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The Role of RITS in Supporting Settlement in a Tokenised Ecosystem

About ASX

ASX is a listed exchange group that plays a critical role in Australia's capital markets, efficiently facilitating capital formation, maintaining market integrity, and providing companies with a valuable source of funding that contributes to economic growth. ASX offers listings, trading, clearing, settlement, technical and information services, technology, data and other post-trade services. It acts as a market operator, clearing house and payments system facilitator. It oversees compliance with its operating rules, promotes standards of corporate governance among Australia's listed companies and helps to educate retail investors.

ASX operates markets for a wide range of asset classes including equities, fixed income, commodities and energy. As an integrated exchange, ASX's activities span primary and secondary market services, including the raising, allocation and hedging of capital flows, trading and price discovery, central counterparty risk transfer and securities settlement for both the equities and fixed income markets.

Executive Summary

ASX welcomes the opportunity to respond to the Reserve Bank of Australia's (**RBA**) consultation on *The Role of RITS in Supporting Settlement in a Tokenised Ecosystem*.

ASX is supportive of the RBA's consultation and its forward-looking work to ensure Australia's wholesale settlement infrastructure can evolve to support a tokenised ecosystem. This work provides an important opportunity to develop the settlement capabilities needed to realise the potential benefits of tokenisation while preserving the public-policy outcomes that underpin confidence in the financial system, including settlement finality, legal certainty, effective management of credit and liquidity risk, operational resilience, market integrity and financial stability.

This work is also of strategic importance to Australia's financial system and broader economy. Competition for capital is global, and the efficiency, resilience and functionality of market and settlement infrastructure are increasingly important factors in where investors, issuers and intermediaries choose to raise capital, invest and transact. Modern settlement infrastructure will be central to ensuring Australia remains an attractive and competitive destination for both foreign and domestic investment, and that the benefits of financial innovation are realised for Australian investors, businesses and the economy.

Internationally, financial markets are investing in distributed-ledger infrastructure, tokenisation initiatives and digital settlement capabilities. Other jurisdictions are moving to establish the settlement infrastructure, regulatory pathways and central bank settlement options needed to support tokenised markets at scale. Without timely progress, Australia risks lagging comparable markets. There is a risk of domestic capital and market activity shifting offshore as investors and institutions seek more efficient execution, settlement, and collateral arrangements.

Tokenisation has the potential to deliver meaningful benefits in wholesale markets, including more efficient collateral mobilisation, improved transaction workflows and greater flexibility in liquidity

management. ASX supports further work through this consultation to identify how Australia's settlement infrastructure can enable these benefits. Future regulatory frameworks for settlement of digital assets should be proportionate and achieve equivalent outcomes for equivalent activities and risks, with requirements reflecting the functions performed and risks created rather than the technology used or the type of entity performing them.

ASX considers that central bank money should remain the settlement anchor for systemically important Australian financial markets, including where assets and settlement processes become tokenised. There is substantial benefit in making near-term enhancements to RITS and the Fast Settlement Service (**FSS**), including standardised interfaces, reserve-locking functionality, improved settlement information and more flexible liquidity-management capabilities, and this work should proceed as a priority.

ASX's preferred end-state is for tokenised central bank reserves to be available for use in wholesale tokenised markets. The legal, policy and technical foundations for their potential future issuance should be developed in parallel with near-term enhancements to RITS and the FSS, supporting practical use cases as they emerge while maintaining momentum towards a settlement architecture capable of supporting tokenised wholesale markets over time. If introduced, tokenised reserves should constitute a direct claim on the RBA, be legally and economically equivalent to ESA balances and benefit from settlement finality protections equivalent to those applying to settlement in RITS. Access should be governed by principles consistent with ESA access, with a clear distinction between eligibility to hold tokenised reserves as a direct claim on the RBA and eligibility to operate platforms through which they may be used. The framework should also support innovation, such as programmability via smart contracts.

