Singapore

This document provides citations of the relevant legislation, regulation, policy and guidance, and notes explaining the assigned ratings for all relevant Principles of a given jurisdiction, by FMI type. It is a direct download of all the information for one jurisdiction that is included in the online CPMI-IOSCO PFMI implementation database (www.bis.org/committees/cpmi/pfmi/l2-database and www.iosco.org/about/?subsection=cpmi_iosco).

It includes all Principles and all key considerations: for the ones where gaps were identified the last column provides details on key conclusions and recommendations. The online CPMI-IOSCO PFMI implementation database allows to search information by Principle across different jurisdictions.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	1.0	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.			Consistent	
CCP	1.1	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.	Notice on Financial Market Infrastructure Standards 3.1.1	Consistent	
CCP	1.2	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.	Notice on Financial Market Infrastructure Standards 3.1.2	Consistent	
CCP	1.3	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	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.	Notice on Financial Market Infrastructure Standards 3.1.3	Consistent	
CCP	1.4	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	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.	Notice on Financial Market Infrastructure Standards 3.1.4	Consistent	
CCP	1.5	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.	Notice on Financial Market Infrastructure Standards 3.1.5	Consistent	

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CCP	2.0	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.			Consistent	Recommendation: Where there are gaps/inconsistencies in language or requirements between the relevant regulations and notices and the PFMI, MAS should consider providing more clarity to CCPs with respect to minimum standards.
CCP	2.1	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.	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.	Notice on Financial Market Infrastructure Standards 3.2.1	Consistent	While the language used in Notice on Financial Market Infrastructure Standards 3.2.1 is closely aligned to the KC, the word “explicitly” was not included. The absence of an explicit requirement could render a CCP’s objectives subject to interpretation and thereby weaken the objectives with respect to financial stability and other relevant public interest considerations.
CCP	2.2	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.	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.	Notice on Financial Market Infrastructure Standards 3.2.2	Consistent	While the language used in Notice on Financial Market Infrastructure Standards 3.2.2 is closely aligned to the KC, it limits the referenced governance arrangements to those for its board of directors (or equivalent) and limits the referenced lines of responsibility and accountability to those between management and the board. As such, the requirements do not extend to lower staff levels. In practice, in accordance with the policy statement in the Monograph, MAS takes guidance from the PFMI explanatory note and MAS expects management to ensure clear and direct lines of responsibility and accountability, including for lower levels.
CCP	2.3	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.	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.	Notice on Financial Market Infrastructure Standards 3.2.3	Consistent	

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CCP	2.4	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.	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).	Securities and Futures Act, section 57(1)(i) and 81ZF(1) Securities and Futures Act, section 71(1) and 81ZF(2)	Consistent	The requirements in the referenced regulations do not explicitly require board members to have appropriate incentives and the board to have a mixture of skills of members to fulfil multiple roles of the board. In practice, in accordance with the policy statement in the monograph, MAS considers relevant aspects under KC4 (including the skills and incentives for the person to satisfy the board's multiple roles) in its regulatory approval process of the appointment of the board members.
CCP	2.5	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.	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.	Notice on Financial Market Infrastructure Standards 3.2.4	Consistent	
CCP	2.6	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.	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.	Notice on Financial Market Infrastructure Standards 3.2.5	Consistent	
CCP	2.7	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.	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.	Notice on Financial Market Infrastructure Standards 3.2.6	Consistent	
CCP	3.0	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.			Consistent	Recommendation: Where there are gaps/inconsistencies in language or requirements between the relevant regulations and notices and the PFMI, MAS should consider providing more clarity to CCPs with respect to minimum standards.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	3.1	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	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.	Notice on Financial Market Infrastructure Standards 3.3.1 Securities and Futures Act, section 59	Consistent	
CCP	3.2	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.	Notice on Financial Market Infrastructure Standards 3.3.2	Consistent	
CCP	3.3	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	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.	Notice on Financial Market Infrastructure Standards 3.3.3	Consistent	
CCP	3.4	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	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.	Securities and Futures (Clearing Facilities) Regulations, section 17 Securities and Futures Act, section 63 MAS Act, section 30AAZK	Consistent	MAS has not explicitly stated in its Securities and Futures (Clearing Facilities) Regulations that a CCP shall identify scenarios that may potentially prevent [the CCP] 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. In practice, MAS requires each CCP to have a recovery and orderly wind-down plan, and it assesses whether the CCP has an appropriate and effective plan. As part of this assessment, MAS determines whether the CCP identified scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern, and assessed the effectiveness of a full range of options for recovery or orderly winding-down.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	4.0	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.			Consistent	

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CCP	4.1	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.	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.	Notice on Financial Market Infrastructure Standards 3.4.1	Consistent	

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CCP	4.2	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.	An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.	Notice on Financial Market Infrastructure Standards 3.4.2	Consistent	

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CCP	4.4	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.	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.	Notice on Financial Market Infrastructure Standards 3.4.4 MAS Capital Conditions	Consistent	The AT notes that Singapore’s current requirements are consistent with respect to Cover 1, which is the currently applicable standard, given that no CCP in Singapore has a more complex risk profile or is considered systemically important in multiple jurisdictions.

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CCP	4.5	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.	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.	Notice on Financial Market Infrastructure Standards 3.4.5	Consistent	

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CCP	4.6	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.	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.	Notice on Financial Market Infrastructure Standards 3.4.6	Consistent	

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CCP	4.7	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.	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.	Notice on Financial Market Infrastructure Standards 3.4.7	Consistent	
CCP	5.0	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.			Consistent	
CCP	5.1	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.	An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.	Notice on Financial Market Infrastructure Standards 3.5.1	Consistent	

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CCP	5.2	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.	An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.	Notice on Financial Market Infrastructure Standards 3.5.2	Consistent	
CCP	5.3	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.	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.	Notice on Financial Market Infrastructure Standards 3.5.3	Consistent	
CCP	5.4	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.	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.	Notice on Financial Market Infrastructure Standards 3.5.4	Consistent	
CCP	5.5	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.	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.	Notice on Financial Market Infrastructure Standards 3.5.5	Consistent	
CCP	5.6	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.	An FMI should use a collateral management system that is well-designed and operationally flexible.	Notice on Financial Market Infrastructure Standards 3.5.6	Consistent	
CCP	6.0	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.			Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	6.1	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.	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.	Notice on Financial Market Infrastructure Standards 3.6.1	Consistent	
CCP	6.2	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.	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.	Notice on Financial Market Infrastructure Standards 3.6.2	Consistent	
CCP	6.3	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.	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.	Notice on Financial Market Infrastructure Standards 3.6.3	Consistent	

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CCP	6.4	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.	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.	Notice on Financial Market Infrastructure Standards 3.6.4	Consistent	
CCP	6.5	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.	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.	Notice on Financial Market Infrastructure Standards 3.6.5	Consistent	
CCP	6.6	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.	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.	Notice on Financial Market Infrastructure Standards 3.6.6	Consistent	
CCP	6.7	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.	A CCP should regularly review and validate its margin system.	Notice on Financial Market Infrastructure Standards 3.6.7	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	7.0	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.			Consistent	
CCP	7.1	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.	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.	Notice on Financial Market Infrastructure Standards 3.7.2	Consistent	
CCP	7.2	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.	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.	Notice on Financial Market Infrastructure Standards 3.7.3	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	7.4	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.	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.	Notice on Financial Market Infrastructure Standards 3.7.5	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	7.5	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.	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.	Notice on Financial Market Infrastructure Standards 3.7.1 Notice on Financial Market Infrastructure Standards 3.7.6	Consistent	
CCP	7.6	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.	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.	Notice on Financial Market Infrastructure Standards 3.7.7	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	7.7	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.	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.	Notice on Financial Market Infrastructure Standards 3.7.8	Consistent	
