

# Guidance – Financial Stability Standards for Securities Settlement Facilities

## Introduction

This guidance is issued in relation to the *Financial Stability Standards for Securities Settlement Facilities* (SSF Standards) determined under section 827D(1) of the *Corporations Act 2001* (the Act). The SSF Standards apply to all holders of an Australian Clearing and Settlement (CS) Facility Licence, under Part 7.3 of the Act, that operate a securities settlement facility. Separate financial stability standards apply to CS facility licensees that operate a central counterparty. For the purposes of the SSF Standards, a securities settlement facility is a CS facility operated by an Australian CS facility licensee where the CS facility licensee enables its participants to transfer title to or other interests in securities, typically in return for payment. A securities settlement facility may also operate a central securities depository. Unless the contrary intention appears, obligations on a securities settlement facility arising from the SSF Standards should be interpreted as being obligations on the CS facility licensee, as operator of the securities settlement facility.

The objective of this document is to provide guidance to securities settlement facilities to assist in the interpretation and application of the SSF Standards, and to elaborate on matters that the Reserve Bank of Australia (Reserve Bank) considers relevant in meeting the SSF Standards. The guidance contains general information in relation to certain matters concerning the SSF Standards and applicable legislation, but is not intended to be exhaustive. It does not elaborate on all aspects of the SSF Standards, and should therefore be read in conjunction with the text of the SSF Standards to provide appropriate context. The guidance does not itself constitute a standard and is not intended to contain obligations that are binding on securities settlement facilities; nor does it constitute legal advice and should not be treated as such. The Reserve Bank encourages users to obtain independent professional advice in relation to the SSF Standards and relevant legislation as they apply to the users and their particular circumstances.

*Note: This guidance is based largely on the Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO) Principles for Financial Market Infrastructures (FMIs) (the Principles).<sup>1</sup> The Reserve Bank has, in parts, added to and amended the text of the Principles and associated explanatory notes.<sup>2</sup>*

## Standard 1: Legal basis

**A securities settlement facility should have a well-founded, clear, transparent and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.**

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1 CPSS-IOSCO (2012), *Principles for Financial Market Infrastructures*, CPSS Publications No 101, Bank for International Settlements, April, is available at <<http://www.bis.org/publ/cpss101.htm>>.

2 A marked-up version of this guidance, indicating where additions and alterations have been made to the text of the Principles, will be made available at <<http://www.rba.gov.au/payments-system/clearing-settlement/standards/201212-new-fss-ris/index.html>> by end 2012.

## Guidance

A robust legal basis for a securities settlement facility's activities in all relevant jurisdictions is critical to a securities settlement facility's overall soundness. The legal basis defines, or provides the foundation for relevant parties to define, the rights and obligations of the securities settlement facility, its participants and other relevant parties, such as its participants' customers, custodians, money settlement agents and service providers. Most risk management mechanisms are based on assumptions about the manner and time at which these rights and obligations arise through the securities settlement facility. Therefore, if risk management is to be sound and effective, the enforceability of rights and obligations relating to a securities settlement facility and its risk management should be established with a high degree of certainty. If the legal basis for a securities settlement facility's activities and operations is inadequate, uncertain or opaque, then the securities settlement facility, its participants and their customers may face unintended, uncertain or unmanageable credit or liquidity risks, which may also create or amplify systemic risks.

### **1.1 A securities settlement facility should be a legal entity which is separate from other entities that may expose it to risks unrelated to those arising from its function as a securities settlement facility.**

1.1.1 In general, a securities settlement facility should not provide services that have a distinct risk profile from, and potentially pose material additional risks to, its activity of operating the securities settlement facility. This may require that the securities settlement facility provide any such services in a legally and financially separate entity, or take other equivalent action. Where a securities settlement facility performs, or wishes to perform, functions that, while having a distinct risk profile, are complementary or necessarily ancillary to its activity as a securities settlement facility, it should consult the Reserve Bank and demonstrate that any potential risks posed to its activity as a securities settlement facility are appropriately and effectively managed.

1.1.2 The identification of the securities settlement facility as a separate legal entity is of particular importance in circumstances in which an entity related to the securities settlement facility is experiencing operational or financial difficulties, including external administration. Related activities that may expose the securities settlement facility to additional financial risks unrelated to those arising from its function as a securities settlement facility include banking-like activities or investment management.

1.1.3 The legal separation of the securities settlement facility may also provide protection to those other activities should the securities settlement facility itself experience operational or financial difficulties. This Standard does not assume or suggest, however, that legal separation will remove all risks that may arise as a result of operational or financial difficulties faced by a securities settlement facility or a related entity.

### **1.2 The legal basis should provide a high degree of certainty for each material aspect of a securities settlement facility's activities in all relevant jurisdictions.**

## Legal basis

1.2.1 The legal basis should provide a high degree of certainty for each material aspect of a securities settlement facility's activities in all relevant jurisdictions.<sup>3</sup> The legal basis consists of the legal framework

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<sup>3</sup> An aspect of a securities settlement facility's activities is or becomes material if it can be a source of a material risk, especially, but not limited to, credit, liquidity, general business, custody, investment or operational risk.

and the securities settlement facility's rules, procedures and contracts. The legal framework includes general laws and regulations that govern, among other things, property, contracts, insolvency, corporations, securities, banking, secured interests and liability. In some cases, the legal framework that governs competition and consumer and investor protection may also be relevant. Laws and regulations specific to a securities settlement facility's activities include those governing its authorisation, regulation, supervision and oversight; rights and interests in financial instruments; settlement finality; netting; immobilisation and dematerialisation of securities; arrangements for delivery versus payment (DvP), payment versus payment (PvP) or delivery versus delivery (DvD); collateral arrangements; default procedures; and the resolution of a securities settlement facility. A securities settlement facility should establish rules, procedures and contracts that are clear, understandable and consistent with the legal framework and provide a high degree of legal certainty. A securities settlement facility also should consider whether the rights and obligations of the securities settlement facility, its participants and, as appropriate, other parties, as set forth in its rules, procedures and contracts are consistent with relevant industry standards and market protocols.

## Rights and interests

- 1.2.2 The legal basis should clearly define the rights and interests of a securities settlement facility, its participants and, where relevant, its participants' customers in the financial instruments, such as cash and securities, or other relevant assets held in custody, directly or indirectly, by the securities settlement facility. It is not sufficient for key rights and obligations to be implied. The legal basis should fully protect both a participant's assets held in custody by the securities settlement facility and, where appropriate, a participant's customer's assets held by or through the securities settlement facility, from the insolvency of relevant parties and other relevant risks. It should also protect these assets when held at a custodian or linked FMI. In particular, consistent with SSF Standard 9 on central securities depositories, the legal basis should protect the assets and positions of a participant's customers. Where applicable, the legal basis should provide certainty with respect to: a securities settlement facility's interests in, and rights to use and dispose of, collateral; a securities settlement facility's authority to transfer ownership rights or property interests; and a securities settlement facility's rights to make and receive payments, in all cases, notwithstanding the bankruptcy or insolvency of its participants, participants' customers or a custodian bank.<sup>4</sup> Also, the securities settlement facility should structure its operations so that its claims against collateral provided to it by a participant should have priority over all other claims, and the claims of the participant to that same collateral should have priority over the claims of third-party creditors.

## Mitigating legal risk

- 1.2.3 In general, there is no substitute for full legal certainty supported by applicable legislation in all jurisdictions relevant to a securities settlement facility's activities. However, in some practical situations, such as might arise where a securities settlement facility offers services outside its home jurisdiction, or

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<sup>4</sup> Collateral arrangements may involve either a pledge or a title transfer, including transfer of full ownership. If a securities settlement facility accepts a pledge, it should have a high degree of certainty that the pledge has been validly created in the relevant jurisdiction and validly perfected, if necessary. If a securities settlement facility relies on a title transfer, including transfer of full ownership, it should have a high degree of certainty that the transfer is validly created in the relevant jurisdiction and will be enforced as agreed and not recharacterised, for example, as an invalid or unperfected pledge or some other unintended category of transaction. A securities settlement facility should also have a high degree of certainty that the transfer itself is not voidable as an unlawful preference under insolvency law. See also SSF Standard 5 on collateral and SSF Standard 11 on participant default rules and procedures.

where participants are located in another jurisdiction to that of the securities settlement facility, it may not be possible, notwithstanding an independent legal opinion, to be confident of full legal certainty for all aspects of a securities settlement facility's operations. In this case, a securities settlement facility should investigate steps to mitigate its legal risk through the selective use of alternative risk management tools that do not suffer from the legal uncertainty identified. These could include, in appropriate circumstances, participant requirements, exposure limits, collateral requirements and prefunded default arrangements. If such controls are insufficient or not feasible, a securities settlement facility could, as appropriate, apply activity limits, restrict access or not perform the problematic activity until the legal situation is addressed.

**1.3 A securities settlement facility should have rules, procedures and contracts that are clear, understandable and consistent with relevant laws and regulations.**

1.3.1 The operating rules and procedures of a securities settlement facility play a key role in enabling participants to understand the risks they incur. The rules need to be clear, comprehensive and up to date to facilitate understanding by participants and prospective participants of the risks they can face through participation in the system. Explanatory material written in plain language can aid understanding of the facility's design and processes, thus improving understanding of risks that may arise through participation.

1.3.2 The rules and procedures should describe the roles of participants and the securities settlement facility and the procedures that will be followed in various circumstances (for example, which parties are to be notified of specific events and the timetables for decision-making and notification). They should make clear the degree of discretion parties are able to exercise in taking decisions that can have a direct effect on the operation of the system. There should be clear processes for changing rules and procedures. The degree of discretion the securities settlement facility can exercise to make unilateral changes to the rules or procedures, and any period of notice it must give to participants, should be clear.

**1.4 A securities settlement facility should be able to articulate the legal basis for its activities to the Reserve Bank and other relevant authorities, participants and, where relevant, participants' customers, in a clear and understandable way.**

1.4.1 One recommended approach to articulating the legal basis for each material aspect of a securities settlement facility's activities is to obtain well-reasoned and independent legal opinions or analyses. A securities settlement facility should consider, subject to any restrictions, sharing these legal opinions and analyses with its participants in an effort to promote confidence among participants and transparency in the system. In addition, a securities settlement facility should seek to ensure that its activities are consistent with the legal basis in all relevant jurisdictions. These jurisdictions could include: those where a securities settlement facility is conducting business (including through linked FMIs); those where its participants are incorporated, located or otherwise conducting business for the purposes of participation; those where collateral is located or held; and those indicated in relevant contracts.

**1.5 A securities settlement facility 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 securities settlement facility under such rules and procedures will not be voided, reversed or subject to stays, including in the event that the securities settlement facility enters into external administration or that one or more of its participants or a settlement bank defaults or is suspended.**

## Settlement finality

- 1.5.1 There should be a clear legal basis regarding when settlement finality occurs in a securities settlement facility in order to define when key financial risks are transferred in the system, including the point at which transactions are irrevocable. Settlement finality is an important building block for risk management systems (see also SSF Standard 7 on settlement finality). A securities settlement facility should consider, in particular, the actions that would need to be taken in the event of a participant's insolvency. A key question is whether transactions of an insolvent participant would be honoured as final, or could be considered void or voidable by liquidators and relevant authorities. In some countries, for example, so-called 'zero-hour rules' in insolvency law can have the effect of reversing a payment, notwithstanding that it has successfully been processed by a payment system. Because this possibility can lead to credit and liquidity risks, the securities settlement facility should ensure that the finality of settlement is not affected by the operation of zero-hour rules in any relevant jurisdiction. If the securities settlement facility offers real-time gross settlement, or has arrangements that involve the netting of transactions, it should seek the benefit of the relevant sections of the *Payment Systems and Netting Act 1998* (if operating in Australia), or equivalent legislation in other jurisdictions. A securities settlement facility also should consider the legal basis for the external settlement mechanisms it uses, such as funds transfer or securities transfer systems. The laws of the relevant jurisdictions should support the provisions of the securities settlement facility's legal agreements with its participants and money settlement agents relating to finality.

## Netting arrangements

- 1.5.2 If a securities settlement facility has a netting arrangement, the enforceability of the netting arrangement should have a sound and transparent legal basis. In general, netting offsets obligations between or among participants in the netting arrangement, thereby reducing the number and value of payments or deliveries needed to settle a set of transactions. Netting can reduce potential losses in the event of a participant default and may reduce the probability of a default. Netting arrangements should be designed to be explicitly recognised and supported under the law and enforceable against a securities settlement facility and a securities settlement facility's failed participants in bankruptcy. In particular, the securities settlement facility should seek the benefit of the relevant sections of the *Payment Systems and Netting Act* (if operating in Australia), or equivalent legislation in another jurisdiction, with respect to any netting arrangements. Without such legal underpinnings, net obligations may be challenged in judicial or administrative insolvency proceedings. If these challenges were successful, the securities settlement facility and its participants could face gross exposures and settlement obligations, which in some circumstances could be many multiples of net obligations.

## Enforceability

- 1.5.3 The rules, procedures and contracts related to a securities settlement facility's operation should be enforceable in all relevant jurisdictions. In particular, the legal basis should support the enforceability of the participant default rules and procedures that a securities settlement facility would use to handle a defaulting or insolvent participant, especially any transfers of a direct or indirect participant's assets or positions (see also SSF Standard 11 on participant default rules and procedures). A securities settlement facility should have a high degree of certainty that actions taken under such rules and procedures will not be voided, reversed or subject to stays, including with respect to the resolution regimes applicable

to its participants.<sup>5</sup> Ambiguity about the enforceability of procedures could delay and possibly prevent a securities settlement facility from taking actions to fulfil its obligations to non-defaulting participants or to minimise its potential losses. The securities settlement facility should obtain a written and reasoned legal opinion as to the enforceability of the securities settlement facility's arrangements under the laws of each relevant jurisdiction.

- 1.5.4 A securities settlement facility should also establish rules, procedures and contracts related to its operations that would be enforceable in the event that the securities settlement facility had to implement its plans for recovery or orderly wind-down, and in the event of external administration. Where relevant, these should adequately address issues and associated risks resulting from foreign and cross-border participation and interoperability of FMLs. There should be a high degree of certainty that any actions taken by the securities settlement facility under such rules and procedures would not be voided, reversed or subject to stays. Ambiguity about the enforceability of procedures that facilitate the implementation of the securities settlement facility's plans for recovery or orderly wind-down, or the resolution of the securities settlement facility, could delay and possibly prevent the securities settlement facility or the Reserve Bank and other relevant authorities from taking appropriate actions and hence increase the risk of a disruption to its critical services or a disorderly wind-down of the securities settlement facility.

### Default or suspension of participants

- 1.5.5 The rules applying in the event of the default or suspension of a participant should be set out in advance: this enhances the certainty of obligations placed on participants and thus minimises the opportunity for surviving participants to challenge any liability; in a default situation, there are likely to be strong incentives to undertake behaviour to minimise any contribution, and this could amplify systemic risks (see SSF Standard 11 on participant default rules and procedures).

### External administration

- 1.5.6 Where a securities settlement facility is in external administration or is otherwise facing difficulties, there is scope for instability in the broader financial system. A high degree of certainty in the legal framework concerning such events can help to limit the capacity for such instability.

- 1.6 A securities settlement facility conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflicts of law across jurisdictions. A securities settlement facility should provide the Reserve Bank with a legal opinion that demonstrates the enforceability of its rules and addresses relevant conflicts of law across the jurisdictions in which it operates. This should be reviewed on a periodic basis or when material changes occur that may have an impact on the opinion, and updated where appropriate.**

### Conflicts of law

- 1.6.1 Legal risk due to conflicts of law may arise if a securities settlement facility is, or reasonably may become, subject to the laws of various other jurisdictions (for example, when it accepts participants established in those jurisdictions, when assets are held in multiple jurisdictions, or when business is conducted in multiple jurisdictions). In such cases, a securities settlement facility should identify

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<sup>5</sup> However, rights triggered only because of entry into resolution or the exercise of resolution powers may be subject to stays in some jurisdictions.

and analyse potential conflicts of law and develop rules and procedures to mitigate associated risks (see paragraph 1.6.2 on obtaining a legal opinion). For example, the rules governing a securities settlement facility's activities should clearly indicate the law that is intended to apply to each aspect of its operations. The securities settlement facility and its participants should be aware of applicable constraints on their abilities to choose the law that will govern the securities settlement facility's activities when there is a difference in the substantive laws of relevant jurisdictions. For example, such constraints may exist because of jurisdictions' differing laws on insolvency and irrevocability.

## Legal opinion

1.6.2 A securities settlement facility operating in multiple jurisdictions should obtain a well-reasoned, independent legal opinion(s) covering potential conflicts of law, as well as the enforceability of its rules and its ability to satisfy its regulatory obligations in all relevant jurisdictions. Any opinion relevant to the securities settlement facility's operations in Australia should be shared with the Reserve Bank. At least every two years, the legal opinion obtained under this Standard should be reviewed, updated where appropriate, and where relevant provided to the Reserve Bank. Between periodic reviews, the legal opinion should be reviewed whenever there is a material change to the securities settlement facility's operational, governance or risk management arrangements or to the legal or regulatory framework governing its activities that may impact on the opinion. Further to such a review, the opinion should be updated where appropriate and provided to the Reserve Bank. Material changes triggering a review of the legal opinion may include changes to: the nature and composition of the securities settlement facility's membership; its internal organisation or structure; product offerings; or applicable laws or regulations.

## Standard 2: Governance

**A securities settlement facility should have governance arrangements that are clear and transparent, promote the safety of the securities settlement facility, and support the stability of the broader financial system, other relevant public interest considerations and the objectives of relevant stakeholders.**

### Guidance

Governance is the set of relationships between a securities settlement facility's owners, board of directors (or equivalent), management and other relevant parties, including participants, the Reserve Bank and other relevant authorities, and other stakeholders (such as participants' customers, other interdependent FMs and the broader market). Governance provides the processes through which an organisation sets its objectives, determines the means for achieving those objectives and monitors performance against those objectives. Good governance provides the proper incentives for a securities settlement facility's board and management to pursue objectives that are in the interests of its stakeholders and that support relevant public interest considerations.

**2.1 A securities settlement facility should have objectives that place a high priority on the safety of the securities settlement facility and explicitly support the stability of the financial system and other relevant public interest considerations.**

2.1.1 Given the importance of securities settlement facilities and the fact that their decisions can have widespread impact, affecting multiple financial institutions, markets and jurisdictions, it is essential for each securities settlement facility to place a high priority on the safety of its operations and explicitly support financial stability and other relevant public interests. This is consistent with a securities settlement facility's obligations under section 821A(aa) of the *Corporations Act 2001*, which states that a CS facility must, to the extent that it is reasonably practicable to do so, not only comply with standards determined by the Reserve Bank under section 827D, but also do all other things necessary to reduce systemic risk. A securities settlement facility's governance arrangements should also include appropriate consideration of the interests of participants, participants' customers, the Reserve Bank and other relevant authorities, and other stakeholders. Governance arrangements should provide for fair and open access, insofar as this would not be inconsistent with the maintenance of acceptable risk control standards (see SSF Standard 15 on access and participation requirements) or the effective implementation of recovery or wind-down plans, or resolution.

**2.2 A securities settlement facility should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, the Reserve Bank and other relevant authorities, participants and, at a more general level, the public.**

2.2.1 Governance arrangements, which define the structure under which the board and management operate, should be clearly and thoroughly documented. These arrangements should include certain key components such as the: role and composition of the board and any board committees; senior management structure; reporting lines between management and the board; ownership structure; internal governance policy; design of risk management and internal controls; procedures for the appointment of board members and senior management; and processes for ensuring performance accountability. Governance arrangements should provide clear and direct lines of responsibility and accountability, particularly between management and the board, and ensure sufficient independence for key functions such as risk management, internal control and audit. These arrangements should be disclosed to owners, the Reserve Bank and other relevant authorities, participants and, at a more general level, the public.

2.2.2 No single set of governance arrangements is appropriate for all securities settlement facilities and all market jurisdictions. Arrangements may differ significantly because of national law, ownership structure or organisational form. Indeed, a securities settlement facility may be owned by its participants or by another organisation, may be operated as a for-profit or not-for-profit enterprise, or may be organised as a bank or non-bank entity. While specific arrangements vary, this Standard is intended to be generally applicable to all ownership and organisational structures.

2.2.3 Depending on its ownership structure and organisational form, a securities settlement facility may need to focus particular attention on certain aspects of its governance arrangements. For instance, a securities settlement facility that is, or is part of, a for-profit entity may need to place particular emphasis on managing any conflicts between income generation and safety. And a securities settlement facility that is part of a larger organisation or corporate group should consider any conflicts of interest or other issues that may arise from its relationship to its parent or to other affiliated entities (see



SSF Standard 2.9).<sup>6</sup> Where relevant, any cross-border issues should also be appropriately identified, assessed and dealt with in the facility's governance arrangements, both at the level of the securities settlement facility and at the level of its parent. A securities settlement facility's ownership structure and organisational form may also need to be considered in the preparation and implementation of its recovery or wind-down plans or in assessments of its resolvability.

**2.3 The roles and responsibilities of a securities settlement facility'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 regularly review both its overall performance and the performance of its individual board members.**

2.3.1 A securities settlement facility's board has multiple roles and responsibilities that should be clearly specified. These roles and responsibilities should include: establishing clear strategic aims for the entity; ensuring effective monitoring of senior management (including selecting its senior managers, setting their objectives, evaluating their performance and, where appropriate, removing them); establishing appropriate compensation policies (which should be consistent with best practices and based on long-term achievements, in particular, the safety of the securities settlement facility – see paragraph 2.5.2); establishing and overseeing the risk management function and material risk decisions; overseeing internal control functions (including ensuring independence and adequate resources); ensuring compliance with all supervisory and oversight requirements; ensuring consideration of financial stability and other relevant public interests; and providing accountability to the owners, participants and other relevant stakeholders (see SSF Standard 2.8). The means by which the board discharges these responsibilities may vary according to the securities settlement facility's organisational form. Where a securities settlement facility forms part of a corporate group, some of the roles and responsibilities of the board may be carried out on a group-wide basis, for instance by the board of the securities settlement facility's parent company. However, the securities settlement facility must be able to demonstrate that any such alternative governance arrangements are effective. In particular, the securities settlement facility should be able to demonstrate that such arrangements uphold its capacity to meet its regulatory and other obligations, and in no way compromise or subordinate the securities settlement facility's interests to the interests of the group (see SSF Standard 2.9).

2.3.2 Policies and procedures related to the functioning of the board should be clear and documented. These policies include the responsibilities and functioning of board committees. A board would normally be expected to have, among others, a risk committee, an audit committee and a compensation committee, or equivalents (including equivalent committees operating on a group-wide basis). All such committees should have clearly assigned responsibilities and procedures.<sup>7</sup> Board policies and procedures should include processes to identify, address and manage potential conflicts of interest of board members. Conflicts of interest include, for example, circumstances in which a board member has material competing business interests with the securities settlement facility. Further, policies and procedures should also include regular reviews of the board's performance and the performance of each individual member, as well as, potentially, periodic independent assessments of performance.

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6 If a securities settlement facility is wholly owned or controlled by another entity, the Reserve Bank will also consider the governance arrangements of that entity in assessing the securities settlement facility's observance of this Standard.

7 Such committees would normally be composed mainly of – and if possible, led by – non-executive or independent directors (see also SSF Standard 2.4).

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

2.4.1 Governance policies related to board composition, appointment and term should also be clear and documented. The board should be composed of suitable members with an appropriate mix of skills (including strategic and relevant technical skills), experience, competence and knowledge of the entity (including an understanding of the securities settlement facility's interconnectedness with other parts of the financial system). The nature and degree of the skills, experience and expertise required of board members will depend on the size, scope and nature of the business conducted by the securities settlement facility. Members should also have a clear understanding of their roles in corporate governance, be able to devote sufficient time to their roles, ensure that their skills remain up to date and have appropriate incentives to fulfil their roles. Members should be able to exercise objective and independent judgement. A securities settlement facility should be able to demonstrate that its board composition provides a sufficient degree of independence from the views of management. This typically requires the inclusion of non-executive board members, including independent board members.<sup>8</sup> The key characteristic of independence is the ability to exercise objective, independent judgement after fair consideration of all relevant information and views and without undue influence from executives or from inappropriate external parties or interests. The precise definition of independence used by a securities settlement facility should be specified and publicly disclosed. A securities settlement facility should also specify and publicly disclose any relevant interests of its board members, as well as any arrangements that it has in place to manage any potential conflicts arising from these interests. Such interests may include relevant business or commercial interests, cross-directorships, shareholdings, or employee relationships. Further, a securities settlement facility should publicly disclose which board members it regards as independent. The appropriate number of independent non-executive directors on a securities settlement facility's board will depend on the size, scope and nature of the business conducted by the securities settlement facility. A securities settlement facility may also need to consider setting a limit on the duration of board members' terms.

**2.5 The roles and responsibilities of management should be clearly specified. A securities settlement facility's management should have the appropriate experience, mix of skills and integrity necessary to effectively discharge its responsibilities for the operation and risk management of the securities settlement facility. Compensation arrangements should be structured in such a way as to promote the soundness and effectiveness of risk management.**

### **Roles and responsibilities of management**

2.5.1 A securities settlement facility should have clear and direct reporting lines between its management and board in order to promote accountability, and the roles and responsibilities of management should be clearly specified. A securities settlement facility's management should have the appropriate experience, mix of skills and integrity necessary to discharge its responsibilities for the operation and risk management of the securities settlement facility. Under board direction (or equivalent alternative governance arrangements), management should ensure that the securities settlement facility's activities are consistent with the objectives, strategy and risk tolerance of the securities settlement facility, as determined by the board (or equivalent). Management should ensure that internal controls

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<sup>8</sup> Having non-executive members included on a board, for example, may help in balancing considerations of safety with competitiveness and, where applicable, profitability.

and related procedures are appropriately designed and executed in order to promote the securities settlement facility's objectives, and that these procedures include a sufficient level of management oversight. Internal controls and related procedures should be subject to regular review and testing by well-trained and staffed risk management and internal audit functions. Additionally, senior management should be actively involved in the risk control process and should ensure that appropriate resources are devoted to the securities settlement facility's risk management framework.

