

Assessment of the Reserve Bank Information and Transfer System

May 2021

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1. Executive Summary

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| Purpose | This report is an assessment of the Reserve Bank Information and Transfer System (RITS), which is operated by the Bank's Payments Settlements Department. The Assessment was independently prepared by the Bank's Payments Policy Department and endorsed by the Payments System Board. It covers the period from April 2020 to March 2021. |
| Approach | RITS has been assessed against the Principles for Financial Market Infrastructures (the Principles). These international standards were developed by the Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO). ¹ The assessment was carried out in accordance with the approach and rating system set out by CPMI and IOSCO in <i>Principles for Financial Market Infrastructures: Disclosure framework and assessment methodology</i> (the Disclosure Framework) and <i>Application of the Principles for Financial Market Infrastructures to Central Bank FMIs</i> . ² |
| Conclusion | This Assessment concludes that, at end March 2021, RITS observed all of the relevant Principles, except for Principle 13 (Participant-Default Rules and Procedures) and Principle 17 (Operational Risk), which it broadly observed. |
| Recommendations | <p>To observe Principle 13 (Participant-Default Rules and Procedures), Payments Policy Department recommends that the Bank formally document its decision-making and crisis-management arrangements in the event of a RITS member default, including consultation arrangements with other authorities and communications with industry.</p> <p>To observe Principle 17 (Operational Risk), Payments Policy Department recommends the Bank:</p> <ul style="list-style-type: none">• complete implementation of all initiatives related to the Bank's Technology Stability Improvement Program (TSIP) that are material to the continued operational stability of RITS• complete implementation of proposals to improve oversight of maintenance activities conducted by external contractors on the Bank's critical infrastructure, including establishing an enhanced internal engineering review and advisory function. |

1 Available at <https://www.bis.org/cpmi/info_pfmi.htm>

2 Available at <<http://www.bis.org/cpmi/publ/d106.htm>> and <<http://www.bis.org/cpmi/publ/d130.pdf>>.

Oversight focus

Over the coming assessment period, areas of particular focus in the oversight of RITS will include:

- developments designed to ensure that RITS remains resilient in the face of evolving cyber-security threats. Specifically, Payments Policy Department will monitor progress in the continued exploration of enhancements to the ability to limit exposure to cyber risk and recover RITS from cyber-attacks in a timely manner.
- the impact of planned upgrades to the Bank's physical infrastructure on the operational stability and resilience of RITS.

2. Summary and Review of Ratings and Recommendations

RITS is Australia's high-value payments system, which is used by banks and other approved institutions to settle their payment obligations on a real-time gross settlement (RTGS) basis.³ RITS is owned and operated by the Reserve Bank. The Bank seeks to ensure effective oversight of RITS by separating its operational and oversight functions, as well as by producing transparent assessments against international standards.

The Bank's Payments Policy Department – the functional area responsible for oversight of the Australian payments system – has produced this Assessment. In undertaking their assessment Payments Policy Staff worked closely with, and drew on information provided by, Payments Settlements Department – the functional area responsible for operating RITS. Payments Policy staff also sought feedback from other departments within the Bank, including those responsible for providing technology services for RITS (see section A.3 for further background on the governance and oversight of RITS). This report has been approved by the Payments System Board.

This Assessment focuses on the critical services provided by the Bank as operator of RITS, in particular the role of RITS as a wholesale RTGS system, as it is this role that makes RITS a systemically important payment system.⁴ Currently, the Bank considers that RITS is the only domestic systemically important payment system for which an assessment against international principles is necessary.⁵ This view reflects the fact that RITS:

- processes an aggregate value of Australian dollar payments that is high relative to other payment systems
- mainly handles time-critical and high-value payments
- is used to effect settlement of payment instructions arising in other systemically important financial market infrastructures.

The Fast Settlement Service (FSS), which settles transactions submitted via the New Payments Platform (NPP) feeder system, is also established under the RITS Regulations. However, focus on the FSS for the purposes of this Assessment is limited to its interaction with the core (wholesale) RITS system.⁶ A similar approach is taken with the role RITS plays in the settlement of interbank payment obligations arising from net settlement systems, for example, those relating to cheque, direct entry and card transactions arising from the Low Value Settlement Service (LVSS).⁷

3 This means that individual payments are processed and settled continuously and irrevocably in real time.

4 'RITS' is used in this report to refer to the Bank as operator of RITS, as well as referring to the system itself.

5 The Bank's Policy Statement on the Supervision and Oversight of Systemically Important Payment Systems is available at <<https://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/principles/implementation-of-principles.html>>.

6 The NPP and FSS are not currently being used in ways that would trigger assessment against the Principles, based on the criteria for systemic importance listed in the Policy Statement.

7 Further information on net settlement systems linked to RITS is provided in section A.5 of Appendix A.

2.1 Progress against 2020 Recommendations

In the 2020 Assessment, RITS was found to observe all relevant Principles other than Principle 17 (Operational risk), which it was found to broadly observe (Table 2).⁸ To observe Principle 17, Payments Policy Department recommended the Bank complete implementation of initiatives to support the continued operational stability of RITS as part of its TSIP.

In the year to March 2021, the Bank made progress across each of the initiatives identified under the TSIP. For example: resourcing of the Bank's IT shared services section was increased; the pilot of a new workload management tool was completed; a series of bespoke training modules were developed; and work to set up a central knowledge repository for relevant procedural documentation made substantial progress.

The TSIP program is still underway. Completion of the RITS-relevant initiatives within the program is expected in 2021. Work on related initiatives to be completed outside the program is also ongoing (see 3.1.1 below).

2.2 Developments in 2020 Areas of Oversight Focus

The 2020 Assessment noted that Payments Policy Department would monitor progress in two areas of oversight focus over the year to March 2021. These related to work to ensure that RITS remains resilient in the face of evolving cyber-security threats and the ongoing response to the COVID-19 pandemic. Table 1 summarises these areas of focus and the progress made during the assessment period.

Table 1: Summary of Developments in Areas of Oversight Focus

| Area of focus | Key developments |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Exploration of enhancements to the ability to recover RITS from cyber-attacks in a timely manner | During the assessment period the Bank endorsed a project to establish a third-site data bunker for holding data from the Bank's most critical systems, including RITS. The data bunker enhances RITS's data resilience in the event of data corruption or loss caused by an operational incident, cyber security event, or the extended loss of one of the two primary data centres. |
| Monitoring the Bank's ongoing response to the COVID-19 pandemic. | Over the assessment period, the Bank continued to adjust its response to the pandemic. During most of the assessment period RITS operated with remote working arrangements in place for most staff, while also maintaining an onsite presence for critical staff. In addition, the Bank continued to engage with RITS members and the operators of major feeder systems into RITS, to ensure they maintained appropriate contingency arrangements to minimise any potential impact on the operations of RITS. |

2.3 2021 Ratings, Recommendations and Areas of Oversight Focus

As at the end of March 2021, RITS was found to observe all of the relevant Principles, except for Principle 13 (Participant-Default Rules and Procedures) and Principle 17 (Operational Risk), which it broadly observed.

⁸ As noted, in undertaking this assessment Payments Policy Department has applied the approach and rating system set out in the Disclosure Framework. 'Observed' is the highest rating within this framework and is applied when Payments Policy Department assesses that '(An) FMI observes the principle. Any identified gaps and shortcomings are not issues of concern and are minor, manageable and of a nature that the FMI could consider taking them up in the normal course of its business.' The full rating scale is set out in Appendix B. A rating of 'broadly observed' is applied when Payments Policy Department assesses that '(An) FMI broadly observes the principle. The assessment has identified one or more issues of concern that the FMI should address and follow up in a defined timeline.'

To observe Principle 13 (Participant-Default Rules and Procedures), Payments Policy Department recommends that the Bank formally document its decision-making and crisis-management arrangements in the event of a RITS member default, including consultation arrangements with other authorities and communications with industry.

To observe Principle 17 (Operational Risk), Payments Policy Department recommends the Bank:

- complete implementation of all initiatives related to the Bank’s TSIP that are material to the continued operational stability of RITS (see 3.1.1 below)
- complete implementation of proposals to improve oversight of key maintenance activities conducted by external contractors on the Bank’s critical infrastructure, including establishing an enhanced internal engineering review and advisory function.

Over the current assessment period, areas of particular interest for Payments Policy Department in its oversight of RITS will include:

- developments designed to ensure that RITS remains resilient in the face of evolving cyber-security threats. Specifically, Payments Policy Department will monitor progress in the implementation of the third-site data bunker and the continued exploration of other enhancements to the ability to limit exposure to cyber risk and recover RITS from cyber-attacks in a timely manner.
- the impact of planned upgrades to the Bank’s physical infrastructure on the operational stability and resilience of RITS.

Table 2: Ratings of Observance of the Principles ^(a)

| Principle | Rating ⁹ |
|----------------------------------------------------------|---------------------|
| 1. Legal basis | Observed |
| 2. Governance | |
| 3. Comprehensive framework for the management of risks | |
| 4. Credit risk | |
| 5. Collateral | |
| 7. Liquidity risk | |
| 8. Settlement finality | |
| 9. Money settlements | |
| 15. General business risk | |
| 16. Custody and investment risks | |
| 18. Access and participation requirements | |
| 19. Tiered participation requirements | |
| 21. Efficiency and effectiveness | |
| 22. Communication procedures and standards | |
| 23. Disclosure of rules, key procedures, and market data | |
| 13. Participant-default rules and procedures | Broadly observed |
| 17. Operational risk | |
| 12. Exchange-of-value settlement systems | Not applicable |

(a) Principles 6, 10, 11, 14, 20 and 24 are not relevant for payment systems.

⁹ Further information on the application of the Principles to central bank financial market infrastructures such as RITS is available at <<https://www.bis.org/cpmi/publ/d130.htm>>

3. Material Developments

This section discusses material developments relevant to RITS that have occurred since last year's Assessment (March 2020) through to end-March 2021. Over this period there were material developments relevant to the Principles concerning: legal basis (Principle 1); participant-default rules and procedures (Principle 13); operational risk (Principle 17); and communication procedures and standards (Principles 22).

To complement this section, background information on how RITS operates, activity and participation in RITS, and the operational performance of RITS is set out in Appendix A. A detailed assessment of how RITS meets the Principles (incorporating developments discussed in this section) is presented in Appendix B.

3.1 Operational Risk Management

3.1.1 IT operational stability review

In 2019, the Bank completed a review of its IT operational practices, with the aim of ensuring the reliability of technology services supporting key Bank systems (including RITS). The review did not identify any significant concerns with the operational stability of RITS itself, but did identify a number of improvement opportunities in relation to the operational stability of some key systems that support RITS. The TSIP was established to address the recommendations that came out of the review, including initiatives relevant to the continued operational stability of RITS such as additional resourcing and training for IT roles supporting RITS and improvements to software patching processes.¹⁰

The 2020 Assessment of RITS recommended that the Bank complete the implementation of initiatives to support the continued operational stability of RITS as part of the TSIP. During the assessment period there was progress across all relevant deliverables, this included:

- increased resourcing of the Bank's IT infrastructure services section, which plays a key role in supporting RITS
- completion of the pilot for a workload management tool to monitor IT staff utilisation rates and reduce the risk of excessive workloads for critical functions
- development of a series of bespoke training modules
- establishing a central knowledge repository to consolidate and collate relevant procedural documentation.

Over the coming period, the Bank expects to close out the TSIP, including initiatives of relevance for the operational stability of RITS. In particular, the Bank will continue the rollout of a new workload management tool to improve capacity planning and of new training programs aimed at uplifting the IT Certification Framework.

In addition, the Bank is progressing a number of initiatives that are related to TSIP workstreams but sit outside the program, such as improvements to processes and controls for the patching of software supporting RITS. This work encompasses efforts to review and update RITS-relevant procedures and work

¹⁰ Further information on these initiatives can be found in section 3.3.1 of the 2020 RITS assessment, available at: <https://www.rba.gov.au/payments-and-infrastructure/rits/self-assessments/>

on a proof of concept for greater automation in the deployment of patching. Once the changes introduced by TSIP and these related initiatives have been embedded into business-as-usual practices, Payments Policy Department will consider whether they have been effective in addressing the findings of the 2019 review.

Recommendation. The Bank should complete implementation of all initiatives related to the Bank's TSIP that are material to the continued operational stability of RITS.

3.1.2 RITS incidents and responses

On 6 July 2020, RITS was affected by a power outage to the data centre at the Bank's Business Resumption Site (BRS). The power supply to the BRS data centre hosting RITS infrastructure was inadvertently shut off during fire control system maintenance. Although payment and settlement systems were operating from the primary data centre at the time, the abrupt power disruption at the BRS caused a network disruption that extended to some services at the Bank's primary site.

The incident took place at 7.30am. The majority of RITS services were re-established and fully operational from the Bank's primary site around 9am, within the two-hour recovery time objective set by the Principles for the resumption of operations by FMIs following a disruption to critical IT systems. The opening of the RITS Daily Settlement Session was delayed from 9.15am to 9.30am, with all transactions able to settle as expected from that time.

While the incident affected the availability of RITS, RITS still achieved an average system availability of 99.958 per cent in 2020, consistent with the Bank's key operational availability target for RITS to be available to its members in excess of 99.95 per cent of the time.

Following the incident, the Bank undertook an internal review to identify key lessons. Similarities between this incident and the power outage which impacted the Bank in August 2018 (resulting in RITS being unavailable for several hours) were identified and taken into consideration.¹¹ The internal review identified that a legacy switchboard design issue and a maintenance contractor failing to fully comply with documented procedures were the contributing causes of the 2020 outage.

In response to the July 2020 outage the Bank has: upgraded the switchboard involved in the incident; implemented enhanced contractor induction arrangements; and improved oversight of compliance with procedures by contractors. The Bank is also establishing new service delivery arrangements for its facilities, which aim to improve the approach to planning, risk assessment and oversight of these sorts of maintenance activities over the long term. This includes an increased role for staff with relevant engineering expertise to review changes as part of an enhanced internal engineering and advisory function. The switchboard upgrade was delivered as part of the Bank's broader Data Centre Improvement Program (DCIP) (see section 3.1.3).

In a separate incident during the assessment period, the Bank identified that software supporting certain backup processes was mistakenly removed in the process of a broader system update. The removal of this software did not have any direct operational impacts on RITS, and the software was reinstated once the error was detected. To mitigate the risk of this type of incident reoccurring, the Bank implemented improvements to its system update procedures involving external contractors. The Bank also implemented

¹¹ The 2018 incident is outlined in section 3.1 of the 2019 RITS Assessment, available at: <https://www.rba.gov.au/payments-and-infrastructure/rits/self-assessments/2019/material-developments.html>

enhancements to the monitoring of RITS database back-up activities, which included the introduction of an additional second-line risk monitoring process for these activities.

Recommendation. The Bank should complete implementation of proposals to improve oversight of maintenance activities conducted by external contractors on the Bank's critical infrastructure, including establishing an enhanced internal engineering review and advisory function.

3.1.3 Operational resilience initiatives

Under Principle 17 (Operational Risk), FMIs are expected to proactively identify and mitigate plausible sources of operational risk. In this regard, over the assessment period the Bank implemented upgrades to the RITS infrastructure and also progressed projects to upgrade its data centres and the head office building.

The upgrades to the RITS infrastructure refreshed core network and application infrastructure and related systems, including the Bank's SWIFT infrastructure. These upgrades aim to enhance the security and resilience of RITS, while also improving processing speeds. For example, they are intended to improve the resilience of site failover in situations where one site becomes non-operational, as happened in the July outage. Implementation of the new infrastructure was finished in early 2021, although residual work relating to improving patching controls and uplifting patch automation capability is still being completed.

The DCIP was established to improve the operational resilience of the Bank's data centres and address potential capacity constraints over the longer term. During the assessment period electrical reconfiguration work at both data centres was completed. Work to increase the capacity of the BRS data centre is currently underway and expected to be completed by the end of the year.

As a separate project, the Bank has also initiated a major renewal of its head office building. The upgrade is expected to be completed in 2024.

Payments Policy Department has identified these planned upgrades to the Bank's physical infrastructure as an area of oversight focus.

Area of oversight focus. Payments Policy Department will monitor the impact of planned upgrades to the Bank's physical infrastructure on the operational stability and resilience of RITS.

3.1.4 Response to the COVID-19 Pandemic

The key focus of the Bank's contingency arrangements in response to the COVID-19 pandemic has been to safeguard the health of Bank staff and the reliability of Bank operations, including the operation of RITS. Over the assessment period RITS continued to operate with work-from-home arrangements in place, while also maintaining an on-site presence. Staff with critical responsibilities for the operation and support of RITS were separated between the Bank's head office and BRS for most of the past year. While this requirement was removed shortly after the end of the assessment period, the Bank remains able to reinstate it if necessary. In response to the pandemic the Bank also developed a pool of alternate staff that

could be rotated into critical roles in circumstances where a large number of critical staff were simultaneously unable to work.¹²

In addition to the Bank-specific arrangements, the Bank also continued its engagement with members and the operators of major feeder systems into RITS, to understand if they remained well-placed to implement contingency arrangements to manage the pandemic and the potential impact on the operations of RITS.

