Committee on Payment and Settlement Systems

Technical Committee of the International Organization of Securities Commissions

Disclosure framework for financial market infrastructures

Consultative report

April 2012

BANK FOR INTERNATIONAL SETTLEMENTS

OICU-IOSCO

This publication is available on the BIS website (www.bis.org) and the IOSCO website (www.iosco.org).

ISBN 92-9197-110-3 (online)

This disclosure framework is being issued now for public consultation. Comments should be sent **by 15 June 2012** to both the CPSS secretariat (cpss@bis.org) and the IOSCO secretariat (fmi@iosco.org). The comments will be published on the websites of the BIS and IOSCO unless commentators have requested otherwise.

A cover note, published simultaneously and also available on the BIS and IOSCO websites, provides background information on why the disclosure framework has been issued and sets out some specific points on which comments are particularly requested.

Contents

1 Introduction

Clear and comprehensive disclosures by financial market infrastructures (FMIs) support sound decision making by market participants, authorities, and the public. Such disclosures also support the main public policy objectives of the CPSS and IOSCO to enhance the safety and efficiency in payment, clearing, settlement, and recording arrangements, and more broadly, limit systemic risk and foster financial stability and transparency.

This disclosure framework was prepared to supplement the CPSS-IOSCO *Principles for financial market infrastructures* (PFMI report) and to assist FMIs in providing the comprehensive level of disclosure that is expected of them under Principle 23 on disclosure of rules, key procedures, and market data. In particular, FMIs should provide responses that are thorough and at an appropriate level of detail in order to:

(1) provide substantive descriptions of key risks, policies, controls, rules, and procedures on a principle-by-principle basis, as required by Principle 23;

(2) provide current and prospective participants, other market participants, authorities, and the general public with a comprehensive understanding of the FMI, its role in the markets it serves, and the range of its relationships, interdependencies, and interactions (for example, its key links, key service providers, and participants); and

(3) improve transparency of FMI governance, risk-management, and operating structure in order to inform and facilitate comparisons among FMIs by current and prospective participants, other market participants, authorities, and the general public.

This disclosure framework was prepared in connection with the CPSS-IOSCO *Assessment methodology for the principles for FMIs and the responsibilities of authorities* to ensure a common framework for disclosure and assessment that will reduce burden on FMIs and provide assessors with a basic set of information from which to begin their assessments of FMIs.

2 FMI disclosure template

In order to facilitate the comparison of FMIs, an FMI's disclosure should follow the structure outlined below.

Responding institution: *[name of FMI]*
Jurisdiction: *[name of primary regulator(s)]*

The information provided in this disclosure is accurate as of *[date]*.
This disclosure can also be found at *[website address]*.
For further information, please contact *[contact details]*.

I. Executive summary

II. General description of the FMI: (a) organization; (b) market(s) served; and (c) key metrics

A. General description

An FMI should provide basic, concise descriptions of the services offered and functions performed by the FMI. A clear description of the typical lifecycle of the transaction clearing and settlement process under normal circumstances may also be useful for participants and the public. The information should highlight how the FMI processes a transaction, including the timeline of events, the validation and checks to which a transaction is subjected, and the responsibilities of the parties involved.

B. Key metrics

An FMI should provide key metrics of its services and operations. For example, an FMI should provide basic volume and value statistics by product type, average aggregate intraday exposures of the FMI to its participants, and statistics on the operational reliability of the FMI's systems. An FMI should also provide statistics related to the financial resources it holds to meet the requirements of the PFMI report. For CCPs, a detailed list of key metrics is provided in Annex 2.

III. Summary of major changes since last update

An FMI should provide a summary of changes since its last disclosure to highlight any material changes and updates to the FMI's design and services.

IV. Principle-by-principle narrative disclosure

An FMI should provide a narrative response for each applicable key consideration with sufficient detail and context, as well as any other appropriate supplementary information, to enable the reader to understand the FMI's approach to or method for observing the principles. Cross-references to publicly-available documents should be included, where relevant, to supplement the FMI's discussion. Section 3 and Annex 1 provide specific guidance on the expected content of an FMI's narrative responses.

V. Annex of additional publicly available resources

3 General instructions for completing the principle-by-principle narrative disclosure

1. An FMI should provide a comprehensive narrative disclosure for each key consideration for each relevant principle, including the key elements listed in the assessment methodology under each key consideration. For the disclosure to be considered complete, the FMI's response must cover at a minimum all of these key elements. The key considerations and key elements are reproduced below for convenience.

