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DETAILED ASSESSMENT OF OBSERVANCE

March 2013

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

Prepared By

Monetary and Capital Markets Department

This Detailed Assessment Report was prepared in the context of an IMF Financial Sector Assessment Program (FSAP) mission in the European Union from November 27–December 13, 2012, led by Charles Enoch, IMF and overseen by the Monetary and Capital Markets Department, IMF. Further information on the FSAP program can be found at http://www.imf.org/external/np/fsap/fssa.aspx

CONTENTS

Appendixes

Glossary

AFM	Autoriteit Financiële Markten
AMF	Autorité des Marchés Financiers
APS	Appropriation of Pledged Securities
BDF	Banque de France
BOE	Bank of England
CBI	Central Bank of Ireland
CBL	Clearstream Banking Luxembourg
CCP	Central Counterparty
CPSS	Committee on Payment and Settlement Systems
CSD	Central Securities Depository
DNB	De Nederlandsche Bank
DVP	Delivery versus payment
EB	Euroclear Bank
ECB	European Central Bank
ESA	Euroclear SA
ESCB	European System of Central Banks
ESES	Euroclear Settlement for Euronext-zone Securities
ESMA	European Securities and Markets Authority
EU	European Union
FI	Fixed Income
FMI	Financial Market Infrastructure
FSAP	Financial Sector Assessment Program
FSMA	Financial Services and Markets Authority
FX	Foreign Exchange
GBP	Great Britain Pound
ICSD	International Central Securities Depository
IT	Information Technology
IOSCO	International Organization of Securities Commissions
MOU	Memorandum of Understanding
MTF	Multilateral Trading Facility
NBB	National Bank of Belgium
OTC	Over the Counter
PFMI	CPSS-IOSCO Principles for Financial Market Infrastructures
RTGS	Real Time Gross Settlement System
SE	Stock Exchange
SSS	Securities Settlement System
USD	United States Dollar

EXECUTIVE SUMMARY

Euroclear Bank is a securities settlement system that contributes to the safety and efficiency of global markets for government bonds and other international securities but also concentrates systemic risk. It is one of the largest securities settlement systems worldwide with a daily average settlement value of around 1.1 trillion euro, providing settlement services for securities from 44 markets in 53 currencies. In particular, Euroclear Bank services the largest, global banks with tri-party repo arrangements to secure their interbank financing.

As a default of Euroclear Bank has the potential to highly disrupt global financial markets adequate risk management is necessary. Operational risk is significant but appears to be well-controlled through appropriate risk measures such as contingency plans and back-up facilities allowing for timely completion of settlement processes. A delivery-versus-payment settlement model is in place that mitigates the risk of a participant losing the value of the transaction. Under its banking license Euroclear Bank offers banking and credit facilities that are linked to its custody and settlement functions. Its credit exposures are managed by a combination of credit limits and—in principle—full collateralization. Euroclear discloses information to allow its participants to accurately identify the risks and costs associated with the use of the system.

Euroclear Bank's risk framework is generally sound. Euroclear Bank should become operationally ready to fully implement plans for recovery and the orderly winding-down of operations. In anticipation of the emerging international regulatory standards and frameworks on recovery and resolution of FMIs, Euroclear Bank has developed recovery plans and plans for the orderly winding down of its operations. It should now, in particular, take measures to be operationally ready for their full implementation. Euroclear Bank and the NBB should accord a high priority to addressing this issue as the disorderly failure of Euroclear Bank would likely lead to systemic disruptions to the institutions and the markets it supports, linked payment systems, CSDs and CCPs, and to the financial system more broadly.

Important risk measures have been taken to reduce credit risk, but further improvements are needed to comply with the international standards. Euroclear Bank has recently improved the quality of its collateral and liquidity management frameworks. Credit risks are apparent in the current practices for asset servicing. EB should address this credit risk for its normal settlement activities and should also adopt measures to mitigate similar credit risks for settlements done via the bridge with Clearstream Banking Luxembourg (CBL) which necessitates a review of the link agreement with CBL. Also, EB has no tools in place to identify, monitor and measure risks from tiered participation, which is a requirement of the new international standards.

Another necessary improvement relates to the frequency of the reconciliation of positions. Eurobonds—that represent more than half of the deposited value—are reconciled on a daily basis. For other securities positions are reconciled on a weekly or monthly basis, which can be a potential source of uncertainly related to the integrity of the securities issues. EB should introduce daily reconciliations of positions for all securities.

Euroclear Bank is subject to effective regulation, supervision and oversight of the NBB and FSMA, but cooperation with the Luxembourg authorities should be improved. The legal framework provides the Belgian authorities with sufficient powers to obtain timely information and induce change. However, as Euroclear Bank offers similar settlement and banking services to the Luxembourg based CBL, closer cooperation with the Luxembourg authorities is needed to ensure a level playing field in the implementation of risk management measures in line with the CPSS-IOSCO principles. Such cooperation already exists in relation to the interoperability link. Given the importance of these FMIs to global financial stability, the existing cooperation between the Belgian and Luxembourg authorities should be formalized and enhanced, with the involvement of the ECB, to coordinate recommendations and seek for a parallel implementation of risk measures in both entities. The proposed Single Supervisory Mechanism will include both CBL and Euroclear Bank, potentially leveling the playing field.

The national securities depositories of Belgium, France and the Netherlands, that share a common IT platform provided by the Euroclear Group, are subject to effective regulation, supervision and oversight of the Belgian (NBB and FSMA), Dutch (DNB and AFM), and French (BDF and AMF) authorities, despite the fact that the legal frameworks differ between the three countries. The cooperation between the different authorities is effective and contributes to the financial stability in Belgium, France, and the Netherlands. Crisis management frameworks are in place and regularly tested and updated.

BACKGROUND, KEY FINDINGS, AND FOLLOW UP

A. Introduction

Assessor and objectives

1. This report contains the assessment of Euroclear Bank (EB) as well as the ESES CSDs based on the CPSS-IOSCO Principles for FMIs (PFMI). The assessment was undertaken in the context of the IMF's Financial Sector assessment Program (FSAP) to the European Union (EU) in November and December 2012. The assessor was Froukelien Wendt of the IMF's Monetary and Capital Markets Department. The assessor would like to thank the NBB, other authorities and other financial institutions for the excellent cooperation and hospitality.

2. The objective of the assessment has been to identify potential risks related to EB and the ESES CSDs that may affect financial stability. While safe and efficient securities settlement systems (SSS) and central securities depositories (CSDs) contribute to maintaining and promoting financial stability and economic growth, they may also concentrate risk. If not properly managed, FMIs can be sources of financial shocks, such as liquidity dislocations and credit losses, or a major channel through which these shocks are transmitted across domestic and international financial markets.

Scope of the Assessment

3. The scope of the assessment includes EB and its authorities. EB is assessed against all relevant principles for FMIs. The authorities of EB, being the National Bank of Belgium (NBB) and the Financial Services and Markets Authority (FSMA), are assessed using the responsibilities for authorities of FMIs. EB was earlier assessed as part of the Belgium FSAP in 2006.

4. In addition, the authorities of the ESES CSDs are assessed against the responsibilities for authorities of FMIs. The way authorities supervise and FMIs is an essential issue in promoting and maintaining domestic financial stability. Given that Belgium, France and the Netherlands rank high on the list of jurisdictions with systemically important financial sectors (as identified by the IMF) an assessment of their CSDs is considered important. The national CSDs have not recently been assessed during the national FSAPs of Belgium, France and the Netherlands.

B. Methodology and Information Used for the Assessment

5. The information used in the assessment includes relevant EU directives, national laws, regulations, rules and procedures governing the systems, and other available material.[1] In

[1] Other available material included annual reports, the self assessment of EB and the ESES CSDs, NBBs responses to the IMF questionnaire, websites from the regulators, overseers, supervisors, operators and stakeholders and other relevant documents.

addition, discussions were held with regulators, overseers, and supervisors, being the NBB, FSMA, Autoriteit Financiële Markten (AFM), De Nederlandsche Bank (DNB), Autorité des Marchés Financiers (AMF), and Banque de France (BDF). The assessment also benefited from discussions with EB and Euroclear SA (ESA), and main stakeholders.

6. At the request of the IMF the NBB conducted an assessment of EB against the PFMI. The assessment included an assessment of the responsibilities of authorities of EB.

7. The ESES authorities also conducted a self assessment of the regulation, supervision and oversight of the ESES CSDs using the five responsibilities of authorities for FMIs. As the ESES CSDs provide services in Belgium, France and the Netherlands, the NBB, as lead overseer, invited other competent authorities in Belgium, France and the Netherlands to cooperate in the preparation of the assessment of the responsibilities of authorities.

C. Overview of Clearing and Settlement Landscape in which Euroclear Bank Operates

8. EB is a systemically important SSS and CSD for European and global markets. A default of EB has the potential to highly disrupt global financial markets. It is one of the largest securities settlement systems worldwide with a daily average settlement value of around 1.1 trillion euro. It provides settlement services for domestic securities from 44 markets and is linked to more than 40 CSDs. It settles in 53 currencies for 1,400 financial institutions from more than 90 countries. In particular, EB services the largest, global banks with tri-party repo arrangements to secure their interbank financing. Appendix 1 contains comparative statistics for EB and other large SSS.

9. EB holds a banking license under Belgium law and is usually referred to as an international central securities depository (ICSD). Where CSDs are primarily created to serve their domestic market, ICSDs were created in the 1970s to settle Eurobonds, i.e., international bonds denominated in a different currency from that of the country in which they are issued. Over the years, ICSDs have extended the scope of their services to cover all types of internationally-traded financial instruments, including equities and investment funds. Under its banking license EB provides credit lines to its participants to facilitate settlement and increase settlement efficiency. The other ICSD in the European Union is CBL that is a bank under Luxembourg law. EB competes directly with CBL, but also with other providers of settlement and custody services (global custodians).[2]

10. EB is part of the Euroclear Group holding company, which also holds the national CSDs of Belgium, France, Finland, Ireland, Netherlands, Sweden, and the United Kingdom. The organization structure is illustrated in Figure 1. Euroclear plc, incorporated in the United Kingdom, is

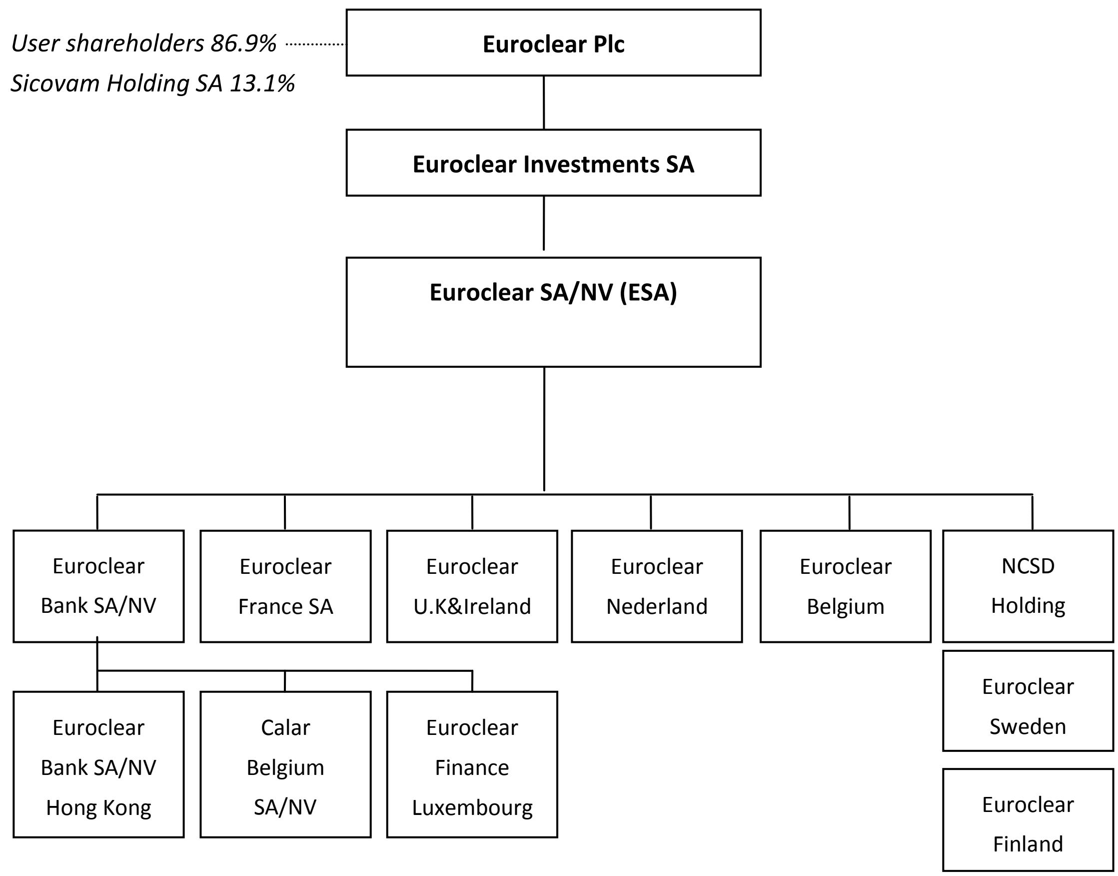
[2] Competition between financial market infrastructures can be an important mechanism for promoting efficiency. Competition may prevent monopolistic pricing and encourage innovation. However, competition on risk measures and management may also impede adherence to appropriate standards of safety and security and should be prevented as the stability of the financial system is at stake.

the ultimate holding company of the Euroclear Group that owns and controls ESA and (indirectly) EB through Euroclear Investments SA, its Luxembourg wholly-owned subsidiary. Euroclear plc is owned and governed by its main users and Sicovam Holding. ESA is the parent company of the group national CSDs and Euroclear Bank. The entities of the Euroclear Group comprise the CSDs of the United Kingdom (Euroclear U.K. and Ireland), France (Euroclear France), the Netherlands (Euroclear Nederland), Sweden (Euroclear Sweden), Finland (Euroclear Finland), and the Belgian CSD for private debt and equities (Euroclear Belgium).

11. EB has two subsidiaries and one branch. Calar Belgium SA/NV is a Belgian company, which principal activity is to own, lease, operate and maintain the real estate of the Euroclear office building in Brussels. Euroclear Finance 2 S.A. is a Luxembourg company, which issues securities, listed on the Luxembourg Stock Exchange. EB has one branch in Honk Kong and is establishing a second branch in Poland.

12. EB's main activity is to operate a multi-currency securities settlement system; in addition EB is active as asset services provider. Participants of EB can open cash and securities accounts in the books of EB. About 200,000 national and international securities are accepted by EB for settlement. The majority are domestic bonds (157,000), followed by other securities (28,000) and equities (19,000). Total turnover in 2011 was €333 trillion, of which the settlement of OTC transactions accounted for 84 percent of total turnover. Figure 2 illustrates the interconnectedness of EB's settlement system with various markets and other systems. Settlement for CCPs, with transactions coming from either a stock exchange (SE) or a multilateral trading facility (MTF), account for 12 percent of total turnover. About 80 percent of EB turnover is settled internally in the books of EB (i.e., both seller and buyer have a securities account in the Euroclear system). Another 10 percent is settled via the bridge with CBL and 10 percent via the links with other CSDs. EB offers a large number of asset services to the holders of securities, including tax services, proxy voting, corporate events, dividends and subscription rights.

Figure 1. Euroclear Group Organization Structure

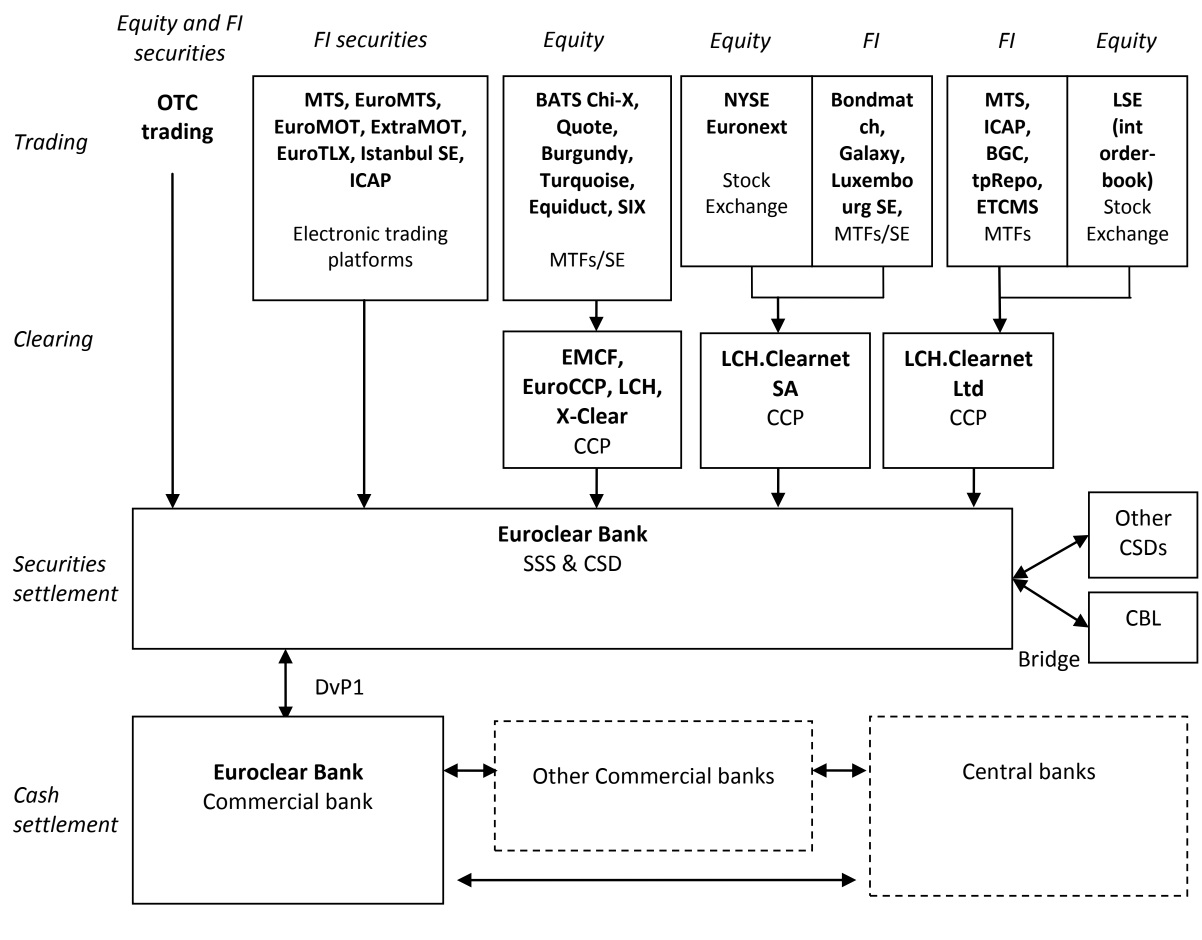


Source: Based on information provided by Euroclear.

13. **EB settles transactions in commercial bank money in its own books, mainly during the overnight batch process.** Each participant holds both cash and securities accounts at EB, which provides them with settlement and custody-related banking services, including credit, foreign exchange, securities lending and borrowing and collateral management services. EB operates a Delivery versus Payment (DVP) Model 1 arrangement (simultaneous gross settlement of cash and securities), which mitigates principal risk.

14. **Whilst most trades settled are denominated in euro, EB also settles in more than 50 other currencies.** EB has a euro account in TARGET2, but does not have direct access to central bank accounts for settlement in other settlement currencies. Therefore, EB makes use of a large network of cash correspondents to offer multi-currency services to their international clients. For the four main currencies (EUR, USD, GBP, and JPY) EB has several commercial banks to act as cash correspondents. The cash correspondents act as liquidity providers and are the link between EB and the national payment system in the country of the currency.

Figure 2. Role of Euroclear Bank as Settlement System in the Global Markets



Source: Based on information provided by Euroclear.

15. EB has a bilateral link with the Luxembourg-based CBL, as well as a number of unilateral links with foreign CSDs. This allows EB to settle a wide range of Eurobonds issued jointly in EB and CBL, as well as a number of foreign securities (foreign bonds, money market instruments, domestic bonds, government and corporate, including convertibles, equities and depository receipts, warrants, and investment funds).

16. Besides core securities settlement services, EB offers value added services in the area of collateral management, where it administers the exchange of collateral and cash associated to the transactions as a third party service provider. EB is developing an international market infrastructure that will allow traders and other market participants to source and move collateral across borders. This infrastructure will allow clients to move securities from where they are currently held to move elsewhere to serve as collateral for gaining access to central bank liquidity secured transactions, margins for CCPs as well as bi-laterally cleared OTC derivative trades. Collateral valuation is done at least on a daily basis. The daily average collateral provision was €324 billion in 2011.

17. EB offers a facility for securities lending and borrowing. All securities made available by lenders are aggregated in a lending pool. Borrowings are allocated whenever a borrowers' account lacks securities to execute a delivery instruction. EB guarantees to each lender the return of lent securities or their cash equivalent in the case of a borrower's default.

18. EB is regulated, supervised and overseen by the NBB and the FSMA. Where the NBB is responsible for the regulation and supervision from a prudential angle, the FSMA is responsible that EB complies with the conduct of business rules. The NBB is also responsible for oversight.

19. The role and responsibilities of the NBB and FSMA are based on statutory law. The prudential supervision of the NBB is based on the NBB Organic Law and the Royal Degree 26/09/2005. The supervision includes EB, ESA and Euroclear Belgium as well as the financial holding company Euroclear Group plc. The responsibilities of the FSMA are outlined in the Law of August 2 and include the protection of investors' interests in financial transactions and the proper operation, integrity and transparency of markets in financial instruments.

20. The oversight responsibilities of the NBB aim to ensure financial stability. They are based on Article 8 of the NBB Organic Law, which states that the NBB shall ensure that the clearing, settlement and payment systems operate properly and shall make certain that they are efficient and sound. The NBB assessments of EB, ESA and Euroclear Belgium are based on the PFMI.

21. Cross-border cooperation and coordination of the supervision, regulation and oversight of EB and ESA is reflected in multilateral and bilateral cooperation arrangements. A multilateral cooperation framework is established at the level of ESA in relation to the corporate services provided by ESA to EB and the national CSDs. Bilateral arrangements have been defined at the level of EB and include arrangements with central banks of issue of the main currencies settled by EB. An informal arrangement exists with the Luxembourg authorities for the bridge with CBL. Bilateral arrangements also cover the Hong Kong branch of EB. Appendix 2 provides a detailed list of cooperative arrangements.

D. Overview of Clearing and Settlement Landscape in which the ESE CSDS Operate

22. The Euroclear Settlement of Euronext-zone Securities (ESES) system is a systemically important SSS for Belgium, France, and the Netherlands. The ESES system settles transactions executed on the Paris, Amsterdam and Brussels Euronext stock exchange cash markets, which are held in the national CSDs of the respective countries. The three CSDs are Euroclear Belgium, Euroclear France, and Euroclear Nederland, which are formally the operators of ESES. The three ESES CSDs share a common IT platform, harmonized settlement and custody services, and apply a harmonized pricing model. In addition, ESES settles OTC transactions. Figure 3 illustrates the role of ESES in the securities markets of Belgium, France and the Netherlands. Appendix 3 contains statistics on the three ESES CSDs.

23. The ESES organization aims to reach maximum efficiency within the context of different national jurisdictions. The CSDs of Belgium, France and the Netherlands are subsidiaries of ESA, the Euroclear group holding company.[3] The IT platform operations are outsourced to ESA. ESA also provides a broad range of services to its subsidiaries such as audit, financial services, risk management, legal advice, human resources and product management. Each local ESES CSD has a country manager. The three ESES CSDs share the same management team, although in different compositions, to ensure a coherent approach for the three CSDs.

24. ESES settlement is conducted in central bank money on cash accounts outsourced by the respective national central banks to the national CSDs. The transactions are settled on cash accounts legally held with the NBB, the BDF, and DNB Bank, but operated by the ESES CSDs. A DVP model 1 arrangement is used, with settlement of securities and cash on a trade-by-trade basis, thereby mitigating principal risk.

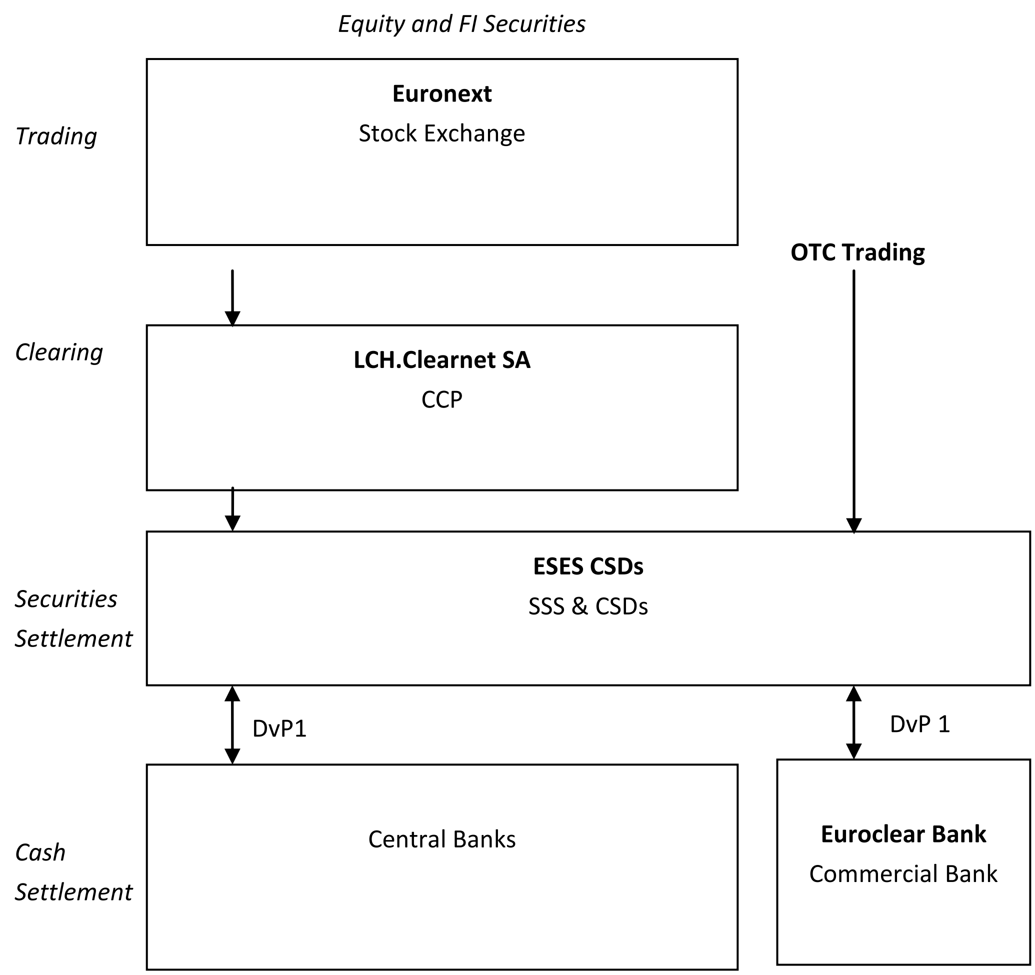
25. The ESES CSDs are subject to supervision and oversight of their respective national authorities. Euroclear France is subject to the regulation and oversight of the French competent authorities, Euroclear Nederland of the Dutch authorities and Euroclear Belgium of the Belgian authorities. The Belgian authorities are the FSMA and the NBB. For France, the authorities are the AMF and BDF. The authorities for the Netherlands are the AFM and DNB. Euroclear Nederland is also subject to supervision by the minister of finance, which supervision is partly mandated to the AFM.

26. The ESES authorities cooperate closely, which is essential to maintain financial stability. The authorities have signed an MOU in October 2009—updating the one of 2005— that sets out principles for the co-ordination of regulating and overseeing ESA. This MOU was also signed by the other central banks and securities regulators which regulate and oversee Euroclear entities in the United Kingdom, Sweden, and Finland. The MOU includes agreements on the exchange of information, and coordinated assessments. The scope of a coordinated assessment may include governance arrangements, operational reliability, the audit function and risk management policy, the business model and any outsourcing to third parties. At the level of ESES, in March 2010, working arrangements were agreed between the ESES authorities on the co-operation and co-ordination of oversight and supervisory activities related to the ESES CSDs.

27. The implementation of Target2 Securities will impact the ESES CSD organization as settlement operations will be outsourced to this new settlement platform.

[3] ESA was established during a company restructuring in 2005 and replaced EB as the owner of the national CSDs of Belgium, France, and the Netherlands. As a sister company EB is less likely to impact the stability of the national CSDs in case of a bankruptcy.

Figure 3. Role of the ESES CSDs in the Securities Markets of Belgium, France, and the Netherlands



Source: Based on information provided by Euroclear.

E. Key Findings and Follow up for Euroclear Bank

General Organization (Principle 1–3)

28. EB has a sound and enforceable legal basis for its settlement, custody and banking activities. The regulatory framework is clear and transparent. The Belgian implementation of European directives provides a firm statutory foundation for netting, set-off and securities lending, consistently with the other member states. Both securities and payment transfers, when finalized, and default arrangements are protected from the ordinary operation of Belgian insolvency law. The banking license regulates the credit activities of EB. EB actively identifies and mitigates risks arising from its activities in various jurisdictions on an ongoing basis.

29. The governance arrangements of Euroclear Group and EB are transparent and its objectives support the stability of the financial system. Euroclear Group's main strategic objectives focus on clients and the stability and developments of the markets locally and globally. In 2011 the board of the Euroclear Group formally decided to be a non-profit company aiming for a limited return on equity. As a follow up to the FSAP assessment in 2006 procedures have been adopted to handle potential conflicts between shareholders and users.

