

ISO 20022 Migration for the Australian Payments System – Issues Paper

A consultation paper issued by the Reserve Bank of Australia and
the Australian Payments Council

April 2019



Australian
Payments Council

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1. Introduction

The Australian payments system comprises a number of payment services, clearing systems and settlement systems. Some of these services and systems use the Society for Worldwide Interbank Financial Telecommunication (SWIFT) Message Type (MT) messaging standards for messages used in trading, clearing, settlement and payments. SWIFT has recently announced plans to cease ongoing support of some categories of MT messages (Categories 1, 2 and 9), used in cross-border and correspondent banking payments, after November 2025 and migrate them to the International Organization for Standardization (ISO) 20022 standard. SWIFT's end goal is to fully migrate all payments and reporting traffic to ISO 20022, allowing the community to use the same standard for all payments flows. A date has not yet been announced when the MT messages used in closed user groups (CUGs), including those used for Australia's High Value Clearing System (HVCS), will cease to be supported. A number of key financial market infrastructures worldwide already have projects underway to adopt the ISO 20022 standard for payment messaging over the next five years. Given SWIFT's end goal for full migration to ISO 20022 and the number of international projects underway, it is an appropriate time to consider adoption of the ISO 20022 standard in Australian payment systems.

The Payments System Board (PSB) has identified migration to ISO 20022 as a key strategic issue for the Australian payments system. Accordingly, the Reserve Bank of Australia (RBA) and the Australian Payments Council (APC) are undertaking this consultation to assist the industry in coming to agreement on key strategic decisions for an ISO 20022 migration project. The intention is to ensure the migration project is undertaken in a timeframe that does not pose risk to the payment system and that appropriately considers the objectives of migration and broader long-term opportunities for the industry. This paper is the first in a series of three consultation papers and will set out some of the key strategic issues for an ISO 20022 migration. A second paper will provide a summary of the initial consultation responses and set out some proposed options for implementation. A third paper will present final conclusions from the consultation, including agreed scope, governance, migration strategy, timetable and implementation approach. The aim of the RBA and APC is for this project to be complete by the end of 2024, ahead of the completion of SWIFT's cross-border payments migration and in line with the timeframes for international migrations.

Section 2 of this paper provides some background on the ISO 20022 message standard, including the benefits and international migration experience; this section also discusses the objectives and potential challenges of the migration for Australia. Section 3 considers the scope of the project, looking at the core messages that should be migrated and other messages that may be considered in scope. Section 4 looks at payment system design issues that could affect the approach taken for the ISO 20022 migration. Section 5 identifies various migration approaches for consideration. Section 6 discusses considerations for project governance. Section 7 outlines the next steps and how to respond to this paper.

2. ISO 2022 Migration

2.1 What is ISO 2022?

ISO 2022 is an internationally recognised standard that was developed and is maintained by ISO. ISO 2022 is a general purpose standard for development of financial industry messaging in the payments, securities, trade services, cards and foreign exchange business domains. For payments, the ISO 2022 standard covers messaging related to cash account management, payments initiation, clearing, and settlement.

The general features of the ISO 2022 standard are:

- Open standard – the message definitions are publicly available from the ISO 2022 website.
- Flexible – definitions can be adapted for new requirements and technologies as they emerge.
- Enhanced data content – ISO 2022 messages have an improved data structure (e.g. defined fields) and expanded capacity (e.g. increased field size and support for extended remittance information).
- Network independent – the adoption of the standard is not tied to a particular network provider.

ISO 2022 is being implemented internationally by a number of key financial market infrastructures (FMIs) and SWIFT has planned the migration of cross-border payments to the ISO 2022 message standard. Domestically, ISO 2022 has been adopted in the New Payments Platform (NPP) and Fast Settlement Service (FSS) and is also the message format being adopted by the ASX as part of its Clearing House Electronic Sub-register System (CHES) Replacement Project.

2.2 What are the benefits?

There are a number of potential benefits of adopting the ISO 2022 message standard. The extent to which benefits are realised depends on the objectives of the migration in each jurisdiction and the extent to which enhanced message content is adopted. The potential benefits may include:

- Efficiency – migration of agreed domestic payment traffic to ISO 2022 offers a range of potential processing efficiency enhancements, such as improved straight-through processing, consistent use of message standards and improvements in transaction screening and monitoring processes.
- International harmonisation – ISO 2022 message guidelines for high value payment systems have been developed through High Value Payments Plus (HVPS+), and ISO 2022 standards for cross-border payments are in the process of being prepared by Cross-Border Payments and Reporting Plus (CBPR+).¹

1 HVPS+ is a task force formed by SWIFT, along with major global banks and market infrastructures, to define and refine a global implementation framework and message usage standards for high value payments to harmonise compatibility of ISO 2022 messages across borders. CBPR+ is a SWIFT working group with responsibility for developing global usage guidelines for cross-border payments.

- Competition and innovation – the enhanced data-carrying capability of ISO 20022 messages is an enabler for institutions to deliver more innovative and competitive services to their customers.
- Future-proofing – the ISO 20022 standard has been designed to adapt to new technologies as they emerge and can be upgraded to meet evolving requirements.
- Fraud and financial crime management – the expansion and addition of information fields can help to facilitate payment tracking and verification, which can assist in the mitigation of fraud and other financial crimes. The use of highly structured ISO 20022 fields also supports greater automation of a number of compliance activities (e.g. Anti-Money Laundering/Counter-Terrorism Financing (AML/CTF) monitoring and sanctions screening).
- Resiliency – increasing the consistency of message formats is one step towards enabling messages to be more easily directed through alternate networks and systems (e.g. in a contingency event).

2.3 International experience

Over the past decade there has been an international push to migrate to ISO 20022 messaging from a number of key FMIs. SWIFT estimates that by 2025, 87 per cent of the value and 79 per cent of the volume of high value domestic payments messaging worldwide will use ISO 20022. A number of the migration projects are being completed as part of a larger infrastructure refresh.

The Bank of England plans to migrate high and low value domestic payment systems by 2024. The key drivers are to improve resiliency, strengthen risk management, reduce fraud, and promote competition and innovation. To meet these objectives, the Bank of England will introduce a Common Credit Message across its domestic payment systems.

The US Federal Reserve Banks have proposed a plan for the migration of the Fedwire Funds System by late 2023, to be undertaken in three phases: preparing for ISO 20022 migration, including ‘cleaning up’ existing message formats; implementing a ‘like-for-like’ ISO 20022 message (limited to existing content); and expanding content. This work will be coordinated with an ISO 20022 migration for the private sector high value payments system, the Clearing House Interbank Payments System. Key drivers for this project include: maintaining consistency with cross-border messaging standards (due to migrate as part of the SWIFT cross-border project); improving the end-to-end efficiency of payments; and enabling richer and more structured data.

The European Central Bank (ECB) is proposing to have a ‘big-bang’ implementation of its consolidated TARGET2 and TARGET2 Securities systems in November 2021. Both systems will use ISO 20022 messaging. The key driver for the project is the consolidation of the two systems, though the ECB has also noted the benefits of ISO 20022 supporting extended remittance information.