3.1.5 Contingency arrangements for high-value feeder systems into RITS

One of the learnings from the August 2018 outage was that not all industry participants were adequately prepared to activate relevant contingency arrangements. To address this, the Bank initiated a process to review arrangements and identify whether refinements were needed to ensure that clearing and settlement operations could continue if RITS or its connection to the wholesale RTGS feeder systems were unexpectedly unavailable. These include the contingency arrangements for SWIFT payments managed by the High-Value Clearing System (HVCS), and for the Austraclear feeder managed by ASX.

In relation to the SWIFT Payment Delivery System (PDS) feeder, an industry committee is working to address the challenges identified with the HVCS fall-back arrangements. During the assessment period, the industry group put forward a proposal to enhance arrangements, which was approved by the HVCS Management Committee and will become effective this year. Under the enhanced arrangements, if a protracted RITS outage were to occur and a same-day recovery of normal operations was not possible, the SWIFT PDS would change to a mode that enables participants to continue exchanging payment messages via SWIFT. Participants would aim to post funds to customer accounts on the same day and settlement in RITS would take place as part of a multilateral batch the next day.

For the Austraclear feeder, ASX is working to improve the readiness of Austraclear participants to use the Assured Mode fall-back in the event that RITS is unavailable. Under this arrangement, securities settlement transactions would continue to be processed in real-time within the day and the resulting multilateral obligations arising between banks would be settled in RITS the next day. During the assessment period, ASX hosted information sessions for Austraclear participants and began planning for an industry-wide contingency exercise to test the arrangements in practice. The exercise is scheduled to occur in the current assessment period.

Separately, the Bank is also exploring options to improve the fall-back arrangements in very extreme scenarios where RITS is unavailable for more than one day, including the possibility of developing a simple deferred net settlement solution that can settle HVCS and Austraclear contingency batches in a separate system.

3.1.6 Cyber resilience

SWIFT-related security controls

As a user of the SWIFT messaging network, the Bank is required to meet security standards set out in SWIFT's Customer Security Controls Framework (CSCF). The CSCF is a set of mandatory and advisory controls for SWIFT users, establishing a baseline security standard across the network. All customers are required to annually attest to their compliance with these controls.

During the assessment period, the Bank commissioned an independent assessment of its compliance with the SWIFT controls. The assessment found the Bank to be fully compliant with the mandatory controls.

¹² More detail on the Bank's pandemic response is available in Section 3.1 of the 2020 RITS assessment, available at: <https://www.rba.gov.au/payments-and-infrastructure/rits/self-assessments/2020/material-developments.html>

Evaluating current and emerging technologies to improve recovery times

Consistent with cyber resilience guidance developed by CPMI and IOSCO, the Bank continues to monitor current and emerging technology options that may further enhance the capability of RITS to safely resume critical operations within two hours of a cyber disruption.¹³ During the assessment period, the Bank commenced a project to establish a third-site data bunker for holding data from the Bank's most critical systems, including RITS and FSS. The purpose of the data bunker is to enhance data resilience in the event of data corruption or loss caused by an operational incident, cyber-security event, or the extended loss of one of the two primary data centres. It is expected that the data bunker will become operational over the coming year.

Industry table-top exercise

In December 2019, the Bank conducted an exercise with a range of industry participants in which participants were asked to respond to a hypothetical cyber scenario. The exercise tested contingency procedures in the event of an attack on a HVCS participant's system that impacts its ability to send HVCS payments to other participants. A focus area for the exercise was communication and collaboration arrangements following such an attack.

During the assessment period, the Bank and the Australian Payments Network (AusPayNet) established two industry working groups to implement the recommendations from the exercise. One group will address recommendations related to cyber incident response procedures, and the other will address those related to the treatment of fraudulent payments submitted via the HVCS. Commencement of the groups was deferred to April 2021 as a result of the pandemic. This work is expected to be completed towards the end of the year.

End-point security

Through its existing security arrangements and the requirements it sets for participation in RITS, the Bank already meets elements of the strategy described in the CPMI's 2018 report on reducing the risk of wholesale payments fraud related to end-point security.¹⁴ The Bank's expectation is that further enhancements to endpoint security will be implemented as part of an ongoing process of continuous improvement.

During the assessment period, the Bank engaged an external party to conduct an assessment of the Bank's end-point security standards for RITS members and feeder systems and recommend enhancements to strengthen the standards where necessary. The Bank is developing updated security standards based on the recommendations from the review, which will be implemented over the coming year.

Area of oversight focus. Payments Policy Department will continue to monitor developments designed to ensure that RITS remains resilient in the face of evolving cyber-security threats, including progress in the continued exploration of enhancements to the ability to limit exposure to cyber risk and recover RITS from cyber-attacks in a timely manner.

13 The CPMI and IOSCO cyber resilience guidance can be found here <<https://www.bis.org/cpmi/publ/d146.pdf>>

14 The report can be found here <<https://www.bis.org/cpmi/publ/d178.pdf>>

3.2 Participant-Default Rules and Procedures

Under Principle 13 (Participant-Default Rules and Procedures) of the Principles, FMIs are required to have effective and clearly defined rules and procedures to manage a participant default. There is an expectation under the Principles that these default rules and procedures should: facilitate a timely response in order to contain losses and liquidity pressures; explain clearly what circumstances constitute a participant default; set out the method(s) for identifying a default; and, if the declaration of a default is discretionary, indicate which person or group should exercise that discretion.

Payments Policy Department has identified that while the steps for managing such an event and communicating with key stakeholders are understood by the relevant decision-makers, there is no documented framework that sets out how the Bank would come to a policy decision on whether to suspend or terminate a RITS membership or that defines the roles of relevant executives. Communication arrangements with other regulatory authorities and broader crisis management and communication considerations are also not explicitly set out, including the coordination of communication with industry.

Recommendation. The Bank should formally document its decision-making and crisis-management arrangements in the event of a RITS member default, including consultation arrangements with other authorities and communication with industry.

3.3 Legal Basis

The Bank has a requirement that all overseas-domiciled RITS members provide an independent legal opinion confirming that the RITS Membership Agreement and RITS Regulations are enforceable in their home jurisdiction. Following the signing of new RITS Membership Agreements in 2017, the Bank has engaged with foreign members on the provision of legal opinions to meet the Bank's requirements where members had not already provided a legal opinion, or their previous opinion needed to be updated. During the assessment period, the Bank completed this work and has now accepted legal opinions from all foreign members.

3.4 Communication Procedures and Standards

3.4.1 Strategy for ISO 20022 payment messaging migration

In the previous assessment period, the Bank and the Australian Payments Council (APC) consulted with industry on the key strategic decisions required before the Australian high-value payments system could migrate to the ISO 20022 message standard.¹⁵ In February 2020, the Bank and APC published the *ISO 20022 Migration for the Australian Payments System - Conclusions Paper*.¹⁶ This document sets out the project scope, migration strategy, governance arrangements and timeline for migration to the new message standard. A 20022 Industry Migration Steering Committee has also been established by AusPayNet to coordinate the migration.

¹⁵ Further information can be found in section 3.4.1 of the 2020 RITS assessment, <<https://www.rba.gov.au/payments-and-infrastructure/rits/self-assessments/2020/pdf/2020-assessment-rits.pdf>>

¹⁶ Available at: <<https://www.rba.gov.au/publications/consultations/202002-iso-20022-migration-for-the-australian-payments-system/pdf/iso-20022-migration-for-the-australian-payments-system-conclusions-paper.pdf>>

In March 2020, SWIFT decided to defer the deadline for migration to ISO 20022 for cross-border payments. As a result, the decision was taken to defer the start of Australia's domestic migration until November 2022. This delay is not expected to impact the November 2024 completion date.

In addition to the industry-wide program, the Bank has commenced planning work to migrate its proprietary Automated Information Facility (AIF) message formats to ISO 20022 and has been engaging with RITS Batch Administrators to discuss plans to migrate batch settlement messaging to ISO 20022.¹⁷

¹⁷ This excludes reservation batch settlement messaging; e.g. the PEXA Batch and the ASX Financial Settlements (ASXF) Batch.

Appendix A: Background Information

This Appendix describes the operational arrangements and key design features of RITS and presents an overview of the operational performance of RITS over the assessment period. Material changes to RITS since the previous Assessment are discussed in section 3 of this report.

While the RITS Regulations govern both the core RITS service and the FSS, the FSS operates as a separate service from the core RITS service.¹⁸ Except where otherwise noted, this Appendix provides background information on the core RITS service.

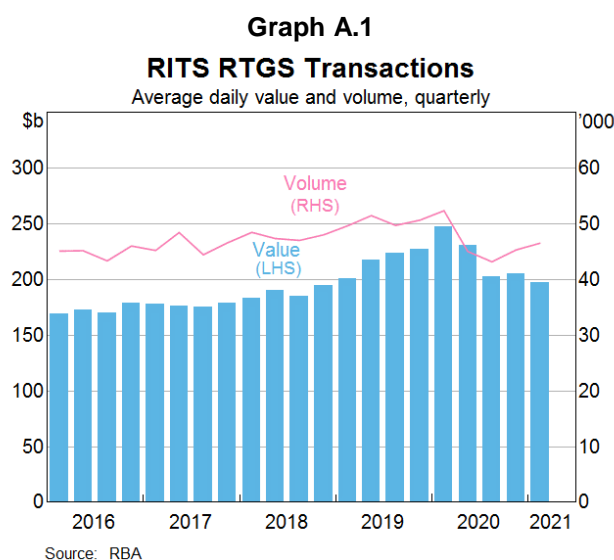
A.1 Activity and Participation

RITS is used to settle time-critical wholesale payments for other financial market infrastructures (FMIs): Australian dollar pay-ins to, or pay-outs from, CLS Bank International (CLS); margin payments to central counterparties (CCPs); and debt and equity settlement obligations arising in securities settlement systems. RITS is also used to make payments between members and to settle the interbank obligations arising from non-cash retail payments.

In the 12 months to March 2021, RITS settled approximately \$209 billion in wholesale RTGS transactions on average each day, which is around 9 per cent lower than in the previous twelve months (Graph A.1). The average number of wholesale RTGS transactions settled each day dropped to approximately 45,000, which is around 12 per cent lower than the previous year. This decline in value and volume relative to the previous 12 months largely reflects the impact of the COVID-19 pandemic

The onset of the COVID-19 pandemic had a significant impact on settlement activity. Volatile conditions in financial markets in March 2020 resulted in wholesale settlement activity in RITS rising sharply. Settlement activity declined in the months that followed, as payments activity reduced in response to COVID-19 lockdown measures across the country. This decline was evident for all wholesale transaction types including SWIFT payments, Austraclear settlements and cash transfers in RITS.

¹⁸ The Bank does not presently assess FSS against the Principles. The Bank will continue to monitor developments in NPP and the FSS, and periodically review whether an assessment against the Principles should be conducted in future.



In addition to settling individual wholesale payments, RITS also facilitates the settlement of net interbank obligations arising from the equity market (through CHES, the equities settlement system operated by ASX Settlement), retail payment systems and the property settlement systems (see section A.5 for more information on these systems). Equities, property settlement payments and retail transactions are settled as batch payments. The majority of the value of retail payments settled in RITS is from the direct entry (DE) system.

Agency arrangements for wholesale RTGS payments

Under the Bank's Exchange Settlement Account (ESA) policy, authorised deposit-taking institutions (ADIs) that account for 0.25 per cent or more of the total value of wholesale RTGS transactions, and systemically important CCPs, are required to settle their Australian dollar obligations in RITS using their own ESAs (see section A.9 for further details on access and participation in RITS). An ADI with a share of transactions of less than 0.25 per cent of the total value of wholesale RTGS transactions is permitted to use an agent to settle some or all of its transactions. ADIs that elect to use an agent to settle all of their transactions have the option of holding a dormant ESA for contingency purposes.

Since RITS is an RTGS system, members need access to additional liquidity (relative to a deferred net settlement system) in order to settle payments individually. Liquidity can be sourced from members' opening ESA balances and additional funds made available to members by the Bank via its intraday liquidity facility (see section A.7 for details).

The aggregate of opening ESA balances is primarily determined by the Bank's market operations. Since March 2020 and the introduction of measures to support the Australian economy during the COVID-19 pandemic, aggregate ESA balances are mainly determined by the amount of purchases of Australian government bonds in the secondary market and funding provided to ADIs under the Term Funding Facility (TFF), along with the Bank's open market operations (OMOs) and liquidity provided under open repos. Open repos facilitate the settlement of same-day DE payments, as evening settlement obligations arising from the DE system are unknown before the close of the interbank cash market. Open repos also provide liquidity for FSS settlements of NPP payments initiated after 4.45 pm Australian Eastern Standard Time (AEST)/Australian Eastern Daylight-saving Time (AEDT) on business days, as well as on weekends and public

holidays. Average liquidity in RITS increased sharply in March 2020 following measures undertaken to support the economy and functioning of financial markets in response to COVID-19.¹⁹

System liquidity plays a role in the timely settlement of RTGS transactions. Timely settlement prevents the build-up of pending transactions limiting the potential adverse consequences if a participant or RITS were to experience an operational issue late in the day.

A.2 Operational Risk

RITS availability

A key operational target is for RITS to be available to its members at a minimum of 99.95 per cent of the time. Availability is measured relative to the total number of hours that the system is normally open for settlement (see section A.6). In 2020, RITS availability was 99.96 per cent (Table A.1).

Table A.1: RITS Availability

Per cent

| | RITS availability ^(a) |
|-------------|----------------------------------|
| 2020 | 99.96 |
| 2019 | 99.95 |
| 2018 | 99.83 |
| 2017 | 99.98 |
| 2016 | 99.99 |

Note: Availability in 2020 represents the average of the five component service availabilities.

- *RITS cash transfers: 99.96*
- *SWIFT payments: 99.99*
- *Austraclear: 99.95*
- *Batch settlement services: 99.95*
- *LVSS: 99.94*

(a) In 2018, the methodology for calculating RITS availability changed to a simple average of availabilities calculated for each of the five component services of RITS. Availability for 2017 and earlier years relates to Bank-operated systems.

Source: RBA

In addition to its availability target, RITS also has capacity targets. These include a:

- *processing throughput target*, which aims to ensure that RITS is able to process peak-day wholesale transactions in less than two hours (assuming no liquidity constraints)
- *projected capacity target*, which specifies that RITS should be able to accommodate projected peak-day wholesale transactions 18 months in advance with 20 per cent headroom.

RITS is regularly tested against these targets and continues to meet them.

External dependencies

The Bank maintains agreements with SWIFT, Austraclear, and other feeder systems that set out operational and support arrangements. RITS also uses a range of utility service providers. To manage dependencies on

¹⁹ For more information on these measures, see RBA (2020), 'Supporting the Economy and Financial System in Response to COVID-19'. Available at <<https://www.rba.gov.au/covid-19/>>.

these providers, both the main and backup sites have an uninterruptable power supply and a backup power generator system. The majority of the external communications links to data centres are via diverse paths.

The efficient operation of RITS is also dependent on the operational reliability and resilience of its members. An operational disruption at a member could prevent it from sending payment instructions to RITS. This could in turn cause liquidity to accumulate in that member's ESA, forming what is known as a 'liquidity sink', and preventing liquidity from being recycled through the system efficiently. Recognising this interdependency, the Bank publishes Business Continuity Standards for direct participants in RITS. These standards aim to promote high availability in RITS payments processing operations, requiring both resilience of system components and rapid recovery if failover to alternative systems is required.²⁰

The Bank monitors compliance with the Business Continuity Standards on an ongoing basis. Each member that operates an ESA or is a batch administrator is required to submit an annual self-certification statement against the standards. As at the end of 2020, 53 RITS members had self-certified as fully compliant, with 12 partly compliant with the standards and one statement still being processed. Where members are partly or non-compliant, the Bank asks members to provide a timetable to achieve compliance and follows up progress with members.

A.3 Governance and Oversight

RITS is owned and operated by the Bank. Since it is not operated as a separate legal entity, the management and operation of RITS fall under the governance structure of the Bank and are therefore subject to its normal oversight, decision-making and audit processes. The Bank articulates specific objectives in relation to its operation of RITS on its website.²¹ These are consistent with the high-level objectives of the Bank, which emphasise the stability of the broader financial system and the welfare of the Australian people. The Bank accordingly aims to provide infrastructure through which settlement obligations arising from the exchange of high-value payments and debt securities can be completed in a safe and efficient manner.