30. EB's risk framework is generally sound but EB should strive to be operationally ready for the full implementation of its plans for recovery and the orderly winding down of its operations. The risk management framework consists of a set of policies, governance arrangements, operational tools and escalation procedures for managing credit, liquidity, operational and other relevant risks. Recovery plans for EB and Euroclear Group have been developed but are not yet finalized. Subsequently, EB is currently not operationally ready to fully implement the plans for recovery or orderly winding down of operations if needed. This situation is an issue of concern, given the size of EB and the impact of a potential failure of EB on the financial stability in Europe and the world.

Credit and Liquidity Risk Management (Principle 4–7)

31. Important risk measures have been taken to reduce credit risk, but further improvements are needed to comply with the international standards. Under its license EB's activities are limited to banking and credit facilities that are linked to its custody and settlement functions. EB offers (uncommitted) credit lines and securities lending to increase settlement efficiency. Subsequent credit exposures are managed by a combination of credit limits and collateral. Credit and liquidity risks from investments are mitigated by the application of a conservative investment policy. Credit and liquidity risks related to the use of cash correspondents and treasury counterparts are mitigated through reverse repo arrangements. EB should improve its framework with regard to advanced income payments to mitigate potential exposures in case the issuer fails to pay. The decision is planned to be implemented by the end of 2013, but does not include the advanced payments for the bridge with CBL.

32. EB uses collateral to cover its exposures and has tools to set and enforce conservative haircuts, however, further improvements can be pursued. The securities accounts of participants in the EB system are used for collateral purposes. In principle, all securities can be used as collateral in the EB systems as long as a reliable valuation of the asset can be obtained. The collateral arrangements do not explicitly take into account potential pro-cyclical adjustments, which may exacerbate financial instability in crisis situations. EB accepts various non-standard types of collateral, such as letters of credit and bank guarantees. Although the use of these types of collateral is relatively small it is recommended to further reduce their use. EB is also encouraged to further automate the monitoring of collateral concentration.

33. On instigation of the NBB EB improved its framework for the management of liquidity risks. EB is able to identify measure and monitor its settlement and funding flows on an ongoing basis. It uses various types of liquid resources, including central bank liquidity, in line with the PFMI.

EB's liquidity management framework aims to ensure that EB has sufficient liquid resources in severe stress situations, which are defined as the default of the two participants with the largest exposure and limited access to liquid sources. EB back tests the sufficiency of collateral on at least a daily basis.

Settlement (Principle 8–10)

34. Settlements in the EB systems are final under the Belgian Settlement Finality Law. Settlements are final at the end of the overnight settlement batches and on a real time basis for settlements during the day. Settlements over the bridge with CBL are final upon confirmed acceptance of the securities, either real time or at the end of the overnight settlement batch. External settlements are final according to local market rules and practices.

35. Money settlements are conducted in commercial bank money on the cash accounts in Euroclear Bank. Settlement in central bank money is considered not practical as (i) EB settles more than 50 currencies and (ii) many of EB's clients do not have access to central bank money in these currencies.

36. Cash is deposited at accounts of designated cash correspondent banks or treasury counterparts. Cash correspondents execute payments and may provide EB with free and mostly unsecured intra-day liquidity facilities, as well as overnight credit if need be. EB controls the credit and liquidity risks arising from the use of cash correspondents through strict selection and due diligence of participants, monitoring of cash balances and mitigation of exposures through repo transactions.

37. EB has access to central bank liquidity and has opened an account in TARGET2 with the NBB. EB can easily access euro central bank liquidity by providing eligible collateral. Although 80 percent of settlements take place in euro EB mainly uses cash correspondents for the deposit of participants' cash in euro. Realignment of payments between the cash correspondents is done through TARGET2. EB has started to use TARGET2 for other payments in euro, such as income payments from the issuer to EB.

Central Securities Depositories and Exchange-of-Value Settlement Systems (Principle 11–12)

38. Securities in the systems of EB are immobilized and held in book-entry form. EB uses a model 1 DVP system, ensuring simultaneous final settlement of securities and funds transfers on a gross (trade-by-trade) basis. EB settles transactions between participants by simultaneous book-entry debits and credits in their respective securities and/or cash accounts held in its books.

39. EB has arrangements in place to ensure the integrity of securities issues, however, not all securities balances are reconciled on a daily basis. Assets are protected against custody risks, supported by the legal framework. The arrangements for the statutory lien enable EB to use proprietary assets of its participants. Overdrafts of securities accounts are not permitted. EB should improve its reconciliation arrangements in line with international standards and apply daily reconciliation for all securities positions. Currently daily reconciliation of securities positions is only conducted for Eurobonds, and not for other securities that represent a significant part of the deposited value of securities in EB.

Default Management (Principle 13–14)

40. The default of one or more large participant could impact the safety and efficiency of the EB system. A default may cause losses to EB and other participants through credit and securities lending. Participants may also face liquidity shocks. EB has developed default rules and procedures to manage a participant default. EB has appropriate discretionary power to implement these rules and internal tests are conducted several times a year. The tests include the participation of all relevant hierarchical levels within the organization. EB does not publicly disclose its full set of default procedures and has not conducted any tests with its participants and other stakeholders.

General Business and Operational Risk Management (Principle 15–17)

41. Management and control systems are in place for the management of general business risks and sufficient resources are available to cover six months of operating expenses. As a bank EB is subject to capital requirements. EB's capital is invested in high quality and liquid assets.

42. Participants' assets are protected and the investment policy of EB is sound. EB holds participants' and its own assets at supervised and regulated entities. EB ensures via a legal opinion that ownership rights are protected. EB only invests in Eurozone securities to ensure prompt access to its assets. More than 80 percent of its cash investments are secured.

43. Operational risk is significant but well-controlled. The system is reliable and secure, and has adequate, scalable capacity, and future capacity needs are regularly reviewed. Contingency plans and back-up facilities are in place to allow for timely recovery of operations and completion of the settlement process. A second datacenter is located on a distance of 20 kilometers. Operations can switch between both sites without data loss in case of a contingency. A third data centre is located at a distance of 300 kilometers. The contingency arrangements are accessible by participants; however, participants do not participate in tests.

Access (Principle 18–20)

44. Access criteria are an important line of defense against potential losses following the default of a participant. The access criteria of EB are risk-based and publicly disclosed. They contain financial and operational requirements, but do not include a requirement that the entity should be subject to regulation and supervision. Monitoring officers are responsible for monitoring the compliance of participants with the access criteria on an ongoing basis. EB participants have the obligation to meet the participation requirements on an ongoing basis, although they do not have a formal reporting obligation to do so.

45. EB has no arrangements in place to review risks arising from interdependencies between direct and indirect participants. Contractual agreements are concluded between EB and its participants and not all the relevant data is available to identify and manage risks from tiered participation arrangements.

46. Risks from links between EB and other CSDs are well mitigated. Exposures between EB and CBL could be further reduced by extending the opening hours of TARGET2. EB has established a bilateral direct link via the bridge to CBL and a number of unilateral direct and indirect interfaces with clearing systems in domestic markets. Credit exposures stemming from the bridge are covered by a syndicated letter of credit. Any additional exposures will be covered by a loss sharing arrangement and EB's capital. Liquidity risk is sufficiently covered by the existing liquidity management framework. It is recommended to reopen the discussions within the ESCB to extend the operating hours of TARGET2 to allow for night time processing of the cash deliveries between CBL and EB. This will significantly reduce the overnight exposures between the two ICSDs and increase settlement efficiency.

Efficiency (Principle 21–22)

47. Mechanisms are in place to guard the efficiency and effectiveness of EB. As EB is owned by a large part of its users EB's main objectives and activities are defined in line with the requirements of its main users. In addition, EB operates in a competitive environment and is exposed to market pressure to operate in an effective manner. Various tools are applied to assess user satisfaction.

48. EB uses the relevant international communication procedures and standards in order to facilitate efficient settlement of cross-border transactions.

Transparency (Principle 23–24)

49. EB provides its participants and the public with a large amount of information on its website, but could better structure the information provided to market participants to accurately identify the risks associated with the use of the ICSD.

Responsibilities of the Authorities of Euroclear Bank (Responsibility A–E)

50. EB is subject to effective regulation, supervision and oversight of the NBB and FSMA. The authorities have sufficient powers to obtain timely information and induce change. The NBB has adopted the PFMI and has informed the market by distributing a circulaire in July 2012. Other relevant policies are disclosed as well. Given the global systemic importance of EB, the NBB should consider to increase its resources for the supervision and oversight of EB in order to ensure high quality and in-depth inspections and assessments. The FSMA should increase its capacity on post-trade matters to enhance the quality and consistency of its conduct of business supervision.

51. The current cooperation between the Belgian and Luxembourg authorities regarding the bridge should be improved. As both ICSDs are highly relevant for the global financial stability the Belgian and Luxembourg authorities should continuously cooperate together, take common decisions and implement these in both ICSDs to ensure a level playing field in the implementation of risk management measures in line with the CPSS-IOSCO principles. The existing cooperation between the Belgian and Luxembourg authorities should be formalized and enhanced, with the involvement of the ECB, to coordinate recommendations and seek for parallel implementation of risk measures in both entities. An involvement of the ECB in its responsibility for financial stability should be pursued. The plans to include EB on the list of eligible banks for the Single Supervisory Mechanism may further contribute to a level playing field.

Table 1. Ratings Summary of Euroclear Bank

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

Table 2. Ratings Summary Responsibilities for the Authorities of Euroclear Bank

Assessment Category	Responsibility
Observed	A, B, C, D
Broadly observed	E
Partly observed	
Not observed	

F. Key Findings and Follow up for the Authorities of the ESES CSDS

Responsibilities of the authorities of the ESES CSDs (Responsibility A–E)

52. **The ESES CSDs are subject to effective regulation, supervision and oversight of the Belgian (NBB and FSMA), Dutch (DNB and AFM), and French (BDF and AMF) authorities, despite the fact that the legal frameworks differ between the three countries.** In the Netherlands the legal underpinning of responsibilities to regulate the SSS lacks a statutory basis, whereas in France the BDF has only indirect powers to oversee the CSD. In practice this does not affect the powers of the authorities to regulate the ESES entity in their respective countries and induce change. The legal and regulatory frameworks will be harmonized with the implementation of the CSD Regulation, which is foreseen for 2015.

53. **In general the resources of the authorities are considered to be sufficient.** The FSMA should increase its capacity on post-trade matters to enhance the quality and consistency of its conduct of business supervision.

54. In Belgium and France the authorities have disclosed their policies, but in the Netherlands the Oversight Framework is not publicly available. All central banks publish an oversight report, which includes information on the oversight and assessments of the ESES CSDs.

55. All authorities have adopted or intend to adopt the PFMI, although the timing and procedures are not harmonized. The NBB has announced the adoption of the PFMI in a circular in July 2012, whereas the BDF awaits the official decision by the Governing Council of the ECB. The board of DNB has taken the decision that from January 1, 2013 onwards the oversight department of DNB will use these principles for all FMIs in the Dutch jurisdiction.

56. The cooperation between the ESES authorities is assessed as effective and contributes to the safety and efficiency of the ESES CSDs. The cooperation is governed by the ESA MOU and the ESES working arrangements. The authorities meet regularly during technical level and high level meetings and conduct assessments together. A crisis management framework exists and is regularly tested and updated.

Table 3. Ratings Summary of Responsibilities for Authorities of ESES CSDs

Assessment Category	Responsibility
Observed	A, B, C, D, E
Broadly observed	
Partly observed	
Not observed	
Not applicable	

G. Recommendations for Euroclear Bank

Table 4. List of Prioritized Recommendations Euroclear Bank

Principle	Issues of Concern and Other Gaps or Shortcomings	Recommended Action	Relevant Parties	Comments and Priority
3	EB and ESA are not operationally ready to implement plans for recovery and orderly winding down of operations	EB and ESA should finalize plans for recovery and orderly winding down of operations and become operationally ready to implement them	EB, ESA, NBB	It is noted that the plans are about to be finalized
4	EB is exposed to unsecured credit usage through advanced income payments	EB is encouraged to implement plans with regard to the advanced income payments as soon as possible.	EB	High priority It is noted EB plans to comply with the PFMI with regard to advanced income payments by end of 2013.

Table 4. List of Prioritized Recommendations Euroclear Bank (continued)				
Principle	**Issues of Concern and Other Gaps or Shortcomings**	**Recommended Action**	**Relevant Parties**	**Comments and Priority**
4, 20	EB could be exposed to unsecured credit usage through advanced income payments for bridge settlements	EB should address credit risks on advanced income payments related to the bridge	EB, NBB and Luxembourg authorities	High priority See also recommendations Responsibility E
11	EB does not reconcile all securities positions on a daily basis	Reconciliation of all securities positions should be done on a daily basis	EB	High priority
19	EB has no tools in place to identify, monitor and measure risks from tiered participation arrangements	EB should develop tools for risks related to tiered participation arrangements	EB	High priority
5	The collateral framework could be further improved in line with the requirements of the PFMI	EB is encouraged to further improve its collateral framework by addressing pro-cyclicality, and reducing the use of non-standard types of collateral	EB	Medium priority
7	Not all participants have signed an APS agreement	EB is encouraged to further improve its liquidity management framework by concluding APS agreements with all participants	EB	Medium priority
13	Default procedures are not disclosed fully and tests are not conducted with participants	EB should disclose comprehensive default procedures and conduct tests with participants	EB, ESA	Medium priority
17	Contingency tests are conducted without participants	EB should develop contingency tests that include the participation of its (main) participants	EB	Medium priority
20	EB is exposed to credit risk from the bridge that can be further reduced by the extension of operating hours of TARGET2	The NBB and EB should reopen the discussions on the opening hours of TARGET2 to reduce overnight exposures and increase settlement efficiency	EB, NBB, ESCB and Luxembourg authorities	Medium priority

Table 4. List of Prioritized Recommendations Euroclear Bank (continued)				
Principle	**Issues of Concern and Other Gaps or Shortcomings**	**Recommended Action**	**Relevant Parties**	**Comments and Priority**
9	EB mainly uses commercial banks for payments rather than central banks	EB is encouraged to further investigate ways to replace commercial bank money for central bank money and to reduce concentration of flows at its cash correspondents	EB	Medium priority
18	Access criteria do not include requirements of regulation and supervision	EB should consider adding the requirement that participants should be subject to regulation and supervision	EB	Medium priority
Responsibilities				
E	Cooperation between NBB and Luxembourg authorities is insufficient	The Belgian and Luxembourg authorities should develop a formal supervisory framework to implement necessary risk measures in parallel. Cooperation with the ECB is preferred	NBB, FSMA, Luxembourg authorities.	High priority
B	Resources are limited	The FSMA should increase its capacity on post trade conduct of business supervision. The NBB is encouraged to increase its resources given the systemic relevance of EB/ESA and other systems under oversight	FSMA, NBB	Medium priority

H. Recommendations Authorities ESES CSDs

Table 5. List of Prioritized Recommendations ESES CSDs

Responsi-bility	Issues of Concern and Other Gaps or Shortcomings	Recommended Action	Relevant Parties	Comments
C	The Oversight Framework for Clearing and Settlement is not publicly available	The Dutch authorities should publicly disclose relevant policies	AFM, DNB	It is recognized that this issue relates to the lack of a statutory basis for supervision of SSS
A	The legal underpinning of supervision of the Dutch authorities on the SSS should be enforced	The Dutch authorities should enforce the legal basis of their supervision on SSS	AFM, DNB	This is foreseen with the implementation of the EU CSD Regulation
B	The FSMA has one supervisor responsible for securities clearing and settlement	The FSMA should increase its capacity related to the business of conduct rules supervision of securities clearing and settlement systems	FSMA	It is noted that the recruitment process has started
D	The authorities operate independently in relation to the adoption of the PFMI	The authorities should consider harmonizing their approaches related to the adoption of the PFMI and similar practices that are not related to the legal and regulatory framework	NBB, DNB, BDF	

DETAILED ASSESSMENT FOR EUROCLEAR BANK

Detailed Assessment of Observance of Principles

<table>
<tr><th colspan="2">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.</th></tr>
<tr><td rowspan="2">Key Consideration 1
The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.</td><td>Material aspects for EB's activities are:

• authorization of different legal entities;
• settlement finality and arrangements for delivery versus payment (DVP);
• netting;
• immobilization or dematerialization of securities and the transfer of securities by book entry;
• rights and interests in financial instruments;
• collateral arrangements;
• default procedures; and
• securities lending and borrowing arrangements.

Relevant jurisdictions for EB are:

• Belgian jurisdiction: for authorization, asset protection of the financial instruments held with Euroclear Bank, most aspects of the collateral framework, the rules governing settlement finality, most of the contractual framework and the resolution regime;
• Jurisdictions where financial instruments are held at accounts of participants.
• Jurisdictions where participants are incorporated, in case of insolvency or resolution proceedings affecting those participants.
• Jurisdictions which laws are selected to govern certain agreements.</td></tr>
<tr><td>The legal basis for each material aspect of EB is provided as follows:
Authorization of Euroclear Bank as Settlement System and Bank
Euroclear Bank N.V./S.A. (EB) is an incorporated company (naamloze vennootschap/société anonyme) under Belgian law.

EB is a settlement institution under Royal Decree n° 62 and is legally recognized as a "central securities depository for financial instruments." As a consequence, EB can receive deposits of financial instruments, hold them and have them circulated. EB has a special status under the Belgian tax rules applicable to revenue payments in securities settlement systems.</td></tr>
</table>

	The respective rights and obligations of the participants of EB are governed by: Terms and Conditions governing use of Euroclear—The clearance and settlement system for internationally traded securities (version of August 2012). • The Operating Procedures of the Euroclear System (version of September 21, 2012); • Supplementary Terms and Conditions governing the lending and Borrowing of Securities through Euroclear (October 2010); • Supplementary Conditions governing extensions of credit to borrowers of securities through the Euroclear System; • General Conditions governing extensions of credit to participants in the Euroclear System; and • Collateral Agreement governing secured borrowings by participants in the Euroclear System. EB is also licensed by the NBB as a credit institution (kredietinstelling/établissement de crédit) under the Belgian Banking Law in line with the European Banking Directive 2006/48. As a consequence, EB can hold cash accounts and deposits on behalf of its clients in its own books, and extend credit. Banking services are documented in the general conditions governing extensions of credit to participants in the Euroclear system. **Settlement Finality and Arrangements for DVP** The Euroclear system, as managed and operated by EB, is a designated system under the Settlement Finality Directive (SFD) and the Law of April 28, 1999 on Settlement Finality implementing the SFD. Under this law irrevocability and finality of settlement in the Euroclear system is guaranteed. Instructions are valid and enforceable vis-à-vis third parties as soon as they are entered into the system, even in case of insolvency of a participant or the operator of the system. Instructions are irrevocable at the time determined by the contractual framework. The zero-hour rule as provided for in the general bankruptcy law does not apply and clawback rules are not applicable to settlements conducted in the Euroclear system. **Netting** The financial collateral directive and the SFD, and the Belgian legislations implementing those directives, provide for validity and enforceability of netting and collateral arrangements governed by Belgian law.

	Immobilization and Dematerialization of Securities EB is licensed to hold on behalf of third parties dematerialized securities of Belgian public debt, dematerialized securities issued under Belgian law by companies and Belgian commercial paper in accordance with the Law of January 2, 1991 on instruments of the public debt; the Belgian Company Code, the Law of July 22, 1991 on commercial paper and the Ministerial Decree of January 24, 1991 on the licensing of the holding of dematerialized securities of Belgian public debt. Under that legislation, EB has a special status of "international securities clearing organism" (Art. 3bis). **Rights and Interests in Financial Instruments** Under Belgian law, Customers' assets held in the Euroclear system are adequately protected under Belgian law, particularly against the insolvency of EB. Both the securities accounts, the cash accounts held in the books of EB, as well as any transfer of funds cannot be taken by creditors of the account holder and any third party. Book entry securities are held under various regimes. The holding and transfer of most securities in the Euroclear System are governed by the Royal Decree n° 62, stating that participants have a co-ownership right in the book-entry pool of securities of each category held on their behalf by EB and the latter does not acquire any ownership interest in the securities deposited in the ES. However, Royal Decree n° 62 is not applicable to the holding of Belgian dematerialized securities, which are subject to distinct regimes. Following recommendations of the NBB the contractual framework of the Euroclear system explicitly includes all securities to be part of the book-entry pool. Article 77*bis* of the law of 6 April 1995 (introduced by the Royal Decree implementing MiFID) contains a specific prohibition (unless the customers give their express agreement) for depositories to use the assets of their customers for transactions for their own account. The applicable contractual framework does however authorize EB to use clients' assets in the context of corporate actions optimization. Art. 77*ter* of the same law provides for the strict segregation of client positions in the books of EB and in those of third party intermediaries where EB holds clients' assets. In case EB, a participant or a sub-participant becomes insolvent, the clients can claim their securities against EB or against the participant/sub-depository of their insolvent depository.

	The securities of clients do not form part of the estate neither of EB nor of its depositories and any liquidator cannot exercise claims on them. In case the total amount of clients' securities would be insufficient to meet the claims of all clients, the latter have recourse against the similar securities of their insolvent depository. In doing so, they will have priority over the general bankrupt estate. In case it would be impossible to recover all securities, all clients holding the same security will share the loss *pro rata*. According to Belgian Private International law rules, the rights and interests of the participants on the securities held in the books of EB are governed by Belgian law, notwithstanding the fact that EB may hold itself those securities for the account of its clients through another CSD or through a custodian (a third- party intermediary) abroad. However, where the underlying securities are located abroad, local legal regimes are also relevant. Before sub-depositing securities, EB will assure itself that the level of asset protection under its Depositary Agreement and applicable law is acceptable by requesting a legal opinion from a reputable law firm. Applicable foreign legislation should provide that the securities held by EB on behalf of its clients are recoverable in kind by the latter notwithstanding the insolvency of the third party intermediary and that the securities cannot be successfully attached by creditors. In case of insolvency proceedings affecting EB, applicable law should also allow EB's participants to exercise their rights on the underlying securities under Belgian law or in a similar fashion. EB publishes an Asset Protection Pack for participants containing copies of the Depositary Agreements and other relevant information. **Collateral Arrangements** Under Belgian Law, the financial collateral directive and the SFD, and the Belgian legislations implementing those directives, provide a high degree of certainty that any pledge of collateral to EB is valid and secure. EB obtains collateral survey opinions from foreign external counsels of 47 countries where participants of EB are incorporated and to whom EB is exposed. The legal opinions confirm that Belgian law should govern the validity and enforceability of pledges and that underlying securities in those jurisdictions cannot be taken by a third party. The opinions are reviewed on a four-yearly basis and ad hoc if new

	legislation impacts EB's situation. Between the planned review every four years, monitoring is performed through information received from local agents' or law firms' newsletters. EB also plans to implement a six-monthly review of the main markets where EB has the largest exposures. The choice of jurisdictions to be covered is based on recommendations from EB's credit, risks management and commercial departments. These recommendations are based on EB's potential credit exposure. **Default Procedures** The terms and conditions, the operating procedures and relevant Euroclear agreements are enforceable in the event of the insolvency of a participant, EB itself or the operator of a linked or interoperable system. The legal opinions obtained by EB do confirm the enforceability of the rules and contractual arrangements related to the operation of the system. This excludes however the event of insolvency of participants in any linked or interoperable system. **Securities Lending and Borrowing** The securities lending arrangements of EB are described in the "supplementary terms and conditions governing the lending and borrowing of securities through Euroclear" (governed by Belgian law) and by "supplementary conditions governing extensions of credit to borrowers of securities through the Euroclear System" (governed by New York law). Securities borrowings are covered by the "Collateral Agreement governing secured borrowings by participants in the Euroclear System." Legal opinions of external counsels confirm that these contractual arrangements provide for a clear and effective legal basis under respectively Belgian and New York law for securities lending arrangements and the collateralization of the exposures deriving from such arrangements (either by pledge or transfer of title).
Key Consideration 2 An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.	EBs rules, contracts and procedures have been assessed over the years as sufficiently clear and transparent by the NBB, the Eurosystem and other authorities. No prior approval by any public authority is required before the rules come into force. As the NBB has considered that there's nevertheless room for improvement Euroclear started a review of its terms & conditions and operating procedures, which aims to result in a complete redrafting of

	those documents to enhance clarity and readability. Consistency of EBs rules, procedures and contracts with relevant laws and regulations is ensured both by ongoing reviews by in-house counsels and the production of legal opinions by external counsels in many areas and shared with NBB upon the latter's request.
Key Consideration 3 An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.	The legal basis of EB's activity is articulated in the following documents: • The terms and conditions governing use of Euroclear, as well as the operating procedures (available on EB's website). • The Disclosure Framework (available on EB's website). • User Guides are available per market. • Various explanatory documentation such as, for instance regarding asset protection, the "asset protection pack," including documents describing the rights of participants to securities deposited in the Euroclear system, management resolutions regarding the appointment of EB's agents, statement for SEC regulated participants, statement for FSA regulated participants, and the Euroclear Bank ISAE 3402 (former SAS 70) report.
Key Consideration 4 An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.	In general there's a high certainty that EB's rules, procedures and contracts are enforceable in all relevant jurisdictions (see also key consideration 1 for rights in financial instruments and collateral). Recent legal cases have confirmed the validity and enforceability of the contractual framework (either through an explicit court decision on the matter, or by the absence of challenge of the validity and enforceability of the contractual framework). The NBB legal department has identified one issue of legal uncertainty related to the collateral framework of EB and is currently considering the introduction of a clarification in the Belgian legislation to mitigate this uncertainty.
Key Consideration 5 An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.	Conflict of laws arise in cross-border situations, such as (i) the holding by EB of securities abroad, (ii) the participation of institutions having their main establishment or place of incorporation abroad, or (iii) the choice of a foreign governing law for certain parts of the contractual framework. EB has identified and mitigated the risks arising from these conflicts of law.
Key Conclusions for Principle 1	EB has a sound and enforceable legal basis for its settlement, custody and banking activities. The regulatory framework is clear and transparent. The Belgian implementation of European directives provides a firm statutory foundation for netting, set-off and securities lending, consistently with the other member states. Both securities

	and payment transfers, when finalized, and default arrangements are protected from the ordinary operation of Belgian insolvency law. The banking license regulates the credit activities of EB. EB actively identifies and mitigates risks arising from its activities in various jurisdictions on an ongoing basis.
Assessment of Principle 1	Observed
Recommendations and comments	-

Principle 2. Governance An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.	
Key Consideration 1 An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations.	The main objective of E B, as expressed on the company website, explicitly supports financial stability and the development of the market. The main objective of the Euroclear Group and EB is to be one of the lead providers of post-trade services through reliability, innovation and leadership by: • building long-term partnerships with clients; and • supporting the stability and developments of the markets, locally or globally. The Boards of Euroclear Group and EB are responsible for assessing their respective performance in meeting this objective. The Management Committee of Euroclear SA assesses also the performance of EB. As safety and efficiency are related to the reputation of EB the Euroclear Group gives high priority to the safety and efficiency of its systems. It has established high standards of professional conduct that direct the ongoing activities of EB. These standards are formalized in various policies and procedures applicable to employees, senior management and Directors across the Group. The user-owned and user-governed structure supports the prioritization of safety and efficiency. The Group's shares are largely owned by users of its services and its main boards are essentially composed of members coming from various parts of the industry. In addition, the Boards of Euroclear Plc and Euroclear SA contain at least two (currently five), non-executive directors not affiliated with any firm

	using the Group's services. This enables the representation of interests other than users. In 2011, the Board of the Euroclear Group formally decided to be a non-profit maximizing company aiming to achieve a target performance level.
Key Consideration 2 An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.	EB is part of the Euroclear Group and shares resources with other Group entities, being Euroclear Plc, Euroclear Investments SA, Euroclear SA/NV and Euroclear Bank (see introduction for organization chart). Euroclear plc and Euroclear Group are user-owned and user-governed. **Euroclear Plc** Euroclear plc is not publicly listed. Its capital is held for 86.9 percent by around 200 user-shareholders. The remaining 13.1 percent is held by Sicovam Holding SA, which is the largest shareholder of Euroclear plc. The voting rights of Sicovam are, as for any shareholder, limited to 5 percent. The 20 largest shareholders, which hold about 52 percent of the shares of the company, comprise the stock exchange NYSE Euronext Group and the largest banks worldwide: • Société Générale Group • BNP Paribas Group • JP Morgan Chase Group • HSBC Group • Royal Bank of Scotland Group • NYSE Euronext Group • Credit Agricole Group • Deutsche Bank Group • Natixis Group • Mitsubishi UFJ Financial Group • Mizuho Financial Group • Nordea Bank Group • LODH Group • Bank Julius Baer Group • Citigroup • Royal Bank of Canada Group • Barclays Group The other 180 shareholders include financial institutions, such as

	broker-dealers, commercial and custodian banks, retail brokers, central banks, fund distributors and transfer agents, corporates active in financial markets, CCPs and stock exchanges. **Euroclear Investment SA** Euroclear Investment is a 100 percent subsidiary of Euroclear plc and is a Luxembourg incorporated "société anonyme (SA)" which provides various management and administrative services to the Group, such as group insurance policies and real estate management. It has no executive management. **Euroclear SA/NV** Euroclear SA/NV (ESA) is a 100 percent subsidiary of Euroclear plc, holding branches in the United Kingdom, France and the Netherlands that are responsible for the operations of the local CSDs. ESA provides common services to other group entities: • IT production, development and infrastructure management. • Human resources, internal audit, legal, compliance, financial and risk management. • Sales and relationship management, product management, business development, strategy, and public affairs. **Euroclear Bank** EB is a credit institution incorporated under Belgian Law and internationally referred to as an ICSD. It operates the system under a license agreement contracted with Euroclear plc which is the owner of the system. EB has two subsidiaries for real estate and financial purposes (Calar Belgium SA and Euroclear Finance 2 SA) and one branch in Hong Kong. It plans to open a second branch in Poland. The Boards of the different Group entities are responsible for the strategic direction and the oversight of the management. ESA and EB have established management committees. The Board of Euroclear Plc is responsible for all shareholders matters (payment of dividends), setting values and standards in governance matters and ensuring that necessary financial resources are in place to meet strategic aims. The board of ESA is responsible for overseeing the ESA management, setting the strategy for the Euroclear Group as a whole, and overseeing its implementation, ensuring effective risk management

	controls are in place, and setting a Group policies framework. The management committee of ESA has delegated responsibilities from the board and is responsible for managing the business of the different operating entities, including EB. The Board of EB is chaired by members of the management committee of ESA or senior officers reporting to them and composed of other senior group executives and of one or more independent directors. EB sets its own strategic and operational objectives in its own legal and regulatory environment, which must be consistent with those set by the parent company. Structural interactions have been organized between the audit committee/risk committee of ESA and EB. Users are also involved in decision making as share holder, but also through board committees (ESA/PLC Audit Committees, ESA/PLC Nominations and Governance Committees, ESA/PLC Remuneration Committees, ESA Risk Committee, ESA Operations, and IT Committee). Euroclear Bank lines of responsibility and accountability: The Board of EB is the ultimate decision making body for EB and sets the policies and strategy for EB. The board of EB has established the following committees: the audit and risk committee, the nominations and governance committee and the remuneration committee. The management committee of EB has been entrusted with the general management of the EB. The management committee has established the following committees: The credit and assets and liabilities committee (CALCO) has decision-making powers related to the granting of credit, the measuring and modeling of credit, market, liquidity and business risks as well as to the adoption of new treasury products. The CALCO monitors, and advises the EB management committee on the credit, market and liquidity risk policies. The local security and operating committee (OC) monitors, advises and decides on the oversight of daily operations, including risk monitoring, cross-divisional operational controls and risk, service delivery, service quality and productivity. The OC also monitors security issues.