2. The applicability of each principle to particular types of FMIs is indicated in the following template (see Annex 1) by the dots in the tabs attached to the headline principles.

3. Charts and diagrams should be included wherever they would be helpful. All charts and diagrams should be accompanied by a description that enables them to be easily understood.

4. In cases where multiple responses to a question are needed, for example if an FMI offers multiple types of services (such as, an FMI that acts as both a CSD and SSS), the FMI should provide a response covering each service and indicate the extent to which each response is relevant.

5. An FMI should not simply refer to or quote rules or regulations as a response to the disclosure framework. As a supplement to a response, however, an FMI may indicate where relevant rules or regulations may be found.

6. When addressing the timing of events, an FMI should provide responses relative to the local time zone(s) where it is located.

7. An FMI should update its responses to the disclosure framework following material changes to the system or its environment. An FMI should perform a comprehensive review of its responses periodically (at least once every two years) to ensure that they are up to date.

8. An FMI should make its responses to the disclosure framework readily available through generally accessible media, such as the Internet.

9. An FMI should be careful not to disclose confidential information in its response.

Annex 1:
Template for the principle-by-principle narrative disclosure

	PS	CSD	SSS	CCP	TR
	●	●	●	●	●

Principle 1: Legal basis

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

Key consideration 1: *The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.*

Key elements:

- Identification of each material aspect of the FMI's activity requiring legal certainty.
- Identification of all relevant jurisdictions for the FMI's activities.
- Assurance of high degree of legal certainty for each aspect of the FMI's activities in all relevant jurisdictions.

Key consideration 2: *An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.*

Key elements:

- Clarity of the FMI's rules, procedures, and contracts.
- Consistency of the FMI's rules, procedures, and contracts with relevant laws and regulations.

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.*

Key element:

- Ability of the FMI to articulate the legal basis for its activities to relevant authorities, participants, and where relevant, participants' customers.

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.*

Key elements:

- Enforceability of the FMI's rules, procedures, and contracts in all relevant jurisdictions.
- Degree of certainty that actions taken under the FMI's rules, procedures, and contracts will not be voided, reversed, or subjected to stays.

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.*

Key elements:

- Identification of potential conflict of laws across jurisdictions.
- Mitigation of risks arising from conflict of laws across jurisdictions.

	PS	CSD	SSS	CCP	TR
	●	●	●	●	●

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.*

Key elements:

- Identification of the FMI's objectives.
- Prioritisation of safety and efficiency in the FMI's objectives.
- Explicit support for financial stability and other relevant public interests in the FMI's objectives.

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.*

Key elements:

- Identification of the governance arrangements under which the board and management operate.
- Identification of lines of responsibilities and accountability within the FMI.
- Disclosure of the identified governance arrangements.

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.*

Key elements:

- Identification of the roles and responsibilities of the FMI's board of directors (or equivalent).
- Identification of procedures for the functioning of the board.
- Identification of processes to identify, address, and manage conflicts of interest of members.
- Review of board's performance.

Key consideration 4: *The board should contain suitable members with the appropriate skills and incentives to fulfil its multiple roles. This typically requires the inclusion of non-executive board member(s).*

Key elements:

- Identification of the appropriate skill sets for board members.

- Identification of appropriate incentives for board members.
- Inclusion of non-executive board members.

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.*

Key elements:

- Identification of the roles and responsibilities of the FMI's management.
- Identification of skills, experience and integrity of management.

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.*

Key elements:

- Identification of the risk-management framework established by the board.
- Identification of board processes to determine, endorse, and regularly review the risk-management framework.
- Identification of authority, independence, resources, and access to the board of the risk-management and internal control functions in governance arrangements.

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.*

Key elements:

- Identification of how the legitimate interests of direct and indirect participants and other relevant stakeholders are reflected in the FMI's design, rules, strategy, and major decisions.
- Identification of how the FMI discloses major decisions to relevant stakeholders and, where appropriate, the public.

	PS	CSD	SSS	CCP	TR
	●	●	●	●	●

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.*

Key elements:

- Identification of types of risk and risk-management policies and procedures.
- Identification of risk-management systems.
- Review of risk-management policies, procedures, and systems.

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.*

Key elements:

- Identification of incentives provided to the FMI's participants and their customers to manage and contain risk.
- Identification of information provided by the FMI to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.
- Review of the policies and procedures for allowing participants and their customers to manage and contain their risks.