CCP	7.8	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.	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.	Notice on Financial Market Infrastructure Standards 3.7.9	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	7.9	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.	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.	Notice on Financial Market Infrastructure Standards 3.7.10	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	7.10	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.	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.	Notice on Financial Market Infrastructure Standards 3.7.11	Consistent	
CCP	8.0	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.			Consistent	
CCP	8.1	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.	An FMI's rules and procedures should clearly define the point at which settlement is final.	Notice on Financial Market Infrastructure Standards 3.8.1	Consistent	
CCP	8.2	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.	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.	Notice on Financial Market Infrastructure Standards 3.8.2	Consistent	
CCP	8.3	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.	An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.	Notice on Financial Market Infrastructure Standards 3.8.3	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	9.0	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.			Consistent	
CCP	9.1	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.	An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.	Notice on Financial Market Infrastructure Standards 3.9.1	Consistent	
CCP	9.2	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.	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.	Notice on Financial Market Infrastructure Standards 3.9.2	Consistent	
CCP	9.3	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.	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.	Notice on Financial Market Infrastructure Standards 3.9.3	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	9.4	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.	If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.	Notice on Financial Market Infrastructure Standards 3.9.4	Consistent	
CCP	9.5	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.	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.	Notice on Financial Market Infrastructure Standards 3.9.5	Consistent	
CCP	10.0	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.			Consistent	
CCP	10.1	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.	An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.	Notice on Financial Market Infrastructure Standards 3.10.1	Consistent	
CCP	10.2	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.	An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.	Notice on Financial Market Infrastructure Standards 3.10.2	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	12.0	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.			Consistent	
CCP	12.1	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.	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.	Notice on Financial Market Infrastructure Standards 3.12.1	Consistent	
CCP	13.0	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.			Consistent	
CCP	13.1	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.	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.	Notice on Financial Market Infrastructure Standards 3.13.1	Consistent	
CCP	13.2	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.	An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.	Notice on Financial Market Infrastructure Standards 3.13.2	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	13.3	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.	An FMI should publicly disclose key aspects of its default rules and procedures.	Notice on Financial Market Infrastructure Standards 3.13.3	Consistent	
CCP	13.4	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.	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.	Notice on Financial Market Infrastructure Standards 3.13.4	Consistent	
CCP	14.0	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.			Consistent	Recommendation: Where there are gaps/inconsistencies in language or requirements between the relevant regulations and the PFMI, MAS should consider providing more clarity to CCPs with respect to minimum standards.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	14.1	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.	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.	Notice on Financial Market Infrastructure Standards 3.14.1 Securities and Futures (Clearing Facilities) Regulations, section 23	Consistent	Notice on Financial Market Infrastructure Standards 3.14.1 is closely aligned to the KC except that the references to customer's collateral have been omitted. Securities and Futures (Clearing Facilities) Regulations, section 23 provides for the segregation and protection of customer's collateral in the event of insolvency of a participant, either (i) for an individual segregated account (on a book-keeping basis); or (ii) on a commingled basis with other customers (ie an omnibus account). However, Securities and Futures (Clearing Facilities) Regulations, section 23 does not appear to directly address portability of customer collateral. In practice, in accordance with the policy statement in the Monograph, MAS reviews a CCP's default management rules and processes and expects a CCP to have rules that permit it to port (i) a customer's collateral in an individual segregated account if the default is not caused by the customer itself, and (ii) customers' collateral in the omnibus account if the default is not caused by any customer in the omnibus account. In addition, consistent with KC 4, Notice on Financial Market Infrastructure Standards 3.14.4 requires a CCP to publicly disclose its rules, policies, and procedures relating to the portability of a participant's customers' positions and related collateral. Therefore, the omission of a reference to the portability of customer's collateral does not materially affect the implementation of KC 1 in practice.
CCP	14.2	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.	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.	Notice on Financial Market Infrastructure Standards 3.14.2	Consistent	
CCP	14.3	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.	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.	Notice on Financial Market Infrastructure Standards 3.14.3	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	14.4	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.	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.	Notice on Financial Market Infrastructure Standards 3.14.4	Consistent	
CCP	15.0	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.			Consistent	Recommendation: Where there are gaps/inconsistencies in language or requirements between the relevant regulations and the PFMI, MAS should consider providing more clarity to CCPs with respect to minimum standards.
CCP	15.1	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.	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.	Notice on Financial Market Infrastructure Standards 3.15.1	Consistent	
CCP	15.2	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.	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.	Notice on Financial Market Infrastructure Standards 3.15.2	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	15.3	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.	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.	Securities and Futures (Clearing Facilities) Regulations, section 17 MAS Capital Conditions	Consistent	
CCP	15.4	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.	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.	MAS Capital Conditions	Consistent	MAS Capital Conditions do not provide a positive list of types of assets that qualify as “financial resources” to be held to cover general business risk, in particular, with respect to the level of credit quality. In practice, in accordance with its policy statement in the Monograph, MAS requires as part of its ongoing supervision that assets held to cover general business risk should be of high quality and sufficiently liquid.
CCP	15.5	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.	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.	Notice on Financial Market Infrastructure Standards 3.15.3	Consistent	
CCP	16.0	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.			Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	16.1	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.	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.	Notice on Financial Market Infrastructure Standards 3.16.1	Consistent	
CCP	16.2	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.	An FMI should have prompt access to its assets and the assets provided by participants, when required.	Notice on Financial Market Infrastructure Standards 3.16.2	Consistent	
CCP	16.3	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.	An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.	Notice on Financial Market Infrastructure Standards 3.16.3	Consistent	
CCP	16.4	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.	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.	Notice on Financial Market Infrastructure Standards 3.16.4	Consistent	
CCP	17.0	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.			Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	17.1	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.	An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.	Securities and Futures Act, section 59	Consistent	
CCP	17.2	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.	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.	Notice on Financial Market Infrastructure Standards 3.17.1	Consistent	
CCP	17.3	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.	An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.	Notice on Financial Market Infrastructure Standards 3.17.2	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	17.4	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.	An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.	Notice on Financial Market Infrastructure Standards 3.17.3	Consistent	
CCP	17.5	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.	An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.	Notice on Financial Market Infrastructure Standards 3.17.4	Consistent	
CCP	17.6	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.	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.	Securities and Futures (Clearing Facilities) Regulations, section 16 Notice on Financial Market Infrastructure Standards 3.17.5	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	17.7	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.	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.	Notice on Financial Market Infrastructure Standards 3.17.6	Consistent	
CCP	18.0	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.			Consistent	Recommendation: Where there are gaps/inconsistencies in language or requirements between the relevant regulations and the PFMI, MAS should consider providing more clarity to CCPs with respect to minimum standards.
CCP	18.1	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	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.	Securities and Futures Act, section 57(1)(d) Securities and Futures (Clearing Facilities) Regulations, section 29(a)	Consistent	
CCP	18.2	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	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.	Notice on Financial Market Infrastructure Standards 3.18.1	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	18.3	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	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.	Securities and Futures Act, section 57(1)(d) Securities and Futures (Clearing Facilities) Regulations, section 29(b)	Consistent	Securities and Futures (Clearing Facilities) Regulations, section 29(b) requires an ACH to include in its business rules requirements "providing for the expulsion, suspension or disciplining" of a member for a contravention of its business rules. However, it does not address procedures for facilitating an "orderly exit" of a suspended or expelled member nor does it address the public disclosure of relevant procedures. In practice, in accordance with the policy statement in the Monograph, MAS expects an ACH to further elaborate, in its rules, the treatment of the member's outstanding obligations to the ACH upon expulsion or suspension. Further, as the business rules of the ACH are subject to MAS' review, MAS will take guidance from the PFMI, including the need for the ACH to have rules to provide for the orderly exit of the participant.
