framework. This may include whenever relevant, the requirements of the CSDR. The signatories' objective is to consult and to consider the views of each other with the aim to reach consensus of EB's SSS's observance with the CPMI-IOSCO PFMI, as well as on any actions necessary to reach such observance.

Representatives of the signatories will meet at least once a year, or more if deemed necessary. Currently, the EB MOG meets twice a year. EB or ESA representatives can be invited to attend these meetings.

	<p>The signatories have agreed on crisis communication procedures to enable cooperation for the assessment and coordination of crisis or potential crisis situations with cross-border or potential cross-border impact.</p> <p>Euroclear SA Technical and High Level Forum</p> <p>Euroclear SA (ESA) provides critical services to EB and is accordingly also subject to supervision and oversight. The overseers and market supervisors of Euroclear group (I)CSDs (Belgium: NBB, FSMA; Finland: Bank of Finland, Finanssivalvonta; France: Banque de France (BdF), Autorité des marchés financiers (AMF); The Netherlands: De Nederlandsche Bank (DNB), Autoriteit Financiële Markten (AFM); Sweden: Riksbank, Finansinspektionen; UK: Bank of England) have signed an MoU on cooperation and exchange of information with regard to the relationship of ESA with the (I)CSDs of the Euroclear group, such as EB.</p> <p>Cooperation among supervisory authorities is intended to promote the integrity, stability and efficiency of the entities of the Euroclear group. This MoU aims to facilitate the cooperation and the mutual exchange among the signatory authorities of relevant information, views, assessment outcomes and related follow-up measures on the scope of cooperation in order to allow them to carry out their legal duties and responsibilities, including the assessment of common services provided by ESA to the CSDs of the Euroclear group, and according to the PFMI, as well as to pursue common views on issues that directly or indirectly impact the CSDs of the Euroclear group within the scope of their respective mandates, roles, responsibilities and powers.</p> <p>The signatory authorities established commonly agreed crisis communication procedure to enable a coordinated approach in situations of crisis or potential crisis with cross-border or potential cross-border impact.</p> <p>Both the ESA Technical Forum (ESA TF) and ESA High Level Forum (HLF) are chaired by the NBB as prudential supervisor of ESA. The ESA TF meets, as a rule, four times a year and interacts with ESA representatives from the three lines of defence. The ESA HLF is the senior-level steering body for this MoU and is composed of senior representatives of the signatory authorities. The ESA HLF will meet, as a rule, two times a year.</p>
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NBB, BCL and CCSF MoU

The NBB, the Banque centrale du Luxembourg (BCL) and the Commission de surveillance du secteur financier agreed on an MoU on the cooperation and communication arrangement under Responsibility E of the CPMI-IOSCO PFMI. An MoU between the signatories is warranted to set out how their cooperation should operate with respect to EB and Clearstream Banking Luxembourg (CBL), including the link between both SSSs, recognising signatories' shared interests and statutory competencies.

EB and CBL (hereafter "ICSDs") are highly relevant for global financial stability. They both play an important role in the issuance of assets eligible for use in Eurosystem credit operations as well as for the settlement and safe-keeping of assets used in Eurosystem credit operations. The ICSDs are both issuer CSD for international securities that are held at common depositories. The interoperable link between the ICSDs creates interdependencies as participants of one ICSD can transfer securities to participants of the other ICSD.

This MoU aims at contributing to increased consistency in the definition and implementation of the CPMI IOSCO PFMI, enabling the coordination of requirements towards the two CSDs and allowing for parallel and consistent implementation of risk measures by both entities.

Each of the signatories endeavours to share information, consult and cooperate with each other as appropriate (i) in the event of any incident that could affect the well-functioning of the interoperable link and (ii) during periods of market stress and in the potential recovery, wind-down or resolution of any of the ICSDs.

The NBB has requested the Commission de Surveillance du Secteur Financier (CSSF), BCL to update the MoU considering changes in the regulatory framework due to CSDR. The ESMA has also recommended to update the MoU in its first peer review assessment under CSDR.