ASX supports a phased and use-case-led implementation approach that enables practical progress while the broader framework is put in place. Collateral mobility represents a strong candidate for an early use case given its potential to deliver tangible liquidity and risk-management benefits across wholesale financial markets.

High-value wholesale use cases should progress through a regulatory sandbox designed as an on-ramp to permanent production, rather than through time-limited pilots or proofs of concept. The United Kingdom's Digital Securities Sandbox provides a useful model, permitting live activity with limits that increase as readiness is demonstrated and a defined pathway designed to lead into a permanent regime[1]. Fixed caps on activity or limited duration of pilots, by contrast, may be too restrictive and weaken incentives to invest, making the transition to scale less certain. The proposed digital financial market infrastructure sandbox emerging from Project Acacia provides an opportunity to adopt a similar model and establish a pathway to permanent production outside the sandbox.

Clear policy direction from the RBA will be important to support safe, scalable and enduring adoption, which is likely to be gradual and non-linear, with conventional systems and tokenised networks coexisting for an extended period. This transition creates a risk that liquidity, assets and settlement activity become dispersed across multiple environments, reducing fungibility and increasing operational complexity. The infrastructure supporting a tokenised asset, and the degree to which it can interact safely and effectively with other systems, will materially influence the efficiency, resilience and risk-management benefits achieved. A transparent, outcome-based framework for interoperability, connectivity and the eligibility of networks, platforms and settlement arrangements would give Australian market participants greater certainty when making long-term infrastructure investments, support effective interaction between tokenised and conventional markets, preserve appropriate compatibility with relevant international developments and limit fragmentation that could weaken liquidity, resilience or effective risk management.

Interoperability should extend beyond technical message exchange to encompass compatible transaction states, settlement-finality arrangements, governance and recovery processes. Bridging or orchestration

[1] The last stage of the DSS Gate 4 is for approval for operating outside DSS under a possible new permanent regime and appears to still be subject to further decision. See: **Digital Securities Sandbox (DSS) | FCA**

layers should be used only where they provide a clear functional benefit, with transparent governance, controls and recovery responsibilities.

Looking beyond the immediate scope of this consultation, tokenisation offers broader opportunities to support innovative and internationally competitive Australian financial markets. For example, ASX is interested in working with the Digital Finance Cooperative Research Centre (**DFCRC**) to explore new tokenised market models, including infrastructure that could support Australian investor access to tokenised assets referencing securities listed in other major developed markets. This is one example of the broader potential for tokenisation to support new products and market models. It reinforces the importance of developing settlement infrastructure and regulatory settings that preserve Australia's capacity to innovate and compete as global financial markets evolve.

Recommendations

ASX recommends that the RBA:

1. **Phase 1: Establish the foundations and enable near-term synchronisation:** Enhance RITS and the FSS with standardised interfaces, consistent messaging, real-time settlement and reservation notifications, and reserve-locking functionality.

2. **Phase 2: Extend settlement and liquidity-management capability:** Progressively extend operating hours, develop a pathway for high-value wholesale settlement through the FSS, and support flexible liquidity management across RITS, the FSS and connected arrangements, including appropriate liquidity arrangements for the New Payments Platform (**NPP**), based on market need and operational readiness.

3. **Phase 3: Establish a production pathway for tokenised central bank reserves:** In parallel with near-term enhancements, develop tokenised central bank reserves as ASX's preferred end-state for wholesale tokenised settlement. If introduced, they should be a direct claim on the RBA, equivalent to ESA balances and available to eligible wholesale participants under comparable access principles.

4. **Regulatory sandbox as an on-ramp to production:** Develop the proposed digital financial market infrastructure sandbox emerging from Project Acacia, or an equivalent regulatory sandbox, as a production pathway for high-value wholesale use cases, drawing on the United Kingdom's Digital Securities Sandbox. Activity limits should be calibrated to each arrangement and increase as readiness is demonstrated, rather than being set as fixed caps, with clear criteria for transitioning successful arrangements into the enduring framework.