	The risk assessment committee (RAC) advises and decides on the launch of any new products and/or services involving highly material risks. Euroclear discloses relevant information via various channels. In addition to publications in the Belgian State Gazette and in the financial/national newspaper pursuant to law requirements, Euroclear's website contains information about its activities and services, the corporate structure and management structure, its annual report, press releases, business developments, and its clients. Although, the usage and shareholding are generally aligned, certain imbalances between shareholding and usage exist. These imbalances could potentially complicate discussions at the level of the board of Euroclear Plc and ESA on the distribution of dividends or rebates as well as on investment policies. As a follow up to the FSAP assessment in 2006 procedures have been adopted to handle potential conflicts between shareholders and users.
Key Consideration 3 The roles and responsibilities of an FMI's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.	The main responsibilities of the ESA board have been defined in detail in the Articles of Association and include, but are not limited to (in respect of ESA and its subsidiaries): • setting the strategy; • approval of the material terms of all major corporate transactions (including, but not limited to, mergers, acquisitions, takeovers and major capital restructurings) including approving the principles of any financing and/or any prospectus or other public document issued in respect of such transactions; • setting the framework for, and material principles of, policies; and • setting the framework for the corporate governance structure. The main responsibilities of the EB board have been defined in detail in the Articles of Association and include: • appointing and removing the members of the management committee; • setting the company's strategy; • setting pricing and rebate policy; • making recommendations with respect to dividends; • setting membership policies for participants to join the Euroclear system; • setting policies; and • reviewing internal controls and reports by the audit and risk

	committee. ESA and EB have available a range of procedures related to the functioning of the respective boards. These procedures include operating rules and rules for the composition of the Boards; procedures for the appointment, renewal and resignation of board members; selection of the chairman and deputy chairman and the establishment of board committees. Board members and new directors also receive an introductory training. Directors receive ongoing training on matters relevant and material to their directorships and committee mandates. In addition, workshops are arranged for the Board on topics of particular relevance or importance. Conflicts of interest of board members are covered by various rules and procedures that aim to identify, address, and manage conflicts of interest. The Belgian Companies Codes stipulates that that a conflict of interest arises when a director has a direct or indirect patrimonial interest in a transaction. Euroclear established policies with a broader definition of conflicts of interests. The policies cover personal conflicts of interest between a Euroclear entity and an individual Euroclear member of management, in addition to conflicts of interest between different entities of the Group (including EB). The procedures are communicated to staff and include the identification of the legal and regulatory definitions of conflict in each jurisdiction; the legal and regulatory requirements for addressing such conflicts; identification of senior managers to whom suspected conflicts should be reported and actions that will be taken if actual conflicts are identified. Furthermore, pursuant to the Royal Decree of 26 September 2005 EB has in place an internal policy on the exercise of external functions outside the company. The boards regularly review their performance, as well as the performance of individual board members. On an annual basis, the boards of EB and ESA carry out a self-assessment and an effectiveness review of the board as a whole, the board chairman and the individual members. This review endeavors to ensure that the board has the necessary framework in place within which to make decisions, focusing on skills and knowledge of the directors, clarity of objectives

	and processes, a culture of openness, disclosure of procedures and an effective relationship with the management. The annual review is carried out by completion of a detailed questionnaire by each board member. Results are discussed within the board and action is taken if needed.
Key Consideration 4 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).	As set out in the policies regarding the board and the board committee composition all board nominations are made on the potential contribution in terms of knowledge, experience and skills in accordance with the needs of the board at the time of the nomination. The skills that should necessarily be represented on the board are generic (finance, accounting, management and organization) as well as specific to the business of the company and the group (banking, securities, settlement, information technology (IT)). The nominations & governance committee leads the process for board nominations and makes recommendations. The "user owned, user governed" model of Euroclear implies that board members proposed by users have incentives to attend board meetings and participate in the development of the strategy. Non-executive directors also receive remuneration for their mandate based on their level of responsibility. The boards of ESA and EB contain independent board members. For ESA the prudential standards require that there is a majority of non-executive directors in the Board. Out of 28 board members, 25 are currently non-executive and five of these 25 persons are independent in the meaning of Art. 526ter of the Belgian Companies Code. For EB the prudential standards require that there is a majority of non-executive directors in the board. Out of 11 board members, six are non-executive and one of them is independent in the meaning of Art. 526ter of the Belgian Companies Code. Euroclear publishes on its website its board compositions as well as which board members it regards as independent.
Key Consideration 5 The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.	The roles and responsibilities of the ESA and EB management are specified by the Belgian Companies Code (for ESA) and the Banking Law (for EB) and in accordance with the Articles of Association. The managements of ESA and EB are responsible for the general management of the company and EB respectively with the exception of (i) the determination of the strategy and general policy of the company and (ii) the powers reserved to the board by law or the Articles of Association. The management committees act under the supervision of the Board.

	The specific objectives of the management committees of ESA and EB are reviewed and updated on a yearly basis by the board. The specific objectives of the group are also stipulated in the group balanced scorecard and the multi-year financial plan. The nominations to the management are made against merit and on the basis of the knowledge, experience and skills of the candidate. The chairman of the management committees of ESA and EB respectively, with the assistance of the human resources division, are in charge of the recruitment process of the management. A competency profile for the management has been defined, including criteria related to business experience, leadership, change management and strategic capacities. Members of the ESA and EB management committees report directly to their respective boards. The boards assess each year the performance of the individual managers. The boards appoint or dismiss the management. Each proposition of resignation or dismissal of a management committee member is notified to NBB in advance. The NBB organizes "exit meetings" with senior managers.
Key Consideration 6 The board should establish a clear, documented risk-management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.	The internal control system of Euroclear and consists of three lines of defense. *1st Line: Business Lines* Businesses identify the risks that may prevent reaching their objectives, define and operate controls to mitigate the risks and document and demonstrate the control environment. The compliance function helps by monitoring changes in laws and regulations and advises as to what controls are required. The risk management function helps by making policies and advising in the implementation of the risk management framework. *2nd Line: Risk Management and Compliance* The risk management function defines the control environment framework in line with regulations and internal policies; it monitors the risk and internal control environment in the changing internal and external environment and reports, challenges or escalates to management risks or control defects. The compliance function monitors, tests and reports to management on controls relating to laws and regulations and advises on remedial actions. *3rd Line: Internal Audit* Internal audit independently reviews and tests the controls and

	reports to management about the adequacy and effectiveness of the control environment and accountability for risk decisions. The internal control system is based on the risk management strategy of the group. Risk tolerance levels are defined and adapted yearly by the board consistent with available capital while risk appetite levels are set by the management on an annual basis with the objective to keep the risk profile low and stable. The risk appetite and tolerance levels are used in daily risk management processes in order to assess the risks and prioritize the actions required to mitigate them. The risk management framework and internal control system are described in policies that set out how the internal control system operates and guidelines for implementation of the various activities. These policies are reflected in a risk register, level 2 risk register, high level control objectives (HLCOs) and level 2 control objectives (L2COs) to mitigate the risks identified, describing how and by whom the risks are to be managed. Euroclear has also set resilience standards for business continuity (e.g., data centre, dual office and crisis management approaches). The accountability for risk decisions is distributed at all levels of the group. It is also noted that the Group has also in place crisis procedures. The risk management framework is approved by the ESA board and reviewed every two years. The risk management and internal audit functions are organized at ESA level. They have sufficient authority, independence, resources, and access to the board to adequately fulfill their responsibilities.
Key Consideration 7 The board should ensure that the FMI's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.	Participants' interests can be pursued through participation in the board, user groups (Market Advisory Committee), ad hoc working groups and committees, international groups (European Repo Council, ISMA, IPMA) or through ad hoc consultations. Major decisions are communicated to owners (user shareholders) through the "notice to shareholders" for the annual general meeting and for each extraordinary general meeting. They are communicated to the users (participants) via the commercial account officers and through various publications (i.e., newsletters) and through user representatives in regular meetings of the market advisory committees.

Key conclusions for Principle 2	The governance arrangements of Euroclear Group and EB are transparent and its objectives support the stability of the financial system. Euroclear Group's main strategic objectives focus on clients and the stability and developments of the markets locally and globally.
Assessment of Principle 2	Observed
Recommendations and comments	-

Principle 3. Framework for the Comprehensive Management of Risks An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	
Key Consideration 1 An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.	EB's framework to manage risks consists of: • board policies, management resolutions and implementation procedures; • tools to measure, monitor, and reduce risks; • a governance structure dedicated to manage risks (see Principle 2); and • escalation tools and default procedures. EB has identified the following risks: credit risk, liquidity risk, operational risk, market risk, business risk, and strategic risk. Risk management policies The risk management framework is described in board policies, management resolutions and implementation procedures. They describe how and by whom risks are identified and mitigated. All policies, including risk-management policies, have to be approved by the board of directors. All policies are reviewed every two years or more frequently if needed. The board is assisted by dedicated risk committees (both at board level and at management committee level) when developing and reviewing risk policies. **Tools** Identification, measurement and monitoring of risks involves the pro-active identification of risks (e.g., via self-assessments, key risk indicators, risk reviews of new initiatives) and the recording of incidents and action plans to prevent them from re-occurring. Most departments of EB and ESA are involved in risk identification, measurement and monitoring, including the business lines, the risk

	management department, the internal control department and the internal auditors. As part of its overall risk management framework EB has put in place an enterprise risk management (ERM) framework for its day to day operational risk and control processes and risk framework concepts. The risk registers lists all risks that Euroclear is facing. Euroclear uses a risk-management system (called I-Track) to identify and follow up its range of risks. Such risks can be identified pro-actively by the business, be identified by internal audit or Euroclear's authorities or following of an incident. The risk management department also uses a value at risk tool to monitor exposures to EB and several measures to calculate its economic capital. EB is able to aggregate its exposures to its counterparties in the various roles they provide, such as treasury counterparty (for re-deposits of cash balances), 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) and lead manager in the new issues process. Although EB has an aggregate view on its exposures on an entity for all its roles, in setting the upper limit for a participant's credit line, it does not take into account the credit exposure it has on the entity as a cash correspondent. The maximum credit limit (or global family limit) caps the exposures from the treasury and participant roles only, as the exposure resulting from the cash correspondent role is not controllable ex ante (as participants may wire money to this cash correspondent without pre-advice for example). **Escalation Tools and Default Procedures** In order to test the effectiveness of the various risk-management policies and procedures, EB regularly conducts back-tests using real-life data. Principles 13 and 17 describe this in further detail.
Key Consideration 2 An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.	EB provides incentives to its participants to manage and contain the risks they pose to EB. This is done both in a general way (e.g., by providing training to participants) and in a very specific way for credit risk (e.g., overdraft interest rates and securities borrowing rates are above market rates and conservative haircuts are applied to collateral in order to encourage participants to use EB's credit facilities in a reasonable way). EB's 'sponsorship process' encourages participants among others to

	maintain their risk profile in line with EB's expectations. EB provides information that allows the participants to manage and contain their risks from participating in the system. This information contains, among others, data on the participant's cash and securities positions and credit usage, but also information on EB and its risk management.
Key Consideration 3 An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.	EB has identified the following type of interdependent entities: • depositories, CCPs, trading platforms; • clients; • cash correspondents; • ICSDs; and • providers of services such as Swift, credit rating agencies and data vendors. The main risks that EB poses to and bears from other entities are credit risk, liquidity risk and operational risk. The risks that EB bears from other entities are identified, measured and monitored via the same risk-management policies and tools as it bears from participants.
Key Consideration 4 An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.	At the request of the NBB, Euroclear Bank (EB) has developed a recovery plan that includes seven scenarios that may potentially prevent EB from providing its critical operations. The scenario's represent the type of critical events that EB may face and include the insolvency of a major counterparty, loss of funding and a long-term IT outage. EB has developed various strategies to reduce the impact of critical events. It has for example plans to switch to manual operations in case of long-term IT outage. It can also limit its exposures by cutting credit lines of participants or terminate the relationship with a cash correspondent. EB can rely on committed contingency liquidity sources if needed. Euroclear has plans to recapitalize EB by injecting excess capital from the holding or other entities of the Euroclear Group or injecting new capital from existing or new shareholders. The NBB is currently reviewing the plans of EB for recovery and orderly wind down. As a next step EB has to address all the operational aspects of the plans for recovery or orderly wind down, including testing where feasible. EB is prepared to provide the authorities with information for

	purposes of resolution planning, however, the authorities are currently still waiting for the further development of international standards and legislation related to resolution planning.
Key Conclusions for Principle 3	EB's risk framework is generally sound. The risk management framework consists of a set of policies, tools, governance arrangements and default procedures to manage credit, liquidity, operational, market, business, and strategic risks. A first version of recovery plans for EB and Euroclear Group has been developed but is not yet fully finalized. EB is currently not operationally ready to fully implement the plans for recovery or orderly wind down, neither have the plans been tested. This situation is an issue of concern, given the size of Euroclear Bank and the impact of a potential failure of EB on the financial stability in Europe and the world. In case of serious problems, EB and its stakeholders are not properly prepared to handle these effectively.
Assessment of Principle 3	Broadly observed.
Recommendations and comments	EB and ESA should finalize their recovery plans and be operationally ready to implement the plans if needed.

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.	EB's framework to manage credit exposures consists of: • credit risk board policies, management resolutions and implementation procedures; • tools to measure, monitor and reduce the credit exposures; • a governance structure dedicated to handle the daily credit operations; and • escalation tools and default procedures. **Policies** The provision of credit by EB and the related credit risk mitigation

	measures are governed by EB's credit risk board policy and the related management resolutions and implementing procedures. The credit risk board policy defines the limits for the risk appetite in EB for credit risk. The risk appetite for credit risk in EB is limited by the available capital allocated to credit risk, regulatory limits and internal limits. The board of EB has approved and is accountable for overseeing the implementation of this board policy. The effective implementation, communication and monitoring of the board policy is delegated to the EB management committee. **Tools** EB has systems that enable it to measure, monitor and reduce credit exposures. An important tool is the exposure management tool (EMT) that provides EB with an overview of all exposures of a particular participant in the Euroclear system and the available collateral to secure that exposure. **Governance** The organization of ESA and EB, the responsibilities of the boards, management committees and board committees are designed to manage credit risks as well as other risks (see also Principles 2). **Default Procedures** EB has escalation tools and default procedures in place to handle crisis situations (see also Principle 13).
Key Consideration 2 An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.	EB’s main sources of credit risk are: *Use of credit line to facilitate Settlement.* As a single purpose bank, EB provides uncommitted multi-currency and multi-purpose credit facilities to its participants. In principle the credit facility is only provided on an intraday basis in order to facilitate settlement. Settlement credit exposure in cash occurs when EB debits a participant’s cash account to execute a transaction for an amount above the available funds in the participant’s cash account. A credit exposure can also arise in case a participant borrows securities as EB guarantees to reimburse the borrowed positions to the lender. Securities borrowing exposures are reported in the participants' intraday credit usage. An overnight credit exposure arises when a credit position on a participant remains at the end of the business day.

	Asset servicing Income and redemption payments may be advanced by EB in the overnight process prior to confirmation of actual receipt of funds from the issuer as far as certain conditions are fulfilled. Policies determine for which securities and participants income and redemption proceeds can be advanced. *Issuance of securities* During the issuance process EB has a credit exposure both on the issuing agent (the lead manager) as well as on the participant that obtains the new issued securities (the allottee). *Cash correspondents* EB can have a credit exposure on its cash correspondents. *Investment book* EB is exposed to credit risk via its investment book. **Risk management tools to control credit risks related to credit facilities to participants** EB's framework to manage credit exposures consists of the following components: *Credit eligibility criteria* Participants of EB should comply with specific requirements in order to obtain a credit facility. Before granting credit facilities to a participant, its financial soundness must be assessed and an internal credit rating must be assigned according to EB's internal credit rating model, which performance and application review has been outsourced to S&P Risk Solutions. *Credit limits* Credit extended by EB to its participants is subject to global and individual credit limits. The size of the credit facility will reflect the financial soundness of the participant, his volume and type of activity and will be in line with limits set in the EB credit policy. Facilities must remain consistent with the credit quality and the activity of the participant, and are therefore reviewed at least annually. *Monitoring and credit use anticipation* EB does a real-time monitoring of the credit exposures taking into account the different sources of credit risk. EB also anticipates possible credit usage before the overnight processing.

	Collateral As a rule, all EB credit facilities should be fully collateralized, either by securities or cash. For securities borrowing, only clients with a secured credit line can have a borrowing cap. Some clients however do have mixed credit lines (i.e., secured & unsecured). Because of this setup, punctual unsecured borrowings might occur which are monitored on a weekly basis. *Capital* A part of the capital of EB is allocated to cover credit risk. In line with the Basel II regulatory framework, EB uses the Foundation Internal Ratings Based Approach ('FIRBA') in order to compute Euroclear group's capital needs for credit risk since January 1, 2007. In order to comply with the requirements of that approach, EB has developed an internal rating model. The economic capital for credit risk is the measure of the required capital resulting from the actual credit exposures and credit ratings of Euroclear participants and counterparts. The economic capital usage for credit risk is recalculated every month; it should not exceed the available capital allocated for credit risk. *Fees* EB charges a relatively high debit interest rate for overnight credit as an incentive to reduce participants' use of overnight credit. The standard debit interest rate = overnight market rate + currency spread + credit spread dependent of the participant's rating. Securities borrowing rates are above 'street lending' market rate as an incentive to participants to properly manage their risks. EB can provide an overnight facility at a lower debit interest rate if certain criteria are met. *Identification of credit drivers* A project has been launched by EB to synchronize tri-party repo settlement in order to eliminate the gap between repo reimbursements and renewals that creates today large intraday credit risks—and consequently liquidity risks—for EB. The deadline for full delivery of the synchronization project is Q1 2013. **Risk Management Tools to Control Credit Risks Related to Asset Servicing** Income and redemption payments are advanced by EB on a

	provisional basis, which means that EB pays income and redemption payments to participants without having received the payments from the issuer. The cash advances become final when the relevant funds for the custody cash distribution are received from the issuer or its agent on the account of EB at the relevant cash correspondent. This occurs normally in the daytime. In terms of credit risk, such advanced payments are considered by EB as a "double-name" risk: both on the issuer and on the participant to which the funds have been advanced. Should the issuer (or its paying agent) not make the income or redemption payment, EB may turn to the participants and reverse the conditional/provisional advanced payments. If deemed necessary EB can also block collateral in the account of the participant. In case of a problem with the participant (due to country risk or other specific event), EB will not advance the funds. The qualification of such payments has been reviewed by EB and as from Q4 2013 income and redemption proceeds to participants will be processed in compliance with Principle 4. Advanced payments via the bridge are not part of this improvement as EB and CBL have not come to an agreement yet. **Risk Management Tools to Control Other Credit Risks** Credit exposures that arise from transactions settled via the bridge with CBL are covered by a specific risk management framework. In case of any unsecured losses EB has the right to debit participants to cover for any losses. Principle 20, KC3, describes in more detail how EB manages this type of credit risk. EB reduces its credit exposures following new issues and the debit of the cash accounts of lead managers, by applying a DVP process towards allottees. Principle 16, KC3, describes in more detail how EB manages this type of credit risk. Credit and liquidity risks from investments are mitigated by the application of a conservative investment policy with investments in high quality government bonds and cash only. Principle 16, KC4, describes how EB manages this type of risk. EB uses reverse repo arrangements to reduce its exposures towards its cash correspondents. Principle 9, KC4, describes in more detail how EB

	manages this type of credit risk. **Data on Credit Exposures** Data provided by EB showed that in the first half of 2012, 99 percent of credit exposures from settlement activities were collateralized. The remaining 1 percent is mainly on central banks or supranational institutions. In the extreme case that all participants (excluding central banks or supranational institutions) would be in default together and that EB had to cover for such a loss, the available capital of EB should have been sufficient. In case of the link with CBL, EB can apply a loss-sharing tool. In the extreme case that EB had to cover such a loss the actual loss would therefore be lower. The available capital should in any case have been sufficient to cover the loss.
Key Consideration 3 A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS payment system or DNS SSS in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such an FMI should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.	NA
Key Consideration 4 A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources (see Principle 5 on collateral and Principle 6	NA

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.	
Key Consideration 5 A CCP should determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A CCP should have clear procedures to report the results of its stress tests to appropriate decision makers at the CCP and to use these results to evaluate the adequacy of and adjust its total financial resources. Stress tests should be performed daily using standard and predetermined	NA

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.	
Key Consideration 6 In conducting stress testing, a CCP should consider the effect of a wide range of relevant stress scenarios in terms of both defaulters' positions and possible price changes in liquidation periods. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.	NA
Key Consideration 7 An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI.	The allocation of any potential credit losses is described in the different policies, management resolutions and implementation procedures of EB. A credit loss will be covered by collateral. In case the amount of collateral appears to be insufficient EB can use its capital. Any remaining losses need to be covered by additional resources as described in the recovery plans (see also Principle 3).

These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.	
Key Conclusions for Principle 4	EB's business model contains various sources of credit and liquidity risks, i.e., from credit lines, advanced income, cash correspondents, issuer services and the investment book. In general these risks are properly identified, monitored and mitigated. EB is however exposed to significant credit risk resulting from advanced income payments. EB has recently decided to adapt the processing of advanced income payments to participants by the end of 2013 in order to comply with Principle 4. So far this does not include the advanced payments for the bridge with CBL.
Assessment of Principle 4	Broadly observed.
Recommendations and Comments	EB is encouraged to implement the plans regarding advanced income payments as soon as possible. EB should extend its decision on advanced income payments related to the bridge with CBL.

Principle 5. Collateral An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.	
Key Consideration 1 An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.	The collateral policy of EB is set out in the credit risk board policy and in the related collateral management resolution. The arrangements between EB and its participants (borrowers) are governed in the collateral agreement. The preferred assets to collateralize credit exposures are cash and securities held in one or more of the participant's accounts in the Euroclear system. As soon as a security is eligible in the Euroclear system, it can be used as collateral, on the condition that a reliable

	valuation of the asset can be obtained. EB can take discretionary measures to value the collateral at zero. In case of a participant's default, EB is allowed to choose on a discretionary, case-by-case basis which collateral it will take first to cover the exposure, i.e., first the cash, followed by the most liquid securities such as government bonds. EB accepts other non-standard types of collateral such as: • New York securities deposited outside the Euroclear system and held by local collateral agent. Currently there is one client left using this type of collateral. • Related party arrangements: a legal entity pledges collateral to support a credit facility extended to a related party. • Shared facility: two entities that share the same credit line. On a case-by-case basis, when EB does not obtain collateral from the participant or a related party, EB also accepts letters of credit and guarantees. The guarantees are not backed by collateral but they are provided by creditworthy entities (rating>A). The use of letters of credit and guarantees is very small (0.06 percent) compared to the total secured credit facilities granted to EB participants. Risks related to the non-standard types of collateral are taken into account in the calculation of the unsecured exposure per participant. EB mitigates wrong-way risk by granting zero value to securities belonging to the same family of participant. Collateral concentration report aims to detect correlations of risks between the participant and the collateral it pledges to EB.
Key Consideration 2 An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.	Securities and cash collateral are regularly valued and subject to haircuts. Securities and cash collateral is marked-to-market on a daily basis. Haircuts for securities are determined on a daily basis. Haircuts for cash are determined on a on a weekly basis. **Valuation Securities Collateral and Cash** EB uses different sources to determine the market value of securities collateral: • Securities prices provided by daily data feeds from Telekurs, Reuters, and IDC (Interactive Data Corporation).

	• Internal prices, which are based on settlement instructions in the Euroclear system under certain conditions. • Theoretical prices, using a model of discounted cash flows. The theoretical price determination is for plain vanilla products only. If the prices, or any other parameter used in the price determination process, are not reliable any more the collateral value is put at zero. EB uses the Security Value Estimation model (SVE) to determine the collateral value. The SVE model is used to calculate a new haircut on a daily basis for each security in the Euroclear system; i.e., a "SVE" factor which is a measure for the market, liquidity and event risk. Event risk is specific issuer credit or country risk. . The aim of the SVE model is to value the pledged collateral in order to protect EB against a drop in security prices with a confidence level of 99 percent over a 10-days period. A special procedure for the daily collateral valuation applies to NY securities accepted as external collateral. The NY collateral agents value the price of the securities held on the agents' books on behalf of EB participants (mainly U.S. T-bills) and inform EB on a daily basis. On a yearly basis, EB back-tests the haircuts for the collateral held externally and inform the NY agent on the defined level of haircuts. For cash collateral, a 10-day VAR based on FX volatilities of each currency is calculated. For USD, EUR, JPY, GBP, and CHF the currency margin is set at 5 percent. For other currencies, the currency margin is (much) higher. In addition to this 10 day VAR, EB includes an additional margin reflecting the liquidity of the currency. A daily check to report excessive FX rate volatilities is in place. When the current currency margin is not high enough to support exchange rates volatilities, a new currency margin is applied. **Model Validation** In Q4 2010, the adequacy of the SVE model has been validated by the risk management department together with an external consultant. The resulting SVE validation report identified room for improvements in particular following the euro sovereign debt crisis. The SVE model is not able to process market volatilities related to specific Eurozone countries. Liquidity risk was not well captured and the SVE model proved not be consider intra-day price volatilities. The weaknesses above were solved by other monitoring procedures such as specific back-tests on crisis countries, CDS price evolution as well as regular

	liquidity assessments through market consultation by EB Treasury. **Stress Testing and Back Testing** The SVE model calculates for each security on a daily basis the haircut percentage taking into account market, liquidity, credit and country risks. EB keeps the possibility to manually apply additional margins in the model in order to deal with extreme situations where it is difficult to sell a particular security at its estimated price or to cover country or credit risk events such as potential issuer or country defaults. In its day-to-day operations, the collateral valuation team daily back-tests the applicable haircuts comparing the collateral haircut (based on the above SVE model) with the actual price movements over a 3,5, and 10-day period. The cash collateral valuation is updated every day (based on the updated exchange rates) and a currency margin haircut (which is updated every week). In addition, EB performs an annual back test for cash collateral. The results of the back-tests are used to further improve the valuation of the securities and cash collateral. The results are reported to the credit, assets and liabilities committee (CALCO). Until 2012, SVE back-testing results were reported on an annual basis. Per 2013 reporting will be done on a quarterly basis. In addition, a yearly stress test is organized to verify whether the haircuts would have been sufficient to cover potential losses in extreme circumstances. It includes different scenarios such as the default of an issuer, country in financial distress, currency depreciation, interest rate or stock indices shock and model risk. Stress assumptions include peak historic price volatilities.
Key Consideration 3 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.	The concept of "pro-cyclicality" is not adopted as such in the collateral management resolutions or implementing procedures.
Key Consideration 4 An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to	EB has identified 10 parameters that are used to analyze the concentration in a participant's collateral portfolio. EB monitors on a daily basis the composition of the collateral portfolio of participants for which their collateral portfolio contains a value of more than

liquidate such assets quickly without significant adverse price effects.	15 percent for 1 parameter, as in that case the portfolio is considered concentrated. The credit officers will take measures to reduce the concentration, such as collateral limitations or discussions with participants to better diversify their collateral. EB can also reduce the collateral value of specific assets to zero. For APS participants, a daily monitoring of their collateral portfolio is also in place. Different reports exist to monitor the collateral concentration: *Weekly collateral concentration monitoring* The weekly collateral concentration report contains the results of an assessment of the quality and level of the daily concentration of the collateral portfolio. *Ad hoc collateral portfolio report* This report presents a real-time overview of a participant's collateral portfolio in terms of quality liquidity and concentration. This report aims to support credit decisions. • Analysis of currency (mis)match between collateral and credit exposures . • Analysis currency (mis)match between available liquidity sources and liquidity needs per currency. EB plans to have fully automated collateral concentration tools by Q4 2013.
Key Consideration 5 An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.	*EB holds securities from more than 40 foreign markets* The main risk is that, in the event of the bankruptcy of a participant, a local court could rule that the rights to the securities being pledged are not located in Belgium and the effectiveness of the pledge vis-à-vis third parties is not determined in accordance with Belgian law. EB's legal framework for the liquidation of securities and cash collateral allows for the immediate liquidation of collateral under both the pledge arrangements agreed with customers and under the statutory lien. EB has a collateral legal survey in which it analyses whether and under which conditions the home jurisdiction of the participant will recognize the validity and enforceability of EB's security interests or the validity of the title transfer arrangements. The collateral surveys are updated every four years. Collateral surveys for new markets or for markets for which the exposure is growing are requested every year (see also Principle 1.