## Compensation

2.5.2 A securities settlement facility should structure compensation arrangements for management to provide incentives for sound and effective risk management. The securities settlement facility should consider offering incentives that reward management for effective risk management and the longer-term financial soundness of the facility. Fundamentally, the securities settlement facility should avoid compensation arrangements that create incentives for management to pursue greater profitability by relaxing risk controls.

**2.6 The board should establish a clear, documented risk management framework that includes the securities settlement facility'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, including through the maintenance of a separate and independent internal audit function.**

## Risk management governance

2.6.1 Because the board is ultimately responsible for managing a securities settlement facility's risks, it should establish a clear, documented risk management framework that includes the securities settlement facility's risk tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision-making in crises and emergencies. The board should regularly monitor the securities settlement facility's risk profile to ensure that it is consistent with the securities settlement facility's business strategy and risk tolerance policy. In addition, the board should ensure that the securities settlement facility has an effective system of controls and oversight, including adequate governance and project management processes, over the models used to quantify, aggregate and manage the securities settlement facility's risks. Board approval should be required for material decisions that would have a significant impact on the risk profile of the entity, such as the limits for total credit exposure and large individual credit exposures. Other material decisions that may require board approval include the introduction of new products, implementation of new links, use of new crisis management frameworks, adoption of processes and templates for reporting significant risk exposures, and adoption of processes for considering adherence to relevant market protocols.

2.6.2 The board, and governance arrangements more generally, should support the use of clear and comprehensive rules and key procedures, including detailed and effective participant default rules and procedures (see SSF Standard 11 on participant default rules and procedures). Governance arrangements should ensure that procedures are in place to support the board's capacity to act appropriately and immediately if any risks arise that threaten the securities settlement facility's viability as a going concern. The governance arrangements should also provide for effective decision-making in

a crisis and support any procedures and rules designed to facilitate the recovery or orderly wind-down of the securities settlement facility.

- 2.6.3 In addition, the governance of the risk management function is particularly important. It is essential that a securities settlement facility's risk management personnel have sufficient independence, authority, resources and access to the board to ensure that the operations of the securities settlement facility are consistent with the risk management framework set by the board. The reporting lines for risk management should be clear and separate from those for other operations of the securities settlement facility, and there should be an additional direct reporting line to a non-executive director on the board via a chief risk officer (or equivalent). To help the board discharge its risk-related responsibilities, a securities settlement facility should have a risk committee, responsible for advising the board on the securities settlement facility's overall current and future risk tolerance and strategy. A securities settlement facility's risk committee should be chaired by a sufficiently knowledgeable individual who is typically independent of the securities settlement facility's executive management and should typically be composed of a majority of members who are non-executive members. The committee should have a clear and public mandate and operating procedures and, where appropriate, have access to external expert advice.

## Model validation

- 2.6.4 The board should ensure that there is adequate governance surrounding the adoption and use of models, such as for credit, collateral and liquidity risk management systems. A securities settlement facility should validate, on an ongoing basis, the models and their methodologies used to quantify, aggregate and manage the securities settlement facility's risks. The validation process should be independent of the development, implementation and operation of the models and their methodologies, and should be subject to an independent review of its adequacy and effectiveness. Validation should include: an evaluation of the conceptual soundness of (including developmental evidence supporting) the models; an ongoing monitoring process that includes verification of processes and benchmarking; and an analysis of outcomes that includes backtesting.
- 2.7 A securities settlement facility's operations, risk management processes, internal control mechanisms and accounts should be subject to internal audit and, where appropriate, periodic independent expert reviews. Internal audits should be performed, at a minimum, on an annual basis. The outcome of internal audits and external reviews should be notified to the Reserve Bank and other relevant authorities.**
- 2.7.1 Governance arrangements should establish and provide for appropriate oversight of internal controls and audit. A securities settlement facility should have sound internal control policies and procedures to help manage its risks. For example, as part of a variety of risk controls, governance arrangements should ensure that there are adequate internal controls to protect against the misuse of confidential information. A securities settlement facility should also have an effective internal audit function, with sufficient resources and independence from management to provide, among other activities, a rigorous and independent assessment of the effectiveness of a securities settlement facility's risk management and control processes (see also SSF Standard 3 on the framework for the comprehensive management of risks). Governance arrangements should typically establish an audit committee to oversee the internal audit function. In addition to reporting to senior management, the audit function should have regular access to the board (or equivalent) through an additional reporting line.

2.7.2 A securities settlement facility should engage independent and appropriately qualified external experts to review aspects of its operations, risk management processes, internal control mechanisms and accounts periodically and as required. The adequacy of and adherence to control mechanisms may also be assessed through regular independent compliance programs. In particular, external reviews may be required if internal audit processes or other internal controls identify potential areas of weakness that require additional external scrutiny and analysis. The outcomes of periodic or ad hoc external reviews should be provided to the Reserve Bank and other relevant authorities on a timely basis, and the securities settlement facility should advise the Reserve Bank or other relevant authorities as to how it plans to address any areas of weakness identified.

**2.8 Governance arrangements should ensure that the securities settlement facility's design, rules, overall strategy and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Governance arrangements should provide for consultation and stakeholder engagement through appropriate forums on operational arrangements, risk controls and default management rules and procedures. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.**

2.8.1 A securities settlement facility's governance arrangements should take into account all relevant stakeholders' interests, including those of its direct and indirect participants, in making major decisions, including those relating to the system's design, rules and overall business strategy. A securities settlement facility with cross-border operations, in particular, should ensure that the full range of views across the jurisdictions in which it operates is appropriately considered in the decision-making process. Mechanisms for involving stakeholders in decision-making processes may include stakeholder representation on the board (including direct and indirect participants), user committees and public consultation processes. Where appropriate, a securities settlement facility should consider establishing targeted stakeholder forums that provide opportunities for focused consultation with specific segments of the participant base, or other stakeholders that have common interests. This might be particularly important where stakeholders vary significantly in size, location or other characteristics. These forums may provide opportunity for stakeholder input on matters such as the securities settlement facility's operational arrangements, risk controls and default management rules and procedures. As opinions among interested parties are likely to differ, the securities settlement facility should have clear processes for identifying and appropriately managing the diversity of stakeholder views and any conflicts of interest between stakeholders and the securities settlement facility. Without prejudice to local requirements on confidentiality and disclosure, the securities settlement facility should clearly and promptly inform its owners, participants, other users and, where appropriate, the broader public, of the outcome of major decisions, and consider providing summary explanations for decisions to enhance transparency where it would not endanger candid board debate or commercial confidentiality.

**2.9 A securities settlement facility that is part of a group of companies should ensure that measures are in place such that decisions taken in accordance with its obligations as a securities settlement facility cannot be compromised by the group structure or by board members also being members of the board of other entities in the same group. In particular, such a securities settlement facility should consider specific procedures for preventing and managing conflicts of interest, including with respect to intragroup outsourcing arrangements.**

2.9.1 Where a securities settlement facility is part of a wider corporate group, there may be the potential for conflicts to arise between the obligations and interests of the securities settlement facility and those of other entities in the group (including related functions performed within the same legal entity – see SSF Standard 1.1), or the group as a whole. For example, where a securities settlement facility utilises staff or other resources that are employed or owned by other group entities, there may be circumstances in which it is in the interests of the group to withhold the provision of those resources – for instance, if it appears likely that the securities settlement facility may enter external administration. Conflicts could also arise between the risk management objectives of a securities settlement facility and the business interests of other group entities. A securities settlement facility should therefore ensure that potential conflicts will not prevent it from appropriately managing its risks and fulfilling its regulatory and other obligations. This may include consideration of whether adequate arrangements exist to manage potential conflicts arising from board composition – that is, where directors of other group entities are members of the securities settlement facility’s board – or any intragroup outsourcing arrangements (including the sharing of staff or other resources) that exist between the securities settlement facility and other group entities. The securities settlement facility should be able to demonstrate to the Reserve Bank and other relevant authorities that its arrangements to manage potential conflicts are adequate, including through the provision of relevant documented governance policies and procedures.

### Standard 3: Framework for the comprehensive management of risks

**A securities settlement facility should have a sound risk management framework for comprehensively managing legal, credit, liquidity, operational and other risks.**

#### Guidance

A securities settlement facility should take an integrated and comprehensive view of its risks, including the risks it bears from and poses to its participants and their customers, as well as the risks it bears from and poses to other entities, such as other FMs, money settlement agents, liquidity providers and service providers. A securities settlement facility should consider how various risks relate to, and interact with, each other. The securities settlement facility should have a sound risk management framework (including policies, procedures and systems) that enable it to identify, measure, monitor and manage effectively the range of risks that arise in or are borne by the securities settlement facility. A securities settlement facility’s framework should include the identification and management of interdependencies. A securities settlement facility should also provide appropriate incentives and the relevant information for its participants and other entities to manage and contain their risks vis-à-vis the securities settlement facility. As set out in SSF Standard 2 on governance, the board of directors plays a critical role in establishing and maintaining a sound risk management framework.

**3.1 A securities settlement facility 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 securities settlement facility. This risk management framework should be subject to periodic review.**

#### Identification of risks

3.1.1 To establish a sound risk management framework, a securities settlement facility should first identify the range of risks that arise within the securities settlement facility and the risks it directly bears from

or poses to its participants, its participants' customers and other entities. It should identify those risks that could materially affect its ability to perform or to provide services as expected. Typically these include legal and operational risks, and in some cases may include credit and liquidity risks. A securities settlement facility should also consider other relevant and material risks, such as market (or price), concentration and general business risks, as well as risks that do not appear to be significant in isolation, but when combined with other risks become material. The consequences of these risks may have significant reputational effects on the securities settlement facility and may undermine the securities settlement facility's financial soundness as well as the stability of the broader financial markets. In identifying risks, a securities settlement facility should take a broad perspective and identify the risks that it bears from other entities, such as other FMs, money settlement agents, liquidity providers, service providers and any entities that could be materially affected by the securities settlement facility's inability to provide services. For example, the relationship between a securities settlement facility and a large-value payment system to achieve DvP settlement can create system-based interdependencies.

### **Comprehensive risk policies, procedures and controls**

3.1.2 A securities settlement facility's board and senior management are ultimately responsible for managing the securities settlement facility's risks (see SSF Standard 2 on governance). The board should determine an appropriate level of aggregate risk tolerance and capacity for the securities settlement facility. The board and senior management should establish policies, procedures and controls that are consistent with the securities settlement facility's risk tolerance and capacity. The securities settlement facility's policies, procedures and controls serve as the basis for identifying, measuring, monitoring and managing the securities settlement facility's risks and should cover routine and non-routine events, including the potential inability of a participant, or the securities settlement facility itself, to meet its obligations. A securities settlement facility's policies, procedures and controls should address all relevant risks, including legal, credit, liquidity, general business and operational risks. These policies, procedures and controls should be part of a coherent and consistent framework that is reviewed and updated periodically, and shared with the Reserve Bank and other relevant authorities.

### **Information and control systems**

3.1.3 In addition, a securities settlement facility should employ robust information and risk control systems to provide the securities settlement facility with the capacity to obtain timely information necessary to apply risk management policies and procedures. In particular, these systems should allow for the accurate and timely measurement and aggregation of risk exposures across the securities settlement facility, the management of individual risk exposures and the interdependencies between them, and the assessment of the impact of various economic and financial shocks that could affect the securities settlement facility. Where relevant, information systems should also enable the securities settlement facility to monitor credit and liquidity exposures, overall credit and liquidity limits, and the relationship between these exposures and limits.

3.1.4 Where appropriate, a securities settlement facility should also provide its participants and its participants' customers with the relevant information to manage and contain their credit and liquidity risks.<sup>9</sup> A securities settlement facility may consider it beneficial to provide its participants and its

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<sup>9</sup> A securities settlement facility should ensure that its information systems have the capacity to provide this information on a timely basis.

participants' customers with information necessary to monitor their credit and liquidity exposures, overall credit and liquidity limits, and the relationship between these exposures and limits.

## Internal controls

3.1.5 A securities settlement facility also should have comprehensive internal processes to help the board and senior management monitor and assess the adequacy and effectiveness of a securities settlement facility's risk management policies, procedures, systems and controls. While business line management serves as the first 'line of defence', the adequacy of and adherence to control mechanisms should be assessed regularly through independent compliance programs and independent external reviews.<sup>10</sup> A robust internal audit function can provide an independent assessment of the effectiveness of a securities settlement facility's risk management and control processes. An emphasis on the adequacy of controls by senior management and the board as well as internal audit can also help counterbalance a business management culture that may favour business interests over establishing and adhering to appropriate controls. In addition, proactive engagement of audit and internal control functions when changes are under consideration can also be beneficial. Specifically, securities settlement facilities that involve their internal audit function in pre-implementation reviews will often reduce their need to expend additional resources to retrofit processes and systems with critical controls that had been overlooked during initial design phases and construction efforts.

### **3.2 A securities settlement facility should ensure that financial and other obligations imposed on participants under its risk management framework are proportional to the scale and nature of individual participants' activities.**

3.2.1 A securities settlement facility should ensure that it has sufficient risk controls and other arrangements in place to comply with the SSF Standards, and address any other systemic risk implications of its activities. In accordance with a securities settlement facility's risk management framework, these arrangements may place financial and other obligations on participants, such as *ex-ante* agreed arrangements for the provision of liquid resources and allocations of uncovered losses or liquidity shortfalls (see SSF Standard 4 on credit risk, SSF Standard 6 on liquidity risk and SSF Standard 11 on participant default rules and procedures), or minimum operational requirements (see SSF Standard 14 on operational risk). Such obligations should be proportional to the nature and magnitude of the risk that individual participants' activities pose to the safety of the securities settlement facility. In general, obligations placed on a participant with limited or conservative activities should differ from those placed on a participant with extensive or risky activities. For the purposes of this Standard, financial obligations do not include minimum capital requirements for participants, which are dealt with under SSF Standard 15 on access and participation requirements.

### **3.3 A securities settlement facility should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the securities settlement facility.**

3.3.1 In establishing risk management policies, procedures and systems, a securities settlement facility should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the securities settlement facility. There are several ways in which a securities

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<sup>10</sup> Internal audits should be performed by qualified and independent individuals who did not participate in the creation of the control mechanisms. The securities settlement facility should also subject aspects of its risk management processes to external independent review (see SSF Standard 2 on governance).



settlement facility may provide incentives. For example, a securities settlement facility could apply financial penalties to participants that fail to settle securities in a timely manner. Provision of incentives can help reduce the moral hazard that may arise from formulas in which losses are shared equally among participants or other formulas where losses are not shared proportionally to risk.

**3.4 A securities settlement facility should regularly review the material risks it bears from and poses to other entities (such as other FMIs, money settlement agents, liquidity providers and service providers) as a result of interdependencies, and develop appropriate risk management tools to address these risks.**

3.4.1 A securities settlement facility should regularly review the material risks it bears from and poses to other entities (such as other FMIs, money settlement agents, liquidity providers and service providers) as a result of interdependencies and develop appropriate risk management tools to address these risks (see also SSF Standard 17 on FMI links). In particular, a securities settlement facility should have effective risk management tools to manage all relevant risks, including the legal, general business and operational risks that it bears from and poses to other entities, in order to limit the effects of disruptions from and to such entities as well as disruptions from and to the broader financial markets. These tools should include business continuity arrangements that allow for rapid recovery and resumption of critical operations and services in the event of operational disruptions (see SSF Standard 14 on operational risk), liquidity risk management techniques (see SSF Standard 6 on liquidity risk), and recovery or orderly wind-down plans should the securities settlement facility become non-viable. Because of the interdependencies between and among systems, a securities settlement facility should ensure that its crisis management arrangements allow for effective coordination among the affected entities, including cases in which its own viability or the viability of an interdependent entity is in question.

**3.5 A securities settlement facility 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. A securities settlement facility should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, a securities settlement facility should also provide relevant authorities with the information needed for purposes of resolution planning.**

3.5.1 A securities settlement facility 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. These scenarios should take into account the various independent and related risks to which the securities settlement facility is exposed. Using this analysis (and taking into account any constraints potentially imposed by domestic legislation), the securities settlement facility should prepare appropriate plans for its recovery or orderly wind-down. The plans should contain, among other elements, a substantive summary of the key recovery or orderly wind-down strategies, the identification of the securities settlement facility's critical operations and services, and a description of the measures needed to implement the key strategies. A securities settlement facility should have the capacity to identify and provide to related entities the information needed to implement its plans on a timely basis during stress scenarios. In addition, these plans should be reviewed and updated regularly. Where applicable, a securities settlement facility should provide

relevant resolution authorities with the information, including strategy and scenario analysis, needed for purposes of resolution planning.

## Standard 4: Credit risk

**A securities settlement facility should effectively measure, monitor and manage its credit exposures to participants and those arising from its settlement processes. A securities settlement facility should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence.**

### Guidance

*This Standard applies only to a securities settlement facility that assumes credit risk as principal. In general, a securities settlement facility operating in Australia would not be expected to assume credit risk as principal. The design of the securities settlement facility and the scope of its activities should minimise the potential for such risk to arise. In the event that it did assume credit risk as principal, the facility should consult with the Reserve Bank to identify clearly the circumstances in which such risk was assumed.*

Credit risk is broadly defined as the risk that a counterparty will be unable to meet fully its financial obligations when due or at any time in the future. The default of a participant (and its affiliates) has the potential to cause severe disruption to a securities settlement facility, its other participants and the financial markets more broadly. Therefore, a securities settlement facility should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its settlement processes (see also SSF Standard 3 on the framework for the comprehensive management of risks, SSF Standard 8 on money settlements, SSF Standard 10 on exchange-of-value settlement systems and SSF Standard 13 on custody and investment risks). Credit exposures may arise in the form of current exposures, potential future exposures, or both. Current exposure, in this context, is defined as the loss that a securities settlement facility would face immediately if a participant were to default.<sup>11</sup> Potential future exposure is broadly defined as any potential credit exposure that a securities settlement facility could face at a future point in time.<sup>12</sup> The type and level of credit exposure faced by a securities settlement facility will vary based on its design and the credit risk of the counterparties concerned.<sup>13</sup>

**4.1 A securities settlement facility should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its settlement processes. Credit exposures may arise from current exposures, potential future exposures, or both.**

4.1.1 A securities settlement facility may face a number of credit risks from its participants or its settlement processes. A securities settlement facility may face counterparty credit risk from the extension of credit to participants. This extension of credit creates current exposures and can lead to potential future exposures, even when the securities settlement facility accepts collateral to secure the credit. A securities settlement facility would face potential future exposure if the value of collateral posted

<sup>11</sup> Current exposure is technically defined as the larger of zero or the market value (or replacement cost) of a transaction or portfolio of transactions within a netting set with a counterparty that would be lost upon the default of the counterparty.

<sup>12</sup> Potential future exposure is technically defined as the maximum exposure estimated to occur at a future point in time at a high level of statistical confidence. Potential future exposure arises from potential fluctuations in the market value of a participant's open positions between the time they are incurred or reset to the current market price and the time they are liquidated or effectively hedged.

<sup>13</sup> In considering any credit exposure to a central bank, on a case-by-case basis a securities settlement facility may take into account the special characteristics of the central bank.

by a participant could fall below the amount of credit extended to the participant by the securities settlement facility, leaving a residual uncovered exposure. In addition, a securities settlement facility that explicitly guarantees settlement would face current exposures arising from any failure of a participant to fund its net debit position or meet its obligations to deliver financial instruments.

**4.2 A securities settlement facility should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk management tools to control these risks. To assist in this process, a securities settlement facility should ensure it has the capacity to calculate exposures to participants on a timely basis as required, and to receive and review timely and accurate information on participants' credit standing.**

4.2.1 A securities settlement facility should frequently and regularly measure and monitor its credit risks throughout the day using timely information. A securities settlement facility should ensure it has access to adequate information, such as appropriate collateral valuations, to allow it to measure and monitor its current exposures and degree of collateral coverage. If credit risk exists between participants, the securities settlement facility should provide the capacity to participants to measure and monitor their current exposures to each other in the system or adopt rules that require participants to provide relevant exposure information. Current exposure should be relatively straightforward to measure and monitor; however, potential future exposure may require modelling or estimation. In order to monitor its risks associated with current exposure, a securities settlement facility should monitor market conditions for developments that could affect these risks, such as collateral values. In order to estimate its potential future exposure and associated risk, a securities settlement facility should model possible changes in collateral values and market conditions over an appropriate liquidation period. A securities settlement facility should regularly monitor the existence of large exposures to its participants and, where appropriate, their customers. A securities settlement facility's systems should be capable of calculating exposures to participants intraday and at short notice.

4.2.2 Additionally, a securities settlement facility should have the capacity to monitor any changes in the creditworthiness of its participants through the systematic review of timely information on financial standing, business activities and profile, and potential interdependencies. The securities settlement facility should use this capacity to conduct periodic reviews of its participants' credit standing, and to conduct ad hoc reviews where the securities settlement facility has reason to believe that a participant's credit standing may deteriorate.

4.2.3 A securities settlement facility should mitigate its credit risks to the extent possible. A securities settlement facility should, for example, eliminate its or its participants' principal risk associated with the settlement process by employing an exchange-of-value settlement system (see SSF Standard 10 on exchange-of-value settlement systems). The use of a system that settles securities and funds on a gross, obligation-by-obligation basis (DvP model 1) would further reduce potential liquidity exposures among participants. In addition, a securities settlement facility should limit its current exposures by strictly limiting the extension of credit.

**4.3 A securities settlement facility should have the authority to impose activity restrictions or additional credit risk controls on a participant in situations where the securities settlement facility determines that the participant's credit standing may be in doubt.**

4.3.1 If a securities settlement facility determines that a participant's credit standing may be in doubt, it should have the authority, under its rules and procedures, to impose additional credit risk controls

on the participant. These may include placing restrictions on the level or types of activities that the participant can undertake, or calling for additional collateral from the participant. In extreme cases, the securities settlement facility may need to consider suspending the participant (see SSF Standard 11 on participant default rules and procedures and SSF Standard 15 on access and participation requirements).

**4.4 A securities settlement facility 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 SSF Standard 5 on collateral). In the case of a deferred net settlement (DNS) securities settlement facility in which there is no settlement guarantee, but where its participants face credit exposures arising from its settlement processes, the facility should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.**

- 4.4.1 A securities settlement facility may settle securities on a gross basis and funds on a net basis (DvP model 2) or settle both securities and funds on a net basis (DvP model 3). Further, a securities settlement facility that uses a DvP model 2 or 3 settlement mechanism may explicitly guarantee settlement, whether the guarantee is by the securities settlement facility itself or by its participants. In such systems, this guarantee represents an extension of intraday credit from the guarantor. In a securities settlement facility that does not provide an explicit settlement guarantee, participants may face settlement risk vis-à-vis each other if a participant defaults on its obligations. Whether this settlement risk involves credit exposures, liquidity exposures or a combination of both will depend on the type and scope of the obligations, including any contingent obligations, the participants bear. The type of obligations will, in turn, depend on factors such as the securities settlement facility's design, rules and legal framework.
- 4.4.2 In order to manage the risk from a participant default, a securities settlement facility should consider the impact of participant defaults and use robust techniques for managing collateral. A securities settlement facility 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 (equity can be used after deduction of the amount dedicated to cover general business risk) (see SSF Standard 5 on collateral and SSF Standard 12 on general business risk).<sup>14</sup> By requiring collateral to cover credit exposures, a securities settlement facility mitigates, and in some cases eliminates, its current exposures and may provide participants with an incentive to manage the credit risks they pose to the securities settlement facility or other participants. Further, this collateralisation allows a securities settlement facility that employs a DvP model 2 or 3 mechanism to avoid unwinding transactions or to mitigate the effect of an unwind should a participant default on its obligations. Collateral and other equivalent financial resources can fluctuate in value, however, so the securities settlement facility needs to establish prudent haircuts to mitigate the resulting potential future exposures.
- 4.4.3 A securities settlement facility that uses a DvP model 2 or 3 mechanism and explicitly guarantees settlement, whether the guarantee is from the securities settlement facility itself or from its participants, should maintain sufficient financial resources to cover fully, with a high degree of confidence, all current and potential future exposures using collateral and other equivalent financial resources. A securities

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<sup>14</sup> Equity may only be used up to the amount held in sufficiently liquid net assets. Such use of equity should be strictly limited to avoiding disruptions in settlement when collateral is not available in a timely manner.

settlement facility that uses a DvP model 2 mechanism and does not explicitly guarantee settlement, but where its participants face credit exposures arising from its settlement processes, 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. DvP model 3 mechanisms do not create credit exposures for participants due to the contemporaneous settlement of linked obligations. A higher level of coverage should be considered for a securities settlement facility that has large exposures or that could have a significant systemic impact if more than two participants and their affiliates were to default.

