EUROPEAN CENTRAL BANK
EUROSYSTEM

Revised oversight framework for retail payment systems

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Introduction

The oversight of payment systems is an essential function of central banks. It aims to ensure the smooth functioning of payment systems, which is an important precondition for the central banks' ability to contribute to financial stability, to implement monetary policy and to maintain public confidence in the currency.

The oversight function of the Eurosystem[1] is recognised in the Treaty on the Functioning of the European Union and the Statute of the European System of Central Banks (ESCB) and of the European Central Bank (ECB). Article 127(2) of the Treaty and Article 3.1 of the Statute state that *"the basic tasks to be carried out through the ESCB shall be […] to promote the smooth operation of payment systems."*

The objectives and scope of the oversight function are defined in the Eurosystem oversight policy framework[2]. With regard to the objectives, the Eurosystem's task of promoting the smooth operation of payment systems consists in ensuring their safety and efficiency. With regard to the scope, the framework specifies the entities and instruments that form the payment and settlement landscape of the euro area; retail payment systems (RPSs) are an integral part of this landscape and thus fall within the scope of oversight.

So far, Eurosystem oversight of retail payment systems has been based on the Oversight standards for euro retail payment systems[3], which, in turn, were based on the Core Principles for Systemically Important Payment Systems[4]. Given the increased integration of retail payment systems in the Single Euro Payments Area (SEPA), and the replacement of the Core Principles with the new CPSS-IOSCO Principles for financial market infrastructures (PFMIs)[5], the Eurosystem decided to define a new comprehensive oversight framework for retail payment systems, replacing the one from 2003. In this revision, the Regulation of the ECB on oversight requirements for systemically important payment systems (hereinafter "the SIPS Regulation"), by means of which the Eurosystem has adopted the PFMIs, has also

1 The Eurosystem comprises the ECB and the national central banks (NCBs) of the Member States that have adopted the euro. The Eurosystem is governed by the Governing Council and Executive Board of the ECB.

2 http://www.ecb.europa.eu/paym/pol/html/index.en.html

3 ECB (June 2003).

4 BIS (January 2001).

5 BIS (April 2012).

been taken into account. The Regulation covers all systemically important payment systems (SIPS), be they large-value or retail payment systems.

The present framework identifies RPS categories and clarifies the oversight standards applicable to each RPS category. In order to ensure effective coordination, it also provides guidance on the organisation of oversight activities for systems of relevance to more than one central bank.

1 Classification of retail payment systems

Retail payment systems are payment systems as defined in Article 2 (1) of the SIPS Regulation, typically handling large-volume payments of a relatively low value. They are generally used for the bulk of payments to and from individuals and between individuals and corporates. These systems have been subject to major changes as a result of the implementation of the Single Euro Payments Area (SEPA); increased integration and competition among retail infrastructures have blurred their national anchorage and enhanced their cross-border dimension within the euro area.

The SIPS Regulation defines SIPS as payment systems[6] that have the potential to trigger systemic risks; this occurs whenever the system itself is insufficiently protected against the risks to which it is exposed. The relevant factors for classifying SIPS are as follows:

(a) **financial impact** – the size of the system and the associated financial risk for its participants and for the financial system as a whole;

(b) **degree of market penetration** – a measure of the relative importance of a system within the domestic and European retail payment market;

(c) **cross-border dimension** – an indication of the cross border nature of an RPS in terms of extent and size of potential negative repercussions in the euro area in the event of a malfunction;

(d) **settlement for other financial market infrastructures (FMIs)** – this concerns the issue of system-based interdependencies and refers to vertical links.

According to the SIPS Regulation, a payment system shall be identified as a SIPS if: (a) it is eligible to be notified as a system pursuant to Directive 98/26/EC by a Member State whose currency is the euro or its operator is established in the euro area, including establishment by means of a branch, through which the system is operated; and (b) at least two of the following occur over a calendar year:

6 According to the SIPS Regulation, a "payment system" is a formal arrangement between three or more participants, not counting possible settlement banks, central counterparties clearing houses or indirect participants, with common rules and standardised arrangements for the execution of transfer orders between the participants.

