

# 2015 Assessment of the Reserve Bank Information and Transfer System

November 2015

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# 1. Introduction and Executive Summary

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A key element of the Payments System Board's (the Board) responsibility for the safety and stability of payment systems in Australia is oversight of systemically important payment systems. Currently, the Bank considers that the Reserve Bank Information and Transfer System (RITS) is the only domestic systemically important payment system for which an assessment against international principles is necessary. This reflects the fact that RITS accounts for the majority of interbank settlements in Australia, and that RITS has a central role in settling time-critical payments and payment obligations arising in other financial market infrastructures (FMIs).

In light of this, the Bank has committed to assess RITS annually against the Principles within the *Principles for Financial Market Infrastructures* (the Principles), developed by the Committee on Payment and Market Infrastructures (CPMI) and the Technical Committee of the International Organization of Securities Commissions (IOSCO).<sup>1</sup>

This report presents the third Assessment of RITS against the Principles. This Assessment has been carried out independently by the Bank's Payments Policy Department in accordance with the approach and rating system set out in the *Principles for Financial Market Infrastructures: Disclosure framework and assessment methodology* (the Disclosure Framework) produced by CPMI and IOSCO in December 2012.<sup>2</sup>

This Assessment concludes that RITS observed all of the relevant Principles. In the spirit of continuous improvement, however, a number of recommendations have been made.

## 1.1 Background

RITS is owned and operated by the Bank. The Bank seeks to ensure effective oversight of RITS by separating the Bank's operational and oversight functions, as well as by transparent Assessments against international standards. This report has been produced by the Bank's Payments Policy Department, which is the functional area responsible for oversight of the payments system, drawing on information provided by the Bank's Payments Settlements Department, which is the functional area responsible for operating RITS (see Section A.1 for further background on the governance and oversight of RITS). It has been endorsed by the Board.

This Assessment focuses on the critical services provided by RITS; in particular, RITS's role as a real-time gross settlement (RTGS) system. In RTGS systems, individual payments are processed and settled continuously and irrevocably in real time. RITS also has a role in the settlement of interbank payment obligations arising from net settlement systems, which is discussed where relevant. To the extent that

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<sup>1</sup> The Joint Statement by the RBA and ASIC, *Implementing the CPSS-IOSCO Principles for Financial Market Infrastructures in Australia*, is available at <<http://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/principles/implementation-of-principles.html>>.

<sup>2</sup> CPSS-IOSCO (2012), *Principles for Financial Market Infrastructures: Disclosure framework and assessment methodology*, December, available at <<http://www.bis.org/cpmi/publ/d106.htm>>.

the matters covered by the Principles are managed outside of Payments Settlements Department, these have also been considered in the Assessment.

## 1.2 Material Developments

This Assessment was conducted during the 12 months to the end of October 2015 (the Assessment period) and covers developments since the last Assessment of RITS, published in December 2014. The key developments are:

- the continued development of a revised version of the RITS Regulations, with a view to improving their clarity
- the initiation of two projects to assess RITS's operational resilience, with respect to:
  - the adequacy of mechanisms in place to prevent a cyber-related incident, including a comprehensive program of penetration testing
  - RITS's ability to detect and recover from a disruption of service, or loss of software or data integrity, resulting from a wide range of operational incidents, including a cyber attack
- the collection of more detailed information on asset-backed securities to enhance the Bank's risk management when providing cash under repurchase agreements (repos) against those assets.

## 1.3 Assessment

On the basis of the evidence presented in this report, the Assessment concludes that RITS observed all of the relevant Principles in the Assessment period. The Bank nevertheless continues to work to ensure that the operation of RITS meets international best practice on an ongoing basis. Consistent with this, Payments Policy Department has made recommendations in two areas:

- *Legal basis.* The Bank should continue to work towards implementation of new RITS Regulations, with a view to improving their clarity.
- *Operational risk.*
  - The Bank should complete its analysis and testing of the mechanisms in place to prevent a cyber-related incident and consider whether additional measures need to be put in place.
  - The Bank should complete its project to review and consider options to improve RITS's ability to detect and recover from a disruption of service, or loss of software or data integrity, resulting from a wide range of operational incidents, including a cyber attack.
  - The Bank is encouraged to review its cyber-risk management arrangements in light of forthcoming CPMI-IOSCO guidance on cyber resilience for FMIs when it is published.

The remainder of this report is structured as follows. Section 2 summarises in tabular form the progress towards implementing the recommendations in the 2014 Assessment, as well as the conclusions and recommendations arising from the 2015 Assessment of RITS. Section 3 summarises material developments in relation to RITS and its operating environment since the 2014 Assessment. Where relevant, the implications for RITS's observance of the Principles, and planned enhancements, are noted. Appendix A provides background information on RITS and its operating environment. Finally, the detailed assessment of RITS against the Key Considerations for each relevant Principle is provided in Appendix B.

## 2. Summary and Review of Ratings and Recommendations

This Section summarises actions taken by the Bank since the publication of the 2014 Assessment in relation to the recommendations made in that Assessment. It also lists the recommendations arising from the 2015 Assessment of RITS against the Principles.

### 2.1 Progress against 2014 Recommendations

In the 2014 Assessment, RITS was found to have observed all of the relevant Principles. Nonetheless, recommendations were made in a number of areas to ensure that RITS's operation continued to meet international best practice. Table 1 summarises the recommendations made in the 2014 Assessment, and progress by the Bank during the Assessment period towards addressing these recommendations.

**Table 1: Summary of Progress against 2014 Recommendations**

Recommendation	Principle	Progress
The Bank should continue its review of the RITS Regulations, with the aim of identifying any areas where the clarity of the RITS Regulations could be improved.	1. Legal basis	Partly addressed.  The Bank has developed a revised version of the RITS Regulations. The revised version is designed to ensure that the clarity of the Regulations is improved, as well as making it easier to amend the Regulations to incorporate new services. Following consultation with participants, the Bank expects to adopt the new RITS Regulations in 2016.
The Bank should keep under continued review its approach to cyber security, and in particular its mechanisms for prevention and detection, and its plans to recover from a cyber-related incident	17. Operational risk	Partly addressed.  During the Assessment period the Bank initiated a project to review and test the mechanisms in place to prevent a cyber-related incident. The first stage of this project involves a review of risks and a stocktake of existing security controls. The next stage will involve a comprehensive program of penetration testing. Based on the findings from the review and testing, the Bank will consider whether additional measures need to be put in place.
The Bank should examine the benefits, challenges and costs of implementing a range of measures that could further enhance the resilience of RITS and facilitate timely recovery from an operational incident.	17. Operational risk	The Bank also initiated a project to review and consider options to improve RITS's ability to detect and recover from a disruption of service, or loss of software or data integrity, resulting from a wide range of operational disruptions, including a cyber attack. This project will include the identification of additional measures that could improve RITS's resilience in this area and an examination of the benefits, challenges and costs of implementing them.  Both projects are expected to be completed in 2016.

Recommendation	Principle	Progress
The Bank should continue to monitor RITS participants' compliance with the new RITS participant Business Continuity Standards.	17. Operational risk	Addressed.  The Bank received participants' latest annual self-certification statements against the new standards as at the end of 2014, at which time 48 of 58 RITS participants were compliant with the standards. Almost all of the remaining participants indicated that they expected to be compliant by the end of the transition period. The Bank will verify this when participants' provide their next self-certification statements in early 2016.

## 2.2 2015 Ratings and Recommendations

The following table summarises the 2015 Assessment of RITS against the Principles.<sup>3</sup> In its Assessment, Payments Policy Department have applied the approach and rating system set out in the Disclosure Framework. Under this rating system, an FMI's observance of a standard may be rated as:

**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.

RITS was found to observe all of the relevant Principles. The Bank nevertheless has governance arrangements in place to motivate and encourage continuous improvement in RITS. Reflecting existing plans and matters identified in the Assessment, Table 2 sets out recommendations in some specific areas. The recommendations in the table are discussed in more detail in Section 3 and in Appendix B.

**Table 2: RITS Ratings and Recommendations**

Principle	Rating	Recommendation
1. Legal basis	Observed	The Bank should continue to work towards implementation of new RITS Regulations, with a view to improving their clarity.
2. Governance	Observed	
3. Framework for the comprehensive management of risks	Observed	

<sup>3</sup> The *Principles for Financial Market Infrastructures*, developed jointly by CPMI and IOSCO, are available at <<http://www.bis.org/publ/CPMI101a.pdf>>.

<b>Principle</b>	<b>Rating</b>	<b>Recommendation</b>
4. Credit risk	Observed	
5. Collateral	Observed	
6. Margin	Not applicable	
7. Liquidity risk	Observed	
8. Settlement finality	Observed	
9. Money settlements	Observed	
10. Physical deliveries	Not applicable	
11. Central securities depositories	Not applicable	
12. Exchange-of-value settlements	Not applicable	
13. Participant default rules and procedures	Observed	
14. Segregation and portability	Not applicable	
15. General business risk	Observed	
16. Custody and investment risks	Observed	
17. Operational risk	Observed	<p>The Bank should complete its analysis and testing of the mechanisms in place to prevent a cyber-related incident and consider whether additional measures need to be put in place.</p> <p>The Bank should complete its project to review and consider options to improve RITS's ability to detect and recover from a disruption of service, or loss of software or data integrity, resulting from a wide range of operational incidents, including a cyber attack.</p> <p>The Bank is encouraged to review its cyber-risk management arrangements in light of forthcoming CPMI-IOSCO guidance on cyber resilience for FMIs.</p>
18. Access and participation requirements	Observed	
19. Tiered participation arrangements	Observed	
20. FMI links	Not applicable	
21. Efficiency and effectiveness	Observed	
22. Communication procedures and standards	Observed	
23. Disclosure of rules, key policies and procedures, and market data	Observed	
24. Disclosure of market data by trade repositories	Not applicable	



### 3. Material Developments

This Section draws out the material developments relevant to RITS and its operating environment since the 2014 Assessment. While the Assessment period was the 12 months to the end of October 2015, material developments since then are also described. To the extent that these developments, and planned enhancements, have implications for RITS's observance of the Principles, these are noted. Over the Assessment period, there have been material developments that are relevant to the Principles concerning legal basis (Principle 1), operational risk (Principle 17), and credit risk and collateral (Principles 4 and 5). To complement this Section, background information on how RITS operates is set out in Appendix A. A detailed Assessment of how RITS meets the Principles is presented in Appendix B, which has been updated to reflect developments discussed in this Section.

There are a number of areas in which the application of the Principles necessarily differs for central bank-owned systems. In preparing the 2013 and 2014 Assessments, the Bank relied on its own judgement regarding how the Principles should be applied to RITS. In August 2015, CPMI and IOSCO published guidance on the application of the Principles to central bank FMIs (see Box A). The guidance is largely consistent with how the Bank applied the Principles, based on its own judgement, in previous Assessments. The current Assessment of RITS against the Principles has nevertheless been updated to reflect the detailed provisions in the new guidance (see Appendix B).

#### **Box A: Application of the Principles to Central Bank FMIs**

In August 2015, CPMI and IOSCO published guidance that clarifies how the Principles should be applied to an FMI that is owned and operated by a central bank.<sup>1</sup> The guidance confirms that, in general, the Principles are applicable to FMIs operated by central banks, with the exception that the requirements:

- to prepare recovery and orderly wind-down plans, and support resolution planning or intervention by a resolution authority, do not apply (Principle 3, Key Consideration 4)
- to hold ring-fenced liquid net assets funded by equity to cover business risk and support a recovery or wind-down plan (Principle 15, Key Considerations 2 to 4), and to maintain a plan to raise additional equity (Principle 15, Key Consideration 5), do not apply.

Consequently, these Key Considerations are not included in the detailed assessment in Appendix B.

In addition, the guidance states that the requirements in the Principles around governance are not intended to constrain the composition of the central bank's governing body or that body's roles and responsibilities (Principle 2, Key Considerations 3 and 4). It also notes that, regardless of the form of any central bank involvement in FMIs, nothing in the Principles is intended to constrain central bank policies on: access to central bank accounts (Principle 18); credit provision (Principle 4); eligible collateral (Principle 5); the management of participant defaults (Principle 13); its investment strategy or the disclosure of that strategy (Principle 16); or implementation of monetary policy.

<sup>1</sup> This guidance is available at <<https://www.bis.org/cpmi/publ/d130.pdf>>.

### 3.1 Activity and Participation

Around 70 per cent of the value of non-cash payments in Australia is settled on an RTGS basis in RITS (Table 3). RITS is also used to settle time-critical payments to other FMIs: Australian dollar pay-ins to CLS Bank International (CLS); margin payments to central counterparties (CCPs); and debt and equity settlement obligations in securities settlement systems. Furthermore, RITS is integral to the functioning of other payment systems, with the interbank obligations arising from non-cash retail payments also settled in RITS (see Section A.2 for further background on systems that are linked to RITS).

**Table 3: Payments in Australia**  
2014/15, daily average<sup>(a)</sup>

	Number <sup>(b)</sup> '000s	Value <sup>(b)</sup> \$ billion	Interbank settlement value in RITS \$ billion
RITS RTGS	43.9	167.8	163.3
<i>SWIFT payments (HVCS)</i>	<i>40.5</i>	<i>103.8</i>	<i>103.7</i>
<i>Debt securities (Austraclear)<sup>(c)</sup></i>	<i>3.2</i>	<i>52.0</i>	<i>47.5</i>
<i>RITS payments<sup>(d)</sup></i>	<i>0.1</i>	<i>13.2</i>	<i>13.2</i>
CLS	58.6	260.6	2.5
Retail payments	37 394.4	62.5	3.7
<i>Direct entry<sup>(e)</sup></i>	<i>12 248.9</i>	<i>55.6</i>	
<i>Cheques</i>	<i>600.7</i>	<i>4.8</i>	
<i>Credit/charge cards</i>	<i>8 610.2</i>	<i>1.2</i>	
<i>Debit cards</i>	<i>15 934.7</i>	<i>0.9</i>	
Equity settlements (CHESS)	750.6	4.4 <sup>(f)</sup>	0.5
Property settlements (PEXA)	-	-	0.01 <sup>(g)</sup>

(a) Business days

(b) Includes payments between customers of the same financial institution

(c) Excludes intraday repurchase agreements

(d) Includes RITS cash transfers, the Bank's government direct entry obligations and Low Value Settlement Service payment obligations settled individually on a bilateral net basis

(e) Includes BPay

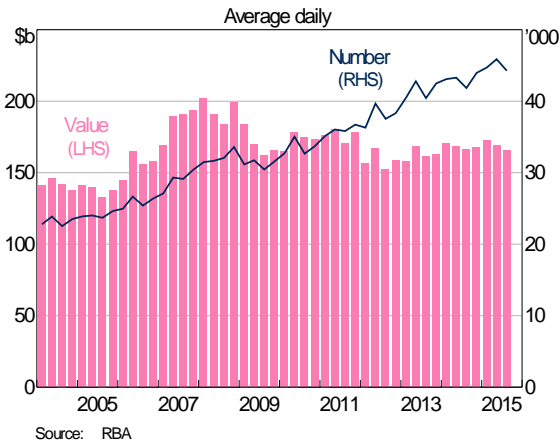
(f) Gross value of equity trades

(g) Net value of property settlement batches; each property settlement batch may involve a number of payments

Sources: ASX; CLS; RBA

Since the previous Assessment, the average value of transactions settled in RITS has been stable (Graph 1). In the 12 months to the end of October 2015, RITS settled an average daily value of over \$168 billion. Consistent with the long-term trend, volume continued to rise. Compared to the same period last year, volume grew by 5 per cent, with 45 000 transactions settled each day on average in the 12 months to the end October 2015. On the peak value day in that period, RITS settled around 49 000 RTGS transactions with a total value of \$249 billion.