Key Consideration 6 An FMI should use a collateral management system that is well-designed and operationally flexible.	Securities or cash collateral are not re-used by EB. EB has a special arrangement with those participants that have the largest credit exposures, i.e., appropriation of pledged securities (APS). APS participants need to sign a supplement to the collateral agreement. In case of a participant's default, the defaulter's collateral becomes the property of EB immediately. The collateral implementation procedures describe the roles and responsibilities in the overall collateral management and the monitoring of the collateral quality process. The collateral management process is quite automated (through SVE and the design of the settlement process). The collateral valuation team includes seven people who control the processes and the credit officers team includes 18 people which take decisions and monitor collateral concentrations in client portfolios. Eight credit monitoring people run the controls on APS/ECB collateral before the overnight processing. The process of collateral liquidation required previously many manipulations to calculate outstanding positions or to reconcile pending instructions, upcoming corporate events or redemptions, etc. Therefore, a tool has been put in place (Exposure Management Tool or EMT) to have a better view on the securities to be sold or appropriated (collateral) and bought (securities borrowing reimbursements), which allows to speed up the process significantly.
Key Conclusions for Principle 5	The securities and cash accounts of participants in the EB system are used for collateral purposes as long as a reliable valuation of the asset can be obtained. EB has tools to set and enforce conservative haircuts. EB has also detailed procedures to ensure that the collateral is well diversified. As EB is dependent on the type of securities held by the participant EB can continue the promotion of diversified collateral. It is recognized that EB works on the further automation of its daily risk management tools. The collateral arrangements do not explicitly take into account potential pro-cyclical adjustments, which may exacerbate financial instability in crisis situations. EB accepts various non-standard types of collateral, such as letters of credit and bank guarantees.
Assessment of Principle 5	Observed.
Recommendations and Comments	EB is encouraged to further improve its collateral framework by formally addressing pro-cyclicality, reducing the use of non-standard types of collateral and further automating the monitoring of the collateral concentration.

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.	
Key Consideration 1	NA
Key Consideration 2	NA
Key Conclusions for Principle 6	NA
Assessment of Principle 6	NA
Recommendations and Comments	-

Principle 7. Liquidity Risk An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.	
Key Consideration 1 An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.	EB's framework to manage liquidity risk consists of: • Liquidity risk board policies, management resolutions and implementation procedures; • Tools to measure, monitor and reduce the liquidity risk • Daily back testing using stress assumptions; and • Escalation tools and default procedures The liquidity risks in each currency are borne directly by EB. EB has established a liquidity risk board policy complemented by management resolutions. The board policy principles address liquidity risk resulting from participant settlement activity in EB and treasury activity. In addition to the management resolution on stress-testing, the board policy on liquidity stress-testing has been finalized in October 2012. The global family limit takes into account the aggregate liquidity risk of a participant that may play multiple roles in relation to EB. It is the maximum sum of all credit facilities granted by EB to a single participant at group level. The global family limit intends to make a link between a single participant's credit usage (at group level) and EB's liquidity capacity. As EB credit facilities are multicurrency facilities denominated in USD, the global limit is set for a USD equivalent amount. This limit is back tested on a daily basis, using stress assumptions. Liquidity risk is also addressed in EBs escalation tools and default procedures.

	The relevant currencies identified in EBs liquidity stress testing framework are the four main currencies (EUR, USD, GBP, and JPY) that represent 95 percent of settlement turnover. **Sources of Liquidity Risk** The difference in timing between cash outflows and cash inflows is the main source of liquidity risk for EB. The settlement of EB participants' buy and sell transactions results in (net) debit or credit cash balances on their cash accounts in EB. In the course of the day, EB participants will instruct EB either to pay-out the available net credit cash balances or will pay-in the amount due, should the net balance of their cash account be negative. All pay-in and out flows are processed via cash correspondents or TARGET2 (>40 percent for EUR payment flows). For its day-to-day liquidity management, and based on cash correspondents' (uncommitted) intraday credit facilities provided to it, EB is able to process wire transfers of participants' settlement proceeds *before* cash correspondents receive the pay-in flows from other EB participants reimbursing their net debit cash positions. These pay-in flows will compensate the intraday credit granted by the cash correspondents to EB. The availability of sufficient liquidity is considered particularly critical in the following instances: • in the evening preceding the overnight process where pre-collateralization is required in some; domestic markets (i.e., Germany, France, Denmark, and Italy); • early in the morning when time critical payments need to be made (cross-border settlement in France and Germany, net payments to CBL resulting from Bridge activity); • when new issue payments need to be made; • throughout the day, to support payment, settlement and custody activity; and • In case of stress, to ensure business continuity.
Key Consideration 2 An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.	**Operational Tools** EB uses operational tools to identify the anticipated cash movements from different activities at the EB nostro accounts at cash correspondents. The information is collected regularly during the day. Based on this forecast, the EB treasury department estimates where liquidity needs might arise, decides to re-invest excess liquidity per currency, and which treasury instruments it would use.

Exceptional activity (e.g., large new issues, big income proceeds, important settlement activity) which may put intraday liquidity under pressure are reported separately to the liquidity management team. The collected information allows the liquidity management team to mobilize the required sources. If EB deems it necessary it can contact the cash correspondent to alert it to ensure timely execution of the related payments.

Through a daily reconciliation process EB identifies ex-post potential unexecuted participants' payments. Where necessary, appropriate escalation is made to ensure payments are executed with correct value date.

EB uses manual procedures to obtain an up to date overview of actual debits to its nostro accounts. EB envisages automating its monitoring of its nostro accounts at cash correspondents to obtain a real-time view, which is planned for 2014.

Based on the estimated pay-in/pay-out flows forecast and the result of potential other mitigating actions, the treasury department will provide the silver crisis team with a view on the estimated end of day liquidity gap and the possible need to activate contingency liquidity sources. Based on the information EB can decide to activate liquidity contingency plans.

Analytical Tools
EB has developed a liquidity data warehouse. All liquidity back and stress testing exercises use this database.

Participant Tools
Participants have tools available to monitor their credit usage and cash position and to anticipate their credit and liquidity needs for the next day. EB participants are updated about their cash position via different reports, i.e., the real-time cash position report and the real-time credit report. The real-time cash position report provides information—per currency—on the participant's real-time cash position resulting from different activities in the Euroclear system. The real-time credit report provides information on the participant's credit line, its real-time credit usage and the available pledged collateral, as well as the total number and value of instructions blocked due to lack of credit or collateral. The report also provides the projected net cash value of all eligible receipt and delivery instructions and the projected net collateral value.

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.	EB manages its liquidity risk by ensuring that it has sufficient liquid resources to manage the default of the two participants with the largest exposures. EB therefore defines on a daily basis the maximum credit lines (for a family) assuming extreme liquidity stress scenarios. System-embedded controls verify continuously whether exposures remain below the credit lines. EB's sources of liquidity are compared with the largest exposures observed on one single participant (at family level) for all relevant currencies and for EUR, USD, GBP, and JPY separately. EB conducts on a daily basis daily back tests to verify whether the credit limits were appropriately set. The results of the daily back tests are reported to the CALCO on a quarterly basis. The results of the tests are analyzed and recommendations are made accordingly. Over the period April–June 2012, no liquidity shortfalls were observed. In addition, liquidity risk is addressed in different stress exercises, based on different scenario's, involving different departments, with the aim to verify the responsiveness of Euroclear to such events and to improve daily processes and crisis procedures. The following tests have taken liquidity risk into account : **Scenario 1: Countries in Default** EB has simulated the default of various countries, both separately and simultaneously. It is assumed that the countries' participants are in default, including the cash correspondents, and the liquidity coming from these entities are not available. EB's borrowing capacity is not altered. Cross-border settlement is discontinued and participants are requested to reroute payments to other cash correspondents 1 hour after the default. The maximum liquidity gap, which is the cash trapped at the cash correspondents and the participants' debit positions, has been compared to the remaining liquidity sources. The results of the stress test showed that in case of one or more country defaults, no liquidity shortfalls were identified for any listed currency.

	Scenario 2: IT outage USD Cash Correspondent This stress test simulated an IT outage for 24 hours at one of EB's USD cash correspondents. USD long cash balances with the cash correspondent were considered to be zero. Participants were asked to re-route their payments 1 hour after the outage. In this scenario no liquidity shortfalls in USD were reported based on the mobilization of EB's committed and uncommitted liquidity sources in USD, including the back-stop facility. **Scenario 3: Multiple Investment Bank Failure** EB simulated a simultaneous failure of three investment banks. These investment banks have signed the APS agreement. The total exposure of EB on the three investment banks is fully covered with securities collateral. For GBP a potential shortfall was reported. As the total exposure of the three investment banks was collateralized, collateral available in other currencies could compensate for the liquidity shortage in GBP. As a follow-up to this stress-test, EB ensures that pledge agreements with liquidity providers will stipulate eligible collateral in different currencies. **Scenario 4: Intraday Cut of EUR, USD, and JPY Cash Correspondent Lines (Reverse Stress Test Scenario)** This scenario assesses whether EB has sufficient liquidity sources available to enable business continuity in EUR, USD and JPY markets in case the intraday credit lines of cash correspondent are not available. The stress test calculated the liquidity gaps encountered before 2:00 p.m. CET by currency and those after 2:00 p.m. CET for all currencies. The stress test showed that EB would experience the first liquidity shortfall when only 25 percent of the total expected incoming payments are received before 1 pm CET. This shortfall will be covered later in the day with cash inflows from participants that need to reimburse their debit positions from their settlement activity. This enables EB to process all participants wire transfers.
Key Consideration 4 A CCP should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments, and meet other payment	NA

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.	
Key Consideration 5 For the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is	EB relies on different sources of liquidity to manage both day-to-day operations as well as extreme circumstances. EB uses four classes of liquidity resources: **Committed Liquidity Sources** • Investment book: EB has an investment book invested in ESCB-eligible securities, which are pledged to NBB to obtain liquidity. The investment book is used for day-to-day operations. • Bilateral standby facilities: Granted by commercial banks based on bilateral contracts foreseeing that these amounts should be provided same-day to EB upon simple request. • Backstop facility: Multicurrency contingency liquidity facility provided by a syndicate of banks. • Guarantee structure: EB can borrow ESCB-eligible collateral from market counterparts for a fixed period of time to guarantee the settlement of the cash leg of Clearstream Frankfurt transactions in the books of the Bundesbank. The guarantee structure is therefore used for day-to-day operations. • Committed swap facilities: EB has a committed swap facility that could be used to convert liquidity available in one currency into another.

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.	**Appropriation of Pledged Securities/APS** The total value of APS collateral is US$58 billion, of which US$182 billion is ESCB eligible. For participants that are top credit users in EB (covering +/- 75 percent of average credit exposure), an arrangement has been set up allowing EB after such participant has been put into default to immediately appropriate the participant's pledged securities. EB has the possibility to either pledge this APS collateral to the NBB for euro liquidity or initiate a repo transaction with third-party liquidity providers or local cash correspondents for liquidity in different currencies. **Highly Reliable Liquidity Sources** Participants' cash balances: Participants leave long cash positions on their accounts, which can be used as an operational liquidity source by EB. These long cash positions could (at least partially) be considered as working cash balances for securities settlement in the books of EB. **Uncommitted Liquidity Sources** • Non-core participants' long cash balances: Participants long cash positions that are not considered as liquid resources. • Intraday credit line cash correspondents: EB's cash correspondents provide EB with intraday credit facilities that are uncommitted and undisclosed. • Intraday credit lines with other commercial banks (non-cash correspondents): credit lines provided by commercial banks that are not linked to daily processing of pay-in and out flows). • Settlement agents' operational lines: for cross-border settlement in some local markets, EB installs liquidity/collateral arrangements with settlement agents (e.g., Denmark, France, Germany, and Italy). • Borrowing capacity: EB has relationships with several market counterparts worldwide from which it might borrow in case of need. • Uncommitted swap facilities: EB has uncommitted swap facilities that could be used to convert liquidity available in one currency into another. The time necessary to obtain liquid resources depends on the type of liquid resources but is in general short, varying from a couple of minutes to a couple of hours. APS collateral can immediately be taken to obtain intraday euro liquidity from the NBB. The committed swap facility is available within 30 minutes. The backstop facility is available at the same day at 2:00 p.m. CET for EUR and 3:00 p.m. CET for USD.

	For committed liquidity sources this is based on the contractual arrangements. The deadlines to call upon the bilateral standby facility vary per liquidity provider. The reliance on APS highlights the importance of the monitoring of a participant's collateral portfolio quality. A potential mismatch between the collateral currency and the liquidity gap would need to be managed through FX swap facilities. This is monitored by EB for APS participants.
Key Consideration 6 An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not assume the availability of emergency central bank credit as a part of its liquidity plan.	Supplemental liquid resources are considered for other scenarios than the default of the participant that would generate the largest aggregate payment obligation. In case of a failure of a non-APS participant, no supplemental liquid resources should be necessary as the potential exposure would be capped at half the level of the liquid sources. Other measures are the use of cash correspondent and the delay of pay-outs. In case of a problem with a cash correspondent EB has the right to disable a cash correspondent and ask participants to re-route payments via another cash correspondent. Re-routing is tested with a selection of participants on a regular basis. In addition, EB is able to delay the execution of wire transfers to better manage its own liquidity needs.
Key Consideration 7 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	The liquidity back-test is an ex-post test to determine to what extent the available liquidity sources would have been sufficient to cover a failure of the participant with the highest debit position observed every day of the period under review. EB's sources of liquidity are compared with the largest exposures observed on one single participant (at family level) for all relevant currencies and on one single participant for EUR, USD, GBP, and JPY separately, for day 1 and 2 as of the default. It does not take other market-related assumptions into account. The liquidity back-test considers exposures related to settlement activity, treasury (cash redeposits) and income advances at participant's legal entity level, which are then grouped by family. EB

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.	takes the exposure after the overnight batches (debit cash balances by participant) which still represents the peak exposure for most of participants. Securities borrowing is excluded from the exposures as the purchase of securities borrowed positions by EB (to reimburse the lender) could be on day 1 but for settlement T+3. It will not affect liquidity on day 1 and 2. Time horizons beyond day 2 are not considered in the liquidity back-test. The defaulting participant is excluded from all the liquidity sources for which he is a provider. The available committed sources are the standby facilities (EUR, USD, GBP) and committed FX swap facilities (EUR, USD, GBP) for day 1 and 2, as well as the investment book and the guarantee structure. The back-stop facility is assumed not to be available on day 1. Contractually, the back-stop facility can be activated on day 1 but because of the operational multi-step process (agent, syndicate); EB takes the conservative approach that 24 hours might be needed to have the liquidity available (as from Day 2). APS collateral is considered available on day 1 and 2. APS will only be activated if the supposedly failing participant with the biggest exposure has signed APS.
Key consideration 8 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.	The relevant policies of EB regarding liquidity management enable EB to effect intraday settlement of payment obligation, also in extreme circumstances. EB policies are approved at board level. The main elements of EB's liquidity risk management, including the distinction between day-to-day versus contingency liquidity management, are disclosed in the Euroclear plc Basel II—Disclosure (2011) and the ESCB-CESR Disclosure Framework (2012). No other documents are communicated except if specifically requested by the participant.

Key Conclusions for Principle 7	On instigation of the NBB EB improved its framework for the management of liquidity risks. EB is able to identify measure and monitor its settlement and funding flows on an ongoing basis. EB's liquidity management framework aims to ensure that EB has enough liquid resources in stress situations, i.e., the default of the two participants with the largest exposure with access to only a limited amount of liquid sources.
Assessment of Principle 7	Observed.
Recommendations and comments	EB is encouraged to further improve its liquidity management framework by concluding APS agreements.

Principle 8. Settlement Finality An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.	
Key Consideration 1 An FMI's rules and procedures should clearly define the point at which settlement is final.	The rules and procedures of EB clearly define the point at which settlements in its systems are final. The point of finality depends on the type of settlement: • Internal settlements (i.e., transfer between two accounts in the EB system): Section 13.8 of EB's Operating Procedures states that the settlement of an internal transaction is final upon execution and generation of records. The simultaneous transfer of securities and transfer of cash are final at that moment, provided that all conditions for settlement are fulfilled. In practice there are two moments of finality, namely at the end of the two overnight securities settlement batches during the night, or in real time for the real-time processing during the day. • Bridge settlements (i.e., between an EB and a CBL participant): Sections 14.9 and 14.10 of EB's Operating Procedures detail that securities transfers over the bridge in the real-time processing are final upon successful execution and generation of records. For securities transfers via the overnight batch, finality is reached when the other side has confirmed acceptance of the securities. • External settlement (i.e., between an EB participant and a participant in a foreign local market via a link between EB and another CSD): Section 15.11 of EB's Operating Procedures states that settlement of an external receipt or delivery transaction is final when final according to local market rules and practice. The systems of EB are designated systems under the relevant finality laws, meaning that the terms and conditions, the operating procedures and the Euroclear documentation are enforceable in the event of the

	insolvency of a system participant; the operator of the system; or the operator of a linked or interoperable system. Finality in all relevant jurisdictions is ensured as EB's network department performs a market link risk assessment for all links that are established and obtains confirmation that no provisional credit is made on the securities account opened by EB. EB only receives provisional transfers of securities from other systems in very limited circumstances from the U.S. market in DTCC. EB prohibits retransfer of these securities until they become final.
Key Consideration 2 An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.	Settlements in EB are final on an intraday basis (for the settlements in the overnight settlement batch processing) or real time (for the real time processed settlements). The majority (about 70 percent) of transactions is settled in the two overnight settlement batches. The first batch processing takes place from 22:00 (S-1) until 23:30 (S-1). The second batch processing takes place from 01:00 (S) until 02:30 (S). Transactions that did not settle in during the night batch and transactions that are entered the same day can settle in the real-time processing during the day from 2:30 am CET to 6:30 pm CET. Settlement failures are rare. The year-to-date (until end July 2012) settlement efficiency is 99.28 percent. Settlement failures may occur when an instruction for settlement on the same day is entered shortly before the ultimate deadline for settling on that day and EB's or the local market's system is down. To prevent this situation, EB is subject to business continuity measures (e.g. back-up data centers) and contingency procedures (e.g., alternative communication channels with the local market). If a participant does not have enough funds, EB may—under certain conditions and subject to limits provide credit to the participant to improve settlement efficiency (see principle 4). If a participant does not have enough securities, he may—under certain conditions—borrow them if he has subscribed to the lending and borrowing program. Additionally Euroclear Bank provides settlement optimization features such as technical netting to reduce collateral needs of its participants in the settlement cycle. If— despite the credit facilities and borrowing program the transaction did not settle during the first and second batch during the night before the intended settlement date, it is recycled in the real-time processing

	during the settlement date. Participants are informed in real time when their transactions settle via EB's proprietary format Euclid R23 and via Euclid R20 for batch process settlement results and ISO (Swift) MT544-7 confirmation messages. Participants are informed of their securities account balance via Euclid R30 in real time and MT 535 statements of holdings after the night batch and after the real-time process.
Key Consideration 3 An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.	Section 6.6.2 of EB's Operating Procedures defines which instructions can be cancelled by participants. The Operating Procedures are publicly available to anyone on Euroclear's website. Cancellation instructions must be sent by the input deadline of the settlement process for which instructions are eligible for settlement (i.e., received and validated but not yet executed by EB). After this input deadline, instructions become irrevocable. For transfer instructions entered in the system before the settlement date (and that are eligible to be settled during the night batch), cancellation instructions must be received before 20 pm CET on the day before the intended settlement date. Settlement instructions entered during the real-time processing settle in principle immediately (provided they are matched and sufficient cash and securities are available). If they have not settled yet, they can be cancelled until the input deadline (6:30 pm CET at the latest). For Bridge instructions, the input deadlines are 8:30 p.m. CET on the day before the intended settlement date (overnight securities settlement processing) or 4:00 p.m. at the latest for the real time processing (for free of payment instructions). The deadlines for external instructions depend on the local rules. After the above mentioned deadlines, instructions become irrevocable for participants. Such instructions can only be cancelled by EB itself under specific circumstances (e.g., pending instructions related to a closed account, pending bridge instructions as of the final maturity date or old external instructions).

Key conclusions for Principle 8	Settlements in the EB systems are final under the Belgian Settlement Finality Law. Settlements are final at the end of the overnight settlement batches and on a real time basis for settlements during the day. Settlements over the bridge with CBL are final upon confirmed acceptance of the securities, either real time or at the end of the overnight settlement batch. External settlements are final according to local market rules and practices.
Assessment of Principle 8	Observed.
Recommendations and Comments	-

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 An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.	All money settlements, for all types of operations and all eligible settlement currencies, are settled in commercial bank money. Settlements between participants of EB are settled in the books of EB itself. Bridge settlements and external settlements are also settled in the books of EB as far as the EB participant is concerned. All EB participants have cash accounts in the relevant settlement currencies in the books of EB. Money settlements are effected by crediting and debiting the relevant cash accounts of the participants. EB, with the support of its regulators, supervisors and overseers, has chosen this model for efficiency reasons. As settlements take place in more than 50 currencies and participants are located in countries from all over the world it is considered not feasible or practical to request them to open accounts at all relevant central banks.
Key Consideration 2 If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.	Settlement in the books of EB is considered to contain little credit and liquidity risk as the settlement asset used is a claim on EB itself, which is an AA+ rated limited-purpose bank. EB is subject to adequate regulation, supervision and oversight by the Belgian authorities and continuously works to further improve its credit and liquidity risk management frameworks in line with international standards. Credit and liquidity risk are two of the six key risks identified by Euroclear in its Risk Register.

Key Consideration 3 If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, 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.	EB does not have settlement banks according to the definition of the PFMI.
Key Consideration 4 If an FMI conducts money settlements on its own books, it should minimize and strictly control its credit and liquidity risks.	Principles 4 and 7 describe how EB minimizes and controls its credit and liquidity risks. In addition, EB manages its credit and liquidity risks related to services provided by cash correspondents. The management of credit risk exposures towards its cash correspondents is in some aspects different from the credit risk management on EB's participants. For its participants, EB can set limits on their credit line, but the exposure on the cash correspondents comes from the positive cash balance on EB's nostro account (which in turn comes from money wired in by the participants) and is not controllable ex ante. These positions are however closely monitored by EB treasury management which performs realignments throughout the day and deposits excess liquidity in the market. EB mitigates its credit risk towards its cash correspondents as follows: • Management of end-of-day nostro exposures. EB uses reverse repos in order to turn the unsecured nostro exposure into a secured exposure (and limit the concentration risk on the cash correspondent). For USD, risks can be mitigated by ensuring FDIC insurance coverage. For EUR, EB can re-deposit its positive balances with the NBB (for other main currencies. EB has also contingency deposit facilities available with a limited number of central banks. EB diversifies its nostro risk by opening accounts with several cash correspondents (per currency). EB can charge

	negative interest to discourage clients from holding excessive long balances. • Monitoring of long balances with all agents. If needed from a risk perspective, for certain countries EB applies a tighter management of intra-day cash balances (e.g., hourly monitoring to sweep of long balances that may result of large income payments) or foresees an active or dormant back-up cash correspondent. • Careful selection, due diligence and continuous monitoring of participants. Participants have to meet certain financial-health criteria in order to become and stay EB client.
Key Consideration 5 An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.	NA
Key Conclusions for Principle 9	Money settlements are conducted in commercial bank money on the cash accounts in Euroclear Bank as settlement on central bank accounts is considered less efficient. Cash is deposited at accounts of designated cash correspondent banks. Cash correspondents must be subject to supervision by local authorities. EB monitors its risks towards cash correspondents and an ongoing basis, including the concentration of exposures. EB has access to central bank liquidity and has opened an account in TARGET2 with the NBB. EB can easily access euro central bank liquidity by providing eligible collateral. Although 80 percent of settlements take place in euro EB mainly uses cash correspondents for the payments of participants' cash in euro. Realignment of payments in euro between the cash correspondents is done through TARGET2. EB has started to use TARGET2 for other payments in euro, such as income payments from the issuer to EB.
Assessment of Principle 9	Observed.

Recommendations and Comments	EB is encouraged to further investigate ways to replace commercial bank money arrangements by central bank money arrangements and to limit its exposures towards its cash correspondents.

Principle 10. Physical Deliveries An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.	
Key Consideration 1 An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.	NA
Key Consideration 2 An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.	NA
Key Conclusions for Principle 10	NA
Assessment of Principle 10	NA
Recommendations and comments	NA

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.	EB applies the Belgian and European accounting principles, which are summarized in CBFA Circular 2007–7 and state that client assets and own assets should be completely separated. Participants' securities are credited at their securities clearance accounts. The securities in these accounts represent 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 participants having deposited securities of the same category (Article 2 of Belgian Royal Decree N° 62). Therefore, participants do not have any right to any specific certificates representing these securities. The rights of securities issuers and holders are safeguarded through: • EB's accounting practices and reconciliation procedures;

	• the separation of participants' securities from those of EB itself and those of other participants; • the separation of underlying customers' securities from those of the participant ; and • their protection against claims from EB which has waived its statutory lien on customers' securities. Euroclear's internal audit includes safekeeping of securities and network management (responsible for monitoring the market links) in their audit universe. All processes are reviewed at least every three–five years. During the most recent audit in this domain (2008), internal audit verified that the reconciliations between EB's books and their depositaries' were properly and timely performed and that any mismatch was timely and adequately investigated and resolved. The next audit on the securities reconciliation process is planned for Q4 2012–Q1 2013. Euroclear's internal audit does not check whether there are sufficient securities to satisfy customer rights, but they do review the reconciliation process performed by the reconciliation & investigation team, a team which is independent from the operational teams that deal with the transactions. An external auditor reviews EB's procedures and internal controls. The results of this review are made available to participants and authorities via the yearly International Standard on Assurance Engagements (ISAE) 3402 report. In addition, each year, the external auditor reports its findings on EB's internal controls regarding the safekeeping of clients' assets to the Belgian authorities. The external auditor from time to time contacts EB's depositories to double check the securities balances. In addition, EB's Network department performs vault inspections at the depositories. The accounting practices and the reference to Royal Decree 62 can be found in the terms and conditions Section 4 (Holding of Securities; Terms of Custody), which are part of the contractual framework between Euroclear Bank and its participants. The controls that EB applies and the inspection by the external auditor can be found in the yearly ISAE 3402 report. This report is available to participants. Creation of securities positions is only performed upon receipt of securities to be credited to client accounts. Removal of these

	securities positions is generally performed upon final maturity or in the context of a corporate event (e.g., exchange). Both creation and deletion are generally processed without manual intervention at EB upon client instruction and depository confirmation. When manual intervention is required, the recording of the information in the database and the input of movements are subject to a four-eye principle (either second user control or keying and re-keying). Movements in client accounts are also reported on a daily basis to clients. Generally, securities are credited and debited in an automated way, which should reduce the risk of unauthorized creation and deletion of securities. When manual intervention is required, the recording of the information in the database and the input of movements are subject to a four-eye principle. EB performs two kinds of reconciliations: • The first kind is an "internal" reconciliation, where the sum of the participants' securities balances is reconciled with the internal account reflecting the total of these securities held at EB's depository. Any discrepancies between these accounts are detected automatically. • As EB is not the official registrar of the issues held on its books is also performs "external" reconciliations. Eurobonds are reconciled on a daily basis with the depositaries, however weekly reconciliations are done for domestic securities that are held with CBL and that are not realigned in the books of the local depository. For certain securities (new global notes held at "common safe keepers"), EB also performs a daily reconciliation of balances. For other securities, EB reconciles the total of participants' securities balances in its books with the securities balances reported by the depositaries on a monthly basis.
Key Consideration 2 A CSD should prohibit overdrafts and debit balances in securities accounts.	Overdrafts and debit balances are prohibited in EB. Transactions for which not enough securities are available in the participant's account will not be executed.
Key consideration 3 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	All Eurobonds held in EB are immobilized, with only a very small percentage (0.3 percent) of the Eurobonds issued in dematerialized form. The physically issue Eurobonds are in the form of a global certificate representing the whole issue. Domestic securities (held through the links) could be issued in

dematerialize securities.	dematerialized, immobilized or physical form. In case of physically issued securities, they need to be immobilized to be held in the systems of EB to enable the transfer of securities in book-entry form.
Key Consideration 4 A CSD should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.	EB's accounting practices and internal controls protect participants' assets, which are segregated from EB's own assets, from the risk of loss due to EB itself. In addition, the participants' assets are legally protected from claims by EB's creditors in case of bankruptcy of EB and EB is legally prohibited from using participants' assets without their consent. Frequent reconciliations should identify any error quickly in order to avoid erroneous creation or deletion of securities. EB has also set procedures to select its depositories and imposes the requirement on depositories to have EB's securities protected by insurance. EB's accounting practices, internal controls, segregation of its own assets and selection of depositories are consistent with the applicable Belgian/European laws and regulations. The legal protection of participants' assets from claims by EB's creditors is provided by Royal Decree N°62. Art. 77bis of the law of April 6, 1995 prohibits EB from using participants' assets without their consent. Securities held by EB or depositories are insured against the risk of physical loss or damage, fraud or cyber risks.
Key Consideration 5 A CSD should employ a robust system that ensures segregation between the CSD's own assets and the securities of its participants and segregation among the securities of participants. Where supported by the legal framework, the CSD should also support operationally the segregation of securities belonging to a participant's customers on the participant's books and facilitate the transfer of customer holdings.	EB's own securities are held in accounts that are separate from the participant's accounts. Each participant's assets are reflected in its own account(s), separated from the assets of other participants, although participants' assets may also be held in an omnibus account. In addition to their own account, participants may open additional accounts and may add a designation to these accounts to segregate them from the main account. EB will in principle not rely on the assets of its participants' customers to cover exposures on its participants, as EB has waived the statutory lien on all securities credited to a Securities Clearance Account which has been separately and expressly identified in writing by the participant as an account to which solely customer securities are credited.