(i) the total daily average value of euro-denominated payments processed exceeds EUR 10 billion;

(ii) its market share is at least one of the following:

- 15% of total volume of euro-denominated payments;
- 5% of total volume of euro-denominated cross-border payments;
- 75% of total volume of euro-denominated payments at the level of a Member State whose currency is the euro;

(iii) its cross-border activity (i.e. participants established in a country other than that of the SIPS operator and/or cross border links with other payment systems) involves five or more countries and generates a minimum of 33% of the total volume of euro-denominated payments processed by that SIPS;

(iv) it is used for the settlement of other FMIs.

Therefore, RPSs that fall within the scope of the above definition are also classified as SIPS or, more specifically, systemically important retail payment systems (SIRPS).

Beyond the SIPS Regulation, the Eurosystem considers it useful to introduce a further distinction within RPSs that are considered of systemic importance based on the geographical scope of the system. This does not, however, affect the oversight requirements to be applied, but only the organisation of the oversight activities within the Eurosystem. As a result, these RPSs can be divided into European systemically important retail payment systems (ESIRPS) and national systemically important retail payment systems (NSIRPS), depending on the extent of their cross-border activity. A SIRPS qualifies as an ESIRPS if it fulfils criterion c) above, while SIRPS that do not fulfil criterion c) are classified as NSIRPS.

In addition to SIRPS, which are governed by the SIPS Regulation, there are other systems which are not of systemic importance but which nonetheless play a major role with respect to both the safety and efficiency of the financial system and public confidence in the euro. These non-SIRPS have varied risk profiles. The Eurosystem has identified two categories of non-SIRPS: prominently important retail payment systems (PIRPS) and other retail payment systems (ORPS). In order to classify them, only one factor needs to be taken into account: the market share of the system at euro area country level.

A non-SIRPS is classified as a PIRPS if its market share is 25% or higher of total euro-denominated payments by volume at the level of a Member State whose currency is the euro. If the market share of a non-SIRPS is below 25%, it is classified as an ORPS. Both PIRPS and ORPS have to comply with a selected number of oversight requirements as stated below.

2 Application of oversight requirements to different RPS categories

The PFMIs and the Oversight expectations for links between retail payment systems (OELRPS)[7] form the core of the standards to be applied to RPSs by the Eurosystem central banks. The Business continuity oversight expectations for systemically important payment systems[8] have been fully replaced by principle 17 of the PFMIs. RPSs that are classified as "systemically important" must comply with both the SIPS Regulation and the OELRPS.

2.1 Principles for financial market infrastructures

Some of the PFMIs are so fundamental that they should also be observed by non-SIRPS. In the light of this, the Eurosystem has identified the PFMIs with which non-SIRPS should comply with. Although both PIRPS and ORPS are required to comply with a selected set of principles, a differentiation is made between the two types of RPS according to the role played in the payment system landscape, the potential economic effects in the event of failure and the potential to undermine public confidence in payment systems and in the currency in general.

Table 1
Principles

Principles	SIRPS	PIRPS	ORPS
TOTAL number of principles applied		12	9
SIPS Regulation	X		
Principle 1: Legal basis		X	X
Principle 2: Governance		X	X
Principle 3: Framework for the comprehensive management of risks		X	X
Principle 4: Credit risk			
Principle 5: Collateral			
Principle 7: Liquidity risk			
Principle 8: Settlement finality		X	X
Principle 9: Money settlements		X	
Principle 13: Participant-default rules and procedures		X	X
Principle 15: General business risk		X	
Principle 16: Custody and investment risks			
Principle 17: Operational risk		X	X
Principle 18: Access and participation requirements		X	X
Principle 19: Tiered participation arrangements			
Principle 21: Efficiency and effectiveness		X	X
Principle 22: Communication procedures and standards		X	
Principle 23: Disclosure of rules, key procedures, and market data		X	X

The set of principles and key considerations applicable to PIRPS or ORPS has been determined on the basis of the risks posed by the typical features of these retail

7 http://www.ecb.europa.eu/press/pr/date/2012/html/pr121129.en.html.