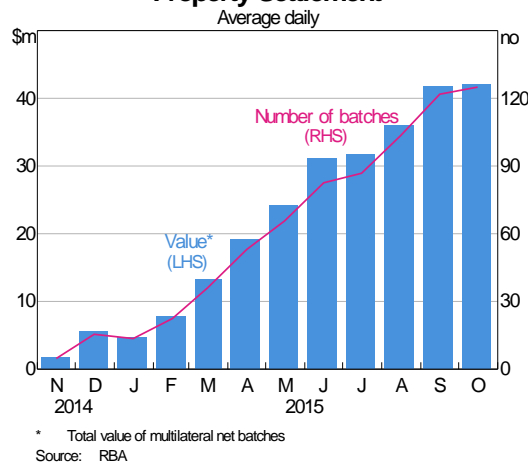
**Graph 1  
RTGS Transactions**



While RITS is primarily an RTGS system, it also facilitates the net settlement of interbank obligations arising from the equity market (through the Clearing House Electronic Sub-register System, CHES, the equities settlement system operated by ASX Settlement), retail payment systems and the property settlement system (see Section A.2 for more information on these systems). The majority of the value of payments arising from these systems is from direct entry (DE) payments.

In November 2014, property settlement functionality was introduced in RITS to support Property Exchange Australia Ltd's (PEXA's) national electronic conveyancing system. Using this functionality, PEXA can submit for settlement linked property transactions as individual multilateral net batches.<sup>4</sup> The volume and value of property batches settling in RITS has grown quickly, albeit that they remain a small proportion of activity in RITS (Graph 2). This growth is expected to continue as take-up of PEXA's system across the property industry expands.

**Graph 2  
Property Settlement**



Under the Bank's Exchange Settlement Account (ESA) access policy, authorised deposit-taking institutions (ADIs) that account for over 0.25 per cent of the total value of RTGS transactions and systemically important CCPs are required to settle their Australian dollar obligations in RITS using their

<sup>4</sup> For more information on property settlement functionality in RITS see Section 3.2.3 in RBA (2014), *2014 Assessment of the Reserve Bank Information and Transfer System*, p 13. Available at <<http://www.rba.gov.au/payments-and-infrastructure/rits/self-assessments/2014/>>.

own ESAs (See Section A.5 for further details on access and participation in RITS). An ESA holder with a share of transactions of less than 0.25 per cent of the total value of RTGS transactions is permitted to use an agent to settle its transactions. The number of participants that settle their payments indirectly through an agent has increased by two to 30, which is around a third of RITS participants (Table 4). The value of outgoing RTGS payments settled by these participants, nevertheless, has remained very low, at below 1 per cent of total RTGS payments in the 12 months to end October 2015.

**Table 4: RITS Participation<sup>(a)</sup>**

	<b>Number of ESAs</b> As at end October 2015	<b>Number of payments<sup>(b)</sup></b> Per cent, year to end October 2015	<b>Value<sup>(b)</sup></b> Per cent, year to end October 2015
Major domestic banks	4	62.4	55.0
Foreign banks	35	31.6	35.4
Other domestic institutions	14	2.6	2.9
Clearing and settlement facilities and the Bank	5	3.4	6.7
Dormant accounts <sup>(c)</sup>	30	-	-
<b>Total</b>	<b>88</b>	<b>100.0</b>	<b>100.0</b>

(a) Excludes non-transactional RITS participants as they do not hold an ESA

(b) Outgoing payments

(c) Indirect RITS participants that maintain an ESA for contingency purposes

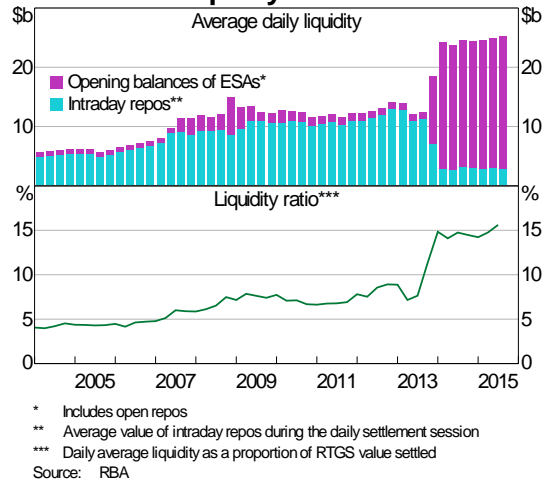
Source: RBA

During the current Assessment period RITS has admitted one new participant: the international CCP, LCH.Clearnet Ltd.<sup>5</sup> During this period, two institutions also ceased to be participants. Activity in RITS remains highly concentrated among the major domestic banks and foreign banks, both in terms of number and value of RTGS payments.

Since RITS is an RTGS system, participants need access to substantial liquidity in order to settle payments individually. Liquidity can be sourced from participants' opening ESA balances and additional funds made available to participants by the Bank via its intraday liquidity facility (see Section A.4 for details). The aggregate of opening ESA balances is primarily determined by the Bank's open market operations and liquidity provided under open repos. Open repos were introduced in November 2013 to 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. As a result of the introduction of open repos average liquidity increased sharply, but since then it has remained relatively constant at around \$24 billion (Graph 3, top panel).

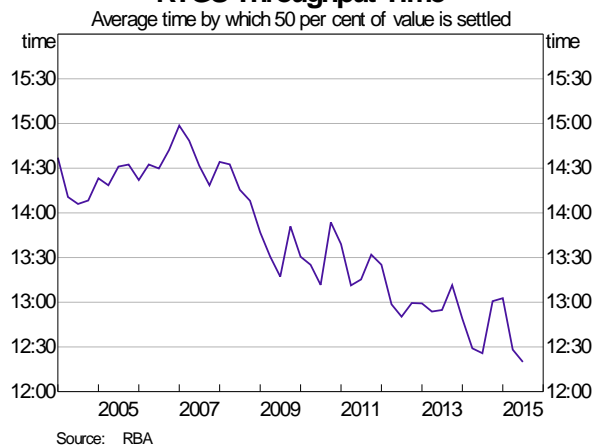
<sup>5</sup> For background on LCH.Clearnet Ltd's membership of RITS see Section 3.3.1 in RBA (2014), *2014 Assessment of the Reserve Bank Information and Transfer System*, p 16.

**Graph 3  
Liquidity in RITS**



System liquidity plays a role in the timely settlement of RTGS transactions. In general, settling payments earlier in the day is desirable as it limits the potential adverse consequences if a participant or RITS were to experience an operational issue late in the day. The ratio of system liquidity to the value of payments settled had been slowly increasing since around 2007, and then doubled as a consequence of the introduction of open repo (Graph 3, bottom panel). This is one factor that has contributed to the earlier settlement of payments in RITS. The average time of day when half of payments, by value, have settled has moved progressively earlier; from between 2.00 pm and 3.00 pm in the mid 2000s, to between around 12.15 pm and 1.15 pm in recent years (Graph 4).

**Graph 4  
RTGS Throughput Time**



### 3.2 Legal Basis

The RITS Regulations form the legal basis for all material aspects of 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.

### 3.2.1 Revised RITS Regulations

While the RITS Regulations are comprehensive, changes to functionality and activity since the launch of RITS have added to their complexity. In light of this, the Bank is undertaking a major restructure and re-write of the RITS Regulations. The main objective is to improve the clarity of the Regulations. In particular, the revised version will remove redundant concepts and simplify terminology. The revised structure is also designed to make it easier to amend the Regulations to incorporate new services. In finalising the changes, the Bank will ensure that RITS's existing legal basis remains sound and the finality of settlement of payments settled in RITS continues to be certain.

The Bank is also using this opportunity to move from the 2000 to the 2011 Global Master Repurchase Agreement (GMRA). The 2011 GMRA reflects lessons from the global financial crisis and the collapse of Lehman Brothers. It simplifies the calling of an event of default, gives the non-defaulting party more flexibility in determining the value of securities as part of the close-out procedure, and allows the close-out amount to be set off against any other amounts payable by the non-defaulting party to the defaulting party. The latest version of the GMRA also broadens the definition of 'act of insolvency', which provides the flexibility to deal with insolvency events in a wide range of jurisdictions.

In 2014, the Bank engaged a law firm to conduct the review. Since then the Bank and the law firm have been working together to develop a draft of the revised RITS Regulations. Following consultation with participants, the Bank is aiming to implement the new Regulations in 2016.

**Recommendation.** The Bank should continue to work towards implementation of new RITS Regulations, with a view to improving their clarity.

## 3.3 Operational Risk Management

### 3.3.1 Identifying and managing operational risk

The key operational target is for RITS to be available to its participants in excess of 99.95 per cent of the time. Availability is measured relative to the total number of hours that the system is open for settlement and reporting. In the nine months to the end of September 2015, the availability of Bank-operated systems fell slightly below its availability target, recording average availability of 99.77 per cent (Table 5). This was primarily because of a third-party software error on 16 February, which caused slowness and intermittent loss of connectivity to the Society for Worldwide Interbank Financial Telecommunications (SWIFT), one of the main communications networks used by RITS, for more than six hours (see Box B).<sup>6</sup> In response to the incident, the Bank has implemented a number of measures to improve the way it works with SWIFT to diagnose systems problems and recover from any disruption.

<sup>6</sup> SWIFT's availability was not affected by the 16 February incident since the software component that was affected by the disruption is hosted on the Bank's infrastructure. For further background see Section 3.3.3.

**Table 5: RITS Availability**

Per cent

	Bank-operated systems	External Feeder systems
2015 <sup>(a)</sup>	99.774	99.896
2014	99.976	99.987
2013	99.989	99.914
2012	99.948	99.818
2011	99.997	99.981
2010	99.993	99.844

(a) 1 January to 30 September 2015  
Source: RBA

### Box B: 16 February Incident

Shortly after RITS opened on 16 February, connectivity between SWIFT and RITS was interrupted for a total of just over six hours, the longest disruption to RITS's services since 2006. SWIFT's network is used to communicate information related to payment instructions originating from RITS's largest feeder system, the SWIFT Payment Delivery System (PDS).<sup>1</sup> It also facilitates the operation of the Automated Information Facility (AIF), which allows participants to automatically send and receive information to support the management of credit risk within their own systems. The disruption primarily caused delays to outward messages on the SWIFT network, which include settlement completion notifications and AIF messages. Inbound SWIFT messages, including payment instructions, were also periodically affected due to the Bank shutting down certain SWIFT-related RITS components to facilitate recovery in a controlled manner.

As soon as the disruption was identified, RITS's internal contingency procedures were initiated. Support from SWIFT was also promptly engaged. The Bank attempted to recover services over the course of several hours, but connectivity was only temporarily regained after each attempt. The Bank sent regular updates to RITS participants throughout the day via email and SMS, informing them of the status of the outage. It also consulted with a number of members during the day, including to discuss potential contingencies in the event that RITS was not able to recover.

Full recovery of SWIFT message processing was finally achieved at around 3.15 pm, and by 4.00 pm the backlog of inbound and outbound SWIFT messages had been cleared. Nonetheless, RITS's main settlement session was extended by 30 minutes to provide certainty that participants had sufficient opportunity to submit payments and receive settlement confirmations and other messages. All SWIFT messages submitted to RITS were processed successfully by the end of the day.

Extensive investigations by SWIFT and the Bank after the incident identified that the root cause was an error in third party software supplied as part of the SWIFT network interface with RITS. In response, the Bank implemented a fix to prevent the error from reoccurring. Since the incident, the Bank has also implemented a number of measures to improve the way it works with SWIFT to diagnose systems problems and recover from any disruption. Further to the implementation of these measures, if a similar disruption were to occur, it is expected that services would be restored in a more efficient and timely manner.

<sup>1</sup> For more information on RITS's feeder systems, see A.2.

There were three other incidents during the Assessment period, although none of these incidents affected RITS's availability.

RITS also has capacity targets. These include:

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

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

### **Cyber security**

Recognising the growing systemic threat originating from cyber attacks, the 2014 Assessment recommended that the Bank keep its approach to cyber security under continued review. Consistent with this recommendation, the Bank initiated a project to analyse and test the mechanisms in place to prevent a cyber-related incident. The project consists of three phases:

- *Stocktake and risk review*. The first phase involves a number of elements:
  - a reconfirmation that the points of attack, cyber threats and attack scenarios that the Bank has previously identified remain current
  - a review of the existing security controls and practices in place to protect systems from the identified threats
  - an assessment of the Bank's current ability to identify potential vulnerabilities, detect and track suspicious activity and identify any compromise or damage to its systems
  - the identification of whether there are any residual areas of vulnerability, or scope to improve existing arrangements, and a prioritisation of remedial actions based on the assessed risk of each
  - an independent assessment of RITS's cyber security control framework against both the Australian Signals Directorate's *Information Security Manual* and the US National Institute of Standards and Technology's *Framework for Improving Critical Infrastructure Cybersecurity*.
- *Penetration testing*. In the second phase, the Bank will engage a third party to perform a comprehensive program of penetration testing of RITS. To be as realistic as possible, the penetration testing will simulate the most likely attack scenarios as identified in the first phase of the project. This testing will reconfirm that the controls identified in the stocktake have been accurately and successfully implemented and work effectively in practice. It will also be designed to ensure that the Bank's multiple layers of security controls are tested.
- *Further enhancements*. While any significant exposures found during the first two phases will be investigated and remedied immediately, this phase will use the outcomes of the first two phases to inform recommendations on additional measures to improve RITS's security controls.

This project is expected to be completed in 2016.

**Recommendation.** The Bank should complete its analysis and testing of the mechanisms in place to prevent a cyber-related incident and consider whether additional measures need to be put in place.



### **CPMI-IOSCO guidance on cyber resilience**

In November 2015, CPMI and IOSCO released draft guidance in the area of cyber resilience for consultation.<sup>7</sup> The guidance supports relevant requirements in the Principles, but does not introduce new requirements. The guidance is also intended to help FMIs enhance their cyber resilience and provide a framework for supervisory dialogue. The guidance addresses five primary risk management categories: governance; identification; protection; detection; and response and recovery. Guidance is also provided on three overarching components relevant to an FMI's cyber-security framework: testing; situational awareness; and learning and evolving. The guidance is expected to be finalised in the first half of 2016. In light of this, Payments Policy Department encourages the Bank to review its cyber-risk management arrangements.

**Recommendation.** The Bank is encouraged to review its cyber-risk management arrangements in light of forthcoming CPMI-IOSCO guidance on cyber resilience for FMIs.

### **Project management**

In 2015, the Bank completed its implementation of an enhanced enterprise-wide project management framework. This framework includes guidance to ensure internal consistency in the way project risks are managed, as well as the governance arrangements for projects. The framework is aligned to widely used industry best practice, including the PRINCE2 framework. The framework is supported by the Enterprise Project Management Office (EPMO), which was established in 2014. The EPMO provides analysis, including on risk, and status reports to the Bank's executives on the major initiatives. It also provides advice and support to Bank staff working on projects.

### **3.3.2 Business continuity arrangements**

Business continuity arrangements in RITS include detailed contingency plans, which are updated at least annually and are tested regularly. Depending on the nature of the operational disruption, recovery time is targeted at equal to or less than 40 minutes. Core business data are protected through synchronous mirroring to a geographically remote second site. This is achieved through the use of specialised database technology, which has automated failover capabilities so that, in the event of a site outage, no data would be lost when switching to the second site. This technology is also designed to be resilient to the failure of individual system components. Full redundancy exists at both sites, ensuring that there is no single point of failure at either site. Both sites are permanently staffed and, since late 2009, live operations have been rotated between the two sites on a regular basis. Staff rotations and cross-training ensures that critical functions are not dependent on particular individuals. The Bank also has succession-planning processes in place for key positions.