The ECB has been of the opinion not to join the MoU, in order to avoid any risk of blurring the supervisory responsibilities of the ECB for FMIs on the one hand vis-à-vis its oversight and central bank of issue responsibilities on the other hand. Nevertheless, the ECB oversight function remains interested in the oversight of the ICSDs in view of the ECB's interest in the smooth functioning of SSSs across the euro area, especially taking into account the systemic importance of the two ICSDs. The ECB remains ready to

	<p>collaborate with the Belgian and Luxembourgish authorities in the ongoing oversight of the ICSDs outside of the framework of the MoU.</p> <p><u>BILATERAL COOPERATION AGREEMENTS</u></p> <p>NBB, FSMA Protocol</p> <p>According to Article 36/26/1, §1 of the NBB Organic Law, the NBB is, pursuant to Article 11 of the CSDR, designated as the sole competent authority responsible for carrying out the tasks related to the licensing and supervision of CSDs, notwithstanding the provisions of the CSDR that specifically confer powers on the authorities responsible for supervising trading platforms and without prejudice to the supervisory powers granted to the FSMA regarding CSDs. The NBB is therefore the competent authority responsible for the implementation of all provisions of the CSDR, except for the provisions of Title II whose implementation is expressly reserved to the authority competent for the issue of securities and the supervision of trading venues and without prejudice to the CSDR articles applicable to CSDs for which the FSMA is also an authority supervising its compliance.</p> <p>The modalities of consultation and the related cooperation between the NBB and the FSMA, to allow the FSMA to assume its responsibilities, has been set out in a protocol. As part of the protocol, the NBB consults the FSMA during EB’s annual review and evaluation on specific subjects for which the FSMA has competencies. The FSMA is directly responsible for Art. 26(3), 29, 32-35, 38, 49 and 53 of the CSDR. The FSMA can request the NBB to provide additional ad hoc information at any time throughout the year.</p> <p>The NBB and the FSMA interact frequently with each other on a day-to-day basis (for a wide range of topics, e.g., CSDR review and evaluation, projects related to T2S and DLT, preparation for ESMA policy groups) and consult each other whenever necessary in the event of a crisis that has an impact on EB and inform each other of any crisis situation.</p> <p>NBB and the Bank of England (BoE) MoU</p> <p>The NBB and the BoE first signed on 15 October 2014 a bilateral MoU on the cooperation and communication framework regarding the oversight of EB undertaken by the NBB. Recently, the NBB and the BoE agreed to enter a new MoU to reflect, among other things, the BoE’s additional responsibilities for the recognition and monitoring of non-UK CSDs following the UK’s withdrawal from the EU.</p>
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GBP is one of the major currencies settled in the system operated by EB. In addition, UK banks and other UK financial institutions and market infrastructures are among EB's largest participants. Prudent risk management by EB is consequently of relevance to limiting systemic risk to the UK financial system. Similarly, the financial soundness of UK institutions that hold accounts with or for EB is relevant as well. Any strategic developments or innovations in the UK financial sector may also have an impact on EB.

Following the UK's withdrawal from the EU, a non-UK CSD, such as EB, must be recognised by the BoE in order to provide CSD services under the UK CSDR. Article 25 of the UK CSDR requires that the BoE must establish suitable co-operation arrangements with a non-UK CSD's home authority before the BoE can recognise that non-UK CSD. The BoE and the NBB intend the MoU to satisfy that requirement in respect of EB.

To the fullest extent practicable, the NBB and BoE agree to share information, consult and co-operate as appropriate during a financial or operational crisis impacting EB or its GBP settlement arrangements.

Based on the MoU, the NBB and BoE will meet at least twice a year. Specific reporting framework for the BoE has been agreed upon.