8 ECB (June 2006).

payment systems and their relative importance in the market served. The Eurosystem has decided that 12 PFMIs, out of the 17 that are applicable to payment systems, are applicable to PIRPS and nine to ORPS (see Table 1).[9]

PFMIs have been especially designed for systemically important infrastructures and contain very stringent requirements. As a result, in some cases, the principle itself is considered applicable, but the details contained in some of the key considerations are considered too demanding for non-SIPS. In the light of the above, and in order to implement a risk-based oversight approach, the Eurosystem has decided that non-SIRPS do not necessarily have to comply with all key considerations associated with the applicable principles.

For each applicable principle, the Eurosystem has identified the key considerations that best fit the specific features of the two RPS categories (see Annex 1). In particular, nine principles apply to both PIRPS and ORPS, of which six with the same level of strictness (i.e. the same key considerations apply to both categories of RPS) and three with slight differentiation:

- Principle 1 (Legal basis), Principle 3 (Framework for the comprehensive management of risks), Principle 8 (Settlement finality), Principle 17 (Operational risk) Principle 21 (Efficiency and effectiveness), and Principle 23 (Disclosure of rules, key procedures, and market data): these principles apply equally to both categories of RPS, given their general scope and the fact that they represent basic requirements for any sound retail payment system;

- Principle 2 (Governance), Principle 13 (Participant-default rules and procedures), and Principle 18 (Access and participation requirements): these principles apply with slight differences in key consideration, taking into account the simpler organisational structure and limited reach of ORPS.

In view of their higher potential to disrupt the retail payments market, PIRPS have to comply with three additional principles: Principle 9 (Money settlements), Principle 15 (General business risk), and Principle 22 (Communication procedures and standards).

The remaining five PMFIs applicable to SIPS – Principle 4 (Credit risk), Principle 5 (Collateral), Principle 7 (Liquidity risk), Principle 16 (Custody and investment risks), and Principle 19 (Tiered participation arrangements) – are considered too demanding for systems that do not pose such a high financial risk to the market. Therefore, these five principles do not apply to PIRPS and ORPS.

2.2 Oversight expectations for links between retail payment systems

The Eurosystem has followed a similar approach with OELRPSs: SIRPS have to comply fully with all of the oversight expectations, while the other two RPS categories (PIRPS and ORPS) have to comply with only a sub-set of oversight

9 Principle 12 – Exchange-of-value settlement systems – is not applicable to RPSs.

expectations or key considerations. The selection of applicable OELRPSs is based on a comparison between the OELRPSs and PFMIs: whenever a PFMI and related key considerations are applicable, the corresponding oversight expectation and related key issues also apply.

The result is that all eight OELRPSs apply to PIRPS, while only seven apply to ORPS, the exception being Expectation 7 on governance, owing to the usually less complex organisational structure of ORPS (see Table 2). Of the seven oversight expectations that apply to both PIRPS and ORPS, six apply with the same level of strictness (i.e. the same key issues apply) owing to their general scope and the fact that they represent basic requirements for any sound link between RPSs. The exception is Expectation 5 concerning access criteria, for which there is a slight differentiation at the level of key issues, owing to the limited reach of ORPS (see Annex 2).

In one respect, money settlements, the OELRPS is stricter than the corresponding PFMI. ORPS must comply with Expectation 4, key consideration 3 “The assets used for settlement via links should carry little or no credit or liquidity risk”, whereas PFMI 9 is not applicable to ORPS. The reason for this lies in an inherent risk in links: a link involves several RPSs whose participants, despite the fact that not all of them have a direct relationship with or knowledge of each other, may be impacted by a defaulting participant, system or settlement agent.

Table 2
Oversight expectations for links

Oversight expectations for links	SIRPS	PIRPS	ORPS
Total expectations	8	8	7
Expectation 1: General	X	X	X
Expectation 2: Legal risk	X	X	X
Expectation 3: Operational risk	X	X	X
Expectation 4: Financial risk	X	X	X
Expectation 5: Access criteria	X	X	X
Expectation 6: Efficiency	X	X	X
Expectation 7: Governance	X	X	
Expectation 8: Indirect and relayed links	X	X	X

Given that links can involve RPSs from different categories (e.g. a link between a SIRPS and a PIRPS), basing the selection of applicable oversight expectations on the RPS category can create asymmetry: the same link might be assessed against all oversight expectations and key issues on one side, but only against some of them on the other side. This asymmetry is, however, considered acceptable, given that all but one of the oversight expectations apply to all RPS categories (see Table 2) and there is only very slight differentiation between categories at the level of key issues.