### **Recovery**

While redundancy and synchronous mirroring are useful tools in the event of a physical disruption, these design features may not be effective measures to recover from software issues or certain data corruptions. With this in mind, in recent years, a few overseas central banks have implemented, or announced plans to implement, 'non-similar facilities' to enhance their contingency arrangements for

<sup>7</sup> CPMI-IOSCO (2015), *Consultative Report: Guidance on cyber resilience for financial market infrastructures*, November, available at <<http://www.bis.org/cpmi/publ/d138.htm>>.

such scenarios.<sup>8</sup> In response to these developments, the 2014 Assessment recommended that the Bank examine the benefits, challenges and costs of implementing a range of measures that could further enhance the resilience of RITS and facilitate timely recovery from an operational incident.

Consistent with this recommendation and its ongoing commitment to enhance the resilience of RITS, the Bank has initiated a project to review and consider the options to improve RITS's ability to detect and recover from a disruption of service, or loss of software or data integrity, in the event of a wide range of operational incidents, including a cyber attack. The project will cover:

- detection of a loss of integrity
- investigation, analysis and diagnosis of the cause of the loss of integrity
- recovery options
- communication with internal and external stakeholders
- resumption of normal operations and post-incident investigation.

The project includes a stocktake of RITS's existing capabilities to detect and recover from a disruption. This includes an assessment of whether these capabilities would be sufficient in a wide range of scenarios in which the integrity of RITS might be compromised. The project will also consider the benefits, challenges and costs of a range of measures that could potentially be implemented to improve RITS's capabilities in this area. This will include the consideration of 'non-similar' system components to improve resilience and RITS's ability to recovery. The analysis will then be used to develop recommendations for future work to improve RITS's resilience. The project is expected to be completed in 2016.

**Recommendation.** The Bank should complete its project to review and consider options to improve RITS's ability to detect and recover from a disruption of service, or loss of software or data integrity, resulting from a wide range of operational incidents, including a cyber attack.

### ***Contingency settlement arrangements***

Even if there was an extreme scenario 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 payments settled in RITS, could 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. During the Assessment period, the Bank initiated a project to renew these contingency settlement arrangements.

The first part of this project, which has been completed, involved the development of new processes to receive advice of bilateral obligations from participants and feeder systems and calculate the resulting multilateral net obligations for input into RITS as a batch. In addition, the RITS participant procedures, which set out what participants should do in various types of contingency events, were revised to reflect the new processes. As part of this body of work, an end-to-end test of the new contingency settlement arrangements for SWIFT PDS was successfully completed by the Australian

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<sup>8</sup> For more information on non-similar facilities, see Section 3.8.2 in RBA (2014), *2014 Assessment of the Reserve Bank Information and Transfer System*, December, p 26. Available at <<http://www.rba.gov.au/payments-and-infrastructure/rits/self-assessments/2014/>>.

Payments Clearing Association (APCA); this included participation by the Bank and a number of RITS participants.

In a second part of this project, the Bank will evaluate whether any refinements to existing contingency arrangements are needed to ensure that clearing and settlement operations could continue in the event that RITS or its external feeder systems were unavailable. This work is expected to be undertaken alongside the review of RITS's ability to detect and recover from a disruption of service, or loss of software or data integrity.

### 3.3.3 External systems and other dependencies

External RTGS feeder systems to RITS consist of Austraclear and SWIFT. In the nine months to September-2015, the combined availability of the Austraclear system and SWIFT services was 99.9 per cent (see Table 5, above).<sup>9</sup> The Bank has entered into agreements with these service providers, which set out the expected response times and level of support should an issue arise. RITS also has critical dependencies on utility providers. To manage these dependencies, each site has an uninterruptable power supply and a backup power generator system. All external communications links to data centres are via dual, geographically separated links.

The efficient operation of RITS is also dependent on the operational reliability and resilience of its participants. In particular, an operational disruption at a participant could prevent it from sending payment instructions to RITS. This could in turn cause liquidity to accumulate in that participant's ESA, forming what is known as a 'liquidity sink', and preventing liquidity from being recycled through the system efficiently. Recognising this dependency, in May 2013 the Bank published its Business Continuity Standards for RITS participants, with a target for compliance to be achieved by September 2015. 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.<sup>10</sup>

As recommended in the 2014 Assessment, the Bank has continued to monitor RITS participants' compliance with the standards. The Bank received participants' latest annual self-certification statements against the new standards as at the end of 2014, at which time 48 of 58 RITS participants were compliant with the standards. Almost all of the remaining participants indicated that they expected to be compliant by the end of the transition period. The Bank will verify this when participants' provide their next self-certification statements in early 2016.

## 3.4 Credit Risk and Collateral

The Bank is not exposed to any financial risks from the settlement of payments in RITS. The Bank does, however, incur credit risk through the provision of liquidity to participants through Standing Facilities to support payments and settlement activity (for more information on the Standing Facilities see Section A.4). It manages this credit risk by purchasing securities under repos. By lending on a collateralised basis, the Bank would only face a loss if a RITS participant failed to repurchase securities sold under repo and the market value of the securities fell to less than the agreed repurchase amount.

<sup>9</sup> The availability of Austraclear was above its availability target of 99.9 per cent, which is set out in its service level agreement with the Bank.

<sup>10</sup> For more information on the participant Business Continuity Standards, see Box E: Participant Business Continuity Standards in RBA (2013), *2013 Self-assessment of the Reserve Bank Information and Transfer System*, p 27, available at <<http://www.rba.gov.au/payments-and-infrastructure/rits/self-assessments/2013/>>.

To manage the latter risk, the Bank only purchases selected highly rated debt securities denominated in Australian dollars. These securities are conservatively valued, and subject to haircuts and daily margin maintenance.

As noted in the CPMI-IOSCO guidance on the application of the Principles to central bank FMIs, nothing in the Principles is intended to constrain central bank policies on credit provision or eligible collateral. However, on the basis of its own risk appetite and monetary policy objective, the Bank has implemented enhancements to its risk management over the Assessment period.

### 3.4.1 Asset-backed securities

As discussed in the 2014 Assessment, since October 2008, the Bank has permitted the use of certain related-party assets issued by bankruptcy remote vehicles, such as self-securitised residential mortgage backed securities (RMBS), as collateral in its Standing Facilities. This was in recognition of the relative scarcity of Australian dollar government, semi-government and bank-issued debt securities. The Bank's exposure to these related-party assets increased materially due to the introduction of open repos in November 2013. Since 2014, around 90 per cent of the outstanding amount of open repos has been collateralised by self-securitised assets.

Since it began accepting these assets, the Bank has applied rigorous risk management controls. These controls include a minimum credit rating, the imposition of an additional haircut and additional reporting requirements. To further reinforce its risk management of these securities, as well as asset-backed securities more broadly, since 30 June 2015 the Bank has required issuers of asset-backed securities to provide more detailed information in order for these securities to be eligible for use in the Bank's operations.<sup>11</sup>

The additional information, which must be kept up to date, covers both transaction-related data and information on the underlying assets. These data have enabled the Bank to refine the methodology it uses to value and apply margins to self-securitised RMBS, for which there are no market prices, as well as other asset-backed securities. Another objective of the enhanced reporting requirements is to promote greater transparency in the securitisation market. To this end, the Bank has required that certain information be made publicly available if securities are to be eligible for use in the Bank's operations.

### 3.4.2 Eligible counterparties

To enter into a repo with the Bank, an entity must be a RITS participant and be 'approved' as a repo counterparty by the Bank's Domestic Markets department. To access the Bank's Standing Facilities, an approved counterparty must also settle its payments across its own ESA.

To provide further clarity to interested parties, the Bank has recently updated its counterparty eligibility criteria. To be an approved counterparty, the previous criteria set out that a counterparty must be a member of Austraclear and be subject to 'appropriate regulation'. The updated guidance:

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<sup>11</sup> For more information, see Aylmer C (2013), 'Developments in Secured Issuance and RBA Reporting Initiatives', Address to the Australian Securitisation Forum, Sydney, 11 November. Available at <<http://www.rba.gov.au/speeches/2013/sp-so-111113.html>>.

- clarifies that the broad objective of the eligibility criteria is that approved counterparties should be financial service providers that contribute to the stability and efficiency of the Australian financial and payments system
- clarifies that the legal entity holding the Austraclear account must be identical to the legal entity that is a participant in RITS
- provides additional guidance on what constitutes an appropriate level of regulation; this includes that an entity regulated by the Australian Prudential Regulation Authority (APRA) or clearing and settlement (CS) facility is deemed to be subject to an appropriate level of regulation.

Since the update was largely to clarify the Bank’s eligibility criteria, it generally has not changed RITS participants’ ability to access the Bank’s Standing Facilities.

### 3.5 New Payments Platform

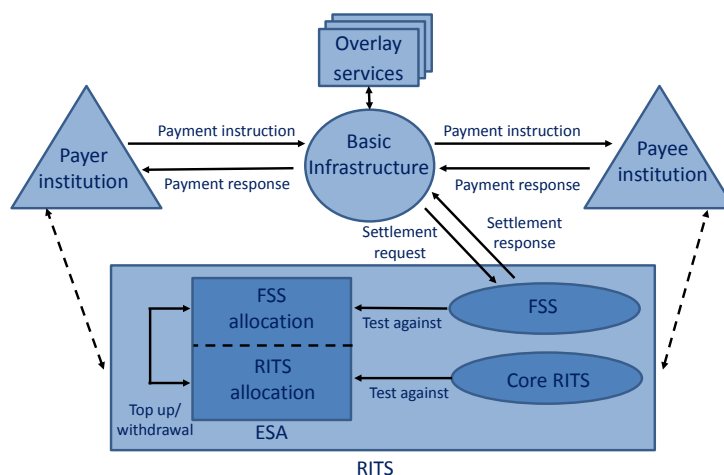
Over the Assessment period, the Bank has continued to contribute to industry efforts to develop the New Payments Platform (NPP). The NPP is being built to meet the remaining objectives arising from the Board’s Strategic Review of Innovation in the Payments System. These objectives include the ability to:

- make real-time retail payments
- make and receive low-value payments outside normal banking hours
- send more complete remittance information with payments
- address payments in a relatively simple way.

#### 3.5.1 Fast Settlement Service

To facilitate the final and irrevocable settlement of payments processed by the NPP, the Bank is designing and building the Fast Settlement Service (FSS), which is expected to operate 24 hours a day, 7 days a week. The FSS will be a RITS service, owned and operated by the Bank (Figure 1). As a RITS service, it is expected that direct users of the FSS will be RITS participants and as a result be bound by the RITS Regulations.

**Figure 1: The New Payments Platform**



Source: RBA

Although it is planned that the FSS will use some of the existing RITS infrastructure, the systems are expected to operate on separate platforms so that RITS's core settlement service and the FSS will be able to process and settle payments independently of one another. Each RITS participant will continue to have only one ESA; however, ESA balances will be divided between an 'FSS allocation' and a 'RITS allocation'. FSS payments will only be tested for settlement against the FSS allocation, and payments sent to RITS's core settlement service will only be tested for settlement against the RITS allocation. During the operating hours of RITS's core settlement service, participants will manage the distribution of their ESA balances between their FSS and RITS allocations (see Section A.5 for details of RITS operating hours). Outside the operating hours of RITS's core settlement service, overnight and on weekends for example, it is expected that an ESA holder's entire ESA balance will be available for FSS settlements.<sup>12</sup>

The governance of the project to develop the FSS is supported by the Bank's enterprise-wide project management framework (for more information about this framework see Section 3.3.1). To develop the FSS, the Bank is primarily relying on its existing resources. Nonetheless, the Bank is hiring additional staff to further support the FSS's development and operation on an ongoing basis. These resources will help ensure that the operation of the core RTGS settlement service is not adversely affected by the increasing scope of RITS's services.

### 3.5.2 Other NPP components

In December 2014, 12 ADIs and the Bank committed funding for the design, development and operation of the other main components of the NPP. These institutions became the founding members of NPP Australia Limited – a new industry mutual company set up by APCA to steer the design and development of the NPP.

In December, NPP Australia Limited also signed a 12-year contract with SWIFT to design, build and operate the Basic Infrastructure. This will be the central utility that will connect participating financial institutions and other approved entities, allowing payment and settlement messages to flow between participants. In July, NPP Australia Limited accepted the high-level technical and operational design of the Basic Infrastructure. SWIFT has now started building the Basic Infrastructure, in cooperation with the 12 ADIs and the Bank. SWIFT has sub-contracted the development and support of the addressing component of the Basic Infrastructure – which will facilitate the easy addressing of payment messages to any recipient – to a third-party, Fiserv.

The Basic Infrastructure will be capable of supporting various 'overlay' services – that is, tailored commercial payment services which participants can choose to make available to their customers. The industry has chosen BPAY to provide the first commercial overlay to use the NPP infrastructure – the Initial Convenience Service (ICS). The ICS will develop three services: a basic fast payment; a payment with a document (to be accessed via a secure document reference service); and a 'request and pay', which will allow a payee to initiate a payment by sending a request to the customer.

The launch of the NPP is scheduled for 2017.

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<sup>12</sup> For more information on how participants will be able to access and manage liquidity in the FSS, see Section 3.2.2 in RBA (2014), *2014 Assessment of the Reserve Bank Information and Transfer System, December*, p 12.

### 3.5.3 Out-of-hours liquidity

Since the NPP will operate on a 24/7 basis, payments may be initiated at a time when ADIs do not have access to wholesale funding sources, particularly the capacity to settle securities transactions in Austraclear. Liquidity from open repos will be the primary tool available to an ADI to manage its liquidity risk outside of RITS's and Austraclear's operating hours. When the NPP is launched, each NPP participant would be expected to establish a sufficiently large open repo position with the Bank to meet projected payment flows, including in peak transaction scenarios. As a result, the size of participants' existing open repo positions is likely to increase.

However, even if participants conservatively pre-position liquidity via their open repo positions, there remains a risk that ESA funds could be depleted if an ADI experienced significant liquidity stress. The Bank, in consultation with APRA, is consulting with NPP participants on potential additional measures to manage this risk.

# Appendix A: Background Information

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RITS is Australia's RTGS system. It is operated by the Bank and settles transactions across ESAs held at the Bank. In RTGS systems, individual payments are processed and settled continuously and irrevocably in real time. RTGS was introduced in Australia in June 1998 to eliminate the settlement risk associated with deferred net settlement of high-value interbank payments and to promote the overall efficiency of Australia's wholesale payments system. This background section presents an overview of the operational arrangements and key design features of RITS. Material changes to RITS since the 2014 Assessment are discussed in Section 3.

## A.1 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.<sup>13</sup> 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 settlements 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 the Bank's most senior executives. Day-to-day operations, liaison with participants, 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 Board has ultimate responsibility.<sup>14</sup> In 2014, the Executive Committee established an internal FMI Oversight Committee to govern oversight activities within this framework. This Committee is chaired by the Assistant Governor (Financial System) and includes a further five senior members of Bank staff with relevant experience.