NBB and Central Bank of Ireland (CBI) MoU

The NBB and the CBI have signed an MoU on the cooperation and exchange of information with regard to EB. The Irish securities market has no domestic securities settlement infrastructure and utilises settlement systems located in different European countries, primarily EB. Irish Government bonds have been issued and settled in EB since 2002. From March 2021, the vast majority of Irish corporate securities and a large proportion of Irish exchange traded funds are also issued and settled in EB. Consequently, the activities of EB are of substantial importance to the functioning of the securities market and the protection of the investors in Ireland under Article 24(4) of the CSDR. The interest of the CBI in EB's functioning relates to the settlement of the aforementioned Irish government bonds, the settlement of Irish corporate securities and the CBI's designation as the national competent authority of the host member state responsible for carrying out the functions of a competent authority referred to in the CSDR.

The NBB and CBI established a commonly agreed crisis communication procedure to enable a coordinated approach in situations of crisis or

	<p>potential crisis with cross-border or potential cross-border impact.</p> <p>Based on the MoU, the NBB and CBI will meet at least once a year. In practice, meetings are organised twice a year, to be aligned with the EB MOG. Specific reporting framework to the CBI has been agreed upon.</p> <p>NBB and the Bank of Japan (BOJ) MoU</p> <p>The NBB and the BOJ agreed on an MoU on the cooperation and communication regarding the oversight of EB undertaken by the NBB. JPY is a major currency settled in the system operated by EB. When assessing EB's payment and settlement arrangements in JPY, and in particular its related liquidity risk management procedures in JPY, the NBB, as authority with primary responsibility with respect to EB, considers the views of the BOJ. Additionally, the NBB will update the BOJ on the use of JPY correspondent banks by EB. The NBB and the BOJ agree to share information, consult and collaborate as appropriate in the event that EB or any of its JPY correspondent banks encounters significant financial distress or suffers a major operational incident. A specific reporting framework has been set up for the BOJ.</p> <p>NBB and ECB Exchange of Letters</p> <p>The NBB and the ECB agreed via the exchange of letters on cooperation of issues of mutual interest related to EB.</p> <p>NBB and Securities and Exchange Commission (SEC) Understanding</p> <p>The NBB and the U.S. SEC signed an understanding regarding an application of EB for an exemption under US federal securities laws to provide clearing services. The SEC is the agency of the U.S. Government that supervises the securities market in the U.S. and persons acting in a professional capacity in those securities markets, including securities depositories and clearing agencies. EB operates under an SEC exemption that allows EB to perform certain clearing agency activities for its U.S. participants without having to register as a clearing agency with the SEC. The exemptive relief sets forth a number of conditions that EB must satisfy in order to remain eligible for exemption from registration with the SEC. The NBB provides supervisory cooperation and assistance to help assure that EB fulfils the conditions of the exemptive order.</p>
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	<p>NBB and Hong Kong Monetary Authority (HKMA) MoU</p> <p>The NBB and the HKMA signed an MoU on the cooperation and communication regarding the cooperative oversight of EB and the Hong Kong FMI, the Central Moneymarkets Unit (CMU). The CMU is an SSS/CSD, operated by the HKMA, and has developed a number of links with CSDs outside Hong Kong, including EB. This MoU is intended to set out the co-operation between the NBB and the HKMA to facilitate both the NBB's and the HKMA's oversight of the link, and to provide a mechanism permitting the responsibilities of both authorities to be fulfilled efficiently and effectively.</p> <p>To the fullest extent practicable, both the NBB and the HKMA will endeavour to share information, consult and cooperate with each other as appropriate in the event of any incident affecting EB or the CMU (as the case may be) that may affect the HK FMI - EB linkages. Each signatory will endeavour to share information, consult and cooperate as appropriate during periods of market stress and in the potential recovery, wind-down or resolution of EB.</p>
<p>Key consideration 2</p> <p>If an authority has identified an actual or proposed operation of a cross-border or multicurrency FMI in its jurisdiction, the authority should, as soon as it is practicable, inform other relevant authorities that may have an interest in the FMI's observance of the CPSS-IOSCO Principles for financial market infrastructures.</p>	<p>Responsibility E Key Consideration 1 above details cooperations that capture either a cross-border or multicurrency feature of EB and considers the observance of the PFMI.</p> <p>The EB MOG encompasses the central banks of issue of those currencies representing the bulk of activity in the settlement system operated by EB: EUR, USD, GBP, JPY and AUD, which comprise about 98% of settlement turnover in number and value of instructions.</p> <p>As regards the notification of other authorities in the context of the supervision of EB, it should be noted that the NBB considers the publication of the FMI and Payment Services Report necessary because the Report enables the NBB to reach out to other financial regulators—in addition to the regulators it already works closely with—that have an interest in understanding the applicable regulations and supervisory approach and priorities of the NBB. The Report describes the oversight and prudential supervision activities regarding EB, with a specific box highlighting the international dimension of EB. With its first publication, the NBB notified the central banks of issue of currencies settled in EB's system by formally informing them of this report describing the supervision of EB.</p> <p>The CSDR, the EU's implementation of the PFMI for CSDs, defines a set of competent and relevant authorities involved in the authorisation and review</p>