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.*

Key elements:

- Identification of material risks that the FMI bears from and poses to other entities as a result of interdependencies.
- Development of risk-management tools that address risks arising from interdependencies with other entities.

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.*

Key elements:

- Identification of the scenarios that may potentially prevent the FMI from being able to provide its critical operations and services.
- Preparation of appropriate plans for recovery or orderly wind-down.

PS	CSD	SSS	CCP	TR
●		●	●	

Principle 4: Credit risk

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

Key consideration 1: *An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.*

Key elements:

- Establishment of a framework for managing credit exposures from participants.
- Establishment of a framework for managing credit risks from the FMI's payment, clearing, and settlement processes.

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.*

Key elements:

- Identification the FMI's sources of credit risk.
- Measuring and monitoring credit exposures.
- Use of tools to control credit risk.

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.*

Key elements:

- Coverage of current and potential future exposures to each participant.
- (For DNS payment systems and DNS SSSs where there is no settlement guarantee) Coverage of the exposures of the two participants and their affiliates that would create the largest aggregate exposure in the system.

Key consideration 4: *A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources (see Principle 5 on collateral and Principle 6 on margin). In addition, a CCP that is* *involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. In all cases, a CCP should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount of total financial resources it maintains.*

Key elements:

- Coverage of current and potential future exposures to each participant.
- Additional financial resources to cover a wide range of potential stress scenarios.
- Documentation and governance arrangements relating to total financial resources.

Key consideration 5: *A CCP should determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A CCP should have clear procedures to report the results of its stress tests to appropriate decision makers at the CCP and to use these results to evaluate the adequacy of and adjust its total financial resources. Stress tests should be performed daily using standard and predetermined parameters and assumptions. On at least a monthly basis, a CCP should perform a comprehensive and thorough analysis of stress testing scenarios, models, and underlying parameters and assumptions used to ensure they are appropriate for determining the CCP's required level of default protection in light of current and evolving market conditions. A CCP should perform this analysis of stress testing more frequently when the products cleared or markets served display high volatility, become less liquid, or when the size or concentration of positions held by a CCP's participants increases significantly. A full validation of a CCP's risk-management model should be performed at least annually.*

Key elements:

- Details of the CCP's total financial resources and stress testing program.
- Communication and use of stress testing results.
- Frequency of stress testing.
- Analysis of stress-testing scenarios, models, and underlying parameters and assumptions.
- Validation of the CCP's risk-management model.

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.*

Key element:

- Identification of scenarios for stress testing financial resources.

Key consideration 7: *An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.*

Key elements:

- Explicit rules and procedure to address fully any credit losses.
- Process for the replenishment of financial resources during a stress event.

	PS	CSD	SSS	CCP	TR
	●		●	●	

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.*

Key elements:

- Identification of acceptable collateral for the FMI.
- Tools available to the FMI to check acceptability of posted collateral.

Key consideration 2: *An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.*

Key elements:

- Identification of the FMI's valuation practices for collateral.
- Identification of the FMI's haircutting practices.

Key consideration 3: *In order to reduce the need for procyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.*

Key element:

- Establishment of stable and conservative haircuts to reduce the need for procyclical adjustments.

Key consideration 4: *An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.*

Key element:

- Identification of policies and procedures to avoid the concentration of certain assets held as collateral.

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.*

Key elements:

- Identification of risks resulting from accepting cross-border collateral.
- Mitigation of risks from accepting cross-border collateral.
- Ability of the FMI to ensure cross-border collateral can be used in a timely manner.

Key consideration 6: *An FMI should use a collateral management system that is well-designed and operationally flexible.*

Key elements:

- Design of the FMI's collateral management system.
- Operational flexibility of the FMI's collateral management system.

PS	CSD	SSS	CCP	TR
			●	

Principle 6: Margin

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

Key consideration 1: *A CCP should have a margin system that establishes margin levels commensurate with the risks and particular attributes of each product, portfolio, and market it serves.*

Key elements:

- Framework of margin system.
- Determinants of credit exposure and margin requirements.
- Documentation of the margin methodology.
- Timeliness and possession of margin payments.

Key consideration 2: *A CCP should have a reliable source of timely price data for its margin system. A CCP should also have procedures and sound valuation models for addressing circumstances in which pricing data are not readily available or reliable.*

Key elements:

- Reliability of price data for margin systems.
- Identification of valuation models for calculating margin requirements when market prices are not readily available or reliable.