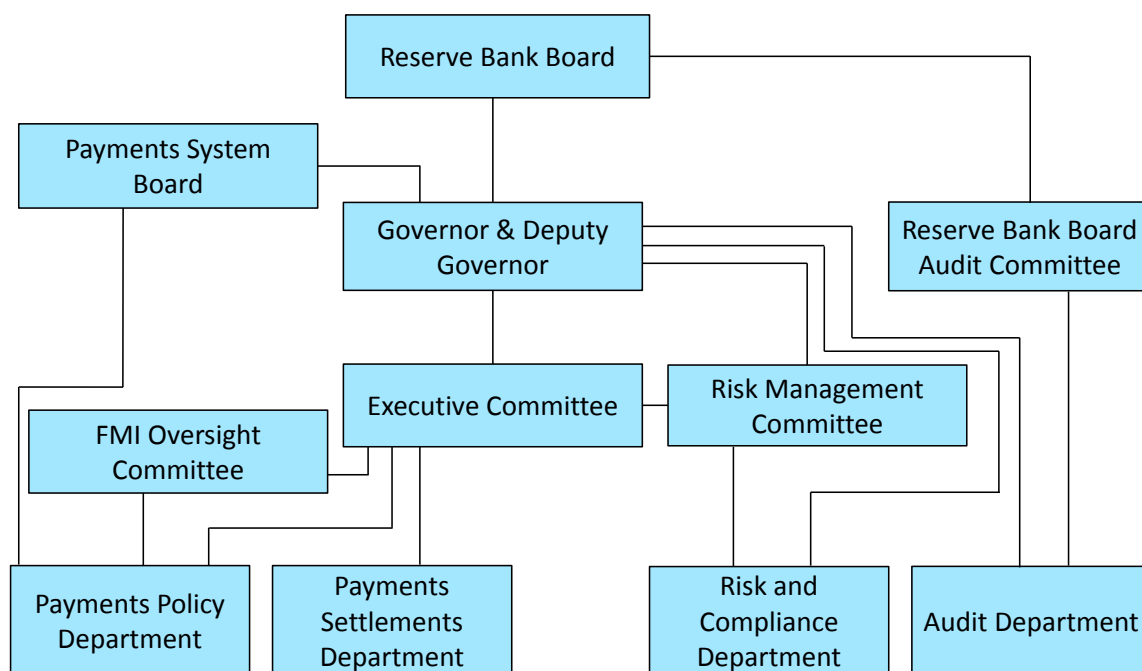
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<sup>13</sup> Available at <<http://www.rba.gov.au/payments-and-infrastructure/rits/about.html>>.

<sup>14</sup> 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 Structure for Payments System Issues**



Source: RBA

## A.2 Systems Linked to RITS

RTGS payment instructions can be submitted to RITS directly (as two-sided payments known as RITS cash transfers), or through two feeder systems: SWIFT PDS and Austraclear. The SWIFT PDS is a closed user group administered by APCA, which sets rules and procedures for clearing payments in Australia through its High Value Clearing System (HVCS). The SWIFT PDS is used primarily to make one-sided 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. 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 Ltd) use these feeder systems to settle Australian dollar obligations arising from the systems they operate.

While RITS is primarily an RTGS system, it also facilitates the multilateral net settlement of interbank obligations arising from other systems (Table A.1). The settlement of obligations arising in the retail payment systems administered by APCA is facilitated by the Bank's Low Value Settlement Service

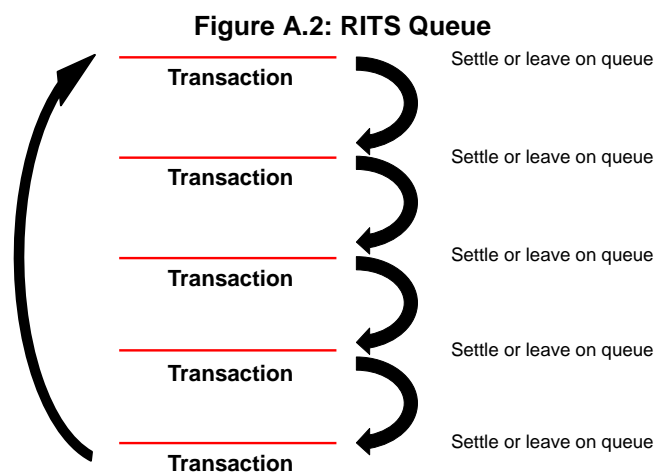
(LVSS) in RITS.<sup>15</sup> All other multilateral net batches are administered by ‘batch administrators’ and entered into RITS through its batch feeder functionality.<sup>16</sup>

**Table A.1: List of Multilateral Net Batches in RITS**

Linked system	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 subject to the Bank's <i>Financial Stability Standards for Securities Settlement Facilities</i> .
Low Value Settlement Service	Cheque, DE (including the BPAY system) and card transactions.	Each retail payment system has its own rules and procedures. These rules and procedures are determined by the system administrator (e.g. APCA), in consultation with its members.
MasterCard Batch	MasterCard brand credit and debit card payments.	MasterCard is a privately owned company incorporated in the US and listed on the New York Stock Exchange
PEXA Batches	Property transactions.	PEXA is owned by the Victorian, New South Wales, Queensland and Western Australian Governments, as well as a number of Australia's largest financial institutions.

### A.3 Design Features

RITS is designed to enhance efficiency in the use of liquidity within the system. It incorporates a central queue and a ‘next-down looping’ algorithm that continuously retests unsettled payments in order of submission (Figure A.2). If the transaction being tested for settlement cannot be settled individually, the auto-offset algorithm searches for up to 10 offsetting transactions (based on the order of submission) between a pair of participants and attempts to settle these simultaneously.<sup>17</sup> Participants 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

<sup>15</sup> For more information on the LVSS, see Box A: Developments in Retail Payments Settlement Arrangements in RBA (2013), *2013 Self-assessment of the Reserve Bank Information and Transfer System*, December, pp 7-8.

<sup>16</sup> 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 <http://www.rba.gov.au/payments-and-infrastructure/rits/information-papers/eligibility-criteria-for-batch-administrator/>.

<sup>17</sup> Payments are only tested for ‘auto-offset’ if they have been on the queue for at least one minute.

RITS participants have access to a range of information to enable them to manage their liquidity risk effectively. These tools provide participants with real-time information to manage their liquidity efficiently. In particular, RITS participants 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, and their projected end-of-day ESA balances.

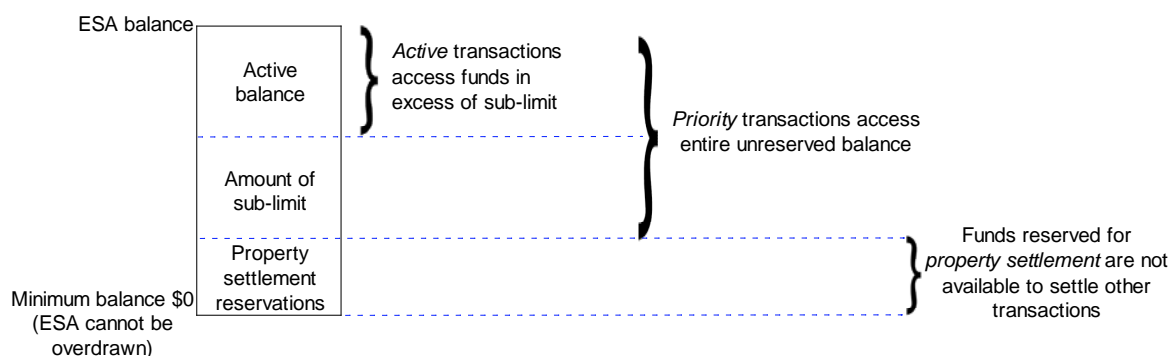
RITS also has features that allow participants to efficiently manage and conserve liquidity.

Participants can use ‘sub-limits’, which they can change at any time during the settlement day, to reserve liquidity for priority payments (Figure A.3). There are three payment statuses available to participants, which determine how individual transactions draw on liquidity:

- Payments with a *deferred* status are not tested for settlement until their status is amended.
- *Active* payment instructions are settled as long as the paying institution has sufficient funds in their ESA above the sum of the participant’s specified sub-limit and any property settlement reservations. Property settlement reservations are made upon receipt of a request from PEXA to cover participants’ net obligations for a given property transaction prior to the settlement of the cash leg (which occurs after advice from PEXA that the relevant land titles office has confirmed to PEXA that the title transfer documents have been lodged).<sup>18</sup>
- *Priority* payments are tested against the ESA balance less any property settlement reservations.

This functionality can be accessed through either the RITS User Interface or via SWIFT messages. Participants 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, and below a participant set threshold.<sup>19</sup>

**Figure A.3: Reserving Liquidity in RITS**



Source: RBA

## A.4 Liquidity Provision

To facilitate the settlement of payments in RITS, the Bank provides liquidity to participants at low cost via its Standing Facilities. Under these facilities, a participant can enter into a repo with the Bank; a repo transfers outright title to the Bank of eligible securities (upon purchase of securities) in return for

<sup>18</sup> For more information on how RITS facilitates the financial settlement of property transactions originating from the PEXA system, see Section 3.2.3 in RBA (2014), *2014 Assessment of the Reserve Bank Information and Transfer System*, December, p 13.

<sup>19</sup> This functionality can also be used to set the status of all payments above a threshold value to priority.

a credit to the participant's ESA, with an agreement to reverse the transaction at some point in the future. Standing facilities are available to any RITS participant which is 'approved' by the Bank's Domestic Markets department and settles its payments across its own ESA.<sup>20</sup>

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 fees), but must be reversed before the settlement of SWIFT and Austraclear transactions ceases in RITS each day.
- *Overnight repos.* In the exceptional case that a participant 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 participant retains the liquidity for use on future days. Open repos help participants 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, which are unknown prior to the close of the interbank cash market and Austraclear.<sup>21</sup> For participants which settle DE obligations across their own ESA, the Bank determines a minimum position in open repos that the participant should maintain.<sup>22</sup> To the extent that these participants retain matching funds against their open repo position (subject to an allowance for variations in ESA balances arising from DE settlements that occur outside of normal banking hours), those ESA balances are compensated at the cash rate target. However, to preserve the incentive for RITS participants to remain active in the interbank cash market while it is open, surplus ESA funds earn a rate 25 basis points below the cash rate target, while any shortfall in funds below the ESA holder's open repo position incurs a 25 basis point penalty.

Participants can also source liquidity through term repos and some outright transactions conducted by the Bank in the 'open market' each day – known as open market operations. The overall amount of ESA funds available via these operations is set by the Bank to support the implementation of monetary policy. These transactions usually involve counterparties selling debt securities to the Bank either under repo or outright.

In its repo arrangements, the Bank only purchases highly rated debt securities denominated in Australian dollars and lodged in Austraclear. RITS participants also have the option to use ASX Collateral to manage certain types of repos in a subset of eligible securities. ASX Collateral is a collateral management service developed by ASX Group in partnership with Clearstream, a Luxembourg-based FMI provider.<sup>23</sup>

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<sup>20</sup> For more information on the Bank's counterparty eligibility criteria, see <<http://www.rba.gov.au/mkt-operations/resources/tech-notes/eligible-counterparties.html>>.

<sup>21</sup> They will also support the settlement of obligations arising via the FSS in the future.

<sup>22</sup> The position is determined as a multiple of a participant's expected DE obligations. 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 (at the cash rate target) 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.

<sup>23</sup> For more information on ASX Collateral, see Box B: ASX Collateral in RBA (2013), *2013 Self-assessment of the Reserve Bank Information and Transfer System*, December, p 12.

## A.5 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 participants of RITS, meeting all of 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 Payments Policy Department, under the governance of the Board, and is available on the Bank's website.<sup>24</sup> The policy has been designed to be fair and open and promote competition in the provision of payment services by allowing access to all providers of third-party payment services, 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 securities settlement facilities (SSFs) with payment arrangements that require Australian dollar settlement are also eligible to hold an ESA.<sup>25</sup>

The ESA 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 participant 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 participant's expected payments business in RITS. To reduce the operational burden on smaller RITS participants, any ESA holder (other than a systemically important CCP) with aggregate outgoing RTGS transactions of less than 0.25 per cent of the total value of RTGS transactions, may use an agent to settle its RITS transactions, rather than settling directly across its own ESA.

The Bank's ESA policy limits the scope for material risks to arise from tiered participation arrangements. Since only ADIs individually accounting for less than 0.25 per cent of the total value of RTGS transactions may settle through an agent, no individual indirect participant would be expected to pose material risk to either its agent or the system more broadly. Further, to reduce dependence on its agent, a bank that participates indirectly is required to maintain an ESA for contingency purposes. To ensure that RITS has sufficient information about indirect participation, ESA holders that participate indirectly are required to report the value and volume of their outgoing RTGS payments to the Bank on a quarterly basis. This information is in part used to monitor compliance with the 0.25 per cent threshold.

## A.6 Operating Hours

Standard settlement hours in RITS, as established by the RITS Conditions of Operation, are 7.30 am to 10.00 pm. These hours were extended in November 2013 to facilitate same-day settlement of DE payments submitted to RITS after the close of the interbank cash market.<sup>26</sup> Prior to then, RITS closed at 6.30 pm Australian Eastern Standard Time and 8.30 pm during Australian Eastern Daylight Time (the first Sunday in October to the first Sunday in April); these remain the times when settlement of SWIFT and Austraclear transactions ceases.

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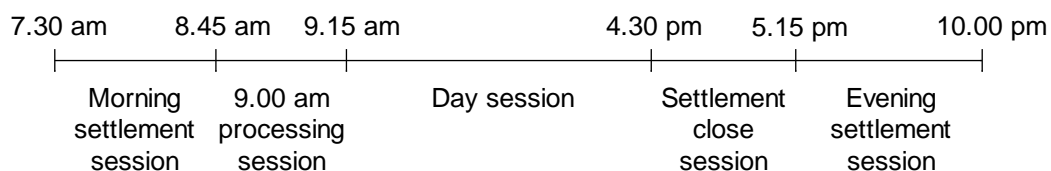
<sup>24</sup> The *ESA Policy* is available at <<http://www.rba.gov.au/payments-and-infrastructure/esa/index.html>>.

<sup>25</sup> 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.

<sup>26</sup> During Australian Eastern Standard Time, the 7.15 pm and 9.15 pm DE settlements occur after the close of the interbank cash market. However, during Australian Eastern Daylight Time, Austraclear and SWIFT transactions continue to be settled until 8.30 pm, so only the last DE settlement occurs outside normal banking hours.

Prior to 9.15 am, settlement is limited to RITS cash transfers, interbank Austraclear transactions, the deferred net obligations settled in the 9.00 am batch process (during the '9.00 am processing session') (Figure A.4), and, prior to the 9.00 am batch process, settlement of obligations for the Mastercard batch and DE government clearings. Other payment instructions can be submitted to RITS during this time, but they are not tested for settlement until the 'day session' commences.

**Figure A.4: The RITS Day**



Source: RBA

There are also restrictions on the types of payments that can settle in the 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.<sup>27</sup> 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.

<sup>27</sup> RITS participants do not have to be evening agreed if they only participate in DE and property settlements after 5.15 pm.

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

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This Appendix sets out the detailed Assessment of how well RITS observed the Principles developed by CPMI and IOSCO in the 2015 assessment period. This Assessment was produced by the Bank's Payments Policy Department, which is the functional area responsible for oversight of the payments system, drawing on information provided by the Bank's Payments Settlements Department, which is the functional area responsible for operating RITS. The conclusions have been endorsed by the PSB. In its assessment, Payments Policy Department have 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 time line.
- **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 that is relevant to the Assessment. In assessing RITS, Payments Policy Department have relied on guidance on the application of the Principles to central bank FMIs published by CPMI and IOSCO in August 2015.

*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.*

## 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***

RITS is owned and operated by the Bank. The RITS Regulations form the legal basis for all key aspects of 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. Based on this information, Payments Policy Department's assessment is that RITS has observed the requirements of Principle 1 during the 2015 Assessment period.

Nonetheless, while the RITS Regulations are comprehensive, changes to functionality and activity since the launch of RITS have added to their complexity. In light of this, the Bank is undertaking a major restructure and rewrite of the RITS Regulations. The main objective of the new version is to improve the clarity of the Regulations. To ensure that RITS continues to meet international best practice, it is recommended that the Bank continue to work towards implementation of new RITS Regulations, with a view to improving their clarity.