	<p>and evaluation of EB. As EB is considered of substantial importance in 25 EEA countries, the competent authorities of these countries receive the NBB's evaluation reports for both core & non-banking type ancillary services and banking-type ancillary services.</p>
<p>Key Consideration 3 Cooperation may take a variety of forms. The form, degree of formalization and intensity of cooperation should promote the efficiency and effectiveness of the cooperation, and should be appropriate to the nature and scope of each authority's responsibility for the supervision or oversight of the FMI and commensurate with the FMI's systemic importance in the cooperating authorities' various jurisdictions. Cooperative arrangements should be managed to ensure the efficiency and effectiveness of the cooperation with respect to the number of authorities participating in such arrangements.</p>	<p>The CSDR and banking regulatory frameworks foresee cooperation with a wide range of competent and relevant authorities.</p> <p>Please see Responsibility E Key Consideration 1 where the form, degree of formalization and intensity of cooperation is detailed. Each MoU has been tailored to the needs of the signatories, allowing each to fulfill its duties related to the oversight of EB.</p>

<p>Key Consideration 4</p> <p>For an FMI where cooperative arrangements are appropriate, at least one authority should accept responsibility for establishing efficient and effective cooperation among all relevant authorities. In international cooperative arrangements where no other authority accepts this responsibility, the presumption is the authority or authorities with primary responsibility in the FMI's home jurisdiction should accept this responsibility.</p>	<p>This section describes the regulatory responsibilities of the NBB. Please also consult Responsibility E Key Consideration 1, describing all of the cooperation agreements which have been setup by the NBB as lead overseer of EB.</p> <p>Briefly, the NBB is lead overseer of EB and has established a wide range of cooperations based on the PFMI. The NBB Organic Law has encoded this responsibility. The NBB has also been appointed lead competent authority regarding EB's compliance with the CSDR, which also requires cooperation with a range of competent and relevant authorities. From a banking regulations perspective, relevant given EB's banking license and authorization to provide banking-type ancillary services as defined by the CSDR, the NBB is the lead (consolidating) supervisor, making sure EB is compliant with the banking rules and the CSDR's additional banking-specific rules, cooperating with, e.g., the ECB, the national resolution authority and the EBA, as needed.</p>
<p>Key Consideration 5</p> <p>At least one authority should ensure that the FMI is periodically assessed against the principles and should, in developing these assessments, consult with other authorities that conduct the supervision or oversight of the FMI and for which the FMI is systemically important.</p>	<p>This section describes the regulatory responsibilities of the NBB. Please also see Responsibility E Key Consideration 1, describing all of the cooperation agreements which have been setup by the NBB as lead overseer of EB.</p> <p>Annually, the NBB establishes an assessment workplan covering topics ranging from prudential requirements (banking, CSDR) to oversight principles. The NBB applies a risk-based approach making use of quantitative data and qualitative reporting, incident reporting, reporting from the 2nd and 3rd lines of defense, and the CSDR Review and Evaluation and Supervisory Review and Evaluation Process (SREP) for banks. As discussed, the CSDR implements the PFMI for CSDs, making all of the assessments relevant from a PFMI angle. In this sense, in the last few years, the NBB is synergizing all assessment frameworks, meaning CSDR specifics and PFMI principles and key considerations are taken onboard, step-by-step, into the banking-regulation-defined SREP which leads to a wide range of recommendations and capital requirements intended to cover all residual risks of EB.</p> <p>In case an MoU (with another authority) foresees to do so, the NBB shares its assessment workplan and outcome and consults the other signatories to take into account their attention points and possible concerns. The CSDR</p>