- 4.5 A securities settlement facility 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 securities settlement facility. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds a securities settlement facility may borrow from liquidity providers. These rules and procedures should also indicate the securities settlement facility's process to replenish any financial resources that the securities settlement facility may employ during a stress event, so that the securities settlement facility can continue to operate in a safe and sound manner.**

### Use of financial resources

- 4.5.1 The rules of a securities settlement facility should expressly set out the order and circumstances in which specific resources of the securities settlement facility can be used in a participant default (see SSF Standard 11 on participant default rules and procedures and SSF Standard 18 on disclosure of rules, key policies and procedures, and market data). For the purposes of this Standard, a securities settlement facility should not include as 'available' to cover credit losses from participant defaults those resources that are needed to cover current operating expenses, potential general business losses or other losses from ancillary activities in which the securities settlement facility is engaged (see SSF Standard 1 on legal basis and SSF Standard 12 on general business risk). In addition, if a securities settlement facility serves multiple markets (either in the same jurisdiction or multiple jurisdictions), its ability to use resources supplied by participants in one market to cover losses from a participant default in another market should have a sound legal basis, be clear to all participants, and avoid significant levels of contagion risk between markets and participants. The design of a securities settlement facility's stress tests should take into account the extent to which resources are pooled across markets in scenarios involving one or more participant defaults across several markets.

### Contingency planning for uncovered credit losses

- 4.5.2 In certain extreme circumstances, the post-liquidation value of the collateral and other financial resources that secure a securities settlement facility's credit exposures may not be sufficient to cover fully credit losses resulting from those exposures. A securities settlement facility should analyse and plan for how it would address any uncovered credit losses. A securities settlement facility 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 securities settlement facility. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds a securities settlement facility

may borrow from liquidity providers.<sup>15</sup> A securities settlement facility's rules and procedures should also indicate its process to replenish any financial resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.

## Standard 5: Collateral

**A securities settlement facility that requires collateral to manage its or its participants' credit exposures should accept collateral with low credit, liquidity and market risks. A securities settlement facility should also set and enforce appropriately conservative haircuts and concentration limits.**

### Guidance

Collateralising any credit exposures protects a securities settlement facility and, where relevant, its participants against potential losses in the event of a participant default (see SSF Standard 4 on credit risk). Besides mitigating a securities settlement facility's own credit risk, the use of collateral can provide participants with incentives to manage the risks they pose to the securities settlement facility or other participants. A securities settlement facility should apply prudent haircuts to the value of the collateral to achieve a high degree of confidence that the liquidation value of the collateral will be greater than or equal to the obligation that the collateral secures in extreme but plausible market conditions. Additionally, a securities settlement facility should have the capacity to use the collateral promptly when needed.

**5.1 A securities settlement facility should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity and market risks.**

5.1.1 A securities settlement facility should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity and market risks. Collateral with low credit, liquidity and market risks comprises assets that may be reliably liquidated or repurchased in private markets, within a reasonable time frame and at a value within the haircut applied or, *in extremis* and where the collateral taker has access, sold to a central bank under a repurchase agreement or otherwise pledged to a central bank. Certain types of collateral that are not considered to have low credit, liquidity and market risks may nevertheless be acceptable collateral for credit purposes if an appropriate haircut is applied. A securities settlement facility must be confident of the collateral's value in the event of liquidation and of its capacity to use that collateral quickly, especially in stressed market conditions. Where a securities settlement facility accepts collateral that does not have low credit, liquidity and market risks, it should demonstrate that it sets and enforces appropriately conservative haircuts and concentration limits (see SSF Standard 5.3).

5.1.2 In general, bank guarantees are not acceptable collateral. However, the use of bank guarantees may be acceptable under certain specified circumstances and under certain conditions, subject to prior approval from the Reserve Bank or other relevant authorities. The Reserve Bank will consider the acceptability of bank guarantees as collateral on a case-by-case basis, taking into account factors including: the credit standing of the bank providing the guarantee; the legal certainty of the arrangement; and whether there is any collateral supporting the guarantee.

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<sup>15</sup> For instance, a securities settlement facility's rules and procedures might provide for the allocation of uncovered credit losses by writing down potentially unrealised gains by non-defaulting participants and the possibility of calling for additional contributions from participants based on the relative size and risk of their portfolios.

5.1.3 Further, a securities settlement facility should regularly review its requirements for acceptable collateral in accordance with changes in underlying risks. When evaluating types of collateral, a securities settlement facility should consider potential delays in accessing the collateral due to the settlement conventions for transfers of the asset. In addition, participants should not be permitted to post their own debt or equity securities, or debt or equity of companies closely linked to them, as collateral. More generally, a securities settlement facility should mitigate specific wrong-way risk by limiting the acceptance of collateral that would likely lose value in the event that the participant providing the collateral defaulted. The securities settlement facility should measure and monitor the correlation between a counterparty's creditworthiness and the collateral posted and take measures to mitigate the risks, for instance by setting more conservative haircuts.

5.1.4 If a securities settlement facility plans to use assets held as collateral to secure liquidity facilities in the event of a participant default, the securities settlement facility will also need to consider, in determining acceptable collateral, what will be acceptable as security to lenders offering liquidity facilities (see SSF Standard 6 on liquidity risk).

**5.2 In determining its collateral policies, a securities settlement facility should take into consideration the broad effect of these policies on the market. As part of this, a securities settlement facility should consider allowing the use of collateral commonly accepted in the relevant jurisdictions in which it operates.**

5.2.1 A securities settlement facility's collateral policies may have broader effects than their direct implications for the effectiveness of the securities settlement facility's risk controls. On the one hand, assets accepted as collateral by FMI, including securities settlement facilities, may be more likely to then be held by participants or used as collateral in other contexts, and may become more liquid as a result. On the other hand, use of a particular class of assets to meet collateral obligations at FMI may, depending on its supply, restrict the availability of such assets for other uses, or significantly affect liquidity and pricing. A securities settlement facility should consider such broader effects when framing its collateral policies.

5.2.2 Participants that are required to source unfamiliar assets as collateral may face additional operational, legal or financial risks as a result. A securities settlement facility should therefore consider allowing the use of collateral that is commonly accepted in each jurisdiction in which it operates. In particular, a securities settlement facility with material Australian-based participation should consider accepting appropriate Australian dollar-denominated securities as collateral.

**5.3 A securities settlement facility should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.**

5.3.1 To provide adequate assurance of the value of collateral in the event of liquidation, a securities settlement facility should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions. A securities settlement facility should, at a minimum, mark its collateral to market daily. Haircuts should reflect the potential for asset values and liquidity to decline over the interval between their last revaluation and the time by which a securities settlement facility can reasonably assume that the assets can be liquidated. Haircuts also should incorporate assumptions about collateral value during stressed market conditions and reflect regular stress testing that takes into account extreme price moves, as well as changes in market liquidity for the asset. If market prices do not fairly represent the true value of the assets, a securities settlement

facility should have the authority to exercise discretion in valuing assets according to predefined and transparent methods. A securities settlement facility's haircut procedures should be independently validated at least annually.<sup>16</sup>

**5.4 In order to reduce the need for procyclical adjustments, a securities settlement facility should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.**

5.4.1 A securities settlement facility should appropriately address procyclicality in its collateral arrangements. To the extent practicable and prudent, a securities settlement facility should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions in order to reduce the need for procyclical adjustments. In this context, procyclicality typically refers to changes in risk management practices that are positively correlated with market, business or credit cycle fluctuations and that may cause or exacerbate financial instability. While changes in collateral values tend to be procyclical, collateral arrangements can increase procyclicality if haircut levels fall during periods of low market stress and increase during periods of high market stress. For example, in a stressed market, a securities settlement facility may require the posting of additional collateral both because of the decline in asset prices and because of an increase in haircut levels. Such actions could exacerbate market stress and contribute to driving down asset prices further, resulting in additional collateral requirements. This cycle could exert further downward pressure on asset prices. Addressing issues of procyclicality may create additional costs for securities settlement facilities and their participants in periods of low market stress because of higher collateral requirements, but result in additional protection and potentially less costly and less disruptive adjustments in periods of high market stress.

**5.5 A securities settlement facility should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.**

5.5.1 A securities settlement facility should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects, including in stressed market conditions. High concentrations within holdings can be avoided by establishing concentration limits or imposing concentration charges. Concentration limits restrict participants' ability to provide certain collateral assets above a specified threshold as established by the securities settlement facility. Concentration charges penalise participants for maintaining holdings of certain assets beyond a specified threshold as established by the securities settlement facility. Further, concentration limits and charges should be constructed to prevent participants from covering a large share of their collateral requirements with the most risky assets acceptable. Concentration limits and charges should be periodically reviewed by the securities settlement facility to determine their adequacy.

**5.6 A securities settlement facility 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.**

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<sup>16</sup> Validation of the securities settlement facility's haircut procedures should be performed by personnel of sufficient expertise who are independent of the personnel that created or apply the haircut procedures. These expert personnel could be drawn from within the securities settlement facility. However, a review by personnel external to the securities settlement facility may also be necessary at times.



5.6.1 If a securities settlement facility accepts cross-border collateral, it should identify and mitigate any additional risks associated with its use and ensure that it can be used in a timely manner.<sup>17</sup> A cross-border collateral arrangement can provide an efficient liquidity bridge across markets, help relax collateral constraints for some participants and contribute to the efficiency of some asset markets. These linkages, however, can also create significant interdependencies between a securities settlement facility and other FMIs, and risks to the securities settlement facility that need to be evaluated and managed (see also SSF Standard 14 on operational risk and SSF Standard 17 on FMI links). For example, a securities settlement facility should have appropriate legal and operational safeguards to ensure that it can use the cross-border collateral in a timely manner and should identify and address any significant liquidity effects. A securities settlement facility also should consider foreign exchange risk where collateral is denominated in a currency different from that in which the exposure arises, and set haircuts to address the additional risk to a high level of confidence. The securities settlement facility should have the capacity to address potential operational challenges of operating across borders, such as differences in time zones or operating hours of foreign central securities depositories or custodians.

**5.7 A securities settlement facility should use a collateral management system that is well designed and operationally flexible.**

### Collateral management systems

5.7.1 A securities settlement facility should use a well-designed and operationally flexible collateral management system. Such a system should accommodate changes in the ongoing monitoring and management of collateral. A collateral management system should track the extent of reuse of collateral (both cash and non-cash) and the rights of a securities settlement facility to the collateral provided to it by its counterparties. Where appropriate, a securities settlement facility's collateral management system should also have functionality to accommodate the timely deposit, withdrawal, substitution and liquidation of collateral in each jurisdiction in which it operates. In particular, where the scope of Australian participation in the securities settlement facility is material, and where market conventions dictate, a securities settlement facility's collateral management system should have the capacity to accommodate the timely deposit, withdrawal, substitution and liquidation of collateral during Australian market hours. A securities settlement facility should allocate sufficient resources to its collateral management system to ensure an appropriate level of operational performance, efficiency and effectiveness. Senior management should ensure that the securities settlement facility's collateral management function is adequately staffed to ensure smooth operations, especially during times of market stress, and that all activities are tracked and reported, as appropriate, to senior management.<sup>18</sup>

### Reuse of collateral

5.7.2 Reuse of collateral refers to the securities settlement facility's subsequent use of collateral that has been provided by participants in the normal course of business. This differs from the securities settlement facility's use of collateral in a default scenario during which the defaulter's collateral, which has become the property of the securities settlement facility, can be used to access liquidity facilities

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<sup>17</sup> Cross-border collateral has at least one of the following foreign attributes with respect to the country in which the securities settlement facility's operations are based: the currency of denomination; the jurisdiction in which the assets are located; or the jurisdiction in which the issuer is established.

<sup>18</sup> Summary reports should include information on the reuse of collateral and the terms of such reuse, including instrument, credit quality and maturity. These reports should also track concentration of individual collateral asset classes.

or liquidated to cover losses (see SSF Standard 11 on participant default rules and procedures). A securities settlement facility should have clear and transparent rules regarding the reuse of collateral (see SSF Standard 18 on disclosure of rules, key policies and procedures and market data). In particular, the rules should clearly specify when a securities settlement facility may reuse its participant collateral and the process for returning that collateral to participants. In general, a securities settlement facility should not rely on the reuse of collateral as an instrument for increasing or maintaining its profitability. However, a securities settlement facility may invest any cash collateral received from participants on their behalf (see SSF Standard 13 on custody and investment risks).

## Standard 6: Liquidity risk

**A securities settlement facility should effectively measure, monitor and manage its liquidity risk. A securities settlement facility 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 securities settlement facility in extreme but plausible market conditions.**

### Guidance

*This Standard applies primarily to a securities settlement facility that assumes liquidity risk as principal, although it also places some obligations where the design of a securities settlement facility generates liquidity risk exposures for its participants. In general, a securities settlement facility operating in Australia would not be expected to assume liquidity risk as principal. The design of the securities settlement facility and the scope of its activities should minimise the potential for such risk to arise. In the event that it did assume liquidity risk as principal, the facility should consult with the Reserve Bank to identify clearly the circumstances in which such risk was assumed.*

Liquidity risk arises in a securities settlement facility when it, its participants or other entities cannot settle their payment obligations when due as part of the settlement process. Depending on the design of a securities settlement facility, liquidity risk can arise between the securities settlement facility and its participants, between the securities settlement facility and other entities (such as commercial bank money settlement agents, nostro agents, custodian banks and liquidity providers), or between participants in a securities settlement facility. It is particularly important for a securities settlement facility to manage carefully its liquidity risk if the securities settlement facility relies on incoming payments from participants or other entities during the settlement process in order to make payments to other participants. If a participant or another entity fails to pay the securities settlement facility, the securities settlement facility may not have sufficient funds to meet its payment obligations to other participants. In such an event, the securities settlement facility would need to rely on its own liquid resources (that is, liquid assets and prearranged funding arrangements) to cover the funds shortfall and complete settlement. A securities settlement facility should have a robust framework to manage its liquidity risks from the full range of participants and other entities. In some cases, a participant may play other roles within the securities settlement facility, such as a settlement or custodian bank or liquidity provider. These other roles should be considered in determining a securities settlement facility's liquidity needs.

**6.1 A securities settlement facility should have a robust framework to manage its liquidity risks from its participants, commercial bank money settlement agents, nostro agents, custodians, liquidity providers and other entities.**

### Sources of liquidity risk

6.1.1 A securities settlement facility should clearly identify its sources of liquidity risk and assess its current and potential future liquidity needs on a daily basis. A securities settlement facility can face liquidity risk from the default of a participant. For example, a securities settlement facility might not be able to convert a defaulting participant's collateral into cash at short notice. A securities settlement facility can also face liquidity risk from any commercial bank money settlement agents, nostro agents, custodians and liquidity providers, as well as linked FMI and service providers, if they fail to perform as expected. Moreover, as noted above, a securities settlement facility may face additional risk from entities that have multiple roles within the securities settlement facility (for example, a participant that also serves as the securities settlement facility's money settlement agent or liquidity provider). These interdependencies and the multiple roles that an entity may assume within a securities settlement facility should be taken into account by the securities settlement facility. A securities settlement facility that employs a DNS mechanism may also create direct liquidity exposures between participants. In a securities settlement facility that uses a DvP model 2 or 3 settlement mechanism and does not guarantee settlement, participants may face liquidity exposures to each other if one of the participants fails to meet its obligations (see SSF Standard 10 on exchange-of-value settlement systems).

### Managing liquidity risk

6.1.2 A securities settlement facility should regularly assess its design and operations to manage, and where possible reduce, liquidity risk in the system. A securities settlement facility that employs a DNS mechanism may be able to reduce its participants' liquidity risk by using alternative settlement designs, such as real-time gross settlement (RTGS) designs with liquidity saving features or a continuous or extremely frequent batch settlement system (see SSF Standard 10 on exchange-of-value systems). In addition, it could reduce the liquidity demands of its participants by providing participants with sufficient information or control systems to help them manage their liquidity needs and risks. Furthermore, a securities settlement facility should ensure that it is operationally ready to manage the liquidity risk caused by participants' or other entities' financial or operational problems. Among other things, a securities settlement facility that does not settle its funds obligations directly in central bank money (see SSF Standard 9 on money settlements) should have the operational capacity to reroute payments, where feasible, on a timely basis in case of problems with a correspondent bank.

6.1.3 A securities settlement facility may use other risk management tools to manage its liquidity risk. For instance, to mitigate and manage liquidity risks from the late-day submission of payments or other transactions, a securities settlement facility could adopt rules or financial incentives for timely submission. And to mitigate and manage liquidity risk stemming from a service provider or a linked FMI, a securities settlement facility could use, individually or in combination, selection criteria, concentration or exposure limits, and collateral requirements. For example, a securities settlement facility should seek to manage or diversify its settlement flows and liquid resources to avoid excessive intraday or overnight exposure to one entity. This, however, may involve trade-offs between the efficiency of relying on an entity and the risks of being overly dependent on that entity.

**6.2 A securities settlement facility 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.**

6.2.1 A securities settlement facility should have effective operational and analytical tools to identify, measure and monitor its settlement and funding flows on an ongoing and timely basis, including any use of intraday liquidity. In particular, a securities settlement facility should understand and assess the value and concentration of its daily settlement and funding flows through any money settlement agents, nostro agents and other intermediaries. A securities settlement facility also should be able to monitor on a daily basis the level of liquid assets (such as cash, securities, other assets held in custody and investments) that it holds. A securities settlement facility should be able to determine the value of its available liquid assets, taking into account the appropriate haircuts on those assets (see SSF Standard 5 on collateral).

6.2.2 In a DNS system, a securities settlement facility should provide sufficient information and analytical tools to help its participants measure and monitor their liquidity risks in the securities settlement facility. As part of this, the securities settlement facility should ensure that all participants understand that their settlement obligations might change, and to the extent possible, how they might change, in the event that a participant (or its settlement bank) failed to meet its obligations and the securities settlement facility had to recalculate other participants' obligations in a multilateral net settlement batch.

6.2.3 If a securities settlement facility maintains prearranged funding arrangements, the securities settlement facility should also identify, measure and monitor its liquidity risk from the liquidity providers of those arrangements. A securities settlement facility should obtain a high degree of confidence through rigorous due diligence that each liquidity provider, whether or not it is a participant in the securities settlement facility, would have the capacity to perform as required under the liquidity arrangement and is subject to commensurate regulation, supervision or oversight of its liquidity risk management requirements. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, the liquidity provider's potential access to credit from the relevant central bank may be taken into account.

**6.3 A securities settlement facility 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.**

6.3.1 A securities settlement facility should ensure that it has sufficient liquid resources, as determined by regular and rigorous stress testing, to effect settlement of any payment obligations that it faces as principal with a high degree of confidence under a wide range of potential stress scenarios. In some instances, a securities settlement facility may need to have access to sufficient liquid resources to effect settlement of payment obligations over multiple days to account for any potential liquidation of collateral that is outlined in the securities settlement facility's participant default procedures (see SSF Standard 6.8 on liquidity stress testing).

- 6.4 For the purpose of meeting its minimum liquid resource requirement, a securities settlement facility'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 a securities settlement facility has access to routine credit at the central bank of issue, the securities settlement facility 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.**
- 6.4.1 A securities settlement facility's outright holdings of qualifying instruments, such as cash and assets eligible for pledging as collateral to (or for conducting other collateralised transactions with) the central bank of issue, are generally the most reliable source of liquidity and should form a substantial part of a securities settlement facility's qualifying liquid resources (see SSF Standard 6.7).
- 6.5 A securities settlement facility may supplement its qualifying liquid resources with other forms of liquid resources. If the securities settlement facility does so, 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 a securities settlement facility 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. A securities settlement facility should not assume the availability of emergency central bank credit as part of its liquidity plan.**
- 6.5.1 A securities settlement facility may consider using non-qualifying liquid resources within its liquidity risk management framework in advance of, or in addition to, using its qualifying liquid resources. This may be particularly beneficial where liquidity needs exceed qualifying liquid resources, where qualifying liquid resources can be preserved to cover a future default, or where using other liquid resources would cause less liquidity dislocation to the securities settlement facility's participants and the financial system as a whole.
- 6.6 A securities settlement facility 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 securities settlement facility 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. A securities settlement facility should regularly test its procedures for accessing its liquid resources at a liquidity provider.**
- 6.6.1 A securities settlement facility should have detailed procedures for using its liquid resources to complete settlement during a liquidity shortfall. A securities settlement facility's procedures should clearly document the sequence in which each type of liquid resource would be expected to be used

(for example, the use of certain assets before prearranged funding arrangements). These procedures may include instructions for accessing cash deposits or overnight investments of cash deposits, executing same-day market transactions, or drawing on prearranged liquidity lines, including any pre-committed liquidity allocation mechanisms involving participants established under the securities settlement facility's rules. In addition, a securities settlement facility should regularly test its procedures for accessing its liquid resources at a liquidity provider, including by activating and drawing down test amounts from committed credit facilities and by testing operational procedures for conducting same-day repos. A securities settlement facility should also adequately plan for the renewal of prearranged funding arrangements with liquidity providers in advance of their expiration.

**6.7 A securities settlement facility with access to central bank accounts, payment services or securities services should use these services, where practical, to enhance its management of liquidity risk.**

6.7.1 If a securities settlement facility has access to central bank accounts, payment services, securities services or collateral management services, it should use these services, where practical, to enhance its management of liquidity risk. Cash balances at the central bank of issue, for example, offer the highest liquidity (see SSF Standard 8 on money settlements).

**6.8 A securities settlement facility should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. A securities settlement facility should have clear procedures to report the results of its stress tests to appropriate decision-makers at the securities settlement facility and to use these results to evaluate the adequacy of, and adjust, its liquidity risk management framework. In conducting stress testing, a securities settlement facility 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 securities settlement facility, include all entities that might pose material liquidity risks to the securities settlement facility (such as commercial bank money settlement agents, nostro agents, custodians, liquidity providers and linked FMIs) and, where appropriate, cover a multiday period. In all cases, a securities settlement facility should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.**

6.8.1 As part of a securities settlement facility's assessment of the sufficiency of its liquid resources through stress testing, it should also consider any strong interlinkages or similar exposures between its participants, as well as the multiple roles that participants may play with respect to the risk management of the securities settlement facility, and assess the probability of multiple failures and the contagion effect among its participants that such failures may cause.

6.8.2 Liquidity stress testing should be performed on a daily basis using standard and predetermined parameters and assumptions. In addition, on at least a monthly basis, a securities settlement facility should perform a comprehensive and thorough analysis of stress-testing scenarios, models and underlying parameters and assumptions used to ensure they are appropriate for achieving the securities settlement facility's identified liquidity needs and resources in light of current and evolving

market conditions. A securities settlement facility should perform stress testing more frequently when markets are unusually volatile, when they are less liquid, or when the size or concentration of positions held by its participants increases significantly. A full validation of a securities settlement facility's liquidity risk management model should be performed at least annually.

6.8.3 A securities settlement facility should also conduct, as appropriate, reverse stress tests aimed at identifying the extreme default scenarios and extreme market conditions for which the securities settlement facility's liquid resources would be insufficient. In other words, these tests identify how severe stress conditions would be covered by the securities settlement facility's liquid resources. A securities settlement facility should judge whether it would be prudent to prepare for these severe conditions and various combinations of factors influencing these conditions. Reverse stress tests require a securities settlement facility to model extreme market conditions that may go beyond what are considered extreme but plausible market conditions in order to help understand the sufficiency of liquid resources given the underlying assumptions modelled. Modelling very extreme market conditions can help a securities settlement facility determine the limits of its current model and resources; however, it requires the securities settlement facility to exercise judgement when modelling different markets and products. A securities settlement facility should develop hypothetical very extreme scenarios and market conditions tailored to the specific risks of the markets and of the products it serves. Reverse stress tests should be considered a helpful risk management tool but they need not, necessarily, drive a securities settlement facility's determination of the appropriate level of liquid resources.

**6.9 A securities settlement facility should establish explicit rules and procedures that enable the securities settlement facility 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 securities settlement facility'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.**

6.9.1 In certain extreme circumstances, the liquid resources of a securities settlement facility or its participants required under SSF Standard 6.3 may not be sufficient to meet the payment obligations of the securities settlement facility to its participants.<sup>19</sup> In a stressed environment, for example, normally liquid assets held by a securities settlement facility may prove not to be sufficiently liquid to obtain same-day funding, or the liquidation period may be longer than expected. A securities settlement facility should establish explicit rules and procedures that enable the securities settlement facility 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 securities settlement facility's process to replenish any liquidity

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<sup>19</sup> These exceptional circumstances could arise from unforeseen operational problems or unanticipated rapid changes in market conditions.

resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.

- 6.9.2 If a securities settlement facility allocates potentially uncovered liquidity shortfalls to its participants, the securities settlement facility should have clear and transparent rules and procedures for the allocation of shortfalls. These procedures could involve a funding arrangement between the securities settlement facility and its participants, the mutualisation of shortfalls among participants according to a clear and transparent formula, or the use of liquidity rationing (for example, reductions in payouts to participants). Any allocation rule or procedure must be discussed thoroughly with and communicated clearly to participants, as well as be consistent with participants' respective regulatory liquidity risk management requirements. Furthermore, a securities settlement facility should consider and validate, through simulations and other techniques and through discussions with each participant, the potential impact on each participant of any such same-day allocation of liquidity risk and each participant's ability to bear proposed liquidity allocations.