The legal basis of RITS is described in further detail under the following Key Considerations.

### **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.**

The legal basis of RITS is set out in the RITS Regulations, which cover the operation of RITS, and the rights and obligations of participants and the Bank. Standard agreements are executed to bind each participant 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 and CHES RTGS.<sup>28</sup> The SWIFT PDS is administered by APCA under its HVCS. The Bank and APCA 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. The Bank has separate contractual arrangements with Austraclear and ASX Settlement covering these feeder systems.

#### *Settlement finality*

The RITS Regulations state that settlement is final when the ESAs of the paying and receiving participants 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 participant enters external administration has the same

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<sup>28</sup> 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 actively used.



standing as if the participant had gone into external administration on the next day. Accordingly, in the event of insolvency all transactions settled on the day of the insolvency are irrevocable and cannot be unwound.

Similarly, the irrevocability of settled transactions originating from the Austraclear and CHES RTGS 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 'fallback arrangements'. These arrangements involve the multilateral netting and settlement of transactions arising from those systems. The irrevocability of settlement under these fallback 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.<sup>29</sup> 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 the APCA clearing streams and transactions settled in the CHES batch, 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 – The Bond Market Association (TBMA)/International Securities Market Association (ISMA) GMRA 2000 version – as amended by exhibits under the RITS Regulations.<sup>30</sup> 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 participants provide for the immediate liquidation of collateral in the event of default. This right is supported by Part 4 of the PSNA.

As part of the changes to the RITS Regulations, the Bank is also moving from the 2000 to the 2011 GMRA. The 2011 GMRA reflects lessons from the global financial crisis and the collapse of Lehman Brothers. It simplifies the calling of an event of default, gives the non-defaulting party more flexibility in determining the value of securities as part of the close-out procedure, and allows the close-out amount to be set-off against any other amounts payable by the non-defaulting party to the defaulting party. The latest version of the GMRA also broadens the definition of 'act of insolvency', which provides the flexibility to deal with insolvency events in a wide range of jurisdictions.

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<sup>29</sup> A small number of obligations sent through LVSS are settled on a gross basis.

<sup>30</sup> The TBMA/ISMA Global Master Repurchase Agreement (2000 version) is available at <

**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 information papers and user guides that explain RITS requirements and functions. This material facilitates existing and prospective participants' understanding of the RITS Regulations and the risks they face by participating in RITS. Nonetheless, changes to functionality and activity since the launch of RITS have added to complexity of the RITS Regulations. As mentioned above, the Bank is undertaking a major restructure and rewrite of the RITS Regulations, with the objective of improving their clarity. The Bank is aiming to implement the new Regulations in 2016, following consultation with participants.

The Bank also 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.**

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.<sup>31</sup> The information paper on the RITS Regulations provides further detail on RITS's legal basis.<sup>32</sup>

**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.

There have been no court cases that have tested the RITS legal framework.

**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 participants 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.<sup>33</sup> 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.

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<sup>31</sup> The relevant webpages are available at <<http://www.rba.gov.au/payments-and-infrastructure/rits/legal-framework.html>>.

<sup>32</sup> See *Information Paper: RITS Regulations and Conditions of Operation*, available at <<http://www.rba.gov.au/payments-and-infrastructure/rits/user-doc/pdf/regulations-conditions.pdf>>.

<sup>33</sup> For further details on the scope of the legal opinion, see <[http://www.rba.gov.au/rits/info/pdf/Signing\\_Instructions.pdf](http://www.rba.gov.au/rits/info/pdf/Signing_Instructions.pdf)>.

## 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***

RITS is owned and operated by the Bank. 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, which are publicly available on the Bank's website. The specific objectives in relation to the Bank's operation of RITS are also published on its website. 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. Accordingly, the Bank aims to provide 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. To ensure that the interests of relevant stakeholders are taken into account, the Bank engages in routine liaison with participants and consults on material changes to operational arrangements. Oversight of RITS is carried out by the Payments Policy Department, within the policy framework for which the Payments System Board has ultimate responsibility.

Based on this information, Payments Policy Department's assessment is that RITS has observed the requirements of Principle 2 during the 2015 Assessment period. Details of the governance arrangements for RITS are described under the following Key Considerations.

*Note: In line with the CPMI-IOSCO guidance on the Application of the Principles to Central Bank FMI, as RITS is operated as an internal function of the Bank, Key Consideration 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.**

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 mandate confirmed by the Australian Government when it introduced significant changes to Australia's financial regulatory structure in July 1998.<sup>34</sup>

The Bank's website states its specific objectives in relation to its operation of RITS. In particular, 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. 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

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<sup>34</sup> Information on the Bank's financial stability mandate is available at <<http://www.rba.gov.au/fin-stability/reg-framework/role-of-the-reserve-bank-in-maintaining-financial-stability.html>>.

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, 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.<sup>35</sup>

**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.**

Information on the Bank's governance arrangements for RITS is documented on the Bank's website and described in Section A.1.<sup>36</sup>

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 is therefore ultimately responsible for the operation of RITS. In fulfilling his responsibilities to manage the Bank, in particular 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 the Bank's most senior executives. The Executive Committee is the key decision-making committee of the Bank for matters of an administrative and management nature that have strategic, Bank-wide or external significance. Accordingly, major decisions related to RITS are considered by the Executive Committee.

Decisions affecting the day-to-day operations, customer relations and development of RITS have been delegated to the Bank's Payments Settlements Department. Payments Settlements Department is part of the Bank's Banking and Payments Group, which is headed by an Assistant Governor who reports to the Governor and Deputy Governor.<sup>37</sup> Clear internal procedures are in place to elevate day-to-day operational matters within Payments Settlements Department and other areas of the Bank, as appropriate.

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

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<sup>35</sup> For more information on the Payments System Board refer to: <<http://www.rba.gov.au/about-rba/boards/psb-board.html>>.

<sup>36</sup> A summary of the governance arrangements of the Bank is available at <<http://www.rba.gov.au/about-rba/governance.html>>.

<sup>37</sup> From December 2015, the Banking and Payments Group and Currency Group will be recombined as the Business Services Group.

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.<sup>38</sup> The Payments System Board produces a separate annual report, which is also presented to the Treasurer and tabled in the Parliament, although this is not a legislative requirement.<sup>39</sup>

**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 described in Key Consideration 2.2, 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 roles and responsibilities of members of the Executive Committee are set out in internal position descriptions.

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.<sup>40</sup>

**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).**

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 are determined in accordance with the Bank's broader responsibilities. The Bank has human resources policies in place to help ensure that senior staff, including members of the Executive Committee, have the appropriate skills and 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.**

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<sup>38</sup> The 2015 *Reserve Bank of Australia Annual Report* is available at <<http://www.rba.gov.au/publications/annual-reports/rba/index.html>>.

<sup>39</sup> The 2015 *Payments System Board Annual Report* is available at <<http://www.rba.gov.au/publications/annual-reports/psb/index.html>>.

<sup>40</sup> These are set out in the document: *Managing Potential Conflicts of Interest Arising from the Bank's Commercial Activities*, available at <<http://www.rba.gov.au/payments-and-infrastructure/payments-system-regulation/conflict-of-interest.html>>.

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 in place to help ensure that management positions are filled with employees with the appropriate skills, incentives, experience and integrity to perform their duties. The Bank has formal performance management arrangements, which help to clarify the expectations of supervisors and employees and ensure that timely feedback is provided. Recruitment and selection at the Bank is based on the suitability of an applicant to carry out the specific requirements of the position to be filled, having regard to the applicant's ability to perform the duties of the position, relevant experience, relevant training and qualifications, and willingness to meet any particular requirement specified in the position description. Bank staff are subject to the Code of Conduct for Reserve Bank Staff (see Key Consideration 2.3).

The Bank also aims to offer remuneration packages that attract employees able to perform their duties to a high standard. To this end, independent consultants are engaged from time to time to ensure that remuneration policies are consistent with market practice. The Remuneration Committee of the Reserve Bank Board is kept informed of the remuneration arrangements for Bank staff.

**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. Risk management is seen as an integral part of the management function within the Bank. Line managers have the responsibility to evaluate their risk environment, put in place appropriate controls, and monitor the effectiveness of these controls. Management is supported in this role through the development and maintenance of a culture that acknowledges the need for careful analysis and management of risk in all business processes.

The Bank's risk management framework is set out at a high level in the Bank's Risk Management Policy.<sup>41</sup> Risks associated with the formulation of monetary and payments policies are the direct responsibility of the Reserve Bank Board and the Payments System Board, respectively. The Boards review management of these risks periodically 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 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 consists of members of the executive team who are responsible for the Bank's operational areas or key support functions. It is chaired by the Deputy Governor and comprises: the Assistant Governors for Banking and Payments,

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<sup>41</sup> This policy is available at <<http://www.rba.gov.au/about-rba/our-policies/risk-management-policy.html>>.

Corporate Services, Currency and Financial Markets; the Chief Financial Officer; the Chief Information Officer; the Heads of Audit Department, Human Resources Department, Information Department and Risk and Compliance Department; and the General Counsel. The Risk Management Committee meets six times a year, or more frequently if required, and reports on its activities both to the Executive Committee and the Reserve Bank Board Audit Committee.

The Risk Management Committee is assisted in its responsibilities by Risk and Compliance Department, the main role of which is to assist individual business areas to manage their risk environment within a broadly consistent framework. Risk and Compliance Department also monitors risk 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.

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 to the Deputy Governor and the Reserve Bank Board Audit Committee.

#### *Crisis 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 would vary with the nature of the disruption and would typically comprise executives from a number of areas of the Bank.

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 participant (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 participants and other relevant parties. To ensure the interests of relevant stakeholders are taken into account, the Bank engages in routine liaison with participants and consults on all material changes to operational arrangements (see Principle 21). All decisions affecting the operation of RITS are advised to participants. 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***

The Bank has a well-established risk management framework which 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. Under the Bank’s Risk Management Policy, Payments Settlements Department aims to identify in a single Risk Register all risks that might impact its ability to operate RITS in a safe and efficient manner. This includes risks arising from interdependencies with other participants, other FMIs or service providers. The Risk Register is updated at least annually, or when material changes to operations or the business environment occur. Payments Settlements Department also designs and applies appropriate controls to mitigate identified risks. This high-level framework is supported by more detailed policies (see Principles 4, 5, 7 and 17) and a governance structure to oversee the Bank’s risk management activities (see Key Consideration 2.6).

Based on this information, Payments Policy Department’s assessment is that RITS has observed the requirements of Principle 3 during the 2015 Assessment period. The framework for the comprehensive management of risks in RITS is described in further detail under the following Key Considerations.

*Note: In line with the CPMI-IOSCO guidance on the Application of the Principles to Central Bank FMIs, since RITS is owned and operated by the Bank as one of the services which 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, liquidity and operational risks, and further sub-categorised into more detailed risk groups (e.g. legal and information technology risks are sub-categories of operational risk). For each risk that has been identified, Payments Settlements Department sets out the potential impact and probability of the risk occurring, and also identifies existing controls and mitigation strategies (including contingency plans) to reduce the likelihood and/or impact of the risk crystallising. 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.



The Bank's Risk Management Policy requires that Payments Settlements Department reviews and updates its register of risks annually, and 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 the Department's risk appetite or agreed tolerance levels must be appropriately escalated. The Department's risk appetite must be consistent with the Bank's Risk Appetite Statement.

**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, participants do not pose liquidity or credit risks to the Bank as operator of RITS (see Principle 4 and 7). RITS participation requirements aim to reduce the likelihood that an individual participant would disrupt the operation of RITS. If a participant does not meet these participation requirements, the Bank may apply sanctions to or impose additional requirements on that participant (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 (such as the annual update of its Risk Register), 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 risk

**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***

The Bank is not exposed to credit risk from the settlement of payments between participants in RITS. These payments are settled using funds in participants' ESAs, which cannot be overdrawn, and the Bank does not guarantee any transaction submitted for settlement in RITS. In the event of the default of a participant, the Bank would not be exposed to a loss in its role as operator of RITS. Accordingly, RITS does not maintain financial resources to cover the default of a participant. In addition, the RTGS mode of settlement in RITS is designed to ensure that unintended credit risk does not arise between participants during the settlement process.

The Bank does, however, incur credit risk in the provision of liquidity to 'approved' participants through Standing Facilities in support of payments activity (see Section A.4 for more information on these facilities). This risk is managed by purchasing high-quality securities under a repurchase agreement (repo), applying a conservative haircut to the securities, and collecting mark-to-market margin (see Principle 5).

Based on this information, Payments Policy Department's assessment is that RITS has observed the requirements of Principle 4 during the 2015 Assessment period. Credit risk in RITS is described in further detail under the following Key Considerations.

*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. Payments in RITS are settled using funds in participants' ESAs, which cannot be overdrawn, and the Bank does not guarantee any transaction submitted for settlement in RITS. Accordingly, in the event of a participant default the Bank would not be exposed to a loss in its role as operator of RITS.

The Bank does, however, incur credit risk in the provision of liquidity to approved participants under its Standing Facilities to support payments activity. This risk is primarily managed by purchasing securities under repo, in accordance with the Bank's risk management framework. The Bank also manages the credit risk arising from its Standing Facilities by restricting the counterparties that it enters into a repo with. In particular, to access the Bank's Standing Facilities, a RITS participant must be an ESA holder, a member of Austraclear, subject to an appropriate level of regulation, and able to ensure efficient and timely settlement of transactions within the Austraclear system.

Under the Bank's risk management framework, responsibility for approving and reviewing its collateral policies is the responsibility of Domestic Markets 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. The Bank's risk management framework is reviewed annually (see Key Consideration 2.6 for further detail on the Bank's risk management framework.)

The RTGS mode of settlement in RITS is also designed to ensure that unintended credit risks do not accumulate between participants during the settlement process. For payments using the SWIFT PDS, transactions are settled across ESAs in RITS prior to the payment messages being sent to the receiving participant. 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 the Bank's risk management framework, Domestic Markets Department has responsibility for identifying and managing the credit risks that arise from its activities. For each credit risk identified, the Department sets out 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 annually, or when there are material changes to the Bank's risk environment.

The Bank incurs credit risk in the provision of liquidity to approved RITS participants under repo. This credit risk is mitigated by purchasing only high-quality securities, applying appropriate haircuts to the securities, and maintaining mark-to-market margin on a daily basis (see Principle 5). Participation requirements in RITS also help to reduce the probability of a participant default (see Principle 18). The Bank monitors the liquidity it provides to approved RITS participants and the composition of securities that it holds on a daily basis. This information 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 participants is mitigated by purchasing high-quality securities under repo, which could be closed out immediately upon default of the repo counterparty. The Bank also faces a potential future loss, which would crystallise in the event that a participant defaulted and the market value of collateral securities fell below the amount of credit provided under repo. This risk is mitigated by applying a haircut to the securities, calibrated to cover the maximum expected decline in the market price of the securities, over a conservative liquidation horizon, at a high level of confidence. The Bank also maintains mark-to-market margin on a daily basis to ensure that the price changes on the previous day do not erode the value of the securities it holds (see Principle 5 for further detail on eligible securities, haircuts and mark-to-market margin maintenance).

RITS is not a deferred net settlement payment system and accordingly the requirement to maintain sufficient resources to cover the exposures of the two participants 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 explained under Key Consideration 4.1, in the event of a participant default the Bank would not be exposed to a loss in its role as operator of RITS. Nevertheless, the Bank maintains internal procedures that set out the course of action it would take after a participant default (see Principle 13).