5. **Phase 4: Scale and interoperate:** Establish clear, outcome-based arrangements for platform eligibility, interoperability, liquidity management, resilience and recovery, enabling proven models to scale without weakening settlement certainty, resilience or financial stability, or materially fragmenting liquidity and collateral.

ASX's interaction with RITS and the FSS

ASX is a significant user of the RBA's central bank settlement services. Austraclear is a feeder system to RITS for the cash leg of transactions in debt securities and certain other obligations. ASX Settlement uses a RITS settlement-only batch for equities settlement. RITS also retains an RTGS feeder developed for CHESS. While the feeder is not currently in use, it is being considered for use in CHESS Release 2.

Through these arrangements, RITS provides the central bank money settlement layer for important Australian securities markets. ASX infrastructure coordinates the asset and cash components of settlement, while the interbank cash obligations are settled through the relevant participants' ESAs.

ASX therefore has a direct interest in the consultation as an operator of critical financial market infrastructure, a substantial user of central bank settlement services and as a developer of potential tokenised market services.

ASX is progressing a tokenised Austraclear collateral mobility service that, in the initial stage, is intended to preserve existing participant interfaces and minimise unnecessary operational change while providing a foundation for more efficient collateral mobility.

Recommended pathway

ASX is continuing to develop and refine its approach to tokenisation through engagement with market participants, regulators and other industry stakeholders, including through its Tokenisation Working Group. This engagement is helping ASX identify practical market use cases, industry priorities, and participant requirements, and inform the appropriate sequencing of future development.

Implementation should be phased, use-case led and based on demonstrated market benefits. Investment in tokenised settlement capability should be supported by an appropriate regulatory framework providing for legal certainty, effective risk management and end-to-end operational readiness.

The design should also recognise that conventional and tokenised infrastructure are likely to coexist for an extended period. Participants should be able to adopt tokenised services progressively, rather than being required to migrate their assets, liquidity and operational processes to a new environment as a condition of participation.

Preserving central bank money as the settlement anchor does not require all markets to adopt the same technology, settlement model or access arrangement. Different models may be appropriate where they provide commensurate settlement finality, legal certainty and risk-management outcomes.

ASX proposes a phased pathway that builds from near-term enhancements to existing settlement infrastructure, through expanded settlement and liquidity-management capability and the development of tokenised central bank reserves, to broader scaling and interoperability. This approach would allow benefits, legal and operational readiness, and risk-management arrangements to be demonstrated before implementation is expanded.

A regulatory sandbox, rather than a series of pilots, should be the principal mechanism for progressing this pathway to permanent production. Pilots and proofs of concept can demonstrate technical feasibility, but they are typically time-limited, conducted outside the regulatory perimeter and do not provide a route to live and enduring activity. As a result, they rarely generate the evidence, participant commitment or investment case needed to move into production. A well-designed sandbox would instead enable eligible use cases to operate in a controlled, real-world environment under proportionate and closely supervised arrangements, with clear criteria and a defined route for successful arrangements to transition into full-scale production.

The United Kingdom's Digital Securities Sandbox (DSS) provides a strong international model for informing Australia's approach. Established by the Bank of England and the Financial Conduct Authority, it permits firms to undertake live digital-securities activity within a temporarily modified regulatory framework. Activity limits are set for each firm and increase as it progresses through defined stages and demonstrates readiness, and the sandbox is designed to inform a permanent regime[2] into which successful models can transition. This structure gives participants the confidence to invest in production-grade infrastructure and to bring real activity onto new platforms. International experience suggests a well-designed sandbox is critical, and that limits which remain fixed, rather than increasing as readiness is demonstrated, may weaken these incentives. Clarity on the duration or the prospect of a clear and enduring outcome, for example a pathway to permanent production, is also key.