	<p>also foresees the sharing and debriefing of assessments with other competent and relevant authorities as part of EB’s regular review and evaluation.</p> <p>The FSMA provided EB with an overview of all documents that have to be reported to them on a yearly, biannual or ad hoc (in case of material changes) basis. EB provides the FSMA with these documents, which are screened a posteriori and further discussed with EB if needed. Given the fact that EB is a systemic institution, the FSMA does not apply risk-based supervision and screens all relevant information provided by EB. On a sampling basis, the newsletters towards participants are also screened by the FSMA to see whether all market participants can assess their risks of using EB.</p>
<p>Key Consideration 6</p> <p>When assessing an FMI’s payment and settlement arrangements and its related liquidity risk-management procedures in any currency for which the FMI’s settlements are systemically important against the principles, the authority or authorities with primary responsibility with respect to the FMI should consider the views of the central banks of issue. If a central bank of issue is required under its responsibilities to conduct its own assessment of these arrangements and procedures, the central bank should consider the views of the authority or authorities with primary</p>	<p>The NBB, as overseer and prudential supervisor of EB assesses EB’s payment and settlement arrangements and EB’s liquidity risk management in general. The NBB is also able to analyze payment and settlement arrangements per currency and the liquidity needs and liquidity sources in each relevant currency.</p> <p>The EB MOG signatories are the central banks of issue representing the currencies most settled within EB’s SSS, namely EUR, USD, GBP, JPY and AUD. These authorities are also consulted about liquidity risk management procedures. In the context of the CSDR, for banking-type ancillary services, including compliance with liquidity requirements, the Eurosystem, representing all euro central banks of issue, is consulted. Some bilateral cooperations also focus on settlement arrangements (e.g., NBB, BOJ MoU).</p> <p>The BoE, (lead) competent authority under the UK CSDR, consults the NBB regarding EB’s compliance with the EU CSDR, considered an equivalent regulation to the UK CSDR, including compliance with the liquidity requirements. This cooperation has been agreed in an MoU.</p>

responsibility with respect to the FMI.	
<p>Key Consideration 7</p> <p>Relevant authorities should provide advance notification, where practicable and otherwise as soon as possible thereafter, regarding pending material regulatory changes and adverse events with respect to the FMI that may significantly affect another authority's regulatory, supervisory, or oversight interests.</p>	<p>All of the MoUs and the procedures foreseen in the CSDR, make sure that in case of material regulatory changes and adverse events, with respect to EB, that may significantly affect another authority's regulatory, supervisory, or oversight interests, the necessary notifications, as soon as practicable possible, take place.</p> <p>As the yearly CSDR review and evaluation of EB is change-driven, competent and relevant authorities in EEA Member States will be debriefed about the outcome of such changes and events.</p> <p>In addition, via the publication of the annual FMI and Payment Services Report, pending material regulatory changes and adverse events with respect to EB will be disclosed as well.</p>
<p>Key Consideration 8</p> <p>Relevant authorities should coordinate to ensure timely access to trade data recorded in a TR.</p>	<p>Not applicable. The NBB does not regulate, supervise or oversee a TR that maintains data pertaining to other jurisdictions.</p>
<p>Key Consideration 9</p> <p>Each authority maintains its discretion to discourage the use of an FMI or the provision of services to such an FMI if, in the authority's judgment, the FMI is not prudently designed or managed or the principles are not adequately observed. An authority exercising such discretion should provide a clear rationale for the action taken both to the</p>	<p>The EB MOG MoU, the NBB, BOJ MoU, the NBB, BoE MoU and the NBB, HKMA MoU explicitly describe that in accordance with the PFMI Responsibility E, each signatory maintains its discretion to discourage the use of EB's SSS or the provision of services to EB's SSS if, in that signatory's judgement, it is not prudently designed or managed, or the principles are not adequately observed. If another signatory would exercise such discretion, it should provide a clear rationale for the action taken both to EB and to the NBB.</p>