## 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***

The implementation of monetary policy is the primary driver of the Bank's collateral policies. Nevertheless, the Bank's collateral policies relating to its role as provider of liquidity to approved RITS participants are broadly consistent with this Principle. The Bank only purchases highly rated debt securities denominated in Australian dollars when providing liquidity to approved participants' ESAs. Collateral is conservatively valued and subject to haircuts, and mark-to-market margin is maintained on a daily basis.

Based on this information, Payments Policy Department's assessment is that RITS has observed the requirements of Principle 5 during the 2015 Assessment period. The Bank's collateral policies are described in further detail under the following Key Considerations.

*Note: Consistent with the CPMI-IOSCO guidance on the Application of the Principles to Central Bank FMs, 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 participants primarily through Standing Facilities. Under these facilities, a participant can enter into a repo with the Bank, exchanging outright title to eligible securities in return for the credit of funds in its ESA with an agreement to reverse the transaction at some point in the future (see A.4 for more information on the Standing Facilities available). Participants can also source liquidity through securities transactions conducted by the Bank in the 'open market' each day – known as open market operations – which are aimed at maintaining the overnight cash rate at its target. These transactions usually involve counterparties selling debt securities to the Bank either under repo or outright.<sup>42</sup>

The Bank only purchases highly rated debt securities denominated in Australian dollars under repo. This policy covers all of the Bank's repo activity, including both repos entered into under the Bank's Standing Facilities and in respect of open market operations. This policy is publicly available on the Bank's website.<sup>43</sup> Eligible securities are generally restricted to highly liquid securities issued by entities with high credit quality, including those issued by: the Australian Government; the central borrowing authorities of the state and territory governments (semi-government securities); certain supranational organisations, foreign governments and government agencies with an explicit government guarantee; and ADIs.

In addition, any security accepted must meet the following criteria:

- The security must be denominated in Australian dollars.

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<sup>42</sup> Outright sales to the Bank are limited to Australian Government Securities.

<sup>43</sup> The policy is available at <<http://www.rba.gov.au/mkt-operations/resources/tech-notes/eligible-securities.html>>.

- The security must be lodged and active in Austraclear, which is the central securities depository for debt securities in Australia.
- Securities accepted as collateral must generally meet a minimum credit rating.<sup>44</sup>
- Asset-backed securities must be tradeable in the secondary market and must be based on a true sale of assets into a bankruptcy remote special purpose vehicle.
- Securities sold to the Bank under a repo must not enter the ‘closed period to maturity’ during the term of the repo.

The Bank also does not accept what it deems to be highly structured securities, such as collateralised debt obligations backed by other asset-backed securities.

If the above conditions are met, Australian Government and semi-government securities are automatically eligible collateral. All other securities are subject to an initial approval process. The Bank will not purchase securities under repo until the approval process for eligibility is complete and the securities are added to the Bank’s list of eligible securities.<sup>45</sup>

In order to assess the eligibility of the security, the minimum credit rating assigned to a security or its issuer by any of the major rating agencies will be used (except certain credit-enhanced securities such as covered bonds). For ADI-issued securities with a residual maturity greater than one year, at least two major credit rating agencies must rate the security or the issuer. For covered bonds issued by ADIs, where two or more security ratings are available, only the ratings on the security will be considered. If two security ratings are not available for ADI-issued covered bonds, the minimum issuer rating will also be considered.

The Bank routinely monitors events such as credit downgrades to ensure that its list of eligible collateral remains current. If a particular collateral security is no longer eligible, counterparties with outstanding repos in that security with the Bank will be required, on a same-day basis, to substitute eligible collateral.

To enhance its risk management of asset-backed securities, since 30 June 2015, the Bank has required the issuers of these securities to provide more detailed information in order for these securities to be eligible for repo with the Bank.<sup>46</sup> The new criteria are being introduced primarily because of the Bank’s potential exposure to asset-backed securities under its Standing Facilities. This exposure has increased significantly due to the implementation of open repos (see Section 3.5.1). The additional information, which will have to 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 participant if it considers that participant 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

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<sup>44</sup> This requirement does not apply to Commonwealth Government securities, semi government securities, securities with an Australian Government guarantee or securities issued and/or guaranteed by the New Zealand government.

<sup>45</sup> The current list of eligible securities is available at <<http://www.rba.gov.au/mkt-operations/xls/eligible-securities.xls>>.

<sup>46</sup> More information on this initiative is available at <<http://www.rba.gov.au/securitisations/>>.

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 participant, the Bank may purchase certain related-party asset-backed securities under repo through its Standing Facilities. However, these securities are subject to an additional haircut and additional reporting requirements. Relatedness thresholds 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 asset-backed security: 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 participant and the asset-backed security.

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 participant sells securities issued by a third-party issuer as collateral, both the participant and the issuer of the security would have to fail for the Bank to face substantial financial loss. In the event that an approved participant that had provided asset-backed securities 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.<sup>47</sup> For operational simplicity, uniform haircut rates are set for broad groups of securities rather than for individual securities, with an additional adjustment for approved related-party asset-backed securities depending on the degree of credit support provided to the transaction by the sponsor. Haircut rates are set to cover the maximum expected decline in the market price of the security, at a confidence level of at least 95 per cent based on a look back period that includes stressed market conditions. The key inputs to this calculation are market prices, the maturity of the securities in the relevant asset classes and the credit ratings of the securities. The Bank reserves the right to review haircuts at any time. The uniform haircut rates are publicly available on the Bank's website.<sup>48</sup>

The Bank also maintains mark-to-market margin on a daily basis to cover changes in the value of its portfolio of securities.<sup>49</sup> To do this, the Bank revalues all securities held under repo using the aforementioned valuation practices at the start of each business day. Where the Bank's net exposure to a counterparty is greater than \$1 million and represents more than 1 per cent of

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<sup>47</sup> The Bank uses the terminology 'margins' instead of 'haircuts' in its publicly available documents.

<sup>48</sup> A list of the haircuts used by the Bank is available at <<http://www.rba.gov.au/mkt-operations/resources/tech-notes/margins.html>>.

<sup>49</sup> Intraday repos do not require mark-to-market margin collection, as they are reversed by the end of the business day.

the net repurchase amounts agreed with that party, the Bank will call for mark-to-market margin equal to its net exposure.<sup>50</sup> 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.

**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 the stressed market conditions following the default of Lehman Brothers in late 2008. This reduces the need for procyclical haircut adjustments during periods of stress.

**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.**

The Bank routinely monitors transaction and collateral summary reports to ensure that the Bank is not exposed to large collateral concentration and liquidation risks. The key factor considered by the Bank is the depth of the market for each security when compared with the Bank's holdings of that security. This mitigates the risk of a price impact from liquidation of a large collateral holding.

**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. These securities must be issued under and 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 Austraclear system and RITS have similar operating hours.

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<sup>50</sup> The repurchase amount for a repo is the value of the repo purchase price adjusted for accrued interest.

## 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 a widely used integrated trading, middle-office and back-office system, and has been extensively customised for the Bank. Transactions involving the exchange of securities with approved participants are recorded and tracked in this system.<sup>51</sup> In addition, the system facilitates the calculation and execution of haircuts and margin calls. Using this system, the Bank has the capacity to produce a wide variety of reports. The system supports the buying, selling, margining, substitution and liquidation of securities in a timely manner. The Bank ensures that there are sufficient resources to maintain its trade entry and collateral management system to a high standard.

Since February 2014, RITS participants have had the option to use ASX Collateral services to deliver a subset of eligible securities under certain types of repos.<sup>52</sup> 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.<sup>53</sup> 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 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**

RITS conducts its settlements on an RTGS basis and does not guarantee settlement. The Bank, as operator of RITS, does not therefore assume liquidity risk through these operations. Accordingly, many of the requirements under this Principle – including those around liquidity stress testing, monitoring, and the maintenance of a pool of liquid assets – do not apply.

However, settling payments on an RTGS basis does place liquidity demands on participants. RITS assists participants in the management of their liquidity requirements through its liquidity-efficient design, the provision of liquidity through Standing Facilities, and the provision of real-time

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<sup>51</sup> Intraday repos involving Commonwealth Government Securities or semi-government securities are recorded outside of this system unless they are extended to become overnight repos.

<sup>52</sup> For more information on the types of repos and securities eligible to be settled via ASX Collateral see <<http://www.rba.gov.au/mkt-operations/resources/tech-notes/settlement-procedures.html>>.

<sup>53</sup> For more information see RBA (2013), 'Box B: ASX Collateral', Self-assessment of the Reserve Bank Information and Transfer System, p 12, available at <<http://www.rba.gov.au/payments-and-infrastructure/rits/self-assessments/2013/>>.



information on transactions and ESA balances. The Bank's operational staff also continuously monitor settlement activity and participant balances in RITS for evidence of any disruption to the flow of liquidity, which could occur if a participant experienced an operational or financial problem. RITS's participation requirements aim to reduce the probability that such problems arise.

Based on this information, Payments Policy Department's assessment is that RITS has observed the requirements of Principle 7 during the 2015 Assessment period. Liquidity risk in RITS is described in further detail under the following Key Considerations.

*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. The Bank, as operator of RITS, does not therefore assume liquidity risk in its operations. Since participants face liquidity risks, however, RITS assists participants 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 (see Section A.4). Furthermore, RITS's participation requirements aim to reduce the probability that a participant experiences an operational or financial problem that could disrupt the flow of liquidity in the system (see Principle 18).

**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 participant level for evidence of any disruption to the flow of liquidity, which could occur if a participant experienced an operational or financial problem (see Principle 17). If such a disruption were observed, the Bank would liaise with participants to mitigate the impact. To further mitigate possible disruption under such a scenario, participants 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 participant default (see Principle 13).

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

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 is not relevant.

- 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 maintain liquid resources to cover payment obligations in stressed scenarios 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 operator of RITS, the requirement to use central bank accounts, payment services or securities services, where practical, 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 test the sufficiency of its liquid resources 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 include rules and procedures that govern the management of a participant 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 do 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***

RTGS payments in RITS are settled individually in real time. The RITS Regulations specify that settlement is final when the ESAs of the paying and receiving RITS participants are simultaneously debited and credited, respectively. The irrevocability of payments settled in RITS is further protected by RITS's approval as an RTGS system under Part 2 of the PSNA.

Based on this information, Payments Policy Department's assessment is that RITS has observed the requirements of Principle 8 during the 2015 Assessment period. RITS's arrangements for ensuring finality of settlements are described in further detail under the following Key Considerations.

**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 participants are simultaneously debited and credited, respectively.<sup>54</sup> The point of settlement is clearly defined in Regulation 1 of the RITS Regulations. As explained under Key

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<sup>54</sup> 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.

Consideration 1.1, this is further protected by RITS's approval as an RTGS system under Part 2 of the PSNA.

- 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.**

RTGS payments in RITS are settled individually in real time. Although settlements occur in real time, a payment submitted to the RITS 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 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 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 Regulation 8 of the RITS Regulations, a participant can unilaterally revoke its outgoing RTGS payments 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*

RITS conducts its money settlements in central bank money across participants' ESAs at the Bank.

Based on this information, Payments Policy Department's assessment is that RITS has observed the requirements of Principle 9 during the 2015 Assessment period. Money settlements in RITS are described in further detail under the following Key Considerations.

- 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 bank money settlement agents in the operation of RITS.

## **12. Exchange-of-value settlement systems**

**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 to eliminate principal risk in those systems. 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.<sup>55</sup> 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 system. RITS also facilitates the financial settlement of property transactions originating from a system operated by PEXA 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.**

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<sup>55</sup> For more information, see Standard 10 in Appendix A2.1 and A2.2 of the *2014/15 Assessment of ASX Clearing and Settlement Facilities*, available at <http://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/clearing-and-settlement-facilities/assessments/2014-2015/>

**Rating: Observed**

The RITS Regulations define what constitutes an insolvency event, as well as the rights and responsibilities of participants and the Bank in an insolvency scenario, and the actions the Bank may take to manage the situation. The Bank may suspend an insolvent participant, at which point the Bank will remove any queued payments to and from the participant, and prevent the input of any new payments involving the suspended participant. By permitting swift and decisive action in this way, the RITS Regulations allow the Bank to minimise the potential for a participant default to disrupt settlement in the system more widely.

Based on this information, Payments Policy Department's assessment is that RITS has observed the requirements of Principle 13 during the 2015 Assessment period. RITS's default management arrangements are discussed in further detail under the following Key Considerations.

*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.**

The RITS Regulations include rules and procedures to govern the management of a participant default. A participant that becomes aware of an insolvency event – either its own insolvency, or the insolvency of another participant for which it acts as participating bank – must notify the Bank immediately. The Bank may then suspend the relevant participant, at which point the Bank will remove any queued payments to and from the participant, and prevent the input of any new payments involving the suspended participant. The Bank may also suspend a participant 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 participant default to disrupt settlement in the system more widely.

As explained under Principle 4, in the event of a participant 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 participant 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 internal default management procedures that document the steps it would take in response to an insolvency event. These procedures outline the roles and responsibilities of management for each decision that must be taken after such an event, which persons should be consulted when taking each decision, and which persons should be advised of a decision. The procedures also set out which other Australian industry bodies and other FMIs should be contacted if a participant is suspended from RITS, and the methods available for communication with these parties. The procedures are tested and updated on a periodic basis.

**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 participants to perform any actions, participants 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**

The Bank manages the general business risk arising from RITS within the context of its organisation-wide risk management framework (see Principle 3). This process covers the full spectrum of financial, market, credit, operational and other risks. This is supported by the Bank’s budgeting and accounting processes, which allow it to monitor, manage and control its operating expenses. New projects are subject to strong governance arrangements, both prior to initiation and through the implementation process. As a central bank-owned FMI, RITS does not hold ring-fenced liquid net assets to cover general business risk. Nevertheless, should a general business risk crystallise, the Bank has access to sufficient liquid funds to meet its current and projected operating expenses.

Based on this information, Payments Policy Department’s assessment is that RITS has observed the requirements of Principle 15 during the 2015 Assessment period. The Bank’s arrangements for managing general business risk are discussed in further detail under the following Key Considerations.

*Note: Consistent with the CPMI-IOSCO guidance on the Application of the Principles to Central Bank FMIs, 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 both the Audit Department and external auditors. Audit reports are reviewed by the Audit Committee.

The Bank’s financial target with respect to RITS is to recover its operating costs. It regularly reviews its pricing and in July 2012 implemented the first phase of a revised pricing structure,

with subsequent phases coming into effect in 2014 and 2015.<sup>56</sup> Under the revised pricing structure a greater proportion of RITS operating costs are recovered from fees based on the value of settled transactions versus the volume of settled transactions. This change recognises that the benefit derived from RTGS settlement is primarily a function of the value, rather than the volume, settled.

The Bank has previously absorbed capital and development costs as a policy-related expense associated with major improvements to RITS's functionality and resilience. However, any new significant projects must be approved by the Executive Committee and relevant financial analysis must be included as part of the Bank's budget process.

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***

Securities provided to the Bank as collateral under repo (both for payment system purposes and open market operations) must be lodged in Austraclear, which is a licensed clearing and settlement (CS) facility overseen by the Australian Securities and Investments Commission (ASIC) and the Bank and subject to the *Financial Stability Standards for Securities Settlement Facilities* (SSF Standards). Close-out netting provisions included in repo contracts with participants provide for the immediate liquidation of collateral in the event of default. This right is supported by Part 4 of the PSNA. In addition, the Austraclear system is subject to high operational resilience standards and operates in the same time zone as RITS, with highly overlapping operating hours. The Bank would therefore expect to have prompt access to the securities it holds as collateral.

The Bank does not hold the collateral it receives in providing liquidity to RITS participants at custodian banks, or with entities in other time zones or legal jurisdictions. The Bank accepts only securities collateral under repo and does not re-use collateral received. The Bank therefore does not face investment risks.