## Standard 7: Settlement finality

**A securities settlement facility should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, a securities settlement facility should provide final settlement intraday or in real time.**

### Guidance

A securities settlement facility should be designed to provide clear and certain final settlement of payments, transfer instructions or other obligations. Final settlement is defined as the irrevocable and unconditional transfer of an asset or financial instrument, or the discharge of an obligation by the securities settlement facility or its participants in accordance with the terms of the underlying contract.<sup>20</sup> A payment, transfer instruction or other obligation that a securities settlement facility accepts for settlement in accordance with its rules and procedures should be settled with finality on the intended value date.<sup>21</sup> Completing final settlement by the end of the value date is important because deferring final settlement to the next business day can create both credit and liquidity pressures for a securities settlement facility's participants and other stakeholders, and potentially be a source of systemic risk. Where necessary or preferable, a securities settlement facility should provide intraday or real-time settlement finality to reduce settlement risk. This will be necessary where transactions are settled through an intraday multilateral net batch or on a real-time basis.

Although some securities settlement facilities guarantee settlement, this Standard does not require a securities settlement facility to provide such a guarantee. Instead, this Standard requires securities settlement facilities to clearly define the point at which the settlement of a payment, transfer instruction or other obligation is final, and to complete the settlement process no later than the end of the value date, and preferably earlier on the value date. Similarly, this Standard is not intended to eliminate fails to deliver in securities trades.<sup>22</sup> The occurrence of non-systemic amounts of such failures, although potentially undesirable, should not by itself be interpreted as a failure to satisfy this Standard. However, a securities settlement facility should take

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<sup>20</sup> Final settlement (or settlement finality) is a legally defined moment. See also SSF Standard 1 on legal basis.

<sup>21</sup> The value date of a securities settlement facility's settlement activity might not necessarily coincide with the exact calendar date if the securities settlement facility introduces night-time settlement.

<sup>22</sup> These fails typically occur because of miscommunication between the counterparties, operational problems in the delivery of securities or failure to acquire a specific security associated with the trade by a specific point in time.



steps to mitigate both the risks and the implications of such failures to deliver securities (see, in particular, SSF Standard 4 on credit risk and SSF Standard 6 on liquidity risk).

**7.1 A securities settlement facility's rules and procedures should clearly define the point at which settlement is final.**

7.1.1 A securities settlement facility's rules and procedures should clearly define the point at which settlement is final. A clear definition of when settlements are final also greatly assists in a resolution scenario such that the positions of the participant in resolution and other affected parties can be quickly ascertained.

7.1.2 A securities settlement facility's legal framework and rules generally determine finality. For a transaction to be considered final, the legal basis governing the securities settlement facility, including relevant insolvency law, must acknowledge the discharge of a payment, transfer instruction or other obligation between the securities settlement facility and system participants, or between or among participants (see SSF Standard 1.5). Where relevant, a securities settlement facility should take reasonable steps to confirm the effectiveness of cross-border recognition and protection of cross-system settlement finality, especially when it is developing plans for recovery or orderly wind-down or providing the Reserve Bank and other relevant authorities with information relating to its resolvability. Because of the complexity of legal frameworks and system rules, particularly in the context of cross-border settlement where legal frameworks are not harmonised, a well-reasoned legal opinion is generally necessary to establish the point at which finality takes place (see also SSF Standard 1 on legal basis).

**7.2 The securities settlement facility should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. A securities settlement facility should consider adopting real-time gross settlement (RTGS) or multiple batch processing during the settlement day.**

### Same-day settlement

7.2.1 A securities settlement facility's processes should be designed to complete final settlement, at a minimum no later than the end of the value date. This means that any payment, transfer instruction or other obligation that has been submitted to and accepted by a securities settlement facility in accordance with its risk management process and other relevant acceptance criteria should be settled on the intended value date. A securities settlement facility that is not designed to provide final settlement on the value date (or same-day settlement) would not satisfy this Standard, even if the transaction's settlement date is adjusted back to the value date after settlement. This is because, in most such arrangements, there is no certainty that final settlement will occur on the value date as expected. Further, deferral of final settlement to the next business day can entail overnight risk exposures. For example, if a securities settlement facility conducts its money settlements using instruments or arrangements that involve next-day settlement, a participant's default on its settlement obligations between the initiation and finality of settlement could pose significant credit and liquidity risks to the securities settlement facility and its other participants.

### Intraday settlement

7.2.2 Depending on the type of obligations that a securities settlement facility settles, the use of intraday settlement, either in multiple batches or in real time, may be necessary or desirable to reduce

settlement risk.<sup>23</sup> Accordingly, a securities settlement facility should consider adopting RTGS or multiple batch settlement to complete final settlement intraday. With batch settlement, the time between the acceptance and final settlement of transactions should be kept short. To speed up settlements, a securities settlement facility should encourage its participants to submit transactions promptly. To validate the finality of settlement, a securities settlement facility also should inform its participants of their final account balances and, where practical, settlement date and time as quickly as possible, preferably in real time.

- 7.2.3 Many securities settlement facilities provide real-time finality by settling individual transactions on an RTGS basis. This would be expected where the trades settled by a securities settlement facility are individually large (in the sense that dealing with a defaulting participant's obligations within a multilateral net batch would cause significant delays, uncertainty or liquidity pressures, see SSF Standard 10.2). However, while an RTGS system can mitigate or eliminate settlement risk, it requires participants to have sufficient liquidity to cover all their outgoing payments and can therefore require relatively large amounts of intraday liquidity. This liquidity can come from various sources, including balances at a central bank or commercial bank, incoming payments and intraday credit. An RTGS system may be able to reduce its liquidity needs by implementing a queuing facility or other liquidity saving mechanisms. Where trade values are small, it may be acceptable for a securities settlement facility to utilise batch settlement (see SSF Standard 10 on exchange-of-value settlement systems). An intermediate model would involve the use of multiple such batches.

**7.3 A securities settlement facility should clearly define the point after which unsettled payments, transfer instructions or other obligations may not be revoked by a participant.**

- 7.3.1 A securities settlement facility should clearly define the point after which unsettled payments, transfer instructions or other obligations may not be revoked by a participant. In general, a securities settlement facility should prohibit the unilateral revocation of accepted and unsettled payments, transfer instructions or other obligations after a certain point or time in the settlement day, so as to avoid creating liquidity risks. In all cases, cutoff times and materiality rules for exceptions should be clearly defined. The rules should make clear that changes to operating hours are exceptional and require individual justifications. For example, a securities settlement facility may want to permit extensions for reasons connected with broader financial market disruption. If extensions are allowed for participants with operating problems to complete processing, the rules governing the approval and duration of such extensions should be clear to participants.

## Standard 8: Money settlements

**A securities settlement facility should conduct its money settlements in central bank money where practical and available. If central bank money is not used, a securities settlement facility should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.**

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<sup>23</sup> For example, intraday or real-time finality is sometimes necessary for monetary policy or payments operations, settlement of back-to-back transactions, intraday margin calls by central counterparties or safe and efficient cross-border links between central securities depositories.

## Guidance

A securities settlement facility typically needs to conduct money settlements with or between its participants for a variety of purposes, such as the settlement of individual payment obligations, and funding and defunding activities. To conduct such money settlements, a securities settlement facility can use central bank money, commercial bank money or a combination of the two. Where individual payment obligations are settled in commercial bank money, exposures are typically created between commercial banks, which are ultimately settled in central bank money. A securities settlement facility may not specify how participants fund their obligations. However, the securities settlement facility, its participants, any commercial settlement banks and any commercial bank money settlement agents should take into account the risks associated with alternative money settlement arrangements.

Settlement in central bank money typically involves the central bank of issue assuming the role of money settlement agent, with ultimate money settlement occurring across accounts held by participants or their commercial settlement banks with the central bank. Typically, this sort of arrangement for the settlement of individual transactions minimises the accrual of exposures between commercial settlement banks.

Settlement in commercial bank money typically occurs on the books of a commercial bank money settlement agent. In this model, a securities settlement facility typically establishes an account with one or more commercial bank(s) and requires each of its participants to establish an account with one of them. In some cases, the securities settlement facility itself can serve as the money settlement agent, in which case money settlements are effected through accounts on the books of the securities settlement facility. A securities settlement facility may also use a combination of central bank and commercial bank monies to conduct settlements, for example, by using central bank money for funding accounts at commercial banks, prior to settlement of individual payment obligations in commercial bank money across those accounts.

A securities settlement facility and its participants may face credit and liquidity risks from commercial bank money settlements. Credit risk may arise when participants use commercial settlement banks to effect money settlements, or when the securities settlement facility uses a commercial bank money settlement agent. Liquidity risk may arise in money settlements if, after a payment obligation has been settled, participants or the securities settlement facility itself are unable to transfer readily their assets at the commercial settlement bank, or money settlement agent, into other liquid assets, such as claims on a central bank.

### **8.1 A securities settlement facility should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.**

8.1.1 With the use of central bank money, a payment obligation is typically discharged by providing the securities settlement facility, its participants or its participants' commercial settlement banks, with a direct claim on the central bank; that is, the relevant central bank is the money settlement agent, and the settlement asset is central bank money. Central banks have the lowest credit risk and are the source of liquidity with regard to their currency of issue. However, the use of central bank money may not always be practical or available. For example, a securities settlement facility may not have direct access to central bank accounts and payment services in all relevant jurisdictions. A multicurrency securities settlement facility that has access to all relevant central bank accounts and payment services may find that some central bank payment services do not operate, or provide finality, at the times when it needs to make money settlements.

**8.2 If central bank money is not used, a securities settlement facility should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.**

8.2.1 An alternative to the use of central bank money is commercial bank money. When settling in commercial bank money, a payment obligation is typically discharged by providing the securities settlement facility or its participants with a direct claim on a commercial bank money settlement agent. To conduct settlements in commercial bank money, a securities settlement facility and its participants need to establish accounts with at least one commercial bank, and likely hold intraday or overnight balances, or both. The use of commercial bank money to settle payment obligations, however, can create additional credit and liquidity risks for the securities settlement facility and its participants. For example, if a commercial bank money settlement agent became insolvent, the securities settlement facility and its participants might not have immediate access to their settlement funds or ultimately receive the full value of their funds. It also creates operational dependencies on the relevant commercial bank(s).

**8.3 If a securities settlement facility settles in commercial bank money or its participants effect settlements using commercial settlement banks, it should monitor, manage and limit credit and liquidity risks arising from the commercial bank money settlement agents and commercial settlement banks. In particular, a securities settlement facility should establish and monitor adherence to strict criteria for commercial banks appropriate to their role in the settlement process, taking account of matters such as their regulation and supervision, creditworthiness, capitalisation, access to liquidity and operational reliability. A securities settlement facility should also monitor and manage the concentration of its and its participants' credit and liquidity exposures to commercial bank money settlement agents and settlement banks.**

8.3.1 If a securities settlement facility uses a commercial bank money settlement agent (or a non-bank deposit-taking institution) for its money settlements, it should monitor, manage and limit its credit and liquidity risks arising from this arrangement. For example, a securities settlement facility should limit both the probability of being exposed to the bank's failure and limit the potential losses and liquidity pressures to which it would be exposed in the event of such a failure. A securities settlement facility should establish and monitor adherence to strict criteria for its commercial bank money settlement agents that take into account, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity and operational reliability. Under these criteria, a commercial bank money settlement agent should be subject to effective banking regulation and supervision. It should also be creditworthy, be well capitalised, and have ample liquidity from the marketplace or the central bank of issue. Where money settlements take place in Australian dollars, a securities settlement facility should only utilise an authorised deposit-taking institution (ADI) that holds an Exchange Settlement Account at the Reserve Bank and has been approved to act as an agent for RTGS payments by the Australian Prudential Regulation Authority.

8.3.2 Even where ultimate settlement occurs in central bank money, many participants in a securities settlement facility may not have direct access to accounts with the relevant central bank. They will therefore typically use the services of commercial settlement banks to effect money settlements or carry out funding and defunding activities. These commercial settlement banks play an important role in the smooth functioning of the settlement process and therefore the securities settlement facility should establish appropriate criteria around their financial and operational capacity to fulfil this role, which may include similar criteria to those described in paragraph 8.3.1 (see also SSF Standard 11 on participant default rules and procedures).

8.3.3 In addition, a securities settlement facility should monitor and manage the concentration of its and, to the extent reasonably practicable, its participants' credit and liquidity exposures to commercial bank money settlement agents and commercial settlement banks. The securities settlement facility should consider the diversification of its and its participants' exposures to commercial banks in the settlement process and assess its potential losses and liquidity pressures as well as those of its participants in the event of the failure of a commercial bank money settlement agent or commercial settlement bank (see also SSF Standard 16 on tiered participation arrangements).

**8.4 If a securities settlement facility conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.**

8.4.1 Where a securities settlement facility conducts money settlements on its own books, it offers cash accounts to its participants, and a payment or settlement obligation is discharged by providing a securities settlement facility's participants with a direct claim on the securities settlement facility itself. The credit and liquidity risks associated with a claim on a securities settlement facility are therefore directly related to the securities settlement facility's overall credit and liquidity risks. A securities settlement facility should look to minimise these risks by limiting its activities and operations to settlement and closely related processes (see SSF Standard 1.1). Further, to settle payment obligations, the securities settlement facility could be established as a supervised special purpose financial institution and limit the provision of cash accounts to participants. In some cases, a securities settlement facility can further mitigate risk by having participants fund and defund their cash accounts at the securities settlement facility using central bank money. In such an arrangement, a securities settlement facility is able to back the settlements conducted on its own books with balances that it holds in its account at the central bank.

**8.5 A securities settlement facility's legal agreements with any commercial bank money settlement agents should state clearly when transfers on the books of the relevant commercial bank 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 securities settlement facility and its participants to manage credit and liquidity risks.**

8.5.1 In settlements involving either central bank or commercial bank money, a critical issue is the timing of the finality of funds transfers. These transfers should be final when effected (see also SSF Standard 1 on legal basis and SSF Standard 7 on settlement finality). To this end, a securities settlement facility's legal agreements with any commercial bank money settlement agent should contain clear provisions regarding the finality of funds transfers. The securities settlement facility should communicate the effect of these provisions to participants. Participants' legal agreements with commercial settlement banks should similarly provide clarity in relation to these matters, although in some cases a securities settlement facility may not have access to these agreements. If a securities settlement facility conducts intraday money settlements, the arrangement should provide real-time finality or intraday finality at the times when a securities settlement facility wishes to effect money settlement.

## Standard 9: Central securities depositories

**A securities settlement facility operating a central securities depository 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 securities settlement facility operating a central securities depository should maintain securities in an immobilised or dematerialised form for their transfer by book entry.**

## Guidance

A securities settlement facility may operate a central securities depository. A central securities depository provides securities accounts, central safekeeping and asset services, which may include the administration of corporate actions and redemptions, and plays an important role in helping to ensure the integrity of securities issues. Securities can be held at the central securities depository either in physical (but immobilised) form or in dematerialised form (that is, as electronic records). The precise activities of a central securities depository vary based on its jurisdiction and market practices. A central securities depository, for example, may be the official securities registrar and maintain the definitive record of legal ownership for a security; however, in some cases, another entity may serve as the official securities registrar. Further, the activities of a central securities depository may vary depending on whether it operates in a jurisdiction with a direct or indirect holding arrangement or a combination of both.<sup>24</sup> A central securities depository should have clear and comprehensive rules and procedures to ensure that the securities it holds on behalf of its participants are appropriately accounted for on its books and protected from risks associated with the other services that the central securities depository may provide.

**9.1 A securities settlement facility operating a central securities depository 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. These rules and procedures should:**

- (a) identify the type of title or interest held by participants for particular securities, to the extent such title or interest is recognised by the facility's rules and procedures;**
- (b) clearly identify the way in which the transfer of (or any other forms of dealing with) securities and related payments can be effected through the facility; and**
- (c) ensure that, to the extent permissible by law, the creditors of the operator of the securities settlement facility have no claim over securities or other assets held, deposited or registered by participants in the facility.**

9.1.1 The preservation of the rights of issuers and holders of securities is essential for the orderly functioning of a securities market. The rules and contractual arrangements of a securities settlement facility that operates a central securities depository that relate to title to securities should ensure that the securities settlement facility and its participants have a high degree of certainty regarding their rights and interests in securities held and recognised by the facility. The legal arrangements put in place by the facility should clearly state the title or interest held by participants. This Standard does not require that the securities settlement facility's rules address all forms of title, interest or dealing available, merely those it purports to recognise.

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<sup>24</sup> In a direct holding system, each beneficial or direct owner of the security is known to the central securities depository or the issuer. Alternatively, an indirect holding system employs a multi-tiered arrangement for the custody and transfer of ownership of securities (or the transfer of similar interests therein) in which investors are identified only at the level of their custodian or intermediary. In either system, the shareholder list may be maintained by the issuer, central securities depository, securities registrar or transfer agent.

- 9.1.2 A securities settlement facility should, in particular, maintain robust accounting practices and perform end-to-end auditing to verify that its records are accurate and provide a complete accounting of its securities issues. If a securities settlement facility records the issuance of securities (alone or in conjunction with other entities), it should verify and account for the initial issuance of securities and ensure that newly issued securities are delivered in a timely manner. To further safeguard the integrity of the securities issues, a securities settlement facility operating a central securities depository should conduct periodic and at least daily reconciliation of the totals of securities issues it records for each issuer (or its issuing agent), and ensure that the total number of securities recorded for a particular issue is equal to the amount of securities of that issue held on the securities settlement facility's books. Reconciliation may require coordination with other entities if the securities settlement facility does not (or does not exclusively) record the issuance of the security or is not the official registrar of the security. For instance, if the issuer (or its issuing agent) is the only entity that can verify the total amount of an individual issue, it is important that the securities settlement facility and the issuer cooperate closely to ensure that the securities in circulation in a system correspond to the volume issued into that system. If the securities settlement facility is not the official securities registrar for the securities issuer, reconciliation with the official securities registrar is required.
- 9.1.3 The procedures of a securities settlement facility that operates a central securities depository should address the legal and operational mechanisms governing the transfer of title or interests between participants. The mechanisms for transfer should ensure that participants know with a high degree of certainty the timing of transfers, and the role of encumbrances, where relevant. Further, custody records should not be affected by any operational failure. Sufficient backup arrangements should be in place to ensure records are not lost even under extreme circumstances, and that they can be accessed in a reasonably timely fashion.
- 9.1.4 The rules and arrangements relating to title to securities should ensure an effective separation between the assets of the securities settlement facility and assets that the facility holds on behalf of its participants through its operation of a central securities depository. In the event of a securities settlement facility's insolvency, participants should have a high degree of certainty that securities held by the facility are immune from the claims of the securities settlement facility's creditors. Furthermore, effective separation will allow the transfer of assets from the insolvent securities settlement facility to participants or to an alternative securities settlement facility.

**9.2 A securities settlement facility operating a central securities depository should prohibit overdrafts and debit balances in securities accounts.**

- 9.2.1 A securities settlement facility operating a central securities depository should prohibit overdrafts and debit balances in securities accounts to avoid credit risk and reduce the potential for the creation of securities. If a securities settlement facility were to allow overdrafts or a debit balance in a participant's securities account in order to credit another participant's securities account, the securities settlement facility would effectively be creating securities and would affect the integrity of the securities issue.

**9.3 A securities settlement facility operating a central securities depository should maintain securities in an immobilised or dematerialised form for their transfer by book entry. Where appropriate, a securities settlement facility operating a central securities depository should provide incentives to immobilise or dematerialise securities.**

9.3.1 A securities settlement facility can maintain securities in physical form or dematerialised form. Securities held in physical form may be transferred via physical delivery or immobilised and transferred via book entry. The safekeeping and transferring of securities in physical form, however, creates additional risks and costs, such as the risk of destruction or theft of certificates, increased processing costs, and increased time to clear and settle securities transactions. By immobilising securities and transferring them via book entry, a securities settlement facility can improve efficiency through increased automation and reduce the risk of errors and delays in processing. Dematerialising securities also eliminates the risk of destruction or theft of certificates. Where possible, a securities settlement facility should therefore maintain securities in an immobilised or dematerialised form and transfer securities via book entry.<sup>25</sup> To facilitate the immobilisation of all physical securities of a particular issue, a global note representing the whole issue can be issued. In certain cases, however, immobilisation or dematerialisation within a central securities depository operated by a securities settlement facility may not be legally possible or practicable. Legal requirements, for example, may limit the possible implementation or extent of immobilisation and dematerialisation. In such cases, a securities settlement facility should provide incentives to immobilise or dematerialise securities.

**9.4 A securities settlement facility operating a central securities depository should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.**

9.4.1 A securities settlement facility should protect assets against custody risk, including the risk of loss because of the securities settlement facility's negligence, misuse of assets, fraud, poor administration, inadequate recordkeeping, or failure to protect a participant's interests in securities or because of the securities settlement facility's insolvency or claims by the securities settlement facility's creditors. A securities settlement facility should have rules and procedures consistent with its legal framework and robust internal controls to achieve these objectives. Where appropriate, a securities settlement facility should consider insurance or other compensation schemes to protect participants against misappropriation, destruction and theft of securities.

**9.5 A securities settlement facility operating a central securities depository should employ a robust system that ensures segregation between its own assets and the securities of its participants, and segregation among the securities of participants. Where supported by the legal framework, a securities settlement facility operating a central securities depository 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.**

9.5.1 A securities settlement facility that operates a central securities depository should employ a robust system that ensures the segregation of its own assets from the securities belonging to its participants. In addition, the securities settlement facility should segregate participants' securities from those of other participants through the provision of separate accounts. While the title to securities is typically held in a securities settlement facility (as operator of a central securities depository), often the beneficial owner, or the owner (depending on the legal framework), of the securities does not participate directly in the system. Rather, the owner establishes relationships with the securities settlement facility's participants (or other intermediaries) that provide safekeeping and administrative services related to the holding

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<sup>25</sup> Book-entry transfers also facilitate the settlement of securities through a DvP mechanism, thereby reducing or eliminating principal risk in settlement (see also SSF Standard 10 on exchange-of-value settlement systems).



and transfer of securities on behalf of customers. Where supported by the legal framework, a securities settlement facility also should support operationally the segregation of securities belonging to a participant's customers on the participant's books and facilitate the transfer of customer holdings to another participant.<sup>26</sup> Where relevant, the segregation of accounts typically helps provide appropriate protection against the claims of a securities settlement facility's creditors or the claims of the creditors of a participant in the event of its insolvency.

**9.6 A securities settlement facility operating a central securities depository 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.**

9.6.1 Since a securities settlement facility operating a central securities depository will typically provide services ancillary to central safekeeping and administration of securities, it should identify, measure, monitor and manage the risks associated with those activities, particularly any credit and liquidity risks, consistent with the SSF Standards. For example, subject to SSF Standard 1.1, a securities settlement facility may provide a centralised securities lending facility to help facilitate timely settlement and reduce settlement fails, or may otherwise offer services that support the bilateral securities lending market. If the securities settlement facility acts as a principal in a securities lending transaction, it should identify, monitor and manage its risks, including potential credit and liquidity risks, under the conditions set in SSF Standard 4 on credit risk and SSF Standard 6 on liquidity risk. For example, the securities lent by the securities settlement facility may not be returned when needed because of a counterparty default, operational failure or legal challenge. The securities settlement facility would then need to acquire the lent securities in the market, perhaps at a cost, thus exposing the securities settlement facility to credit and liquidity risks.

## Standard 10: Exchange-of-value settlement systems

**If a securities settlement facility settles transactions that comprise 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.**

### Guidance

The settlement of a financial transaction by a securities settlement facility may involve the settlement of two linked obligations, such as the delivery of securities against payment of cash or securities or the delivery of one currency against delivery of another currency.<sup>27</sup> In this context, principal risk may be created when one obligation is settled, but the other obligation is not (for example, the securities are delivered but no cash payment is received). Because this principal risk involves the full value of the transaction, substantial credit losses as well as substantial liquidity pressures may result from the default of a counterparty or, more generally, the failure to complete the settlement of both linked obligations. Further, a settlement default could result in high replacement costs (that is, the unrealised gain on the unsettled contract or the cost of replacing the

<sup>26</sup> The customer's rights and interests to the securities held by the participant or the securities settlement facility operating the central securities depository will depend upon the applicable legal framework. In some jurisdictions, a securities settlement facility may be required to maintain records that would facilitate the identification of customer securities regardless of the type of holding system in effect.

<sup>27</sup> In some cases, the settlement of a transaction can be free of payment, for example, for the purposes of pledging collateral and repositioning securities. The settlement of a transaction may also involve more than two linked obligations, for example, for the purposes of some collateral substitutions where there are multiple securities or for premium payments related to securities lending in two currencies. These cases are not inconsistent with this Standard.

original contract at market prices that may be changing rapidly during periods of stress). A securities settlement facility should eliminate or mitigate these risks through the use of an appropriate DvP, DvD or PvP settlement mechanism.<sup>28</sup>

**10.1 A securities settlement facility 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 securities settlement facility settles on a gross or net basis and when finality occurs.**

10.1.1 DvP, DvD and PvP settlement mechanisms eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation occurs. If a securities settlement facility effects settlements using a DvP, DvD or PvP settlement mechanism, it should settle a high percentage of obligations through that mechanism. In the securities market, for example, a DvP settlement mechanism is a mechanism that links a securities transfer and a funds transfer in such a way as to ensure that delivery occurs if and only if the corresponding payment occurs. Similarly, a PvP settlement mechanism is a mechanism which ensures that the final transfer of a payment in one currency occurs if and only if the final transfer of a payment in another currency or currencies takes place, and a DvD settlement mechanism is a securities settlement mechanism which links two or more securities transfers in such a way as to ensure that delivery of one security occurs if and only if the corresponding delivery of the other security or securities occurs.

10.1.2 A securities settlement facility should eliminate or mitigate credit risk by appropriate system design. This requires that the facility's rules and procedures ensure that settlement of transactions in the facility occurs on a DvP (or PvP or DvD) basis for both primary and secondary markets, subject to market convention. The settlement of two obligations can be achieved in several ways and varies by how trades or obligations are settled, either on a gross basis (trade-by-trade or line-by-line) or on a net basis, and the timing of when finality occurs.