The governance structure as it applies to RITS is shown in Figure A.1. In accordance with the *Reserve Bank Act 1959*, the Governor is responsible for the management of the Bank, and is therefore ultimately responsible for the operation of RITS. The Governor is assisted and supported in this responsibility by the Executive Committee, which comprises senior executives. Day-to-day operations, liaison with members, and the ongoing development of RITS are delegated to the Bank's Payments Settlements Department.

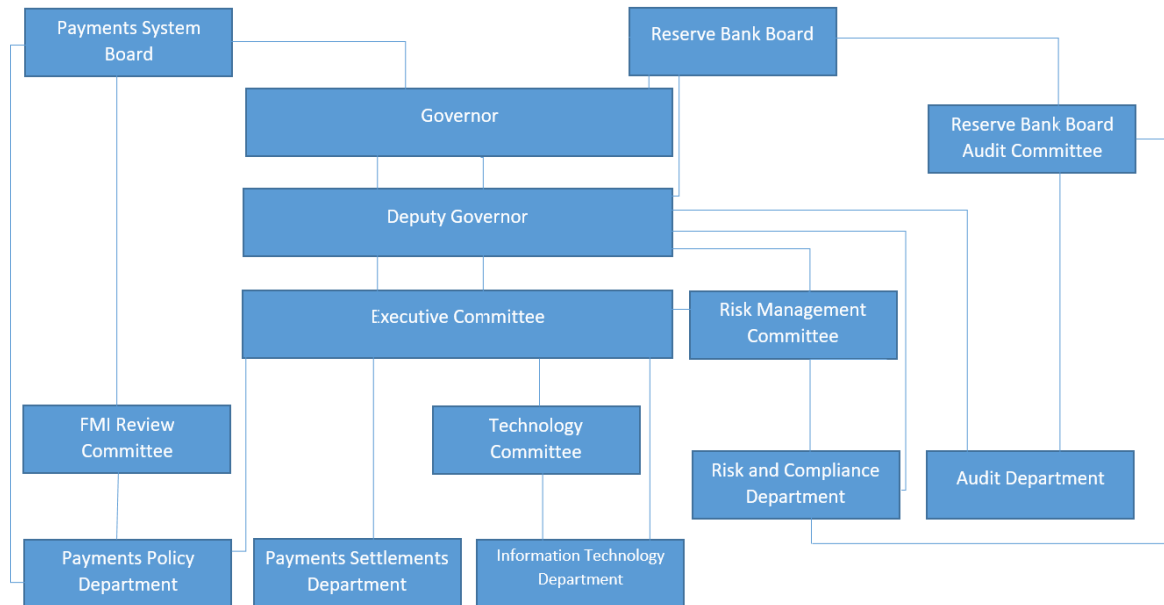
RITS is also subject to oversight by the Bank's Payments Policy Department, within the policy framework for which the Payments System Board has ultimate responsibility.²² The Executive Committee has established an internal FMI Review Committee to govern oversight activities within this framework. This committee is chaired by the Assistant Governor (Financial System) and includes at least a further five senior members of Bank staff with relevant experience.

20 For more information on the participant Business Continuity Standards, see RBA (2013), 'Box E: Participant Business Continuity Standards', *2013 Self-assessment of the Reserve Bank Information and Transfer System*, p 27 <<https://www.rba.gov.au/payments-and-infrastructure/rits/self-assessments/2013/pdf/2013-self-assess-rits.pdf>>

21 Available at <<https://www.rba.gov.au/payments-and-infrastructure/rits/about.html>>.

22 Payments Policy Department and Payments Settlements Department are separate departments in the Bank's organisational structure, with separate reporting lines up to and including the level of Assistant Governor.

Figure A.1: Reserve Bank Governance and Oversight Structure for Payments System Issues



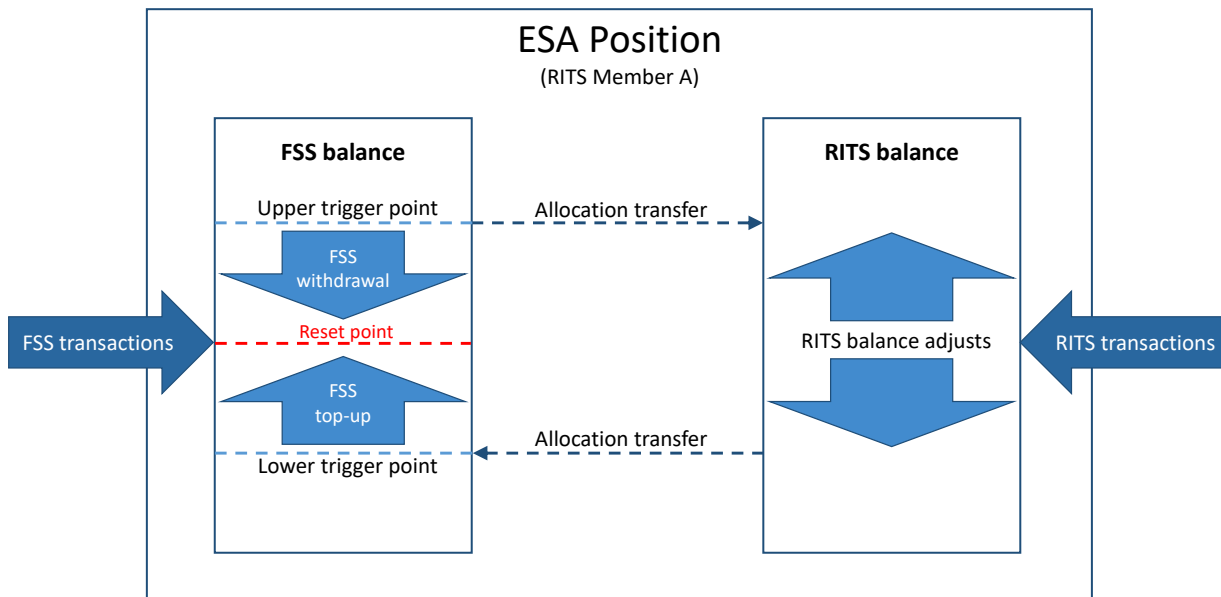
Source: RBA

A.4 Design Features

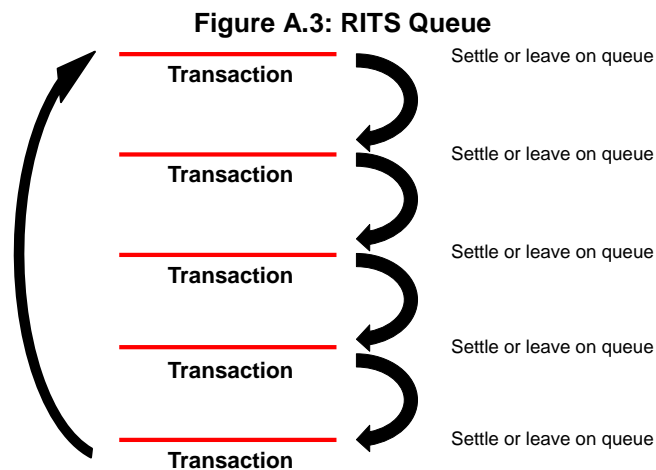
ESA funds are allocated between the core RITS service and the FSS. The RITS balance is used for funding high-value payments and multilaterally netted settlements. The FSS balance is used for funding the real-time settlement of consumer and business NPP payments. Members can control the use of liquidity within the system by setting parameters to automatically allocate ESA funds to or from the FSS. For example, there is functionality allowing members to set criteria (upper, lower and reset point values) that are used by RITS to automatically generate allocation transfers between members' FSS and RITS balances (Figure A.2).²³

²³ For more information on the NPP and FSS, see RBA (2018), 'Box B: The New Payments Platform and the Fast Settlement Service', 'Assessment of the Reserve Bank Information and Transfer System', pp 7–9. Available at <<https://www.rba.gov.au/payments-and-infrastructure/rits/self-assessments/2018/pdf/2018-assess-rits.pdf>>

Figure A.2: ESA Funds Allocation



The core RITS system is designed to enhance efficiency in the use of liquidity within the system. Wholesale transactions in RITS are settled on a central queue. The RITS central queue uses a ‘next-down looping’ algorithm to continuously retest unsettled payments in order of submission (Figure A.3). If the transaction being tested for settlement cannot be settled individually using the RITS balance, the auto-offset algorithm searches for up to 10 offsetting transactions (based on the order of submission) between the pair of members and attempts to settle these simultaneously.²⁴ Members can also nominate specific offsetting payments to be settled simultaneously to assist in managing client credit constraints; this functionality is known as ‘targeted bilateral offset’.



Source: RBA

Members have access to a range of real-time information in RITS to enable them to manage their liquidity efficiently and effectively. In particular, members have access to information on their current ESA balances, settled payments and receipts, queued inward and outward transactions, the value of first- and second-leg intraday repos, their projected end-of-day ESA balances, and their FSS balance and RITS/FSS allocation transfer facilities.

²⁴ Payments will only trigger ‘auto-offset testing’ if they have been in the queue for at least one minute.

RITS also has features that allow members to efficiently manage and conserve liquidity. Members can use ‘sub-limits’, which they can change at any time during the settlement day, to reserve liquidity for priority payments. There are three payment statuses available to members, which determine how wholesale RITS individual transactions draw on liquidity:

- *Priority* payments are tested against the full RITS balance less funds reserved for property settlement.
- *Active* payment instructions are settled as long as the paying institution has sufficient funds in their RITS Balance above the sum of the member’s specified sub-limit and any property settlement reservations.
- Payments with a *deferred* status are not tested for settlement until their status is amended.

This functionality can be accessed through either the RITS User Interface or via SWIFT messages. Members can choose to change the payment status of each payment individually, or they can choose to automatically set the status of all payments of a particular type, above and below a member set threshold.²⁵

A.5 Systems Linked to RITS

Wholesale RTGS payment instructions can be submitted to RITS directly as RITS cash transfers, or through two feeder systems: SWIFT PDS and Austraclear. The SWIFT PDS is a closed user group administered by AusPayNet, which sets rules and procedures for clearing payments in Australia through its HVCS. The SWIFT PDS is used primarily to make customer and interbank payments, with interbank settlement occurring across ESAs in RITS. Austraclear transactions submitted to RITS for settlement generally represent the cash legs of debt security transactions, which are settled on a delivery-versus-payment model 1 basis.²⁶ Payment instructions that are not associated with the settlement of securities transactions may also be sent for settlement via the Austraclear system. Other FMIs with ESAs (i.e. CLS, the ASX CCPs and LCH.Clearnet Limited (LCH)) use these feeder systems to settle Australian dollar obligations arising from the systems they operate.

RITS also facilitates the multilateral net settlement of interbank obligations arising from other systems (Table A.2). The settlement of obligations arising from the retail payment clearing systems administered by AusPayNet is facilitated by the Bank’s LVSS in RITS. All other multilateral net batches are administered by ‘batch administrators’ and entered into RITS through its batch feeder functionality.²⁷

Table A.2: List of Multilateral Net Batches in RITS

| Linked system | Underlying transaction types | Governance and ownership |
|---------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CHESS Batch | Primarily equity security transactions | The CHESS Batch is administered by ASX Settlement, which is owned by ASX Group. ASX Settlement is licensed as a clearing and settlement facility and is subject to the Bank’s Financial Stability Standards for Securities Settlement Facilities. |

25 For example, a member may wish all small SWIFT transactions to be given an ESA Status of *priority* to allow them to settle quickly out of the priority tranche of ESA funds; transactions above the member-set threshold could be given a status of *active* to allow manual liquidity management for these transactions.

26 That is, the cash leg of the transaction is settled on a gross basis simultaneously with the transfer of the security.

27 To ensure that a batch administrator can administer the batch in a safe and efficient manner, the Bank requires that it meets certain risk-based requirements. For more information, see <<https://www.rba.gov.au/payments-and-infrastructure/rits/information-papers/eligibility-criteria-for-batch-administrator/>>.

| Linked system | Underlying transaction types | Governance and ownership |
|---------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Low-Value Settlement Service | Cheque, DE (including the BPAY system), Visa and ATM transactions | Each retail payment system has its own rules and procedures. These rules and procedures are determined by the system administrator (e.g. AusPayNet), in consultation with its members. |
| Mastercard Batch | Mastercard brand credit and debit card payments | The Mastercard Batch is administered by Mastercard International, which is a privately owned company incorporated in the US and listed on the New York Stock Exchange. |
| PEXA Batch | Property transactions | PEXA is owned by a consortium consisting of Commonwealth Bank of Australia, Link Group and Morgan Stanley Infrastructure Partners. |
| eftpos Batch | eftpos brand debit card payments | The eftpos Batch is administered by the member-owned eftpos Payments Australia Limited. |
| ASX Financial Settlements Batch | Property transactions | The ASX Financial Settlements Batch is administered by ASX Financial Settlements Pty Limited, which is owned by the ASX Group. |

A.6 Operating Hours

Standard settlement hours in the core RITS service, as established by the RITS Regulations, are 7.30 am to 10.00 pm.²⁸ Settlement of SWIFT and Austraclear transactions cease at 6.30 pm AEST and 8.30 pm during AEDT (the first Sunday in October to the first Sunday in April).

Prior to 9.15 am, settlement in RITS is limited to the deferred net obligations settled in the 9.00 am settlement process (during the 9.00 am processing session), and, before the 9.00 am settlement process, settlement of RITS cash transfers, interbank Austraclear transactions, eftpos batches and DE government clearings. Other payment instructions can be submitted to RITS during this time, but they are not tested for settlement until the daily settlement session commences at 9.15 am. Further details can be found in Table A.3.

Table A.3: The Core RITS Day

| RITS session | Time window | Transactions able to be settled |
|----------------------------|-----------------|-----------------------------------------------------|
| Morning settlement session | 7.30am – 8.45am | eftpos batch transactions Cash transfers LVSS |
| 9.00 am processing session | 8.45am-9.15am | LVSS Cash transfers |
| Daily settlement session | 9.15am-4.30pm | All services ^(a) |
| Settlement close session | 4.30pm-5.15pm | Settlement of queued transactions |

²⁸ During AEST, the 7.15 pm and 9.15 pm DE settlements occur after the close of the interbank cash market. However, during AEDT, Austraclear and SWIFT transactions continue to be settled until 8.30 pm, so only the last DE settlement occurs outside normal banking hours.

| RITS session | Time window | Transactions able to be settled |
|----------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Evening settlement session | 5.15pm-10.00pm | Cash transfers Low value settlement service SWIFT ^(b) Property settlement batches ^(b) Austraclear ^(b) |

(a) Includes all batch transactions, LVSS, SWIFT, Austraclear, cash transfers

(b) During winter these transactions are not able to be settled after 6.30 pm. During summer these transactions can settle until 8.30 pm. Property settlement batches include the ASX Financial Settlements Batch and the PEXA Batch.

Source: RBA

There are also restrictions on the types of payments that can settle in the RITS evening settlement session. Only 'evening agreed' settlement participants, as defined in the RITS Regulations, can participate fully in the evening settlement session from 5.15 pm onwards.²⁹ Consequently, to allow the settlement of remaining queued transactions at the end of the day session there is a 45-minute settlement close session. At the end of the settlement close session at 5.15 pm, any remaining queued payments that are not flagged as being 'evening eligible' are removed from the queue.

A.7 Liquidity Provision

To facilitate the settlement of payments in RITS, the Bank provides liquidity to members at low cost via its Standing Facilities. Under these facilities, a member can enter into a repo with the Bank; a repo transfers outright title of eligible securities to the Bank (upon purchase of securities) in return for a credit to the member's ESA, with an agreement to reverse the transaction at some point in the future. Standing Facilities are available to any RITS member that is 'approved' by the Bank's Domestic Markets Department and settles its payments across its own ESA.

There are three types of repos that can be performed under the Bank's Standing Facilities:

- *Intraday repos.* For these repos, both the sale and repurchase occur on the same day. They are provided free of charge (except for a small settlement transaction fee), but must be reversed before the settlement of Austraclear transactions ceases in RITS.
- *Overnight repos.* In the exceptional case that a member is unable to reverse an intraday repo by the end of the day, the transaction may, with the approval of the Bank, be converted to an overnight repo. Interest would then be charged at 25 basis points above the cash rate target.
- *Open repos.* This type of repo does not specify the date on which the transaction will be reversed. The member retains the liquidity for use on future days. Open repos help members meet their settlement obligations without having to actively manage their liquidity, particularly outside of normal banking hours. Open repos were introduced to facilitate the settlement of evening DE payment obligations, the size of which are unknown prior to the close of the interbank cash market and Austraclear. They also support the settlement of NPP obligations arising in the FSS. For members that settle DE or NPP obligations across their own ESA, the Bank determines a minimum position in open repos that the

²⁹ RITS members do not have to be evening agreed if they only participate in DE and property settlements after 5.15 pm.

member should maintain.³⁰ Open repos are entered into at a pricing rate equal to the rate on surplus ESA balances.³¹ ESA balances up to the value of open repos contracted by the ESA holder, adjusted for evening DE and NPP payments, accrue interest at the rate on surplus ESA balances. Any shortfall in ESA balances from this level attracts the appropriate standing facility rate of 25 basis points above the cash rate target.³²

Members can also source liquidity through term repos and outright transactions conducted by the Bank. These transactions usually involve counterparties selling debt securities to the Bank either under repo or outright.