Based on this information, Payments Policy Department's assessment is that RITS has observed the requirements of Principle 16 during the 2015 Assessment period. Custody and investment risks in RITS are described in further detail under the following Key Considerations.

*Note: Consistent with the CPMI-IOSCO guidance on the Application of the Principles to Central Bank FMs, 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.*

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<sup>56</sup> For further details see 'Box C: RITS Pricing' in RBA (2013), *Self-assessment of the Reserve Bank Information and Transfer System*, p 23.



**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.**

Securities held by the Bank under repo must be lodged in Austraclear (see Principle 5). Austraclear is a licensed CS facility and is therefore overseen by 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 receives in providing liquidity to RITS participants, or hold collateral with entities in other time zones or legal jurisdictions.

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

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, with highly overlapping operating hours. The Bank would therefore expect to have prompt access to the securities it holds as collateral. In particular, the Bank has a service agreement with ASX – the owner of Austraclear – that imposes strict operational requirements on the Austraclear system, including a requirement to provide a minimum 99.9 per cent availability during business hours. The Austraclear system must also adhere to similar high standards of security and operational reliability set out in the SSF Standards.

Since February 2014, RITS participants have had 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, 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 RITS participants.

**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 accepts only securities collateral under repo and does not re-use collateral received. The Bank therefore does not face investment risks.

## 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: Observed***

RITS is designed to achieve a very high standard of operational reliability, with comprehensive policies and controls in place to: ensure reliability of IT infrastructure, monitor performance in real time and address potential problems promptly; maintain sufficient capacity; maintain the security and integrity of the system; and manage change effectively. The Bank manages the operational risks arising from RITS within the Bank's organisation-wide risk management framework (see Key Consideration 2.6).

The Bank sets clear operational reliability and capacity objectives and implements policies, procedures and controls to achieve those targets. The key operational targets for RITS are 99.95 per cent availability and minimum capacity to accommodate projected volumes 18 months in advance with 20 per cent headroom. The Bank has sufficient resources, including well-trained and competent personnel, to operate RITS. There is also an effective change management framework to ensure that system changes do not adversely affect the operation of RITS.

The Bank has also put in place a framework to maintain the security and integrity of RITS. Access to RITS is tightly controlled using a range of security controls. To gain access to the RITS User Interface, each user requires a RITS token with a valid and unique digital certificate; these are issued to users via a secure process. Access rights are controlled via unique logons for each user, creating an audit trail for each action within the system. All traffic across the various networks that are used to access RITS is encrypted. The RITS application and supporting infrastructure is segmented using firewalls approved by the Australian Signals Directorate (the agency responsible for evaluating information security products and services used by the Australian Government). Vulnerability assessments and penetration testing are undertaken periodically by external consultants.

Nonetheless, recognising the growing systemic threat originating from cyber-related risks and consistent with recommendations in the 2014 Assessment, the Bank has initiated a project to review and test the mechanisms in place to prevent a cyber-related incident. The first stage of this project will involve a review of risks and a stocktake of existing security controls. The next stage involves a comprehensive program of penetration testing. Based on the findings from the review and testing the Bank will consider whether additional measures should be put in place. This project is expected to be completed in 2016.

In November 2015, CPMI and IOSCO released for consultation draft guidance in the area of cyber resilience to support relevant requirements in the Principles. The guidance is intended to help FMIs enhance their cyber resilience and provide a framework for supervisory dialogue. The guidance is expected to be finalised in the first half of 2016. The Bank is encouraged to review its cyber risk management arrangements in light of the guidance when it is published.

RITS's business continuity arrangements include detailed contingency plans, which are updated at least annually and are tested regularly, with recovery time targets of up to 40 minutes, depending on the nature of the operational disruption. The primary control to reduce the impact of a disruption is a high degree of redundancy in RITS's architecture. RITS is synchronously mirrored at a geographically

remote second site, which is permanently staffed. Full redundancy exists at both sites, ensuring that there is no single point of failure at either site. Live operations are rotated between the two sites on a regular basis. Staff rotation and cross-training ensure that critical functions are not dependent on particular individuals. The Bank also has succession planning processes in place for key positions.

In light of international developments and consistent with a recommendation in the 2014 Assessment, the Bank initiated a project to review and consider options to improve RITS's ability to detect and recover from a disruption of service, or loss of software or data integrity, resulting from a wide range of operational disruptions, including a cyber-related incident. This project will include the identification of additional measures that could improve RITS's resilience in this area and an examination of the benefits, challenges and costs of implementing them. This project is also expected to be completed in 2016.

The Bank monitors the operational performance of its participants. In addition, in 2013, the Bank introduced Business Continuity Standards for RITS participants. The Bank received participants' latest annual self certification statements against the new standards as at the end of 2014, at which time 48 of 58 RITS participants were compliant with the standards. Almost all of the remaining participants indicated that they expected to be compliant by the end of the compliance deadline. The Bank has also established controls to limit the risk from critical service providers, utilities and other FMIs. The Bank has a service level agreement with Austraclear and has a premium support package from SWIFT; both entities are key service providers to RITS. These arrangements set out the response times and the minimum level of support expected from each service provider. The Bank also has in place a service level agreement with a key technology vendor that provides enhanced monitoring and technical support. RITS's use of critical service providers and utilities is subject to ongoing monitoring and testing.

Based on this information, Payments Policy Department's assessment is that RITS has observed the requirements of Principle 17 during the 2015 Assessment period. Nonetheless, to ensure that the operations of RITS continue to meet international best practice, Payments Policy Department recommends that the Bank:

- complete its analysis and testing of the mechanisms in place to prevent a cyber-related incident and consider whether additional measures should be put in place
- complete its project to review and consider options to improve RITS's ability to detect and recover from a disruption of service, or loss of software or data integrity, resulting from a wide range of operational incidents, including a cyber attack

The Bank is also encouraged to review its cyber risk management arrangements in light of forthcoming CPMI-IOSCO guidance on cyber resilience for FMIs.

Details of RITS's operational risk-management arrangements are described under the following Key Considerations.

**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 applies both a historical approach, drawing lessons from issues that have occurred in the past, and a theoretical approach whereby experienced staff members seek to identify possible additional sources of risk. For each operational risk identified, Payments Settlements Department assesses the probability of the operational risk crystallising and its potential impact. Controls and mitigation strategies are also considered. Operational controls are documented in procedures manuals, administration guides and daily checklists. These controls and contingency plans are reviewed and signed off by management annually, or when system changes or upgrades are planned.

The operational risk management framework supporting RITS is benchmarked against relevant domestic and international standards, including:

- Business Continuity – Managing Disruption-related Risk (AS/NZS 5050-2010)
- Fraud and Corruption Control (AS 8001-2008)
- Whistleblower Protection Programs for Entities (AS 8004-2003).

#### *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 and technology and finance industries, including:

- Information Technology Infrastructure Library, Version 3
- ISO Standard 20000: IT Service Management.

Under the policy, any material change typically would require the responsible business area to prepare a change implementation plan, which would identify possible risks arising from the change and controls in place to mitigate those risks. These controls would 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 operating hours. This allows time for testing before RITS opens. Backups of data and system configurations are made prior to 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 connectivity, functional, capacity and failover testing. RITS participants are given the opportunity to become familiar with new functionality in a test environment prior to live implementation.

In 2015 the Bank completed its implementation of an enhanced 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 aligned to widely used industry best practice, including the PRINCE2 framework. The framework is supported by the Enterprise Project Management Office (EPMO), which was established in 2014. The EPMO provide analysis, including on risk, and status reports to the Bank's executives on the major initiatives. It also provides advice and support to Bank staff working on projects.

### *Access to resources*

The resourcing of the areas in Payments Settlements Department involved in the operation of RITS is the responsibility of the senior management in those areas. Recruitment and promotions at the Bank are merit-based and subject to a formal selection process. New staff are required to undergo training in a range of areas, including anti-money laundering, information security, workplace health and safety, acceptable use of technology, fraud awareness and the Bank's Code of Conduct. Staff rotations and cross-training in critical areas ensure that critical functions are not dependent on particular individuals. The Bank also has succession planning processes in place for key staff.

Payments Settlements Department relies on the Bank's Information Technology Department to provide technical support for RITS. To ensure that 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 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 review 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 operates a hotline, through which suspicious behaviour can also be reported anonymously. 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 within 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, Banking and Payments. RITS's operational policies, procedures and controls are subject to audit by the Audit Department, 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. RITS's target availability is 99.95 per cent for Bank-controlled components. Availability is measured relative to the total number of hours that the system is open for settlement and reporting. This target is set out in internal documents, and is assessed on a quarterly basis. Assessments are available to senior management in Payments Settlements Department and Payments Policy Department.

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

The Bank also monitors RITS's components to ensure that issues are detected in a timely manner. The monitoring aims to detect system problems within 15 minutes of their inception. In some cases, automated tools are used, which verify the operation of system components at intraday intervals as short as one minute, and provide automatically generated email alerts to relevant Bank staff if any issues are detected. These include third-party tools which test connectivity by logging in from outside of the Bank's internal communications network and deliver data on the performance of RITS's components back to Bank staff in real time. System liquidity, and the value and volume of queued and settled payments relative to historical averages, are also monitored on a near real-time basis. In 2012, monitoring of the RITS system after business hours was introduced, to improve monitoring of overnight processing and to facilitate the submission and settlement of retail payments.<sup>57</sup>

**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 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)
- a projected capacity target – that is, RITS should be able to accommodate projected volumes 18 months in advance with 20 per cent headroom.

Targets are also set for the system's maximum response time to a participant command.

RITS is tested regularly to ensure that it meets these targets. Processing throughput testing is performed quarterly and complemented by daily monitoring of actual processing throughput. Capacity testing is performed prior to each new RITS software release and at regular intervals. Test outcomes are reviewed by management in Payments Settlements Department. In the event of a problem, the Bank would investigate options to either improve processing throughput or increase capacity.

Testing is complemented by an alert system, which is designed to automatically advise operational staff if operational capacity for various RITS components is approached.

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

*Information security*

At the Bank, 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

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<sup>57</sup> For more information on changes to these clearing and settlement arrangements see RBA (2013), 'Box A: Developments in Retail Payments Settlement Arrangements', *Self-assessment of the Reserve Bank Information and Transfer System*, pp 7–8.

management framework. As noted in the Bank's Risk Appetite Statement, the Bank has a very low appetite for threats to Bank assets arising from external malicious cyber attacks. To address this risk, the Bank aims for strong internal control processes and the development of robust technology solutions.

Information Technology 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 team within the Information Technology Department headed by the Bank's Chief Information Security Officer. RITS information security policies are aligned to the Australian Government's Protective Security Policy Framework.<sup>58</sup> Its cyber security practices are also informed and supported by domestic and international best practice, including strategies for mitigating cyber intrusions developed by the Australian Signals Directorate. The security policies are reviewed annually and in the event of changes to either the nature of the risk or the assets being protected. Security reviews by external consultants are also routinely commissioned for new RITS components and in response to significant changes to the RITS system.

Access to RITS is tightly controlled using a range of security controls, which vary with the method of access. To gain access to the RITS User Interface, each user requires a RITS token with a valid and unique digital certificate; these are issued to users via a secure process. Access rights are controlled via unique logons for each user, creating an audit trail for each action within the system. RITS also provides functionality to participants to enable dual entry checks at all stages of the payment process.

Security administrators can review event logs and follow up on unusual activity. All transactions can be traced end-to-end, and are signed using a private key that allows for enhanced non-repudiation of the transaction.

All traffic across the various networks that are used to access RITS is secure. Access to the user interface via the internet and the Austraclear National Network Infrastructure/ASX Net network is encrypted. The RITS application and supporting infrastructure is segmented using firewalls approved by the Australian Signals Directorate, so that only authorised traffic can reach it. Vulnerability assessments and penetration testing are undertaken by external consultants periodically.

While the Bank's current information security policies presently address all potential vulnerabilities and threats, the Bank recognises that both the nature of cyber-related issues and industry best practice are rapidly evolving. Accordingly, consistent with recommendations in the 2014 Assessment, the Bank has initiated a project to review and test the mechanisms in place to prevent a cyber-related incident. The first stage of this project will involve a review of risks and a stocktake of existing security controls. The next stage involves a comprehensive program of penetration testing. Based on the findings from the review and testing the Bank will consider whether additional measures should be put in place. This project is expected to be completed in 2016.

#### *Physical security*

Facilities Management Department administers the Bank's physical security policy, which complies with the Protective Security Policy Framework set by the Australian Government.

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<sup>58</sup> This framework is available at <<https://www.protectivesecurity.gov.au/Pages/default.aspx>>.

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. Access to both the primary and business recovery sites are restricted to staff and authorised visitors. Access to sensitive areas, such as data centres, is further restricted to those staff who require access for their duties. The Bank maintains audit trails of access to all sensitive areas. Both operational sites are also designed in such a way to provide physical protection to the buildings.

**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.**

The Bank maintains detailed business continuity plans. These set out the operational response to events that could disrupt RITS's operations. These plans cover lines of authority, means of communications and failover procedures, and are updated annually or more frequently if required (e.g. when there is a major change to RITS).

A primary control to reduce the impact of a contingency is a high degree of redundancy in RITS's systems. RITS is synchronously mirrored at two geographically remote sites, which are permanently staffed. Full redundancy of equipment exists at both these sites, ensuring there is no single point of failure at either site. RITS can be operated from either site indefinitely. Live operations alternate between both sites on a regular basis. Critical staff are also able to work from home through remote logon using a Virtual Private Network. The recovery time target is up to 40 minutes, depending on the nature of the operational disruption.

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

Contingency plans include arrangements for the provision of timely information to stakeholders, including RITS participants and operators of interdependent systems. The plans include predefined notification lists of both internal and external parties, and assign responsibility for regular updates. A web-based crisis communication facility for RITS enables the Bank to disseminate information via email and SMS to a large number of stakeholders within minutes. This facility can also be operated from remote locations and does not rely on the availability of either operational site. Conference call facilities are also available to enable timely discussion between key stakeholders. To ensure that staff are familiar with the crisis communications facility, it is used regularly.

Plans for all key contingencies are tested at least annually to ensure that the contingency procedures are robust and remain effective. To ensure staff are fully aware of the contingency plans, procedures are also tested in regular 'at-desk' contingency drills. In addition, Payments Settlements Department staff that are based at the Bank's head office are required to work at the Bank's geographically remote second site during a designated week each year to ensure



that they are familiar with the facility. In addition, staff that are responsible for the day-to-day operation of RITS are also required to work at both sites at least one each quarter.

While redundancy and synchronous mirroring are useful tools in the event of a physical disruption, these design features may not be effective measures to recover from software issues or certain data corruptions. With this in mind, in recent years, a few overseas central banks have implemented, or announced plans to implement, 'non-similar facilities' (NSFs) to enhance their contingency arrangements for such scenarios.<sup>59</sup> In response to these developments and consistent with recommendations in the 2014 Assessment, the Bank has initiated a project to review and consider the options to improve RITS's ability to detect and recover from a disruption of service, or loss of software or data integrity, in the event of a wide range of operational incidents, including in the event of a cyber-related incident.

Even if there was an extreme scenario 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 payments settled in RITS, could 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. During the Assessment period, the Bank initiated a project to renew these contingency settlement arrangements.

The first part of this project, which has been completed, involved the development of new processes to receive advice of bilateral obligations from participants and feeder systems and calculate the resulting multilateral net obligations for input into RITS as a batch. In addition, the RITS participant procedures, which set out what participants should do in various types of contingency events were revised to reflect the new process. As part of this body of work, an end to end test of the new contingency settlement arrangements for SWIFT PDS was successfully organised by APCA; this included participation by the Bank and a number of RITS participants.