[2] The legal designation in a possible new permanent regime in Gate 4 is still to be determined, however the purpose is to operate outside the DSS. See **https://www.fca.org.uk/firms/innovation/digital-securities-sandbox**

Domestically, the proposed digital financial market infrastructure sandbox emerging from Project Acacia provides an opportunity to develop an equivalent Australian pathway, rather than establishing a standalone experimentation environment. Its design should build on the evidence generated through Project Acacia and involve relevant regulators and representative parts of the wholesale financial markets. It could include entry criteria identifying eligible wholesale use cases and participants, alongside proportionate requirements addressing legal basis, settlement finality, governance, operational resilience, participant safeguards and regulatory reporting. Progression could be assessed against transparent milestones, with activity limits calibrated to the risks of each arrangement and increasing as each milestone is met, and clear processes for modifying or removing temporary regulatory settings and transitioning successful arrangements into the enduring legal and supervisory framework.

The phases should not be treated as strictly sequential. In particular, the policy, legal and technical design of tokenised central bank reserves should commence while near-term RITS and FSS improvements are delivered. Parallel development would reduce the risk that interim synchronisation arrangements become unnecessarily entrenched or that market participants are required to make duplicative investments.

Phase 1: Establish the foundations and enable near-term synchronisation

In the near term, ASX recommends that the RBA enhance and modernise RITS and the FSS so that future tokenised asset platforms can use these existing central bank settlement services.

The principal technical enhancements should include standardised interfaces, more consistent messaging, real-time settlement and reservation notifications, and access to appropriate reserve-locking functionality. These changes would improve the ability of asset platforms to coordinate transfers with settlement through RITS or the FSS and reduce the cost and complexity of bespoke integration approaches.

The objective should be to provide a reliable means of supporting tokenised market use cases through central bank money without requiring each use case to develop separate settlement and operational arrangements.

Phase 2: Extend settlement and liquidity-management capability

The second phase should provide greater alignment between the operating hours of tokenised markets as they emerge and the availability of central bank settlement and liquidity-management services.

Potential priorities include extending the operating hours of relevant RITS services to support settlement outside current operating timeframes; developing an appropriate pathway for high-value wholesale settlement through the FSS; and providing more flexible mechanisms for participants to allocate, reserve and rebalance central bank liquidity across RITS, the FSS and connected settlement arrangements. These capabilities should be supported by appropriate liquidity arrangements for the NPP, recognising that its current use for high-value payments is understood to be constrained principally by the liquidity risk-management settings of commercial banks rather than the technical capacity of the platform.

Any extension of operating availability should be considered across the full settlement chain. Extending the technical availability of RITS or the FSS will have limited practical value unless relevant asset platforms, participants, settlement agents, liquidity arrangements and operational support functions are also available.

A staged extension of operating hours may therefore be more appropriate than moving immediately to continuous availability. Initial implementation should focus on use cases where extended settlement capability would provide demonstrable market or systemic benefits, such as collateral substitution, margin settlement and time-sensitive liquidity movements. As recognised in the RBA's Project Acacia Final Report, the design and implementation of any enduring change should involve input from representative parts of the Australian financial markets to ensure that the resulting arrangements are workable, broadly supported and capable of sustained adoption.

Phase 3: Establish a production pathway for tokenised central bank reserves

In parallel with near-term RITS and FSS enhancements, ASX recommends that the RBA progress the policy, legal and technical work required to establish a production pathway for tokenised central bank reserves. Consistent with Project Acacia's findings, this work should include further research to assess the potential role, design and implications of tokenised central bank reserves.

If introduced under an appropriate legal and regulatory framework, tokenised reserves should be issued and redeemed by the RBA and constitute a direct claim on the RBA. The framework should provide for their legal and economic equivalence to ESA balances, including equivalent treatment in relation to settlement finality, credit risk, funding and redemption, together with appropriate recognition for prudential liquidity purposes.

These legal and regulatory foundations should be developed and tested through the sandbox pathway outlined above. Used in this way, it would provide a practical mechanism for testing the design features outlined below, identifying residual barriers and reducing the risk of successful trials becoming stranded pilots.