3 Organisation of oversight activity

For the purpose of conducting oversight of individual RPSs, including collection and assessment of information and possible measures aimed at inducing change, the Eurosystem assigns the lead role to the central bank considered best placed for the task either by virtue of its proximity to the overseen entity (e.g. where the system is legally incorporated in its jurisdiction) or because national laws attribute specific oversight responsibilities to the central bank concerned, subject to any Treaty-based requirements. This is typically the case for systems with a clear national anchor. For systems that have no national anchor, the body entrusted with oversight responsibility is the NCB of the country in which the system is legally incorporated, unless the Governing Council of the ECB decides otherwise and assigns primary oversight responsibilities to the ECB.

Changes have occurred in the retail market over the last few years as a result of financial integration, giving RPSs an increasing European and international reach, and this process is likely to continue. Increasing integration among retail infrastructures makes it necessary to enhance the coordination of national oversight arrangements and to increase the common oversight activities.

The operations of ESIRPS extend significantly beyond the scope of interest of any individual central bank (whether an NCB or the ECB) and, by definition, ESIRPS are deemed to be of interest to the Eurosystem as a whole. Accordingly, although the oversight activities for an ESIRPS will continue to be directed and coordinated by the competent authority, which is the central bank recognised as the lead overseer under the Eurosystem Oversight Policy Framework, any other Eurosystem central bank could also be involved.

In some cases, a non-ESIRPS retail payment system could also be of interest to more than one jurisdiction. In such cases, oversight arrangements would be set up between the lead overseer and the other relevant Eurosystem central banks. These arrangements should be efficient and effective, with the ultimate goal of ensuring consistent and comprehensive oversight.

Annex 1
Applicable principles and key considerations

Key considerations (KCs)		PIRPS	ORPS
Principle 1: Legal basis		X (5 KCs)	X (5 KCs)
1.	*The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.*	*	*
2.	*An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.*	*	*
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.*	*	*
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.*	*	*
5.	*An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.*	*	*
Principle 2: Governance		X (2 KCs)	X (1 KC)
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.*		
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.*	*	*
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.*		
4.	*The board should contain suitable members with the appropriate skills and incentives to fulfil its multiple roles. This typically requires the inclusion of non-executive board member(s).*		
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.*		
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.*		
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.*	*	
Principle 3: Framework for the comprehensive management of risks		X (1 KC)	X (1 KC)
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.*	*	*
2.	*An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.*		
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.*		
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.*		
Principle 4: Credit risk			
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.*		
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.*		
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.*		
4.	*An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.*		
Principle 5: Collateral			
1.	*An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.*		
2.	*An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.*		
3.	*In order to reduce the need for procyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.*		
4.	*An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.*		

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.*		
6.	*An FMI should use a collateral management system that is well-designed and operationally flexible.*		
Principle 7: Liquidity risk			
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.*		
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.*		
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.*		
4.	*For the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.*		
5.	*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.*		
6.	*An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, a liquidity provider's potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.*		
7.	*An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.*		
8.	*An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.*		
9.	*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.*		
Principle 8: Settlement finality		**X (2 KCs)**	**X (2 KCs)**
1.	*An FMI's rules and procedures should clearly define the point at which settlement is final.*	*	*
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.*		
3.	*An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.*	*	*
Principle 9: Money settlements		**X (5 KCs)**	
1.	*An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.*	*	
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.*	*	
3.	*If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.*	*	
4.	*If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.*	*	
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, and 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.*	*	
Principle 13: Participant-default rules and procedures		**X (3 KCs)**	**X (2 KCs)**
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.*	*	*
2.	*An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.*	*	*
3.	*An FMI should publicly disclose key aspects of its default rules and procedures.*	*	
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.		
Principle 15: General business risk		**X (5 KCs)**	
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.*	*	
2.	*An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.*	*	
3.	*An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.*	*	
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.*	*	
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.*	*	
Principle 16: Custody and investment risks			
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.*		
2.	*An FMI should have prompt access to its assets and the assets provided by participants, when required.*		
3.	*An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.*		
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.*		
Principle 17: Operational risk		**X (3 KCs)**	**X (3 KCs)**
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.*	*	*
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.*		
3.	*An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.*	*	*
4.	*An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.*		
5.	*An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.*	*	*
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.*		
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.*		
Principle 18: Access and participation requirements		**X (3 KCs)**	**X (2 KCs)**
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.*	*	*
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.*	*	
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.*	*	*
Principle 19: Tiered participation arrangements			
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.*		
2.	*An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.*		
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.*		
4.	*An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.*		
Principle 21: Efficiency and effectiveness		**X (1 KC)**	**X (1 KC)**
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.*	*	*
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.*		
3.	*An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.*		