	The assets in the underlying customers' accounts can easily be transferred to another participant via a simple transfer instruction by the participant or its liquidator. The underlying customers can however not send transfer instructions themselves, as they are not necessarily known to EB.
Key Consideration 6 A CSD should identify, measure, monitor, and manage its risks from other activities that it may perform; additional tools may be necessary in order to address these risks.	EB only offers services that are related to custody and settlement of assets. In order to facilitate the efficient settlement of their participants' instructions, EB offers limited banking services (credit facilities and money transfer services). EB also offers its participants collateral management services (e.g. tri-party repo), securities lending and borrowing, issuer services and tax services. EB also offers a dedicated platform for investment funds (FundSettle) covering aspects from order routing and transaction settlement to asset servicing for those funds. There is also a multi-currency post-trade service for loans (LoanReach). Before being offered to clients, every potential new service has to go through an approval process, during which the impact of the new service on the risk profile of EB is assessed, leading to the acceptance or refusal of the new service from a risk point of view. See also Principle 3.
Key conclusions for Principle 11	In EB, securities are held in book-entry form and are immobilized. EB has arrangements in place to ensure the integrity of securities issues. Assets are protected against custody risks, supported by the legal framework. The contractual arrangements for the statutory lien do not enable EB to use proprietary assets of its participants nor the clients of the participant. Overdrafts of securities accounts are not permitted. Currently daily reconciliation is only conducted for Eurobonds, and not for domestic securities that represent half of the deposited value of securities in EB.
Assessment of Principle 11	Broadly observed
Recommendations and Comments	Reconciliation of all securities positions should be done on a daily basis for all securities.

Principle 12. Exchange-of-Value Settlement Systems If an FMI settles transactions that involve the settlement of two linked obligations (for example securities or foreign exchange transactions) it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.	
Key Consideration 1 An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis when finality occurs.	EB eliminates principle risk by the application of a delivery versus payment (DVP) model 1 arrangement, with settlement on a trade by trade basis, with gross settlement of the cash leg and gross settlement of the securities leg. The DVP arrangement is supported by the relevant legal and contractual framework as well as the technical framework, which ensures that delivery of securities takes place if, and only if, payment is received. Both legs are final at the same time. The system controls the availability of the cash and securities 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 for settlement at a later point in time. If the cash and/or the securities are available, the instructions will be executed and the cash and securities will be transferred simultaneously. About 90 percent of the transactions in the Euroclear system are settled against payment (DVP). The other 10 percent are free of payment (FOP) instructions that cover transactions to which no cash leg is associated neither within nor outside the Euroclear system, for example for collateral transfers.
Key conclusions for Principle 12	EB uses a model1 DVP system, ensuring simultaneous final settlement of securities and funds transfers on a gross (trade-by-trade) basis. EB settles transactions between participants by simultaneous book-entry debits and credits in their respective securities and/or cash accounts held in its books.
Assessment of Principle 12	Observed.
Recommendations and Comments	-

<table>
<tr><th colspan="2">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.</th></tr>
<tr><td>Key Consideration 1
An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.</td><td>EB has default rules and procedures to handle the default of one of its participants. The default rules and procedures define the sequencing of actions to be taken by EB in case of an:

• operational or financial failure of a participant;
• operational incident or failure of CBL; or a
• failure of a depository.

For each of these scenarios, the responsibilities as well as the expected time required, is listed for each stage of the crisis: initial impact assessment, crisis management and recovery decisions, communication management, and long term recovery.

EB has defined the roles, obligations, and responsibilities of the various parties according to the level of the crisis which are:

• Bronze: the monitoring teams and their supervisors deal with operational management and daily matters.
• Silver: department heads are concerned with tactical management and deal with short to medium term matters by coordinating through regular crisis meetings.
• Gold: senior managers are concerned with strategic management and deal with long term matters and/or if the situation becomes public.

Operational or Financial Failure of a Participant
If a participant is not in a position to meet its payment obligations towards EB when due, EB is entitled to put this participant in default and has the right to liquidate this participant's pledged collateral in order to cover its own exposures.

Operational problems at one of EB's counterparties are expected to be detected due to unusual patterns, and late or absence of cash payments.
A financial default is defined as follows:

• The participant cannot fulfill its payment obligations, for example because he is declared bankrupt.
• The participant is in debit for an amount of at least US$100,000</td></tr>
</table>

	above its advised credit facility for more that 90 consecutive days. • The participant is in default on any financial obligation in excess of 3 percent of its total shareholders' equity. The actions that EB can take when a default is declared are described in different documents, including the Operating Procedures, the Liquidity Contingency Plan Implementing Procedure, Corporate Business Continuity Plan and the Settlement Crisis Procedure - Failure of a Counterpart. For any participant that signed the APS arrangements, EB can immediately appropriate the pledged securities. The proceeds of the collateral liquidation will be used to cover any liquidity needs and to replenish liquidity resources potentially called upon by EB like the standby and the back-stop facilities. If no APS has been signed EB needs to wait 24 hours before it can liquidate the collateral of the participant. Contingency liquidity sources are calibrated in order to bridge that 24 hours period. Should unexpected circumstances request it, EB has always the right to liquidate the collateral immediately via the statutory lien or the general pledge. On top of the pledged collateral or other recourses provided by its participants, EB can rely on a statutory lien on assets participants hold in the system. This lien is to secure any claim against any participant arising in connection with the settlement of transactions through or in connection with the system. EB has discretionarily waived such statutory lien over the balance 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 the participant would have agreed in writing that the lien should continue to apply to the customer securities credited to such securities account. At this date, none of the EB's participants has agreed to extend the Statutory Lien to client assets. EB has developed the so-called "Exposure Management Tool" which provides an overview for every participant of its accounts, its exposures and its collateral accounts. The Exposure Management Tool eases the selection of collateral to be sold. EB distinguishes between operational liquidity sources (for day-to-day operations) and contingency sources. The EB recovery plan provides that EB would first use the operational

	liquidity sources, including uncommitted sources (interbank market or cash correspondents) or liquidity obtained through APS. If not sufficient, EB would make use of the bilateral committed facilities first and would then, if needed, trigger the backstop facility. Since the facility is syndicated (and therefore more visible), EB will use it only in extreme circumstances. Contractually the back-stop is available on day 1 if triggered before 12:00 p.m. After that, it will be practically difficult to draw on the facility and still arrange for receipt of the liquidity for same day (except for USD). In the extreme case where EB's risk mitigation measures would not be sufficient, and where EB is confronted with an unexpected loss, imposing EB to rely on its capital, the recovery plan will have to be implemented. Once the participant has been declared in default, EB will block the positioning of securities for internal instructions. Any new incoming instructions, new wire transfers, etc. initiated after the declaration of default are automatically blocked and will not be processed. All securities and cash accounts are blocked, and therefore all pending instructions of the defaulted counterparty are blocked as well. Blocked pending instructions may still be allowed to settle if sufficient cash/securities are available in the accounts of the defaulting entity and depending on the situation. If the defaulting participant has pending borrowed positions, EB needs to define whether a long securities balance could be used to cover a borrowed position in the same security, or to execute buy-ins to reimburse the outstanding borrowed position. The Operating Procedures allow the reversal of advanced income and redemption payments for securities if the defaulting counterparty is an issuer. Mandatory corporate events (i.e., income payments, redemptions) will still be executed as they are mandatory events that EB has to process. **Operational Incident or Failure of CBL** Pursuant to Section 7.02 (b) of the bridge agreement, EB is obliged to make payments to CBL each day. There are no other provisions which would allow EB to stop making payments to CBL if due, even if CBL were bankrupt. In case CBL is not able to fulfill its payment obligations with EB, the

	letter of credit of CBL in favor of EB can be called upon. As the letter of credit is unconditional, there is no need to put CBL first in default before calling upon the letter of credit. The notice of demand can be sent to the agent of the letter of credit for payment in USD on the third banking day. Should CBL fail to pay EB, and the letter of credit is insufficient to cover the losses, EB will rely on a loss-allocation mechanism by debiting the participants' cash accounts. EB has the right to debit these cash accounts for a proportional portion of the unpaid amount due by CBL. The participants' cash accounts are those to which credits were previously made as a result of (delivery) transactions that are taken into account in the calculation of the amount due by CBL to EB. If the cash position of a participant is not sufficient, the debit cash position resulting from the application of the right-to-debit will need to be reimbursed by the participant. If the participant would fail to reimburse its cash position, EB may ultimately have to liquidate the collateral pledged by the participant. The decision to implement the right-to-debit is taken by the EB management committee.
Key Consideration 2 An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.	EB has established a global business continuity plan to prepare EB crisis management response (silver level) in case of an operational/financial failure of an external counterpart or CBL, as well as a failure of a depository. The EB business continuity plan prescribes how to manage communication to staff (internal Communications as part of the silver team), and to clients. EB uses "Fact 24," an external crisis communication tool, to communicate with participants in crisis situations. The tool is independent from the Euroclear IT infrastructure and guarantees effective communication in all situations including system outages. It is used very regularly to communicate with participants during "bronze" level incidents. The NBB is also included in the addressee list. Regular contact between EB and its regulators under normal circumstances is expected to make the crisis communication process between both parties effective and timely. The EB stress testing management resolutions are in principle reviewed every two years. Euroclear risk management will report the results of the review, and recommend if required amendments, to the

	EB management committee. The Euroclear business continuity implementing procedure is in principle reviewed every two years. EB continuity plans are reviewed at a minimum on an annual basis, or more frequently if required.
Key Consideration 3 An FMI should publicly disclose key aspects of its default rules and procedures.	Several key aspects of the default rules and procedures are publicly available, however, a consistent and comprehensive disclosure of the key aspects of default rules and procedures is currently lacking. Also, key aspects of a default of CBL or one of the depositories are not or not clearly disclosed.
Key Consideration 4 An FMI should involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.	EB does not test its participant-default procedures with its participants because most of the procedures to be tested are internal procedures. On a regular basis, EB does organize desktop BCP testing for different scenarios (a.o. defaults of a large participant with multiple roles in the Euroclear system and CBL). Regulators can attend internal desk top crisis tests as observer. EB plans to organize a joint test together with CBL for the bridge.
Key Conclusions for Principle 13	EB has developed default rules and procedures to manage a participant default. EB has appropriate discretionary power to implement these rules and internal tests are conducted on an annual basis. The tests include the participation of all relevant hierarchical levels within the organization. Several key aspects of the default rules and procedures are not publicly available. Also, EB hasn't conducted any tests with its participants and other stakeholders, although a test with CBL is planned regarding the bridge settlements.
Assessment of Principle 13	Observed
Recommendations and comments	EB should improve the disclosure of its default procedures and conduct tests with participants and other relevant stakeholders.

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.	
Key Consideration 1 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.	NA
Key Consideration 2 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.	NA
Key Consideration 3 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.	NA
Key Consideration 4 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,	NA

that may impair its ability to segregate or port a participant's customers' positions and related collateral.	
Key conclusions for Principle 14	NA
Assessment of Principle 14	NA
Recommendations and comments	NA

Principle 15. General Business Risk An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.	
Key Consideration 1 An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.	General business risk is one of the 6 key risks identified by Euroclear in its Risk Register (see also principle 3) and is subsequently included in Euroclear's Enterprise Risk Management (ERM) Framework for identifying, monitoring, controlling and reporting relevant risks for EB. Potential business risks are identified by Euroclear's commercial division and product management division (for the revenue side. For the cost side, corporate spend management identifies potential risks via assessments of business needs and suppliers at least once a year. Overall business risk is monitored via the financial plan by the financial division. The general business risks for EB are two-fold: • Failure to realize revenues (unfavorable changes in depot level, exchange rates, transaction volumes, long and short clients' cash balances and interest rates). • Lack of cost control (staff, outsourcing and IT investment costs). These indicators are followed-up monthly via the financial plan. EB manages its risks on the revenue side by identifying opportunities to continuously improve EB's products and services taking into account market evolution; assess the competitiveness of the products and services offering; evaluate product profitability; and perform risk assessment (incl. business risk) of new products. EB also puts emphasis on sales relationship and account management, direct client

	support and marketing. EB manages its risks on the cost side by using the corporate procurement tool, which centralizes all business needs across the company and takes into account commercial issues and opportunities and market knowledge about suppliers. The risk management division advises the corporate spend management on contract renewals and third-party risk assessments. The financial results are compared to the financial plan on a monthly basis.
Key Consideration 2 An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required achieving a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.	The current model to calculate the amount of capital to set aside for business risk used by EB focuses on potential negative deviations from the planned earnings level at a 12-month horizon. Extreme potential deviations are taken into account (at the 99.98 percent confidence level). The model assumes that the planned earnings are normally distributed with a mean equal to the planned earnings themselves and a standard deviation that is estimated by the gap between past forecast earnings and past actual earnings of the last eight years. This statistical model does not take into account EB's such as client concentration, sliding scale pricing or the business migration process, and produces therefore conservative business risk assessments. The model does not explicitly take into account the risk profile of EB or the length of time of achieving an orderly recovery or wind down of critical operations and services. Euroclear is developing a new structural, bottom-up methodology that will simulate potential evolutions of key business variables on the cost and revenues side. In addition to capital set aside for credit, operational, market and business risk, EB's capital model adds two buffers (for stress tests and model risk).
Key Consideration 3 An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial	EB has developed a first version of its recovery plan in 2012. This plan includes several scenarios (e.g. insolvency major counterparty, internal fraud event, loss of funding or long-term IT outage) and several options to recover from the shocks in the scenarios (e.g. liquidating collateral, recapitalization, and insurance, activating contingency liquidity sources or manual processing). This plan is in the process of finalization. There is no explicit link between the capital held for general business risk and the recovery plan and plans for orderly wind down. EB's economic capital for business risk is calculated in accordance with the Basel II - Pillar II framework.

resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.	EB has based its capital on 2011 figures to estimate the necessary capital to cover six months of operating expenses. It has estimated that an amount of €379 million would be needed. This amount would take into account the worst case scenario where all activity stops (no settlement fees will be received from clients, but also no settlement fees to be paid to depositories), while safekeeping and other fees still need to be paid to depositories. EB has internally dedicated an amount of equity capital for business risk (€184 million), which, together with stress risk (€325 million), is sufficient to cover the six months of operating expenses of €379 million. The equity capital consists of liquid net assets, as its equity is invested in liquid assets. Although the liquid assets designated to cover business risks are not physically separated from liquid assets to cover other risks, the amount set aside for business risk is conceptually separated from the capital and liquid assets needed for compliance credit, operational and other types of risk.
Key Consideration 4 Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.	EB's capital is invested in debt securities (EU government, supranational and European Financial Stability Facility bonds only) with a rating of at least AA+, or held in cash at the central bank. In case of extreme market conditions where EB would not be able to convert AAA or AA+ rated EU government bonds into cash, it can use them as collateral for obtaining liquidity via the NBB as these bonds are ESCB eligible. The quality and liquidity of the assets in which EB's capital is invested is assessed monthly by EB and the NBB. In case of deteriorating quality of some of the bonds, the investment portfolio is adjusted (to ensure that all bonds in the portfolio are rated AA+ or above).
Key Consideration 5 An FMI should maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the board of directors and updated regularly.	If EB's capital falls below its minimum requirements, the excess capital of the other entities of the Euroclear Group can be injected into EB. If EB's capital falls below its minimum requirements, the subordinated debt instrument will be converted into profit sharing certificates. If these measures are insufficient, a capital increase by existing or new shareholders may be decided. EB's Board has still to review and approve the first version of the recovery plan.

Key Conclusions for Principle 15	Management and control systems are in place for the management of general business risks and sufficient resources are available to cover six months of operating expenses. As a limited purpose bank, EB is subject to capital requirements.
Assessment of Principle 15	Observed.
Recommendations and Comments	-

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 holds its participants' and its own assets at depositories, treasury counterparties and cash correspondents. Eurobonds are held at "common depositories" (typically big international banks). Local securities are held either at the local CSD directly or via a local sub-custodian. Cash is held at the local central bank (if possible) and/or at local cash correspondents (typically a large local bank). Currently, all EB's depositories and cash correspondents are supervised and regulated as they are all banks or CSDs. EB checks whether its agents are supervised and regulated. The depositories and cash correspondents need to meet the requirements set out in the "selection and monitoring of agents" management resolution with regard to anti-money laundering, operational readiness, good reputation and financial soundness. Depositories are contractually required to have and maintain any necessary consents, permits, licenses, approvals, authorizations or exemptions of any government or other regulatory authority in the relevant countries. The depository agreements with EB's depositories provide for specific requirements for these depositories with regard to record keeping (e.g., the depository will keep records of the aggregate principal amount, number of shares or other units, of securities held ; such records will include the certificate number or any other identifying number for securities held in certificated form as well as appropriate transaction numbers of all securities received or delivered; the agent will deliver on a certain day of the month copies of the above information to EB ; such records will be held in a building other than the building in which the securities are held in order to allow their reissuance in case of their mutilation, loss, destruction or theft) and

	safekeeping procedures. Securities must be either labeled or otherwise appropriately identified as being held for EB, be held in the vaults of the depository on a non-fungible basis, not be comingled with other securities held by the depository whether held for its own account or the account of others and not be deposited or held with any other depository, custodian or clearing system except the local CSD. Before being selected, a candidate-agent has to go through a risk assessment via the EB risk assessment committee. EB conducts a due diligence review of the candidate. The candidate must meet business and quality requirements, accept the terms of the standard EB agreement, comply with data protection and confidentiality requirements, be financially sound, manage its operational risk properly and meet business continuity requirements. Furthermore, being associated with the candidate should not cause reputational damage for EB and vault inspections are performed for agents in charge of safekeeping physical securities. EB's management committee is responsible for the approval of any new agent, including the depositories and cash correspondents where the assets are held, and the yearly re-approval of all agents. The Inspection & Auditing paragraph in the depository agreements gives EB the right to inspect and audit records at the depository. In addition, EB can make use of reports from the external auditor of the depository (such as SAS 70/ISAE 3402) if available.
Key Consideration 2 An FMI should have prompt access to its assets and the assets provided by participants, when required.	For every market link, EB asks a legal opinion that confirms among others the enforceability of the depository agreement and the asset protection, e.g., in case of insolvency of the depository. EB's portfolio of own securities consist of high-quality EU government, supranational and EFSF bonds only. Since all its assets are held in the Eurozone, there are no time zone or legal jurisdiction problems that could delay access to its assets.
Key Consideration 3 An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.	EB monitors and understands its exposures on its custodian banks for all the roles they may have in the system, such as cash correspondent, participant, issuer of securities and lead manager in the issuance process. The Exposure Monitoring Tool of EB is described in Principle 3. The mitigation of risk towards custodians in their role as cash correspondents is described in Principle 9. The custodian banks may also play the role of lead manager in the

	new issues process. In the issuance process of Eurobonds EB may have a credit risk on what is called the "lead manager" (LM), which is the entity that coordinates the new issue process. EB may also have an exposure on the "allottee," which is the entity that receives the new securities.[4] Credit risk exposures of EB on the LM which cash account is debited, are mitigated by EB by applying a DVP process towards allottees. The cash from the LM account will later be used to pay the issuer for the new securities. Before the closing of the issuance process, EB reserves the necessary cash or credit in the allottees' accounts to cover the debit position of the LM. EB mitigates its exposure on the allottee via a DVP transaction. EB credits the securities and debits the cash from the allottee account.
Key Consideration 4 An FMI's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.	EB's investment strategy aims for a very prudent and risk adverse risk profile. EB will also avoid any form of trading activity. The market risk board policy specifies that the activities and instruments that EB can engage in must be in line with its low risk profile and that a prudent investment strategy must be applied in order to preserve the core equity of the bank. The criteria for assets in its investment book are : • Quality: "Each instrument must have the issue or issuer rated AA- or higher by at least two out of the three rating agencies (Moody's, S&P, and Fitch) and confirmed by the internal EB rating." • Asset classes: EB can invest in EUR-denominated sovereign, supranational or agency debt instruments, or temporary cash positions. In practice, EB invests in high-quality bonds of EU governments, the EFSF and supranational (such as the EIB). EB applies concentration limits in the investment book. To reduce liquidity risks EB invests in short-term securities with a maximum duration of five years. EB's investment strategy also explicitly aims to invest in securities that can be used as collateral to obtain liquidity from the central bank.

[4] In some new issues processes (when securities are "pre-released"), EB has no credit risk on the LM because the LM account is credited with cash from the allottees before it is debited to wire out the money for the issuer.

	The general principles of its investment strategy are briefly mentioned in the Euroclear Annual Report and are explained in more detail in its Pillar 3 disclosure, i.e., in the sections on market, credit and liquidity risk.
Key Conclusions for Principle 16	Participants' assets are protected and the investment policy of EB is sound. EB holds participants' and its own assets at supervised and regulated entities. EB ensures via a legal opinion that ownership rights are protected. EB only invests in Eurozone securities to ensure prompt access to its assets. More than 80 percent of its cash investments are secured.
Assessment of Principle 16	Observed.
Recommendations and Comments	-

Principle 17. Operational Risk An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfillment of the FMI's obligations, including in the event of a wide-scale or major disruption.	
Key Consideration 1 An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.	The board of the parent company Euroclear SA/NV has defined the **operational risk board policy** which is also applicable to EB. The primary goal of this policy is to define an operational risk management framework that ensures that Euroclear takes the necessary steps in its day-to-day operations to effectively identify, assess, monitor and manage operational risk at all levels. The risk management framework describes: • how operational risks are identified; • who bears responsibility for managing these risks; • how they can be mitigated; • all relevant operational risk processes; • the role of people within the processes; and • the information needed to make sound management decisions. Euroclear adopts the Basel II definition of Operational Risk which views operational risk as an umbrella risk, encompassing: • processing risk: the risk of loss (financial or reputation) resulting from inadequate or failed internal processes, people, system, or external events;

	• accounting risk: the risk of loss (financial or reputational) arising from the failure to produce timely and accurate management reporting and financial statements; and • ethical conduct, legal and compliance risk, addressed in an ad hoc board policy. The operational risk board policy also defines policy goals for corporate and information security, services by third parties and media communications. Policy goals are translated by senior management into management resolutions which are further detailed in implementation procedures. The operational risk management framework implements a risk management cycle that encompasses: • **Risk identification, assessment and measurement**, which is performed using three approaches: systematic risk assessments are associated with the new product or service approval process; existing processes are controlled through daily monitoring of key risk indicators (KRI) and key performance indicators (KPI). Business areas use self-assessment processes to identify potential shortcomings and solutions. • **Risk response**, which can be to mitigate, accept, transfer/insure/hedge or avoid the risks. For the management of these risks, the board and management have set a limit to the amount of risk it is prepared to accept (risk appetite) and the total amount of risk the business can take (risk tolerance). The business areas need to develop solutions to mitigate risks effectively, with the risk management division of ESA. • **Risk reporting and escalation**. Risk mitigating action plans and their target dates are all logged. The successful implementation of these mitigating actions is monitored through KPI reporting and risk and control self-assessments. The EB audit and risk committee, together with the ESA risk management division ensures the follow-up of the resolution action plans. The timeliness of risk resolution is a key indicator in the Euroclear Group's balanced scorecard. • **Risk monitoring**. Line management will set-up risk monitoring tools to follow-up risks and where possible, puts in place tactical measures to avoid the risks. Risks can be accepted when the costs required to mitigate the risk outweigh the benefits. Depending upon the impact of the risk, the decision to accept a risk is made

	by the business owners or the EB management committee. There is a formal process to re-certify all accepted risks regularly. The risk monitoring is performed using a risk register, which captures the risks that Euroclear faces in pursuing its corporate objectives. The annually updated **Business Impact Analysis** (BIA) aims to identify, assess and resolve threats and risks associated with an interruption to business processes, including those stemming from external sources. Each business area has identified its recovery requirements (staff, communications and records, equipment, procedures) and produced a plan or procedures which fit with the overall business continuity plan. In practice, single points of failure do not exist as such but if identified during the BIA process mitigating action would be taken. **National and International Standards** The Euroclear Group aims to align its risk management practices as closely as possible with major recommendations from various regulatory and industry bodies, such as CPSS-IOSCO, European Banking Authority, G30, European Central Bank, European Securities and Markets Authority, Basel Committee for Banking Supervision and the NBB. Its risk management framework has been developed and is maintained in accordance with best practices for risk management and regulatory guidelines, including COSO, ISO 31000:2009 principles and generic guidelines on risk management and ISO 27001:2005 guidelines for information security. **Human Resources** The Human Resources division has established formal hiring policies providing appropriate assurance that new employees are qualified for their job responsibilities. All new employees complete a standard orientation program. In addition, there are informal departmental seminars, supervised on-the-job trainings, and formal in-house training courses. Certain positions require specialized training provided by third parties. Managers are responsible for encouraging staff to pursue additional training and development to increase expertise within their functional responsibilities. Formal performance appraisals are conducted annually for all personnel. Interim performance appraisals are conducted for people who are changing manager or are at the end of a project assignment.

	Fraud Prevention Regarding fraud prevention, the fraud prevention management resolution— based on the ethical conduct, legal and compliance risk board policy—specifically addresses the fraud controls taken by the Euroclear Group. The objectives of this document are to explain how to prevent, detect and deal promptly and effectively with fraud. It also outlines what measures must be taken to create a workplace environment that promotes Euroclear's reputation for integrity, fairness and honesty as required by the Euroclear ethical conduct, legal and compliance risk board policy. It also details whether and how gifts may be accepted. ESA considers fraud reporting as essential to ensure the consistent treatment of information regarding fraud, the proper investigation by an independent and experienced team, and the protection of Euroclear Group's interests and reputation. Any evidence or suspicion of fraudulent activities must be reported by the responsible manager to the head of the legal division, the head of the internal audit division, the head of the human resources division or the head of the risk management division who are part of the whistle blowing investigation team. **Change Management** When designing (new) products and services, operational risk is considered via a formal risk assessment before the launch. The implementation of the controls or measures that are required subsequent to such risk assessment is monitored. Changes to operational applications and their supporting systems and networks are planned, developed and implemented in a controlled manner. The system development methodology 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 to these principles and guidelines is evaluated for every project or change as part of the production acceptance criteria. Application systems are subject to rigorous testing and review before they are installed in production. The scope of such testing is defined and the results are reviewed by both technical and business experts. The testing is performed in environments segregated from the development and production environments. This supports effective

	and efficient feasibility and integration testing of applications and infrastructure in the early stages of the acquisition and development process. Once testing is complete, the change is made available for release into the production environment. Senior level managers, technical experts and application experts from ESA and EB approve the installation of releases into the production environment, using a formal sign-off process. This is supported by a change-management application. A release may contain several application changes. Only a limited number of authorized individuals, independent from the development team, are able to implement such approved changes, thereby leaving an audit trail of transfers into production.
Key Consideration 2 An FMI's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI's operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.	As risk management (including operational risk management) and IT are centralized in the holding company ESA, both ESA and EB have certain responsibilities for operational risk. **Euroclear Bank Level** The board of EB is the ultimate decision making body for issues related to operational risk of EB. In order to perform its responsibilities more efficiently, the board has established an audit and risk committee. The board has defined terms of reference for the committee, which includes details of their role and responsibilities, operating procedures and the reporting requirements. The audit and risk committee receives input from the internal audit, compliance and risk management functions, and at least once a year verifies whether those functions are working effectively. The EB management committee has been entrusted with the general management of EB and has also established a number of committees to assist with the performance of its duties. The responsibilities of these committees are detailed in their terms of reference. Regarding the management of operational risks these are the: • Local security and operating committee : This committee monitors, advises on and decides on the oversight of daily operations, including risk monitoring, cross-divisional operational controls and risk, service delivery, service quality and productivity. It also monitors security issues and advises the EB management committee, or appropriate division heads. • Risk assessment committee: This committee has been set up for advising and deciding on the launch of any new products and/or

	services involving highly material risks. It ensures that new products, services and processes are analyzed using a formal risk analysis methodology. Senior Management of EB is responsible for: • ensuring that employees of EB have been informed of the operational risk management framework and that they participate in operational risk awareness sessions; • ensuring that sufficient resources are allocated to operational risk management; • ensuring compliance with this policy and related policy documents, as well as local laws and regulations; and • Reporting on compliance with this policy. **Euroclear SA Level** The ESA board, audit committee and management committee have similar responsibilities for ESA as described above for EB. In addition, at ESA level the following specific committees exist: • Group risk committee: EB participates in this committee set up by the ESA to assist in assessing group-related risks. • Group admission committee—EB, together with the ESES CSDs, participates in this advisory cross-entity committee to review participants and participant related policies. EB is assisted by the risk management division of the parent company ESA in managing all types of risks, including operational risk. At least quarterly, the risk management division details the status and trend of the risk profile and comments on the key risks in a formal report to the EB management team, EB audit and risk committee and the risk committee of the ESA board. The senior management of EB reviews the operational risk board policy every two years and reports its findings to the ESA and EB board. Further reviews may be undertaken in the event of significant changes in the strategic, operating, and legal or compliance environment of Euroclear. EB review, audit and test its systems, operational policies, procedures, and controls, including its operational risk-management arrangements with participants on an annual basis.