CCP	19.0	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.			Consistent	
CCP	19.1	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	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.	Notice on Financial Market Infrastructure Standards 3.19.1	Consistent	
CCP	19.2	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.	Notice on Financial Market Infrastructure Standards 3.19.2	Consistent	
CCP	19.3	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	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.	Notice on Financial Market Infrastructure Standards 3.19.3	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	19.4	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.	Notice on Financial Market Infrastructure Standards 3.19.4	Consistent	
CCP	20.0	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.			Consistent	Recommendation: Where there are gaps/inconsistencies in language or requirements between the relevant regulations and the PFMI, MAS should providing more clarity to CCPs with respect to minimum standards.
CCP	20.1	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.	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.	Securities and Futures Act, section 59 Securities and Futures (Clearing Facilities) Regulations, section 11(3) and 12(1)(b) Notice on Financial Market Infrastructure Standards 3.20.1	Consistent	The referenced regulations and notice do not explicitly set the requirements that mirror/implement the first sentence of the KC. In practice, in accordance with its policy statement in the Monograph, MAS ensures as part of its approval process that a link will be established in compliance with the PFMI, including the need to identify and mitigate potential risks from the link.
CCP	20.2	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.	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.	Notice on Financial Market Infrastructure Standards 3.20.2	Consistent	
CCP	20.7	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.	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.	Notice on Financial Market Infrastructure Standards 3.20.3	Consistent	
CCP	20.8	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.	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.	Notice on Financial Market Infrastructure Standards 3.20.4	Consistent	
CCP	21.0	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.			Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	21.1	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	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.	Notice on Financial Market Infrastructure Standards 3.21.1	Consistent	
CCP	21.2	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	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.	Notice on Financial Market Infrastructure Standards 3.21.2	Consistent	
CCP	21.3	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.	Notice on Financial Market Infrastructure Standards 3.21.3	Consistent	
CCP	22.0	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.			Consistent	
CCP	22.1	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.	An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.	Notice on Financial Market Infrastructure Standards 3.22.1	Consistent	
CCP	23.0	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.			Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	23.1	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.	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.	Notice on Financial Market Infrastructure Standards 3.23.1	Consistent	
CCP	23.2	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.	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.	Notice on Financial Market Infrastructure Standards 3.23.2	Consistent	
CCP	23.3	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.	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.	Notice on Financial Market Infrastructure Standards 3.23.3	Consistent	
CCP	23.4	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.	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.	Notice on Financial Market Infrastructure Standards 3.23.4	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CCP	23.5	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.	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.	Notice on Financial Market Infrastructure Standards 3.23.5	Consistent	
CSD_SSS	1.0	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.			Consistent	
CSD_SSS	1.1	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.	SSS: Notice on Financial Market Infrastructure Standards 3.1.1 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.1.1 SSS/CSD owned and operated by MAS: Paragraph 2.2 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	1.2	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.	SSS: Notice on Financial Market Infrastructure Standards 3.1.2 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.1.2 SSS/CSD owned and operated by MAS: Paragraph 2.3 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	1.3	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.1.3 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.1.3 SSS/CSD owned and operated by MAS: Paragraph 2.4 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	1.4	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.1.4 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.1.4 SSS/CSD owned and operated by MAS: Paragraph 2.5 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	1.5	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.	SSS: Notice on Financial Market Infrastructure Standards 3.1.5 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.1.5 SSS/CSD owned and operated by MAS: Paragraph 2.6 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	2.0	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.			Consistent	Recommendation: Where there are gaps/inconsistencies in language or requirements between the relevant regulations and the PFMI, MAS should consider providing more clarity to SSSs with respect to minimum standards.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	2.1	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.2.1 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.2.1 SSS/CSD owned and operated by MAS: Paragraph 2.7 of the Standards for MAS-Operated FMIs	Consistent	While the wording used in the Notice on Financial Market Infrastructure Standards and Notice for Central Securities Depositories 3.2.1 is closely aligned to the KC, the word “explicitly” is not included. The absence of an explicit requirement could render a CSDs/SSSs objectives subject to interpretation and thereby weaken the objectives with respect to financial stability and other relevant public interest considerations.
CSD_SSS	2.2	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.2.2 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.2.2 SSS/CSD owned and operated by MAS: Paragraph 2.8 of the Standards for MAS-Operated FMIs	Consistent	SSS and CSD While the wording used in Notice on Financial Market Infrastructure Standards 3.2.2 and Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.2.2 is closely aligned to the KC, it limits the referenced governance arrangements to those for its board of directors (or equivalent) and limits the referenced lines of responsibility and accountability to those between management and the board. As such, the requirements do not extend to lower staff levels. In practice, in accordance with the policy statement in the Monograph, MAS takes guidance from the PFMI explanatory note and MAS expects management to ensure clear and direct lines of responsibility and accountability, including for lower levels.
CSD_SSS	2.3	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.2.3 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.2.3 SSS/CSD owned and operated by MAS: Paragraph 2.9 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	2.4	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.	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).	SSS: Securities and Futures Act, section 57(1)(i) and 81ZF(1); Securities and Futures Act, section 71(1) and 81ZF(2); Securities and Futures (Corporate Governance of Approved Exchanges, Approved Clearing Houses and Approved Holding Companies) Regulations, section 6(1); Securities and Futures (Corporate Governance of Approved Exchanges, Approved Clearing Houses and Approved Holding Companies) Regulations, section 2; Securities and Futures (Corporate Governance of Approved Exchanges, Approved Clearing Houses and Approved Holding Companies) Regulations, section 10 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.2.4 SSS/CSD owned and operated by MAS: Paragraph 2.10 of the Standards for MAS-Operated FMIs	Consistent	SSS The requirements in the referenced regulations do not explicitly require board members to have appropriate incentives and the board to ensure a mixture of skills of members to fulfil multiple roles of the board. In practice, in accordance with the policy statement in the monograph, MAS considers relevant aspects under KC4 (including the skills and incentives for the person to satisfy the board's multiple roles) in its regulatory approval process of the appointment of the board members.
CSD_SSS	2.5	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.2.4 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.2.5 SSS/CSD owned and operated by MAS: Paragraph 2.11 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	2.6	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.2.5 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.2.6 SSS/CSD owned and operated by MAS: Paragraph 2.12 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	2.7	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.2.6 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.2.7 SSS/CSD owned and operated by MAS: Paragraph 2.13 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	3.0	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.			Consistent	Recommendation: Where there are gaps/inconsistencies in language or requirements between the relevant regulations and the PFMI, MAS should consider providing more clarity to SSSs with respect to minimum standards.