A.8 Credit Risk and Collateral

The Bank is not exposed to any credit risk from the settlement of wholesale payments in RITS, or from the settlement of NPP payments in the FSS. Wholesale payments in RITS are settled using funds in members' RITS Allocation and payments settled in the FSS use the member's FSS Allocation. Neither of these allocations can be overdrawn, and the Bank does not guarantee any transaction submitted for settlement in RITS or the FSS.

The Bank does, however, incur credit risk through the provision of liquidity to members through OMOs and Standing Facilities to support the implementation of monetary policy and payments and settlement activity, respectively. It also incurs credit risk through the TFF and the foreign exchange (FX) swap line to support US dollar funding, both established in March 2020.³³ The Bank manages this credit risk by lending funds via purchase of securities under repo. Consequently, it would only face a loss if a RITS member failed to repurchase securities sold under repo and the market value of the securities fell to less than the agreed repurchase amount. To manage this risk, the Bank purchases under repo only highly rated debt securities denominated in Australian dollars and lodged in Austraclear. All securities purchased under repo are conservatively valued, and subject to haircuts and daily margin maintenance.

To enter into a repo with the Bank, an entity must meet eligibility criteria. Counterparties must be (without limitation): a RITS member and an Austraclear member (and the legal entity holding the Austraclear account must be identical to the legal entity that is a participant in RITS); subject to 'appropriate regulation' (for example, an entity regulated by APRA, or a clearing and settlement facility overseen by the Bank); and able to ensure efficient and timely settlement of transactions within Austraclear. To access the Bank's Standing Facilities, an approved counterparty must also settle such transactions across its own ESA.³⁴

30 To limit the need for ESA holders to contract intraday repos on a regular basis, the Bank may agree to contract an amount of open repos over and above the stipulated minimum position. This includes ESA holders that do not participate directly in the settlement of DE obligations in RITS. These maximum permitted positions in open repos are reviewed at least annually.

31 Surplus ESA balances are ESA balances, excluding balances that account holders keep to meet their evening DE and NPP payment obligations.

32 For further details, see <https://www.rba.gov.au/mkt-operations/resources/tech-notes/standing-facilities.html>.

33 For operational notes on the TFF, see <https://www.rba.gov.au/mkt-operations/term-funding-facility/operational-notes.html>.

34 For more information on the Bank's counterparty eligibility criteria, see <https://www.rba.gov.au/mkt-operations/resources/tech-notes/eligible-counterparties.html>. The Bank has discretion to provide an exemption to the requirement for an approved counterparty to settle a Standing Facilities repo across its own ESA.

A.9 Access and Participation

Since settlement in RITS occurs using central bank money, only institutions that hold an ESA with the Bank can be settlement participants in RITS. Furthermore, since RITS is the only means of access to ESAs, all ESA holders must be RITS members and meet its operating conditions. The eligibility criteria to hold an ESA with the Bank therefore effectively represent the eligibility criteria for settlement participants in RITS. Policy on ESA eligibility is set by the Bank's Executive Committee, and is available on the Bank's website.³⁵ The policy has been designed to be fair and open, and to promote competition in the provision of payment services by allowing access to all providers of third-party payment services, irrespective of their institutional status. An updated ESA policy was published in July 2019.

ADIs are assumed to provide third-party payment services as part of their business so they are eligible by default. Australian-licensed CCPs and securities settlement facilities (SSFs) with payment arrangements that require Australian dollar settlement are also eligible to hold an ESA.³⁶

The ESA eligibility policy sets a number of risk-based participation requirements, including around operational capacity and access to liquidity. These are designed to reduce the likelihood that an individual member experiences an operational or financial shock that could disrupt the system more broadly. The application of participation requirements aims to be proportional to a prospective member's expected payments business in RITS.

ADIs with aggregate outgoing RTGS transactions of less than 0.25 per cent of the total value of wholesale RTGS transactions may use an agent to settle some or all their RITS transactions, rather than settling all of their activity directly across their own ESAs. This reduces the operational burden on smaller RITS members. Payments settled on an RTGS basis through the FSS are not included in the calculation of the 0.25 per cent threshold.

The Bank's ESA policy limits the scope for material risks to arise from tiered participation arrangements. Only ADIs individually accounting for less than 0.25 per cent of the total value of wholesale RTGS transactions may settle through an agent. Consequently no individual indirect member would be expected to pose material risk to either its agent or the system more broadly. Further, to reduce dependence on its agent, a member that participates indirectly has the option to hold a 'dormant' ESA for use in an extreme contingency where the availability or effectiveness of the RTGS services provided by its agent are compromised. To ensure that RITS has sufficient information about indirect participation, agents acting for ADIs that participate indirectly are required to report the value and volume of their ADI clients' outgoing RTGS payments to the Bank on a quarterly basis. This information is used to monitor compliance with the 0.25 per cent threshold.

35 The ESA Policy is available at <<https://www.rba.gov.au/payments-and-infrastructure/esa/>>.

36 Under the Bank's *Financial Stability Standards for Central Counterparties* a CCP that the Bank determines to be systemically important in Australia and has Australian dollar obligations is required to settle its Australian dollar obligations across its own ESA or that of a related body corporate acceptable to the Bank. The ESA Policy places an equivalent requirement on SSFs that are systemically important in Australia and have Australian dollar obligations.

Appendix B: Detailed Assessment of the Reserve Bank Information and Transfer System

This appendix sets out the detailed assessment of how well RITS observed the Principles developed by CPMI and IOSCO as at the end of March 2021. The Assessment focuses on RITS's role as a wholesale RTGS system; in respect of the FSS, only the interaction with the core (wholesale) RITS system is assessed (see section 2 for more information on the assessment scope). The conclusions of this assessment have been approved by the Payments System Board.

In its assessment, Payments Policy Department has applied the rating system used in the CPMI-IOSCO Disclosure Framework. Under this framework, observance of each of the applicable Principles is rated according to the following scale:

- *Observed* – Any identified gaps and shortcomings are not issues of concern and are minor, manageable and of a nature that the FMI could consider taking them up in the normal course of its business.
- *Broadly observed* – The assessment has identified one or more issues of concern that the FMI should address and follow up on in a defined timeline.
- *Partly observed* – The assessment has identified one or more issues of concern that could become serious if not addressed promptly. The FMI should accord a high priority to addressing these issues.
- *Not observed* – The assessment has identified one or more serious issues of concern that warrant immediate action. Therefore, the FMI should accord the highest priority to addressing these issues.
- *Not applicable* – The standard does not apply to the type of FMI being assessed because of the particular legal, institutional, structural or other characteristics of the FMI.

The ratings of RITS against the relevant Principles are supplemented by detailed information under each key consideration relevant to the assessment. In assessing RITS, Payments Policy Department has relied on guidance on the *Application of the Principles for Financial Market Infrastructures to Central Bank FMIs* published by CPMI and IOSCO in August 2015.³⁷

Note: Principles 6 (margin), 10 (physical deliveries), 11 (central securities depositories), 14 (segregation and portability), 20 (FMI links) and 24 (disclosure of market data by trade repositories) are not applicable to systemically important payment systems and have therefore been omitted.

³⁷ See CPMI-IOSCO (2015), *Application of the Principles for financial market infrastructures to central bank FMIs*, August. Available at <<http://www.bis.org/cpmi/publ/d130.pdf>>.

1. Legal Basis

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

Rating: Observed

1.1 The legal basis should provide a high degree of certainty for each material aspect of a payment system's activities in all relevant jurisdictions.

RITS is owned and operated by the Bank. The legal basis of all key aspects of RITS is set out in the RITS Regulations, which cover the operation of RITS, and the rights and obligations of members and the Bank.³⁸ Standard agreements are executed to bind each member to the RITS Regulations. In addition to the RITS Regulations, the following key aspects of RITS activities are supported by Australian legislation and additional contractual arrangements.

RTGS feeder systems

RITS accepts settlement instructions from approved feeder systems. Admission as a feeder system is by specific reference in the RITS Regulations. The RTGS feeder systems are the SWIFT PDS, Austraclear, CHES RTGS and NPP.³⁹ The SWIFT PDS is administered by Australian Payments Network (AusPayNet) under its HVCS. The Bank and AusPayNet each have contractual arrangements with SWIFT covering the SWIFT PDS.

The Austraclear and CHES RTGS feeder systems are operated by Austraclear and ASX Settlement respectively. Both entities are wholly owned subsidiaries of ASX Limited. The Bank has separate contractual arrangements with Austraclear and ASX Settlement covering these feeder systems. The NPP feeder system is operated by New Payments Platform Australia Limited (NPPA) and is covered under a contractual arrangement between the Bank and NPPA.

Settlement finality

The RITS Regulations state that settlement is final when the ESAs of the paying and receiving members in RITS are simultaneously debited and credited, respectively. The irrevocability of payments settled in RITS is protected by RITS's approval as an RTGS system under Part 2 of the *Payment Systems and Netting Act 1998* (PSNA). With this approval, a payment executed in RITS at any time on the day on which a RITS member enters external administration has the same standing as if the member had gone into external administration on the next day (in the case of a winding up) or as if the member had not gone into external administration (in the case of other forms of external administration). Accordingly, in the event of insolvency, all transactions settled on the day of the insolvency are irrevocable and cannot be unwound simply because of the event of external administration (i.e. they are protected from the 'zero-hour' rule). The PSNA also, among other things, clarifies that resolution of a financial institution is a form of non-terminal administration, and that a payment executed in RITS when a member has gone into non-terminal administration has the same effect it would have had if the member had not gone into non-terminal administration.

38 The RITS regulations are available at: <<https://www.rba.gov.au/payments-and-infrastructure/rits/user-doc/pdf/regulations.pdf>>.

39 The CHES RTGS feeder system provides for the delivery-versus-payment model 1 settlement of equities transactions executed on ASX. This system is currently not used.

The irrevocability of settled transactions originating from the Austraclear and CHESSTRTGS feeder systems is supported by their respective approvals as RTGS systems under Part 2 of the PSNA.

Netting arrangements

In the unlikely event that RITS is unavailable for a significant period of time, payments arising from Austraclear and the SWIFT PDS can be settled using contingency arrangements. These arrangements involve the multilateral netting and settlement of transactions arising from those systems. The irrevocability of settlement under these contingency arrangements is supported by the approval of Austraclear and HVCS as netting arrangements under Part 3 of the PSNA. The approval of HVCS establishes the legal basis for the netting of SWIFT PDS payments.

While RITS is primarily an RTGS system, it also provides for the final settlement of net obligations arising in other payment and settlement systems. This is either through the LVSS or the batch feeder functionality.⁴⁰ RITS's approval under Part 2 of the PSNA does not ensure the legal certainty of the netting of the underlying obligations. Nevertheless, the majority of the value of obligations settled in these multilaterally netted batches originates from AusPayNet clearing streams and transactions settled in the CHESST and eftpos batches, which are approved netting arrangements under Part 3 of the PSNA.

Enforceability of repurchase agreements

The enforceability of repos in the event of a default also requires a high degree of legal certainty. Repos with the Bank are governed by an international standard agreement – Securities Industry and Financial Markets Association (SIFMA)/International Capital Market Association (ICMA) Global Master Repurchase Agreement (GMRA) (2011 version) – as amended by an annexure to the RITS Regulations. This agreement sets out, among other things, what constitutes default and the consequential rights and obligations of the parties. In the event of a default, the agreement allows the non-defaulting party to terminate the agreement, calculating the net obligation based on the prevailing market value at the time the contract is closed out. Close-out netting provisions included in repo contracts with RITS members provide for the immediate liquidation of collateral in the event of default. This right is supported by Part 4 of the PSNA.

1.2 A payment system should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.

To facilitate a clear understanding of RITS rules and procedures, the RITS Regulations are supplemented by user guides and other documentation that explain RITS requirements and functions. This material facilitates existing and prospective members' understanding of the RITS Regulations and the risks they face by participating in RITS.

The Bank seeks external legal advice on material amendments to the RITS Regulations and associated contractual agreements, including, where relevant, on the interaction of such amendments with Australian and New South Wales laws and regulations.

1.3 A payment system should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.

⁴⁰ A small number of obligations sent through LVSS are settled on a gross basis.

At a high level, the legal basis for RITS is articulated in a clear and understandable manner on the Bank's website and the RITS Information Facility.^{41,42}

- 1.4 A payment system 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 payment system under such rules and procedures will not be voided, reversed, or subject to stays.**

To ensure that the RITS Regulations and associated contractual agreements are enforceable, the Bank seeks external legal advice on material amendments to these documents.

- 1.5 A payment system conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.**

The RITS Regulations are governed by New South Wales law and require that all members submit to the non-exclusive jurisdiction of the courts of New South Wales. Since 2011, the Bank has required foreign RITS applicants to provide a legal opinion affirming that the RITS membership legal documents constitute valid, legally binding and enforceable obligations.⁴³ This opinion must cover whether the courts in the home jurisdiction of the applicant will give effect to the choice of New South Wales law as the governing law and whether the judgement of an Australian court would be enforceable in the home jurisdiction without retrial or re-examination. Following the signing of new RITS Membership Agreements in 2017, the Bank worked with foreign members on the provision of legal opinions that meet the Bank's requirements in cases where members had not provided a legal opinion previously or their previous opinion required updating. Legal opinions have been received and accepted from all foreign members.

2. Governance

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

Rating: Observed

Note: In line with the CPMI-IOSCO guidance on the Application of the Principles to Central Bank FMIs, as RITS is operated as an internal function of the Bank, Key Considerations 2.3 and 2.4 are not intended to constrain the composition of the Bank's governing body or that body's roles and responsibilities.

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

RITS is owned and operated by the Bank. The high-level objectives of the Bank are set out in the *Reserve Bank Act 1959*. The Bank's duty is to contribute to the stability of the currency, maintenance of full employment, and the economic prosperity and welfare of the Australian people. Stability of the financial system is also a longstanding responsibility of the Bank – a

41 See <<https://www.rba.gov.au/payments-and-infrastructure/rits/legal-framework.html>>

42 The RITS information facility is an information web portal for operational users of RITS. See <<https://www.rba.gov.au/rits/info/aboutrits.htm>>

43 For further details on the scope of the legal opinion, see <https://www.rba.gov.au/rits/info/pdf/Signing_Instructions.pdf>.

mandate confirmed by the Australian Government when it introduced significant changes to Australia's financial regulatory structure in July 1998.⁴⁴

The Bank's objective in developing and operating RITS is to provide the infrastructure through which settlement obligations arising from the exchange of high-value payments and debt securities settlements can be extinguished in a safe and efficient manner.⁴⁵ The design of RITS ensures that there is no build-up of settlement exposures associated with high-value transactions, which in turn promotes the stability of Australia's financial system. Reflecting the critical importance of RITS to the Australian financial system, the Bank aims to operate RITS at an extremely high standard of availability and resilience, and to ensure that its settlement services continue to evolve to meet the changing needs of the broader payments system.

Decisions concerning the operation of RITS and ESAs are required to be consistent with the policy environment determined by Payments Policy Department. Payments Policy Department carries out its oversight of RITS and supervision of clearing and settlement facilities licensed in Australia under the governance of the Payments System Board. The broad mandate of the Payments System Board, which is set out in the Reserve Bank Act, places a high priority on the safety and the efficiency of the wider Australian payments system.⁴⁶

2.2 A payment system should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.

Since it is not operated as a separate entity, the management and operation of RITS fall under the governance structure of the Bank, and are subject to the Bank's normal oversight, decision-making and audit processes. The Bank has clear and transparent governance arrangements. Information on the Bank's governance arrangements for RITS is documented on the Bank's website and described in section A.3.⁴⁷

The Bank's governance arrangements reflect relevant provisions of the Reserve Bank Act and the *Public Governance, Performance and Accountability Act 2013*. In accordance with the Reserve Bank Act, the Governor is responsible for the management of the Bank and therefore ultimately responsible for the operation of RITS. In fulfilling his responsibilities to manage the Bank under the Reserve Bank Act and as the accountable authority under the Public Governance, Performance and Accountability Act, the Governor is assisted and supported by the Executive Committee, which is comprised of senior executives. The Executive Committee is the principal decision-making committee in the Bank at which matters that have a strategic or Bank-wide significance are discussed. Accordingly, major decisions related to RITS are considered by the Executive Committee.