**10.2 A securities settlement facility that is an exchange-of-value settlement system should eliminate principal risk by linking the final settlement of one obligation to the final settlement of the other through an appropriate delivery versus payment (DvP), delivery versus delivery (DvD) or payment versus payment (PvP) settlement mechanism.**

10.2.1 In meeting the requirements of SSF Standard 10.1, the final settlement of two linked obligations can be achieved either on a gross basis or on a net basis. The choice of settlement model employed by a securities settlement facility will depend on the nature of obligations that it settles. Typically, exchange-of-value settlement can be achieved in one of three ways:

- where the final transfers of payment and/or securities between trade counterparties required to extinguish linked obligations occur contemporaneously and on a trade-by-trade (or line-by-line) basis in real time (i.e. DvP model 1)

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<sup>28</sup> While DvP, DvD and PvP mechanisms eliminate principal risk in the settlement process, they do not eliminate the risk that the failure of a participant could result in systemic disruptions, including liquidity dislocations.

- where final securities transfers are settled on a trade-by-trade (or line-by-line) basis in real time, with final payment transfers settled on a multilateral net basis at the end of the processing cycle (i.e. DvP model 2)<sup>29</sup>
- where both final securities transfers and/or final payment transfers required to extinguish linked obligations occur contemporaneously on a multilateral net basis at the end of the processing cycle (i.e. DvP model 3).

Regardless of whether a securities settlement facility settles on a gross or net basis, the legal, contractual, technical and risk management framework should ensure that the settlement of an obligation is final if and only if the settlement of the corresponding obligation is final.

10.2.2 The timing of exchange-of-value settlement of trades is important. Where the final contemporaneous transfers of securities and/or payments required to extinguish linked obligations occur either in real time throughout the day, or on a multilateral net basis at the end of the processing cycle, principal risk is eliminated. On the other hand, where final transfer of securities occurs in real time, but final payment is deferred until some later time, sellers of securities remain exposed to principal risk, which must therefore be managed.

10.2.3 Where settlement involves the exchange of a security for payment (a DvP transaction), the settlement of obligations requires up to three steps:

- the security (or title over the security) needs to be transferred from seller to buyer
- payment must be transferred from the buyer to the seller, either across accounts with the securities settlement facility's money settlement agent (which may be the central bank of issue), or using the services of a commercial settlement bank
- where the buyer and seller use a different commercial settlement bank, funds must be transferred from the account of the buyer's settlement bank to the account of the seller's settlement bank with the money settlement agent (see SSF Standard 8 on money settlements).

10.2.4 Contemporaneous performance of the three steps involved in a DvP transaction requires that:

- the transfer of money settlement assets is irrevocably linked with the settlement of securities and payment obligations, such that one cannot occur without the other
- where netting is used, securities blocked prior to transfer are not subject to claims by third parties
- final and irrevocable settlement of all obligations arising from a securities trade occurs either simultaneously or within such a very small period of time that the benefits of DvP are achieved.

10.2.5 Notwithstanding that contemporaneous multilateral net settlement of securities and/or final payment transfers eliminates principal risk, a participant default that triggered recalculation of obligations within the net settlement batch could, if obligations were sufficiently large, cause survivors to face significant liquidity pressures on a short horizon. Furthermore, even where a participant default did not give rise to sizeable swings in liquidity requirements for participants, the dependencies between participants in a net batch settlement model are such that problems with a single participant could nevertheless cause delays and uncertainty for all participants.

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<sup>29</sup> Given the separation of securities and funds transfers in such a system, intraday finality of securities settlement can only be achieved if securities transfers are collateralised or otherwise guaranteed.

- 10.2.6 Where individual trade values are large, in the sense that dealing with a defaulting participant's obligations within a multilateral net batch could cause significant delays, uncertainty or liquidity pressures, a securities settlement facility would be expected to settle linked obligations using trade-by-trade (or line-by-line) settlement on a real-time basis. Only where trade values are not large in this sense would it be acceptable for the payment transfers and/or final securities transfers required to extinguish linked obligations to occur on a multilateral net basis. Even where trade values are small, linked settlements should occur contemporaneously unless this is precluded by operational requirements. Where netting is involved, the securities settlement facility should ensure that it has taken steps to ensure the certainty of netting arrangements (see SSF Standard 1 on legal basis). The securities settlement facility should, at a minimum, ensure that the final and irrevocable settlement of obligations is completed by the end of the settlement day.
- 10.2.7 Operational requirements that may necessitate non-contemporaneous settlement of linked obligations refer to practical matters arising out of the nature of the security and payment being exchanged that preclude contemporaneous settlement. This may occur, for example, where title must be exchanged by individual physical delivery and, as a practical matter, payment is by other than electronic transfer.

## Standard 11: Participant default rules and procedures

**A securities settlement facility 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 securities settlement facility can take timely action to contain losses and liquidity pressures and continue to meet its obligations.**

### Guidance

Participant default rules and procedures facilitate the continued functioning of a securities settlement facility in the event that a participant fails to meet its obligations. Such rules and procedures help limit the potential for the effects of a participant's failure to spread to other participants and possibly undermine the viability of the securities settlement facility. Key objectives of default rules and procedures should, where relevant, include: ensuring timely completion of settlement, even in extreme but plausible market conditions; minimising losses for the securities settlement facility and for non-defaulting participants; limiting disruptions to the market; providing a clear framework for accessing securities settlement facility liquidity facilities as needed; and managing and closing out the defaulting participant's positions and liquidating any applicable collateral in a prudent and orderly manner. To the extent consistent with these objectives, a securities settlement facility should allow non-defaulting participants to continue to manage their positions and transactions as normal.

- 11.1 A securities settlement facility should have default rules and procedures that enable the securities settlement facility to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default. A securities settlement facility should ensure that financial and other obligations created for non-defaulting participants in the event of a participant default are proportional to the scale and nature of individual participants' activities.**

### Rules and procedures

- 11.1.1 A securities settlement facility should have default rules and procedures that enable the securities settlement facility to continue to meet any obligations to non-defaulting participants in the event of

a participant default. A securities settlement facility should explain clearly in its rules and procedures what circumstances constitute a participant default, addressing both financial and operational defaults.<sup>30</sup> A securities settlement facility should describe the method for identifying a default. In particular, a securities settlement facility should specify whether a declaration of default is automatic or discretionary, and if discretionary, which person or group shall exercise that discretion. Key aspects to be considered in designing the rules and procedures include: the actions that a securities settlement facility can take when a default is declared; the extent to which such actions are automatic or discretionary; potential changes to the normal settlement practices, should these changes be necessary in extreme circumstances, to ensure timely settlement; the management of transactions at different stages of processing; the expected treatment of proprietary and customer transactions and accounts; the probable sequencing of actions; the roles, obligations and responsibilities of the various parties, including non-defaulting participants; and the existence of other mechanisms that may be activated to contain the impact of a default. A securities settlement facility should involve its participants, the Reserve Bank and other relevant authorities, and other relevant stakeholders in developing its default rules and procedures (see SSF Standard 2 on governance).

- 11.1.2 In the event of a participant default, financial and other obligations created for non-defaulting participants should be proportional to the scale and nature of participants' activities. Disproportionate obligations may place undue demands on participants at a time of wider market distress.

## Use and sequencing of financial resources

- 11.1.3 A securities settlement facility's default rules and procedures should enable the securities settlement facility to take timely action to contain losses and liquidity pressures, before, at and after the point of participant default (see also SSF Standard 4 on credit risk and SSF Standard 6 on liquidity risk). Where relevant, a securities settlement facility's rules and procedures should allow the securities settlement facility to use promptly any financial resources that it maintains for covering losses and containing liquidity pressures arising from default, including liquidity facilities. The rules of the securities settlement facility should specify the order in which different types of resources will be used. This information would enable participants to assess their potential future exposures from using the securities settlement facility's services. Typically, a securities settlement facility should first use assets provided by the defaulting participant, such as collateral, to provide incentives for participants to manage prudently the risks, particularly credit risk, they pose to a securities settlement facility. The application of previously provided collateral should not be subject to prevention, stay or reversal under applicable law and the rules of the securities settlement facility. A securities settlement facility should also have a credible and explicit plan for replenishing its resources over an appropriate time horizon following a participant default so that it can continue to operate in a safe and sound manner. In particular, the securities settlement facility's rules and procedures should define any obligations of the non-defaulting participants to replenish the financial resources depleted during a default so that the time horizon of such replenishment is anticipated by non-defaulting participants.

- 11.2 A securities settlement facility should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules. This requires that the securities settlement facility should:**

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<sup>30</sup> An operational default occurs when a participant is not able to meet its obligations due to an operational problem, such as a failure in information technology systems.

- (a) require its participants to inform it immediately if they:**
  - (i) become subject to, or become aware of the likelihood of external administration, or have reasonable grounds for suspecting that they will become subject to external administration; or**
  - (ii) have breached, or are likely to breach, a risk control requirement of the securities settlement facility;**
- (b) allow for the cancellation or suspension of a participant or commercial settlement bank from the securities settlement facility:**
  - (i) if the participant or commercial settlement bank is in external administration; or**
  - (ii) if there is a reasonable suspicion that the participant or commercial settlement bank may become subject to external administration; and**
- (c) allow participant users of a commercial settlement bank which becomes subject to external administration, or which is reasonably likely to become subject to external administration, to quickly nominate a new commercial settlement bank.**

11.2.1 This Standard is aimed at ensuring the timely settlement of obligations in the event that a participant or commercial settlement bank goes into external administration. The securities settlement facility should have a legally binding requirement for participants to notify it should they be in default or reasonably suspect that this is the case. Similar notification should be made in the event of a breach or likely breach of any risk control requirement of the securities settlement facility. Any communication should be at an appropriately high level both within the participant organisation and the securities settlement facility. The impact that a participant or commercial settlement bank in external administration may have on other participants should be minimised through the existence of legally binding arrangements, the timely flow of information, and the institution of appropriate controls and procedures. For a commercial settlement bank, this should include rules and procedures allowing its participant users to quickly nominate a new provider in the event that it enters external administration or is reasonably likely to do so. There is a difference between external administration and cases where a participant may have sufficient assets to meet its obligations, yet be unable to complete settlement of its obligations due to operational failure or liquidity pressures. This distinction should be recognised in the rules of the securities settlement facility.

11.2.2 A securities settlement facility should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in the rules. Management should ensure that the securities settlement facility has the operational capacity, including sufficient well-trained personnel, to implement its procedures in a timely manner. A securities settlement facility's rules and procedures should outline examples of when management discretion may be appropriate and should include arrangements to minimise any potential conflicts of interests. Management should also have internal plans that clearly delineate the roles and responsibilities for addressing a default and provide training and guidance to its personnel on how the procedures should be implemented. These plans should address documentation, information needs and coordination when more than one securities settlement facility or authority is involved. In addition, timely communication with stakeholders, in particular with the Reserve Bank and other relevant authorities, is of critical importance (see also SSF Standard 19 on regulatory reporting). The securities settlement facility, to the extent permitted,

should clearly convey to affected stakeholders information that would help them to manage their own risks. The internal plan should be reviewed by management and the relevant board committees at least annually or after any significant changes to the securities settlement facility's arrangements.

**11.3 A securities settlement facility should publicly disclose key aspects of its default rules and procedures. Where a securities settlement facility settles via a multilateral net batch, arrangements for dealing with any unsettled trades of a defaulting participant that are not guaranteed by a central counterparty, such as reconstituting the multilateral net batch excluding the settlement obligations of the defaulting participant, should be clear to all its participants and should be capable of being executed in a timely manner.**

11.3.1 To provide certainty and predictability regarding the measures that a securities settlement facility may take in a default event, a securities settlement facility should publicly disclose key aspects of its default rules and procedures, including: the circumstances in which action may be taken; who may take those actions; the scope of the actions which may be taken, including the treatment of both proprietary and customer positions, funds and other assets; the mechanisms to address any obligations of a securities settlement facility to non-defaulting participants; and, where direct relationships exist with participants' customers, the mechanisms to help address the defaulting participant's obligations to its customers. Such transparency should facilitate the orderly handling of defaults, enable participants to understand their obligations to the securities settlement facility and to their customers, and provide for informed decisions by market participants about their activities in the market. A securities settlement facility should ensure that its participants and their customers, as well as the public, have appropriate access to the securities settlement facility's default rules and procedures and should promote their understanding of those procedures in order to foster confidence in the market in the event of a participant default.

11.3.2 Any arrangements for dealing with the unsettled trades of a defaulting participant should be clear to all securities settlement facility participants and capable of being executed in a timely manner. For example, in the case of a securities settlement facility that settles via a multilateral net batch, rules for any reconstitution of a multilateral net batch excluding any settlement obligations of a defaulting participant that have not been guaranteed by a central counterparty should be clearly stated and disclosed to participants. Sufficient information and tools should be made available to participants to assist, as far as possible, in quantifying the potential magnitude of liquidity demands in the event of any such reconstitution of the batch, and taking appropriate steps to accommodate these demands (see SSF Standard 6.2). Reconstitution of the batch should provide for any requirements arising from a central counterparty's rules for dealing with the inability of a clearing participant to settle arising from its own failure or that of a commercial settlement bank.

**11.4 A securities settlement facility should involve its participants and other stakeholders in the testing and review of the securities settlement facility's default procedures. Such testing and review should be conducted at least annually and following material changes to the rules and procedures to ensure that they are practical and effective.**

11.4.1 A securities settlement facility should involve relevant participants and other stakeholders in the testing and review of its default procedures. Such testing and review should be conducted at least annually and following material changes to the rules and procedures to ensure that they are practical and effective. The periodic testing and review of default procedures is important to help the securities

settlement facility and its participants understand fully the procedures and to identify any lack of clarity in, or discretion allowed by, the rules and procedures. Such tests should include all relevant parties, or an appropriate subset, that would likely be involved in the default procedures, such as members of the appropriate board committees, participants, linked or interdependent FMI, the Reserve Bank and other relevant authorities, and any related service providers. This is particularly important where a securities settlement facility relies on non-defaulting participants or third parties to assist in the close out process and where the default procedures have never been tested by an actual default. The results of these tests and reviews should be shared with the securities settlement facility's board of directors, risk committee, and the Reserve Bank and other relevant authorities.

11.4.2 Furthermore, part of a securities settlement facility's participant default testing should include the implementation of the resolution regime for a securities settlement facility's participants, as relevant. A securities settlement facility should be able to take all appropriate steps to address the resolution of a participant. Specifically, the securities settlement facility, or if applicable a resolution authority, should be able to transfer a defaulting participant's open positions and customer accounts to a receiver, third party or bridge financial company.

**11.5 A securities settlement facility should demonstrate that its default management procedures take appropriate account of interests in relevant jurisdictions and, in particular, any implications for pricing, liquidity and stability in relevant financial markets.**

11.5.1 A securities settlement facility should ensure that its default management procedures take appropriate account of the interests of all relevant stakeholders across the jurisdictions in which it operates, including those of its direct and indirect participants. A securities settlement facility's governance arrangements should ensure that these interests are taken into account (see SSF Standard 2 on governance). The actions that a securities settlement facility takes in the event of a default, such as any reconstitution of a multilateral net batch, could, through the impact on participants, potentially impact on pricing, liquidity and stability in certain financial markets. A securities settlement facility should consider these wider market impacts of its default management actions, and take mitigating action to minimise market impacts as appropriate.

## Standard 12: General business risk

**A securities settlement facility should identify, monitor and manage its general business risk and hold, or demonstrate that it has legally certain access to, 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.**

### Guidance

A securities settlement facility should have robust management and control systems to identify, monitor and manage general business risk. General business risk refers to the risks and potential losses arising from a securities settlement facility's administration and operation as a business enterprise that are neither related to participant default nor separately covered by financial resources under SSF Standard 4 on credit risk or SSF Standard 6 on liquidity risk. General business risk includes any potential impairment of the securities settlement facility's financial position (as a business concern) as a consequence of a decline in its revenues



or an increase in its expenses, such that expenses exceed revenues and result in a loss that must be charged against capital. Such impairment can be caused by a variety of business factors, including poor execution of business strategy, negative cash flows or unexpected and excessively large operating expenses. Business-related losses also may arise from risks covered by other standards, for example, legal risk (in the case of legal actions challenging the securities settlement facility's custody arrangements), investment risk affecting the securities settlement facility's resources and operational risk (in the case of fraud, theft or loss).<sup>31</sup> In these cases, general business risk may cause a securities settlement facility to experience an extraordinary one-time loss as opposed to recurring losses.

**12.1 A securities settlement facility 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.**

### Identifying business risk

12.1.1 A securities settlement facility should identify and assess the sources of business risk and their potential impact on its operations and services, taking into account past loss events and financial projections. A securities settlement facility should assess and thoroughly understand its business risk and the potential effect that this risk could have on its cash flows, liquidity and capital positions. In doing so, a securities settlement facility should consider a combination of tools, such as risk management and internal control assessments, scenario analysis and sensitivity analysis. Internal control assessments should identify key risks and controls and assess the impact and probability of the risks and the effectiveness of the controls. Scenario analysis should examine how specific scenarios would affect the securities settlement facility. Sensitivity analysis should test how changes in one risk affect the securities settlement facility's financial standing; for example, how the loss of a key customer or service provider might impact the securities settlement facility's existing business activities. In some cases, a securities settlement facility may wish to consider an independent assessment of specific business risks.

12.1.2 A securities settlement facility should clearly understand its general business risk profile so that it is able to assess its ability to either avoid, reduce or transfer specific business risks, or accept and manage those risks. This requires the ongoing identification of risk mitigation options that the securities settlement facility may use in response to changes in its business environment. When planning an expansion of activity, a securities settlement facility should conduct a comprehensive enterprise risk assessment. In particular, when considering any major new product, service or project, the securities settlement facility should forecast potential revenues and expenses as well as identify and plan how it will cover any additional capital requirements. Further, a securities settlement facility may eliminate or mitigate some risks by instituting appropriate internal controls or by obtaining insurance or indemnity from a third party.

### Measuring and monitoring business risk

12.1.3 Once a securities settlement facility has identified and assessed its business risk, it should measure and monitor these risks on an ongoing basis and develop appropriate information systems as part

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<sup>31</sup> See also SSF Standard 1 on legal basis, SSF Standard 13 on custody and investment risks and SSF Standard 14 on operational risk.

of a robust enterprise-wide risk management program. Key components of a robust enterprise-wide risk management program include establishing strong financial and internal control systems so that the securities settlement facility can monitor, manage and control its cash flows and operating expenses and mitigate any business-related losses (see SSF Standard 3 on the framework for the comprehensive management of risks). In particular, a securities settlement facility should minimise and mitigate the probability of business-related losses and their impact on its operations across a range of adverse business and market conditions, including the scenario that its viability as a going concern is questioned. A securities settlement facility should also ensure that it has rigorous and appropriate investment guidelines and monitoring procedures (see SSF Standard 13 on custody and investment risks).

**12.2 A securities settlement facility should hold, or demonstrate that it has legally certain access to, 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 a securities settlement facility should hold, or have access to, 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.**

12.2.1 A securities settlement facility should hold, or demonstrate that it has legally certain access to, liquid net assets funded by equity (such as common stock, disclosed reserves or retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses.<sup>32</sup> Equity allows a securities settlement facility to absorb losses on an ongoing basis and should be permanently available for this purpose. The amount of liquid net assets funded by equity a securities settlement facility should hold, or have access to, 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.<sup>33</sup> If these assets are not held by the securities settlement facility itself, the securities settlement facility must have legally certain arrangements in place that guarantee it can access liquid net assets held by an affiliated entity, including in circumstances where its own or the affiliated entity's financial standing was in doubt. Any such arrangement should be subject to approval by the Reserve Bank and other relevant authorities.

12.2.2 In order to estimate the amount of liquid net assets funded by equity that a particular securities settlement facility would need, the securities settlement facility should regularly analyse and understand how its revenue and operating expenses may change under a variety of adverse business scenarios as well as how it might be affected by extraordinary one-time losses. This analysis should also be performed when a material change to the assumptions underlying the model occurs, either because of changes to the securities settlement facility's business model or because of external changes. A securities settlement facility needs to consider not only possible decreases in revenues but also possible increases in operating expenses, as well as the possibility of extraordinary one-time losses, when deciding on the amount of liquid net assets to hold or make accessible to cover general business risk.

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<sup>32</sup> If the securities settlement facility's corporate structure is such that it cannot legally or institutionally raise equity (for example under certain structures of mutual ownership), it should ensure an equal amount of equivalent loss-absorbing financial resources is available.

<sup>33</sup> Recovery could include recapitalising, replacing management, merging with another securities settlement facility, revising business strategies (including cost or fee structures) or restructuring services provided.

**12.3 A securities settlement facility should maintain a viable recovery or orderly wind-down plan and should hold, or have legally certain access to, sufficient liquid net assets funded by equity to implement this plan. At a minimum, a securities settlement facility should hold, or have legally certain access to, 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 SSF Standard 4 on credit risk and SSF Standard 6 on liquidity risk. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.**

12.3.1 A securities settlement facility should maintain a viable plan to achieve recovery and orderly wind-down and should hold, or have access to, sufficient liquid net assets funded by equity to implement this plan.<sup>34</sup> The appropriate amount of liquid net assets funded by equity will depend on the content of the plan and, specifically, on the size of the securities settlement facility, the scope of its activities, the types of actions included in the plan, and the length of time needed to implement them. A securities settlement facility should also take into consideration the operational, technological and legal requirements for participants to establish and move to an alternative arrangement in the event of an orderly wind-down. At a minimum, however, a securities settlement facility should hold, or have access to, liquid net assets funded by equity equal to at least six months of current operating expenses.<sup>35</sup>

12.3.2 Assets held by a securities settlement facility to cover risks or losses other than business risk (for example, where relevant, the financial resources required under SSF Standard 4 on credit risk and SSF Standard 6 on liquidity risk) should not be included when accounting for liquid net assets available to cover business risk.<sup>36</sup> However, any equity held under international risk-based capital standards should be included where relevant and appropriate to avoid duplicate capital requirements.

**12.4 Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the securities settlement facility to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.**

12.4.1 To ensure the adequacy of its own resources, a securities settlement facility should regularly assess and report its liquid net assets funded by equity relative to its potential business risks to the Reserve Bank and other relevant authorities (see also SSF Standard 19 on regulatory reporting).

**12.5 A securities settlement facility 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.**

12.5.1 A securities settlement facility should provide a viable capital plan for maintaining an appropriate level of equity. The capital plan should specify how a securities settlement facility would raise new capital if its equity capital were to fall close to or below the amount needed. This plan should be approved by the board of directors (or an appropriate board committee), reviewed at least annually and updated as

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34 The requirement for liquid net assets funded by equity ensures that the assets held for the purposes of this Standard are sufficiently liquid to be available to mitigate any potential business risks in a timely manner, can only be used for business risk purposes and are funded by equity rather than long term liabilities.

35 Operating expenses may exclude depreciation and amortisation expenses for purposes of this calculation.

36 Depending on the rules of the particular securities settlement facility and the insolvency law of the jurisdiction in which it is established, the equity of a securities settlement facility may ultimately be used if the resources that form the default backing are insufficient to cover the losses generated in the event of a participant default.

appropriate. A securities settlement facility may also need to consult its participants and others during the development of its plan.

- 12.5.2 In developing a capital plan, a securities settlement facility should consider a number of factors, including its ownership structure and any insured business risks. For example, a securities settlement facility should determine if and to what extent specific business risks are covered by explicit insurance from a third party, or explicit indemnity agreements from a parent, owners or participants (for example, general loss allocation provisions and parent guarantees), which would be realisable within the recovery or orderly wind-down time frame. Given the contingent nature of these resources, a securities settlement facility should use conservative assumptions when taking them into account for its capital plan. Furthermore, these resources should not be taken into account when assessing the securities settlement facility's capital adequacy.

## Standard 13: Custody and investment risks

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

### Guidance

A securities settlement facility has the responsibility to safeguard its assets, such as cash and securities, as well as any assets that its participants have provided to the securities settlement facility. Assets that are used by a securities settlement facility to support its operating funds or capital funds or that have been provided by participants to secure their obligations to the securities settlement facility should be held at supervised or regulated entities that have strong processes, systems and credit profiles, including other FMIs (for example, central securities depositories). In addition, assets should generally be held in a manner that assures the securities settlement facility of prompt access to those assets in the event that the securities settlement facility needs to draw on them.

A securities settlement facility should ensure that its investment strategy is consistent with its overall risk management strategy. Resources held by a securities settlement facility to cover credit, liquidity or general business risks should not be exposed to credit, market or liquidity risks (including through concentrated exposures to investment counterparties) that may compromise the ability of the securities settlement facility to use these resources when needed.

**13.1 A securities settlement facility 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.**

- 13.1.1 A securities settlement facility should mitigate its custody risk by using only supervised and regulated entities with robust accounting practices, safekeeping procedures and internal controls that fully protect its own and its participants' assets (if any). It is particularly important that assets held in custody are protected against claims of a custodian's creditors. The custodian should have a sound legal basis supporting its activities, including the segregation of assets (see also SSF Standard 1 on legal basis and SSF Standard 9 on central securities depositories). The custodian also should have a strong financial position to be able to sustain losses from operational problems or ancillary non-custodial activities.