CSD_SSS	3.1	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.3.1; Securities and Futures Act, section 59 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.3.1 SSS/CSD owned and operated by MAS: Paragraph 2.14 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	3.2	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.	SSS: Notice on Financial Market Infrastructure Standards 3.3.2 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.3.2 SSS/CSD owned and operated by MAS: Paragraph 2.15 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	3.3	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.3.3 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.3.3 SSS/CSD owned and operated by MAS: Paragraph 2.16 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	3.4	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	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.	SSS: Securities and Futures (Clearing Facilities) Regulations, section 17; Securities and Futures Act, section 63; MAS Act, section 30AAZK CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.3.4 SSS/CSD owned and operated by MAS: Not applicable for central bank-owned and operated FMIs as elaborated in the CPMI-IOSCO Guidance note on Application of the Principles for financial market infrastructures to central bank FMIs (August 2015).	Consistent	SSS MAS has not explicitly stated in its Securities and Futures (Clearing Facilities) Regulations that an SSS shall identify scenarios that may potentially prevent [the SSS] 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. In practice, MAS requires each SSS to have a recovery and orderly wind-down plan, and it assesses whether the SSS has an appropriate and effective plan. As part of this assessment, MAS determines whether the SSS identified scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern, and assessed the effectiveness of a full range of options for recovery or orderly winding-down. SSS/CSD owned and operated by MAS The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	4.0	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.		SSS owned and operated by MAS: As explained in paragraph 2.17 of the Standards for MAS-Operated FMIs, the implementation measures for this principle are strictly in respect of credit risk arising from MAS-operated FMIs' activities.	Consistent	SSS owned and operated by MAS The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	4.1	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.4.1 SSS owned and operated by MAS: Paragraph 2.18 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	4.2	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.	An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.	SSS: Notice on Financial Market Infrastructure Standards 3.4.2 SSS owned and operated by MAS: Paragraph 2.19 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	4.3	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.4.3 SSS owned and operated by MAS: Paragraph 2.20 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	4.7	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.4.7 SSS owned and operated by MAS: Paragraph 2.21 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	5.0	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.			Consistent	
CSD_SSS	5.1	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.	An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.	SSS: Notice on Financial Market Infrastructure Standards 3.5.1 SSS owned and operated by MAS: Paragraph 2.22 of the Standards for MAS-Operated FMIs.	Consistent	SSS owned and operated by MAS The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	5.2	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.	An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.	SSS: Notice on Financial Market Infrastructure Standards 3.5.2 SSS owned and operated by MAS: Paragraph 2.23 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	5.3	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.5.3 SSS owned and operated by MAS: Paragraph 2.24 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	5.4	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.5.4 SSS owned and operated by MAS: Paragraph 2.25 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	5.5	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.5.5 SSS owned and operated by MAS: Paragraph 2.26 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	5.6	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.	An FMI should use a collateral management system that is well-designed and operationally flexible.	SSS: Notice on Financial Market Infrastructure Standards 3.5.6 SSS owned and operated by MAS: Paragraph 2.27 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	7.0	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.			Consistent	
CSD_SSS	7.1	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.7.2 SSS owned and operated by MAS: Paragraph 2.28 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	7.2	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.7.3 SSS owned and operated by MAS: Paragraph 2.29 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	7.3	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.7.4 SSS owned and operated by MAS: Paragraph 2.30 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	7.5	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.7.1; Notice on Financial Market Infrastructure Standards 3.7.6 SSS owned and operated by MAS: Paragraph 2.31 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	7.6	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.7.7 SSS owned and operated by MAS: Paragraph 2.32 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	7.7	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.7.8 SSS owned and operated by MAS: Paragraph 2.33 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	7.8	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.7.9 SSS owned and operated by MAS: Paragraph 2.34 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	7.9	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.7.10 SSS owned and operated by MAS: Paragraph 2.35 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	7.10	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.7.11 SSS owned and operated by MAS: Paragraph 2.36 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	8.0	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.			Consistent	
CSD_SSS	8.1	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.	An FMI's rules and procedures should clearly define the point at which settlement is final.	SSS: Notice on Financial Market Infrastructure Standards 3.8.1 SSS owned and operated by MAS: Paragraph 2.37 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	8.2	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.8.2 SSS owned and operated by MAS: Paragraph 2.38 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	8.3	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.	An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.	SSS: Notice on Financial Market Infrastructure Standards 3.8.3 SSS owned and operated by MAS: Paragraph 2.39 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	9.0	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.			Consistent	
CSD_SSS	9.1	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.	An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.	SSS: Notice on Financial Market Infrastructure Standards 3.9.1 SSS owned and operated by MAS: Paragraph 2.40 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	9.2	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.9.2 SSS owned and operated by MAS: Paragraph 2.41 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	9.3	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.9.3 SSS owned and operated by MAS: Paragraph 2.42 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	9.4	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.	If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.	SSS: Notice on Financial Market Infrastructure Standards 3.9.4 SSS owned and operated by MAS: Paragraph 2.43 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	9.5	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.9.5 SSS owned and operated by MAS: Paragraph 2.44 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	10.0	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.			Consistent	
CSD_SSS	10.1	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.	An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.	SSS: Notice on Financial Market Infrastructure Standards 3.10.1 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.10.1 SSS/CSD owned and operated by MAS: Paragraph 2.45 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	10.2	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.	An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.	SSS: Notice on Financial Market Infrastructure Standards 3.10.2 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.10.2 SSS/CSD owned and operated by MAS: Paragraph 2.46 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	11.0	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.			Consistent	
CSD_SSS	11.1	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.	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.	CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.11.1 CSD owned and operated by MAS: Paragraph 2.47 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	11.2	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.	A CSD should prohibit overdrafts and debit balances in securities accounts.	CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.11.2 CSD owned and operated by MAS: Paragraph 2.48 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	11.3	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.	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.	CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.11.3 CSD owned and operated by MAS: Paragraph 2.49 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	11.4	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.	A CSD should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.	CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.11.4 CSD owned and operated by MAS: Paragraph 2.50 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	11.5	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.	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.	CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.11.5 CSD owned and operated by MAS: Paragraph 2.51 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	11.6	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.	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.	CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.11.6 CSD owned and operated by MAS: Paragraph 2.52 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	12.0	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.			Consistent	
CSD_SSS	12.1	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.12.1 SSS owned and operated by MAS: Paragraph 2.53 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	13.0	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.		SSS/CSD owned and operated by MAS: As explained in paragraph 2.54 of the Standards for MAS-Operated FMIs, the implementation measures for this principle are not intended to constrain MAS' policies and actions for maintaining financial stability including managing participant defaults.	Consistent	SSS/CSD owned and operated by MAS The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.
CSD_SSS	13.1	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.13.1 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.13.1 SSS/CSD owned and operated by MAS: Paragraph 2.55 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	13.2	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.	An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.	SSS: Notice on Financial Market Infrastructure Standards 3.13.2 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.13.2 SSS/CSD owned and operated by MAS: Paragraph 2.56 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	13.3	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.	An FMI should publicly disclose key aspects of its default rules and procedures.	SSS: Notice on Financial Market Infrastructure Standards 3.13.3 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.13.3 SSS/CSD owned and operated by MAS: Paragraph 2.57 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	13.4	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.13.4 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.13.4 SSS/CSD owned and operated by MAS: Paragraph 2.58 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	15.0	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.			Consistent	Recommendation: Where there are gaps/inconsistencies in language or requirements between the relevant regulations and the PFMI, MAS should consider providing more clarity to SSSs with respect to minimum standards.
CSD_SSS	15.1	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.15.1 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.15.1 SSS/CSD owned and operated by MAS: Paragraph 2.59 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	15.2	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.15.2 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.15.2 SSS/CSD owned and operated by MAS: Not applicable for central bank-owned and operated FMIs as explained in the PFMI and elaborated in the CPMI-IOSCO Guidance note on Application of the Principles for financial market infrastructures to central bank FMIs (August 2015).	Consistent	SSS/CSD owned and operated by MAS The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.
CSD_SSS	15.3	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.	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.	SSS: Securities and Futures (Clearing Facilities) Regulations, section 17; MAS Capital Conditions CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.15.3 SSS/CSD owned and operated by MAS: Not applicable for central bank-owned and operated FMIs as explained in the PFMI and elaborated in the CPMI-IOSCO note on Application of the Principles for financial market infrastructures to central bank FMIs (August 2015).	Consistent	SSS/CSD owned and operated by MAS The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	15.4	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.	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.	SSS: MAS Capital Conditions CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.15.4 SSS/CSD owned and operated by MAS: Not applicable for central bank-owned and operated FMIs as explained in the PFMI and elaborated in the CPMI-IOSCO note on Application of the Principles for financial market infrastructures to central bank FMIs (August 2015).	Consistent	SSS MAS Capital Conditions do not provide a positive list of types of assets that qualify as “financial resources” to be held to cover general business risk, in particular, with respect to the level of credit quality. In practice, in accordance with its policy statement in the Monograph, MAS requires as part of its ongoing supervision that assets held to cover general business risk should be of high quality and sufficiently liquid. SSS/CSD owned and operated by MAS The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.