	Each quarter, a rolling-forward plan for the next six quarters is produced on the basis of risk and control assessments which determine the need, scope and depth for audits. A full scope audit is performed on each line of the audit universe at least every three years. The quarterly plan, with both risk-based and rotational audits, is presented and approved by the ESA and EB management committees and by the audit committees. On an annual basis EB publishes a SAS 70/ ISAE 3402 Report. This report provides information on EB's controls and operating procedures, which needs to be verified by an external audit firm.
Key Consideration 3 An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.	The Euroclear Group sets out the high level objectives for the organization, including those related to operational reliability. The operational reliability objectives are clearly defined and are measured via the balanced scorecard. Objectives can be both qualitative and quantitative. Examples of quantitative objectives are the availability rates of different services to the client. The uptime objective for core services is set at 99.50 percent. Other quantitative objectives are the duration of a process, the response time or number of transactions processed. Policies are in place to achieve the objectives. The risk register categorizes and defines the risks that Euroclear faces in achieving its objectives. The risk register is supported by high-level control objectives that encompass all high-level processes that need to be realized effectively to allow individual business areas to achieve their business objectives. The control objectives provide guidance to the organization on the expected level of internal control in each entity and division of the Group. Each of the high level control objectives has a senior business management owner who is overall accountable for ensuring that risks are appropriately mitigated. They are subject to independent reviews carried out by the internal audit department.
Key Consideration 4 An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.	The capacity management team within the ESA corporate technology division performs capacity monitoring on a daily basis. System and network performance metrics are evaluated for trends, to assess whether potential future capacity problems might occur and have a negative impact on the processing performance. Capacity monitoring and management are included in the risk-based internal audit universe. The maximum capacity is 250,000 transactions per day, which is well above the 170,000 transactions that EB processes per day.

	Business planning and product management provide input on future capacity requirements for the implementation of new projects or new services. Before a new system is accepted in the production environment, stress testing is performed to assess how the system behaves under extreme but valid processing loads. This should assure that sufficient processing capacity is available when the system is promoted to the production environment.
Key Consideration 5 An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.	The Euroclear group-wide operational risk board policy comprises policy goals for corporate and information security. In order to protect assets, EB and ESA have detailed a set of control measures in several operational procedures. The objective is to prevent unauthorized physical access, damage and interference to business premises and information and to prevent loss, damage, theft or harm to assets (including personnel) and interruption to Euroclear's activities. **Physical Security** Critical or sensitive business information processing facilities should be housed in secure areas, protected by a defined security perimeter, with appropriate security barriers and entry controls. They should be physically protected from unauthorized access, damage and interference. The EB management committee is responsible for ensuring that the Euroclear buildings and offices within their area of responsibility are protected in accordance with the principles within this implementing procedure. The actual implementation of physical access controls, as well as general site surveillance is under the responsibility of the facilities department within the financial division of ESA. The physical security takes into account the guidance produced by national critical infrastructure protection agencies (Centre for the Protection of National Infrastructure in the United Kingdom., Haut Functionaries de la Défense in France) which is aligned to international, national, and industry-level standards. The agencies conduct a rolling review program to ensure adequate physical security measures are in place and maintained. When compliance with any security standard outlined in the physical security implementing procedure is not achieved, a formal risk assessment is to be made and an exception applied in accordance with the exceptions reporting and approval implementing procedure.

	Tolerance of this residual risk is mostly driven by the costs related to the implementation of the measures, the risk appetite of Euroclear and the client service focus. **Information Security** Consistent with Basel II, information security risks are a component of Operational Risk. Therefore, the Euroclear group-wide operational risk board policy is also applicable to the identification, monitoring, assessment, and management of the full range of information security vulnerabilities and threats on an ongoing basis. To achieve these objectives Information security is governed by an Information security management system (ISMS) described in the information security management system (ISMS) management resolution. The management resolution describes how information security is organized, managed, implemented and monitored, including the roles and responsibilities of staff. Information security is addressed through the implementation of controls in four domains: • physical and environmental security; • personnel security; • logical security; and • business continuity management. The chief security officer heads a group security and resilience (GSR) team in the risk management division. The chief security officer is responsible for developing and maintaining the policies, standards, processes and procedures that together form the ISMS. The formal policies and standard procedures governing Information security are based on internationally recognized control standards, such as the ISO/IEC 27000:2005 series, BS25999–2:2006, ISO IEC 31000, COBiT, and ITIL. Additionally, where personal or sensitive personal data is concerned, Euroclear is guided by the relevant EU Directive and relevant national legislation. In planned or ad hoc changes to the system the ESA IT security management reviews the test results and reports.

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.	EB and ESA both have defined a business continuity plan (BCP). At Euroclear Group level, a business continuity department is in place within the risk management department, which has the day to day responsibility for the coordination of the BCP across the group. The Business Impact Analysis (BIA) forms the basis for the BCP as it is used to identify critical activities and recovery time objectives for each of the business processes. The BIA helps to identify and assess threats and risks associated with business process' interruptions. The BIA analyzes both the short and long-term effects of an incident, and identifies dependencies related to people, information, technology and facilities. The BCP has been developed to cover a number of defined scenarios, including the loss of an office, loss of staff and an IT disaster recovery incident. The BCP contains: • guidelines on how to use the plan; • recovery procedures; and • contact information of stakeholders, e.g., continuity teams, management, other staff, clients, critical suppliers, stockholders, suppliers, public authorities, and media. The local security and operating committee advises on and monitors the implementation of policies, standards and guidelines with regard to business continuity. The system development methodology 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 to these principles and guidelines is evaluated for every project or change as part of the production acceptance criteria. Procedures and checklists are maintained and made available in various ways to enable duty managers and senior management to manage and control the services at all times, also in case of emergency. ‘Battle boxes’ (Go bags) are securely stored at external locations to ensure that the BCP and related procedures are available in case of a potential disaster. Standard introductory training for new Euroclear staff explicitly covers business continuity. BCP awareness updates, exercises and training are

provided on a regular basis to all Euroclear Group staff, using different communication channels and tools.

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.

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 staff, other staff, regulators (silver and gold) and the press (gold).

Client communication is to be initiated as soon as possible, with a threshold set at 30 minutes after the calling of the bronze meeting. The communication should cover the reason and impact of the problem, contact details, possible mitigating actions by the ICSD, and the planned timing of the next update until resolution.

Back-up Sites

Euroclear has three data centers:

- Two nearby data centers (DC1 and DC2) that provide real-time synchronized data mirroring and act as the primary and secondary data centre.
- A third data centre (DC3), located hundreds of kilometers away from the two synchronized sites. This site receives a-synchronized data. It allows recovery in a few hours in the event of a regional disaster affecting both other data centers. This means that settlement can be completed within the business day.

Euroclear will call for a local disaster recovery if a disaster affects one data centre. In that case the recovery time objective is two hours for critical operations. The recovery point objective is to have zero data loss.

Euroclear will call for a regional disaster recovery if a disaster affects both the primary and secondary data centers. In that case the recovery time objective is four hours for crucial operations. The recovery point objective is to have data loss of less than one minute.

The distance between the first two data centers is sufficient to

	mitigate the risk that a single event halts operations. The third data centre is located over three hundred kilometers from the primary and secondary sites. The core processing systems synchronously mirror production data between the two main data centers. This allows for knowledge on the status of all transactions 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 a third data centre. Data loss response plans have been developed by operations specialists to minimize the impact of data loss whilst aiming to resume computerized operations in a time period which does not cause unnecessary strain on market stability. The provision of the communication lines is split across a number of telecommunications suppliers. EB has implemented a 'dual office' concept with two geographically-dispersed business operations sites to limit the risk that a single event will impact both sites. Key staff is split across both sites, and operations are conducted from both sites simultaneously. This set-up is operated on a continuous basis. **Testing** The BCP is reviewed annually and considers changes to Euroclear's risk profile, business objectives, operational environment, legal and regulatory requirements and market expectations. Internal tests are conducted annually. Every BCP component is tested at least once a year. Tests include an IT disaster recovery test, office switch tests, and several desktop or simulation exercises. All EB departments have at least one nominated BCP coordinator who is responsible for the coordination, maintenance and testing of the BCP within these departments. The critical production services are swapped between these two data centers at least six times a year. Testing does not involve participants or linked FMIs outside the Euroclear Group. Critical service providers are called upon in case issues would be encountered during the testing.

Key Consideration 7 An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.	The operational risk board policy defines policy goals for services delivered by third parties as well as for participant affiliation and monitoring. For certain aspects of the services offered to participants, EB uses external service providers. The relationship between EB and service providers is subject to a formal contract including service level management agreements. EB has identified the required roles, and assigned appropriate responsibilities to manage and monitor its service providers. 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. The bridge with CBL is the most important link of EB in terms of the value of settled transactions. The two ICSDs exchange transaction files 16 times a day. EB and CBL have developed common operating contingency procedures. These procedures cover different scenarios: • continue internal processing without input from the other ICSD; • change of sequence of the transaction files processing; and • errors in the exposure checking process which may require a re-run of the internal processing. In addition, EB has analyzed the business continuity consequences of a scenario where CBL is not operational. This scenario is not included in the bridge agreement. The scenarios are included in EB's internal BCP tests. No tests have been conducted in which EB and CBL both participate. EB does include other relevant external service and utility providers in its BCP, such as communication networks, and other FMIs. Contingency procedures include communication with the impacted FMIs to inform them about the nature of the incident and EB's resolution measures. However, they are not included in any BCP tests.
Key Conclusions for Principle 17	Operational risk is significant but well-controlled. The system is reliable and secure, and has adequate, scalable capacity, and future capacity needs are regularly reviewed. Contingency plans and back-up facilities are in place to allow for timely recovery of operations and completion of the settlement process. A second datacenter is located on a distance of 20 kilometers. Operations can switch between both sites without data loss in case of a contingency. A third data centre is

	located at a distance of 300 kilometers. The contingency arrangements are accessible by participants; however, participants do not participate in tests. Neither are BCP tests conducted with external stakeholders, such as service providers and other FMIs.
Assessment of Principle 17	Observed.
Recommendations and Comments	EB should include participants and other external stakeholders, such as other FMIs, in BCP tests.

Principle 18. Access and Participation Requirements An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	
Key Consideration 1 An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.	EB's admission criteria are the following : • Financial resources: The applicant must demonstrate the possession of adequate financial resources, as well as the ability to maintain adequate financial resources on an ongoing basis, taking into account the applicant's business. • Technology capability: The applicant must demonstrate that it has adequate staff that is capable to manage the use of EB's system. It should have adequate physical facilities, technological infrastructures, communications systems, books, records and procedures to meet the operational requirements of the system. The applicant must also demonstrate an ability to maintain this capability on an ongoing basis. • Need for EB Services: The applicant must demonstrate that its business and capabilities are such that it could expect material benefit from admission. The applicant must also demonstrate that upon admission it could generate a sufficient volume of depot or transactions to justify its admission, taking due account of the ongoing costs associated with maintenance of accounts and participation. • Reputation in the market: The applicant must demonstrate a good reputation. In assessing this EB shall consider the applicant's regulatory status, if any, the reputation of its management and any factors it deems relevant. • Anti-Money Laundering Program: While it is the sole responsibility of each Euroclear applicant and participant to comply with any anti-money laundering requirements, the applicant must demonstrate that it has an adequate anti money laundering program. In assessing this EB shall consider the applicant's compliance with any requirement that EB in its sole

	• judgment deems necessary for the protection of its reputation. These criteria apply to all applicants to the system regardless of identity, type and location of the applicant. EB accepts a heterogeneous range of participants from more than 80 different countries. EB participants include major international banks as well as smaller players. All EB participants are direct participants.
Key Consideration 2 An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit.	All admission criteria are risk based and apply similarly to different types of participants. Euroclear's management resolution on admission criteria and ongoing monitoring is reviewed every two years, with ad hoc reviews if needed. The risk management department is responsible for the review and the implementation of any changes if needed. The legal division will be requested to give advice on any amendments to the document. EB's participation criteria are available on Euroclear's website.
Key Consideration 3 An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.	A team of monitoring officers is responsible for the monitoring of compliance of participants with the access criteria on an ongoing basis. The monitoring officers are accountable for knowing the client, in terms of business and quality of management among others. EB participants have the obligation to meet the participation requirements on an ongoing basis, although they do not have a formal reporting obligation to do so. EB intends to make this obligation more visible and to raise client awareness of this obligation. The exact wording and location of such clarification will be assessed in the context of the ongoing project related to the redrafting of the operational procedures, which is expected to be finalized in the course of 2013. The general policy for surveillance of participants is the mentioned admission criteria and ongoing monitoring management resolution. This sponsorship process consists of an initial know your client (KYC) exercise upon admission which is followed up by a regular KYC process. This process materializes in a review of the five admission criteria with the final aim of confirming that a participant complies with the criteria. The due diligence levels are at the basis of the sponsorship process.

	The level of due diligence required depends on the creditworthiness of the participant or its shareholders as expressed by a EB internal credit rating or external credit rating and the type of risk (financial and/or only operational risk). Sponsorships are performed before admission and on an annual basis, except under defined criteria where the frequency is decreased to every two years provided all criteria are scored 'sufficient'. Participants with a credit facility are rated at least annually and many of the elements in the sponsorship file are assessed in this process. If a participant no longer meets the admission criteria, Section 14 of the terms and conditions explains the procedure for the termination of its participation. EB may at any time terminate the participation in the Euroclear System of any participant by giving such participant at least 30 days' notice thereof, provided that EB may terminate participation immediately in case of bankruptcy, non-payment of obligations towards EB or in case a delay of the termination can materially affect the interests of EB or its participants. These procedures are explained in EB's Terms and Conditions, disclosed to all participants and the general public via the Euroclear website.
Key Conclusions for Principle 18	Access criteria are an important line of defense against potential losses following the default of a participant. The access criteria of EB are risk-based and publicly disclosed. They contain financial and operational requirements, but do not include a requirement that the entity should be subject to regulation and supervision.
Assessment of Principle 18	Observed.
Recommendations and Comments	EB should consider adding the requirement that participants should be subject to regulation and supervision. EB is encouraged to request participants to promptly report any non-compliance with EB's access criteria.

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 does not recognize tiered arrangements in its system and has only a contractual relationship with direct participants. Participants do have the possibility to open additional accounts, either for their own securities positions of for their clients. Client accounts can be omnibus accounts servicing many clients or individual clients' accounts. EB's participants are free to determine names and codes to their accounts. Subsequently, EB does not have appropriate information about the underlying clients of participants. There is currently no formal procedure to specifically process or monitor the underlying clients' activities. EB has no right to collect information on participants' clients beyond the existing information available in its system at individual account level. There is currently no formal procedure in place to evaluate potential risks arising from dependencies due to participants' underlying clients' activity. A draft inspection report from the NBB supervisors recommended EB to identify, based on the information available in the system and in accordance with the AML regulations, the underlying clients of non-omnibus accounts.
Key Consideration 2 An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.	There is currently no formal procedure in place to evaluate the relevant dependencies due to participants' underlying clients' activity.
Key Consideration 3 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 manage the risks arising from these transactions.	No such identification process is in place.

Key Consideration 4 An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.	EB does not regularly review risks arising from tiered participation arrangements.
Key conclusions for Principle 19	EB has no arrangements in place to review risks arising from interdependencies between direct and indirect participants. Contractual agreements are concluded between EB and its participants and EB can identify and manage risks from tiered participation arrangements as far as data is available.
Assessment of Principle 19	Broadly observed.
Recommendations and Comments	EB should develop tools to identify, monitor and mitigate risks from tiered participation arrangements to reduce any risks that are not yet covered by the existing risk management framework.

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.	
Key Consideration 1 Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.	EB has established two types of links with other CSDs: • EB has links with more than 40 local CSD as a so-called "investor CSD," to offer its clients access to these foreign markets via their participation in EB. The links can be direct, with a link between EB and the local CSD (either operated by EB or by an agent) or indirect via another CSD or another market (relayed link). [5, 6] • EB and CBL have a link with each other via the bridge. Before entering into a link arrangement the EB risk assessment committee has to approve the link. EB's management committee is responsible for the approval of every new agent (including the depositories and cash correspondents that are involved in the links) and the yearly re-approval of all agents. The risk assessment process is coordinated by the network management department with the input from other departments, e.g., risk management, legal, and credit. The assessments consists of an

[5] EB also offers access to some markets via direct registration (whereby the securities are registered in the name of EB's clients or final beneficiaries with the local CSD). Access via direct registration is not considered as a link for the purpose of this assessment report.

[6] Other CSDs may open a link with EB by becoming a participant of EB. These inbound links are not discussed as these CSDs are considered to be normal participants.

	assessment of the: • Domestic securities: they have to meet certain criteria in order to be accepted in EB, e.g., criteria on registration, ownership restrictions, reporting obligations and disclosure requirements. • Agents: all agents are evaluated against criteria with regard to anti-money laundering, operational readiness, good reputation and financial soundness. Upon selection of a new agent, EB conducts a due diligence review of the candidates. The candidates must meet business and quality requirements, accept the terms of the standard EB agreement, comply with data protection and confidentiality requirements, be financially sound, manage their operational risk and meet business continuity requirements. Furthermore, being associated with the candidate should not cause reputational damage for EB and vault inspections are performed for agents in charge of safekeeping physical securities. The criteria in this process are used to form an opinion about the candidate; no formal acceptance levels for these criteria are used (e.g., "rating AA or above" for the financial strength criterion). • Link itself: the risk assessment of the market link includes legal, tax and regulatory issues as well as risks related to the market infrastructure (CSDs, stock exchanges, CCPs) and operational risks. For the local CSD, local depositories and cash correspondents, EB analyses their financial strength, control environment (internal and external audit and supervision/oversight) and operational environment (e.g., use of SWIFT, business continuity). For the CSD, the account structure and the settlement process (incl. DVP and finality) are analyzed as well. In case the risk assessment identifies major risks in the local market that cannot be mitigated and/or no agent meets EB's criteria, no link will be established with that market. In addition to the initial assessment EB assesses the risks from links on an ongoing basis. The "selection and monitoring of agents" management resolution foresees that the network management department will conduct a risk assessment in the context of the market link review for every link every three years. On a continuous basis, the department reviews the risk profile of every link when there are operational, legal or regulatory changes or changes that affect the appointed agent. Every year, or in case of material changes in the agent's circumstances, EB's management

	committee must re-approve all performance and pricing requirements. The relevant CPSS-IOSCO standards are used in the relevant assessments. The risk assessment of a new market link includes a question on compliance with market standards.
Key Consideration 2 A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link.	The legal framework supporting the market links includes all contractual documentation with all the agents involved and CSDs (in case of direct links). The agreements with local agents are governed by the laws of the local market where the agent is located. The bridge agreement between EB and CBL is governed by Luxembourg law, except for the section about CBL's accounts with EB to the extent mandatory provisions of Belgian law are applicable. For all links, EB obtains a legal opinion from a law firm with expertise in the local market. The legal opinion covers the validity and enforceability of the contracts and asset protection among others. EB has recently obtained legal opinions for multi-deposited securities (i.e., securities from a home market such as Thailand or Morocco with which EB does not have a link, but are held at a "remote CSD," for example in Germany or France, with which EB has a link. EB's policy is to renew all asset protection opinions at least every three years. Ad-hoc renewals within a shorter time frame are performed in case there are any changes in the market legislation, EB launches new services on a specific market or the set up of the market link is changed (e.g., indirect to direct link).
Key Consideration 3 Linked CSDs should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between CSDs should be covered fully with high quality collateral and be subject to limits.	As a rule, for inbound links, with CSDs opening an account in EB, EB is not exposed to credit and liquidity risk as CSDs are not granted a credit line. For outbound links, with EB opening an account in another CSD other than CBL, EB only participates in CSDs following a comprehensive risk assessment. The CSD to which EB plans to link should apply a DVP mechanisms and sound risk management systems. In case the risk assessment identifies major risks in the CSD that cannot be mitigated EB will not link with that CSD. EB can be exposed to significant credit risk through the link with CBL. EB has developed a dedicated credit risk management framework to measure, monitor and manage this risk. Credit risk arises at the moment EB settles delivery transactions in

	which EB's participants are sellers and CBL's participants are buyers. Subsequently, EB needs to be paid by CBL on behalf of CBL's participants. The related cash positions are registered on the cash accounts held by one ICSD with the other. These cash positions can lead to bilateral credit exposures. The exposure of EB on CBL will be netted with the exposure of CBL on EB for opposite transactions. EB can offset the net exposure on CBL in one currency by cash in another currency held by CBL ("currency set-off)." Net exposures between EB and CBL are covered by a letter of credit, which is committed. The letter of credit is updated twice a year or on an ad hoc basis if needed to ensure that the letter of credit is sufficient to cover the exposure. As both ICSDs share the same cash correspondents for EUR and USD, the ICSD that has a net exposure in EUR or USD on the other ICSD can be paid by the other one early in the morning (between 03:00 and 05:00 CET) in order to reduce the net exposure. This reduction of the net exposure allows more deliveries. The letter of credit is provided by a syndicate of more than 30 banks. CBL covers its credit exposure with an identical letter of credit from the same syndicate of banks. In case CBL fails to pay, EB should call the letter of credit no later than three days after CBL failed to pay. The syndicate of banks should honor the demand for payment on the third business day after the demand. EB can receive the cash proceeds from the letter of credit as soon as day three after CBL failed to pay and no later than a maximum of five days. The letter of credit constitutes a claim on various banks (which eliminates concentration risk) and is therefore comparable to a diversified portfolio of claims represented by securities. Following every transfer of deliveries via the bridge, the capping mechanism verifies whether the net exposure remains below the level of the letter of credit based on the receipts from and re-deliveries to the other system. The capping mechanism may not always be effective and unsecured exposures may exist. In the fourth quarter of 2012 credit exposures remained well below the letter of credit (including the currency set-off). Since EB advances the proceeds of income and redemption payments to its participants and to CBL (i.e., EB credits the proceeds the night

	before the payment day and thus before EB has received the proceeds from the issuer), EB has a credit exposure on CBL for such advanced income and redemption payments. As these advances are not reflected as a credit extension, the exposure calculation process deducts these advances from the net exposure on CBL instead of adding them. These exposures may in theory lead to exposures above the letter of credit. However in the fourth quarter credit exposures, including those related to advanced income remained covered by the letter of credit (including the currency set-off). The ICSDs should work together to develop an action plan to solve this issue. An ultimate tool to cover credit losses that exceed the letter of credit and the set-off is the possibility of EB to reverse (pro rata) cash amounts from EB participants, who delivered securities against payment via the bridge (see EB's Operating Procedures Section 8.3.1). The cash reversals are considered as provisional, subject to the reimbursement of the cash proceeds from the letter of credit and any other claims available to EB with respect to such failure to pay. This right-to-debit does not give EB an ex-ante guarantee that all the participants will have sufficient cash (or secured credit) to cover the debits and as such differs from other loss-allocation mechanisms. However, previous tests showed that such amounts are distributed among many participants which limit possible exposures towards single participants. In the two cases mentioned above (refusals and advanced income and redemptions) where EB's credit exposure on CBL may exceed the letter of credit (and currency set-off) the unsecured credit risk needs to be covered EB's capital. Liquidity risk is covered by the general liquidity risk framework described in Principle 7.
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.	There is only one case where EB receives provisional securities: newly-issued money market instruments received from DTC in the U.S. market. EB blocks such securities in the participants' accounts until they are final in the local market, thereby prohibiting their re-transfer.

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.	The initial selection process takes into account that clients' assets must be adequately protected based on local market standards. The depositary agreements with the local agents have provisions to protect the clients' assets (such as segregation of EB's clients' assets from those of the local agent or those of other clients of the agent, no sub-deposits allowed unless approved by EB, the agent must maintain insurance coverage for the securities). In addition, EB obtains legal opinions that confirm among others that the depository's creditors do not have a claim on EB's or EB's participants' assets held at the depository (see also Principle 16). The frequency of reconciliation by EB's depositories with the issuer CSD depends on local requirements and is not necessarily as frequent as daily, but sometimes also weekly. EB itself does not impose minimum reconciliation requirements.
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.	EB measures, monitors and manages risks with issuer CSDs according to the "selection and monitoring of agents" management resolution (see also key consideration 1). The risks assessments include risks ranging from custody risk to financial and reputational risk. CSDs must have a good reputation and must be financially sound. They must comply with data protection and confidentiality, operational risk management and business continuity requirements. Other criteria include anti-money laundering requirements, operational readiness and service quality requirements. The liabilities of the intermediaries are defined in the depositary agreements. Intermediaries are liable for losses subject to the usual force majeure clauses, but they are not liable for losses caused by the issuer CSDs. EB's liabilities are defined in the terms and conditions, which state that EB shall have no liability for the acts or omissions of (or the bankruptcy or insolvency of) any intermediary or linked CSD. For direct operated links, the legal opinions will also include detailed questions regarding the split of liabilities between the issuer CSD, the agent and EB as from Q4 2012.
Key Consideration 7 Before entering into a link with another CCP, a CCP should identify and manage the potential spill-over effects from the default of the linked CCP. If a link has three or more CCPs, each CCP should identify, assess, and manage the risks of the collective link arrangement.	NA

Key Consideration 8 Each CCP in a CCP link arrangement should be able to cover, at least on a daily basis, its current and potential future exposures to the linked CCP and its participants, if any, fully with a high degree of confidence without reducing the CCP's ability to fulfill its obligations to its own participants at any time.	NA
Key Consideration 9 A TR should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.	NA
Key Conclusions for Principle 20	EB has established a bilateral direct link via the bridge to CBL and a number of unilateral direct and indirect interfaces with clearing systems in domestic markets. Credit exposures stemming from the bridge are covered by a syndicated letter of credit. Any additional exposures will be covered by a loss sharing arrangement and EB's capital. Liquidity risk is sufficiently covered by the existing liquidity management framework.
Assessment of Principle 20	Observed.
Recommendations and Comments	It is recommended to reopen the discussions within the ESCB to extend the operating hours of TARGET2 to allow for night time processing of the cash deliveries between CBL and EB. This should reduce the overnight exposures between the two ICSDs and increase settlement efficiency.

Principle 21. Efficiency and Effectiveness An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	
Key Consideration 1 An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.	The Euroclear Group is user-owned and user-governed and operates in a competitive environment. There is constant pressure to meet the needs of its participants and the markets it serves. A prevalent example of addressing the needs of its participants and markets are EB's operating hours (2:30 AM CET to 18:30 CET). They facilitate settlement for clients in different time zones. EB has launched a project to replace the batch processes during the night (22:00–2:30 CET) by real-time settlement in the coming years. This will also reduce costs.