2.3.1 SWIFT ISO 20022 migration for cross-border payments

SWIFT has been consulting with SWIFT participants worldwide as part of its decision to facilitate an industry migration of cross-border payments. The key drivers for this work include: the increased adoption of ISO 20022 in domestic payment systems; enabling consistent customer experience across domestic and international payment systems; supporting development of new services due to enhanced message capabilities; and assisting with compliance activities (e.g. increasing the efficiency of AML monitoring).

SWIFT's cross-border migration is planned to begin in November 2021 and will include all users of payments and cash management messages (MT Categories 1, 2 and 9).

The migration will involve a coexistence phase, lasting approximately four years. The coexistence phase will allow a mix of old and new messaging while members are completing their migration to ISO 20022. The coexistence of old and new messages is facilitated by translation services, provided by SWIFT, enabling users to translate messages between ISO 20022 and their MT equivalents. At the end of the coexistence phase, all users are expected to have migrated to ISO 20022 and translation services will be removed. However, SWIFT note that internal translation can continue to occur while back-office systems are upgraded. At this time, SWIFT also plans to withdraw support for the MT message Categories 1, 2 and 9 used in cross-border and correspondent banking payments.

As part of the consideration of the scope of a domestic migration, there may be advantages to the industry in coordinating a domestic ISO 20022 migration with this related cross-border work. For example, coordination may simplify the overall migration to ISO 20022, reducing the time when support for old and new formats is required and synergies in back-office system upgrades may be explored. Moreover, aligning cross-border message formats with domestic message formats means that richer data can be transported end-to-end with international payments without translation or truncation.

2.4 Objectives of an ISO 20022 migration for payments in Australia

In Australia, some key objectives for a migration to the ISO 20022 standard include:

1. Modernisation – the growing adoption of ISO 20022 in other FMIs worldwide combined with SWIFT's cross-border migration project and its end goal to fully migrate all payments and reporting traffic to ISO 20022 are key drivers for adopting the ISO 20022 standard in domestic payments messaging. This would include, at a minimum, the migration of domestic messaging traffic in:
 - The SWIFT Payment Delivery System (PDS), covering clearing and settlement messaging between HVCS members.
 - Any back-office, reconciliation, treasury, AML/CTF or sanctions screening systems that uses the relevant MT message formats.
 - The Reserve Bank Information and Transfer System (RITS) Automated Information Facility (AIF), which is used by RITS members for liquidity management and statement provision.
 - RITS Batch settlement arrangements that use SWIFT MT messaging (i.e. Mastercard, eftpos, and CHES).
 - SWIFT MT messages between participants and the Austraclear debt securities settlement system.
2. Simplification – broad migration to ISO 20022 will, over time, facilitate increased automation by providing structured information, potential content enhancements and consistent service delivery across various payment functions.
3. Use of enhanced content – expanded data-carrying capacity and the use of additional and structured fields are expected to facilitate improvements in areas such as processing efficiency and risk management. It will also enable increased competition and innovation in potential service offerings.

Consultation Questions

Q1. Does your organisation currently support ISO 20022 payments and reporting messaging? If yes, what payment systems and/or associated activities are currently supported? If no, what plans does your organisation have to support ISO 20022 by 2024?

Q2. Does your organisation currently provide or use inbound and/or outbound correspondent banking services?

Q3. Are there any other objectives that your organisation believes the Australian financial industry should look to achieve as part of an ISO 20022 payments migration? If yes, please explain your views.

2.5 Risks and challenges

The migration of current MT message formats to ISO 20022 for domestic (and cross-border) payments will involve significant work for the payments industry. Changes will be required to: back-office systems; treasury and liquidity management systems; fraud, AML/CTF monitoring and sanctions screening systems; and downstream client systems. In addition, changes to business processes, data storage capacity and the possible use of translation services will need to be considered. Alongside these implications, other high-level challenges that may be faced by payment industry participants include (but are not limited to):

- Prioritisation against other initiatives – there are competing payments-related projects requiring investment of resources and personnel within each organisation and across the industry (e.g. the ongoing work by NPP participants to rollout NPP services to their customers).
- Business case approval – the process within each organisation to seek funding approval to undertake the ISO 20022 migration project will vary. All organisations will need to consider how they will obtain the necessary approval, taking into account potential synergies with the cross-border migrations and the timing of other industry payment efficiency initiatives.
- Project horizon – given the potential broad scope of an ISO 20022 migration project, the total length of the project may be quite long, requiring ongoing funding and resource commitments.
- Cross-border migration – all financial institutions submitting SWIFT MT payments internationally will be affected by the staggered global rollout of implementations of ISO 20022 messaging and the different migration approaches adopted between jurisdictions.

The costs of migrating payments messaging to ISO 20022 will depend on each participant's current ISO 20022 capability, the required investment in replacement infrastructure, and resourcing needs.

Consultation Questions

Q4 a) Do you have any comments on the high-level risks and challenges of payments messaging migration to ISO 20022 outlined in section 2.5? If yes, please provide your comments under the relevant risk/challenge: prioritisation against other initiatives, business case approval, project horizon and cross-border migration.

Q4 b) Are there any other major risks and challenges that you believe need to be considered? If yes, please explain your views.

Q5. For your organisation, please consider each risk and challenge outlined in Section 2.5, and list any others you have identified in Q4 b). Please rate each risk/challenge for your organisation according to the scales for likelihood (rare, possible, likely, almost certain, certain) and consequence (insignificant, minor, moderate, catastrophic). Please rank each risk/challenge by the difficulty they pose to your organisation, with 1 being the most difficult.