CSD_SSS	15.5	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.15.3 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.15.5 SSS/CSD owned and operated by MAS: Not applicable for central bank-owned and operated FMIs as explained in the PFMI and elaborated in the CPMI-IOSCO note on Application of the Principles for financial market infrastructures to central bank FMIs (August 2015).	Consistent	SSS/CSD owned and operated by MAS The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.
CSD_SSS	16.0	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.		SSS/CSD owned and operated by MAS: As explained in paragraph 2.60 of the Standards for MAS-Operated FMIs, the implementation measures for this principle are not intended to constrain MAS’ investment policies (including that for reserve management) or the disclosure of those policies.	Consistent	SSS/CSD owned and operated by MAS The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	16.1	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.16.1 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.16.1 SSS/CSD owned and operated by MAS: Paragraph 2.61 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	16.2	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.	An FMI should have prompt access to its assets and the assets provided by participants, when required.	SSS: Notice on Financial Market Infrastructure Standards 3.16.2 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.16.2 SSS/CSD owned and operated by MAS: Paragraph 2.62 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	16.3	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.	An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.	SSS: Notice on Financial Market Infrastructure Standards 3.16.3 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.16.3 SSS/CSD owned and operated by MAS: Paragraph 2.63 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	16.4	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.16.4 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.16.4 SSS/CSD owned and operated by MAS: Paragraph 2.64 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	17.0	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.			Consistent	
CSD_SSS	17.1	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.	An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.	SSS: Securities and Futures Act, section 59 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.17.1 SSS/CSD owned and operated by MAS: Paragraph 2.65 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	17.2	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.17.1 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.17.2 SSS/CSD owned and operated by MAS: Paragraph 2.66 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	17.3	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.	An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.	SSS: Notice on Financial Market Infrastructure Standards 3.17.2 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.17.3 SSS/CSD owned and operated by MAS: Paragraph 2.67 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	17.4	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.	An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.	SSS: Notice on Financial Market Infrastructure Standards 3.17.3 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.17.4 SSS/CSD owned and operated by MAS: Paragraph 2.68 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	17.5	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.	An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.	SSS: Notice on Financial Market Infrastructure Standards 3.17.4 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.17.5 SSS/CSD owned and operated by MAS: Paragraph 2.69 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	17.6	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.17.5; Securities and Futures (Clearing Facilities) Regulations, section 16 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.17.6 SSS/CSD owned and operated by MAS: Paragraph 2.70 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	17.7	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.17.6 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.17.7 SSS/CSD owned and operated by MAS: Paragraph 2.71 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	18.0	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.		SSS/CSD owned and operated by MAS: As explained in paragraph 2.72 of the Standards for MAS-Operated FMIs, the implementation measures for this principle are not intended to constrain MAS' policies on the parties to whom it is prepared to offer central bank accounts and the terms of offer.	Consistent	SSS/CSD owned and operated by MAS The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs. Recommendation: Where there are gaps/inconsistencies in language or requirements between the relevant regulations and the PFMI, MAS should consider providing more clarity to SSSs with respect to minimum standards.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	18.1	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	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.	SSS: Securities and Futures Act, section 57(1)(d); Securities and Futures (Clearing Facilities) Regulations, section 29(a) CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.18.1 SSS/CSD owned and operated by MAS: Paragraph 2.73 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	18.2	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.18.1 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.18.2 SSS/CSD owned and operated by MAS: Paragraph 2.74 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	18.3	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	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.	SSS: Securities and Futures Act, section 57(1)(d); Securities and Futures (Clearing Facilities) Regulations, section 29(b) CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.18.3 SSS/CSD owned and operated by MAS: Paragraph 2.75 of the Standards for MAS-Operated FMIs	Consistent	SSS Securities and Futures (Clearing Facilities) Regulations, section 29(b) requires an ACH to include in its business rules requirements "providing for the expulsion, suspension or disciplining" of a member for a contravention of its business rules. However, it does not address procedures for facilitating an "orderly exit" of a suspended or expelled member nor does it address the public disclosure of relevant procedures. In practice, in accordance with the policy statement in the Monograph, MAS expects an ACH to further elaborate, in its rules, the treatment of the member's outstanding obligations to the ACH upon expulsion or suspension. Further, as the business rules of the ACH are subject to MAS' review, MAS will take guidance from the PFMI, including the need for the ACH to have rules to provide for the orderly exit of the participant.
CSD_SSS	19.0	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.			Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	19.1	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.19.1 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.19.1 SSS/CSD owned and operated by MAS: Paragraph 2.76 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	19.2	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.	SSS: Notice on Financial Market Infrastructure Standards 3.19.2 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.19.2 SSS/CSD owned and operated by MAS: Paragraph 2.77 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	19.3	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.19.3 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.19.3 SSS/CSD owned and operated by MAS: Paragraph 2.78 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	19.4	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.	SSS: Notice on Financial Market Infrastructure Standards 3.19.4 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.19.4 SSS/CSD owned and operated by MAS: Paragraph 2.79 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	20.0	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.			Consistent	Recommendation: Where there are gaps/inconsistencies in language or requirements between the relevant regulations and the PFMI, MAS should consider providing more clarity to SSSs with respect to minimum standards.
CSD_SSS	20.1	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.	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.	SSS: Securities and Futures Act, section 59; Securities and Futures (Clearing Facilities) Regulations, section 11(3) and 12(1)(b); Notice on Financial Market Infrastructure Standards 3.20.1 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.20.1 SSS/CSD owned and operated by MAS: Paragraph 2.80 of the Standards for MAS-Operated FMIs	Consistent	SSS The referenced regulations and notice do not explicitly set the requirements that mirror/implement the first sentence of the KC. In practice, in accordance with its policy statement in the Monograph, MAS ensures as part of its approval process that a link will be established in compliance with the PFMI, including the need to identify and mitigate potential risks from the link.