The Bank has established an Executive Accountability Framework, which is publicly available.⁴⁸ The framework sets out where accountability lies within the executive team for the Bank's functions

44 Information on the role of the Bank in maintaining financial stability is available at <<https://www.rba.gov.au/financial-stability/reg-framework/role-of-the-reserve-bank-in-maintaining-financial-stability.html>>.

45 Further information on the Bank's objectives in relation to its operation of RITS is available at <<https://www.rba.gov.au/payments-and-infrastructure/rits/about.html>>.

46 Information on the Payments System Board is available at <<https://www.rba.gov.au/about-rba/boards/psb-board.html>>.

47 A summary of the governance arrangements of the Bank is available at <<https://www.rba.gov.au/about-rba/governance.html>>.

48 The framework is available at <<https://www.rba.gov.au/about-rba/our-policies/pdf/executive-accountability-framework.pdf?v=2021-06-28-09-59-45>>.

and operations. Under this framework the Assistant Governor (Business Services) is accountable for the operation of RITS.

Decisions affecting day-to-day operations, customer relations and the development of RITS are delegated to the Bank's Payments Settlements Department. Payments Settlements Department is part of the Bank's Business Services Group. Procedures are in place to escalate day-to-day operational matters within Payments Settlements Department and other areas of the Bank, as appropriate. The Bank's IT and Workplace departments provide technology and infrastructure support services to the operation of RITS. The Assistant Governor (Corporate Services) is accountable for the provision of these services.

Oversight of RITS is carried out by the Bank's Payments Policy Department, within the policy framework for which the Payments System Board has ultimate responsibility. Payments Policy Department is separate from Payments Settlements Department in the Bank's organisational structure, with separate reporting lines up to and including the level of Assistant Governor. The two departments nevertheless meet regularly to discuss policy issues and operational developments, and the Payments System Board is periodically updated on relevant developments.

As an independent central bank and statutory body, the Bank is ultimately accountable to the Parliament of Australia. Since 1996, the Governor and senior officers of the Bank have appeared twice yearly before the House of Representatives Standing Committee on Economics to report on matters under the responsibility of the Bank. The Reserve Bank Act also requires that the Bank inform the Australian Government of its policies 'from time to time'. In addition, to fulfil its obligations under the Public Governance, Performance and Accountability Act, the Bank prepares an annual report for presentation to the Treasurer and tabling in the Parliament.⁴⁹

2.3 The roles and responsibilities of a payment system's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.

As noted above, the Governor, with assistance from the Executive Committee, is ultimately responsible for the management of the Bank, including the operation of RITS. The roles and responsibilities of the Governor are set out in the Reserve Bank Act and the Public Governance, Performance and Accountability Act. The role of the Executive Committee is set out in its charter.

In recognition of the Governor's responsibility for maintaining a reputation for integrity and propriety on the part of the Bank, the Governor and other members of the Executive Committee are subject to the Code of Conduct for Reserve Bank Staff, which places a high priority on integrity and has provisions that address potential conflicts of interest. Specific Bank policies deal with potential conflicts of interest arising from the Bank's roles as the principal regulator of the payments system and as provider of banking services to the Australian Government.⁵⁰

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

49 RBA annual reports are available at <<https://www.rba.gov.au/publications/annual-reports/rba/2020/>>.

50 These are set out in the document *Managing Potential Conflicts of Interest arising from the Bank's Commercial Activities*, available at <<https://www.rba.gov.au/payments-and-infrastructure/payments-system-regulation/conflict-of-interest.html>>.

Under the terms of the Reserve Bank Act, the Governor is appointed by the Treasurer. Since RITS is owned by the Bank, and is not operated as a separate legal entity, the skills and qualifications of the Governor reflect the Bank's broader responsibilities. The Bank has human resources policies and practices in place to help senior staff, including members of the Executive Committee, develop the appropriate skills and have the appropriate incentives. These policies are described in Key Consideration 2.5.

2.5 The roles and responsibilities of management should be clearly specified. A payment system's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the payment system.

The roles and responsibilities of the management responsible for the day-to-day operation of RITS are clearly documented in position descriptions.

The Bank has human resources policies and practices that seek to ensure that management positions are filled with employees with the appropriate skills, incentives, experience and integrity to perform their duties. The Bank has formal job descriptions and performance management arrangements to help clarify the expectations of supervisors and employees and ensure that timely feedback is provided. Bank staff are subject to the Code of Conduct for Reserve Bank Staff (see Key Consideration 2.3).

2.6 The board should establish a clear, documented, risk-management framework that includes the payment system's risk tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.

The Bank has a well-established risk management framework that facilitates the identification, assessment and treatment of all risks – including those arising from its operation of RITS – at both an enterprise ('top-down') and business ('bottom-up') level. Line managers have the responsibility to evaluate their risk environment, put in place appropriate controls and monitor the effectiveness of these controls.

The Bank's risk management framework is set out at a high level in the Bank's Risk Management Policy.⁵¹ Risks associated with monetary and payments policies are the direct responsibility of the Reserve Bank Board and the Payments System Board, respectively. These Boards review management of risks annually as part of their decision-making processes. The Risk Management Policy is complemented by a Risk Appetite Statement, which provides an outline of the Bank's appetite for and approach to managing its most significant risks, including strategic, financial, people and operational risks. The Risk Appetite Statement is published on the Bank's website.⁵²

The risk management framework, including the Risk Management Policy and Risk Appetite Statement, is governed by the Risk Management Committee, in accordance with the Risk Management Committee Charter. This Committee is chaired by the Deputy Governor and comprises senior executives from operational and support areas of the Bank. It meets six times a year, or more frequently if required, and reports on its activities to both the Executive Committee and the Reserve Bank Board Audit Committee.

51 This policy is available at <<https://www.rba.gov.au/about-rba/our-policies/risk-management-policy.html>>.

52 This policy is available at <<https://www.rba.gov.au/about-rba/our-policies/risk-appetite-statement.html>>.

The Risk Management Committee is assisted in its responsibilities by Risk and Compliance Department, whose main role is to assist individual business areas to manage their risk environment within a broadly consistent framework. Risk and Compliance Department also monitors and reports on portfolio risks and compliance with respect to the Bank's operations in financial markets, and provides support to business areas in the implementation of fraud control, business continuity and compliance management. The Head of Risk and Compliance Department reports directly to the Deputy Governor and the Chair of the Reserve Bank Board Audit Committee.

Audit Department also supports the framework for managing risk, complementing but remaining separate from the work of Risk and Compliance Department. In addition to providing assurance that the Bank's risk management policies are effective, Audit Department has a separate, independent mandate to test the adequacy of procedures and controls at all levels of the Bank. The Head of Audit Department reports directly to the Deputy Governor and the Chair of the Reserve Bank Board Audit Committee.

Crises and emergencies

In circumstances including a significant disruption to the Bank's operations that affects several business areas, the Governor may delegate responsibility for coordination of the Bank's response, either to the Bank's Crisis Management Group or an individual. The Crisis Management Group's membership is chaired by the Governor and includes key executives within the Bank. The Crisis Management Group responds to crises and emergencies in accordance with the Bank's Incident Management Framework.

Payments Settlements Department also maintains plans that address decision-making in crises and emergencies. These plans cover operational disruptions (see Principle 17) and the default of a RITS member (see Principle 13). The plans are required to set out how Payments Settlements Department would communicate with the Crisis Management Group during a disruption.

- 2.7 The board should ensure that the payment system design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.**

The Bank's governance arrangements ensure accountability and transparency to RITS members and other relevant parties. To ensure the interests of relevant stakeholders are taken into account, the Bank engages in routine liaison with members and consults on all material changes to operational arrangements, for example through regular RITS User Group forums (see Principle 21). All decisions affecting the operation of RITS are advised to members. Policy decisions that affect RITS are also communicated to the public through media releases. Major decisions and the reasons for them are also explained in the Reserve Bank Annual Report and, if relevant, the Payments System Board Annual Report.

3. Framework for the Comprehensive Management of Risks

A payment system should have a sound risk management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.

Rating: Observed

Note: In line with the CPMI-IOSCO guidance on the Application of the Principles for Financial Market Infrastructures to Central Bank FMIs, since RITS is owned and operated by the Bank as one of the services

that the Bank has undertaken to provide, the Bank's ability to ensure continuity of operations of the FMI as necessary in extreme financial circumstances means that the requirements to prepare recovery and orderly wind-down plans do not apply. In addition, since intervention by a resolution authority is not relevant, requirements to support resolution planning or intervention by a resolution authority in the operation or ownership of the FMI do not apply. Accordingly, the Bank has not assessed RITS against Key Consideration 3.4.

3.1 A payment system 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 payment system. Risk management frameworks should be subject to periodic review.

The Bank's risk management framework is set out under Key Consideration 2.6. Under this framework, Payments Settlements Department is required to identify all of the risks that might impact its ability to operate RITS in a safe and efficient manner in a single risk register. Risks are categorised at a high level into strategic, credit, market and operational risks, and further sub-categorised into more detailed risk groups (e.g. liquidity risk is a sub-category of market risk). For each risk that has been identified, Payments Settlements Department sets out the consequence and likelihood of the risk occurring, and also identifies and applies controls and mitigation strategies to reduce the consequence and/or likelihood of the risk.

Enterprise risks are risks that have potential consequences for a number of departments across the Bank. Responsibilities for managing enterprise risks are shared across the Bank, with individual departments able to implement additional controls for these risks if they consider that the risk manifests itself in a unique manner within that department. Where a risk is co-managed by another business area – for example, some RITS operational controls are implemented by the Bank's Information Technology Department – this must be acknowledged by the other business area. Enterprise and department risks and controls are recorded in the Risk Management System.

The Bank's Risk Management Policy requires that Payments Settlements Department reviews and updates its risks and controls continuously, including after any major change to the Department's risk environment, to reflect any changes in risks and controls that have occurred. As part of this process, any residual risks identified in the Risk Register that are outside of risk appetite or agreed tolerance levels must be appropriately escalated by the risk owner including the identification of actions to return residual risks to within risk appetite.

The Risk Management Policy is reviewed annually, or more frequently if there is a major change to the Bank's risk management framework. Changes to the Policy are approved by the Bank's Executive Committee.

3.2 A payment system should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the payment system.

Given the design of RITS, members do not pose liquidity or credit risks to the Bank as operator of RITS (see Principles 4 and 7). RITS membership requirements aim to reduce the likelihood that an individual member would disrupt the operation of RITS. If a member does not meet these membership requirements, the Bank may apply restrictions to, or impose additional requirements on, that member (see Principle 18).

3.3 A payment system should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.

The Bank, in operating RITS, reviews the material risks that it bears from, and poses to, other entities. This is done in the context of its ongoing review of risks, and its processes for identifying risks associated with major changes to its risk environment, such as new activities or system changes. This is also part of the Bank's change management framework (see Key Consideration 17.1). The tools used to manage risks from other entities include service level agreements, customer support packages and documented operational and contingency procedures (see Key Consideration 17.7)

4. Credit

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

Rating: Observed

Note: Key Considerations 4.4, 4.5 and 4.6 do not apply to RITS as it is not a CCP. Consistent with the CPMI-IOSCO guidance on the Application of the Principles to Central Bank FMIs, this Principle should not constrain the Bank's policies on the provision of credit, or the terms of, or limits on, such provision.

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

The Bank is not exposed to credit risk in its role as operator of RITS (see Appendix A, section A.8). The Bank does, however, incur credit risk in the provision of liquidity to approved RITS members under its Standing Facilities to support payments activity (see Appendix A, section A.7 for more information on these facilities). This risk is primarily managed by purchasing securities under repo, in accordance with the Bank's risk management framework (see Appendix A, section A.8 for more information on the conditions for entering into a repo with the Bank).

Under the Bank's risk management framework, responsibility for approving and reviewing collateral eligibility lies with Risk and Compliance Department, with oversight from the Risk Management Committee. The policies, procedures and controls implemented to mitigate credit risk are subject to audit by Audit Department (see Key Consideration 2.6 for further detail on the Bank's risk management framework).

The RTGS mode of settling wholesale payments in RITS is also designed to ensure that unintended credit risks do not accumulate between members during the settlement process. For payments using the SWIFT PDS, transactions are settled across ESAs in RITS before payment messages are sent to the receiving member. Austraclear transactions submitted to RITS for settlement generally represent the cash legs of debt security transactions, which are settled on a delivery-versus-payment model 1 basis to mitigate the credit risk associated with the settlement process. Since RITS cash transfers are payments between two ESA holders unintended credit risk would not arise.

4.2 A payment system should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.

Under its risk management framework, the Bank has responsibility for identifying and managing the credit risks that arise from its activities. For each credit risk identified, the Bank routinely measures the potential impact and probability of the credit risk crystallising, and, where possible,

the existing controls and mitigation strategies. These controls are reviewed and signed off by management at least annually, or when there are material changes to the Bank's risk environment.

The Bank uses risk management tools to control credit risks incurred in the provision of liquidity to approved RITS members (see Appendix A, section A.8). Information on potential credit risks is readily available via summary reports produced by the Bank's trade entry and collateral management system (see Key Consideration 5.6).

- 4.3 A payment system should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a deferred net settlement payment system in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such a payment system 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.**

The credit risk assumed by the Bank in providing liquidity to RITS members is mitigated by purchasing high-quality securities under repo and having appropriate collateral policies in place (see Appendix A, section A.8 for more information).

RITS is not a deferred net settlement payment system and accordingly the requirement to maintain sufficient resources to cover the exposures of the two members and their affiliates that would create the largest aggregate credit exposure in the system does not apply.

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

As discussed under Key Consideration 4.1, in the event of a member default the Bank would not be exposed to a loss in its role as operator of RITS.

5. Collateral

A payment system that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. A payment system should also set and enforce appropriately conservative haircuts and concentration limits.

Rating: Observed

Consistent with the CPMI-IOSCO guidance on the Application of the Principles to Central Bank FMIs, this Principle should not constrain the Bank's policies on what it accepts as eligible collateral in its lending operations.

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

The Bank provides liquidity to approved RITS members via OMOs and via its Standing Facilities (see Appendix A, section A.7). In addition, in March 2020 the Bank established a Term Funding Facility (TFF) to Support Lending to Australian Businesses, and a temporary reciprocal currency arrangement with the US Federal Reserve for the provision of US dollars (US dollar swap line). The TFF was announced as part of a package of measures to support the Australian economy during the COVID-19 pandemic. The TFF provides ADIs with three year funding at a fixed cost through repo against eligible securities, including the use of self-securitised assets.⁵³ For use of the US dollar swap line, eligible counterparties must sell eligible Australian dollar securities under repo.

The Bank only purchases highly rated debt securities denominated in Australian dollars under repo. This policy applies to all of the Bank's domestic operations, irrespective of whether the repos are contracted under the Bank's Standing Facilities, in OMOs, under the TFF or the US dollar swap line. The policy is publicly available on the Bank's website and is reviewed from time-to-time. More information on the Bank's approach to accepting securities is available in the Eligible Securities policy.⁵⁴

To enhance its risk management of asset backed securities (ABS), the Bank requires the issuers of these securities (or their appointed information providers) to provide more detailed information in order for these securities to be eligible for repo with the Bank.⁵⁵ The criteria mitigate risks arising from the Bank's potential exposure to ABS under its operations. The additional information, which must be kept up to date, covers both transaction-related data as well as information on the underlying assets (i.e. loan-level data).

Wrong-way risk

To mitigate wrong-way risk in its operations, the Bank will not purchase securities from an approved RITS member it considers to be materially related to the credit quality of the security. Where applicable, the Bank's list of eligible securities identifies those counterparties considered to be related to specific securities. The Bank considers a material relationship to exist when the entities are members of the same corporate group, or where one entity has an ownership stake in another entity that exceeds 15 per cent.

Upon request by a member for a related-party exemption, the Bank may purchase certain related-party ABS under repo through its Standing Facilities and the TFF. However, these securities are subject to an additional haircut and additional reporting requirements. Thresholds for related parties also apply beyond which the Bank will not permit the use of the security, irrespective of the size of the haircut. The Bank considers each of the following parties to be related to an ABS: the sponsor of the issuing trust; the loan originators; servicers; swap counterparties; liquidity providers; and guaranteed investment contract providers to the issuing trust. The magnitude of any additional haircut will depend on the nature of the relationship between the member and the ABS.

In the event of insolvency, the close-out netting provisions included in the repo agreements allow the Bank to close out or terminate the second leg of the repo immediately. This right is protected by Part 4 of the PSNA. Where an approved member sells securities issued by a third-party issuer as collateral, both the member and the issuer of the security would have to fail for the Bank to

53 For operational notes on the TFF, see <<https://www.rba.gov.au/mkt-operations/term-funding-facility/operational-notes.html>>.

54 The policy is available at <<https://www.rba.gov.au/mkt-operations/resources/tech-notes/eligible-securities.html>>. The current list of eligible securities is available at <<https://www.rba.gov.au/mkt-operations/xls/eligible-securities.xls>>.