FMI and to the authority or authorities with primary responsibility for the supervision or oversight of the FMI.	
Key Consideration 10 Cooperative arrangements between authorities in no way prejudice the statutory or legal or other powers of each participating authority, nor do these arrangements constrain in any way an authority's powers to fulfill its statutory or legislative mandate or its discretion to act in accordance with those powers.	All cooperations foresee that the signatories in no way prejudice the statutory or legal or other powers of each participating authority, nor do these arrangements constrain in any way an authority's powers to fulfill its statutory or legislative mandate or its discretion to act in accordance with those powers.
Key Conclusions for Responsibility E	<p>The NBB has established a number of comprehensive and effective bilateral and multilateral cooperative arrangements with respect to the oversight of Euroclear Bank, which cover, among others, information sharing, crisis protocols, consultation, and communication.</p> <p>Examples of such arrangements include the establishment of the Multilateral Oversight Group (MOG) for EB, bilateral agreements with a number of authorities (e.g., the United States, Japan, Ireland, and the United Kingdom), and a protocol with the FSMA on communication and consultation between the two Belgian authorities.</p> <p>In addition, a new MoU between Belgian and UK authorities has recently been agreed upon and finalized. As of May 2023, EB was recognized as a third country CSD under the UK CSDR.</p>
Assessment of Responsibility E	Observed
Recommendations and comments	

Appendix I. List of EB Links with Other CSDs and SSS

CSD Name	Country	SSS
ASX Settlement Pty. Limited	AU	CHESS
ATHEX CSD	GR	Dematerialized Securities System
Austraclear	AU	ASX Settlement
Banca Nationala a Romaniei SAFIR	RO	Banca Nationala a Romaniei SAFIR
Bank Negara Malaysia	MY	Rentas
BOGS (Bank of Greece Securities Settlement System)	GR	BOGS (Bank of Greece Securities Settlement System)
Caja de Valores S.A.	AR	CRYL, Central de Registracion y Liquidacion de Instrumentos de Endeudamiento Publico
Caja de Valores S.A.	AR	Caja de Valores S.A.
CDS Clearing and Depository Services Inc.	CA	Debt Clearing Service (DCS) and the Securities Settlement Service (SSS).
Central Depository (Pte) Ltd.	SG	The Central Depository (Pte) Limited (CDP)
Central Depository of Securities Prague	CZ	Centrální depozitář cenných papírů, a.s. Central Securities Depository Prague
Central Moneymarket Unit	HK	Central Moneymarket Unit
Centralna klirinsko depotna druzba (KDD)	SI	KDD CENTRALNA KLIRINŠKO DEPOTNA DRUŽBA
Centrální depozitář cenných papírů SR a.s. (CDCP)	SK	Centrální depozitář cenných papírů SR a.s. (CDCP)
Clearstream Banking AG	DE	Clearstream SSS Cascade
Clearstream Banking SA	LU	Clearstream Securities Settlement System (Creation)
Cyprus CDCR (Central Depository and Central Registry)	GR	Central Depository and Central Registry
Deposito Central de Valores	CL	Contraparte Central S.A. (CCLV)
DTC (Depository Trust Company)	US	DTC (Depository Trust Company)
Edaa Securities Depository Center Company (Saudi CSD)	SA	Edaa Securities Depository Center Company (Saudi CSD)
Euroclear Belgium	BE	CIK
Euroclear Finland	FI	Euroclear Finland
Euroclear France SA	FR	ESES France
Euroclear Netherland	NL	ESES Netherlands
Euroclear Sweden AB	SE	VPC systemet
Euroclear UK & International Limited (EUI) (CREST)	GB	Crest system
Euronext securities Copenhagen - VP	DK	VP Securities
Euronext securities Lisbon - Interbolsa	PT	Euronext securities Lisbon - Interbolsa
Euronext Securities Milan - Monte Titoli S.p.A.	IT	Euronext Securities Milan - Monte Titoli S.p.A.
Euronext securities Oslo - VPS	NO	The security settlement system VPO NOK The security settlement system VPO EURO
Fedwire Securities Services	US	Fedwire Securities Service