**13.2 A securities settlement facility should have prompt access to its assets and the assets provided by participants, when required.**

13.2.1 A securities settlement facility should confirm that its interest or ownership rights in the assets can be enforced and that it can have prompt access to its assets and any assets provided by participants, when required. Timely availability and access should be ensured even if these securities are held in another time zone or jurisdiction. Furthermore, the securities settlement facility should confirm it has prompt access to the assets in the event of the default of a participant.

**13.3 A securities settlement facility should evaluate and understand its exposures to its custodians, taking into account the full scope of its relationships with each.**

13.3.1 A securities settlement facility should evaluate and understand its exposures to its custodians, taking into account the full scope of its relationships with each custodian. For example, a financial institution may serve as a custodian to a securities settlement facility as well as a money settlement agent or liquidity provider to the securities settlement facility. The custodian also may be a participant in the securities settlement facility and offer clearing services to other participants. A securities settlement facility should carefully consider all of its relationships with a particular custodian bank to ensure that its overall risk exposure to an individual custodian remains within acceptable limits. Where feasible, a securities settlement facility could consider using multiple custodians for the safekeeping of its assets to diversify its exposure to any single custodian. The securities settlement facility would, however, need to balance the benefits of risk diversification against the benefits of pooling resources at one or a small number of custodians. In any event, a securities settlement facility should monitor the concentration of risk exposures to, and financial condition of, its custodians on an ongoing basis.

**13.4 A securities settlement facility'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.**

13.4.1 A securities settlement facility's strategy for investing its own and any participants' assets should be consistent with its overall risk management strategy and fully disclosed to its participants. When making its investment choices, the securities settlement facility should not allow pursuit of profit to compromise its financial soundness and liquidity risk management. Investments should be secured by, or be claims on, high-quality obligors to mitigate the credit risk to which the securities settlement facility is exposed. Within these parameters, a securities settlement facility should, to the extent reasonably practicable, have a high degree of confidence that its own capital would be sufficient to withstand losses associated with the failure of any individual non-government investment counterparty. This implies the imposition of conservative limits on the size and concentration of counterparty exposures. In considering its overall credit risk exposures to individual obligors, a securities settlement facility should also take into account other relationships with the obligor that create additional exposures, such as where an obligor is also a participant or an affiliate of a participant in the securities settlement facility. In addition, a securities settlement facility should ensure that any investment of participant assets in the securities of participants or their affiliates is subject to appropriate controls for specific wrong-way risk.

13.4.2 Because the value of a securities settlement facility's investments may need to be realised quickly, investments should allow for quick liquidation with little, if any, adverse price effect. For example,

a securities settlement facility could invest in overnight reverse repo agreements backed by liquid securities with low credit risk. In allowing for quick liquidation with minimal adverse price effect, a securities settlement facility should also impose limits on the concentration of certain assets in its investment portfolio.

## Standard 14: Operational risk

**A securities settlement facility 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 securities settlement facility's obligations, including in the event of a wide-scale or major disruption.**

### Guidance

Operational risk is the risk that deficiencies in information systems, internal processes and personnel, or disruptions from external events will result in the reduction, deterioration, or breakdown of services provided by a securities settlement facility. Operational failures can damage a securities settlement facility's reputation or perceived reliability, lead to legal consequences and result in financial losses incurred by the securities settlement facility, participants and other parties. In certain cases, operational failures can also be a source of systemic risk. A securities settlement facility should: establish a robust framework to manage its operational risks, which should identify the plausible sources of operational risk; deploy appropriate systems; establish appropriate policies, procedures and controls; set operational reliability objectives; and develop a business continuity plan. A securities settlement facility should take a holistic approach when establishing its operational risk management framework.

### Identifying and managing operational risk

**14.1 A securities settlement facility should establish a robust operational risk management framework with appropriate systems, policies, procedures and controls to identify, monitor and manage operational risks.**

14.1.1 A securities settlement facility should actively identify, monitor and manage the plausible sources of operational risk and establish clear policies and procedures to address them. Operational risk can stem from both internal and external sources. Internal sources of operational risk include inadequate identification or understanding of risks and the controls and procedures needed to limit and manage them, inadequate control of systems and processes, inadequate screening of personnel and, more generally, inadequate management. External sources of operational risk include the failure of critical service providers or utilities or events affecting a wide metropolitan area such as natural disasters, terrorism and pandemics. Both internal and external sources of operational risk can lead to a variety of operational failures that include: errors or delays in message handling; miscommunication; service degradation or interruption; fraudulent activities by staff; and disclosure of confidential information to unauthorised entities. If a securities settlement facility provides services in multiple time zones, it may face increased operational risk due to longer operational hours and less downtime for maintenance.

A securities settlement facility should identify all potential single points of failure in its operations.<sup>37</sup> Additionally, a securities settlement facility should assess the evolving nature of the operational risk it faces on an ongoing basis (for example, pandemics and cyber-attacks), so that it can analyse its potential vulnerabilities and implement appropriate defence mechanisms.

**14.2 A securities settlement facility's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the securities settlement facility's operational risk management framework. Systems, operational policies, procedures and controls should be reviewed, audited and tested periodically and after significant changes.**

14.2.1 A securities settlement facility should establish clear policies, procedures and controls that mitigate and manage its sources of operational risk. Overall, operational risk management is a continuous process encompassing risk assessment, defining an acceptable tolerance for risk and implementing risk controls. This process results in a securities settlement facility accepting, mitigating or avoiding risks consistent with its operational reliability objectives. A securities settlement facility's governance arrangements are pertinent to its operational risk management framework (see also SSF Standard 2 on governance). In particular, a securities settlement facility's board should explicitly define the roles and responsibilities for addressing operational risk and endorse the securities settlement facility's operational risk management framework.

14.2.2 To ensure the proper functioning of its risk controls, a securities settlement facility should have sound internal controls. For example, a securities settlement facility should have adequate management processes for setting operational standards, measuring and reviewing performance, and correcting deficiencies. A securities settlement facility may draw on international, national and industry level standards, guidelines or recommendations in designing its operational risk management framework. Conformity with commercial standards can help a securities settlement facility meet its operational objectives. For example, commercial standards exist for information security, business continuity and project management. A securities settlement facility should regularly assess the need to integrate the applicable commercial standards into its operational risk management framework. In addition, a securities settlement facility should seek to comply with relevant commercial standards in a manner commensurate with the securities settlement facility's importance and level of interconnectedness.

14.2.3 A securities settlement facility's arrangements with participants, operational policies and operational procedures should be periodically, and whenever necessary, tested and reviewed, especially after significant changes occur to the system or a major incident occurs. In order to minimise any effects of the testing on operations, tests should be carried out in a 'testing environment'. This testing environment should, to the extent possible, replicate the production environment (including the implemented security provisions, in particular, those regarding data confidentiality). Additionally, key elements of a securities settlement facility's operational risk management framework should be audited periodically and whenever necessary. In addition to periodic internal audits, external independent reviews may be necessary, depending on the securities settlement facility's importance and level of interconnectedness. Consistent with the evolving nature of operational risk management,

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<sup>37</sup> A single point of failure is any point in a system, whether a service, activity or process, which, if it failed to work correctly, would lead to the failure of the entire system.

a securities settlement facility's operational objectives should be periodically reviewed to incorporate new technological and business developments.

14.2.4 A securities settlement facility's operational risk management framework should include formal change management and project management processes to mitigate operational risk arising from modifications to operations, policies, procedures and controls. Change management processes should provide mechanisms for preparing, approving, tracking, testing and implementing all changes to the system. Project management processes, in the form of policies and procedures, should mitigate the risk of any inadvertent effects on a securities settlement facility's current or future activities due to an upgrade, expansion or alteration to its service offerings, especially for major projects. In particular, these policies and procedures should guide the management, documentation, governance, communication and testing of projects, regardless of whether projects are outsourced or executed internally.

**14.3 A securities settlement facility should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives. These policies include, but are not limited to, having: exacting targets for system availability; scalable capacity adequate to handle increasing stress volumes; and comprehensive physical and information security policies that address all potential vulnerabilities and threats.**

### Operational reliability

14.3.1 A securities settlement facility should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives. These objectives serve as benchmarks for a securities settlement facility to evaluate its effectiveness and evaluate its performance against expectations. These objectives should be designed to promote confidence among the securities settlement facility's participants. Operational reliability objectives should include the securities settlement facility's operational performance objectives and committed service level targets. Operational performance objectives and service level targets should define both qualitative and quantitative measures of operational performance and should explicitly state the performance standards the securities settlement facility is intending to meet. The securities settlement facility should monitor and assess regularly whether the system is meeting its established objectives and service level targets. The system's performance should be reported regularly to senior management, relevant board committees, participants, the Reserve Bank and other relevant authorities. In addition, a securities settlement facility's operational objectives should be periodically reviewed to incorporate new technological and business developments.

### System availability

14.3.2 A securities settlement facility should set explicit and exacting benchmarks for the availability of key systems, commensurate with the criticality of the services it provides. Measures of system availability should be reported regularly to senior management, relevant board committees, participants, the Reserve Bank and other relevant authorities. A securities settlement facility should have procedures to investigate a failure to meet system availability benchmarks, including external review where appropriate, and should implement any recommended changes to operations on a timely basis.



## Operational capacity

14.3.3 A securities settlement facility should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service level objectives, such as the required processing speed. Capacity management requires that the securities settlement facility monitor, review and test (including stress test) the actual capacity and performance of the system on an ongoing basis. The securities settlement facility should carefully forecast demand and make appropriate plans to adapt to any plausible change in the volume of business or technical requirements. These plans should be based on a sound, comprehensive methodology so that the required service levels and performance can be achieved and maintained. As part of its capacity planning, a securities settlement facility should determine a required level of redundant capacity, taking into account the securities settlement facility's level of importance and interconnectedness, so that if an operational outage occurs, the system is able to resume operations and process all remaining transactions before the end of the day (see SSF Standard 14.7).

## Physical and information security

14.3.4 A securities settlement facility should have comprehensive physical and information security policies that address all potential vulnerabilities and threats. In particular, a securities settlement facility should have policies effective in assessing and mitigating vulnerabilities in its physical sites from attacks, intrusions and natural disasters. A securities settlement facility also should have sound and robust information security policies, standards, practices and controls to ensure an appropriate level of confidence and trust in the securities settlement facility by all stakeholders. These policies, standards, practices and controls should include the identification, assessment, mitigation and management of current and potential future security threats and vulnerabilities for the purpose of implementing appropriate safeguards into its systems. These safeguards should both defend against the intrusion of external threats and limit the vulnerability of systems to threats that breach perimeter safeguards. System security should be subject to regular review and testing, and systems should be periodically updated as appropriate. Data should be protected from loss and leakage, unauthorised access and other processing risks, such as negligence, fraud, poor administration and inadequate recordkeeping. A securities settlement facility's information security objectives and policies should conform to commercially reasonable standards for confidentiality, integrity, authentication, authorisation, non-repudiation, availability and auditability (or accountability).

**14.4 A securities settlement facility should ensure that it can reliably access and utilise well-trained and competent personnel, as well as technical and other resources. These arrangements should be designed to ensure that all key systems are operated securely and reliably in all circumstances, including where a related body becomes subject to external administration.**

## Access to resources

14.4.1 Because the proper performance of a securities settlement facility's employees is a core aspect of any operational risk management framework, a securities settlement facility should be able to access and utilise sufficient well-qualified personnel. A securities settlement facility's personnel should be able to operate the system safely and consistently follow operational and risk management procedures during normal and abnormal circumstances. A securities settlement facility should implement appropriate human resources policies to hire, train and retain qualified personnel, thereby mitigating the effects of

high rates of personnel turnover or key person risk. Additionally, a securities settlement facility should have appropriate human resources and risk management policies to address fraud prevention. Where appropriate, a securities settlement facility should also have reliable access to technical expertise and other resources external to the securities settlement facility as necessary to ensure the security and reliability of key systems.

### Resources shared with a related body

14.4.2 In some cases a securities settlement facility may utilise personnel and other resources that are employed or owned by a related body. Agreements between a securities settlement facility and any related bodies governing such arrangements should ensure, to the extent permissible by law, that the securities settlement facility can continue to access key resources in all circumstances, including in the event of the related body's insolvency or external administration.

**14.5 A securities settlement facility should identify, monitor and manage the risks that key participants, other FMIs and service and utility providers might pose to its operations. A securities settlement facility should inform the Reserve Bank of any critical dependencies on utilities or service providers. In addition, a securities settlement facility should identify, monitor and manage the risks its operations might pose to its participants and other FMIs. Where a securities settlement facility operates in multiple jurisdictions, managing these risks may require it to provide adequate operational support to participants during the market hours of each relevant jurisdiction.**

14.5.1 A securities settlement facility is connected directly and indirectly to its participants, other FMIs, and its service and utility providers. Accordingly, the securities settlement facility should identify both direct and indirect effects on its ability to process and settle transactions in the normal course of business and manage risks that would stem from the external operational failure of a connected entity. Such effects may include those transmitted through its participants, which may participate in multiple FMIs. Likewise, a securities settlement facility should identify, monitor and manage the risks it poses to its participants and that it faces from and poses to other FMIs (see SSF Standard 17 on FMI links). To the extent possible, a securities settlement facility should coordinate business continuity arrangements with interdependent FMIs. A securities settlement facility also should consider the risks associated with its service and utility providers and the operational effect on the securities settlement facility if service or utility provider failed to perform as expected. A securities settlement facility should provide reliable service, not only for the benefit of its direct participants, but also for all entities that would be affected by its ability to process transactions.

### Dependencies on service providers

14.5.2 A securities settlement facility should have a formal policy that sets out the process for entering into, maintaining and exiting key outsourcing or service provision arrangements. Before an outsourcing or service provision arrangement is established, senior management should identify the business, operational and other risks involved and ensure that these risks can be adequately monitored and controlled by the facility, and that the Reserve Bank and other relevant authorities are able to access sufficient information and effectively perform crisis management actions (see SSF Standards 14.9, 14.10 and 14.11). The board should approve the establishment of any outsourcing or service provision

arrangement for a key business activity and be informed on a regular basis of the performance of the service provider.

- 14.5.3 A securities settlement facility that outsources operations to or is otherwise dependent on critical service providers should also disclose the nature and scope of this dependency to its participants. In addition to these service providers (such as financial messaging providers), a securities settlement facility is also typically dependent on the adequate functioning of utilities (such as power and telecommunication companies). As a result, a securities settlement facility should identify the risks from its critical service providers and utilities and take appropriate actions to manage these dependencies through appropriate contractual and organisational arrangements. A securities settlement facility should inform the Reserve Bank of any critical dependencies on utilities or service providers and ensure that both it and the Reserve Bank are able to access sufficient information on the performance of these utilities or service providers. To that end, the securities settlement facility may contractually provide for direct contacts between the critical service provider and the Reserve Bank, or contractually ensure that the Reserve Bank is able to obtain specific reports from the critical service provider. Alternatively, the securities settlement facility may provide the Reserve Bank with relevant information that it receives from the critical service provider.
- 14.5.4 A securities settlement facility's contractual arrangements with critical service providers should also ensure that the securities settlement facility's approval is mandatory before a critical service provider can itself outsource material elements of the service provided to the securities settlement facility, and that in the event of such an arrangement, full access to necessary information is preserved. Clear lines of communication should be established between the dependent securities settlement facility and the critical service provider to facilitate the flow of information between parties in both ordinary and exceptional circumstances (see SSF Standard 14.9). Additional controls may be required where outsourcing or service provision arrangements involve critical functions of the securities settlement facility or where relevant to crisis management (see SSF Standards 14.10 and 14.11).
- 14.5.5 Where a securities settlement facility operates in multiple jurisdictions, managing the risks that it poses to its participants may require it to provide adequate operational support to participants during the market hours of each relevant jurisdiction. In particular, where it has material Australian-based participation, the securities settlement facility should provide an appropriate degree of operational support to its Australian-based participants during Australian market hours. The degree of operational support should be sufficient to allow participants to resolve operational issues on a timely basis during Australian market hours (or within a reasonable extension of these hours, where necessary).
- 14.6 A participant of a securities settlement facility should have complementary operational and business continuity arrangements that are appropriate to the nature and size of the business undertaken by that participant. The securities settlement facility's rules and procedures should clearly specify operational requirements for participants.**
- 14.6.1 To manage the operational risks associated with its participants, a securities settlement facility should establish minimum operational requirements for its participants (see also SSF Standard 15 on access and participation requirements). A securities settlement facility should define operational and business continuity requirements for participants in accordance with the participant's role and importance to the system, taking into consideration the nature and scale of the business undertaken by each participant. These requirements should complement the securities settlement facility's own

operational and business continuity arrangements. Rules and procedures should clearly and fairly specify the requirements of participants in this regard. In some cases, a securities settlement facility may wish to identify critical participants based on consideration of transaction volumes and values, services provided to the securities settlement facility and other interdependent systems and, more generally, the potential impact on other participants and the system as a whole in the event of a significant operational problem. Critical participants may need to meet some of the same operational risk management requirements as the securities settlement facility itself. A securities settlement facility should have clear and transparent criteria, methodologies or standards for critical participants to ensure that their operational risks are managed appropriately.

## Business continuity arrangements

**14.7 A securities settlement facility 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 systems can resume operations within two hours following disruptive events. Business continuity arrangements should provide appropriate redundancy of critical systems and appropriate mitigants for data loss. The business continuity plan should be designed to enable the securities settlement facility to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The securities settlement facility should regularly test these arrangements.**

## Business continuity management

14.7.1 Business continuity management is a key component of a securities settlement facility's operational risk management framework. A business continuity plan should have clearly stated objectives and should include policies and procedures that allow for the rapid recovery and timely resumption of critical operations following a disruption to a service, including in the event of a wide-scale or major disruption. A securities settlement facility should explicitly assign responsibility for business continuity planning and devote adequate resources to this planning. The plan should identify and address events that pose a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption, and should focus on the impact on the operation of critical infrastructures and services. A securities settlement facility's business continuity plan should ensure that the securities settlement facility can continue to meet agreed upon service levels in such events. Both internal and external threats should be considered in the business continuity plan, and the impact of each threat should be identified and assessed. In addition to reactive measures, a securities settlement facility's business continuity plan may need to include measures that prevent disruptions of critical operations. All aspects of the business continuity plan should be clearly and fully documented and details of relevant procedures made available to participants.

14.7.2 The objectives of a securities settlement facility's business continuity plan should include the system's recovery time and recovery point. A securities settlement facility should aim to be able to resume operations within two hours following disruptive events; however, backup systems ideally should commence processing immediately. This may imply maintenance of dual redundancy for critical systems at its primary site. The plan should be designed to enable the securities settlement facility to complete settlement by the end of the day even in case of extreme circumstances. Systems, including

backup and data recovery procedures, should be designed to resume operations with a high degree of confidence that data will not be lost. This should include regular, and ideally real-time, replication of data across primary and secondary sites, and robust and timely procedures to recover data and transactions submitted in the interval between the last data replication and successful failover to a secondary site. Should data loss nevertheless occur, contingency plans for securities settlement facilities should ensure that the status of all transactions at the time of the disruption can be identified with certainty in a timely manner.

- 14.73 A securities settlement facility should set up a secondary site with sufficient resources, capabilities, and functionalities and appropriate staffing arrangements that would not be affected by a wide-scale disruption and would allow the secondary site to take over operations if needed.<sup>38</sup> The secondary site should provide the level of critical services necessary to perform the functions consistent with the recovery time objective and should be located at a sufficient geographical distance from the primary site that it has a distinct risk profile.<sup>39</sup> Depending on the securities settlement facility's importance and level of interconnectedness, the need for a third site could be considered, in particular to provide sufficient confidence that the securities settlement facility's business continuity objectives will be met in all scenarios. A securities settlement facility should also consider alternative arrangements (for example, manual paper-based procedures) to allow for the processing of time-critical transactions in extreme circumstances. Both primary and secondary (and any additional) sites should have sufficient capacity to process volumes that are at least double projected stress volumes. This redundant capacity should be sufficient to ensure that each site is able to operate continuously and independently even in extreme circumstances.
- 14.74 A securities settlement facility's business continuity plan should also include clearly defined procedures for crisis and event management. The plan, for example, should address the need for rapid deployment of a multiskilled crisis and event management team as well as procedures to consult and inform participants, interdependent FMIs, the Reserve Bank and other relevant authorities, and others (such as service providers and, where relevant, the media) on a timely basis. Communication with the Reserve Bank and other relevant authorities is critical in case of a major disruption to a securities settlement facility's operations or wider market distress that affects the securities settlement facility, particularly where data held by the securities settlement facility may be critical for crisis management. Depending on the nature of the problem, communication channels with local civil authorities (for physical attacks or natural disasters) or computer experts (for software malfunctions or cyber-attacks) may also need to be activated. If a securities settlement facility has global importance or critical linkages to one or more interdependent FMIs, it should set up, test and review appropriate cross-system or cross-border crisis management arrangements.
- 14.75 A securities settlement facility's business continuity plan and its associated arrangements should be subject to periodic review and testing. Tests should address various scenarios that simulate wide-scale disasters and inter-site switchovers. A securities settlement facility's employees should be thoroughly

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38 A particular site may be primary for certain functions and secondary for others. It is not intended that a securities settlement facility would be required to have numerous separate secondary sites for each of its essential functions.

39 A securities settlement facility should conduct a comparative risk analysis of the secondary site. The secondary site should in principle not be affected by an event that affects the primary site, with the exception of some very specific threats, such as a coordinated attack. Each site should have robust resilience based on the duplication of software and hardware, and the technology in place to replicate data between the various sites should be consistent with the chosen recovery point objectives.

trained to execute the business continuity plan and participants, critical service providers and linked FMIs should be regularly involved in the testing and be provided with a general summary of the testing results. The degree of participant involvement in the testing should be appropriate to the nature and size of the business undertaken by individual participants (see SSF Standard 14.8). The securities settlement facility should also consider the need to participate in industry-wide tests. A securities settlement facility should make appropriate adjustments to its business continuity plans and associated arrangements based on the results of the testing exercises.

## Incident management

14.7.6 A securities settlement facility should have comprehensive and well-documented procedures in place to record, report, analyse and resolve all operational incidents. After every significant disruption, a securities settlement facility should undertake a 'post-incident' review to identify the causes and any required improvement to the normal operations or business continuity arrangements. Such reviews should, where relevant, include the securities settlement facility's participants. The details of the incident and conclusions of the review should be provided to the Reserve Bank on a timely basis (see SSF Standard 19.1(h)).

**14.8 A securities settlement facility should consider making contingency testing compulsory for the largest participants to ensure they are operationally reliable and have in place tested contingency arrangements to deal with a range of operational stress scenarios that may include impaired access to the securities settlement facility.**

14.8.1 An operational disruption to the largest participants of a securities settlement facility may pose significant risks to the securities settlement facility's own operational performance, either directly or through interdependencies with other participants or FMIs. A securities settlement facility should therefore consider requiring its largest participants to perform contingency tests for their own operations with a particular focus on reliability of access to the securities settlement facility, and to participate in the securities settlement facility's own contingency testing. Where interdependencies between the securities settlement facility and its largest participants are significant, there will be a strong case for these participants to be involved in the securities settlement facility's contingency tests. Large participants' contingency tests should address the operational reliability of the participants and should cover a range of stress scenarios, including impaired access to the securities settlement facility.

## Outsourcing and other dependencies

**14.9 A securities settlement facility that relies upon, outsources some of its operations to, or has other dependencies with a related body, another FMI or a third-party service provider (for example, data processing and information systems management) should ensure that those operations meet the resilience, security and operational performance requirements of these SSF Standards and equivalent requirements of any other jurisdictions in which it operates.**

14.9.1 A securities settlement facility that relies upon, outsources some of its operations to, or has other dependencies with a related body, another FMI or a third-party service provider (for example, data processing and information systems management) should ensure that those operations meet relevant resilience, security and operational requirements of the SSF Standards and equivalent requirements of any other jurisdiction in which it operates. Requirements placed on such service providers should

be proportional to the nature of the services that they provide. Further, even when systems and processes are outsourced or provided externally, the securities settlement facility remains responsible for those systems and processes. The securities settlement facility should have robust arrangements for the selection and substitution of such providers, timely access to all necessary information, and appropriate controls and monitoring tools (see SSF Standard 14.5).

14.9.2 Where a securities settlement facility outsources or is otherwise dependent on a provider of a critical function – a function that is integral to the safe and effective provision of its core services as a securities settlement facility – a greater degree of scrutiny of arrangements may be appropriate. In scrutinising service providers in accordance with this Standard, a securities settlement facility that outsources or relies upon external providers of critical functions should, consistent with the expectations set out in Annex F to the Principles, ensure that each provider of these critical services:

- identifies and manages relevant operational and financial risks to its critical services and ensures that its risk management processes are effective
- implements and maintains appropriate policies and procedures, and devotes sufficient resources to ensure the confidentiality and integrity of information and the availability of its critical services in order to fulfil the terms of its relationship with the securities settlement facility
- implements appropriate policies and procedures to ensure that its critical services are available, reliable and resilient. Its business continuity management and disaster recovery plans should therefore support the timely resumption of its critical services in the event of an outage so that the service provided fulfils the terms of its agreement with the securities settlement facility
- has in place robust methods to plan for the entire lifecycle of the use of its technologies and the selection of technological standards
- provides users, including the securities settlement facility and, where appropriate, its participants, with sufficient information to enable them to understand clearly their roles and responsibilities in managing risks related to their use of a critical service provider.

Where a critical service provider is a regulated entity, it may be more likely to achieve these criteria. However, the securities settlement facility must still form its own judgement as to whether the criteria have been met. The securities settlement facility should inform the Reserve Bank of the arrangements it has in place to ensure that critical service providers meet these requirements (see SSF Standard 14.10).