Key consideration 3: *A CCP should adopt initial margin models and parameters that are risk-based and generate margin requirements sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of positions following a participant default. Initial margin should meet an established single-tailed confidence level of at least 99 percent with respect to the estimated distribution of future exposure. For a CCP that calculates margin at the portfolio level, this requirement applies to each portfolio's distribution of future exposure. For a CCP that calculates margin at more-granular levels, such as at the subportfolio level or by product, the requirement must be met for the corresponding distributions of future exposure. The model should (a) use a conservative estimate of the time horizons for the effective hedging or close out of the particular types of products cleared by the CCP (including in stressed market conditions), (b) have an appropriate method for measuring credit exposure that accounts for relevant product risk factors and portfolio effects across products, and (c) to the extent practicable and prudent, limit the need for destabilising, procyclical changes.*

Key elements:

- Features of the initial margin methodology.
- Close out and sample periods for margin model.
- Procyclicality and specific wrong-way risk in the CCP's margin system.

Key consideration 4: *A CCP should mark participant positions to market and collect variation margin at least daily to limit the build-up of current exposures. A CCP should have* *the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants.*

Key elements:

- Features of the variation margin methodology.
- Determination of the CCP's authority and operational capacity to make intraday calls and payments, both scheduled and unscheduled, to participants.

Key consideration 5: *In calculating margin requirements, a CCP may allow offsets or reductions in required margin across products that it clears or between products that it and another CCP clear, if the risk of one product is significantly and reliably correlated with the risk of the other product. Where two or more CCPs are authorised to offer cross-margining, they must have appropriate safeguards and harmonised overall risk-management systems.*

Key elements:

- Identification of methodology used for offsets or reductions in margin requirements.
- Robustness of the methodology.
- Identification of risks from cross-margining and implementation of appropriate safeguards and harmonised risk-management programmes at the CCPs.

Key consideration 6: *A CCP should analyse and monitor its model performance and overall margin coverage by conducting rigorous daily backtesting and at least monthly, and more-frequent where appropriate, sensitivity analysis. A CCP should regularly conduct an assessment of the theoretical and empirical properties of its margin model for all products it clears. In conducting sensitivity analysis of the model's coverage, a CCP should take into account a wide range of parameters and assumptions that reflect possible market conditions, including the most-volatile periods that have been experienced by the markets it serves and extreme changes in the correlations between prices.*

Key elements:

- Margin model performance.
- Sensitivity analysis of model performance and overall margin coverage.
- Disclosure of backtesting and sensitivity analysis results.

Key consideration 7: *A CCP should regularly review and validate its margin system.*

Key element:

- Regular review and validation of the margin system.

	PS	CSD	SSS	CCP	TR
	●		●	●	

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.*

Key elements:

- Identification of liquidity risks in each currency.
- Establishment of a framework for measuring, monitoring, and managing liquidity risks in each currency.

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.*

Key element:

- Identification of operational and analytical tools to identify, measure, and monitor settlement and funding flows on an ongoing and timely basis.

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.*

Key elements:

- Quantification of the minimum liquidity resource requirement in each currency.
- Quantification of additional liquidity resource requirements.

Key consideration 4: *A CCP should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments, and meet other payment obligations on time with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources sufficient to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions.*

Key elements:

- Minimum liquidity resource requirement in each currency to cover a participant default.
- Additional minimum liquidity resource requirements.
- Consideration to cover the default of two participants by a CCP involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions.

Key consideration 5: *For the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.*

Key elements:

- Composition of qualifying liquid resources.
- Coverage and availability of qualifying liquid resources.

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.*

Key elements:

- Composition of supplemental liquid resources.
- Use, coverage, and availability of supplemental liquidity resources.

Key consideration 7: *An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, a liquidity provider's potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.*

Key elements:

- Identification of the FMI's minimum required qualifying liquid resources.
- Due diligence by the FMI to assess the sufficiency of information for each liquidity provider to understand and to manage its associated liquidity risks.

- Due diligence by the FMI to assess the capacity of each liquidity provider to perform as required under its commitment.

Key consideration 8: *An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.*

Key elements:

- Access to central bank accounts, payment services, or securities services.
- Use of central bank services to enhance management of liquidity risk.

Key consideration 9: *An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.*

Key elements:

- Identification of the FMI's stress testing program.
- Communication and use of stress testing results.
- Analysis of stress-testing scenarios, models, and underlying parameters and assumptions.
- Documentation and governance.