55 More information on this initiative is available at <<https://www.rba.gov.au/securitisations/>>.

potentially incur a financial loss. In the event that an approved member that had provided ABS and the issuing trust failed, the Bank would have recourse to the underlying assets (e.g. the residential mortgage loan pool).

5.2 A payment system should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.

Valuation

The Bank values securities purchased under repo using available market prices. When a timely market price is not available or reliable, the Bank uses conservative valuation formulae that are reviewed regularly.

Haircuts and mark-to-market margin maintenance

The Bank applies haircuts to all securities purchased under repo, with haircuts set for broad groups of securities, based on security type, term to maturity and credit rating.⁵⁶ Asset-backed securities attract additional haircuts depending on the features of the individual security. Haircuts are calibrated to cover the maximum expected decline in the market price of the security, including in stressed market conditions. The haircuts also take into account liquidity risk, with less liquid securities attracting a higher haircut. The Bank reserves the right to review haircuts at any time. More information on the Bank's haircutting practices, including the haircut schedule, is available on the Bank's website.⁵⁷

The Bank also maintains mark-to-market (variation) margin on a daily basis to cover changes in the value of its portfolio of securities.⁵⁸ To do this, the Bank calculates an exposure amount against each counterparty each day in respect of all securities held under repo based on the closing prices of the preceding business day. Where the Bank's net exposure to a counterparty is greater than \$1 million and represents more than 1 per cent of the net repurchase amounts agreed with that party, the Bank will call for mark-to-market margin equal to its net exposure.⁵⁹ Similarly, the Bank will meet requests for mark-to-market margin from a counterparty when it has a net exposure to the Bank greater than \$1 million and where that net exposure represents more than 1 per cent of the net repurchase amounts agreed with that party.

Margin is calculated and provided separately for repos contracted under OMO (which includes repos contracted under the US dollar swap line), Standing Facilities and the TFF.

5.3 In order to reduce the need for procyclical adjustments, a payment system should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.

The Bank generally applies haircuts that are calibrated to include periods of stressed market conditions. Haircuts are calibrated to capture stressed market conditions. This ensures that haircuts are set at stable and conservative levels, and reduces the need for procyclical haircut adjustments during periods of stress.

56 The Bank uses the terminology 'margins' instead of 'haircuts' in its publicly available documents. Haircuts are also applied to securities sold by the Bank under securities lending repo, although these transactions do not provide liquidity for settlement of transactions in RITS.

57 A list of the haircuts used by the Bank is available at <<https://www.rba.gov.au/mkt-operations/resources/tech-notes/margin-ratios.html>>.

58 Intraday repos do not require mark-to-market margin collection, as they are reversed by the end of the business day.

59 The repurchase amount for a repo is the value of the repo purchase price adjusted for accrued interest.

5.4 A payment system should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.

Consistent with the CPMI-IOSCO guidance on the Application of the Principles to Central Bank FMIs, the Bank is not constrained with regards to the assets it accepts as eligible collateral in its lending operations.

5.5 A payment system 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.

The Bank mitigates the risks associated with cross-border collateral by imposing additional restrictions. The only cross-border collateral that the Bank currently accepts is very highly rated Australian dollar-denominated securities issued or guaranteed by a foreign government or issued by a supranational. The terms and conditions of these securities must be governed by Australian law. In addition, because certain cross-border securities may be less liquid than domestic securities, the Bank applies higher haircuts to these securities. There is no operational risk associated with differences in time zones since all collateral must be lodged in Austraclear. The operating hours of the Austraclear system and RITS are aligned.

5.6 A payment system should use a collateral management system that is well designed and operationally flexible.

The Bank relies on a well-designed and operationally flexible trade entry and collateral management system to manage the securities it purchases under repo. This system is an integrated trading, middle-office and back-office system, and has been extensively customised for the Bank. The system supports the buying, selling, margining, substitution and liquidation of securities in a timely manner.

Transactions involving the exchange of securities with approved members are recorded and tracked in this system.⁶⁰ In addition, the system facilitates pricing of securities, application of haircuts by default, collateral substitutions, margin maintenance and coupon passes.⁶¹ The Bank has developed within this system a large number of analytical reports to monitor counterparty and collateral exposures, repo and outright portfolio holdings, daily activity summaries and other analytics associated with the Bank's domestic operations (for OMOs, Standing Facilities and the TFF). The Bank ensures that there are sufficient resources to maintain its trade entry and collateral management system to a high standard.

RITS members have the option to use ASX Collateral services to deliver a subset of eligible securities under certain types of repos.⁶² ASX Collateral is a collateral management service that acts as an agent to automate the allocation and optimisation of collateral in respect of securities held in Austraclear.⁶³ As agent, ASX Collateral is responsible for ensuring that securities delivered to the Bank's Austraclear account using its service are appropriately valued and meet the Bank's

60 Intraday repos involving Commonwealth Government Securities or semi-government securities are recorded outside of this system unless they are extended to become overnight repos.

61 'Coupon passes' refer to the Bank passing the coupon payments on securities that it has purchased under a repo agreement back to the seller of the securities.

62 For more information on the types of repos and securities eligible to be settled via ASX Collateral see <<https://www.rba.gov.au/mkt-operations/resources/tech-notes/settlement-procedures.html>>.

63 For more information see 2019 ASX Assessment, Financial Stability Standards for Securities Settlement Facilities, p 1: <<https://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/clearing-and-settlement-facilities/assessments/2018-2019/pdf/c2-financial-stability-standards-for-securities-settlement-facilities.pdf>>

eligibility requirements. ASX Collateral also offers extensive reporting functionality, including reports on collateral transactions and securities held. The Bank does not re-use securities it receives under repo.

7. Liquidity Risk

A payment system should effectively measure, monitor, and manage its liquidity risk. A payment system 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 payment system in extreme but plausible market conditions.

Rating: Observed

Note: Key Consideration 7.4 does not apply to RITS as it does not operate a CCP.

7.1 A payment system should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.

RITS conducts its settlements on an RTGS basis and does not guarantee settlement. Under the ESA Policy, ESA balances must also be maintained in credit at all times. The Bank, as operator of RITS, does not therefore assume liquidity risk in its operations. Since members face liquidity risks, however, RITS assists members in their liquidity management through: its liquidity-efficient design; the provision of liquidity through Standing Facilities; the provision of real-time information on transactions and ESA balances; and the provision of tools to manage their payments and liquidity (for more information see Appendix A, section A.4). Furthermore, RITS's membership requirements aim to reduce the probability that a member experiences an operational or financial problem that could disrupt the flow of liquidity in the system (see Principle 18).

The Bank is not exposed to liquidity risks from settlement banks, nostro agents, custodian banks or liquidity providers.

7.2 A payment system should have effective operational and analytical tools to identify, measure, and monitor its funding flows on an ongoing and timely basis, including its use of intraday liquidity.

Since RITS does not assume liquidity risk, there are no relevant funding flows for RITS to measure and monitor. In managing operational risk, the Bank's operational staff continuously monitor the flow of liquidity and payments at both a system and member level for evidence of any disruption to the flow of liquidity, which could occur if a member experienced an operational or financial problem (see Principle 17). To further mitigate possible disruption under such a scenario, members are required to inform the Bank in the event of any operational problem, and the RITS Regulations also set out actions that the Bank may take in response to a member default (see Principle 13).

7.3 A payment system, including one employing a deferred net settlement (DNS) mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement and, where appropriate, intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.

Since the Bank does not assume liquidity risk as operator of RITS, the requirement to maintain liquid resources to cover payment obligations in stressed scenarios does not apply.

- 7.5 For the purpose of meeting its minimum liquid resource requirement, a payment system'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 payment system has access to routine credit at the central bank of issue, the payment system 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.**

Since the Bank does not assume liquidity risk as operator of RITS, the minimum liquid resource requirement does not apply.

- 7.6 A payment system may supplement its qualifying liquid resources with other forms of liquid resources. If the payment system does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if a payment system 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 payment system should not assume the availability of emergency central bank credit as a part of its liquidity plan.**

Since the Bank does not assume liquidity risk as operator of RITS, the need to supplement its qualifying liquid resources does not apply.

- 7.7 A payment system 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 payment system 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 payment system should regularly test its procedures for accessing its liquid resources at a liquidity provider.**

Since the Bank does not assume liquidity risk as operator of RITS, the requirement to ensure that its liquidity providers have sufficient frameworks in place to manage their liquidity risk does not apply.

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

Since the Bank does not assume liquidity risk as the operator of RITS, the requirement to use central bank accounts, payment services or securities services does not apply.

- 7.9 A payment system should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. A payment system should have clear procedures to report the results of its stress tests to appropriate decision makers at the payment system and**

to use these results to evaluate the adequacy of and adjust its liquidity risk management framework. In conducting stress testing, a payment system 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 payment system, include all entities that might pose material liquidity risks to the payment system (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, a payment system should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.

Since the Bank does not assume liquidity risk as operator of RITS, the requirement to maintain liquid resources to cover payment obligations in stressed scenarios does not apply.

- 7.10 A payment system should establish explicit rules and procedures that enable the payment system 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 payment system’s process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.**

The RITS Regulations set out actions that may be taken in RITS in the event of a member default (see Principle 13). Since the Bank does not assume liquidity risk as operator of RITS, the requirement to establish rules and procedures to address unforeseen and potentially uncovered liquidity shortfalls and replenish any liquid resources does not apply.

8. Settlement Finality

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

Rating: Observed

- 8.1 A payment system’s rules and procedures should clearly define the point at which settlement is final.**

The settlement of a payment in RITS is final and irrevocable when the ESAs of the paying and receiving RITS members are simultaneously debited and credited.⁶⁴ The point of settlement is clearly defined in Clause 16 of the RITS Regulations. As explained under Key Consideration 1.1, this is further protected by the approval of RITS as an RTGS system under Part 2 of the PSNA.

⁶⁴ Wholesale RTGS payments settled using the ‘auto offset’ functionality are settled in full across relevant ESAs simultaneously. These payments are posted in full to the ESAs and are not subject to bilateral netting.

- 8.2 A payment system 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 large-value payment system should consider adopting RTGS or multiple-batch processing during the settlement day.**

Wholesale RTGS payments in RITS are settled individually in real time. Although settlements occur in real time, a wholesale RTGS payment submitted to the System Queue may remain there if the payer chooses not to settle the transaction (e.g. if the payer has set the status of the transaction to 'deferred') or has insufficient funds. Any wholesale RTGS payments that are not settled at the end of the last session during which the transaction was eligible for settlement are automatically removed from RITS but may be resubmitted for settlement when the system reopens (for more information on RITS session times refer to Appendix A, section A.6).

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

Under Clause 13.2 of the RITS Regulations, a member can unilaterally revoke its outgoing wholesale RTGS payments sent to the System Queue at any time prior to settlement. RITS cash transfers can be revoked via the RITS User Interface, while payments sent via a feeder system must be revoked via that feeder system.

9. Money Settlements

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

Rating: Observed

- 9.1 A payment system should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.**

Money settlements in RITS are conducted in central bank money. Payment obligations in RITS are settled on an RTGS basis across ESAs at the Bank.

- 9.2 If central bank money is not used, a payment system should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.**

Money settlements in RITS are conducted using central bank money.

- 9.3 If a payment system settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, a payment system should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. A payment system should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.**

Money settlements in RITS are conducted using central bank money.

- 9.4 If a payment system conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.**

Money settlements in RITS are conducted using central bank money across the books of the Bank. The Bank's credit and liquidity risks from the operation and provision of liquidity in RITS are strictly controlled, as described in Principles 4 and 7.

- 9.5 A payment system's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the payment system and its participants to manage credit and liquidity risks.**

The Bank does not use commercial settlement banks in the operation of RITS.

12. Exchange-of-Value Settlements

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

Rating: Not applicable

RITS is not an exchange-of-value settlement system. It does not perform the settlement of foreign exchange transactions or securities transactions.

RITS does, however, facilitate the settlement of linked securities, foreign exchange and property transactions in other systems, assisting market participants in eliminating principal risk. In particular, RITS settles the interbank obligations arising from the cash leg of delivery-versus-payment debt and equity security transactions in Austraclear and ASX Settlement, respectively. RITS is also used to fund the Australian dollar leg of foreign exchange transactions settled on a payment-versus-payment basis in CLS's Settlement and CLSClearedFX services.⁶⁵

RITS also facilitates the financial settlement of property transactions originating from separate systems operated by PEXA and ASX Financial Settlements Pty Limited, such that the lodgement of the title transfer only occurs once settlement has been assured by the reservation of funds in ESAs.

13. Participant-Default Rules and Procedures

A payment system 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 payment system can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

Rating: Broadly Observed

Note: Consistent with the CPMI-IOSCO guidance on the Application of the Principles to Central Bank FMIs, this Principle should not constrain the Bank's policies on maintaining financial stability including when managing participant defaults.

- 13.1 A payment system should have default rules and procedures that enable the payment system to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.**

⁶⁵ CLSClearedFX settles cash flows arising from deliverable FX derivatives cleared by CCPs in a number of currency pairs, including AUD/USD.

The RITS Regulations set out actions taken in RITS in the event of a member default. A member that becomes aware of an insolvency event – either its own insolvency, or the insolvency of another member for which it acts as a settlement agent – must notify the Bank immediately. The Bank may then suspend the relevant member, at which point the Bank will remove any queued payments to and from the member, and prevent the input of any new payments involving the suspended member. The Bank may also suspend a member that is unable to meet its settlement obligations. By permitting swift and decisive action in this way, the RITS Regulations allow the Bank to minimise the potential for a member default to disrupt settlement in the system more widely.

As explained under Principle 4, in the event of a member default the Bank would not be exposed to a loss in its role as operator of RITS. Accordingly, the RITS Regulations do not cover replenishment of financial resources following a member default.

13.2 A payment system should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.

The Bank has detailed procedures in place that set out the operational steps to be taken in response to an insolvency event affecting a RITS member. However, the Bank does not have a formally documented framework setting out the Bank’s decision-making and crisis-management arrangements in the event of a RITS member default, including consultation arrangements with other authorities and with industry, and the roles of relevant executives in this process. For further information, refer to section 3.2.

13.3 A payment system should publicly disclose key aspects of its default rules and procedures.

The key aspects of the default management rules and procedures are set out in the RITS Regulations, which are publicly available on the Bank’s website.

13.4 A payment system should involve its participants and other stakeholders in the testing and review of the payment system’s default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.

Since RITS default management procedures do not require members to perform any actions, members are not involved in the testing or review of these procedures.

15. General Business Risk

A payment system should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

Rating: Observed

Note: Consistent with the CPMI-IOSCO guidance on the Application of the Principles to Central Bank FMI, the requirement to hold ring-fenced liquid net assets funded by equity to cover business risk and support a recovery or wind-down plan (Key Considerations 15.2 – 15.4) does not apply to the Bank, given its inherent financial soundness. Similarly, the requirement to maintain a plan to raise additional equity (Key Consideration 15.5) does not apply.

15.1 A payment system 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.

As set out under Key Consideration 2.6, the Bank takes a coordinated approach to identifying, assessing and managing risk at both an enterprise and business level. A key component of the Bank's framework for managing general business risk is its budgeting and accounting processes, which allow it to monitor, manage and control its operating expenses, including those arising from the operation of RITS. The Bank's financial accounts are also subject to audit by the Australian National Audit Office. Audit reports are reviewed by the Audit Committee.

The Bank's financial target with respect to RITS is to recover its operating costs over the medium term. This gives the Bank some flexibility over the timing of fee changes and allows it to provide greater price stability to members. The fee structure is reviewed annually, although not every review results in changes to the fees. The current fee structure includes transaction-based fees and annual fees. Fees for wholesale RTGS transactions are based on a combination of the value and volume of settled transactions.

For significant improvements to RITS functionality, the Bank absorbs the initial capital and development costs as a policy-related expense. Such projects must be approved by the Bank's Investment Committee and relevant financial analysis is included as part of the business case approval process. Ongoing operational costs and system lifecycle replacement costs are recovered.

In addition, the Bank has an ongoing program to evaluate fraud risks and review its fraud control framework (see Key Consideration 17.1)

16. Custody and Investment Risks

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

Rating: Observed

Note: Consistent with the CPMI-IOSCO guidance on the Application of the Principles to Central Bank FMIs, this Principle should not constrain the Bank's policies on investment strategy (including that for reserve management) or impose requirements regarding the disclosure of that strategy.

16.1 A payment system 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.

The Bank does not hold RITS members' assets as part of its role as operator of RITS. However, the Bank does do so as part of its provision of liquidity to approved RITS members and as provider of ESAs to RITS members. Further information can be found in Principles 5 and 9. Securities provided to the Bank as collateral are held at Austraclear, a licensed clearing and settlement facility that is overseen by the Australian Securities and Investments Commission (ASIC) and the Bank. In accordance with the licensing regime, Austraclear must meet the Bank's SSF Standards, which are aligned with the Principles. The SSF Standards require that Austraclear maintain robust accounting practices, safekeeping procedures and internal controls that fully protect the assets for which it acts as a central securities depository.