	EB is providing innovative solutions to meet the needs of its participants on a continuous basis. This includes technology, products and procedures. The scope of products offered is wide. EB does not only offer settlement of Eurobonds, but also settlement of domestic securities via its links with other markets. In addition to pure settlement, EB also offers a range of related services, such as asset servicing, securities lending and borrowing and collateral management. EB received feedback from its clients via daily operational communication. In addition EB monitors clients' satisfaction through annual client surveys. EB's commercial division, in cooperation with the product management division translates customers' wishes and questions into new or enhanced products and services.
Key Consideration 2 An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.	In the area of minimum service levels, the 99.50 percent uptime target for EB's systems is one of the main objectives. EB has achieved and exceeded the 99.50 percent system availability target over the last years. Compliance is monitored by EB on a quarterly basis and reported to its authorities.
Key Consideration 3 An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.	EB measures its efficiency and effectiveness via a balanced scorecard. The balanced scorecard evaluates the performance of its senior management against the strategic priorities on an annual basis. Performance objectives include financial, business, operational, risk and other objectives. On an ongoing basis the Euroclear divisions are scored against key performance indicators (KPIs) that are tailored to their specific functions.
Key Conclusions for Principle 21	Mechanisms are in place to guard the efficiency and effectiveness of EB. As EB is owned by a large part of its users EB's main objectives and activities are defined in line with the requirements of its main users. In addition, EB operates in a competitive environment and is exposed to market pressure to operate in an effective manner. Various tools are applied to assess user satisfaction.
Assessment of Principle 21	Observed.
Recommendations and Comments	-

Principle 22. Communication Procedures and Standards An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.	
Key Consideration 1 An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.	EB uses internationally accepted communications protocols. Automated interaction can be either standard web-based, or EB proprietary screen or computer-to-computer based. Underlying connection networks are the internet or IP network providers BT and SWIFT. EB applies international ISO15022 communication standards. In the area of corporate actions EB is not yet fully ISO compliant, but it has invested over the last two years to become more compliant with the Securities Market Practice Group and it will continue to focus on improving the compliance with ISO15022 standards. Euroclear also has plans to introduce the use of the new ISO 20022 standards in addition to the existing ISO 15022 in areas where such standards exist. In addition to the Common Code (a securities identification code shared by EB and CBL), EB uses the ISIN to identify financial instruments. For external settlement, instruction format requirements differ from one market to the next. The BIC is one of the possibilities to identify counterparty. Another possibility is a five-digit EB code corresponding to a local counterparty as identified in EB's online counterparty's database.
Key Conclusions for Principle 22	EB uses the relevant international communication procedures and standards in order to facilitate efficient settlement of cross-border transactions.
Assessment of Principle 22	Observed.
Recommendations and comments	-

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 two main documents that comprise EB's rules and procedures are the terms and conditions governing use of Euroclear and the operating procedures of the Euroclear System. The terms and conditions contain a high-level description of the rights and obligations of EB and its participants in an accessible way. The operational procedures are much more detailed (the version of

	May 16, 2012 contains 452 pages) and are regularly updated. EB's risk management and legal departments are conducting a complete review of the operational procedures in order to improve the clarity and transparency of the document, in particular with regard to the risks of participation in the Euroclear System. Completion of the review is planned for 2013. A first step was completed in September 2012, where EB provided a summary of participants' rights and responsibilities after each relevant section to make it easier for participants to identify the main risks from participating in the EB. The participants receive the terms and conditions and the operational procedures when they apply for participation in EB. Both documents are also available on Euroclear's website (www.euroclear.com) and upon a participant's request. Updates to these documents are provided via newsletters that are available on the website and sent to all participants.
Key Consideration 2 An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.	A broad set of detailed information about Euroclear and its services is available on its website, including its rules and operational procedures. EB also discloses relevant information on its website in the EB's CPSS-IOSCO Disclosure Framework. The participants' rights and obligations are described in the terms and conditions. Information on the management of risks is provided via documents such as the Basel II – Pillar 3 disclosure on risk management or the CPSS-IOSCO/ESCB-CESR Disclosure Framework.
Key Consideration 3 An FMI should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.	EB provides a lot of information, including on training, on its website. New clients receive a welcome pack. Training options consist of local course, online training, e-learning and on-site visits. These are complemented by regular newsletters, brochures and other material that is publicly available. There is anecdotal evidence, e.g., following the Lehman default, that some rules and procedures are less known to some participants
Key Consideration 4 An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.	On the public part of the Euroclear website, EB publishes the "General Fees" brochure. This document provides detailed information on the applicable fees for each type of service and the applied discounts. EB applies the European Code of Conduct for Clearing and Settlement of November 7, 2006 and therefore provides price transparency and service unbundling in order to: • enable participants to understand the services they will be

	provided with, and to understand the prices they will have to pay for these services, including discount schemes; and • facilitate the comparison of prices and services, and to enable participants to reconcile ex-post billing of their business flow against the published prices and the services provided. An update on fees is issued once a month, taking into account a minimum of 10 business days before the implementation of a tariff change if it has an adverse impact on clients, and any time before implementation if the tariff change creates a favorable impact for clients.
Key Consideration 5 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.	EB publishes the disclosure framework every year. The last version was published in July 2012 and was based on the ESCB-CESR standards. All information is available in English.
Key Conclusions for Principle 23	EB provides its participants and the public with a huge amount of information on its website, but could provide market participants with better information to accurately identify the risks associated with the use of the ICSD.
Assessment of Principle 23	Observed
Recommendations and Comments	EB is encouraged to finalize its review of its operational procedures to improve the understanding of its participants of the risks related to the use of EB's systems.

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.	NA

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.	NA
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.	NA
Key Conclusions for Principle 24	NA
Assessment of Principle 24	NA
Recommendations and Comments	NA

DETAILED ASSESSMENT RESPONSIBILITIES AUTHORITIES EUROCLEAR BANK

Responsibility A: Regulation, Supervision, and Oversight of Financial Market Infrastructures FMIs should be subject to appropriate and effective regulation, supervision, and oversight by a central bank, market regulator, or other relevant authority.	
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.	In Belgium, several laws, i.e., the NBB Organic Law, the Royal Degree September 26, 2005, and the Law of August 2, 2002, contain criteria to identify FMIs that should be subject to regulation, supervision, and oversight. These laws are published in the Belgian National Gazette (moniteur belge) and available also on the NBB website and FSMA website. **National Bank of Belgium Oversight** Under Article 8 of the Organic Law establishing the Organic Statute of the NBB of February 22, 1998 (hereafter "the NBB Organic Law"), the NBB shall ensure that the clearing and payment systems operate properly and shall make certain that they are efficient and sound. **National Bank of Belgium Prudential Supervision** The status of settlement institutions and equivalent settlement institutions is defined in Article 36/1 and 36/26, §7 of the NBB Organic Law. The scope for the supervision of these institutions is described in Article 36/26 of the NBB Organic Law. The Royal Decree dated September 26, 2005 on the status and supervision of (equivalent) settlement institutions provides for a suitable legal framework for (equivalent) settlement institutions' supervision and includes distinct provisions relating to authorization of (equivalent) settlement institutions (licensing criteria) and their ongoing supervision. **Financial Services and Markets Authority Supervision** The Belgian legislation on supervision applies to settlement institutions that provide settlement services for transactions conducted on a Belgian regulated market or that provide such services, from within Belgium, for transactions conducted on a foreign regulated market. The Law of August 2, 2002 on the supervision of the financial sector and on financial services (hereafter the "Law of August 2, 2002)" defines settlement institutions as institutions that undertake the settlement of orders to transfer financial instruments or

	rights in respect of those financial instruments or of forward exchange transactions, whether or not settlement is in cash. Supervision also extends to institutions referred to as "equivalent to settlement institutions," that is, institutions established in Belgium whose activity consists of undertaking all or part of the operational management of the services provided by the settlement institutions. The criteria used to identify FMIs that should be subject to regulation, supervision and oversight are those used in these definitions. Based on these laws the NBB and FSMA regulate, supervise and oversee ESA, EB and Euroclear Belgium as well as other FMIs.
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.	The following settlement institutions have obtained a license: • Settlement institutions: CIK SA (commercial name Euroclear Belgium), EB SA and NBB-SSS; and Bank New York Mellon; and • Equivalent settlement institution: Euroclear SA (ESA). ESA has a double status. Apart from a equivalent settlement institution it is also a financial holding company. This list of settlement institutions and equivalent settlement institutions is available on NBB website. **Legal Competences of National Bank of Belgium and Financial Services and Markets Authority** Since April 1, 2011, Belgium has adopted a twin-peaks model for the supervision of settlement institutions, with different competences for the NBB and the FSMA as the successor of the former Banking Finance and Insurance Commission (CBFA). The competences of NBB and FSMA concerning clearing and settlement institutions can be summarized as follows: **National Bank of Belgium Prudential Supervision** Without prejudice to the below-mentioned powers of oversight, the NBB is responsible for prudential supervision (including the issuance of authorizations) of clearing institutions as well as settlement institutions and equivalent institutions. In its capacity as prudential supervisor, the NBB verifies that (equivalent) settlement institutions (having or not also a credit institution license) meet the authorization requirements and operating criteria laid down in the laws and regulations. This implies inter alia that the NBB ascertains that the (equivalent) settlement institution's organization and functioning are appropriate, and carries out supervision over its activities and

	financial situation. Where a settlement institution is a subsidiary of a financial holding company, the supervision on a standalone basis is complemented with supervision on a consolidated basis. **Financial Services and Markets Authority Supervision** **Conduct of Business Rules Supervision** The FSMA is responsible for the surveillance of financial markets and the protection of investors. The FSMA should ensure compliance with the rules aimed at guaranteeing the proper functioning, integrity and transparency of markets in financial instruments. The FSMA exercises its powers in respect of settlement institutions in the light of this twofold perspective. In light of the competences of the NBB and of the FSMA as regards the CSD, cooperation between the NBB and the FSMA has been agreed as follows: • Principles 1 (Legal basis), 2 (Governance), and 13 (Participant-default Rules & Procedures): evaluation by the NBB, finalized after consultation with the FSMA regarding aspects of these principles linked to the FSMA's competences, as regards both EB and Euroclear Belgium. • Principles 11 (Central Securities Depositaries) and 16 (Custody & Investment Risks): evaluation by the NBB, finalized after consultation with the FSMA, taking into account the principle of proportionality as regards the exercise of the FSMA's competence vis-à-vis EB. • Principles 18 (Access & Participation requirements), 21 (Efficiency), and 23 (Disclosure of Rules, Key Procedures): evaluation by the NBB, finalized after consultation with the FSMA on all aspects of these principles, as regards both EB and Euroclear Belgium. In the event that there is divergence between the opinion of the NBB and that of the FSMA as regards compliance with one of these principles, the opinion of the FSMA will be included in the general conclusions of the evaluation, with a brief description of the reasons for this divergent opinion. All other standards of the CPSS and IOSCO Principles for financial market infrastructures are evaluated by the NBB, which will see to it that it provides the FSMA with all information that may be useful for the latter in the exercise of its powers.

	National Bank of Belgium Oversight Under Article 8 of the NBB Organic Law, the NBB shall ensure that the clearing and payment systems operate properly and shall make certain that they are efficient and sound (oversight). The NBB assesses the Euroclear system against the CPSS-IOSCO Recommendations. The NBB oversight applies a risk-based approach in defining its priorities. The NBB oversight is a team of 10 experts with a multi-disciplinary background (economics, IT specialists, legal experts). It relies on internal expertise at other NBB departments, if deemed necessary (i.e., experts in legal and operational risks, IT development). The NBB oversight is responsible for both oversight implementation and policy issues. The "Chinese Walls" concept is applied in the NBB meaning that oversight and operational departments within NBB have separate reporting lines up to board level.
Key Conclusions for Responsibility A	ESA and EB are subject to appropriate and effective regulation, supervision, and oversight by the NBB and the FSMA.
Assessment of Responsibility A	Observed.
Recommendations and Comments	-

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 FMIs.	
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.	**Powers to Obtain Information** *National Bank of Belgium Oversight* As overseer, the NBB has concluded a Protocol arranging for the practical implementation of the oversight of the Euroclear system. The current oversight Protocol was signed in February 2007 and covers EB, Euroclear Belgium, and ESA. The Protocol includes arrangements for the exchange of information (Section 4). In its capacity of overseer, the NBB has access to all information it judges necessary to perform its oversight tasks. The Protocol also foresees explicitly the possibility for the NBB to make on-site inspections to collect relevant info. At any time, the NBB can request to meet internal or external auditors. The NBB should also be informed in due time of any development or event that could have a significant impact on the organization of

	the company, or on the functioning, efficiency and/or reliability of the Euroclear system. Post-mortem analyses are provided to the NBB after (significant) operational incidents. The Protocol includes an indicative list of documents/data to be reported on a regular basis (such as minutes of board meeting, audit reports and statistics as well as a list of major incidents or significant events. *National Bank of Belgium Prudential Supervision* The Royal degree 26/09/2005 and the Banking Law provide the NBB with the powers to obtain relevant information and to conduct onsite inspections. Relevant information includes financial statements of EB and ESA and other financial information. The NBB can also prescribe what information it deems useful for its supervision to receive, such as transaction information and organizational information. The NBB may also carry out on-the-spot inspections, and inspect and copy, at the firm's premises, any information in the institution's possession. *Financial Services and Markets Authority Supervision* The Law of August 2, 2002 specifies that, in exercising its supervisory mandate, the FSMA may receive it all information and documents it deems necessary, may undertake on-site inspections, may take cognizance of any document on site and have access to any IT system. The FSMA may also ask the statutory auditors or persons responsible for the audit to submit special reports and/or periodic reports on subjects that it determines. It may also require entities established in Belgium to forward to it all useful information and documents relating to companies that form part of the same group and are established abroad. Provisions exist to share confidential information under certain restrictions with domestic and foreign authorities. **Powers to Induce Change** NBB Oversight uses moral suasion to induce change. The legal framework in Belgium provides the NBB prudential supervision department with different types of powers, being moral suasion; exceptional recovery measures; administrative sanctions and criminal sanctions (imposed by the criminal courts). The Law of August 2, 2002 provides the FSMA with different types of power to induce change, such as publication, financial penalties or the appointment of a special auditor.

Key Consideration 2 Authorities should have sufficient resources to fulfill their regulatory, supervisory, and oversight responsibilities.	**National Bank of Belgium Oversight** For oversight the NBB defines its action plans using a risk based approach, which provide the basis for the setting of its priorities. The NBB has dedicated 3.58 FTE to the oversight of Euroclear Group (ESA, EB, ESES/Euroclear Belgium). Oversight activities also include policy matters, such as CPSS working groups, EU legislation (EMIR, CSD regulation), and ESCB related work. The NBB also oversees other systems, i.e., T2S, CLS, NBB-SSS. **National Bank of Belgium Prudential Supervision** For prudential supervision the NBB also defines its action plans using a risk based approach, which provide the basis for the setting of its priorities. For NBB prudential supervision on clearing (LCH.Clearnet SA) and (equivalent) settlement institutions (Euroclear, BNYM) available resources are currently FTE 6.50, but additional resources are expected by the end of 2012. **Financial Services and Markets Authority** The FSMA has appointed one senior FTE to post-trading issues. The senior FTS is supported by the policy and Legal departments. **Legal Protection of Staff** The staff of the NBB and FSMA has legal protections to carry out their responsibilities.
Key Conclusions for Responsibility B	The authorities have sufficient powers to obtain timely information and induce change.
Assessment of Responsibility B	Observed.
Recommendations and Comments	Given the global systemic importance of EB, the NBB should consider to increase its resources for the supervision and oversight of EB in order to ensure high quality and in-depth inspections and assessments. The FSMA should increase its capacity on post-trade matters to enhance the quality and consistency of its conduct of business supervision.

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.	
Key Consideration 1 Authorities should clearly define their policies with respect to FMIs, which include the authorities' objectives, roles, and regulations.	The policies of the NBB and FSMA are based on and defined by the legal framework in Belgium; in particular in the NBB Organic Law, the Royal Degree 26/09/2005, the Banking Law, the Law of August 2002. The policies of the NBB are reflected in regulations, circulars and communications that include the authorities' objectives and expectations towards the institutions under supervision. NBB issued in July 20, 2012 a circular n° 2012–06 stating that the new CPSS-IOSCO Principles dated April 2012 will be used as guiding principles for the oversight and supervision of FMIs in Belgium.
Key Consideration 2 Authorities should publicly disclose their relevant policies with respect to the regulation, supervision, and oversight of FMIs.	All regulations and circulars issued by NBB are communicated to the FMIs concerned and published on the NBB website. The Financial Stability Review (FSR) includes a specific report on the prudential supervision and oversight of financial market infrastructures. Policy issues, summaries of assessment results, as well as prudential and oversight activities with regard to FMIs are disclosed in the FSR. Similar information is included in the annual report. All relevant applicable regulation can be found on the NBB website. The cooperation agreement signed by the NBB and the FSMA in respect of the surveillance and supervision of market infrastructures is published on the website of the FSMA.
Key Conclusions for Responsibility C	The NBB and FSMA have clearly defined policies related to their objectives, roles and regulations. These are based on and reflected in the legal framework, regulations, circulars and communications that are publicly disclosed.
Assessment of Responsibility C	Observed.
Recommendations and Comments	-

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.	The NBB and FSMA have adopted the PFMI as principles for their oversight and supervision. The NBB issued a circular in July 2012 stating that the new CPSS IOSCO Principles, dated April 2012, will be used as guiding principles for the oversight and supervision of FMIs in Belgium. This circular is available on NBB website. The cooperation agreement signed by the NBB and the FSMA in respect of the surveillance and supervision of FMIs specifies which of the principles the responsibility of the NBB and/or FSMA is. This agreement is publicly available.
Key Consideration 2 Authorities should ensure that these principles are, at a minimum, applied to all systemically important payment systems, CSDs, SSSs, CCPs, and TRs.	The NBB circular of July 2012 clearly specifies that the PFMI apply to all (equivalent) settlement institutions active in Belgium, including those having a credit institution status in Belgium. The circular further specifies the application of the "proportionality principle," which takes into account the nature, size and complexity of activities and risks of the FMIs concerned.
Key Consideration 3 Authorities should apply these principles consistently within and across jurisdictions, including across borders, and to each type of FMI covered by the principles.	Within the NBB, the internal risk committee ensures the consistent application of law and regulations in Belgium and organizes the interaction between the micro- and macro-prudential dimensions of the supervision. Concerning consistency across jurisdictions, the supervision of foreign establishments of Belgian FMIs, and of Belgian establishments of foreign FMIs, is supported by FSMA's and NBB's collaboration with foreign supervisory authorities, in the framework of mutual agreements aimed at cooperation and exchange of information. The FSMA's Policy department, with the collaboration of the Legal department, ensures the consistent application of law and regulations in Belgium. The NBB and FSMA both apply a road map or action plan specifying any actions to be taken for the FMI to comply with the PFMI. These plans include a specified time line and are agreed between the authority and the FMI. In case of delays in implementation, these delays have to be clarified by the FMI, and—if need be—escalation is done at a high level.

Key Conclusions for Responsibility D	The NBB and FSMA have adopted the PFMI. The NBB has informed the market by distributing a circular in July 2012. The NBB and FSMA both have adopted approaches to ensure the consistent application of the PFMI within Belgium and across borders.
Assessment of Responsibility D	Observed.
Recommendations and Comments	-

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.	At the domestic level the NBB has concluded a cooperation agreement with the FSMA that specifies the different responsibilities of the authorities in relation to EB and how cooperation in practice will take place. At an international level the NBB has concluded a range of agreements, which are outlined in appendix 2, describing the signatories, scope and type of cooperation agreement. In crisis situations (of an operational as well as financial nature), the NBB's crisis committee will coordinate internally, and with domestic authorities or with foreign authorities if needed. For the bridge between EB and CBL, a crisis contact list has been set up between the Belgian and Luxembourg overseers and banking regulators. Regulators will contact each other in case of an incident with the bridge.
Key Consideration 2 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.	The NBB has arrangements in place with the central banks of issue of the major currencies settled in the systems of EB, i.e., the FED (USD), ECB (EUR), Bank of Japan (JPY), and the Bank of England (GBP). The currencies issued by these central banks represented about 95 percent of total settlement turnover in August 2012. A cooperation agreement with the BOE is pending. The NBB does not actively inform other relevant authorities, but in general is approached by the foreign national authorities themselves. In general foreign central banks are well aware that their currency is settled in the Euroclear system. By the end of 2011, 97 central banks were a participant in the Euroclear system).

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.	At the domestic level the NBB and FSMA have signed a cooperation agreement concerning the distribution of tasks related to the supervision and oversight of market infrastructures. In this agreement, the relevant CPSS-IOSCO Principles are selected for which the cooperation agreement applies. The type of cooperative arrangements the NBB concludes with foreign authorities will vary in accordance with each authority's requirements and interests. Regarding the bridge between EB and CBL the Belgian and Luxembourg authorities have concluded an informal arrangement for the sharing of information as both authorities have a common interest in the good functioning of the bridge and the ICSD's observance of CPSS-IOSCO Principle 20. The authorities meet frequently in case of specific changes related to the bridge. In the absence of such changes they meet—in practice—once a year.
Key Consideration 4 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.	The NBB is lead overseer/supervisor in the cooperative arrangements for ESA and EB.
Key Consideration 5 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.	The NBB, as lead regulator of EB, assesses EB periodically against the CPSS-IOSCO principles. At the domestic level the NBB consults with the FSMA regarding the assessment of specific principles, as agreed in the cooperation agreement. At the international level the NBB is selective in sharing the results of its assessments of EB with other authorities. The ECB receives the assessments results in line with the letter of intent exchanged between the ECB and the NBB.

	The NBB also shares the relevant parts of its assessment with the Luxembourg authorities as far as the bridge between EB and CBL is concerned. A summary of the assessment results is usually disclosed in the NBB's Financial Stability Review, which is available on the NBB's website.
Key Consideration 6 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 responsibility with respect to the FMI.	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. The most comprehensive relation exists between the NBB and the ECB regarding the euro settlements. The ECB is informed on the assessment results from the NBB oversight on EB and any views of the ECB will be taken into consideration in that regard. The same will apply to the BoE and BoJ for their respective currencies once the cooperation agreements are finalized. The NBB has informal agreements with the FED and the Bank of Japan.
Key Consideration 7 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.	At the domestic level the NBB informs the FSMA according to their cooperation agreement. In the case of the bridge, the Belgian and Luxembourg authorities will inform each other in case of a bridge incident as well as material regulatory changes or adverse events that will impact the common risk and operational management framework. Where a bilateral cooperation exists, the NBB would consider informing other authorities insofar the interests of such authority would be affected.
Key Consideration 8 Relevant authorities should coordinate to ensure timely access to trade data recorded in a TR.	N/A
Key Consideration 9 Each authority maintains its discretion to discourage the use of an FMI or the	No authority has exercised discretion to discourage the use of EB or ESA, or the provision of services to them, on the grounds that the Euroclear systems are not prudently designed or managed, 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 FMI and to the authority or authorities with primary responsibility for the supervision or oversight of the FMI.	principles are not adequately observed.
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.	NA
Key conclusions for Responsibility E	The current cooperation between the Belgian and Luxembourg authorities regarding the bridge is considered insufficient to contribute to financial stability. It is an informal arrangement and mainly covers aspects related to the bridge. The Belgian and Luxembourg authorities regulate, supervise and oversee both ICSDs rather independently without regular consultation and parallel implementation of risk management and other improvements. Inconsistent implementation of risk measures may result in competition on risk management.
Assessment of Responsibility E	Broadly Observed.
Recommendations and Comments	As both ICSDs are highly relevant for the global financial stability the Belgian and Luxembourg authorities should continuously cooperate together, take common decisions and implement these in parallel in both ICSDs. The NBB should therefore formalize its cooperation agreement with the Luxembourg authorities, meat several times during the year, agree to reach a common position on relevant issues and implement decisions in parallel within EB and CBL. The scope should not only include the bridge, but also other relevant operational and risk management matters to ensure a level playing field for both ICSDs. The involvement of the ECB in its responsibility for financial stability should be pursued in this regard. The plans to include EB and CBL on the list of eligible banks for the single supervisory mechanism for the euro zone may further contribute to a level playing field.

DETAILED ASSESSMENT RESPONSIBILITIES AUTHORITIES ESES CSDS

Responsibility A. Regulation, Supervision, and Oversight of Financial Market Infrastructures FMIs should be subject to appropriate and effective regulation, supervision, and oversight by a central bank, market regulator, or other relevant authority.	
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.	**Belgium** In Belgium, several laws, i.e., the NBB Organic Law, the Royal Degree 26/09/2005, and the Law of August 2, 2002, contain criteria to identify FMIs that should be subject to regulation, supervision, and oversight. These laws are published in the Belgian National Gazette (moniteur belge) and available on the NBB website and FSMA website. Based on these laws the NBB and FSMA regulate, supervise and oversee ESA, EB and Euroclear Belgium as well as other FMIs. **France** The French Monetary and Financial Code specify the criteria for CSDs and SSS to be supervised and overseen. French CSDs and securities settlement systems (SSS) are regulated by the French authorities AMF, the French markets authority, and BDF (for SSS only), as provided in the French Monetary and Financial Code. The Monetary and Financial Code is publicly available. **Netherlands** In the Netherlands several laws contain criteria to identify FMIs that should be subject to regulation, supervision, and oversight. These laws are the Dutch Securities Giro Act (wet giraal effectenverkeer or Wge) for Euroclear Nederland and the Dutch Act on Financial Supervision (Wet op het financieel toezicht or Wft). Based on the Wft a regulated market or multilateral trading facility should have adequate arrangements for the clearing and settlement of the transactions on its platform. To meet this requirement the CCP and CSD are subject to the Oversight Framework Clearing and Settlement (OFCS). These laws are publicly available on Internet and other sources. The Dutch Giro Act and Wft are publicly available from the website http://www.overheid.nl/. FMI's including Euroclear Nederland, are listed on the website of the AFM and DNB. The OFCS is not publicly available.

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.	**Belgium** There are currently three settlement institutions and one equivalent settlement institution: • Settlement institutions: CIK SA (commercial name Euroclear Belgium), EB SA and NBB-SSS. • Equivalent settlement institution: Euroclear SA (ESA). ESA has a double status. Apart from equivalent settlement institution it is also a financial holding company. This list of settlement institutions and equivalent settlement institutions is available on NBB website. Since April 1, 2011, Belgium has adopted a twin-peaks model for the supervision of settlement institutions, with different competences for the NBB and the FSMA as the successor of the former Banking Finance and Insurance Commission (CBFA). Without prejudice to the below-mentioned powers of oversight, the NBB is responsible for prudential supervision (including the issuance of authorizations) of clearing institutions as well as settlement institutions and equivalent institutions. In its capacity as prudential supervisor, the NBB verifies that (equivalent) settlement institutions (having or not also a credit institution license) meet the authorization requirements and operating criteria laid down in the laws and regulations. This implies inter alia that the NBB ascertains that the (equivalent) settlement institution's organization and functioning are appropriate, and carries out supervision over its activities and financial situation. Where a settlement institution is a subsidiary of a financial holding company, the supervision on a standalone basis is complemented with supervision on a consolidated basis. The FSMA is responsible for the surveillance of financial markets and the protection of investors. The FSMA should ensure compliance with the rules aimed at guaranteeing the proper functioning, integrity and transparency of markets in financial instruments. The FSMA exercises its powers in respect of settlement institutions in the light of this twofold perspective. Under Article 8 of the NBB Organic Law, the NBB shall ensure that the clearing and payment systems operate properly and shall make certain that they are efficient and sound (oversight). The NBB

	assesses the Euroclear system against the CPSS-IOSCO Recommendations. **France** Euroclear France as CSD, and ESES France as SSS (operated by Euroclear France), have been identified as FMIs subject to regulation, supervision, and oversight. Other FMIs, other than CSDs and SSS, have been identified as well. The Monetary and Financial Code provides BdF with a general oversight competency over SSS, and over the CSD, as operator of the SSS, although BdF has no direct oversight competencies on the CSD as such. Similarly, the Monetary and Financial Code establishes a clear basis for the regulatory responsibility of the AMF with regard to CSD and SSS. The AMF General Regulation contains specific requirements applicable to CSD and SSS, in book V title V for CSDs and book V title VI for SSS. Article L. 330-1 of the Monetary and Financial Code relies on AMF General Regulation regarding the granting of approval for the participation of some specific types of companies (including non-EU applicants) to an SSS. As a consequence, the Monetary and Financial Code provides the AMF with a general regulatory power regarding conduct rules and professional obligations for CSD and SSS, without prejudice of the powers of BdF on SSS. **Netherlands** AFM and DNB have identified Euroclear Nederland as CSD for the Netherlands. In addition five CCPs and several payment systems have been identified as FMIs under the supervision and oversight of the AFM and/or DNB. The AFM has been mandated powers under the Dutch Giro Act to supervise ENL. AFM has sole responsibility and informs the Ministry of Finance of its supervision of ENL under the Dutch Giro Act in an annual report. Important information obtained from this supervision is shared with DNB routinely. DNB performs its oversight pursuant to Sections 4(2) and 3(1)(e) of the Dutch Bank Act 1998 and in accordance with the European System of Central Banks, which charge DNB and the ESCB respectively with ensuring the smooth operation of payment

	systems. DNB is responsible for oversight of all institutions, systems and products that are of significance for Dutch large-value and retail payments. The oversight of securities clearing and settlement systems encompasses oversight of all institutions and systems providing securities clearing and settlement services that are relevant for the Netherlands. Supervision under the OFCS includes yearly assessments of the FMIs against relevant international standards. Responsibilities under the OFCS are shared between AFM and DNB equally, with DNB having specific vested interest in prudential matters and AFM on conduct of business matters. **Chinese walls** The central banks of Belgium, France and the Netherlands all have established Chinese walls, with separate reporting lines for oversight and the operational department up to the level of the board or one level below the board.
Key Conclusions for Responsibility A	The ESES CSDs are subject to effective regulation, supervision and oversight of the Belgian (NBB and FSMA), Dutch (DNB and AFM) and French (BDF and AMF) authorities, despite the fact that the legal frameworks differ substantially between the three countries. In the Netherlands the legal underpinning of responsibilities to regulate the SSS lacks a statutory basis, whereas in France the BDF has only indirect powers to oversee the CSD. In practice this does not affect the powers of the authorities to regulate the ESES entity in their respective countries and to induce change. The legal and regulatory frameworks will be harmonized with the implementation of the CSD Regulation, which is foreseen for 2015.
Assessment of Responsibility A	Observed.
Recommendations and Comments	The Dutch authorities should enforce the legal basis of their supervision on SSS.

<table>
<tr><th colspan="2">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 FMIs.</th></tr>
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The Protocol includes arrangements for the exchange of information (Section 4). In its capacity of overseer, the NBB has access to all information it judges necessary to perform its oversight tasks. The Protocol also foresees explicitly the possibility for the NBB to make on-site inspections to collect relevant info. At any time, the NBB can request to meet internal or external auditors. The NBB should also be informed in due time of any development or event that could have a significant impact on the organization of the company, or on the functioning, efficiency and/or reliability of the Euroclear system. Post-mortem analyses are provided to the NBB after (significant) operational incidents.

The Protocol includes an indicative list of documents/data to be reported on a regular basis (such as minutes of board meeting, audit reports and statistics as well as a list of major incidents or significant events.

The Royal degree September 26, 2005 and the Banking Law provide the NBB with the powers to obtain relevant information and to conduct onsite inspections. Relevant information includes financial statements of EB and ESA and other financial information. The NBB can also prescribe what information it deems useful for its supervision to receive, such as transaction information and organizational information. The NBB may also carry out on-the-spot inspections, and inspect and copy, at the firm’s premises, any information in the institution’s possession.