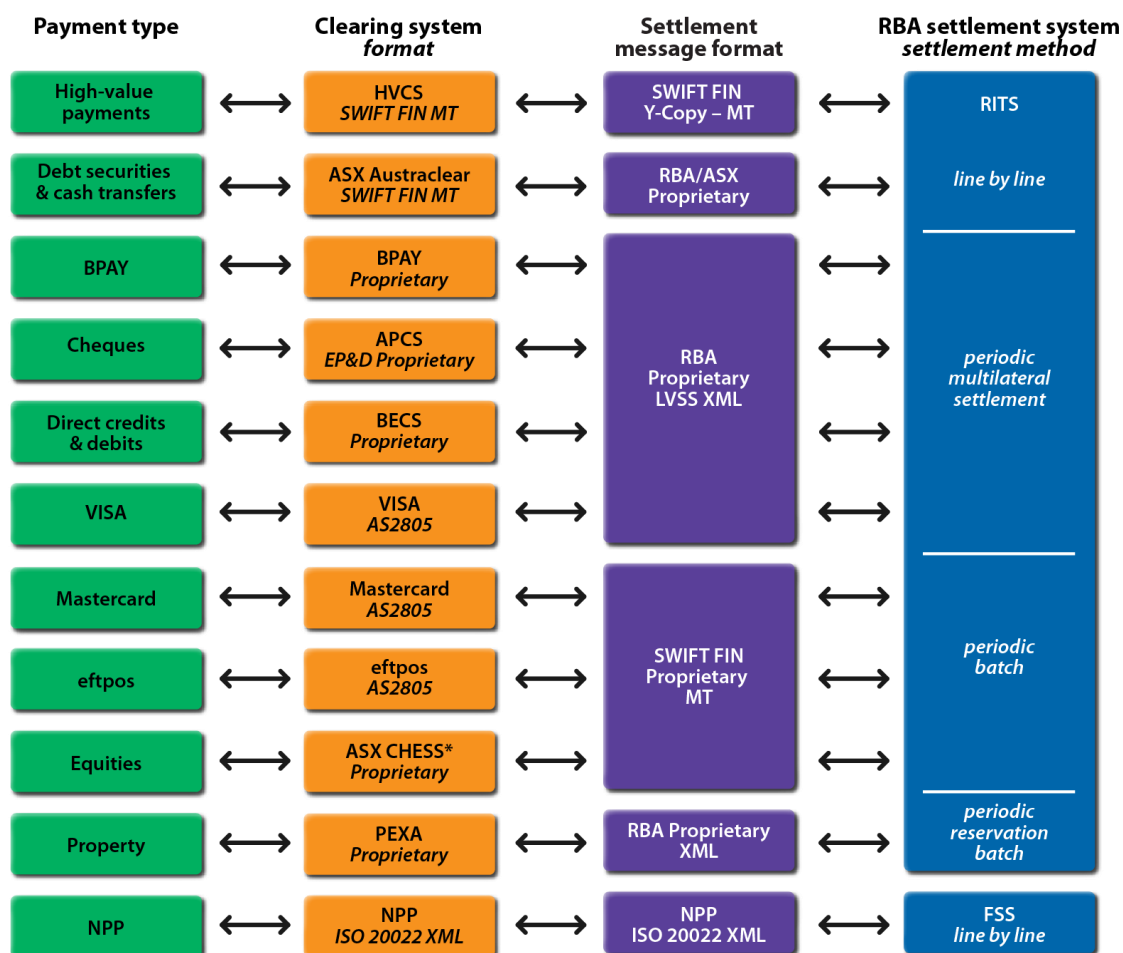
3. Strategic Issues – Scope of Migration

3.1 Australian payments, clearing and settlement systems

3.1.1 Current state

There is a range of payments, clearing and settlement arrangements used in the Australian payments system. The exchange of information takes place via clearing systems specific to the payment type. Settlement of clearing obligations occurs in the RBA’s settlement systems, either via RITS or the RITS FSS (Figure 1). A range of different message formats is used for the exchange of clearing and settlement messages used by the different systems.

Figure 1: Australian Payments, Clearing and Settlement Systems



*ASX CHESS batch settlement message is currently migrating to ISO 20022.

Box A: Current Australian Payments, Clearing and Settlement Systems

As shown in Figure 1, there are a number of payments, clearing and settlement systems that make up Australia's payment system.²

Industry-operated clearing systems

- High value payments – used for AUD customer and financial institution to financial institution wholesale payments. These payments are bilaterally cleared using the SWIFT PDS between HVCS members and settled line by line in RITS.
- Cheques – used for some retail payments by consumers and businesses, including some property transactions, though their use is declining rapidly. These payments are bilaterally cleared between Australian Paper Clearing System (APCS) members and settled periodically in multilateral batches in RITS.
- Direct credits and debits – used for retail credit transfers (e.g. salary payments) and direct debits (e.g. utility payments). These payments are bilaterally cleared between Bulk Electronic Clearing System (BECS) members and settled periodically in multilateral batches in RITS.
- NPP – used for instant funds transfers 24 hours a day, seven days per week ('24/7'). These payments are bilaterally cleared between NPP participating financial institutions and settled line by line in the FSS.

Privately owned payment systems

- BPAY – used for bill payments. These payments are bilaterally cleared between participating institutions through BPAY and settled periodically in multilateral batches in RITS.
- Cards (eftpos, Mastercard, and Visa schemes) – used for retail point-of-sale and online payments. These payments are bilaterally cleared between financial institutions according to rules for each card scheme and settled periodically in batches in RITS (only Visa is a multilateral batch).
- Property – used for e-conveyancing and settlement of property transactions through the Property Exchange Australia (PEXA) system. The properties and payments are exchanged between lawyers, conveyancers, financial institutions and land registries, on a near-delivery-versus-payment (DvP) basis and settled in periodic reservation batches in RITS.³
- Debt securities – used for the electronic securities depository, cash transfers and settlement of debt securities through ASX Austraclear. These debt securities are exchanged on a DvP basis and the interbank obligations are settled line by line in RITS.
- Equities – used for electronic securities depository and settlement of all equities and equities-related securities through the ASX CHESS. These equities securities are exchanged on a DvP basis and the interbank obligations are settled in a periodic batch in RITS.

2 Payments arrangements that do not settle in central bank money (e.g. American Express cards) are excluded from this summary.

3 DvP is an asset settlement mechanism that links an asset transfer and a funds transfer in such a way as to ensure that delivery occurs only if the corresponding payment occurs.

RBA interbank systems

- RITS – Australia’s high value settlement system, which is used by banks and other approved institutions to settle obligations arising from payments clearing and financial markets transactions. Payments are settled on a line by line, real-time gross settlement (RTGS) basis, or via batch. RITS provides liquidity saving features and payments are settled on a queued basis according to a transaction’s priority status and eligibility for settlement in the current session.
- FSS – settles payments initiated via the NPP on a first-in, first-out (FIFO), line by line RTGS basis, and is available 24/7.

Table 1 shows the average value and volume processed through these channels on a daily basis.

Table 1: Payments in Australia^(a)
Daily average^(b), January 2018 – December 2018

	Number '000s	Value \$ billion
High Value Payments ^(c)	43.9	112.4
Cheques	274.8	3.3
Direct Debits and Credits (includes BPAY)	13,654.3	45.0
NPP	387.3	0.3
Debt Securities	3.7	61.1
Equities	1,260.6	5.2
Cards ^(d)	25,742.4	1.8
Property	4.2	1.2

(a) Includes payments between customers of the same financial institution.

(b) Daily average for active business days for each payment stream. 253 days for all streams except the NPP (92 days from October 2018 – December 2018), and cards (365 days).

(c) Includes SWIFT PDS and net Continuous Linked Settlement (CLS) payments. Net CLS payments represent the Australian dollar pay-ins to and pay-outs from CLS.

(d) Includes debit and credit card transactions.

Sources: RBA

3.1.2 Migration project scope

Given the broad range of payment types that make up the Australian payments system, there will be some degree of judgement as to what should be included in the final scope of the ISO 20022 migration project. The inclusion of some message sets will be driven by SWIFT’s planned end of support for MT messages used outside of a SWIFT member administered CUG, while other message sets could potentially be included because they would deliver the objectives outlined in Section 2.4 above. One possible way to group payment messages for preliminary consideration is set out below.