BELGIUM

Hong Kong Securities Clearing Company Limited (HKSCC)	HK	CCASS
Iberclear	SP	ARCO Securities Settlement Systems The systems operated by BME CLEARING S.A.U.
Ireland	IE	Euroclear Bank
Japan Securities Depository Center Inc	JP	Japan Securities Depository Center Inc
KDPW S.A.	PL	KDPW S.A.
KELER	HU	KELER
LUX CSD	LU	LuxCSD Securities Settlement System
MERKEZİ KAYIT KURULUŞU ANONİM ŞİRKETİ	TR	MERKEZİ KAYIT KURULUŞU ANONİM ŞİRKETİ for all securities except for Government bonds where TIC-ESTS (Turkish Interbank Clearing – Electronic Security Settlement System) is the SSS
Monetary Authority of Singapore	SG	MEPS-SGS subsystem
NARODOWY BANK POLSKI (NBP)	PL	SKARBNET4
Nasdaq CSD SE Estonian branch	ES	Nasdaq CSD SE Estonian branch
Nasdaq CSD SE, Lithuanian branch	LT	Nasdaq CSD SE, Lithuanian branch
NBB SSS	BE	NBB SSS
New Zealand Securities Central Depository Limited	NZ	NZClear
OeKB CSD (WSB System)	AT	OeKB CSD (WSB System)
S.D. Ineval SA de CV	MX	Comision Nacional Bancaria y de Valores
SHANGHAI CLEARING HOUSE (SHCH)	CN	SHANGHAI CLEARING HOUSE (SHCH)
SIX SIS AG	CH	SECOM, the securities settlement system operated by SIS SegalInterSettle AG
SKD (Short Term Bond System) ČESKÁ NÁRODNÍ BANKA	CZ	SKD (Short Term Bond System) ČESKÁ NÁRODNÍ BANKA
Strate Limited	ZA	Strate Limited
Thailand Securities Depository Company Limited	TH	Thailand Securities Depository Company Limited
The Bank of Japan	JP	Bank of Japan Financial Network Systems (BOJ-NET)
The Bureau of Treasury, Philippines - RoSS	PH	BTR-RoSS
The National Settlement Depository (NSD)	RU	NSD
The Taiwan Depository and Clearing Corporation (TDCC)	TW	The Taiwan Depository and Clearing Corporation (TDCC)
The Tel Aviv Stock Exchange Clearing House Limited	IL	The Tel Aviv Stock Exchange Clearing House Limited
Source: EB		