CSD_SSS	20.2	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.20.2 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.20.2 SSS/CSD owned and operated by MAS: Paragraph 2.81 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	20.3	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.	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.	CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.20.3 CSD owned and operated by MAS: Paragraph 2.82 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	20.4	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.	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.	CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.20.4 CSD owned and operated by MAS: Paragraph 2.83 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	20.5	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.	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.	CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.20.5 CSD owned and operated by MAS: Paragraph 2.84 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	20.6	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.	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.	CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.20.6 CSD owned and operated by MAS: Paragraph 2.85 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	21.0	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.		SSS: Securities and Futures Act, section 75(1)(a)	Consistent	
CSD_SSS	21.1	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.21.1 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.21.1 SSS/CSD owned and operated by MAS: Paragraph 2.86 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	21.2	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.21.2 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.21.2 SSS/CSD owned and operated by MAS: Paragraph 2.87 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	21.3	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.	SSS: Notice on Financial Market Infrastructure Standards 3.21.3 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.21.3 SSS/CSD owned and operated by MAS: Paragraph 2.88 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	22.0	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.			Consistent	
CSD_SSS	22.1	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.	An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.	SSS: Notice on Financial Market Infrastructure Standards 3.22.1 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.22.1 SSS/CSD owned and operated by MAS: Paragraph 2.89 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	23.0	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.			Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	23.1	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.23.1 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.23.1 SSS/CSD owned and operated by MAS: Paragraph 2.90 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	23.2	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.23.2 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.23.2 SSS/CSD owned and operated by MAS: Paragraph 2.91 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	23.3	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.23.3 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.23.3 SSS/CSD owned and operated by MAS: Paragraph 2.92 of the Standards for MAS-Operated FMIs	Consistent	
CSD_SSS	23.4	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.23.4 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.23.4 SSS/CSD owned and operated by MAS: Paragraph 2.93 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
CSD_SSS	23.5	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.	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.	SSS: Notice on Financial Market Infrastructure Standards 3.23.5 CSD: Notice on Financial Market Infrastructure Standards for Central Securities Depositories 3.23.5 SSS/CSD owned and operated by MAS: Paragraph 2.94 of the Standards for MAS-Operated FMIs	Consistent	
PS	1.0	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.		Refer to KCs	Consistent	
PS	1.1	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	The legal basis should provide a high degree of certainty for each material aspect of an FMI’s activities in all relevant jurisdictions.	Paragraph 2.2 of the Standards for MAS-Operated FMIs	Consistent	
PS	1.2	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.	Paragraph 2.3 of the Standards for MAS-Operated FMIs	Consistent	
PS	1.3	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	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.	Paragraph 2.4 of the Standards for MAS-Operated FMIs	Consistent	
PS	1.4	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	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.	Paragraph 2.5 of the Standards for MAS-Operated FMIs	Consistent	
PS	1.5	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.	Paragraph 2.6 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	2.0	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.		Refer to KCs	Consistent	
PS	2.1	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.	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.	Paragraph 2.7 of the Standards for MAS-Operated FMIs	Consistent	
PS	2.2	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.	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.	Paragraph 2.8 of the Standards for MAS-Operated FMIs	Consistent	
PS	2.3	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.	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.	Paragraph 2.9 of the Standards for MAS-Operated FMIs	Consistent	
PS	2.4	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.	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).	Paragraph 2.10 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	2.5	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.	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.	Paragraph 2.11 of the Standards for MAS-Operated FMIs	Consistent	
PS	2.6	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.	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.	Paragraph 2.12 of the Standards for MAS-Operated FMIs	Consistent	
PS	2.7	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.	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.	Paragraph 2.13 of the Standards for MAS-Operated FMIs	Consistent	
PS	3.0	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.		Refer to KCs	Consistent	
PS	3.1	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	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.	Paragraph 2.14 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	3.2	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.	Paragraph 2.15 of the Standards for MAS-Operated FMIs	Consistent	
PS	3.3	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	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.	Paragraph 2.16 of the Standards for MAS-Operated FMIs	Consistent	
PS	3.4	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	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.	Not applicable for central bank-owned and operated FMIs as elaborated in the CPMI-IOSCO Guidance note on Application of the Principles for financial market infrastructures to central bank FMIs (August 2015).	Consistent	The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	4.0	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.		Refer to KCs. As explained in paragraph 2.17 of the Standards for MAS-Operated FMIs, the implementation measures for this principle are strictly in respect of credit risk arising from MAS-operated FMIs' activities.	Consistent	The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	4.1	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.	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.	Paragraph 2.18 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	4.2	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.	An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.	Paragraph 2.19 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	4.3	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.	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.	Paragraph 2.20 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	4.7	An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.	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.	Paragraph 2.21 of the Standards for MAS-Operated FMIs	Consistent	
PS	5.0	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.		Refer to KCs	Consistent	
PS	5.1	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.	An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.	Paragraph 2.22 of the Standards for MAS-Operated FMIs.	Consistent	The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	5.2	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.	An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.	Paragraph 2.23 of the Standards for MAS-Operated FMIs	Consistent	
PS	5.3	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.	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.	Paragraph 2.24 of the Standards for MAS-Operated FMIs	Consistent	
PS	5.4	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.	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.	Paragraph 2.25 of the Standards for MAS-Operated FMIs	Consistent	
PS	5.5	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.	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.	Paragraph 2.26 of the Standards for MAS-Operated FMIs	Consistent	
PS	5.6	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.	An FMI should use a collateral management system that is well-designed and operationally flexible.	Paragraph 2.27 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	7.0	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.		Refer to KCs	Consistent	
PS	7.1	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.	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.	Paragraph 2.28 of the Standards for MAS-Operated FMIs	Consistent	
PS	7.2	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.	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.	Paragraph 2.29 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	7.3	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.	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.	Paragraph 2.30 of the Standards for MAS-Operated FMIs	Consistent	
PS	7.5	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.	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.	Paragraph 2.31 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	7.6	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.	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.	Paragraph 2.32 of the Standards for MAS-Operated FMIs	Consistent	
PS	7.7	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.	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.	Paragraph 2.33 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	7.8	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.	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.	Paragraph 2.34 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	7.9	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.	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.	Paragraph 2.35 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	7.10	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.	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.	Paragraph 2.36 of the Standards for MAS-Operated FMIs	Consistent	
PS	8.0	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.		Refer to KCs	Consistent	
PS	8.1	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.	An FMI's rules and procedures should clearly define the point at which settlement is final.	Paragraph 2.37 of the Standards for MAS-Operated FMIs	Consistent	
PS	8.2	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.	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.	Paragraph 2.38 of the Standards for MAS-Operated FMIs	Consistent	
PS	8.3	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.	An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.	Paragraph 2.39 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	9.0	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.		Refer to KCs	Consistent	
PS	9.1	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.	An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.	Paragraph 2.40 of the Standards for MAS-Operated FMIs	Consistent	
PS	9.2	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.	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.	Paragraph 2.41 of the Standards for MAS-Operated FMIs	Consistent	
PS	9.3	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.	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.	Paragraph 2.42 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	9.4	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.	If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.	Paragraph 2.43 of the Standards for MAS-Operated FMIs	Consistent	
PS	9.5	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.	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.	Paragraph 2.44 of the Standards for MAS-Operated FMIs	Consistent	
PS	12.0	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.		Refer to KCs	Consistent	
PS	12.1	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.	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.	Paragraph 2.53 of the Standards for MAS-Operated FMIs	Consistent	
PS	13.0	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.		Refer to KCs. As explained in paragraph 2.54 of the Standards for MAS-Operated FMIs, the implementation measures for this principle are not intended to constrain MAS' policies and actions for maintaining financial stability including managing participant defaults.	Consistent	The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	13.1	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.	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.	Paragraph 2.55 of the Standards for MAS-Operated FMIs	Consistent	
PS	13.2	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.	An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.	Paragraph 2.56 of the Standards for MAS-Operated FMIs	Consistent	
PS	13.3	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.	An FMI should publicly disclose key aspects of its default rules and procedures.	Paragraph 2.57 of the Standards for MAS-Operated FMIs	Consistent	
PS	13.4	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.	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.	Paragraph 2.58 of the Standards for MAS-Operated FMIs	Consistent	
PS	15.0	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.		Refer to KCs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	15.1	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.	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.	Paragraph 2.59 of the Standards for MAS-Operated FMIs	Consistent	
PS	15.2	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.	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.	Not applicable for central bank-owned and operated FMIs as explained in the PFMI and elaborated in the CPMI-IOSCO Guidance note on Application of the Principles for financial market infrastructures to central bank FMIs (August 2015).	Consistent	The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.
PS	15.3	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.	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.	Not applicable for central bank-owned and operated FMIs as explained in the PFMI and elaborated in the CPMI-IOSCO note on Application of the Principles for financial market infrastructures to central bank FMIs (August 2015).	Consistent	The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	15.4	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.	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.	Not applicable for central bank-owned and operated FMIs as explained in the PFMI and elaborated in the CPMI-IOSCO note on Application of the Principles for financial market infrastructures to central bank FMIs (August 2015).	Consistent	The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.
PS	15.5	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.	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.	Not applicable for central bank-owned and operated FMIs as explained in the PFMI and elaborated in the CPMI-IOSCO note on Application of the Principles for financial market infrastructures to central bank FMIs (August 2015).	Consistent	The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.