Key consideration 10: *An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.*

Key elements:

- Identification of explicit rules and procedures to enable the FMI to settle following any individual or combined default among its participants.
- Identification of a process to replenish any liquidity resources employed during a stress event.
- Documentation and communication.

	PS	CSD	SSS	CCP	TR
	●		●	●	

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.*

Key elements:

- Identification of the point at which settlement is final based on the FMI's rules and procedures.
- Clarity of the documentation.

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.*

Key elements:

- Occurrence of final settlement no later than the end of the value date.
- Occurrence of intraday or real-time final settlement.
- Consideration of the potential risk-reducing benefits of changing current processes to adopt RTGS, to adopt multiple-batch processing, and/or to complete final settlement earlier in the day, as applicable.

Key consideration 3: *An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.*

Key elements:

- Identification of the points after which unsettled payment, transfer instructions, or other obligations may not be revoked by a participant.
- Clarity of the documentation.

	PS	CSD	SSS	CCP	TR
	●		●	●	

Principle 9: Money settlements

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

Key consideration 1: *An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.*

Key element:

- Identification of money settlement assets.

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.*

Key element:

- Credit or liquidity risk of settlement assets used for money settlement.

Key consideration 3: *If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.*

Key elements:

- Identification of strict criteria for settlement banks.
- Assessment of the FMI's monitoring of settlement banks' adherence to the criteria mentioned in KE 1.
- Management of the concentration of credit and liquidity risks to the commercial settlement banks.

Key consideration 4: *If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.*

Key element:

- Risks associated with money settlements on the books of the FMI.

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.*

Key element:

- Provisions of the FMI's legal agreements with its settlement banks.

PS	CSD	SSS	CCP	TR
	●	●	●	

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.*

Key element:

- Identification and documentation of the FMI's obligations with respect to the delivery of physical instruments or commodities.

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.*

Key elements:

- Identification, management, and monitoring of the risks and costs of the storage and delivery of physical instruments or commodities.
- Matching participants for delivery and receipt for FMIs serving commodity markets.

	PS	CSD	SSS	CCP	TR
		●			

Principle 11: Central securities depositories

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

Key consideration 1: *A CSD should have appropriate rules, procedures, and controls, including robust accounting practices, to safeguard the rights of securities issuers and holders, prevent the unauthorised creation or deletion of securities, and conduct periodic and at least daily reconciliation of securities issues it maintains.*

Key elements:

- Rules, procedures, and controls to safeguard the rights of securities issuers and holders (including accounting practices).
- Rules, procedures, and controls to prevent the unauthorised creation or deletion of securities.
- Rules, procedures, and controls for conducting periodic and at least daily reconciliation of securities issues.

Key consideration 2: *A CSD should prohibit overdrafts and debit balances in securities accounts.*

Key element:

- Prohibition of overdrafts or debit balances in securities accounts.

Key consideration 3: *A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry. Where appropriate, a CSD should provide incentives to immobilise or dematerialise securities.*

Key element:

- Immobilisation or dematerialisation of securities.

Key consideration 4: *A CSD should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.*

Key element:

- Rules and procedures for protecting assets from custody risk.

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.*

Key element:

- Identification of segregation mechanisms for securities.

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.*

Key element:

- Identification, measurement, monitoring, and management of risks to the CSD deriving from other activities it may perform.

PS	CSD	SSS	CCP	TR
●		●	●	

Principle 12: Exchange-of-value settlement systems

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

Key consideration 1: *An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.*

Key elements:

- Elimination of principal risk by linking the two settlement obligations.
- Achievement of final settlement of two linked obligations.

PS	CSD	SSS	CCP	TR
●	●	●	●	

Principle 13: Participant-default rules and procedures

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

Key consideration 1: *An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.*

Key elements:

- Identification of default rules and procedures.
- Use and sequencing of financial resources.
- Identification of default rules and procedures that address the replenishment of resources following a participant default.

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.*

Key element:

- Preparation of an FMI to implement its default rules and procedures.

Key consideration 3: *An FMI should publicly disclose key aspects of its default rules and procedures.*

Key element:

- Disclosure of key aspects of default rules and procedures to the public.

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.*

Key element:

- Testing and review of the default procedures with participants and other stakeholders.