Appendix II. List of FMI s that are Participants in the Euroclear System

Participant Name	Country	Participant Profile
ASTANA INTERNATIONAL EXCHANGE	KAZAKHSTAN	CSD
B3 S.A.	BRAZIL	CCP
BANQUE CENTRALE DE COMPENSATION	FRANCE	CCP
BME CLEARING, S.A. SOCIEDAD UNIPERSONAL	SPAIN	CCP
Caja de Valores S.A.	ARGENTINA	CSD
CASSA DI COMPENSAZIONE E GARANZIA SPA	ITALY	CCP
CAVALI S.A. ICLV	PERU	CSD
Central Counterparty National Clearing Centre	RUSSIA	CCP
CENTRAL SECURITIES DEPOSITORY	KAZAKHSTAN	CSD
CENTRALNI DEPOZITAR CENNYCH PAPIRU A.S.	CZECH REPUBLIC	CSD
Clearstream Banking SA	Luxembourg	CSD
Deposito Central de Valores	CHILE	CSD
EUREX CLEARING AG	GERMANY	CCP
Euroclear Belgium	BELGIUM	CSD
Euroclear France SA	FRANCE	CSD
Euroclear Netherland	THE NETHERLANDS	CSD
Euroclear Sweden AB	SWEDEN	CSD
Euroclear UK & International Limited (EUI) (CREST)	UNITED KINGDOM	CSD
Euronext securities Copenhagen - VP	DENMARK	CSD
Euronext Securities Milan - Monte Titoli S.p.A.	ITALY	CSD
EUROPEAN CENTRAL COUNTERPARTY NV	THE NETHERLANDS	CCP
HONG KONG MONETARY AUTHORITY	HONG KONG	CSD
HONG KONG SECURITIES CLEARING	HONG KONG	CSD
ICE CLEAR CREDIT LLC	UNITED STATES OF AMERICA	CCP
ICE CLEAR EUROPE LIMITED	UNITED KINGDOM	CCP
ICE CLEAR NETHERLANDS B.V.	THE NETHERLANDS	CCP
ICE SECURITIES EXECUTION & CLEARING, LLC	UNITED STATES OF AMERICA	Market Infrastructure*
INTERCLEAR CENTRAL DE VALORES SA	COSTA RICA	CSD
Japan Securities Clearing Corporation	JAPAN	CCP
KDPW S.A.	POLAND	CCP
Krajowy Depozyt Papierów Wartościowych S.A	POLAND	CSD

BELGIUM

LATIN CLEAR CENTRAL LATINOAMERICANA DE VALORES	PANAMA	CSD
LCH LIMITED	UNITED KINGDOM	CCP
LME CLEAR LIMITED	UNITED KINGDOM	CCP
M.A.E. (Mercado Abierto Electronico)	ARGENTINA	Market Infrastructure*
MFEX MUTUAL FUNDS EXCHANGE AB	SWEDEN	Market Infrastructure*
MIDCLEAR	LEBANON	CSD
MUSCAT CLEARING & DEPOSITORY COMPANY SAOC	OMAN	CSD
NASDAQ CLEARING AB	SWEDEN	CCP
NASDAQ DUBAI GUARDIAN LIMITED	UNITED ARAB EMIRATES	CSD
PHILIPPINE DEPOSITORY AND TRUST CORP.	THE PHILIPPINES	CSD
SD INDEVAL INSTITUCIÓN PARA EL DEPOSITO DE VALORES SA DE CV	MEXICO	CSD
SHANGHAI CLEARING HOUSE (SHCH)	PEOPLE REPUBLIC OF CHINA	Market Infrastructure*
SIX SIS AG	SWITZERLAND	CSD
THE CENTRAL DEPOSITORY (PTE) LIMITED	SINGAPORE	CSD
THE KOREA SECURITIES DEPOSIT	SOUTH KOREA	CSD
The National Settlement Depository (NSD)	RUSSIA	CSD
The Taiwan Depository and Clearing Corporation (TDCC)	TAIWAN	CSD
The Tel Aviv Stock Exchange Clearing House Limited	ISRAEL	CCP
TRINIDAD AND TOBAGO CENTRAL Depository Ltd	TRINIDAD AND TOBAGO	CSD
* Market Infrastructure : Participant acting as trading platform and clearing.		
Source: EB		