PS	16.0	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.		Refer to KCs. As explained in paragraph 2.60 of the Standards for MAS-Operated FMIs, the implementation measures for this principle are not intended to constrain MAS' investment policies (including that for reserve management) or the disclosure of those policies.	Consistent	The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.
PS	16.1	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.	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.	Paragraph 2.61 of the Standards for MAS-Operated FMIs	Consistent	
PS	16.2	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.	An FMI should have prompt access to its assets and the assets provided by participants, when required.	Paragraph 2.62 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	16.3	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.	An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.	Paragraph 2.63 of the Standards for MAS-Operated FMIs	Consistent	
PS	16.4	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.	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.	Paragraph 2.64 of the Standards for MAS-Operated FMIs	Consistent	
PS	17.0	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.		Refer to KCs	Consistent	
PS	17.1	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.	An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.	Paragraph 2.65 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	17.2	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.	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.	Paragraph 2.66 of the Standards for MAS-Operated FMIs	Consistent	
PS	17.3	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.	An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.	Paragraph 2.67 of the Standards for MAS-Operated FMIs	Consistent	
PS	17.4	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.	An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.	Paragraph 2.68 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	17.5	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.	An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.	Paragraph 2.69 of the Standards for MAS-Operated FMIs	Consistent	
PS	17.6	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.	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.	Paragraph 2.70 of the Standards for MAS-Operated FMIs	Consistent	
PS	17.7	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.	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.	Paragraph 2.71 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	18.0	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.		Refer to KCs. As explained in paragraph 2.72 of the Standards for MAS-Operated FMIs, the implementation measures for this principle are not intended to constrain MAS' policies on the parties to whom it is prepared to offer central bank accounts and the terms of offer.	Consistent	The approach taken by MAS is consistent with paragraph 1.23 of the PFMI, as elaborated in the CPMI-IOSCO Guidance note Application of the Principles for financial market infrastructures to central bank FMIs.
PS	18.1	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	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.	Paragraph 2.73 of the Standards for MAS-Operated FMIs	Consistent	
PS	18.2	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	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.	Paragraph 2.74 of the Standards for MAS-Operated FMIs	Consistent	
PS	18.3	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	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.	Paragraph 2.75 of the Standards for MAS-Operated FMIs	Consistent	
PS	19.0	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.		Refer to KCs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	19.1	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	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.	Paragraph 2.76 of the Standards for MAS-Operated FMIs	Consistent	
PS	19.2	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.	Paragraph 2.77 of the Standards for MAS-Operated FMIs	Consistent	
PS	19.3	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	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.	Paragraph 2.78 of the Standards for MAS-Operated FMIs	Consistent	
PS	19.4	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.	Paragraph 2.79 of the Standards for MAS-Operated FMIs	Consistent	
PS	21.0	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.		Refer to KCs	Consistent	
PS	21.1	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	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.	Paragraph 2.86 of the Standards for MAS-Operated FMIs	Consistent	
PS	21.2	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	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.	Paragraph 2.87 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	21.3	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.	Paragraph 2.88 of the Standards for MAS-Operated FMIs	Consistent	
PS	22.0	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.		Refer to KCs	Consistent	
PS	22.1	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.	An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.	Paragraph 2.89 of the Standards for MAS-Operated FMIs	Consistent	
PS	23.0	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.		Refer to KCs	Consistent	
PS	23.1	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.	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.	Paragraph 2.90 of the Standards for MAS-Operated FMIs	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
PS	23.2	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.	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.	Paragraph 2.91 of the Standards for MAS-Operated FMIs	Consistent	
PS	23.3	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.	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.	Paragraph 2.92 of the Standards for MAS-Operated FMIs	Consistent	
PS	23.4	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.	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.	Paragraph 2.93 of the Standards for MAS-Operated FMIs	Consistent	
PS	23.5	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.	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.	Paragraph 2.94 of the Standards for MAS-Operated FMIs	Consistent	
TR	1.0	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.			Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
TR	1.1	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.	Notice on Financial Market Infrastructure Standards 3.1.1	Consistent	
TR	1.2	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.	Notice on Financial Market Infrastructure Standards 3.1.2	Consistent	
TR	1.3	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	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.	Notice on Financial Market Infrastructure Standards 3.1.3	Consistent	
TR	1.4	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	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.	Notice on Financial Market Infrastructure Standards 3.1.4	Consistent	
TR	1.5	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.	An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.	Notice on Financial Market Infrastructure Standards 3.1.5	Consistent	
TR	2.0	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.			Consistent	Recommendation: Where there are gaps/inconsistencies in language or requirements between the relevant regulations and the PFMI, MAS should consider providing more clarity to TRs with respect to minimum standards.
TR	2.1	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.	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.	Notice on Financial Market Infrastructure Standards 3.2.1	Consistent	While the language used in Notice on Financial Market Infrastructure Standards 3.2.1 is closely aligned to the KC, the word "explicitly" was not included. The absence of an explicit requirement could render a CCP's objectives subject to interpretation and thereby weaken the objectives with respect to financial stability and other relevant public interest considerations.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
TR	2.2	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.	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.	Notice on Financial Market Infrastructure Standards 3.2.2	Consistent	While the language used in Notice on Financial Market Infrastructure Standards 3.2.2 is closely aligned to the KC, it limits the referenced governance arrangements to those for its board of directors (or equivalent) and limits the referenced lines of responsibility and accountability to those between management and the board. As such, the requirements do not extend to lower staff levels. In practice, in accordance with the policy statement in the Monograph, MAS takes guidance from the PFMI explanatory note and MAS expects management to ensure clear and direct lines of responsibility and accountability, including for lower levels.
TR	2.3	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.	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.	Notice on Financial Market Infrastructure Standards 3.2.3	Consistent	
TR	2.4	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.	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).	Securities and Futures Act, section 46I(1)(j) Securities and Futures Act, section 46V(1)	Consistent	The requirements in the referenced regulations do not explicitly cover board members' incentives or a reference to the board's multiple roles and the inclusion of non-executive board member(s). In practice, in accordance with the policy statement in the monograph, MAS considers relevant aspects under KC4 (including the skills and incentives for the person to satisfy the board's multiple roles) in its regulatory approval process of the appointment of the board members. It is noted that MAS envisages legislative amendments to include TRs into the Securities and Futures (Corporate Governance of Approved Exchanges, Approved Clearing Houses and Approved Holding Companies) Regulations to establish requirements on independent directors and to provide further precision on the qualification criteria for board members as set out in these regulations currently applicable to CCPs and SSS.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
TR	2.5	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.	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.	Notice on Financial Market Infrastructure Standards 3.2.4	Consistent	
TR	2.6	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.	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.	Notice on Financial Market Infrastructure Standards 3.2.5	Consistent	
TR	2.7	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.	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.	Notice on Financial Market Infrastructure Standards 3.2.6	Consistent	
TR	3.0	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.			Consistent	Recommendation: Where there are gaps/inconsistencies in language or requirements between the relevant regulations and the PFMI, MAS should consider providing more clarity to TRs with respect to minimum standards.
TR	3.1	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	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.	Notice on Financial Market Infrastructure Standards 3.3.1 Securities and Futures Act, section 46J	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
TR	3.2	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.	Notice on Financial Market Infrastructure Standards 3.3.2	Consistent	
TR	3.3	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	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.	Notice on Financial Market Infrastructure Standards 3.3.3	Consistent	
TR	3.4	An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.	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.	Securities and Futures (Trade Repositories) Regulations, section 14 Securities and Futures Act, section 46N MAS Act, section 30AAZK	Consistent	MAS has not explicitly stated in its Securities and Futures (Trade Repositories) Regulations that a TR shall identify scenarios that may potentially prevent [the TR] 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. In practice, MAS requires each TR to have a recovery and orderly wind-down plan, and it assesses whether the TR has an appropriate and effective plan. As part of this assessment, MAS determines whether the TR identified scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern, and assessed the effectiveness of a full range of options for recovery or orderly winding-down.