Messages that should migrate to ISO 20022

A key assumption underpinning this paper is that Australia will continue to operate a dedicated high value payments system (HVPS). Maintaining a dedicated HVPS is necessary due to its systemic importance, the large share of payment values that flows through the system on a daily basis and the system’s design to enable the efficient use of liquidity through settlement in RITS.

Given the widespread global migration away from SWIFT MT messages, all services and systems that use these messages should be migrated to an alternative solution. These include:

- *SWIFT PDS clearing and settlement messaging for high value payments* – Given the importance of the HVPS, the industry-operated HVCS clearing and settlement messaging should migrate to ISO 20022 as part of this project.
- *RITS batch payments settlement messaging (SWIFT FIN AIF)* – the interbank batch settlement instructions sent by Mastercard, eftpos and CHES Batch Administrators (all privately owned entities) use SWIFT Category 1 messages. The RBA proposes to engage separately with each of these batch administrators to migrate interbank settlement messaging to ISO 20022, independent of broader industry consultation. Messages will be migrated based on bilateral agreement and implemented in a timeframe complementary with the wider ISO 20022 migration project. CHES settlement messages are already in the process of migrating as part of a separate ASX project.
- *RITS AIF messaging* – the AIF is a not payment system but an ancillary reporting and enquiry messaging service offered to a CUG of RITS members. SWIFT MT messages are used in the AIF service for Exchange Settlement Account (ESA) statements, liquidity and credit management, and enquiry and status reporting. The RBA is considering replacement of these messages either by developing an Application Programming Interface service or migrating the messages to ISO 20022.
- *Austraclear cash transfer messaging* – Cash transfers between Austraclear participants can be submitted to Austraclear using SWIFT Category 1 messages. While this migration could be done separately to the high value payments migration, there may be some benefit to participants of having this included as part of the overall ISO 20022 migration project scope. Other SWIFT MT messaging submitted to Austraclear for debt securities settlement processing do not form part of the payments migration scope.
- *Other financial institution messaging* – sent or received using SWIFT MT messages. For example, this may include downstream clients (corporates or client financial institutions) initiating or receiving MT payment messages.

Other messaging that could be migrated

As part of the migration to ISO 20022, there may be some benefit in including a broader set of payments messages within the migration scope. In considering whether these clearing system messages should be migrated to ISO 20022, the long-term future of some of these payment types should be considered along with the costs and benefits of migrating each. Some potential options could include:

- *Direct credits and debits (direct entry (DE)) clearing messaging* – BECS credit and debit transaction messages could be migrated to ISO 20022 messaging, which could potentially be aligned with other payment messages such as HVCS and the NPP. This would improve the information-carrying capacity of DE payments, which currently limits the remittance description to 18 characters compared, for example, with ISO 20022 compliant NPP payment messaging which allows up to 280 characters.
- *RITS Low Value Settlement Service (LVSS) settlement messaging* – current LVSS settlement files use an RBA proprietary eXtensible Markup Language (XML) format that could be aligned with the ISO 20022 standard.

- *Customer to financial institution/financial institution to customer messaging* – an ISO 20022 migration provides an opportunity to define standards for messages between customers and their financial institutions.

Other payment messaging/ format standards

There are a number of other clearing arrangements that currently use clearing message sets/formats that are not aligned with ISO 20022. There are likely to be significantly greater costs and/or less benefit from migrating these to ISO 20022.

- *Card clearing messaging* – the current AS2805 messages used for card payment clearing are based on an international standard. Any decisions on migration to ISO 20022 are likely to be made at the international level.
- *BPAY clearing messaging* – the current messages are in a BPAY proprietary format.
- *Cheque clearing format standards* – the current Electronic Presentment & Dishonour format used for cheque clearing is not considered to be a candidate for migration, given the continuing decline in the use of cheques.⁴
- *Property reservation and settlement batch messaging* – the current RBA proprietary XML formats were designed specifically for property batch settlement purposes. They include the ability to reserve funds in an ESA to facilitate property settlement processes. Currently an ISO 20022 message format to reserve funds does not exist and there appears to be limited benefit to create and migrate to a new ISO 20022 message format.

Consultation Questions

Q6. Which, if any, of the messages categorised as “Other messaging that could be migrated”, should be included as part of an ISO 20022 payments migration? Are there any that you think could potentially form part of a later stage of migration? Please explain your views.

Q7. Do you have any other specific feedback you wish to provide on the overall ISO 20022 payments migration scope? Please explain your views.

Q8. For organisations that use the RBA’s AIF reporting and enquiry service, what are your initial views on a replacement solution to modernise this service? Please explain your views.

3.2 Possible message enhancements

The ISO 20022 standard offers the capability to include enhancements to existing payment message content. The inclusion of enhanced message content as part of an ISO 20022 migration would meet a key objective of the project and offer a wide range of potential benefits, including the delivery of value-add services and improved processing efficiency. Some examples of enhancements that may be adopted include:

- *Payment purpose codes* – this provides for a standardised method of identifying the purpose of a payment (e.g. salary payment, tax payment). The implementation of purpose codes can facilitate efficiency gains, such as the identification of time-critical payments, and identification for

4 See the Reserve Bank’s Governor’s recent speech Lowe, P. (2018) ‘A Journey Towards a Near Cashless Payments System’ Australian Payment Summit, Sydney, November, available at <https://www.rba.gov.au/speeches/2018/sp-gov-2018-11-26.html>.

processing. Purpose codes may also be used to assist in compliance screening by flagging specific fields that need to be verified.

- Identity information – structured fields to identify the ultimate originator and beneficiary, combined with enhanced fields for financial intermediaries (agents), can be used to trace a payment through the payment chain more efficiently. The use of structured identity fields can also help to streamline financial crime compliance activities.
- Legal Entity Identifiers (LEIs) – LEIs can be used to identify organisations, linking to a database containing rich information about that entity. The use of LEIs can provide significant advantages for identification, Know Your Customer (KYC) screening, and AML/CTF monitoring and sanctions screening. However, achieving the full benefits of LEIs in payments would be reliant on a wide adoption of LEIs in Australia and overseas.
- Remittance information – the current structural limitations of some message formats (e.g. in BECS) significantly limits the amount of remittance information that can be sent with a payment. The ISO 20022 standard offers both a structured way to send remittance information, as well as larger unstructured remittance fields.
- International Bank Account Number (IBAN) – IBAN is a unique code that can be used to identify a customer’s bank account. IBANs are widely used in Europe and growing in use globally, particularly in the Middle East. IBANs are designed to improve the processing of cross-border payments.

In addition to clearing messages, there are possible efficiency benefits in widening the project scope to include the standardised use of ISO 20022 payment investigation messages between participating institutions. This could help facilitate the automation of various investigation processes, which has proved beneficial for the NPP.

Consultation Questions

Q9 a) Please provide your views on whether to include each of the enhanced content items proposed in Section 3.2.

Q9 b) What other enhanced content considerations would you like to see included as part of the migration project? Please explain your views.