In a second part of this project, the Bank will evaluate whether any refinements to existing contingency arrangements are needed to ensure that clearing and settlement operations could continue in the event that RITS or its external feeder systems were unavailable. This work is expected to be undertaken alongside the review of RITS's ability to detect and recover from a disruption of service, or loss of software or data integrity.

**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.**

*Participants*

Recognising that the efficient operation of RITS is also dependent on the operational reliability and resilience of its participants, any technical problem affecting a participant's transaction activity must be notified to the Bank immediately. The Bank also monitors participants' payment flows in real time. If a potential problem is detected, the Bank will contact that participant for further information. After a disruption, a participant is required to provide the

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<sup>59</sup> For more information on non-similar facilities, see section 3.8.2 in RBA (2014), *2014 Assessment of the Reserve Bank Information and Transfer System*, December, p 26.

Bank with a detailed report on the causes and remedial actions of the disruption.<sup>60</sup> In addition, in May 2013, the Bank published its Business Continuity Standards for RITS participants, with a target for compliance to be achieved by September 2015. 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.<sup>61</sup>

Consistent with recommendations in the 2014 Assessment, the Bank has continued to monitor RITS participants' compliance with the standards. The Bank received participants' latest annual self-certification statements against the new standards as at the end of 2014, at which time 48 of 58 RITS participants were compliant with the standards. Almost all of the remaining participants indicated that they expected to be compliant by the end of the transition period. The Bank will verify this when participants' provide their next self-certification statements in early 2016.

#### *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 participants to effect third-party payments, as well as the management of Austraclear settlements via the RITS Automated Information Facility (which uses SWIFT messages). The Bank has a premium support package from SWIFT. The terms of this package 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 >central banks and chaired by the National Bank of Belgium.<sup>62</sup> To support its oversight activities, the Oversight Group has set proprietary minimum standards – the High Level Expectations – against which SWIFT is assessed.

Over the Assessment period, the Bank has implemented a number of measures to improve the way it works with SWIFT to diagnose systems problems and recover from a disruption. These changes were made in response to a major incident caused by an error in third party software supplied as part of the SWIFT network interface with RITS (see Box B for more information). As a results of the implementation of these measures, if a similar disruption were to occur, it is expected that services would be restored in a more efficient and timely manner.

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

- each operational site has an uninterruptable power supply and a backup power generator system
- all external communications links to the two operational sites are via dual geographically separated links, and where possible with different telecommunications providers
- the Bank performs regular testing of backup arrangements.

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<sup>60</sup> For further details of the incident reporting arrangements see 'RITS Advice 02/2012: Incident Reporting Arrangements', 10 April 2012, available at <<http://www.rba.gov.au/payments-and-infrastructure/rits/user-doc/pdf/incident-reporting-arrangements.pdf>>.

<sup>61</sup> 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.

<sup>62</sup> In 2012, the Oversight Group set up the SWIFT Oversight Forum to include 12 additional central banks, including the Bank, in the oversight process. Through its membership of the Oversight Forum, the Bank is able to access information relevant to SWIFT oversight.

### *Other FMIs*

Austraclear has been identified as an FMI that is of critical importance to the operation of RITS. The service level agreement with ASX – 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 the Austraclear system to conduct connectivity testing with 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 critical interdependent systems.<sup>63</sup> 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.<sup>64</sup> 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 payments, 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), CLS and SWIFT. 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 the contingency settlement arrangements mentioned above.

## **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***

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, since RITS is the only means of access to ESAs, all ESA holders must be participants 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 Payments Policy Department, under the governance of the Payments System Board, and is available on the Bank's website. The policy has been designed to be fair and open and promote competition in the provision of payment services by allowing access to all providers of third-party payment services, 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. Similarly, Australian-licensed CCPs and securities settlement facilities (SSFs) with payment arrangements that require Australian dollar settlement are also eligible to hold an ESA. The ESA policy sets a number of risk-based participation requirements, including around operational capacity and access to liquidity, which are designed to reduce the likelihood that an individual

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<sup>63</sup> See Standard 14.9 of the SSF Standards, available at <<http://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/clearing-and-settlement-facilities/standards/securities-settlement-facilities/2012/>>.

<sup>64</sup> For more information on ASX Collateral and its implications for Austraclear, refer to the *2014/15 Assessment of ASX Clearing and Settlement Facilities*.

participant experiences an operational or financial problem that disrupts the system more broadly. These requirements are generally proportional to participants' expected payments in RITS.

Based on this information, Payments Policy Department's assessment is that RITS has observed the requirements of Principle 18 during the 2015 Assessment period. RITS access and participation requirements are described in further detail under the following Key Considerations.

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

**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.**

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. Similarly, 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 ESA applicant must also demonstrate that it meets certain risk-related participation requirements at the time of application, including that:

- it has the operational capacity to operate and manage its ESA
- it has access to sufficient ESA liquidity to meet its anticipated routine and 'peak' period settlement obligations
- access to adequate intraday ESA liquidity to allow it to conduct its customers' business in a way that does not unreasonably impinge on other participants or reduce the efficiency of the system
- any collateral or guarantees it relies upon, especially in times of unpredictable stress, are adequate to meet its obligations.

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

To reduce the operational burden on smaller RITS participants, any ESA holder that is not a CCP, with aggregate outgoing RTGS transactions of less than 0.25 per cent of the total value of RTGS transactions, may use an agent to settle its RTGS transactions, rather than settling directly across its own ESA (see Principle 19).

Indirect participation in RITS is not available more broadly because of the concern that it might lead to a high degree of concentration of payments through a few direct participants, and give rise to an unacceptable concentration of liquidity and operational risks in these participants (see Principle 19). Indirect participation also introduces credit risk for participants because settlement between an indirect participant and its settlement agent occurs in commercial bank money. Although some small institutions are therefore required to participate in RITS directly, the cost of technical access to the RITS user interface is low for these participants, since they may use an internet connection.

**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 participants' activity in RITS, to ensure that participants 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 participants are also required to self-certify their compliance with the Business Continuity Standards annually. In addition, the majority of RITS participants – 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 participants, 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 participant. Accompanying procedures are designed to facilitate an orderly exit. 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. In addition to these rights, the Bank may suspend, for such a period as it considers appropriate, any participant who: fails to comply with any provision of the RITS Regulations; is guilty of any conduct regarded by the Bank to be contrary to the interests of the participants of the system; or has become insolvent. To facilitate an orderly exit, unsettled payments to or from a suspended participant would be removed from the RITS queue, and the input of any new payments involving the suspended participant would be prevented (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***

The Bank's ESA policy limits the scope for material risks to arise from tiered participation arrangements. Under the policy, ADIs that settle over 0.25 per cent of the total value of RTGS transactions and systemically important CCPs are required to settle their Australian dollar obligations in RITS using their own ESAs. Only those ESA holders with a share of transactions of less than 0.25 per cent of the total value of RTGS transactions are permitted to use an agent to settle their transactions. The Bank monitors ESA holders' compliance with this policy on an ongoing basis.

Based on this information, Payments Policy Department's assessment is that RITS has observed the requirements of Principle 19 during the 2015 Assessment period. Tiered participation arrangements in RITS are described in further detail under the following Key Considerations.

**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 outgoing RTGS transactions of less than 0.25 per cent of the total value of RTGS transactions. Further, to reduce dependence on its agent, a bank that participates indirectly is required to maintain an ESA for contingency purposes.

To ensure RITS has sufficient information about indirect participation, ESA holders that participate indirectly are required to report the value and volume of their outgoing RTGS payments to the Bank on a quarterly basis, and also notify the Bank if they change the agent bank through which they settle. These reporting requirements are set out in the Supplementary Membership Agreement that such ESA holders sign with the Bank. This information is used to monitor compliance with the 0.25 per cent threshold. If the value of an ESA holder's outgoing payments consistently exceeded the 0.25 per cent threshold, the Bank would consider revoking approval for the agency arrangement. If revoked, the ESA holder 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.
- Australian-licensed SSFs with payment arrangements that require Australian dollar settlement are eligible to hold ESAs. 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 as direct participants 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 between indirect participants that are not required to hold ESAs – that is, non-banks – and direct RITS participants that could affect RITS. For this reason it only collects information on indirect payment flows from ESA holders that use an agent.

**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 RTGS payments must be less than 0.25 per cent of total RTGS payments, it is unlikely that such a participant would be large relative to the direct participant it uses as an agent. In addition, to evaluate the potential impact of an ADI's agency arrangement, APRA requires the arrangement to be compliant with the ADI Prudential Standard on Outsourcing (CPS 231). Under this standard, an ESA holder using an agent would have to describe to APRA the key risks involved in using the agent and the mitigation strategies used to address these risks. APRA also assesses whether the agency arrangement introduces unacceptable risks to the direct participant.

The design of RITS also encourages direct participation by reducing the liquidity required for direct participation through liquidity-saving features, which are described in Section A.3.

**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. Notwithstanding this, the Bank also reviews the risks that arise from tiering in RITS on an ad hoc basis.

## **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***

The Bank ensures that RITS meets the needs of its participants by consulting with RITS participants on a regular basis. In addition to holding RITS User Group forums in Melbourne and Sydney every six months, the Bank liaises closely with industry through APCA and Australian Financial Markets Association (AFMA) and consults directly with RITS participants on proposed changes to RITS. Such consultation is key to setting and communicating RITS's business priorities. To ensure efficiency and effectiveness in RITS's operations, the Bank sets goals relating to minimum service levels and risk

management, and monitors its performance against these goals (see Principle 17 for further details on minimum service levels).

Based on this information, Payments Policy Department's assessment is that RITS has observed the requirements of Principle 21 during the 2015 Assessment period. The efficiency and effectiveness of RITS are described in further detail under the following Key Considerations.

**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.**

To ensure that the needs of its participants and the markets it serves are met, the Bank consults widely on any proposed changes to RITS. The Bank also holds RITS User Group forums in Melbourne and Sydney every six months. These forums provide an opportunity both for participants to suggest improvements and for the Bank to consult on planned upgrades. The Bank also liaises closely with the industry through APCA and AFMA, and directly with RITS participants on proposed changes to RITS.

**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 participants in the payments system. RITS communicates its business priorities through public consultation, the RITS User Group forum, other direct consultations with RITS participants, and liaison with industry through APCA and AFMA.

**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 audits of the functional areas involved in the operation of RITS, which are presented to the 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 reviewed on a quarterly basis. Feedback from periodic liaison with stakeholders at RITS User Group forums and industry liaison through APCA and AFMA are also key inputs into reviews of the effectiveness of 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***

RTGS payment instructions can be submitted to RITS via two linked external feeder systems – SWIFT PDS and Austraclear – or entered into RITS directly. Payment messages sent to RITS via the SWIFT PDS



feeder system – which account for the majority of volumes and value settled in RITS – are sent using the internationally accepted SWIFT message standards and network. Automated Information Facility messages (including ESA statements) also use the SWIFT message standards and network. The procedures and standards for participants to send payment messages to Austraclear are determined by ASX, the owner of Austraclear. Some payments are manually entered directly into RITS using the RITS User Interface, which is accessible via the internet.

Based on this information, Payments Policy Department’s assessment is that RITS has observed the requirements of Principle 22 during the 2015 Assessment period. RITS’s communication procedures and standards are described in further detail under the following Key Consideration.

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

Messages sent to RITS via the SWIFT PDS use SWIFT message standards and are transmitted over the SWIFT network. The majority of RTGS payments by value and volume submitted to RITS are entered via the SWIFT PDS feeder system. The Automated Information Facility, which participants can use to access information on their payments, receipts and liquidity in real time, and receive end-of-day ESA statements, also uses message standards set by SWIFT and is accessed via the SWIFT network.

The procedures and standards used to submit payments messages to Austraclear are determined by ASX.<sup>65</sup> Notwithstanding this, participants can use the RITS User Interface or the Automated Information Facility to control the status of payments sent via the Austraclear feeder systems.

Payments 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.

## **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***

The RITS Regulations and associated contractual arrangements, which are available on the Bank’s website, are supplemented by information papers and user guides that explain RITS requirements and functions. In addition, publication of this Assessment satisfies the requirement to provide information on operations in accordance with the Disclosure Framework developed by CPMI and IOSCO. The RITS fee schedule is also publicly available on the Bank’s website. The Bank publishes on its website monthly data on the number and value of RITS payments, as well as a list of RITS participants. Finally, to further enhance participant understanding of RITS’s operations, the Bank provides training to RITS participants, and also monitors participants’ activity and operations to confirm that RITS rules, procedures and features are well understood and to identify any potential issues.

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<sup>65</sup> ASX also controls the procedures and standards for payment messages through a third RTGS feeder system, CHES RTGS, which is currently not used.

Based on this information, Payments Policy Department's assessment is that RITS has observed the requirements of Principle 23 during the 2015 Assessment period. The disclosure of rules, key procedures and market data relating to RITS is described in further detail under the following Key Considerations.

**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 are comprehensive, and are available to the public on the Bank's website. As discussed under Key Consideration 1.2, the Bank is undertaking a major restructure and re-write of the RITS Regulations. The main objective of the new version is to improve the clarity of the Regulations. The Bank is aiming to implement the new Regulations in 2016, following consultation with participants. 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 RITS Regulations are accompanied by an information paper that provides further information on participant's rights and obligations. This paper is available on the Bank's website. The Bank also provides participants with user guides that contain detailed descriptions of RITS's features and instruction on how to use them, and information notes on material changes to RITS.

**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.**

The Bank provides participant training and monitors participants' operations to ensure RITS rules, procedures and features are well understood. Training is provided to all new participants, and is offered to all participants 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. Participants 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 participants. The Help Desk is open during RITS business hours.

**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.<sup>66</sup> This schedule provides fees at the level of individual services and provides clear descriptions of priced services. There are no discounts on RITS fees. Under the RITS Regulations, all changes to fees must be announced to participants at least two months before they take effect.

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<sup>66</sup> For further details see 'Box C: RITS Pricing' in RBA (2013), *Self-assessment of the Reserve Bank Information and Transfer System*, p 23.

**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. This report addresses all of the matters identified in the Disclosure Framework. The Bank also publishes on its website monthly data the number and value of RITS payments, as well as a list of RITS participants. In addition, these data are made available in the *Statistics on Payment, Clearing and Settlement Systems in the CPMI Countries*.<sup>67</sup>

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<sup>67</sup> These data are available at <[http://www.bis.org/list/cpmi/tid\\_57/index.htm](http://www.bis.org/list/cpmi/tid_57/index.htm)>.

# Abbreviations

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ADI	Authorised deposit-taking institution	HVCS	High Value Clearing System
AFMA	Australian Financial Markets Association	ICS	Initial Convenience Service
APCA	Australian Payments Clearing Association	IOSCO	International Organization of Securities Commissions
APRA	Australian Prudential Regulation Authority	ISMA	International Securities Market Association
ASIC	Australian Securities and Investments Commission	LVSS	Low Value Settlement Service
CCP	Central counterparty	NPP	New Payments Platform
CHESS	Clearing House Electronic Sub-register System	PDS	Payment Delivery System
CLS	CLS Bank International	PEXA	Property Exchange Australia Ltd
CPMI	Committee on Payment and Market Infrastructures (formerly CPSS)	PSNA	Payment Systems and Netting Act 1998
CS	Clearing and settlement	RITS	Reserve Bank Information and Transfer System
DE	Direct entry	RTGS	Real-time gross settlement
ESA	Exchange Settlement Account	SSF	Securities settlement facility
FMI	Financial market infrastructure	SWIFT	Society for Worldwide Interbank Financial Telecommunication
FSS	Fast Settlement Service	TBMA	The Bond Market Association
GMRA	Global Master Repurchase Agreement		