TR	15.0	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.			Consistent	Recommendation: Where there are gaps/inconsistencies in language or requirements between the relevant regulations and the PFMI, MAS should consider providing more clarity to TRs with respect to minimum standards.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
TR	15.1	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.	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.	Notice on Financial Market Infrastructure Standards 3.15.1	Consistent	
TR	15.2	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.	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.	Notice on Financial Market Infrastructure Standards 3.15.2	Consistent	
TR	15.3	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.	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.	Securities and Futures (Trade Repositories) Regulations, section 14 MAS Capital Conditions	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
TR	15.4	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.	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.	MAS Capital Conditions	Consistent	MAS Capital Conditions do not provide a positive list of types of assets that qualify as “financial resources” to be held to cover general business risk, in particular, with respect to the level of credit quality. In practice, in accordance with its policy statement in the Monograph, MAS requires as part of its ongoing supervision that assets held to cover general business risk should be of high quality and sufficiently liquid.
TR	15.5	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.	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.	Notice on Financial Market Infrastructure Standards 3.15.3	Consistent	\
TR	17.0	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.			Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
TR	17.1	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.	An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.	Securities and Futures Act, section 46J	Consistent	
TR	17.2	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.	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.	Notice on Financial Market Infrastructure Standards 3.17.1	Consistent	
TR	17.3	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.	An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.	Notice on Financial Market Infrastructure Standards 3.17.2	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
TR	17.4	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.	An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.	Notice on Financial Market Infrastructure Standards 3.17.3	Consistent	
TR	17.5	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.	An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.	Notice on Financial Market Infrastructure Standards 3.17.4	Consistent	
TR	17.6	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.	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.	Notice on Financial Market Infrastructure Standards 3.17.5 Securities and Futures (Trade Repositories) Regulations, section 13	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
TR	17.7	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.	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.	Notice on Financial Market Infrastructure Standards 3.17.6	Consistent	
TR	18.0	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.			Consistent	
TR	18.1	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	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.	Securities and Futures Act, section 46I(d) Securities and Futures (Trade Repositories) Regulations, section 18(a)	Consistent	
TR	18.2	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	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.	Notice on Financial Market Infrastructure Standards 3.18.1	Consistent	
TR	18.3	An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	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.	Notice on Financial Market Infrastructure Standards 3.18.2	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
TR	19.0	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.			Consistent	
TR	19.1	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	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.	Notice on Financial Market Infrastructure Standards 3.19.1	Consistent	
TR	19.2	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.	Notice on Financial Market Infrastructure Standards 3.19.2	Consistent	
TR	19.3	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	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.	Notice on Financial Market Infrastructure Standards 3.19.3	Consistent	
TR	19.4	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.	Notice on Financial Market Infrastructure Standards 3.19.4	Consistent	
TR	20.0	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.			Consistent	Recommendation: Where there are gaps/inconsistencies in language or requirements between the relevant regulations and the PFMI, MAS should consider providing more clarity to TRs with respect to minimum standards.
TR	20.1	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.	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.	Securities and Futures (Trade Repositories) Regulations, section 9(3) and 10(1) Notice on Financial Market Infrastructure Standards 3.20.1	Consistent	The referenced regulations and notice do not explicitly set the requirements that mirror/implement the first sentence of the KC. In practice, in accordance with its policy statement in the Monograph, MAS ensures as part of its approval process that a link will be established in compliance with the PFMI, including the need to identify and mitigate potential risks from the link.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
TR	20.2	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.	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.	Notice on Financial Market Infrastructure Standards 3.20.2	Consistent	
TR	20.9	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.	A TR should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.	Notice on Financial Market Infrastructure Standards 3.20.5	Consistent	
TR	21.0	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.			Consistent	
TR	21.1	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	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.	Notice on Financial Market Infrastructure Standards 3.21.1	Consistent	
TR	21.2	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	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.	Notice on Financial Market Infrastructure Standards 3.21.2	Consistent	
TR	21.3	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.	Notice on Financial Market Infrastructure Standards 3.21.3	Consistent	
TR	22.0	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.			Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
TR	22.1	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.	An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.	Notice on Financial Market Infrastructure Standards 3.22.1	Consistent	
TR	23.0	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.			Consistent	
TR	23.1	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.	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.	Notice on Financial Market Infrastructure Standards 3.23.1	Consistent	
TR	23.2	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.	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.	Notice on Financial Market Infrastructure Standards 3.23.2	Consistent	
TR	23.3	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.	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.	Notice on Financial Market Infrastructure Standards 3.23.3	Consistent	

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
TR	23.4	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.	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.	Notice on Financial Market Infrastructure Standards 3.23.4	Consistent	
TR	23.5	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.	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.	Notice on Financial Market Infrastructure Standards 3.23.5	Consistent	
TR	24.0	A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.			Partly consistent	Recommendation: MAS is recommended to implement/ complete measures that address the gaps identified in relation to KC1. Where there are gaps/inconsistencies in language or requirements between the relevant regulations and the PFMI, MAS should consider providing more clarity to TRs with respect to minimum standards.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
TR	24.1	A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.	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.	Securities and Futures Act, section 46A Securities and Futures Act, section 46ZJ(1)(e) and 46ZK(2)(a)	Partly consistent	MAS has authority under the SFA to direct a TR to publish information related to the transactions reported to it. As of the cut-off date, however, MAS had not exercised the authority to direct DDRS, the sole LTR operating in Singapore as of the cut-off date, to publish such information. Accordingly, there are currently neither legal/supervisory requirements/expectations for, nor actual practice of, disclosure of the TR data to the public. The referenced regulations articulate specific requirements for a TR to provide data to MAS but do not do so with respect to the data provision to other relevant authorities. However, the AT considers that MAS' implementation measures are consistent with this respect of PFMI (ie data provision to relevant authorities) on the basis of the Monograph for the following reasons: (1) DDRS is required by MAS as part of its ongoing supervision to submit to MAS all the transaction data reported to DDRS; (2) MAS entered into a MOU with the Australian Securities Investments Commission (ASIC) and the Reserve Bank of Australia (RBA) to provide them with access to the data in DDRS; and (3) Only ASIC and RBA are deemed to be such relevant authorities at this juncture. Recommendation: MAS is recommended to implement/complete measures that address the identified gaps. It is acknowledged that MAS is actively considering appropriate requirements for LTRs to publish the data in a manner that will help to achieve the objectives of the public disclosure.
TR	24.2	A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.	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.	Securities and Futures Act, section 46I(1)(h) Securities and Futures Act, section 46ZJ(1)(e)	Partly consistent	The referenced regulations do not explicitly establish requirements with respect to the timeliness and appropriateness of the manner of the data provision. In practice, in accordance with the policy statement in the Monograph, MAS sets the requirements that mirror KC2 when exercising its legal power to prescribe the manner of data provision by the TR to relevant authorities.

FMI Type	Principle or Type key consideration ID	Principle	Key consideration	Implementation measures	Principle rating	Assessment comments (ie key conclusions and recommendations)
TR	24.3	A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.	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.	Notice on Financial Market Infrastructure Standards 3.24.1	Partly consistent	The referenced regulation refers to timeliness and format of the data only for cases “where the data is disclosed publicly” and does not separately address timeliness and format of data provision to relevant authorities and participants. In practice, in accordance with the policy statement in the Monograph, MAS ensures as part of its licensing and ongoing supervision process that appropriate arrangements are in place for timely data provision and accessible data formatting including with respect to relevant authorities and participants.