4. Strategic Issues – Payment System Design

4.1 Long-run payment system design considerations

A migration to the ISO 20022 standard presents an opportunity for the industry to consider the optimal long-run design of Australia's payments system. The changes required for an ISO 20022 migration can be considered and designed to align with the longer-term strategic direction desired by the industry. Accordingly, it is important the industry considers the strategic issues raised in this consultation in conjunction with long-run issues raised in the consultation on the APC's review of the Australian Payments Plan and any related work by the Australian Payments Network (AusPayNet).

In preliminary industry discussions on an ISO 20022 migration, some stakeholders have raised the question as to whether high value payments could be migrated to the NPP, thereby avoiding a separate upgrade of the HVPS to ISO 20022 messaging. The NPP is newly commissioned, operates on modern infrastructure and the message set is based on the ISO 20022 standard (Box B). For some participants, this may seem an attractive proposition, compared with the system upgrade work to move HVCS to ISO 20022. However, there are some significant issues that would need to be considered in determining the suitability of any potential migration of high value payments to the NPP. These include:

- Member participation in the NPP is relatively narrow. For example, direct participation in the SWIFT PDS (47 participants) is much larger than in the NPP (11 participants). Consequently, the overall quantum of work required for all HVCS participants to develop infrastructure to directly connect to the NPP would be significant.
- Under the RBA's existing ESA policy, ADIs must directly settle across their own ESA if their aggregate wholesale RITS RTGS transactions constitute 0.25 per cent or more of the total value of wholesale RITS RTGS transactions. This policy requirement, as well as NPP Australia's (NPPA) participant onboarding requirements, would need to be met in any proposed migration of high value payments to the NPP.
- Existing RITS functionality helps to facilitate efficient liquidity management processes for ESA holders for the settlement of their high value payments, including those processed through the SWIFT PDS. RITS allows transactions to be queued until sufficient settlement funds are available. It also provides other liquidity savings features such as transaction prioritisation and auto-offset.
- The settlement system used for NPP payments is the FSS. The FSS caters for fast, immediate settlement processing. It has no queuing, transaction management functionality, or liquidity saving features, which may make it unsuitable for the settlement of high value payments.
- It may be possible for the RBA to build functionality that allows payments sent from the NPP, or from other payment systems, to be settled in either RITS or the FSS (i.e. a choice in settlement method could be provided). Given the different levels of participation by institutions across payment systems, this would potentially be complex to implement.

- Existing cash market arrangements are based primarily on the processing arrangements and operating hours of Australia's high value systems, Austraclear and the SWIFT PDS. A careful analysis of the implications for the cash market from migrating high value payments to the NPP would be required to ensure that there are no adverse outcomes for the broader financial system, especially if operating hours were extended.
- For many HVCS members, large-scale systems and operational changes may be required to redevelop interactions between payment systems, back office and treasury systems, fraud, reporting and reconciliation systems as they may be heavily integrated in existing payment channels and business processes.
- A major advantage of maintaining two or more separate credit transfer systems is that, in the event one of the systems becomes unavailable in a contingency scenario, payments can be redirected to a different system for processing. This mechanism has been successfully used by Australian institutions during a number of contingency events to maintain customer service availability. The potential resiliency benefits for some participants of being able to route payments through a different clearing system, which is also ISO 20022 compatible, in a contingency would be lost if NPP and HVCS were merged.

Accordingly, migrating high value payments to the NPP in place of migrating SWIFT PDS to ISO 20022 messaging is not a simple or straightforward option. While some HVCS payments have already, or will in the future, migrate to the NPP, this does not necessarily obviate the need to maintain a distinct HVPS. With two distinct systems, there would be potential merit in developing contingency capability to allow payments to be sent through either the NPP or SWIFT PDS to allow critical payments to flow in the event that one system becomes unavailable.

Industry stakeholders should also consider the long-term future of the DE clearing system in relation to the ISO 20022 migration. The cost and effort of migrating legacy DE systems to ISO 20022 messaging would be large and the industry may not consider this migration to be worthwhile. As with the HVCS, some credit payments currently cleared through DE are candidates to migrate to the NPP. With the proposed development of an NPP Consent and Mandate Service, debit payments would also be candidates to migrate to the NPP. These developments may lead to the decline in use of DE to the extent that the industry may consider whether to continue the ongoing support of this clearing system.

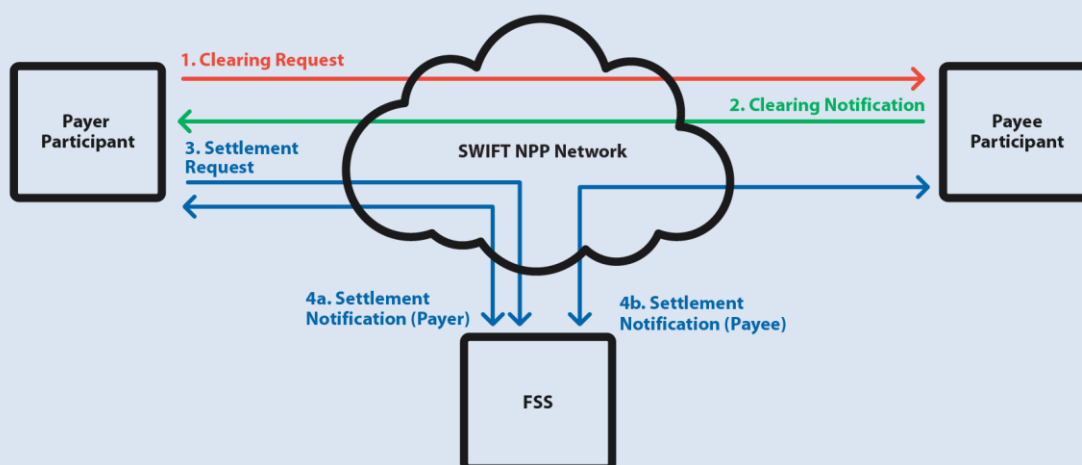
Similarly, with the decline in cheque use in Australia, the industry is likely to consider the length of its ongoing support of this clearing stream and therefore may not consider a migration to ISO 20022 worthwhile.

Box B: The NPP

The NPP facilitates the 24/7 real-time clearing of consumer and business payments, with settlement occurring in the RBA's FSS. There are currently more than 75 banks, credit unions and building societies that have rolled out real-time payments services to their customers, of which 11 participants undertake settlement in FSS. The NPP utilises ISO 20022 messaging for the clearing and settlement of payments. Figure 2 shows the order of message flows in the NPP.

NPP payments are generally associated with an overlay service, which can range from arrangements that set service standards to more complex solutions that implement new flows and payment types between participants. The first overlay service is Osko by BPAY, which is a payment option available through participating digital banking channels, such as mobile applications and online banking, on a 24/7 basis that enables funds and information to be rapidly transferred and made available to recipients.

Figure 2: NPP Message Flows



Consultation Questions

Q10. Do you agree with the view that it is appropriate to maintain a dedicated HVPS alongside other payment systems, including the NPP? If no, please explain your views.