The Bank does not use custodian banks to hold the collateral it purchases in providing liquidity to eligible RITS members, or hold Australian dollar-denominated collateral with entities in other time zones or foreign legal jurisdictions.

16.2 A payment system should have prompt access to its assets and the assets provided by participants, when required.

Approved RITS members are bound by the RITS Regulations, which include an amended and supplemented version of the SIFMA/ICMA GMRA (2011 version) legal contract governing the terms and conditions of repos with the Bank. The close-out netting provisions included in the Bank's repo agreements with counterparties provide for the Bank to close out or terminate the second leg of a repo immediately. This right is protected by Part 4 of the PSNA (see Principle 1).

The Austraclear system is subject to high operational resilience standards and operates in the same time zone as RITS, and Austraclear's operating hours are broadly aligned with those of RITS (for further information see Principle 17.7). The Bank would therefore expect to have prompt access to the securities it holds as collateral. The Austraclear system must also adhere to similar high standards of security and operational reliability set out in the SSF Standards.⁶⁶

RITS members have the option to use ASX Collateral services to deliver a subset of eligible securities under certain types of repo (see Principle 5). Securities provided to the Bank under repo through ASX Collateral are held in special-purpose 'collateral accounts' in Austraclear. Securities in these accounts can only be transferred based on instructions from ASX Collateral. For this reason, the Bank relies on the availability of ASX Collateral to be able to promptly access the securities held in the Bank's collateral accounts and, in the case of a default of the repo counterparty, liquidate those securities in a timely manner. The operational resilience of ASX Collateral is addressed in Key Consideration 17.7.

16.3 A payment system should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.

The Bank does not use custodian banks to hold the collateral it receives in providing liquidity to eligible RITS members.

16.4 A payment system'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.

The Bank publishes criteria for securities eligible for domestic operations on its website. Eligibility criteria take into account the creditworthiness of the issuers and the Bank applies conservative haircuts on all collateral securities purchased under repo (see Key Consideration 5.2). The legal contract governing the repo transactions give the Bank full title to the purchased securities and the close out netting provisions enable the Bank to terminate the repo contract, value and liquidate the securities upon notice of default.

The Bank does not re-use collateral purchased under repo and therefore does not face investment risks associated with returning re-used securities on the unwind date of repos.

⁶⁶ For further information on the operational resilience of Austraclear see: <https://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/clearing-and-settlement-facilities/assessments/asx/>.

Under the Bank's Executive Accountability Framework, the Assistant Governor (Financial Markets) and the Head of Risk and Compliance Department are responsible for ensuring that the Bank's financial risk management is consistent with the Bank's Financial Risk Management Governance Policy. This includes responsibility for ensuring the Bank's credit exposure guidelines remain appropriate, and monitoring compliance with those guidelines.

17. Operational Risk

A payment system 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 payment system's obligations, including in the event of a wide-scale or major disruption.

Rating: Broadly observed

17.1 A payment system should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.

The Bank has established a robust operational risk management framework, with systems, policies and procedures to identify, monitor and manage operational risk.

Under the risk management framework, Payments Settlements Department is required to identify the range of risks that might impact its ability to operate RITS in a safe and efficient manner. To identify operational risks, the Bank draws lessons from issues that have occurred in the past, and periodically assesses emerging risks, for example, arising from new technologies.

For each operational risk identified, Payments Settlements Department assesses the likelihood of the operational risk crystallising and its potential impact. Controls and mitigation strategies are also considered. Operational controls are documented in procedure manuals, administration guides and daily checklists. The operational risk management framework supporting RITS is benchmarked against relevant domestic and international standards.

Change and project management

The Bank has a change management policy, supported by detailed processes and procedures, to safeguard the integrity and reliability of RITS. The policy is aligned to standards that are considered best practice in the information technology and finance industries.

Under the policy, any material change or maintenance activity with the potential to impact data centre operations requires the responsible business area to prepare a change implementation plan, identifying possible risks arising from the change and the controls in place to mitigate those risks. These controls would normally include plans to 'back out' any change that had been implemented, should this be necessary. Changes assessed as posing a high or medium risk are presented for approval to the Change Advisory Board, which comprises senior management from operational and information technology areas in the Bank.

To ensure that changes do not disrupt the operation of RITS, major or high-risk changes are implemented outside of core operating hours.⁶⁷ Backups of data and system configurations are made as appropriate before the implementation of any major changes. Any system changes are subject to extensive testing in separate test environments before approval for live implementation. This includes, as applicable, connectivity, functional, performance and failover testing. RITS members are given the opportunity to become familiar with new functionality in an industry test environment before live implementation.

The Bank has an enterprise-wide project management framework. This framework includes guidance to ensure internal consistency in the way project risks are managed, as well as the arrangements for governing a project. The framework is broadly aligned to widely used industry best practice, including the PRINCE2 framework. The framework is supported by the Enterprise Portfolio Management Office (EPMO). The EPMO provides analysis, including on risk, and status reports to the Bank's executives on major initiatives. It also provides advice and support to Bank staff working on projects.

Staffing arrangements

The Bank has appropriate human resource policies and staffing arrangements in place to ensure that it is able to manage its RITS operations effectively. The resourcing of the areas in Payments Settlements Department involved in the operation of RITS is the responsibility of senior management in those areas. Payments Settlements Department relies on the Bank's Information Technology Department to provide technical support for RITS. To ensure there is a common understanding, the level of service expected from Information Technology Department with regard to the support of RITS is set out in internal documents. The resourcing policies set out above also apply to Information Technology Department.

Fraud control

The Bank has an ongoing program to evaluate internal fraud risks and review its fraud control framework. This is documented in the Fraud Control Policy. The primary preventative fraud controls include audit logs, dual input checks, separation of duties, management sign-off and processing checklists. These controls are supported by reconciliations and reviews by management. Regular staff training in fraud awareness is also conducted and monitored to ensure that all staff are actively engaged in fraud prevention. The Bank also operates a hotline for staff, through which suspicious behavior can be reported anonymously. The Bank's Audit Department investigates the potential for fraud and fraud controls as part of its regular audits.

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

The Bank manages the operational risks arising from RITS through its risk management framework, the governance of which is set out under Key Consideration 2.6. Under this framework, operational risk policies are developed and approved by the senior management of Payments Settlements Department, with oversight from the Risk Management Committee. In some circumstances, policies would need to be approved by the Assistant Governor (Business Services). Operational policies, procedures and controls in respect of RITS are subject to audit by the Audit Department,

⁶⁷ To minimise the risk of service interruption changes to the FSS, which operates continuously, are performed during business hours using component or site isolation techniques.

with assistance from external consultants. Audit reports are reviewed by the Audit Committee, with copies provided to the Risk Management Committee.

The systems, policies, procedures and controls that are part of the operational risk framework are tested periodically (see Key Considerations 17.4–17.7 for further details).

17.3 A payment system should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.

RITS availability targets are clearly defined and documented. The target availability for RITS is at least 99.95 per cent, calculated on an annual basis. Availability is measured relative to the total number of hours that the system is normally open for settlement (see Appendix A.2). Performance against the annual availability target for RITS is reported to the Bank's Executive Committee and senior management in Payments Settlements Department on a quarterly basis.

The Bank has established arrangements to ensure that RITS meets its target availability, including a detailed business continuity policy (see Key Consideration 17.6) and change and incident management framework (see Key Consideration 17.1). In addition, Payments Settlements Department applies a number of controls to prevent or manage disruptions, including operating procedure manuals, dual input checks and the use of checklists.

Both RITS and the FSS are monitored on a continuous basis. The Bank also monitors RITS components to ensure that any issues are detected in a timely manner. Automated tools are used, which verify the operation of system components in intervals as short as one minute, and generate email alerts to relevant Bank staff if any issues are detected. The Bank monitors the flow of liquidity and payment messages at both a system and member level for evidence of any disruption, which could occur if a member experiences an operational or financial problem. Alerts are also generated where unexpectedly high ESA balances indicate potential liquidity issues.

17.4 A payment system should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.

The Bank has processes and controls in place to ensure that RITS has sufficient capacity. RITS capacity targets for wholesale RTGS transactions include a:

- processing throughput target – that is, that RITS should be able to process peak-day transactions in less than two hours (assuming no liquidity constraints)
- projected capacity target – that is, RITS should be able to accommodate projected volumes 18 months in advance with 20 per cent headroom.

RITS is tested regularly to ensure that it meets these targets. Test results are reviewed by management in Payments Settlements Department. In the event of an issue, the Bank would investigate options to either improve processing throughput or increase capacity.

Testing is complemented by monitoring and alerting systems, which are designed to automatically advise operational staff if volumes begin to approach operational capacity for various RITS components.

17.5 A payment system should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.

Information security

Cyber resilience in relation to both RITS and the Bank's operations more broadly is overseen by the Risk Management Committee as part of the Bank's enterprise-wide risk management framework. As noted in the Bank's Risk Appetite Statement, the Bank has a very low appetite for risk of compromise to Bank assets arising from cyber threats. To address this risk, the Bank adopts and continually updates strong internal controls and secure technology solutions.

Information Technology Department, in conjunction with Payments Settlements Department, is responsible for the review and implementation of the information security policies applicable to RITS. To support the Bank's information security, there is a dedicated Information Technology Security Team within the Information Technology Department that is headed by the Bank's Chief Information Security Officer. Information security policies are aligned to the Australian Government's Protective Security Policy Framework.⁶⁸

Cyber security practices are informed by domestic and international best practice, including the Australian Signals Directorate's Strategies to Mitigate Cyber Security Incidents. RITS is certified annually against the ISO27001 information security standard. As a user of the SWIFT messaging network, the Bank is also required to attest that it meets security standards established by SWIFT (including the SWIFT Customer Security Control Framework (CSCF)), annually. This is done through an independent assessment of compliance.

Information security policies are reviewed annually and include consideration of changes to either the nature of the risk or the assets being protected. Security reviews and penetration tests by external consultants are also routinely commissioned for new RITS components and in response to significant changes to the RITS system or security environment.

The Bank recognises that cyber risks and industry best practice are rapidly evolving, and that cyber resilience requires ongoing effort. Further details on the initiatives the Bank is undertaking as part of its ongoing cyber resilience strategy are set out in section 3.1.6.

Physical security

The Bank's Workplace Department implements the Bank's physical security policy, which complies with the Protective Security Policy Framework set by the Australian Government. Under the policy, security risks are identified and controls implemented to mitigate these risks. The Bank maintains a number of controls to limit physical access to sensitive areas.

17.6 A payment system 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. The plan should be designed to enable the payment system to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The payment system should regularly test these arrangements.

68 This framework is available at <<https://www.protectivesecurity.gov.au/Pages/default.aspx>>.

The Bank maintains detailed business continuity plans. These set out the operational response to events that could disrupt the operation of RITS. These plans cover lines of authority, means of communications and failover procedures, and are updated annually or more frequently if required.

A primary control to reduce the impact of a contingency event is a high degree of redundancy in RITS systems. RITS data are synchronously mirrored at two geographically remote sites, which are permanently staffed. Full redundancy of equipment required for the settlement of RITS transactions exists at both these sites, supporting the operation of RITS from either site indefinitely. Live operations alternate between both sites on a periodic basis. If required, all staff are able to work from home through remote logon using a virtual private network. For further information on working arrangements during the assessment period, refer to section 3.1.4.

For RITS, the Bank's recovery time target (the time taken between confirmed system failure at one site and resumption at the alternate site) is up to 40 minutes, depending on the nature of the operational disruption.

This level of redundancy is complemented by internal plans to deal with a wide variety of potential disruptions. These potential disruptions include the failure of individual RITS components and wide-scale external disruptions, such as floods and pandemics. Target recovery times are documented and tested for each scenario. Contingency procedures are reviewed at regular intervals, and after major system changes and testing (if required).

The Bank has monitoring and alerting capabilities to identify cyber-attacks, as well as systems and processes that would enable timely and accurate recovery of data following a breach. As part of its ongoing cyber resilience strategy, the Bank continues to improve the capability of RITS to meet the two-hour recovery time objective in the event of an extreme but plausible cyber-attack. This is consistent with the expectations established by CPMI and IOSCO in their 2016 Cyber Resilience Guidance. This includes ongoing evaluation of current and emerging technology that could further enhance the Bank's ability to recover from cyber-attacks in a timely manner.

Payments Settlements Department's plans include arrangements for the provision of timely information to stakeholders, including RITS members and operators of interdependent systems. A web-based crisis communication facility for RITS enables the Bank to efficiently disseminate information via email and SMS to a large number of stakeholders. The crisis communication facility is configured to include predefined notification lists of both internal and external parties. This facility is externally hosted, does not rely on any Bank infrastructure and can be accessed remotely if required. Video and conference call facilities are also available to enable timely discussion between key stakeholders.

Payments Settlements Department also has documented procedures and processes for managing a contingency, which includes instructions for assigning roles and responsibilities during a contingency. Contingency testing occurs regularly to ensure that the contingency procedures are well-practiced and remain effective. All Payments Settlements Department staff are able to work from home, and those who are based at the Bank's head office are required to attend and become familiar with the Bank's geographically remote second site.

In an extreme event in which RITS was unavailable and recovery was not possible, transactions from the SWIFT PDS and Austraclear feeder systems, which account for the majority of value and volume of wholesale RTGS transactions settled in RITS, can be settled using contingency settlement arrangements. These arrangements involve the deferred net settlement of interbank obligations arising from the two feeder systems in a multilateral batch in RITS on the following day.

As noted in section 3.1.5, the Bank is exploring options to improve the contingency settlement arrangements in very extreme scenarios where RITS is unavailable for more than one day.

17.7 A payment system should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, a payment system should identify, monitor, and manage the risks its operations might pose to other FMIs.

Members

Recognising that the efficient operation of RITS is also dependent on the operational reliability and resilience of its members, members are required to notify the Bank immediately of any problem affecting their transaction activity. The Bank also monitors members' payment flows. If a potential problem is detected, the Bank will contact that member for further information. After a disruption, a member is required to provide the Bank with a detailed incident report on the causes and remedial actions of the disruption. In addition, the Bank sets Business Continuity Standards for RITS members, which aim to promote high availability and security in RITS members' payments processing operations.

The Bank monitors RITS members' compliance with the standards on an ongoing basis. The Bank has received reporting members' latest annual self-certification statements against the standards as at the end of 2020, at which time 66 RITS members self-certified, with 12 partly compliant with the standards and one member's statement still under review. Where members are not fully compliant, the Bank asks members to provide a timetable to achieve compliance and follows up progress with members.

Where applicable, the standards also require members to comply with the SWIFT CSCF and provide the Bank with access to view relevant attestations made to SWIFT, which the Bank monitors in the same way as the other RITS Business Continuity Standards. In May 2018 the CPMI published a high-level strategy for reducing the risk of wholesale payments fraud related to endpoint security. While the Bank already meets elements of the strategy described in this report, it is in the process of uplifting the security standards that RITS members are required to comply with (see section 3.1.6).

Service and utility providers

SWIFT has been identified as a critical service provider to RITS, as the failure of SWIFT would severely impair the ability of members to effect third-party payments, as well as the management of Austraclear settlements via the RITS Automated Information Facility (AIF).⁶⁹ The Bank has a premium support package from SWIFT, the terms of which set out the response times and level of support expected from SWIFT should an issue arise. The Bank also liaises regularly with SWIFT and participates in a coordinated global outage test, which simulates an operational disruption at SWIFT. The resilience and reliability of SWIFT is supported by regulation and oversight by the SWIFT Oversight Group, comprising the G10 central banks and chaired by the National Bank of Belgium.⁷⁰ To support its oversight activities, the Oversight Group has set proprietary minimum standards – the High Level Expectations – against which SWIFT is assessed.

To address the risks to RITS from critical dependencies on utility providers, the Bank has put in place a number of controls:

69 The AIF provides for the automation of credit and liquidity management messaging instructions between RITS and ESA holders' internal payments systems via the SWIFT network.

70 The Bank participates in the the SWIFT Oversight Forum which allows the Bank to access information relevant to SWIFT oversight.

- separate electricity suppliers service each operational site
- each site has an uninterruptible power supply and a backup power generator system
- regular testing of backup arrangements
- the majority of the external communications links to data centres are via diverse paths.

Other FMIs

Austraclear has been identified as an FMI that is of critical importance to the operation of RITS. The contractual agreement with ASX Limited – the owner of Austraclear – imposes strict service operational requirements on the Austraclear system, including requiring the Austraclear system to provide a minimum 99.9 per cent availability during business hours. The agreement also requires ASX to conduct failover and contingency testing of network connectivity between the Austraclear system and RITS annually.