The Law of August 2, 2002 specifies that, in exercising its supervisory mandate, the FSMA may receive it all information and documents it deems necessary, may undertake on-site inspections, may take cognizance of any document on site and have access to any IT system. The FSMA may also ask the statutory auditors or persons responsible for the audit to submit special reports and/or periodic</td></tr>
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	reports on subjects that it determines. It may also require entities established in Belgium to forward to it all useful information and documents relating to companies that form part of the same group and are established abroad. Provisions exist to share confidential information under certain restrictions with domestic and foreign authorities. **Belgium: Powers to Induce Change** NBB Oversight uses moral suasion to induce change. The legal framework in Belgium provides the NBB prudential supervision department with different types of powers, being moral suasion; exceptional recovery measures; administrative sanctions and criminal sanctions (imposed by the criminal courts). The Law of August 2, 2002 provides the FSMA with different types of power to induce change, such as publication, financial penalties or the appointment of a special auditor. **France: Powers to Obtain Information** The articles in the Monetary and Financial Code implies that to achieve its duty to ensure the safety of securities clearing and settlement, BDF has access to all relevant information in a timely manner. This means that BDF access to all relevant information without constraints. BDF also collects information as settlement agent for Euroclear France. The Monetary and Financial Code is currently under review to further formalize the oversight powers of BDF, in particular in terms of access to information, and of on documents and onsite inspections. The AMF General Regulation contains specific requirements that provide the AMF with the power to obtain information. The CSD and SSS should require approval of the AMF for any change in their operating rules. Also, modifications in the conditions under which a CSD and/or SSS have been authorized must be submitted to the AMF. These conditions include the internal rules of the CSD/SSS; its operating rules; significant shareholders; human, technical and financial resources with a particular emphasis on risk management; as well as its management body. In addition, the AMF General Regulation requires a CSD/SSS to name a person responsible for the compliance of the CSD or the SSS with its operating rules and with the anti money-laundering laws, as

	well as the compliance of the exercise of the CSD/SSS activity within the regulatory framework. This person must send an annual report to the AMF regarding the conditions under which the regulatory controls were handled and the outcome of their findings. **France: Powers to induce change** BDF uses moral suasion to encourage the enforcement of changes when deemed necessary. In addition, BDF published the results of its assessments in its oversight reports (available on the BDF's web site). Moreover, following an assessment, and based on recommendations that BDF may produce, if need be, the SSS establishes an action plan in order to address recommendations, which will be monitored by BDF. The Monetary and Financial Code provides the AMF with the power to conduct controls with the CSD/SSS in order to check that they comply with the professional obligations to which they are submitted according to the legal and regulatory framework. Moreover, AMF has a specific Enforcement Commission, which may impose sanctions on CSD or SSS for any breach of professional obligations established by laws, regulations or conduct of business rules approved by the AMF. The applicable sanctions are also stated provided by the Monetary and Financial Code and include a warning, a reprimand, or a temporary or permanent ban on providing some or all of the services. In lieu of, or in addition to, said sanctions, the Enforcement Commission may also impose fines. **Netherlands: Powers to obtain information** AFM and DNB can request and obtain any information they feel is relevant for carrying out their responsibilities. For significant changes in its systems or operations ENL has to acquire prior approval from AFM and DNB. These powers are laid down in the OFCS. AFM DNB and the FMIs have made arrangements under OFCS for monthly reporting of relevant information. This includes monthly reporting on business continuity, incidents, and transaction volumes amongst others. Furthermore AFM and DNB may require an FMI to provide specific reporting as part of the approval of certain projects. AFM and DNB meet with ENL on a bi-weekly basis to discuss the reported information as well as discuss developments and projects in the pipeline. The AFM can also obtain information from Euroclear Nederland on the basis of the mandate by the Ministry of Finance under the Dutch

	Giro Act. The power to obtain information is limited to information needed for adequate supervision. Furthermore, AFM meets with ENL to discuss Dutch Giro Act specific subjects on a quarterly basis. **Netherlands: Powers to Induce Change** Under the OFCS the AFM and DNB can induce change or enforce corrective action in ENL in case it is not observing relevant principles. In case ENL does not follow-up on the issued recommendations this can lead to the assessment that the regulated market that settles with ENL does not fulfill article 5:30 (e) of the Dutch Act on Financial Supervision. This law offers a range of measures, ranging from soft measures to measures including penalties, removing of board members, appointing a caretaker or revoking the markets license to operate. However, these powers can only be used against the regulated markets that settle at Euroclear Nederland and not against the CSD directly. In case it is concluded that an FMI does not observe all principles a letter to the board of directors of the FMI is send. This letter sums up the issues which cause the non-observance. Also recommendations are made to address the issues. The progress on these recommendations is monitored during the regular oversight meetings between the FMI and the AFM and DNB. Based on the mandate of the Ministry of Finance under the Dutch Giro Act, AFM will alert Euroclear Nederland if it they are not compliant with the law and will require Euroclear Nederland to take corrective actions and cease the non-compliant activity.
Key Consideration 2 Authorities should have sufficient resources to fulfill their regulatory, supervisory, and oversight responsibilities.	**Belgium** For oversight the NBB defines its action plans using a risk based approach, which provide the basis for the setting of its priorities. The NBB has dedicated 3.58 FTE to the oversight of Euroclear Group (ESA, EB, ESES/Euroclear Belgium). Oversight activities also include policy matters, such as CPSS working groups, EU legislation, and ESCB related work. The NBB also oversees other systems, i.e., T2S, CLS, NBB-SSS. For prudential supervision the NBB also defines its action plans using a risk based approach, which provide the basis for the setting of its priorities. For NBB prudential supervision on clearing (LCH.Clearnet SA) and (equivalent) settlement institutions (Euroclear, BNYM) available resources are currently FTE 6.50, but additional resources are expected by the end of 2012.

	The FSMA has appointed one senior FTE to post-trading issues. The senior FTS is supported by the policy and legal departments. **France** The duty of oversight of clearing and settlement institutions is carried out by a unit (called SEPI) of the Directorate for Payment Systems and Market Infrastructures. SEPI has currently twelve agents, including ten executives. Half the staff of the Oversight Unit is dedicated to the oversight of securities clearing and settlement systems. The oversight of Euroclear France's ESES is primarily performed by two staff members with assistance from the other team members, in particular on issues of business continuity, crisis management and global security. AMF has a created a specific department dedicated to the regulatory monitoring of markets, infrastructures and participants. The market department is composed of about 40 employees and three teams, which are the market abuse enforcement division, the market intermediaries division and the market infrastructures division. The market infrastructures division role is to closely supervise the market infrastructures through the presence of its member to the colleges of regulators of the various market infrastructures, and a direct access to their management. The team is composed of seven senior personnel with operational experience who may rely as need be on other departments for specific support. Regarding the oversight of Euroclear France's ESES, the market department head is seating to the High Level Committee of Euroclear College of regulators, while the market infrastructures division is seating at the technical committee. The market infrastructures division dedicates two full time equivalent resources for the supervision of Euroclear France. The market infrastructures division works closely with the regulation and international affairs department, which is in charge of the negotiations concerning international regulations. Two people in this team are dedicated to post-market issues including on CSD/SSS. **Netherlands** The oversight department of DNB consists of eight FTE, half of which are assigned to the oversight of securities clearing and settlement systems. One FTE is dedicated to the oversight of Euroclear Nederland, which includes participation in the technical committees on ESES and ESA. Assistance from other colleagues is readily available when needed, for example on specific topics as

	business continuity, cybercrime and legal. The manager of the oversight department is participating in the high level oversight committees on ESES and ESA and engages in high level meetings with Euroclear Nederland. The AFM allocates resources to supervision of the FMIs which are deemed to carry the most risk. The Securities Markets and Financial Infrastructure Supervision Division team dedicated to financial infrastructure regulation and supervision consists of 9 FTE of which three FTE are dedicated to supervision of securities clearing and settlement supervision. Euroclear Nederland is supervised by two FTE which function as each other's alternate. One FTE participates in the ESES and ESA technical committees. The head of the Securities Markets and Financial Infrastructure Supervision Division participates in the ESES and ESA high level oversight committees and in high level meetings with Euroclear Nederland. **Legal Protection of Staff** Belgium: The staff of the NBB and FSMA has legal protections to carry out their responsibilities. France: BDF and AFM are liable for their employees' actions when taken in the course of their functions. Netherlands: Staff of DNB and AFM is not personally liable for actions carried out on behalf of the AFM and or DNB. This does not however exclude possible legal action because of criminal offenses, gross negligence, or willful misconduct.
Key Conclusions for Responsibility B	In general the resources of the authorities are considered to be sufficient. The FSMA has only one staff member dedicated to post-trade matters.
Assessment of Responsibility B	Observed
Recommendations and Comments	The FSMA should increase its capacity on post-trade matters to enhance the quality and consistency of its conduct of business supervision.

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.	
Key Consideration 1 Authorities should clearly define their policies with respect to FMIs, which include the authorities' objectives, roles, and regulations.	**Belgium** The policies of the NBB and FSMA are based on and defined by the legal framework in Belgium; in particular in the NBB Organic Law, the Royal Degree 26/09/2005, the Banking Law, the Law of August 2002. The policies of the NBB are reflected in regulations, circulars and communications that include the authorities' objectives and expectations towards the institutions under supervision. NBB issued in July 20, 2012 a circular n° 2012-06 stating that the new CPSS-IOSCO Principles dated April 2012 will be used as guiding principles for the oversight and supervision of FMIs in Belgium. **France** BDF's policies for SSS are reflected in the framework for the oversight of securities settlement systems. The framework is based on the ESCB-CESR Recommendations and their assessment methodology. These recommendations are expected to be replaced by the PFMI. AMF's role and objectives are directly defined by the law under Article L. 621-1 of the Monetary and Financial Code. **Netherlands** The policies of AFM and DNB for SSS and CSDs are reflected in the OFCS. The framework is based on the relevant international standards, which are currently the PFMI. The OFCS does include the objectives, roles and responsibilities of the authorities. In addition, the policies of the AFM are also based on the Dutch Giro Act.
Key Consideration 2 Authorities should publicly disclose their relevant policies with respect to the regulation, supervision, and oversight of FMIs.	**Belgium** All regulations and circulars issued by NBB are communicated to the FMIs concerned and published on the NBB website. The Financial Stability Review (FSR) includes a specific report on the prudential supervision and oversight of financial market infrastructures. Policy issues, summaries of assessment results, as well as prudential and oversight activities with regard to FMIs are disclosed in the FSR. Similar information is included in the annual report. All relevant applicable regulation can be found on the NBB website.

	The cooperation agreement signed by the NBB and the FSMA in respect of the surveillance and supervision of market infrastructures is published on the website of the FSMA. **France** BDF's policies are regularly disclosed in its oversight report, which is published every three years. The oversight report contains the results of assessments of FMI conducted by BDF. The oversight report also describes and explains BDF's oversight framework, its modifications and their rationale. In addition, BDFs issues communications to inform market participants. FMIs are informed through bilateral meetings if necessary. The AMF General Regulation is publicly disclosed and published. In addition, AMF publishes guidelines and notices to further explain its General Regulation application. Many communication instances are set with market infrastructures. Amongst other groups, AMF has established a commission for reviewing issues on post markets. This commission meets on a periodic basis. It is led by a board member of AMF and includes, among others, a representative of Euroclear France. Last, AMF publishes an annual report, which summarizes its policy, regulatory and control activities. **Netherlands** DNB's policies are published on the website of DNB with a dedicated section for oversight related issues, which includes a brochure explaining the oversight goals, the oversight subjects and the oversight method (including a reference to the standards). In addition, DNB publishes an annual report that describes the activities of DNB in discharging its responsibility for the oversight of payment and settlement systems. DNB has published a summary of its oversight activities in its Annual Report since the 2006 reporting year. From 2011, the results of the oversight are presented in a separate publication. The report describes results of assessments of FMIs conducted by DNB and other relevant authorities. The AFM discloses the applicable laws on its website and publishes a yearly report on its supervision of FMIs as part of its annual report. General information about the areas of supervision by the AFM can

	be retrieved from the AFM website. The OFCS is not publicly disclosed as it is tied to the regulated market/MTF license and is considered to contain confidential information about the regulated market and MTF in question.
Key conclusions for Responsibility C	In Belgium and France the authorities have disclosed their policies, but in the Netherlands the Oversight Framework is not publicly available. All central banks publish an oversight report, which includes information on the oversight and assessments of the ESES CSDs.
Assessment of Responsibility C	Observed
Recommendations and Comments	The AFM should publicly disclose the OFCS.

Responsibility D. Application of the principles for FMIs 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.	**Belgium** The NBB and FSMA have adopted the PFMI as principles for their oversight and supervision. The NBB issued a circular in July 2012 stating that the new CPSS IOSCO Principles, dated April 2012, will be used as guiding principles for the oversight and supervision of FMIs in Belgium. This circular is available on NBB website. The cooperation agreement signed by the NBB and the FSMA in respect of the surveillance and supervision of FMIs specifies which of the principles is the responsibility of the NBB and/or the FSMA. This agreement is publicly available. **France** BDF is considering adopting the PFMI in compliance with the decisions that will be taken at the Eurosystem level towards the PFMI. The AMF has welcomed officially the publication of the PFMI report. **Netherlands** The board of DNB has taken the decision that from January 1, 2013 onwards the oversight department of DNB will use these principles for all FMIs in the Dutch jurisdiction. This decision is reflected on the oversight page of DNB's website (www.dnb.nl). The AFM in its cooperation with DNB will adopt the principles as well as relevant international standards under the OFCS.

Key Consideration 2 Authorities should ensure that these principles are, at a minimum, applied to all systemically important payment systems, CSDs, SSSs, CCPs, and TRs.	**Belgium** The NBB circular of July 2012 clearly specifies that the PFMI apply to all (equivalent) settlement institutions active in Belgium, including those having a credit institution status in Belgium. The circular further specifies the application of the "proportionality principle," which takes into account the nature, size and complexity of activities and risks of the FMIs concerned. **France** As the French authorities will adopt the PFMI, which in principle apply to all CSD and SSS, the principles will be applied to all FMIs in France. **Netherlands** The PFMI will be applicable to all wholesale payments systems and all securities clearing and settlement systems in the Netherlands. The PFMI will be applicable to retail payment systems based on a methodology which is currently under development by the ESCB. The OFCS will be adapted to reflect the application of the PFMI.
Key Consideration 3 Authorities should apply these principles consistently within and across jurisdictions, including across borders, and to each type of FMI covered by the principles.	All authorities promote consistency by the close cooperation between regulators, supervisors and overseers both locally and internationally. Consistent application of the principles is assured mainly by using the assessment methodology for all overseen entities. At an international level cooperative oversight has been implemented for ESES, enabling the relevant authorities to develop shared analyses and assessments against a common oversight framework. Gaps and diverging interpretations of the oversight framework between authorities are then avoided (see also responsibility E).
Key conclusions for Responsibility D	All authorities intend to adopt the PFMI, although the timing and procedures are not harmonized. The NBB has announced the adoption of the PFMI in a circular in July 2012, whereas the BDF awaits the official decision by the Governing Council of the ECB and DNB implements the PFMI per January 2013 without official notice.
Assessment of Responsibility D	Observed
Recommendations and comments	The authorities should consider harmonizing their approaches related to the adoption of the PFMI and similar practices that are not related to the legal and regulatory framework.

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 ESES Committee is a committee dedicated to cooperation between authorities in relation to the supervision and oversight of the ESES CSDs of the Euroclear group. The ESES CSDs consist of Euroclear France, Euroclear Nederland and Euroclear Belgium. The ESES authorities comprise the Belgian, French and Dutch securities commissions and central banks: • Nationale Bank van België (NBB) / Banque Nationale de Belgique (BNB) • Autorité des services et marchés financiers / Autoriteit voor Financiële Diensten en Markten (FSMA) • Autorité des Marchés Financiers (AMF) • Banque de France (BDF) • Autoriteit Financiële Markten (AFM) • De Nederlandsche Bank (DNB) As Euroclear has it's headquarter in Belgium, the NBB has the lead in organizing the cooperative oversight of the ESES CSDs. The main objective of the ESES committee is the exchange of and sharing of information and mutual consultation. The cross-border cooperation principles with regard to the ESES CSD/SSS are documented in the "ESES Working arrangements among the ESES overseers/supervisors for the oversight/supervision of the ESES CSDs/SSSs of March 18, 2010," a document that was endorsed by each ESES authority. The ESES supervisors and overseers will use the existing practical arrangements (such as regular meetings between the authorities and with the ESES CSD management; crisis communication facilities) agreed on in an ESA MOU context, but use these arrangements in an ESES only composition. To that end, the ESA regulatory high level and technical level committees meet since 2010 in an ESES only composition, among authorities and with the ESES SSSs/CSDs management. During 2010, a full assessment of the ESES SSSs' compliance with the ESCB-CESR recommendations was conducted. Due to the unique

	position of ESES, the Belgian, Dutch and French central banks ("the overseers)" performed the assessment on a cooperative basis. The joint assessment was documented in a single joint document and a common assessment outcome document was agreed and published by each assessor. For Euroclear Belgium an additional cross-border arrangement is in place relating to the outsourcing of the daily settlement operations' management that was outsourced to Euroclear France in February-March 2011. A dedicated MoU dated July 1, 2011 between the Belgian and French central banks and securities commissions was signed governing the exchange of information and the supervisory and oversight cooperation related to the outsourcing of the EBE settlement operations, and allowing for an on place inspection by the Belgian prudential supervisor where deemed appropriate. Each ESES supervisor/overseer remains solely and fully responsible for the proper execution of its respective competencies, tasks and duties under its applicable national law. Bilateral contact between an authority and its CSD/SSS remain relevant, especially to exchange information on specific issues. As a consequence, each ESES supervisor/overseer taking a decision that has a significant impact on the functioning of the ESES SSSs/CSDs will inform and consult, prior to such a decision, the other ESES supervisors/overseers on such a decision, except when such an approach would not be compatible with applicable regulatory deadlines. While recognizing that the decision making remains a local and separate competency of each authority vis-à-vis its local SSS/CSD, each ESES supervisor/overseer endeavors to reach common assessments and resolutions by consensus. A "crisis communication procedure" has been put into place at the level of ESA and ESES. As regards the crisis communication in case of an incident impacting the ESES CSDs, a specific arrangement is in place regulating the communication between the ESES CSD and the ESES authorities. The arrangement is contained in the "Euroclear Crisis Regulatory Co-ordination Pack" (version 4) of May 31, 2010 that has been agreed among the ESA authorities and in its specific ESES addendum of December 12, 2011 that complements this pack. A conference call facility can be used if needed. This facility is regularly tested and has proven useful to follow-up ESES incidents by the authorities. Under the arrangement, each authority will escalate to the adequate hierarchical level internally.

	Finally, it is noted that the issue of cooperation during recovery, wind-down or resolution situations is currently under discussion at the ESA Technical Committee.
Key consideration 2 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.	The ESES cooperation arrangements followed the launch of a harmonized settlement platform for the three ESES CSDs. The ESES authorities have not notified other relevant authorities as the ESES CSDs are only operated for the local markets of Belgium, France and the Netherlands. If other authorities may have an interest in the FMI's observance of the PFMI comprehensive information is available at public websites to obtain a good understanding of the safety and efficiency of the ESES CSDs.
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.	As the three ESES CSDs are highly intertwined, especially from an operational and governance ankle, the majority of decisions related to the regulation, supervision and oversight of the ESES CSDs will be taken jointly by all relevant authorities. Therefore, the ESES authorities cooperate intensely; pursue a common understanding of submitted projects and agree on common approval planning. The supervisory/oversight coordination principles are documented in the "ESES Working arrangements among the ESES overseers/supervisors for the oversight/supervision of the ESES CSDs/SSSs of March 18, 2010." This document is without prejudice to the existing ESA MOU regarding the supervision/oversight of the common services that are provided by ESA. This ESES supervisory/oversight cooperation is set up as an extension of the multilateral cooperation framework at the level of ESA, which is also the parent company of the CSDs in Finland, Sweden, the United Kingdom, and Ireland and of the ICSD EB. The soundness and efficiency of ESA and the ESA services, that are common to all Euroclear group CSD/SSS and that are not ESES specific, are looked at jointly by the ESA authorities. All ESA authorities have signed an MOU regarding the cooperation and coordination of the regulation, supervision and oversight of ESA. The purpose of the cooperation is the exchange of information relevant for the co-ordination and the co-operation between the authorities in the area of the supervision/oversight and, where applicable, for the coordinated assessment, as commonly agreed, of the common services that are provided by ESA for supporting the activities of the entirety of the (I) CSDs of the group.

	The scope of the coordinated assessment encompasses the governance arrangements of the Euroclear Group, including significant shareholder and financial structure changes; the operational reliability, the business continuity plans and the allocation of human and IT resources for the operation of the (I)CSDs and their settlement systems; the organization of the audit function and the risk management policy of the group; the business model and the harmonization projects; and any outsourcing by ESA to third parties." The cooperation at the level of ESA and ESES takes also the form of constitutions of colleges, which are organized at a technical level and a high level. The ESA MOU foresees the establishment of a permanent secretariat, operated by the NBB, in charge of the administrative support to the ESA and ESES college and of the exchange of information. In principal four technical meetings and two high level meetings are organized each year. Experience shows that current practices of exchange of information at ESA and ESES college meetings are standard topics on the agenda and are generally deemed adequate.
Key consideration 4 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.	The NBB is the lead overseer and supervisor of ESA. With regard to the ESES CSDs the supervisory and oversight competences are defined per jurisdiction with national authorities being responsible for their national CSD. All ESES authorities participate in the ESA and the ESES committees. The NBB chairs the meetings and is in charge of the practical organization of the meetings as well as the coordination of the exchange of information.
Key consideration 5 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	Each ESES authority ensures that its own national CSD is periodically assessed against the CPSS IOSCO principles. The assessments conducted by the different authorities are shared with all other ESES authorities. ESES CSD assessments can be done jointly by the ESES authorities, if deemed appropriate.

supervision or oversight of the FMI and for which the FMI is systemically important.	The assessment of the "common functions" provided by ESA is discussed and coordinated by NBB within the ESA College.
Key consideration 6 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 responsibility with respect to the FMI.	The euro is the relevant currency in the context of ESES with the ESES central banks acting as central bank of issue. Assessments of liquidity management needs and procedures are conducted locally if deemed necessary: • in Belgium by the NBB as the NBB has primary responsibility with respect to Euroclear Belgium; • in France by BDF in consultation of the AMF as both have a joint primary responsibility with respect to Euroclear France; and • in the Netherlands by DNB in consultation with the AFM as both have a joint primary responsibility with respect to Euroclear Nederland.
Key consideration 7 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.	Material regulatory changes should be reported by the ESES CSD to its local regulators. This information, if relevant, is shared with other authorities within the ESA and ESES colleges. The positions of all concerned authorities are taken into account in order to achieve a common view of all ESA or ESES authorities on the regulatory change concerned. This coordination is however without prejudice to any laws, regulatory models or requirements in force in, or applying to, any jurisdiction of an authority that is party to the ESA and ESES MOU.
Key consideration 8 Relevant authorities should coordinate to ensure timely access to trade data recorded in a TR.	NA
Key consideration 9 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	No authority has exercised discretion to discourage the use of the systems of EB or ESA, or the provision of services to them, on the grounds that they are not prudently designed or managed, or the principles are not adequately observed.

observed. An authority exercising such discretion should provide a clear rationale for the action taken both to the 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.	NA
Key Conclusions for Responsibility E	The cooperation between the ESES authorities is assessed as effective and contributes to the safety and efficiency of the ESES CSDs. The cooperation is governed by the ESA MOU and the ESES Working arrangements. The authorities meet regularly in technical level and high level meetings and conduct assessments together. A crisis management framework exists and is regularly tested and updated.
Assessment of Responsibility E	Observed
Recommendations and comments	-

AUTHORITIES' RESPONSE

In general, the NBB agrees with the IMF's assessment and recommendations.

The NBB will closely monitor EB's implementation of the recommended actions, in particular for Principles 3, 4, 11, and 19.

Before the IMF's assessment, the NBB and EB had already discussed an action plan regarding the advanced income and redemption issue, which would make EB compliant for Principle 4 by the end of 2013. With respect to principles 11 and 19, Euroclear will be requested to set up an action plan in order to achieve full observance.

For Principle 3, the NBB agrees with the IMF's recommendation that EB should prepare the operational implementation of its recovery plan. However, it should be noted that such request could only be met in a fully compliant way once the international regulatory guidelines regarding recovery and resolution plans for FMIs have been finalized (a consultative report by CPSS-IOSCO on Recovery of FMIs is only expected by summer 2013). It should also be noticed that even if further progress is effectively expected in this field, EB is already operationally ready at this stage to implement several elements of its recovery plan. These arguments lead the NBB towards a different judgment on the level of observance of Principle 3 (Framework for the comprehensive management of risks).

Regarding the Responsibilities of the NBB for EB, the NBB supports the IMF's recommendations and will initiate discussions with the Luxembourg authorities and the ECB to strengthen and broaden the cooperation with respect to the oversight and supervision of the two ICSDs in particular in order to seek for a parallel implementation of the applicable principles. In this regard, the NBB will actively collaborate with the Luxembourg authorities and ECB in order to come to a common solution that would allow EB to comply with respect to advanced income and redemption payments over the Bridge.

Finally, the Belgian, Dutch, and French authorities are in agreement with the ESES assessment.

Appendix 1. Key Statistics 2011

	EB	CBL	DTCC	Federal Reserve
Number of participants	1,383	1,283	378	2,406
Domestic	30	106	362	nav
Foreign	1,356	1,177	16	Nav
Central banks	99	54	0	nav
CCPs	4	13	1	nav
CSDs	13	33	12	nav
Banks	309	840	1	nav
Other	931	237	2	nav
Turnover *(EUR bln/USD bln)*	332,958			
Number of securities held (thousands)	203.90	Nav	3,690.0	1,187.1
International and domestic bonds	157.01	Nav	nav	nav
Equities	18.68	Nav	nav	Nav
Other securities	28.21	nav	nav	nav
Value of securities held *(Euro billions)*	10,769.27	4,889.23	40,000.00	60,295.90
International and domestic bonds	10,130.89	4,495.51	nav	nav
Equities	455.00	275.24	nav	nav
Other securities	183.39	118.48	nav	nav

Source: CPSS Red book and ECB Blue book.

Appendix 2. List of Memorandum of Understandings and Other Cooperation Agreements for Euroclear Bank

Type and Date	Authorities Involved	Scope
MOU 22/11/2001	Belgian and French authorities	Information sharing on issues of common interest, including links between EB and EF, and operational reliability and operational integration projects.
MOU 9/7/2002	Belgian, Dutch and French authorities	Supervisory/oversight co-operation in respect to the settlement facilities provided by Euroclear for the Euronext markets. Main issues of joint interest include the continued safety and soundness of the settlement services provided to participants of Euronext, the stability of the financial system and public confidence.
MOU 15/12/2002–updated in April 2012	NBB (lead overseer) and Central Bank of Ireland (CBI)	Co-operative oversight in respect of the settlement function for Irish government bonds that was outsourced to EB by CBI.
Letter of intent 18/09/2008	NBB and AFM	Provision of information by the NBB on EB links to other CSDs that Euroclear Nederland uses or intends to use through its direct link with EB.
Letter of intent 27/10/2009	NBB and ECB	Exchange of information on the oversight of EB. This involves information on EB's compliance with the CPSS-IOSCO (and ESCB-CESR) recommendations and specifically also on the compliance of the Bridge between EB and CBL with the CPSS-IOSCO recommendations.
MOU (pending)	NBB and Bank of England (BoE)	Exchange of information between the NBB and BOE as the GBP is one of the main currencies settled in the Euroclear system operated by EB. In addition, U.K.-owned banks and other U.K.-based financial institutions and market infrastructures are among EB's largest participants.
Informal arrangement	NBB and Luxembourg authorities	Information sharing in relation to the Bridge between EB and CBL. The authorities meet on a regular basis at technical level; the ICSDs are often invited to the meeting as well.

Appendix 2. List of Memorandum of Understandings and Other Cooperation Agreements for Euroclear Bank (concluded)

Type and Date	Authorities Involved	Scope
Informal arrangement	NBB and Bank of Japan	Information regarding the role of JPY in the Euroclear system and JPY cash balances with JPY cash correspondents.
Informal arrangement	NBB and FED	The NBB provides (statistical) input to the Fed on the role of the USD as settlement currency in the Euroclear system. The NBB also reports on the relative importance of U.S. participants.
MOU 3/2/2005	NBB and HKMA	Information sharing and cooperation, in particular related to the Hong Kong branch of EB.
Collaboration protocol 18/10/2012	NBB and FSMA	Cooperation related to the supervision and surveillance of FMIs.

Source: National Bank of Belgium.

Appendix 3. Key Statistics Euroclear Settlement for ESES CSDs 2011

Key statistics ESES	Euroclear Belgium	Euroclear France	Euroclear Nederland
Number of participants	73	162	67
Domestic foreign	20	125	17
Foreign	53	37	50
Central banks	1	1	1
CCPs	1	1	1
CSDs	0	5	2
Banks	27	100	24
Other	44	55	39
Turnover	555,936	146,536,799	4,740,183
Number of securities held *(thousands/value (EUR mln)*	1/131,742	47/5,021,182	9/866
Domestic Bonds	1/4,902	22/2,855,523	1/490,000
Equities	0/126,062	1/1,167,305	1/338,000
Other securities	0/778	23/998,354	7/38,000

Source: CPSS Red book and ECB Blue book.