**14.10 All of a securities settlement facility's outsourcing or critical service provision arrangements should provide rights of access to the Reserve Bank to obtain sufficient information regarding the service provider's operation of any critical functions provided. A securities settlement facility should consult with the Reserve Bank prior to entering into an outsourcing or service provision arrangement for critical functions.**

14.10.1 All of a securities settlement facility's outsourcing or critical service provision arrangements should incorporate contractual rights of access for the Reserve Bank allowing the Reserve Bank to seek information directly from the service provider in order to assess its operational performance and reliability with regard to any critical functions provided (see SSF Standard 14.5). Notwithstanding any assessment that the Reserve Bank may make regarding such service providers, a securities settlement facility should independently monitor the adherence of outsourcing or critical service providers to the

resilience, security and operational performance requirements of the SSF Standards and other relevant standards (see SSF Standard 14.9).

14.10.2 Prior to entering into an outsourcing or service provision arrangement for a critical function, a securities settlement facility should consult with the Reserve Bank (see also SSF Standard 19 on regulatory reporting). As part of this consultation process, the securities settlement facility should provide the Reserve Bank with details of the arrangement, including provisions that satisfy the requirements of SSF Standards such as 14.5, 14.9, 14.10 and 14.11, and any other provisions necessary to comply with the operational requirements under the SSF Standards.

**14.11 A securities settlement facility should organise its operations, including any outsourcing or critical service provision arrangements, in such a way as to ensure continuity of service in a crisis and to facilitate effective crisis management actions by the Reserve Bank or other relevant authorities. These arrangements should be commensurate with the nature and scale of the securities settlement facility's operations.**

14.11.1 A securities settlement facility should ensure that its operations, including any outsourcing or critical service provision arrangements, are organised in such a way that it is able to provide continuous and reliable service in a crisis, and that the Reserve Bank or other relevant authorities are able to take effective action to manage or resolve a crisis. A securities settlement facility may need to consider contractual arrangements with outsourcing providers or other service providers that contain explicit provisions safeguarding continuity of service in crisis scenarios, including financial distress to the securities settlement facility.

14.11.2 A systemically important securities settlement facility should have robust arrangements to ensure continuity of service and facilitate effective crisis management actions by the Reserve Bank or other relevant authorities. In assessing the systemic importance of a securities settlement facility, the Reserve Bank will consider factors such as:

- the size of the securities settlement facility in Australia (for example, the value of transactions processed by the securities settlement facility in Australian dollar-denominated products, or its market share)
- the availability of substitutes for the securities settlement facility's services in Australia
- the nature and complexity of the products settled by the securities settlement facility
- the degree of interconnectedness with other parts of the Australian financial system.

14.11.3 A systemically important securities settlement facility that also has a strong connection to the Australian real economy and financial system should also organise its operations so as to facilitate resolution actions taken by the Reserve Bank or other relevant authorities. This may require that the securities settlement facility directly operate critical functions or, for outsourced or externally provided functions and to the extent supported by law, provide for contractual rights of access to any appointed statutory manager in a resolution scenario. These rights of access would need to survive termination of the outsourcing or service provision agreement. In determining whether a systemically important securities settlement facility has a strong connection to the Australian real economy and financial system, the following factors are likely to be relevant:

- whether the securities settlement facility offers services in a domestic or international market



- the mix of domestic and international participants in the securities settlement facility
- the potential for disruption to the securities settlement facility to affect the real economy
- whether the market serviced by the securities settlement facility is retail or wholesale
- whether the securities settlement facility settles a domestic securities market
- links that the securities settlement facility has with other Australian FMI.

## Standard 15: Access and participation requirements

**A securities settlement facility should have objective, risk-based and publicly disclosed criteria for participation, which permit fair and open access.**

### Guidance

Access refers to the ability to use a securities settlement facility's services and includes the direct use of the securities settlement facility's services by participants, including other market infrastructures (for example, trading platforms) and, where relevant, service providers (for example, matching and portfolio compression service providers). In some cases, this includes the rules governing indirect participation. A securities settlement facility should allow for fair and open access to its services. It should control the risks to which it is exposed by its participants by setting reasonable risk-related requirements for participation in its services. A securities settlement facility should ensure that its participants and any linked FMIs have the requisite operational capacity, financial resources, legal powers and risk management expertise to prevent unacceptable risk exposure for the securities settlement facility and other participants. A securities settlement facility's participation requirements should be clearly stated and publicly disclosed so as to eliminate ambiguity and promote transparency.

**15.1 A securities settlement facility 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.**

15.1.1 Restrictions on access can result in highly tiered settlement arrangements and potentially give rise to concentration risks (see SSF Standard 16 on tiered participation arrangements). Care should therefore be taken that participation requirements do not arbitrarily limit access to a securities settlement facility's services.

15.1.2 While pursuing the benefits of fair and open access, however, a securities settlement facility's participation requirements should not compromise its risk-based controls or conflict with directors' statutory duties. Indeed, a securities settlement facility should always consider the risks that an actual or prospective participant may pose, both to the securities settlement facility and to other participants. This will typically entail risk-related participation requirements adequate to ensure that its participants meet appropriate operational, financial and legal standards consistent with timely fulfilment of their obligations to the securities settlement facility and other participants.

**15.2 A securities settlement facility's participation requirements should be justified in terms of the safety of the securities settlement facility and the markets it serves, be tailored to and commensurate with the securities settlement facility's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, a securities settlement facility should endeavour to set requirements that have the least restrictive impact on access that circumstances permit.**

- 15.2.1 A securities settlement facility's participation requirements should be justified in terms of the safety of the securities settlement facility and the markets it serves, be tailored to the securities settlement facility's specific risks, be imposed in a manner commensurate with such risks, and be set out in the securities settlement facility's rules and publicly disclosed. The requirements should be objective and should not unnecessarily discriminate against particular classes of participants or introduce competitive distortions.<sup>40</sup> Operational requirements may include reasonable criteria relating to the participant's ability and readiness (for example, its information technology capabilities) to use a securities settlement facility's services. Financial requirements may include reasonable risk-related capital requirements, other evidence of financial strength and creditworthiness, and collateralisation of exposures. Legal requirements may include appropriate licences and authorisations to conduct relevant activities as well as legal opinions or other arrangements that demonstrate that possible conflicts of law would not impede the ability of an applicant (for example, a foreign entity) to meet its obligations to the securities settlement facility. A securities settlement facility also may require participants to have appropriate risk management expertise. If a securities settlement facility admits non-regulated entities, it should take into account any additional risks that may arise from their participation and design its participation requirements and risk management controls accordingly.
- 15.2.2 To help address the balance between open access and risk, a securities settlement facility should set participation requirements and manage its participant-related risks through the use of real-time binding risk management controls and other operational arrangements that have the least restrictive impact on access that circumstances permit. For example, where a securities settlement facility assumes credit risk as principal, it can manage participant-related risks by using real-time binding credit limits or collateral requirements. The permitted level of participation may be different for participants maintaining different levels of capital. Where other factors are equal, participants holding higher levels of capital may be permitted less restrictive risk limits or be able to participate in more functions within the securities settlement facility. Such risk management controls may mitigate the need for a securities settlement facility to impose onerous participation requirements that limit access. A securities settlement facility could also differentiate its services to provide different levels of access at varying levels of cost and complexity. For example, a securities settlement facility may wish to limit full direct participation to certain types of entities, and to apply limits to the activities of, or provide indirect access to, others. Participation requirements (and other risk controls) can be tailored to each class or tier of participants based on the risks each class or tier poses to the securities settlement facility and its participants.
- 15.2.3 When settling on behalf of other market participants, a direct participant assumes responsibility for the risks those market participants bring to the securities settlement facility and its participants. It is therefore important that the direct participant has appropriate financial and operational resources and risk management arrangements to fulfil its obligations to the securities settlement facility and other participants arising from this activity. In some markets, there may be relatively few direct participants with the financial and operational resources to fulfil this role, and therefore the potential concentration of risks in a small number of direct participants may argue for closer monitoring and perhaps more stringent participation requirements for direct participants that provide settlement services to other market participants (see also SSF Standard 17 on tiered participation arrangements). Where tiering

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<sup>40</sup> A similar principle is set out in the guidance to SSF Standard 11.1, in relation to the proportionality of obligations placed on non-defaulting participants in the event of a default.

exists, each class of participation should be clearly defined and the participation requirements should be the same for all applicants of the same class.

**15.3 A securities settlement facility 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.**

15.3.1 A securities settlement facility should monitor compliance with its participation requirements on an ongoing basis through the receipt of timely and accurate information. Participants should be obliged to report any developments that may affect their ability to comply with a securities settlement facility's participation requirements. A securities settlement facility should have the authority to impose additional risk controls on a participant in situations where the securities settlement facility determines the participant poses heightened risk to the securities settlement facility. For example, if a participant's credit standing comes into doubt, the securities settlement facility may require the participant to provide additional collateral or may place restrictions on the level or types of activities that the participant can undertake (see SSF Standard 4 on credit risk). A securities settlement facility should consider additional reporting requirements for non-regulated institutions. A securities settlement facility should also have clearly defined and publicly disclosed procedures for, in extreme cases, facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements of the securities settlement facility (see SSF Standard 4 on credit risk and SSF Standard 11 on participant default rules and procedures).

15.3.2 If a securities settlement facility has an appeals process for suspending or cancelling participation in the facility, the appeals process should not detract from the securities settlement facility's ability to suspend or cancel participation. For serious breaches, the preferable approach would be for the suspension or cancellation to persist during an appeal, with reinstatement upon a successful appeal, rather than the suspension or cancellation being put on hold until an appeal is heard.

## **Standard 16: Tiered participation arrangements**

**A securities settlement facility should identify, monitor and manage the material risks to the securities settlement facility arising from tiered participation arrangements.**

### **Guidance**

Tiered participation arrangements occur when some firms (indirect participants) rely on the services provided by other firms (direct participants) to use the securities settlement facility's settlement facilities.<sup>41</sup>

The dependencies and risk exposures (including credit, liquidity and operational risks) inherent in these tiered arrangements can present risks to the securities settlement facility and its smooth functioning, as well as to the participants themselves and the broader financial markets. For example, if a securities settlement facility has few direct participants but many indirect participants with large values or volumes of transactions, it is

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<sup>41</sup> This Standard considers tiered participation arrangements that arise from the different relationships that participants may have with the securities settlement facility. One type of relationship is with participants in the securities settlement facility that are bound by the securities settlement facility's rules and agreements. Such 'direct participants' and the management of the risks they present should be fully covered by the rules and agreements of the securities settlement facility and are generally dealt with in other SSF Standards. A second type of relationship is with entities that are not bound by the rules of the securities settlement facility, but whose transactions are settled through the securities settlement facility. In this Standard, these entities are defined as 'indirect participants' in the securities settlement facility.

likely that a large proportion of the transactions processed by the securities settlement facility depend on a few direct participants. This will increase the severity of the effect on the securities settlement facility of a default of a direct participant or an operational disruption at a direct participant. The credit exposures in tiered relationships can also affect the securities settlement facility. If the value of an indirect participant's transactions is large relative to the direct participant's capacity to manage the risks, this may increase the direct participant's default risk. There may also be legal or operational risk to the securities settlement facility if there is uncertainty about the liability for indirect participant transactions and how these transactions will be handled in the event of a default (see SSF Standard 1 on legal basis).

The nature of these risks is such that they are most likely to be material where there are indirect participants whose business through the securities settlement facility is a significant proportion of the securities settlement facility's overall business or is large relative to that of the direct participant(s) through which they access the securities settlement facility's services. Typically, the identification, monitoring and management of risks from tiered participation will therefore be focused on the immediate customers of direct participants and depend on the direct participant for access to a securities settlement facility's services. In exceptional cases, however, tiered participation arrangements may require the securities settlement facility to look beyond the direct participant and its immediate customer. An important source of tiering is participants' use of commercial settlement banks to effect money settlements and carry out funding and defunding activities. This source of tiering is not directly addressed in this Standard, but rather is considered in SSF Standard 8.

There are limits on the extent to which a securities settlement facility can, in practice, observe or influence direct participants' commercial relationships with their customers. However, a securities settlement facility will often have access to information on transactions undertaken on behalf of indirect participants and can set direct participation requirements that may include criteria relating to how direct participants manage relationships with their customers insofar as these criteria are relevant for the safe operation of the securities settlement facility. At a minimum, a securities settlement facility should identify the types of risk that could arise from tiered participation and should monitor concentrations of such risk. If a securities settlement facility or its smooth operation is exposed to material risk from tiered participation arrangements, the securities settlement facility should seek to manage and limit such risk.

**16.1 A securities settlement facility 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 securities settlement facility arising from such tiered participation arrangements.**

16.1.1 A securities settlement facility may be able to obtain information relating to tiered participation through its own systems or by collecting it from direct participants. A securities settlement facility should ensure that its procedures, rules and agreements with direct participants allow it to gather basic information about indirect participants in order to identify, monitor and manage any material risks to the securities settlement facility arising from such tiered participation arrangements. This information should enable the securities settlement facility, at a minimum, to identify: the proportion of activity that direct participants conduct on behalf of indirect participants; direct participants that act on behalf of a material number of indirect participants; indirect participants with significant volumes or values

of transactions in the system; and indirect participants whose transaction volumes or values are large relative to those of the direct participants through which they access the securities settlement facility.<sup>42</sup>

**16.2 A securities settlement facility should identify material dependencies between direct and indirect participants that might affect the securities settlement facility.**

16.2.1 A securities settlement facility should identify material dependencies between direct and indirect participants that can affect the securities settlement facility. Indirect participants will often have some degree of dependence on the direct participant through which they access the securities settlement facility. In the case of a securities settlement facility with few direct participants but many indirect participants, it is likely that a large proportion of the transactions processed by the securities settlement facility would depend on the operational performance of those few direct participants. Disruption to the services provided by the direct participants – whether for operational reasons or because of a participant’s default – could therefore present a risk to the smooth functioning of the system as a whole. The securities settlement facility should identify and monitor material dependencies of indirect participants on direct participants so that the securities settlement facility has readily available information on which significant indirect participants may be affected by problems at a particular direct participant.

16.2.2 In some cases, issues at an indirect participant could affect the securities settlement facility. This is most likely to occur where a large indirect participant accesses a securities settlement facility’s facilities through a relatively small direct participant (see SSF Standard 16.3). Failure of this significant indirect participant to perform as expected, such as by failing to meet its payment obligations, or stress at the indirect participant, such as that which causes others to delay payments to the indirect participant, may affect the direct participant’s ability to meet its obligations to the securities settlement facility. Securities settlement facilities should therefore identify and monitor the material dependencies of direct participants on indirect participants so that the securities settlement facility has readily available information on how the securities settlement facility may be affected by problems at an indirect participant, including which direct participants may be affected.

**16.3 A securities settlement facility should identify indirect participants responsible for a significant proportion of transactions processed by the securities settlement facility and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the securities settlement facility in order to manage the risks arising from these transactions.**

**Credit and liquidity risks in tiered participation arrangements**

16.3.1 Tiered participation arrangements typically create credit and liquidity exposures between direct and indirect participants. The management of these exposures is the responsibility of the participants and, where appropriate, subject to supervision by their regulators. A securities settlement facility is not expected to manage the credit and liquidity exposures between direct and indirect participants, although the securities settlement facility may have a role in applying credit or position limits in agreement with the direct participant. A securities settlement facility should, however, have access to information on concentrations of risk arising from tiered participation arrangements that may affect

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<sup>42</sup> If satisfying this Standard requires the collection of sensitive information that may advantage one party over another, the securities settlement facility should ensure that the sensitive information is appropriately protected and used only for risk purposes rather than commercial purposes.

the securities settlement facility, allowing it to identify indirect participants responsible for a significant proportion of the securities settlement facility's transactions or whose transaction volumes or values are large relative to those of the direct participants through which they access the securities settlement facility. A securities settlement facility should identify and monitor such risk concentrations.

- 16.3.2 If a participant default would leave a securities settlement facility with a potential credit exposure related to an indirect participant's positions, the securities settlement facility should ensure it understands and manages the exposure it would face. For example, the securities settlement facility may set participation requirements that require the direct participant, on the securities settlement facility's request, to demonstrate that it is adequately managing relationships with its customers to the extent that they may affect the securities settlement facility. A securities settlement facility should also consider establishing concentration limits on exposures to indirect participants, where appropriate.

### **Indirect participation and default scenarios**

- 16.3.3 Default scenarios can create uncertainty about whether indirect participants' transactions have been settled or will be settled and whether any settled transactions will be unwound. Default scenarios can also raise legal and operational risks for the securities settlement facility if there is uncertainty about whether the indirect or direct participant is liable for completing the transaction. A securities settlement facility should ensure that a default, whether by a direct participant or by an indirect participant, does not affect the finality of indirect participants' transactions that have been processed and settled by the securities settlement facility. A securities settlement facility should ensure that its rules and procedures are clear regarding the status of indirect participants' transactions at each point in the settlement process (including the point at which they become subject to the rules of the system and the point after which the rules of the system no longer apply) and whether such transactions would be settled in the event of an indirect or direct participant default. A securities settlement facility should also ensure that it adequately understands its direct participants' processes and procedures for managing an indirect participant's default. For example, the securities settlement facility should know whether the indirect participant's queued payments can be removed or future-dated transactions rescinded and whether such processes and procedures would expose the securities settlement facility to operational, reputational or other risks.

### **Encouraging direct participation**

- 16.3.4 Direct participation in a securities settlement facility usually provides a number of benefits, some of which may not be available to indirect participants, such as real-time gross settlement, exchange-of-value settlement, or settlement in central bank money. Moreover, indirect participants are vulnerable to the risk that their access to a securities settlement facility is withdrawn or disputed. If these indirect participants have large values or volumes of business through the securities settlement facility, this may affect the smooth functioning of the securities settlement facility. For these reasons, where an indirect participant accounts for a material proportion of the transactions processed by a securities settlement facility, it may be appropriate to encourage direct participation. For example, a securities settlement facility may in some cases establish objective thresholds above which direct participation would normally be encouraged (provided that the firm satisfies the securities settlement facility's access criteria). Setting such thresholds and encouraging direct participation should be based on risk considerations rather than commercial advantage.

**16.4 A securities settlement facility should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.**

16.4.1 A securities settlement facility should regularly review risks to which it may be exposed as a result of tiered participation arrangements. If material risks exist, the securities settlement facility should take mitigating action as appropriate. The results of the review process should be reported to the board of directors and updated periodically and after substantial amendments to a securities settlement facility's rules.

## Standard 17: FMI links

**A securities settlement facility that establishes a link with one or more FMIs should identify, monitor and manage link-related risks.**

### Guidance

A link is a set of contractual and operational arrangements between two or more FMIs that connect the FMIs directly or through an intermediary. A securities settlement facility may establish a link with another securities settlement facility for the primary purpose of expanding its services to additional financial instruments, markets or institutions. For example, a securities settlement facility operating a central securities depository (referred to as an investor central securities depository) may establish a link to another central securities depository in which securities are issued or immobilised (referred to as an issuer central securities depository) to enable a participant in the securities settlement facility to access the services of the issuer central securities depository through the participant's existing relationship with the securities settlement facility. A securities settlement facility may also establish a link with a different type of FMI. For example, a central counterparty for securities markets may establish and use a link to a securities settlement facility operating a central securities depository to receive and deliver securities. This Standard covers links between securities settlement facilities, as well as links between a securities settlement facility and other types of FMI such as central counterparties, central securities depositories and trade repositories.<sup>43</sup> If a securities settlement facility establishes a link, it should identify, monitor and manage its link-related risks, including legal, operational, credit and liquidity risks.<sup>44</sup> Further, a securities settlement facility that establishes multiple links should ensure that the risks generated by one link do not affect the soundness of the other links and linked FMIs. Mitigation of such spillover effects requires the use of effective risk management controls, including additional financial resources or the harmonisation of risk management frameworks across linked FMIs.

**17.1 Before entering into a link arrangement, and on an ongoing basis once the link is established, a securities settlement facility should identify, monitor and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that the securities settlement facility is able to comply with these SSF Standards.**

### Identifying link-related risks

17.1.1 Before entering into a link arrangement and on an ongoing basis once the link is established, a securities settlement facility should identify and assess all potential sources of risk arising from the

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<sup>43</sup> Links to payment systems are not addressed by this Standard because these links are addressed in SSF Standard 8 on money settlements.

<sup>44</sup> Prior to entering into a link arrangement, a securities settlement facility should inform its participants of the expected effects on the securities settlement facility's risk profile. See also SSF Standard 18 on disclosure of rules, key policies and procedures, and market data.

link arrangement. The type and degree of risk varies according to the design and complexity of the securities settlement facility and linked FMIs and the nature of the relationship between them. In a simple case of a vertical link, for example, a securities settlement facility may provide basic services to another FMI, or vice versa, such as a central securities depository that provides securities transfer services to a securities settlement facility. Such links typically pose only operational and custody risks. Other links may be more complex and may pose additional risks to the securities settlement facility, such as credit and liquidity risks. In addition, links between a securities settlement facility and other FMIs may pose specific risks to the securities settlement facility or other FMIs in the link arrangement. For example, a central counterparty may have a link with a securities settlement facility that operates a central securities depository for the delivery of securities and settlement of margins. If the central counterparty poses risks to the securities settlement facility, the facility should manage those risks. In all cases, link arrangements should be designed such that the securities settlement facility is able to observe the SSF Standards.

### Managing operational risk

17.1.2 A securities settlement facility should obtain an appropriate level of information about each linked FMI's operations in order for the securities settlement facility to perform effective periodic assessments of the operational risk associated with the link. In particular, securities settlement facilities should ensure that risk management arrangements and processing capacity are sufficiently scalable and reliable to operate the link safely for both the current and projected peak volumes of activity processed over the link (see SSF Standard 14 on operational risk). Systems and communication arrangements between the securities settlement facility and linked FMIs also should be reliable and secure so that the link does not pose significant operational risk to the securities settlement facility and the linked FMIs. Any reliance by a securities settlement facility on a critical service provider should be disclosed as appropriate to the linked FMI and the securities settlement facility should require reciprocal disclosure from the linked FMI. In addition, a linked securities settlement facility should identify, monitor and manage operational risks due to complexities or inefficiencies associated with differences in time zones, particularly as these affect staff availability. Governance arrangements and change management processes should ensure that changes in the securities settlement facility or a linked FMI will not inhibit the smooth functioning of the link, related risk management arrangements, or non-discriminatory access to the link (see SSF Standard 2 on governance and SSF Standard 15 on access and participation requirements).

### Managing financial risk

17.1.3 A securities settlement facility in a link arrangement should effectively measure, monitor and manage its financial risk, including custody risk, arising from the link arrangement. A securities settlement facility should ensure that it and its participants have adequate protection of assets in the event of the insolvency of a linked FMI or a participant default in a linked FMI.

**17.2 A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the securities settlement facility and other FMIs involved in the link.**

17.2.1 A link involving a securities settlement facility should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the securities settlement facility. Cross-border links may present legal risk arising from differences between the laws and



contractual rules governing the linked FMIs and their participants, including those relating to rights and interests, collateral arrangements, settlement finality and netting arrangements (see SSF Standard 1 (on legal basis)). For example, differences in law and rules governing settlement finality could lead to a scenario in which a transfer is regarded as final in the securities settlement facility but not final in the linked FMI, or vice versa. To limit any uncertainties arising from such a scenario, the respective rights and obligations of the linked FMIs and, where necessary, their participants should be clearly defined in the link agreement. In a cross-jurisdictional context, the terms of the link agreement should also set out an unambiguous choice of law that will govern each aspect of the link.

**17.3 Where relevant to its operations in Australia, a securities settlement facility should consult with the Reserve Bank prior to entering into a link arrangement with another FMI.**

- 17.3.1 Prior to entering into a link arrangement with another FMI that is relevant to its operations in Australia, a securities settlement facility should consult with the Reserve Bank. As part of this consultation, the securities settlement facility should provide the Reserve Bank with a comprehensive description of the link arrangement. This description should include details of the legal basis of the link, and any financial obligations or operational interdependencies created by the link, including obligations created for both the securities settlement facility and the linked FMI. A securities settlement facility should provide sufficient detail to demonstrate that the link arrangement will not adversely affect its compliance with the SSF Standards. Where the Reserve Bank identifies aspects of the proposal that may create unacceptable risks for the securities settlement facility, the securities settlement facility should make any necessary changes to the proposal to control or mitigate these risks prior to implementation. These changes may be necessary to ensure that the securities settlement facility continues to comply with the SSF Standards and equivalent standards in other relevant jurisdictions.
- 17.3.2 Where a linked FMI's principal place of business is not in Australia, the Reserve Bank may also consult with the regulator of the linked FMI in its principal place of business, in order to understand the overseas regulator's assessment of the link arrangement and to ensure that all relevant legal, regulatory, operational and financial risk issues have been considered and addressed.

**17.4 A securities settlement facility operating a central securities depository that links to another central securities depository should measure, monitor and manage the credit and liquidity risks arising from such links. Any credit extended to the linked central securities depository should be covered fully with high-quality collateral and be subject to limits.**

- 17.4.1 As part of its activities, a securities settlement facility operating a central securities depository may choose to establish a link with another central securities depository. If such a link is improperly designed, the settlement of transactions across the link could subject participants to new or increased risks. In addition to legal and operational risks, the securities settlement facility and its participants could also face credit and liquidity risks. For example, an operational failure or default in a linked central securities depository may cause settlement failures or defaults in a securities settlement facility and expose participants in the securities settlement facility, including participants that did not settle transactions across the link, to unexpected liquidity pressures or outright losses. The default procedures of a linked central securities depository, for example, could affect a securities settlement facility through loss-sharing arrangements. A securities settlement facility operating a central securities depository that has a link with another central securities depository should therefore identify, monitor and manage its credit and liquidity risks arising from the link arrangement. In addition, any credit

extended to the linked central securities depository should be fully covered by high-quality collateral and subject to limits.