	PS	CSD	SSS	CCP	TR
				●	

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.*

Key elements:

- Identification of the segregation and portability arrangements that protect customer positions and related collateral.
- Legal support for such segregation and portability arrangements under applicable law.

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.*

Key elements:

- Identification of the account structure for positions of a participant's customers and related collateral.
- Ability of the CCP to readily identify positions of its participants' customers and to segregate related collateral.

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.*

Key element:

- Identification of the CCP's portability arrangement.

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, that may impair its ability to segregate or port a participant's customers' positions and related collateral.*

Key elements:

- Disclosure of the rules, policies, and procedures relating to the segregation and portability of a participant's customers' positions and related collateral.
- Disclosure of any constraints that may impair the CCP's ability to segregate or port a participant's customers' positions and collateral.

	PS	CSD	SSS	CCP	TR
	●	●	●	●	●

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.*

Key element:

- Management and control systems to identify, monitor, and manage general business risks.

Key consideration 2: *An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.*

Key element:

- Amount of liquid net assets funded by equity held by the FMI.

Key consideration 3: *An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.*

Key elements:

- Identification of a viable plan to achieve a recovery or orderly wind-down.
- Minimum holdings of liquid net assets funded by equity.
- Inclusion of capital held under international risk-based capital standards.

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.*

Key element:

- Identification of assets to cover general business risk.

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.*

Key elements:

- Identification of a viable plan for raising additional equity capital.
- Approval of the plan to replenish capital by the FMI's board of directors (or equivalent).

	PS	CSD	SSS	CCP	TR
	●	●	●	●	

Principle 16: Custody and investment risks

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

Key consideration 1: *An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.*

Key elements:

- Characteristics of the entities at which the FMI holds it assets.
- Ability of the entities to protect the FMI's and its participants' assets.

Key consideration 2: *An FMI should have prompt access to its assets and the assets provided by participants, when required.*

Key element:

- Prompt access to the FMI's and its participants' 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.*

Key element:

- Evaluation of the FMI's exposure to its custodian banks.

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.*

Key elements:

- Investment strategy of the FMI.
- Disclosure of the FMI's investment strategy to participants.
- Characteristics of the FMI's investments.

PS	CSD	SSS	CCP	TR
●	●	●	●	●

Principle 17: Operational risk

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

Key consideration 1: *An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.*

Key elements:

- Identification of operational risk.
- Operational risk-management framework.

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.*

Key elements:

- Identification of roles and responsibilities for operational risk.
- Endorsement of the operational risk-management framework by board of directors (or equivalent).
- Auditing and testing.

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.*

Key elements:

- Operational reliability objectives.
- Policy to achieve the operational reliability objectives.

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.*

Key element:

- Scalable capacity.

Key consideration 5: *An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.*

Key elements:

- Physical security policies.
- Information security policies.

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.*

Key elements:

- Business continuity plan.
- Crisis management and communication.
- Adequate secondary site.
- Review and testing of business continuity arrangements.

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.*

Key elements:

- Identification, monitoring, and management of risks posed by participants, other FMIs, and service and utility providers.
- Identification, monitoring, and management of risks posed by the FMI to other FMIs.

	PS	CSD	SSS	CCP	TR
	●	●	●	●	●

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.*

Key element:

- Access policies of the FMI.

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.*

Key elements:

- Description of participation requirements.
- Impact of requirements on access.
- Disclosure of participation requirements.

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.*

Key elements:

- Monitoring of compliance with participation requirements.
- Procedures for facilitating the suspension and orderly exit of a participant that fails to meet participation requirements.

PS	CSD	SSS	CCP	TR
●	●	●	●	●

Principle 19: Tiered participation arrangements

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

Key consideration 1: *An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.*

Key element:

- Ability to gather and assess information on risks to the FMI arising from tiered participation arrangements.

Key consideration 2: *An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.*

Key element:

- Identification of dependencies between direct and indirect participants that can affect the FMI.

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.*

Key elements:

- Identification of key indirect participants.
- Management of the risks arising from transactions of key indirect participants.

Key consideration 4: *An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.*

Key elements:

- Review of risks arising from tiered participation arrangements.
- Implementation of mitigating actions.

	PS	CSD	SSS	CCP	TR
		●	●	●	●

Principle 20: FMI links

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

Key consideration 1: *Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.*

Key elements:

- Identification of potential sources of risk arising from prospective link arrangements.
- Identification, monitoring, and management of risk arising from established links.
- Effect of link arrangements on observance of other principles.