Q11 a) Does your organisation have any other views or preferences on how the long-term design of the Australian payments system should evolve?

Q11 b) If yes, how does choice of settlement method and system resiliency factor into this view?

Q11 c) From your organisation's perspective, what other long-term design considerations should be factored into this migration project? Please frame your response from a strategic standpoint rather than any focus on short-term challenges or required investment.

4.2 RTGS message exchange models

The move to ISO 20022 message format standards internationally has also coincided with changes in how some RTGS operators propose to receive and process message content in their HVPSs. As is the

case with other central banks, the RBA is considering the appropriate message and network exchange model to adopt for the processing of high value payments as part of the ISO 20022 migration project.

The majority of HVPSs around the world, including the SWIFT PDS, use SWIFT’s Y-Copy messaging service (Figure 3). The Y-Copy service involves the sending party (the HVCS/RITS member) sending the full payment clearing message to the SWIFT network, which then extracts relevant interbank settlement details to send to RITS for settlement. Upon settlement, RITS sends a confirmation to the SWIFT network which then releases the full payment message (including the settlement confirmation) to the receiving party (another HVCS/RITS member) while also notifying the sending party of the successful settlement.

Under the Y-Copy service, RITS receives no information about the sending or receiving customer. In addition, message routing and security are handled by SWIFT, as the network operator, at each transit point. From a contingency perspective, it is possible for the Y-Copy service to support continuation of clearings when RITS is unavailable.

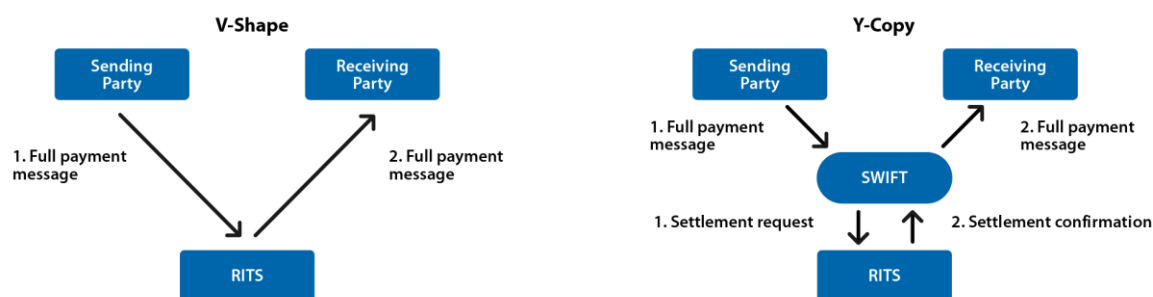
An alternative option is a V-Shape model. The V-Shape model involves the sending party sending the full payment clearing message to RITS for settlement. Upon settlement, RITS sends the full payment message (including the settlement confirmation) to the receiving party. Under this model, the full payment message, including customer information, is received by RITS.

A feature of the V-Shape model is that it does not necessarily require SWIFT to operate the network and the system may even become ‘network agnostic’. This could have some advantages in terms of resiliency because industry participants could potentially connect to more than one network to clear and settle payments for a particular payment system. This could provide contingency options in the event of one network, or the RITS interface to that network, being unavailable as payments could be routed through the other network. Support of multiple networks may also increase competition between network providers and therefore reduce prices.

However, allowing clearing systems to use multiple networks to connect to RITS would introduce additional complexity, and therefore cost, as different network protocols, security protocols and gateways would need to be supported. Other potential implications of adopting a V-Shape architecture may include changes for how end-point security and message routing is managed and a need for additional transaction screening.

In each model, interbank settlement in RITS would occur before the completion of the payments clearing.

Figure 3: Alternative RTGS messaging exchange models



Consultation Questions

Q12. If a separate high value clearing system is maintained for the ISO 20022 payments migration, what is your organisation's preference on the RTGS messaging model (i.e. Y-Copy or V-Shape) that should be adopted? Please explain your views.

5. Strategic Issues – Migration Approach

5.1 ISO 2022 migration approach

This consultation is seeking views on the preferred approach for the ISO 2022 migration. In considering the approach to migration, the scope of migration and strategic issues discussed in Section 4 should be taken into account. Regardless of the migration approach, there are four broad stages to the migration project that will be required:

- Industry consultation – this stage will seek feedback on the strategic issues and decisions associated with an ISO 2022 migration (this paper), summarise the views collected and suggest options for the key strategic issues (second half of 2019), and outline final conclusions from the consultation and implementation plan (2020). This stage includes the determination of the scope of the project, the migration approach, the governance arrangements, and the broad schedule.
- Preparation, planning and design – this stage will focus on industry and participant preparations for the implementation of system and process changes for the agreed migration scope and approach. At an industry level, governance arrangements and working groups will be established and engagement with relevant stakeholders will occur.
- Industry testing – this stage will involve a period of comprehensive industry testing to prove readiness for production cutover.
- Implementation – in this stage production environments will be prepared and implementation plans executed. All participants will have migrated in-scope messages to ISO 2022. This stage also includes project review and other completion activities.

The specifics of these stages will depend on the migration approach selected. Two possible options are summarised below. A third option, a like-for-like only migration, was considered. This option is not explored in more detail as it excludes the consideration of enhanced message content, a key migration project objective listed in Section 2.4.

5.1.1 Option 1 – Like-for-like migration followed by adoption of enhanced content.

This option uses a two phase process. In the first phase, a like-for-like mapping and use of existing message content from MT formats into ISO 2022 messages is undertaken. In this phase, no extra data fields or requirements will exist other than those required by the current messaging standard; use of enhanced message content will not be permitted. Following the like-for-like implementation, the second phase facilitates the adoption of enhanced content by introducing new data fields and increasing field sizes.

This project option enables industry readiness through incremental change while ultimately meeting project objectives and realising the benefits of enhanced content.

A key advantage of this approach is the balance of risks associated with the immediate adoption of enhanced content against the benefits associated with a migration to ISO 20022, taking advantage of content enhancements and potential efficiency improvements.

A drawback of this migration option is the extended project period, as it would require the back-to-back delivery of separate like-for-like and enhanced content migrations. This option may require the use of message translation services and a larger resourcing overhead.

5.1.2 Option 2 – Direct migration to enhanced content

This option involves migration directly from existing formats to ISO 20022 messages with enhanced content. The key advantage of this approach is that it is likely the industry will be able to realise the benefits of enhanced content sooner. In comparison to Option 1, this option does not require consecutive implementations and the overall project timeframe (and therefore funding and resource commitments) is likely to be less.

The industry project to successfully implement this option may need to be more carefully managed as the full project will need to be completed around SWIFT's timeline for cross-border work and project risks are therefore likely to increase, particularly given the number of participants involved and the range and extent of internal system changes that are likely to be required.

Consultation Questions

Q13. Does your organisation agree with the proposed high-level stages of the ISO 20022 payments migration project? Please explain your views.

Q14. Taking into account the advantages and disadvantages of each migration option, which approach do you support? Please explain your views.