The Bank also monitors the interdependencies between Austraclear and ASX Collateral. While ASX Collateral is not itself subject to direct regulation as an FMI, the Bank's SSF Standards set requirements for Austraclear to maintain equivalent resilience standards for critical interdependent systems.⁷¹ Accordingly, in its assessment of Austraclear against the SSF Standards, the Bank has sought to establish that the standards for operational resilience at ASX Collateral (including the link with Clearstream) are consistent with those that apply to Austraclear.⁷² The availability of ASX Collateral is also relevant to the Bank's ability to promptly access securities held through ASX Collateral (see Key Consideration 16.2).

Austraclear and CLS rely on RITS to settle Australian dollar-denominated wholesale RTGS transactions, and their operations would be disrupted if RITS was not available. This risk is mitigated by ensuring the operational reliability and resilience of RITS. The Bank also conducts joint contingency testing with ASX (the operator of Austraclear) and CLS. In addition, ASX has contingency plans that contemplate Austraclear continuing to operate independently of RITS. These plans allow for the interbank settlement of funds to be effected using contingency settlement arrangements (see Key Consideration 17.6).

18. Access and Participation Requirements

A payment system should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.

Rating: Observed

Note: Consistent with the CPMI-IOSCO guidance on the Application of the Principles to Central Bank FMIs, this Principle should not constrain the Bank's policy on whom it is prepared to offer accounts and on what terms.

71 See RBA (2020), 'Assessment of ASX Clearing and Settlement Facilities', September, Standard 14.9. Available at <https://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/clearing-and-settlement-facilities/assessments/asx/>.

72 These standards are established under Austraclear Regulation 28.15 and elaborated under paragraph 28.15 of the Austraclear Procedures, Determinations and Practice Notes. For more information on ASX Collateral and its implications for Austraclear, refer to RBA (2019), 'Assessment of ASX Clearing and Settlement Facilities', September. Available at <https://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/clearing-and-settlement-facilities/assessments/asx/>.

18.1 A payment system 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.

Since settlement in RITS occurs using central bank money, only an institution with an ESA at the Bank can be a settlement participant in RITS. Furthermore, because RITS is the only means of access to ESAs, all ESA holders must be members of RITS and meet all of its operating conditions. The eligibility criteria for ESA holders therefore effectively represent the eligibility criteria for settlement participants in RITS. Policy around ESA eligibility is set by the Bank's Executive Committee and is available on the Bank's website. The ESA eligibility policy has been designed to be fair and open and enhance competition in the provision of payment services by allowing providers of third-party payment services access, irrespective of their institutional status. ADIs are eligible by default, because these institutions are assumed to provide third-party payment services as part of their business.

Australian-licensed CCPs and SSFs (or a related body corporate acceptable to the Bank) with payment arrangements that require Australian dollar settlement are also eligible to hold an ESA.

An applicant for an ESA must demonstrate that it meets certain risk-related participation requirements at the time of application. These include requirements related to financial resources and skills, operational capacity, business continuity and liquidity arrangements, and risk management.⁷³

As part of the application process, the Bank may choose to commission a report relating to aspects of the applicant's conduct and standing, including of the applicant itself, its directors, key management personnel, shareholders and other related entities. The Bank may also require the applicant to obtain a report from an independent expert assessing the applicant's policies and procedures related to sanctions and anti-money laundering and counter-terrorism financing (AML/CTF) and the applicant's compliance with sanctions and AML/CTF legislation and other regulatory requirements.

To ensure that the institution is always able to authorise, execute and settle RTGS transactions in an efficient and timely manner, the Bank requires that, for institutions settling transactions using their own ESA, responsibility for the ESA must rest with management located in Australia.⁷⁴ ESA holders must also meet the Business Continuity Standards set by the Bank (see Key Consideration 17.7).

The Bank reserves the right to impose additional operational or other requirements on ESA holders at its discretion. In particular, an institution that is not supervised by APRA (i.e. not an ADI or other APRA regulated institution) or that has limited access to liquid assets, and that has deferred net settlement or time-critical payment obligations, may need to meet additional liquidity requirements on an ongoing basis.

18.2 A payment system's participation requirements should be justified in terms of the safety and efficiency of the payment system and the markets it serves, be tailored to and commensurate

73 Further details on ESA eligibility can be found on the Bank's website <https://www.rba.gov.au/payments-and-infrastructure/esa/>

74 Australian-licensed clearing and settlement facilities may apply for an exemption from the requirement to maintain management and resources in Australia, so as to be able to manage their ESA from an approved offshore location. Eligibility for such an exemption will be determined on a case-by-case basis.

with the payment system's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, a payment system should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit.

RITS participation requirements are designed to reduce the likelihood that an individual member experiences an operational or financial problem that disrupts the system more broadly, for instance by defaulting, becoming a liquidity sink or excessively delaying payments.⁷⁵ The requirements are generally proportional to members' expected wholesale payments in RITS. For example, the Business Continuity Standards are proportional to the nature and size of a prospective member's payments business.

To reduce the operational burden on smaller RITS members, an ADI with aggregate outgoing wholesale RTGS transactions of less than 0.25 per cent of the total value of wholesale RTGS transactions, may use an agent to settle some or all of its wholesale RTGS transactions, rather than settling directly across its own ESA (see Principle 19). An ADI that settles all of its RTGS transactions through an agent may apply to hold a 'dormant' ESA for use in an extreme contingency where the availability or effectiveness of the RTGS services provided by its agent are compromised.

Indirect participation in RITS is not available more broadly because of the concern that it might lead to a high degree of concentration of wholesale RTGS transactions through a few direct participants, and give rise to an unacceptable concentration of liquidity and operational risks in these members (see Principle 19). Indirect participation also introduces credit risk for members because settlement between an indirect participant and its settlement agent occurs in commercial bank money.

18.3 A payment system 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.

The Bank closely monitors member activity in RITS, to ensure that members are demonstrating that they have the operational capacity and sufficient liquidity to manage their payments activity on an ongoing basis (see Key Consideration 17.7). RITS direct participants are also required to self-certify their compliance with the Business Continuity Standards annually. In addition, the majority of RITS members – ADIs, CCPs and SSFs – are subject to ongoing regulation, supervision and oversight by either APRA, or ASIC and the Bank, including with respect to operational and liquidity requirements. Where RITS members, as ESA holders, are subject to additional operational or other requirements, evidence of their compliance with these requirements must be provided periodically to the Bank.

The RITS Regulations clearly set out the conditions under which the Bank can suspend a member. The Bank may at any time terminate or vary the terms of the membership of any institution, or impose particular conditions on an institution's membership of RITS. The Bank may at any time suspend with immediate effect any member, for such a period as it considers appropriate, if it believes:

- the member is insolvent

⁷⁵ A liquidity sink refers to liquidity accumulating in a participant's account, disrupting liquidity recycling and thereby preventing other participants from settling their payments.

- the member has not complied with any obligations under the membership agreement or any representation made by the member is not true at any time
- the member's conduct or continued participation is contrary to the interests of the members, the Bank or RITS
- the member has or will have insufficient funds for settlements
- the Bank has lost the authority to debit or credit the member's ESA or receive or give effect to transactions.

To facilitate an orderly exit, unsettled payments to or from a suspended member would be removed from the RITS queue, and the input of any new payments involving the suspended member would be prevented. In the case of the suspension of a batch administrator, all payments in any unsettled batch would be removed from the RITS queue (see Principle 13).

19. Tiered Participation Arrangements

A payment system should identify, monitor and manage the material risks to the payment system arising from tiered participation arrangements.

Rating: Observed

19.1 A payment system 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 payment system arising from such tiered participation arrangements.

The Bank's ESA policy limits the scope for material risks to arise from tiered participation arrangements (see Principle 18). In particular, the Bank's ESA policy limits indirect participation by ADIs, which are the primary providers of payment services in Australia, to those with aggregate wholesale RTGS transactions of less than 0.25 per cent of the total value of wholesale RITS RTGS transactions.⁷⁶

Agent banks are required to report the value and volume of the incoming and outgoing wholesale RTGS payments settled on behalf of their client ADIs to the Bank on a quarterly basis. ESA holders that participate indirectly must notify the Bank if they change the agent bank through which they settle. This information is used to monitor compliance with the 0.25 per cent threshold. If the value of an ADI's outgoing wholesale RTGS payments consistently exceeded the 0.25 per cent threshold, the Bank would consider revoking approval for the agency arrangement. If revoked, the ADI would be required to settle payments using its own ESA.

As noted under Principle 18, the ESA policy also minimises the scope for risks arising from indirect participation by CCPs and SSFs. The Bank requires:

- any Australian-licensed CCP that the Bank has determined to be systemically important in Australia to settle Australian dollar margin-related receipts or payments, and the CCP's Australian dollar securities- or derivatives-related obligations, across an ESA held in its own name or that of a related body corporate acceptable to the Bank
- any Australian-licensed SSF that the Bank has determined to be systemically important in Australia, and that faces Australian dollar liquidity risk from securities settlement-related

⁷⁶ Payments settled on an RTGS basis through the FSS are not included in the calculation of the 0.25 per cent threshold.

activities, to hold an ESA in its own name, or that of a related body corporate acceptable to the Bank, in order to manage its Australian dollar liquidity. The Bank's SSF Standards also require that an SSF conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks. Together, these requirements mean that Australian-licensed SSFs with payment arrangements that require Australian dollar settlement settle such obligations in RITS.

19.2 A payment system should identify material dependencies between direct and indirect participants that might affect the payment system.

Taken in combination, the requirements described in Key Consideration 19.1 mitigate the risk of material dependencies developing between direct and indirect participants that could affect RITS.

The Bank considers it unlikely that there are material dependencies that could affect RITS between RITS members that are indirect participants that are not required to hold ESAs, and RITS members that are direct RITS participants. To enhance its visibility of indirect flows through RITS, the Bank collects information about indirect wholesale RTGS payment flows from RITS members that act as settlement agents for indirect ADI participants.

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

Given that the value of an indirect participant's wholesale RTGS payments must be less than 0.25 per cent of total wholesale RTGS payments, it is unlikely that such a participant would be large relative to the direct participant it uses as an agent. The design of RITS also encourages direct participation by reducing the liquidity required for direct participation through liquidity-saving features, which are described in Appendix A, section A.4.

19.4 A payment system should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.

The Bank monitors compliance with its ESA policy, which mitigates the potential for risks to arise from tiered participation arrangements, on an ongoing basis. The Bank also reserves the right to review the ESA policy as necessary.

21. Efficiency and Effectiveness

A payment system should be efficient and effective in meeting the requirements of its participants and the markets it serves.

Rating: Observed

21.1 A payment system should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.

The Bank holds RITS User Group forums every six months. These forums provide an opportunity to discuss issues of strategic importance to RITS and its members. The Bank liaises closely with the industry through AusPayNet and the Australian Financial Markets Association (AFMA). The Bank also consults with RITS members on strategic initiatives.

21.2 A payment system should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk management expectations, and business priorities.

The Bank's objectives in developing and operating RITS are clearly defined (see Key Consideration 2.1). The Bank sets goals relating to minimum service levels and risk management (see Key Consideration 17.3). A key business priority for RITS is to meet the changing needs of members in the payments system. The Bank communicates its business priorities for RITS through public consultation, RITS User Group forums, direct consultations with RITS members, and liaison with industry through AusPayNet and AFMA.

The Bank publishes its corporate plan on an annual basis. This document outlines the Bank's strategic plan, including its mission and key objectives. It also includes key activities and performance measures and targets in respect of operating RITS.⁷⁷

21.3 A payment system should have established mechanisms for the regular review of its efficiency and effectiveness.

The Bank has processes in place to ensure that RITS is operated in an efficient manner. These include regular internal audits of the functional areas involved in the operation of RITS, which are presented to the Bank's Audit Committee, and performance evaluations of Payments Settlements Department management against their position descriptions. A key metric for the review of the effectiveness of Payments Settlements Department is its operational performance. This is reported to the Bank's Executive Committee on a quarterly basis.

Feedback from periodic liaison with stakeholders at RITS User Group forums and industry liaison through AusPayNet and AFMA are also key inputs into reviews of the effectiveness of RITS. The Bank also carries out ad-hoc reviews of and implements required upgrades to the technologies and internal business processes that support RITS to ensure the continued effectiveness of the system.

The Bank publishes an annual performance statement as part of its annual report. This includes the Bank's results regarding the performance measures and targets set in the corporate plan in respect of operating RITS.

22. Communication Procedures and Standards

A payment system should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.

Rating: Observed

22.1 A payment system should use, or at a minimum accommodate, internationally accepted communication procedures and standards.

The majority of wholesale payment messages sent to RITS – by both volume and value – are sent using the internationally accepted SWIFT message standards and network.⁷⁸ Wholesale RTGS

⁷⁷ The RBA 2020/21 Corporate Plan is available at <<https://www.rba.gov.au/about-rba/corporate-plan.html>>

⁷⁸ FSS transactions are not included in this calculation.

payment instructions can be submitted to RITS for settlement on the System Queue via two linked external feeder systems – SWIFT PDS and Austraclear – or entered into RITS directly.

Messages sent to RITS via the SWIFT PDS use SWIFT MT message standards and are transmitted over the SWIFT network.⁷⁹ The AIF – which members can use to access information on their payments, receipts and liquidity in real time, receive end-of-day ESA statements and submit commands to manage queued payments – also uses SWIFT message standards and is accessed via the SWIFT network.

The procedures and standards used to submit payments messages to Austraclear are determined by ASX.⁸⁰ Notwithstanding this, members can use the RITS User Interface or the AIF to control the status of payments sent via the Austraclear feeder system.

Wholesale interbank RTGS payments submitted to the System Queue can be manually entered directly into RITS using the RITS User Interface, which can also be used to perform enquiries, download reports and manage transactions. The RITS User Interface is a browser-based interface that can be accessed over the internet.

Messages sent to RITS via the NPP feeder system use ISO20022 message standards and are transmitted over the domestic SWIFT network.

23. Disclosure of Rules, Key Procedures and Market Data

A payment system should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the payment system. All relevant rules and key procedures should be publicly disclosed.

Rating: Observed

23.1 A payment system should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.

The RITS Regulations and associated contractual arrangements are clear and comprehensive, and are available to the public on the Bank's website. The RITS Regulations are supplemented by information papers and user guides that explain RITS requirements and functions.

23.2 A payment system should disclose clear descriptions of the system's design and operations, as well as the payment system's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the payment system.

The Bank provides operationally active members with information papers and user guides that contain detailed descriptions of RITS's features and instruction on how to use them.

23.3 A payment system should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the payment system's rules and procedures and the risks they face from participating in the payment system.

79 There is work underway to migrate the SWIFT messages used by RITS from the current MT standard to ISO 20022 (see section 3.4.1).

80 ASX also controls the procedures and standards for payment messages through a third RTGS feeder system, CHES-RTGS, which is currently not used.

The Bank provides member training and monitors members' operations to ensure that the RITS rules, procedures and features are well understood. Training is provided to all new operationally active members, and is offered to all members when new functionality is introduced. Refresher training is available upon request.

Training consists of presentations by the Bank on the key features of RITS, as well as the opportunity to be guided through transaction input and management in a test environment. Members also have access to a RITS test environment on an ongoing basis to help them gain familiarity with RITS. The Bank has established the RITS Help Desk to provide ongoing operational assistance to RITS members. The Help Desk provides support on a 24/7 basis.

23.4 A payment system should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The payment system should provide clear descriptions of priced services for comparability purposes.

The RITS fees schedule is publicly available on the Bank's website.⁸¹ This schedule provides fees at the level of individual services and provides clear descriptions of priced services. There are no discounts on RITS fees.

23.5 A payment system should complete regularly and disclose publicly responses to the CPMI-IOSCO Disclosure Framework for financial market infrastructures. A payment system also should, at a minimum, disclose basic data on transaction volumes and values.

The assessment of RITS against the Principles is published on the Bank's website.⁸² This report addresses all of the matters identified in the Disclosure Framework. The Bank also publishes on its website monthly data on the number and value of RITS payments, as well as a list of RITS members.⁸³ RITS payments data are also published by the Bank for International Settlements in the *Statistics on Payment, Clearing and Settlement Systems in the CPMI Countries* on an annual basis.⁸⁴

81 The RITS fee schedule is available at <<https://www.rba.gov.au/payments-and-infrastructure/rits/membership/schedule-fees.html>>.

82 Current and previous Assessments of RITS are available at <<https://www.rba.gov.au/payments-and-infrastructure/rits/self-assessments/>>.

83 Monthly RITS transaction data is available in C7 Real-time Gross Settlement Statistics of the RBA Statistical Tables at <<https://www.rba.gov.au/statistics/tables/>>. A list of RITS members is available at <<https://www.rba.gov.au/payments-and-infrastructure/rits/membership/membership-list.html>>.

84 These data are available at <<https://www.bis.org/cpmi/paysysinfo.htm>>