17.4.2 Furthermore, a securities settlement facility operating a central securities depository and any linked central securities depository should have robust reconciliation procedures to ensure that their respective records are accurate and current. Reconciliation is particularly important when three or more central securities depositories are involved in settling transactions (that is, the securities are held in safekeeping by one central securities depository or custodian while the seller and the buyer participate in one or more of the linked central securities depositories).

**17.5 Provisional transfers of securities between a securities settlement facility operating a central securities depository and another central securities depository should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.**

17.5.1 Some practices that may be adopted in link arrangements involving a securities settlement facility operating a central securities depository and other central securities depositories deserve particularly rigorous attention and controls. In particular, provisional transfers of securities between a securities settlement facility operating a central securities depository and the linked central securities depository should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.

**17.6 A securities settlement facility operating an investor central securities depository that uses an intermediary to operate a link with an issuer central securities depository should measure, monitor and manage the additional risks (including custody, credit, legal and operational risks) arising from the use of the intermediary.**

17.6.1 In an indirect link arrangement, a securities settlement facility operating an investor central securities depository uses an intermediary (such as a custodian bank) to access the issuer central securities depository. In such cases, the securities settlement facility faces the risk that the custodian bank may become insolvent, act negligently or commit fraud. Although a securities settlement facility operating an investor central securities depository may not face a loss on the value of the securities, the ability of the facility to use its securities might temporarily be impaired. The securities settlement facility should measure, monitor and manage on an ongoing basis its custody risk (see also SSF Standard 13 on custody and investment risks) and provide evidence to the Reserve Bank and other relevant authorities that adequate measures have been adopted to mitigate this custody risk. In addition, the securities settlement facility should ensure that it has adequate legal, contractual and operational protections to ensure that its assets held in custody are segregated and transferable (see SSF Standard 9 on central securities depositories). Similarly, a securities settlement facility operating an investor central securities depository should ensure that any money settlement agents can perform as expected. In that context, the securities settlement facility should have adequate information on the business continuity plans of its intermediary and the issuer central securities depository to achieve a high degree of confidence that both entities will perform as expected during a disruptive event.

## Standard 18: Disclosure of rules, key policies and procedures, and market data

**A securities settlement facility should have clear and comprehensive rules, policies and procedures and should provide sufficient information and data to enable participants to have an accurate understanding of the risks they incur by participating in the securities settlement facility. All relevant rules and key policies and procedures should be publicly disclosed.**

### Guidance

A securities settlement facility should provide sufficient information to its participants and prospective participants to enable them to identify clearly and understand fully the risks and responsibilities of participating in the system. To achieve this objective, a securities settlement facility should adopt and disclose written rules, policies and procedures that are clear and comprehensive and that include explanatory material written in plain language so that participants can fully understand the system's design and operations, their rights and obligations, and the risks of participating in the system. A securities settlement facility's rules, policies, procedures and explanatory material need to be accurate, up to date and readily available to all current and prospective participants. Moreover, a securities settlement facility should disclose to participants and the public basic operational information and responses to the CPSS-IOSCO *Disclosure Framework for Financial Market Infrastructures*.

**18.1 A securities settlement facility should adopt clear and comprehensive rules, policies and procedures that are fully disclosed to participants. Relevant rules and key policies and procedures should also be publicly disclosed (including specific requirements relating to SSF Standards 1.4, 2.2, 11.3, 13.4, 15.2 and 15.3).**

18.1.1 A securities settlement facility should adopt clear and comprehensive rules, policies and procedures that are fully disclosed to participants. Relevant rules and key policies and procedures should also be publicly disclosed. A securities settlement facility's rules, policies and procedures are typically the foundation of the securities settlement facility and provide the basis for participants' understanding of the risks they incur by participating in the securities settlement facility.

**18.2 A securities settlement facility should disclose clear descriptions of the system's design and operations, as well as the securities settlement facility's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the securities settlement facility (see SSF Standards 2.8 and 8.5).**

18.2.1 Relevant rules, policies and procedures should include clear descriptions of the system's design and operations, as well as the rights and obligations of the securities settlement facility and its participants, so that participants can assess the risk they would incur by participating in the securities settlement facility.<sup>45</sup> They should clearly outline the respective roles of participants and the securities settlement facility as well as the rules, policies and procedures that will be followed in routine operations and non-routine, though foreseeable, events, such as a participant default (see SSF Standard 11 on participant default rules and procedures). In particular, a securities settlement facility should have clear and comprehensive rules, policies and procedures for addressing financial and operational problems

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<sup>45</sup> Information should be disclosed to the extent it would not risk prejudicing the security and integrity of the securities settlement facility or divulging commercially sensitive information, such as trade secrets or other intellectual property.

within the system. For example, rules, policies and procedures should identify which parties are to be notified of specific events and the timetables for decision-making and notification. They should make clear the degree of discretion parties are able to exercise in taking decisions that can have a direct effect on the operation of the system.

18.2.2 In addition to disclosing all relevant rules, and key policies and procedures, a securities settlement facility should have a clear and fully disclosed process for proposing and implementing changes to its rules, policies and procedures and for informing participants, and the Reserve Bank and other relevant authorities, of these changes. Similarly, the rules, policies and procedures should clearly disclose the degree of discretion that a securities settlement facility can exercise over key decisions that directly affect the operation of the system, including in crises and emergencies (see also SSF Standard 1 on legal basis and SSF Standard 2 on governance). For example, a securities settlement facility's procedures may provide for discretion regarding the extension of operating hours to accommodate unforeseen market or operational problems. A securities settlement facility also should have appropriate procedures to minimise any conflict of interest issues that may arise when authorised to exercise its discretion.

**18.3 A securities settlement facility should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the securities settlement facility's rules, policies and procedures and the risks they face from participating in the securities settlement facility.**

18.3.1 Participants bear primary responsibility for understanding the rules, policies, procedures and risks of participating in a securities settlement facility as well as the risks they may incur when the securities settlement facility has links with other FMs. A securities settlement facility, however, should provide all documentation, training and information necessary to facilitate participants' understanding of the securities settlement facility's rules, policies and procedures and the risks they face from participation. New participants should receive training before using the system, and existing participants should receive, as needed, additional periodic training. A securities settlement facility should disclose to each individual participant data to help each participant understand and manage the potential financial risks stemming from participation in the securities settlement facility. For instance, participants should have access to sufficiently timely and broadly comprehensive data on equities securities lending to enable them to assess the potential implications for settlement risk. This is particularly important where equities securities loans are bilaterally negotiated and not novated to (or otherwise cleared through) a central counterparty, but nevertheless settled alongside centrally cleared exchange-traded transactions. Other relevant information that should be disclosed to participants, but typically not to the public, includes relevant aspects of the securities settlement facility's business continuity arrangements.<sup>46</sup>

18.3.2 A securities settlement facility is well placed to observe the performance of its participants and should promptly identify those participants whose behaviour demonstrates a lack of understanding of, or compliance with, applicable rules, policies, procedures and risks of participation. In such cases, a securities settlement facility should take steps to rectify any perceived lack of understanding by the participant and take other remedial action necessary to protect the securities settlement facility and its participants. This may include notifying senior management within the participant institution. In

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<sup>46</sup> Information on business continuity that can undermine a securities settlement facility's safety and soundness should not be disclosed to the public. However, this information should be disclosed to the Reserve Bank and other relevant authorities.

cases in which the participant's actions present significant risk or present cause for the participant's suspension, the securities settlement facility should notify the Reserve Bank and other relevant authorities.

**18.4 A securities settlement facility should complete regularly and disclose publicly responses to the CPSS-IOSCO *Disclosure Framework for Financial Market Infrastructures*. A securities settlement facility also should, at a minimum, disclose basic risk and activity data, as directed by the Reserve Bank from time to time.**

### Disclosure framework and other information

18.4.1 A securities settlement facility should complete regularly, and disclose publicly, responses to the CPSS-IOSCO *Disclosure Framework for Financial Market Infrastructures*. The securities settlement facility should provide comprehensive and appropriately detailed disclosures to support the overall transparency of the securities settlement facility, its governance, operations and risk management framework. In order for the disclosures to reflect correctly the securities settlement facility's current rules, policies, procedures and operations, the securities settlement facility should update its responses following material changes to the system or its environment. At a minimum, a securities settlement facility should review its responses to the CPSS-IOSCO *Disclosure Framework for Financial Market Infrastructures* each year to ensure continued accuracy and usefulness.

18.4.2 Other relevant information for participants and, more generally, the public could include general information on the securities settlement facility's full range of activities and operations, such as the names of direct participants in the securities settlement facility, key times and dates in its operations, and its overall risk management framework.<sup>47</sup> A securities settlement facility should also disclose its financial condition, financial resources to withstand potential losses (where relevant), timeliness of settlements and other performance statistics. With respect to data, a securities settlement facility should, at a minimum, disclose basic data on transaction volumes and values. The securities settlement facility should also disclose any additional data that the Reserve Bank may direct it to disclose from time to time.

### Forms of disclosure

18.4.3 A securities settlement facility should make the relevant information and data it discloses as set forth in these SSF Standards readily available through generally accessible media, such as the internet, in English in addition to any other language(s) relevant to the scope of its operations. The data should be accompanied by robust explanatory documentation that enables users to understand and interpret the data correctly.

## Standard 19: Regulatory reporting

**A securities settlement facility should inform the Reserve Bank in a timely manner of any events or changes to its operations or circumstances that may materially impact its management of risks or ability to continue operations. A securities settlement facility should also regularly provide information to the Reserve Bank regarding its financial position and risk controls on a timely basis.**

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<sup>47</sup> A clear description of the typical lifecycle of the settlement process under normal circumstances may also be useful for participants and the public. This information would highlight how the securities settlement facility settles a transaction, and the responsibilities of the parties involved.

## Guidance

The *Corporations Act 2001* and the SSF Standards impose requirements for notification to the Reserve Bank in certain circumstances. This Standard sets out some of these requirements and imposes additional reporting requirements.

Oral notification to the Reserve Bank may be appropriate, particularly in circumstances where timely communication is needed. In practice, this should be followed by notification in writing.

To assist in meeting this Standard, formal points of liaison will be agreed upon between the securities settlement facility and the Reserve Bank.

### **19.1 A securities settlement facility should inform the Reserve Bank as soon as reasonably practicable if:**

- (a) it breaches, or has reason to believe that it will breach:**
  - (i) an SSF Standard; or**
  - (ii) its broader legislative obligation to do, to the extent that it is reasonably practicable to do so, all things necessary to reduce systemic risk;**
- (b) it becomes subject to external administration, or has reasonable grounds for suspecting that it will become subject to external administration;**
- (c) a related body to the securities settlement facility becomes subject to external administration, or if the securities settlement facility has reasonable grounds for suspecting that a related body will become subject to external administration;**
- (d) a participant becomes subject to external administration, or if the securities settlement facility has reasonable grounds for suspecting that a participant will become subject to external administration;**
- (e) a participant fails to meet its obligations under the securities settlement facility's risk control requirements or has its participation suspended or cancelled because of a failure to meet the securities settlement facility's risk control requirements;**
- (f) it fails to enforce any of its own risk control requirements;**
- (g) it plans to make significant changes to its risk control requirements or its rules, policies and procedures;**
- (h) it or a service it relies on from a third party or outsourced provider experiences a significant operational disruption, including providing the conclusions of its post-incident review;**
- (i) any internal audits or independent external expert reviews are undertaken of its operations, risk management processes or internal control mechanisms, including providing the conclusions of such audits or reviews;**
- (j) its operations or risk controls are affected, or are likely to be affected, by distress in financial markets;**
- (k) it has critical dependencies on utilities or service providers, including providing a description of the dependency and an update if the nature of this relationship changes;**

- (l) it proposes to grant a security interest over its assets (other than a lien, right of retention or statutory charge that arises in the ordinary course of business);
- (m) it proposes to incur or permit to subsist any loans from participants or members unless such loans are subordinated to the claims of all other creditors of the securities settlement facility; or
- (n) any other matter arises which has or is likely to have a significant impact on its risk control arrangements (see also SSF Standards 1.6, 14.10 and 17.3).

19.2 A securities settlement facility should also provide to the Reserve Bank, on a timely basis:

- (a) audited annual accounts;
- (b) management accounts on a regular basis, and at least quarterly;
- (c) risk management reports on a regular basis, and at least quarterly;
- (d) periodic activity, risk and operational data, as agreed with the Reserve Bank; and
- (e) any other information as specified by the Reserve Bank from time to time.

## Glossary

Unless the contrary intention appears, the terms in the guidance to the *Financial Stability Standards for Securities Settlement Facilities* (SSF Standards) have the meanings provided for in this Glossary. Wordings or terms used in this Glossary importing the singular shall include the plural and vice versa where the context requires.

*Note: This Glossary is based largely on the glossary to the Principles, and the CPSS Glossary of Terms Used in Payments and Settlement Systems, added to and amended by the Reserve Bank as appropriate.<sup>48</sup>*

Term	Definition
<b>affiliate</b>	This term means 'associated entity' as defined in section 50AAA of the <i>Corporations Act 2001</i> .
<b>backtesting</b>	A comparison of previously observed outcomes with expected outcomes derived from the use of margin models.
<b>batch settlement</b>	The settlement of groups of payments, transfer instructions or other obligations together at one or more discrete, often pre-specified times during the processing day.
<b>beneficial owner</b>	A person or entity that is entitled to receive some or all of the rights deriving from ownership of a security or financial instrument (for example, income, voting rights and power to transfer). In some cases the beneficial owner of a security or financial instrument may not be the legal owner of the security or instrument.
<b>book entry</b>	The transfer of securities and other financial assets which does not involve the physical movement of paper documents or certificates (for example, the electronic transfer of securities).
<b>business continuity</b>	A state of uninterrupted business operations. This term also refers to all of the organisational, technical and staffing measures used to ensure the continuation of operations following a disruption to a service, including in the event of a wide-scale or major disruption.
<b>central bank money</b>	A liability of a central bank, in this case in the form of deposits held at the central bank, which can be used for settlement purposes.
<b>central counterparty</b>	An entity that interposes itself between counterparties to contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer, and thereby ensuring the performance of open contracts.
<b>central securities depository</b>	An entity that provides securities accounts, central safekeeping services and asset services, which may include the administration of corporate actions and redemptions, and plays an important role in helping to ensure the integrity of securities issues (that is, ensure that securities are not accidentally or fraudulently created or destroyed or their details changed).
<b>choice of law</b>	A contractual provision by which parties choose the law that will govern their contract or relationship. Choice of law may also refer to the question of what law should govern in the case of a conflict of laws.

<sup>48</sup> A Glossary of Terms Used in Payments and Settlement Systems is available at <<http://www.bis.org/publ/cpss00b.pdf>>.



<b>Term</b>	<b>Definition</b>
<b>clearing</b>	The process of transmitting, reconciling and, in some cases, confirming transactions prior to settlement, potentially including the netting of transactions and the establishment of final positions for settlement. For the clearing of futures and options, this term also refers to the daily balancing of profits and losses and the daily calculation of collateral requirements.
<b>collateral</b>	An asset or third-party commitment that is used by a collateral provider to secure an obligation vis-à-vis a collateral taker.
<b>commercial bank money</b>	A liability of a commercial bank, in the form of deposits held at the commercial bank, which can be used for settlement purposes.
<b>conflict of laws</b>	An inconsistency or difference in the laws of jurisdictions that have a potential interest in a transaction.
<b>counterparty</b>	A party to a trade.
<b>credit risk</b>	The risk that a counterparty, whether a participant or other entity, will be unable to meet fully its financial obligations when due, or at any time in the future.
<b>critical service provider</b>	A related entity or third party that provides services to a securities settlement facility that are integral to the safe and effective provision of its core services as a securities settlement facility.
<b>current exposure</b>	The loss that a securities settlement facility (or in some cases, its participants) would face immediately if a participant were to default. Current exposure is technically defined as the larger of zero or the market value (or replacement cost) of a transaction or portfolio of transactions within a netting set with a counterparty that would be lost upon the default of the counterparty.
<b>custody risk</b>	The risk of loss on assets held in custody in the event of a custodian's (or sub-custodian's) insolvency, negligence, fraud, poor administration or inadequate recordkeeping.
<b>default</b>	An event stipulated in an agreement as constituting a breach or default. Generally, such events relate to a failure to complete a transfer of funds or securities in accordance with the terms and rules of the system in question.
<b>deferred net settlement (DNS)</b>	A net settlement mechanism that settles on a net basis at the end of a predefined settlement cycle.
<b>delivery versus delivery (DvD)</b>	A securities settlement mechanism that links two securities transfers in such a way as to ensure that delivery of one security occurs if and only if the corresponding delivery of the other security occurs.
<b>delivery versus payment (DvP)</b>	A securities settlement mechanism that links a securities transfer and a funds transfer in such a way as to ensure that delivery occurs if and only if the corresponding payment occurs.
<b>dematerialisation</b>	The elimination of physical certificates or documents of title that represent ownership of securities so that securities exist only as accounting records.
<b>Exchange Settlement Account</b>	An account held at the Reserve Bank which is used for the final settlement of obligations between Exchange Settlement Account holders.

<b>Term</b>	<b>Definition</b>
<b>external administration</b>	This term has the meaning given by section 5 of the <i>Payment Systems and Netting Act 1998</i> .
<b>failover</b>	The process of switching over to a standby system in the event of an operational disruption.
<b>final settlement</b>	The irrevocable and unconditional transfer of an asset or financial instrument, or the discharge of an obligation by the securities settlement facility or its participants in accordance with the terms of the underlying contract. Final settlement is a legally defined moment.
<b>financial market infrastructure (FMI)</b>	A multilateral system among participating institutions, including the operator of the system, used for the purposes of clearing, settling or recording payments, securities, derivatives or other financial transactions. Examples of FMIs include central counterparties, securities settlement facilities, securities settlement systems, central securities depositories, payment systems and trade repositories.
<b>general business risk</b>	Any potential impairment of a securities settlement facility's financial position (as a business concern) as a consequence of a decline in its revenues or an increase in its expenses, such that expenses exceed revenues and result in a loss that must be charged against capital.
<b>governance</b>	The set of relationships between a securities settlement facility's owners, board of directors (or equivalent), management and other relevant parties, including participants, authorities and other stakeholders (such as participants' customers, other interdependent FMIs and the broader market).
<b>haircut</b>	A risk control measure applied to underlying assets whereby the value of those underlying assets is calculated as the market value of the assets reduced by a certain percentage (the 'haircut'). Haircuts are applied by a collateral taker in order to protect itself from losses resulting from declines in the market value of a security in the event that it needs to liquidate that collateral.
<b>immobilisation</b>	The act of concentrating the location of securities in a depository and transferring ownership by book entry.
<b>investment risk</b>	The risk of loss faced by a securities settlement facility when it invests its own or its participants' resources, such as collateral.
<b>investor central securities depository</b>	A term used in the context of central securities depository links. An investor central securities depository – or a third party acting on behalf of the investor central securities depository – opens an account in another central securities depository (the issuer central securities depository) so as to enable the cross-system settlement of securities transactions.
<b>issuer central securities depository</b>	A central securities depository in which securities are issued (or immobilised). The issuer central securities depository opens accounts allowing investors (in a direct holding system) and intermediaries (including investor central securities depositories) to hold these securities.
<b>large-value payment system</b>	A funds transfer system that typically handles large-value and high-priority payments.
<b>legal risk</b>	The risk of the unexpected application of a law or regulation, usually resulting in a loss.

<b>Term</b>	<b>Definition</b>
<b>linked FMI</b>	An FMI that is connected with one or more other FMIs, either directly or through an intermediary, according to a set of contractual and operational arrangements between the FMIs involved in the link.
<b>liquidity risk</b>	The risk that a counterparty, whether a participant or other entity, will have insufficient funds to meet its financial obligations as and when expected, although it may be able to do so in the future.
<b>mark to market</b>	The practice of revaluing securities and financial instruments using current market prices.
<b>money settlement agent</b>	The entity whose assets are used to settle the ultimate payment obligations arising from securities transfers within a securities settlement facility, or other clearing and settlement activities. Accounts with the money settlement agent are held by settlement banks, which may act on their own behalf and/or offer payment services to participants that do not have accounts with the money settlement agent.
<b>money settlement asset</b>	An asset which carries little or no credit or liquidity risk and is used to settle payment obligations arising from trades in financial products.
<b>multilateral net batch</b>	The settlement of groups of payments, transfer instructions or other obligations together at a discrete, often pre-specified time, where these obligations have been offset among multiple participants.
<b>netting</b>	The offsetting of obligations between or among participants in the netting arrangement, thereby reducing the number and value of payments or deliveries needed to settle a set of transactions.
<b>operational risk</b>	The risk that deficiencies in information systems or internal processes, human errors, management failures or disruptions from external events will result in the reduction, deterioration or breakdown of services provided by a securities settlement facility.
<b>payment system</b>	A set of instruments, procedures and rules for the transfer of funds between or among participants; the system includes the participants and the entity operating the arrangement.
<b>payment versus payment (PvP)</b>	A settlement mechanism that ensures that the final transfer of a payment in one currency occurs if and only if the final transfer of a payment in another currency or currencies takes place.
<b>physical delivery</b>	The delivery of an asset, such as an instrument or commodity, in physical form.
<b>potential future exposure</b>	Any potential credit exposure that a securities settlement facility could face at a future point in time. Potential future exposure is technically defined as the maximum exposure estimated to occur at a future point in time at a high level of statistical confidence. Potential future exposure arises from potential fluctuations in the market value of a participant's open positions between the time they are incurred or reset to the current market price, and the time they are liquidated or effectively hedged.

<b>Term</b>	<b>Definition</b>
<b>prefunded default arrangements</b>	Financial resources of a securities settlement facility that are contributed to the securities settlement facility on an ongoing basis prior to, and available in the event of, a participant default. Examples include assets contributed by participants for the purpose of covering losses or liquidity pressures resulting from participant defaults, and capital of the securities settlement facility.
<b>principal risk</b>	The risk that a counterparty will lose the full value involved in a transaction, for example, the risk that a seller of a financial asset will irrevocably deliver the asset, but not receive payment.
<b>procyclicality</b>	Changes in risk management requirements or practices that are positively correlated with business or credit cycle fluctuations and that may cause or exacerbate financial instability.
<b>real-time gross settlement (RTGS)</b>	The real-time settlement of payments, transfer instructions or other obligations individually on a transaction-by-transaction basis.
<b>reconciliation</b>	A procedure to verify that two sets of records issued by two different entities match.
<b>related body</b>	A 'related body corporate' as defined in section 9 of the <i>Corporations Act 2001</i> .
<b>replacement cost</b>	The unrealised gain on the unsettled contract or the cost of replacing the original contract at market prices that may be changing rapidly during periods of stress.
<b>repurchase agreement (repo)</b>	A contract to sell and subsequently repurchase securities at a specified date and price.
<b>securities</b>	Any financial product (within the meaning given in the <i>Corporations Act 2001</i> ) of a kind in relation to which obligations are prescribed under the Corporations Regulations 2001 for the purposes of section 768A(1)(b) of the Corporations Act.
<b>securities registrar</b>	An entity that provides the service of preparing and recording accurate, current and complete securities registers for securities issuers.
<b>securities settlement facility</b>	A clearing and settlement facility that enables its participants to transfer title to or other interests in securities, typically in return for payment. A securities settlement facility may also operate a central securities depository.
<b>segregation</b>	A method of protecting customer collateral and contractual positions by holding or accounting for them separately from those of the direct participant (such as a carrying firm or broker).
<b>settlement bank</b>	The entity that maintains accounts with the money settlement agent in order to settle payment obligations arising from securities transfers, both on its own behalf and for other market participants.
<b>settlement risk</b>	The general term used to designate the risk that settlement in a funds or securities transfer system will not take place as expected. This risk may comprise both credit and liquidity risk.
<b>specific wrong-way risk</b>	The risk that an exposure to a counterparty is highly likely to increase when the creditworthiness of that counterparty is deteriorating.
<b>stress testing</b>	The estimation of credit and liquidity exposures that would result from the realisation of extreme price changes.

<b>Term</b>	<b>Definition</b>
<b>systemic risk</b>	The risk that the inability of one or more participants to perform as expected will cause other participants to be unable to meet their obligations when due.
<b>systemically important</b>	A securities settlement facility is systemically important if its distress or disorderly failure, because of its size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity. In assessing the systemic importance of a securities settlement facility in Australia, the Reserve Bank will take into account relevant factors including: the size of the securities settlement facility in Australia; the availability of substitutes for the securities settlement facility's services in Australia; the nature and complexity of the products settled by the securities settlement facility; and the degree of interconnectedness with other parts of the Australian financial system.
<b>unwinding</b>	The process used to recalculate obligations in some net settlement systems where transfers between the accounts of participants are provisional until all of them have finally discharged their settlement obligations. If a particular participant fails to settle, some or all of the provisional transfers involving that participant are deleted from the system and the settlement obligations of the remaining participants are recalculated.
<b>value date</b>	The day on which the payment, transfer instruction or other obligation is due and the associated funds and securities are typically available to the receiving participant.
<b>zero-hour rule</b>	A provision in the insolvency law of some countries whereby the transactions conducted by an insolvent institution after midnight on the date the institution is declared insolvent are automatically ineffective or revocable by operation of law.