5.2 Managing the transition to new messages

For each migration option, there are different strategies that could be considered to help manage the transition from old to new messages (and, for Option 1, the transition from like-for-like to enhanced content). The strategies that are currently being employed in international migrations are:

- **Big-bang** – under this transition, all participants migrate to the new messaging simultaneously for a determined group of messages. This avoids the need for infrastructure to support multiple messaging types for participants and operators. However, it requires all participants to be ready on time, which is usually managed through checkpoints or stage gates during the project.
- **Coexistence** – under this transition, both the old and new (or like-for-like and enhanced content) message formats would be supported during a transition period. This removes some of the coordination problems of the big-bang approach, but adds cost and complexity due to the need to support multiple message formats and possibly dual systems for a period of time. Under a coexistence transition, a date would need to be set for when existing (or legacy) message formats would no longer be supported. One risk with this approach is that the nominated end date becomes the de facto big-bang implementation date.

If a coexistence transition is adopted, there is likely to be a requirement for some participants to use a message translation service in order to ensure that their ISO 20022 migration occurs in the required timeframe. Such message translation capability could be developed by a participant

themselves or by the use of vendor-supplied product. Usage rules for translation services would need to be agreed across the industry.

Consultation Questions

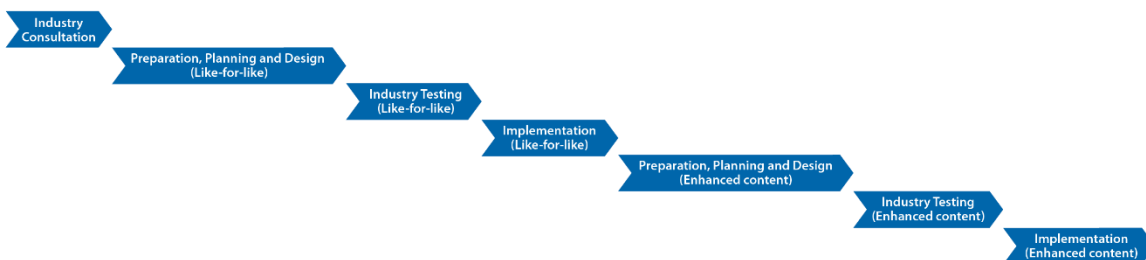
Q15. What is your organisation’s preferred approach for transitioning between existing message formats and ISO 2022? Please explain your views.

5.3 Project timing

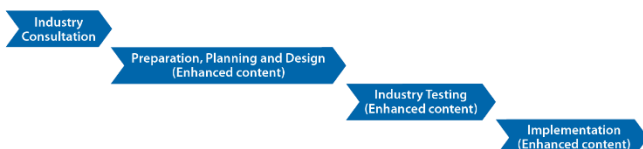
Most ISO 2022 migration projects internationally are scheduled to be completed within four to seven years from initial consultation to implementation. This can provide some guide as to migration timing for Australia, although some international migrations are being done as part of larger system replacement projects and different jurisdictions may have different objectives, scope, and approaches. Achieving alignment with SWIFT’s cross-border payments migration would require Australian domestic messages to migrate from SWIFT MT formats before 2025. Consequently, the RBA and APC propose that the project should be delivered before the end of 2024. Based on the migration options discussed in 5.1, Figure 4 breaks down the components of each migration project option.

Figure 4: Migration Project Options

Option 1 – Like-for-like Migration Followed by Adoption of Enhanced Content



Option 2 – Direct Migration to Enhanced Content



Consultation Questions

Q16. Does your organisation face any impediments or constraints that are evident at this stage that would limit your ability to migrate to ISO 2022 within the 2024 target timeframe set out in this paper? If yes, please explain.

Q17. Are there other international ISO 2022 initiatives that you consider the Australian ISO 2022 payments migration timeframe should be aligned to? E.g. large domestic implementations in other jurisdictions. Please explain your views.

Q18 a) Is your organisation affected by the timing of SWIFT’s ISO 2022 migration for cross-border payments?

Q18 b) If yes, are there benefits to aligning the migration of domestic AUD payments messaging to cross-border payments migration for your organisation?

5.4 Message harmonisation

Given the flexibility of ISO 20022, an important part of successful adoption of ISO 20022 is agreement as to how it is used. Compatibility with existing systems and processes, both domestically and internationally, is considered to be an important objective.

In aiming to achieve message harmonisation, the following background factors are relevant:

- The international HVPS+ group has published ISO 20022 message usage guidelines for high value payments processing.
- The international CBPR+ group is in the process of formulating ISO 20022 message usage guidelines for cross-border payments. Cross-border payments message usage guidelines will use HVPS+ guidelines as a starting point. The ISO 20022 structure of these payments is important as they are often converted to domestic high value payments by Australian correspondent financial institutions.
- NPPA has defined ISO 20022 message usage guidelines for a number of different payment-related processing scenarios covering customer payments, bank-to-bank payments and reporting. To improve back-office processes, it has also defined a range of ISO 20022 messages for use by its participants in payment investigation processes.

As the HVPS+ group has already developed guidelines for ISO 20022 messaging for high value payments, where applicable, these appear a sensible starting point for defining the new message standards for Australian high value payments. This will ultimately improve the interoperability of Australia's ISO 20022 messaging with other jurisdictions.

Consultation Questions

Q19. Do you support the HVPS+ developed message guidelines being used as the starting point for the development and implementation of new ISO 20022 standards for Australia's HVPS? Please explain your views.

Q20. To what extent should other ISO 20022 standards for payments messaging (e.g. those used for the NPP) be considered? Please explain your views.

Q21. Are there any other areas of work that you believe are relevant in looking to achieve message harmonisation (to the extent possible)? Please explain your views.

6. Strategic Issues – Project Governance

6.1 Governance

The successful adoption of ISO 20022 as the modern global messaging format standard for payment messaging will require significant industry effort, leadership and coordination. The RBA and APC recognise that individual participants will each have different costs and challenges and that the benefits of an ISO 20022 migration may be realised more readily for some than others. A strong governance framework is necessary to work towards a cooperative outcome that takes into account the public interest in providing efficient and competitive payment systems. The following governance principles, developed for the NPP project and formalised in the core criteria, may be an appropriate starting point for determining the governance framework of an ISO 20022 migration project:⁵

- The governance arrangements should have an effective decision-making framework, be focused on outcomes, and have in place mechanisms for clear accountability for all decisions taken.
- All decisions regarding the delivery of project outcomes should take into account public interest considerations.
- The project governance arrangements should identify, document and address real or perceived conflicts of interest in terms of representation, influence and decision-making.
- The project governance arrangements should be overseen by a steering committee with an independent chair and representation of industry stakeholders (with appropriate decision-making authority) catering for the interests of large, medium and smaller institutions.
- The project governance arrangements should include a process to allow feedback from industry stakeholders not directly represented on the steering committee.
- The project governance arrangements should adopt a formal project management methodology and have a communication plan in place to provide all project stakeholders with relevant information on a regular basis.
- There should be a fair, transparent and objective process for the selection of any consultants appointed.
- There should be a project assurance role undertaken by an independent body before key milestones, e.g. as was undertaken to review the proposed NPP payment infrastructure and network.