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.*

Key element:

- Legal basis to support operation of any link arrangements.

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.*

Key element:

- Measurement, monitoring, and management of credit and liquidity risk arising from linked CSDs.

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.*

Key element:

- Restrictions on provisional transfer of securities between linked CSDs.

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.*

Key element:

- Level of protection for investor CSD's participants.

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.*

Key element:

- Investor CSD's measurement, management, and monitoring of the risks arising from the use of an intermediary.

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.*

Key elements:

- Identification, assessment, and management of potential spill-over effects of a linked CCP's default.
- Identification, assessment, and management of the potential spill-over effects in case of networks of links between CCPs.

Key consideration 8: *Each CCP in a CCP link arrangement should be able to cover, at least on a daily basis, its current and potential future exposures to the linked CCP and its participants, if any, fully with a high degree of confidence without reducing the CCP's ability to fulfil its obligations to its own participants at any time.*

Key elements:

- Ability to cover exposures to the linked CCP.
- Contribution to linked CCP's default funds.
- Potential sharing of uncovered losses.

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.*

Key element:

- Assessment of operational risk from links to ensure scalability and reliability of IT and related resources.

PS	CSD	SSS	CCP	TR
●	●	●	●	●

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.*

Key element:

- Design of the FMI to meet the needs of its participants and the markets it serves.

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.*

Key element:

- FMI's goals and objectives.

Key consideration 3: *An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.*

Key element:

- FMI review of its efficiency and effectiveness.

	PS	CSD	SSS	CCP	TR
	●	●	●	●	●

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.*

Key elements:

- Use or accommodation of internationally accepted communication procedures.
- Use or accommodation of internationally accepted communication standards.

PS	CSD	SSS	CCP	TR
●	●	●	●	●

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, fees, and other material costs they incur by participating 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.*

Key elements:

- Clarity and comprehensiveness of rules and procedures.
- Disclosure of rules and procedures to participants.
- Disclosure of relevant rules and key procedures to the public.

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.*

Key elements:

- Description of the system's design and operations.
- Description of participants' rights and obligations.

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.*

Key element:

- FMI documentation and training for its 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.*

Key elements:

- Public disclosure of service fees and discounts.
- Description of priced services.

Key consideration 5: *An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO* Disclosure framework for financial market infrastructures*. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.*

Key elements:

- Completion and public disclosure of the CPSS-IOSCO *Disclosure framework for financial market infrastructures*.
- Public disclosure of other information.

PS	CSD	SSS	CCP	TR
				●

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.*

Key element:

- Provision of data to relevant authorities and the public.

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.*

Key element:

- Processes and procedures to provide data to relevant authorities.

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 analysed.*

Key elements:

- Information systems for the provision of current and historical data.
- Availability and format of data.

Annex 2:
Key metrics for CCPs

Margin	
Total collateral held – cash basis on which supplied (title-transfer or not)	
Total collateral held (non-cash)	
Proportions of non-cash collateral held by collateral type (%)	
List of eligible collateral accepted (Complete details in Principle 5)	
Frequency of routine margin collection	
Number of non-routine margin calls over last 12 months	
Value of routine margin collection vs. non-routine margin calls over last 12 months	
Summary description of margin methodology and representative list of factors that would cause margin requirements to change. Should include summary of netting arrangements across positions / products.	
The initial margin requirement that would result from simple specified example trades / portfolios [so that participants, and regulators and market could compare the output]	
Default fund	
Size of pre-paid DF, including any segmentation by, e.g., type of product	
Discussion of ability to call additional contributions from participants	
Explanation of the specific stress test or series of tests from which the size of the DF was derived. (Implicitly, more severe tests would be result in losses beyond the default capabilities of the CCP).	
Results of simple standardized stress tests, e.g., parallel shift in relevant curves	
Frequency of stress testing, back testing and model reviews/validation	
Capital	
Capital / own funds	
Amount of own funds is committed to waterfall	
Uncovered credit losses	
How these will be allocated	
Investment risk	
Policy on how margin and default fund invested	
Summary details of investments held at the CCPs own risk	
Summary measure of interest rate and fx risk in the investment portfolio	
Liquidity risk	
Coverage policy (cover one, cover two, etc.)	
Arrangements to cover liquidity needs in event of failure to pay	
Arrangements to manage uncovered liquidity shortfalls	
Segregation arrangements	
Whether clients are protected against simultaneous default of clearing member and fellow clients	