Principle 22: Communication procedures and standards		**X (1 KC)**	
1.	*An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.*	*	
Principle 23: Disclosure of rules, key procedures, and market data		**X (3 KCs)**	**X (3 KCs)**
2.	*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.*	*	*
3.	*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.*	*	*
4.	*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.*		
5.	*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.*	*	*
6.	*An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO Disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.*		

Annex 2
Applicable oversight expectations for links and key considerations

Oversight expectations for links	Equivalent PFMI	PIRPS	ORPS
General I) An RPS that establishes a link with one or more other RPSs should identify, monitor, and manage link-related risks.		X (4 KCs)	X (4 KCs)
1. An RPS should identify and asses all potential sources of risk arising from a link arrangement before entering into it and on an ongoing basis once the link is established.	P20, KCs 1, 2	*	*
2. An RPS participating in a link should be able to meet all of its obligations to the linked RPSs and to its participants in a timely manner.	P20, KCs 1, 2	*	*
3. An RPS that establishes multiple links should ensure that the risks generated in one link do not spill over and affect the soundness of the other links and RPSs.	P20, KCs 1, 2	*	*
4. Link arrangements should be designed in such a way that each RPS is able to continue to observe other applicable oversight principles.	P20, KCs 1, 2	*	*
Legal risk II) A link should have a well-founded, clear and transparent legal basis that is enforceable in all relevant jurisdictions, supports its design and provides adequate protection to the RPSs and their participants in the operation of the link.		X (5 KCs)	X (5 KCs)
1. The legal framework (laws, regulations, rules and procedures) applicable to the linked RPSs and to the link itself should provide a high degree of certainty for each aspect of the link functioning in all relevant jurisdictions.	P1, KC 1	*	*
2. The rules, procedures and contracts governing the link should be clear, understandable and consistent with relevant laws and regulations. They should be readily available as appropriate for all parties with a legitimate interest.	P1, KC 2 P23, KC 1	*	*
3. The rules, procedures and contracts governing the link should be complete, valid, and enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken under such rules and procedures will not be stayed, voided, or reversed.	P1, KC 4	*	*
4. Linked RPSs should identify and mitigate the risks arising from any potential conflicts of laws across jurisdictions.	P1, KC 5	*	*
5. Linked RPSs should comply with the applicable regulatory frameworks.	-	*	*
Operational risk III) RPSs should carefully assess the operational risks related to their links to ensure information security as well as scalability and reliability of IT and related resources.		X (3 KCs)	X (3 KCs)
1. The scope of RPS information security policy and requirements should cover the link arrangements.	P17, KC 5	*	*
2. The operational service level of the link should be agreed by the linked RPS and communicated to all relevant parties.	P17, KC 3	*	*
3. RPSs should ensure that the risk management arrangements and processing capacity are sufficiently scalable and reliable to operate the link for both the current and projected peak volumes of activity processed over the link.	P17, KC 4		
4. The functioning of the link should be appropriately tested and monitored, and incidents should be logged and followed up. Linked RPSs and all parties involved should agree on business continuity arrangements for the link.	P17, KCs 1, 2, 3, 6	*	*
Financial risk IV) Linked RPSs should closely monitor and effectively measure and manage the financial risks arising from the link arrangement.		X (2 KCs)	X (2 KCs)
1. RPSs should have a clear understanding of the impact the link has on each of the financial risks they incur.	P4, KCs 1, 2; P7, KCs 1, 2		
2. The system's rules and procedures should enable participants to have a clear understanding of the impact the link has on each of the financial risks they incur.	P23, KC 2		
3. The assets used for settlement via links should carry little or no credit or liquidity risk.	P9, KC 2	*	*
4. Payments exchanged via a link should be settled promptly, preferably on an intra-day basis.	P8, KC 2		
5. The terms of the link agreement should ensure adequate arrangements for managing and containing the risks associated with the inability of one of the RPS's participants to fulfill its obligations promptly, especially in the event that a netting process takes place.	P13, KCs 1, 2	*	*
Access criteria V) An RPS should define objective criteria which permit fair access for other RPSs that request the establishment of a link.		X (5 KCs)	X (2 KCs)
1. Access criteria should be clear, objective and non-discriminatory. They should be publicly disclosed.	P18, KCs 1, 2	*	
2. Access criteria should be justified in terms of the safety and efficiency of the system, as well as the broader financial markets.	P18, KC 2	*	
3. Access criteria can be tailored to specific kinds of link (direct, indirect and relayed) on the basis of the risks each kind of such a link poses to the RPS and its participants.	P18, KC 2	*	
4. An RPS that refuses to establish a link should provide a written explanation to the applicant.	-	*	*
5. An RPS involved in a link should ensure that price-setting is non-discriminatory and transparent.	P23, KC 4		
6. Exit rules and procedures should be defined.	P18, KC 3	*	*
Efficiency VI) A link should meet the requirements of RPS participants and the markets it serves.		X (1 KC)	X (1 KC)
1. An RPS should have clearly defined, measurable and achievable goals and objectives concerning the functioning of links, e.g. in the areas of minimum service levels, risk management expectations and business priorities. An RPS should have established mechanisms for the regular review of the efficiency and effectiveness of its links.	P21, KCs 2, 3		
2. A link should be designed to meet current and future needs of its participants and the markets it serves.	P21, KC 1	*	*