5 These governance principles are based on the 'RBA Core Criteria for a 'Fast Payments' Solution', available at: <https://www.rba.gov.au/payments-and-infrastructure/payments-system-regulation/past-regulatory-reviews/strategic-review-of-innovation-in-the-payments-system/201211-rba-core-criteria-fast-pay-solution/pdf/solution-112012.pdf>.

The RBA and APC are committed to undertaking the consultation stage of the ISO 20022 project to coordinate industry feedback on key strategic decisions to develop a final roadmap for migration.

Following this stage, there are a number of potential governance structures that could be used for the ISO 20022 migration project. A funding model will need to be determined and this is likely to be dependent on the governance structure adopted. There are at least five main groups that could play some role in the governance and the RBA and APC are interested in industry feedback on the extent of involvement and preferred roles for each of these parties:

- PSB and APC – these peak oversight bodies for the Australian payments industry can provide strategic direction and endorsement of strategic direction for industry development. One or both of these groups could play a role as the sponsor of the project.
- Industry and AusPayNet – the industry has the technical expertise to lead the technical stage of an ISO 20022 migration. Without an existing structure, however, there may be difficulty in the industry coalescing on its own to establish a governance framework. One possible industry-led approach is for AusPayNet to coordinate the technical industry governance structure, drawing on membership across relevant clearing systems.
- Consultants – consultants are able to impartially engage with industry participants, and work closely with all stakeholders to implement the technical build that meets the needs of individual payment participants as well as the wider payments industry. Consultants can also provide specific expertise in project management and coordination, though this expertise comes at a cost. This approach was effective in the NPP project.
- RBA – given its roles as RTGS operator and regulator of the payment system, the RBA could continue to assist in playing a coordinating role in conjunction with the other parties. The RBA will need to be a participant in the project to upgrade its own financial market and banking operations systems ISO 20022.
- SWIFT – given SWIFT’s role in setting messaging format standards and facilitating domestic and international payments across SWIFT networks, SWIFT could provide a key role in providing technical expertise and coordinating the ISO 20022 migration in Australia.

Consultation Questions

Q22. Does your organisation have a preferred governance structure? Please explain your views and include your preference for the roles of different parties in that governance structure.

7. Next Steps

The RBA and APC are seeking views from interested parties on the topics and questions presented in this consultation paper. Respondents are requested to use the [Response Template](#) for their submissions. Submissions should be provided no later than 31 May 2019, and should be sent to: ISOConsultation@rba.gov.au.

All submissions will be published on the RBA's website, unless it is specifically requested that the Bank treat the whole or any part of a submission as confidential. The Bank will endeavour to meet with stakeholders that make submissions.

Privacy

Unless requested otherwise, published submissions will include contact details and any other personal information contained in those documents. For information about the Bank's collection of personal information and approach to privacy, please refer to the [Personal Information Collection Notice for Website Visitors](#) and the Bank's [Privacy Policy](#).

Glossary

Term	Definition
AIF	Automated Information Facility. An automated messaging service used by ESA holders to send and receive messages from RITS to perform credit and liquidity management and to receive ESA statements.
AML/CTF	Anti-Money Laundering/Counter-Terrorism Financing.
APC	Australian Payments Council.
APCS	Australian Paper Clearing System. This clearing system is administered by AusPayNet and is primarily used for exchange of cheque payments.
Austraclear	Austraclear is a securities depository and settlement system for debt securities, and provides cash settlement services to the OTC debt market and for derivatives traded on the ASX (equities) and ASX 24 (futures) markets. Austraclear is a wholly owned subsidiary of the ASX group.
AusPayNet	Australian Payments Network.
Auto-offset	Grid-lock preventing feature of RITS – if a transaction remains unsettled, auto-offset functionality will search for offsetting payments from the receiving party and will settle them simultaneously.
BECS	Bulk Electronic Clearing System. This clearing system is administered by AusPayNet and is used for exchange of direct credit and direct debit payments.
CBPR+	Cross-Border Payments and Reporting Plus. A SWIFT and PMPG working group charged with developing ISO 20022 global usage guidelines for cross-border payments.
CHES	Clearing House Electronic Sub-register System. CHES is a settlement system for Australian equities operated by ASX Settlement.
Cross-border payments	Cross-border payments are sent by an individual, business or government agency from one jurisdiction to a recipient in another jurisdiction.
CUG	Closed User Group.
DE	Direct Entry.
DvP	Delivery-versus-Payment. A settlement arrangement that ensures that delivery of an item, such as title or securities, occurs if and only if the corresponding payment occurs (and vice versa).
eftpos	Electronic funds transfer at point of sale. The eftpos system is a domestic debit card system managed by eftpos Payments Australia Limited.
ESA	Exchange Settlement Account.
FIFO	First-in, first-out. FSS transactions are tested for settlement in the order they are received by the system.
FMI	Financial Market Infrastructure.
FSS	Fast Settlement Service.
HVCS	High Value Clearing System. This clearing system is administered by AusPayNet and is used for exchange of high value payments. Also known as the SWIFT PDS.
HVPS	High value payments system.
HVPS+	High Value Payments Plus. A task force formed by SWIFT, along with major global banks and market infrastructures with developing ISO 20022 global usage guidelines for high value payments.
IBAN	International Bank Account Number.
Interbank settlement	Settlement of payment obligations across ESAs in RITS/FSS.
ISO	International Organization for Standardization.

ISO 20022	A messaging standard for financial markets developed and maintained by ISO.
KYC	Know Your Customer.
LEI	Legal Entity Identifier. A 20 character unique identifier allocated to organisations using the ISO 17442 format.
Line by line	The transaction is settled on an individual basis without being grouped or netted with other transactions.
LVSS	Low Value Settlement Service. A RITS service used for the lodgement of settlement instructions for obligations arising in APCS, BECS and some card systems.
MT	SWIFT Message Type (MT) messages.
NPP	New Payments Platform.
NPPA	NPP Australia Limited. The company responsible for the operation and management of the NPP.
PMPG	The Payments Market Practice Group is an international forum, facilitated by SWIFT, that assists industry participants formulate better market practices, including correct use of standards.
RBA	Reserve Bank of Australia.
RITS	Reserve Bank Information and Transfer System. RITS is Australia's RTGS system, owned and operated by the RBA.
RTGS	Real-time gross settlement. A settlement method by which the transfer of money from one ESA holder to another occurs on a real time and gross basis.
SWIFT	Society for Worldwide Interbank Financial Telecommunication. A co-operative organisation that operates a network for the exchange of payment and other financial messages between financial institutions.
SWIFT FIN	The SWIFT messaging service that enables the exchange of MT messages.
SWIFT PDS	SWIFT Payment Delivery System. Also known as the HVCS.
SWIFTNet	SWIFT's IP-based private global network for banking communication.
XML	eXtensible Markup Language.