3. The establishment of links should not put the balance of RPSs at risk in terms of risk management and efficiency.	-		
Governance VII) The governance arrangements related to the establishment and operation of the link should be clear and transparent, promote the safety and efficiency of links, and support the objectives of relevant stakeholders and relevant public interest considerations.		X (1 KC)	
1. The management of the RPS involved in a link should formulate a clear strategy on the establishment of links which should be disclosed to owners, relevant authorities, users and, at a more general level, other RPSs.	P2, KC 7	*	
2. An RPS should have objectives that place a high priority on the safety and efficiency of the link and explicitly support the public interest.	P2, KC 1		
3. Governance arrangements should ensure whether a decision to establish a link appropriately reflects the objectives and interests of the relevant stakeholders and, if so, how.	P2, KC 7		
4. An RPS involved in a link should preferably implement formalised mechanisms for sharing relevant information with the relevant stakeholders and consult them when needed.	P2, KC 7		
Indirect and relayed links VIII) An RPS that uses an intermediary to operate a link with another RPS should measure, monitor and manage the additional risks (including legal, financial and operational risks) arising from the use of an intermediary.		X (4 KCs)	X (4 KCs)
1. Before the establishment of an indirect or relayed link, an RPS should analyse all the risks related to intermediation in the exchange of payments.	P3, KC 1	*	*
2. An RPS that uses an intermediary to operate a link with another RPS should measure, monitor and manage the additional legal risks arising from the use of an intermediary.	P1	*	*
3. RPSs should identify and mitigate operational risks introduced by the intermediary.	P17	*	*
4. The RPS involved in an indirect or relayed link should monitor the role and financial soundness of any intermediary.	P3, P4, P7		
5. In indirect and relayed links, linked RPSs should ensure that the intermediary does not unduly restrict usage of the link by any participant.	P18, KC 1	*	*
6. The efficiency and effectiveness of the indirect and relayed links should be periodically assessed and compared with the alternative channels of payment exchange, e.g. direct links.	P21, KC 3		