The design should allow tokenised reserves to be used on, or made natively interoperable with, eligible wholesale asset platforms. A model in which tokenised reserves are confined to a standalone cash platform and accessed through multiple bridges will preserve many of the reconciliation, synchronisation and operational dependencies that tokenised reserves are intended to address.

In terms of outcomes, any proposed design should:

- provide real-time funding and redemption during its operating hours (with that window sufficiently extended to support the intended wholesale use cases)
- be capable of further expansion as market demand, liquidity arrangements and operational readiness develop
- support atomic or appropriately coordinated DvP settlement.

Tokenised reserves are an important component of the future settlement architecture and are needed to realise the full benefits of tokenised markets. Their design and implementation should address the risks arising from an additional settlement environment operating alongside RITS and the FSS, including potential fragmentation of central bank liquidity, more complex intraday liquidity management, new operational dependencies and increased demand for central bank liquidity outside current RITS operating hours.

Phase 4: Scale and interoperate

The RBA should provide clear policy direction on the role of interoperability in the future wholesale settlement architecture. The objective should not be to maximise connectivity across every platform or network, but to support arrangements that improve the safe and efficient movement of cash, assets and settlement instructions while preserving legal certainty, resilience and clear accountability. Cross-network interoperability should therefore be pursued where it delivers a clear functional benefit and the resulting dependencies can be governed effectively. Within the settlement workflow, interoperability should support consistent transaction identifiers and states, coordinated validation and execution, compatible finality and recovery arrangements, and a clear allocation of responsibility across the transaction lifecycle. This direction would assist market participants in making long-term infrastructure decisions and reduce the risk of incompatible or duplicative investment.

Once the legal, operational and risk-management framework has been demonstrated through controlled use cases, consideration could be given to expansion. With respect to tokenised reserves, expansion should build on evidence that the initial arrangements operate reliably at production scale and can accommodate broader participation without weakening settlement certainty or resilience.

Relevant arrangements should also demonstrate that they can operate without materially fragmenting liquidity, weakening existing netting efficiencies or creating unacceptable dependencies between connected platforms (i.e. between blockchains and unreliable providers, which could result in the blocking of token and asset flow). The assessment should consider whether additional connections or bridging arrangements introduce single points of failure, impede the movement of cash or assets following a service-provider disruption, or make responsibility for recovery and reconciliation unclear.

Over time, the framework may support cross-platform, cross-asset and selected cross-border use cases. The RBA should provide clear direction on the design principles and standards needed to support these use cases, while maintaining appropriate compatibility with emerging international approaches. Many international initiatives are seeking to integrate digital-asset capabilities with existing financial market infrastructure through standards-based messaging, including ISO 20022, and increasingly interoperable ledger technologies. Australian arrangements should draw on these developments where they support efficient cross-border interaction without compromising domestic legal certainty, resilience or policy objectives.

Design and adoption principles

Preservation of public-policy outcomes

Tokenisation changes the manner in which assets, payments and instructions may be represented and processed. It does not remove the risks arising from wholesale market activity.

Tokenised arrangements should therefore preserve the public-policy outcomes underpinning existing wholesale markets. These include a clear and enforceable legal basis, final and irrevocable settlement, effective management of credit and liquidity risk, transparent governance and accountability, operational and cyber resilience, accurate and authoritative records, and effective default and recovery arrangements.

These outcomes should be treated as core design requirements rather than matters to be addressed after a technology or operating model has been selected.

This does not mean that existing market structures must be replicated in tokenised form. The framework should permit new models where they can achieve the required outcomes more efficiently. However, the use of a different technology should not result in a lower level of protection for participants, markets or the financial system.

Central bank money should remain the settlement anchor

Central bank money should remain the preferred settlement asset for systemically important wholesale financial markets.

Settlement in central bank money enables interbank obligations to be discharged without exposure to the credit risk of a private issuer. It also provides a common settlement asset across institutions and markets, supporting confidence in the exchangeability of different forms of private money at par.

These characteristics are particularly important during periods of market stress, when concerns about counterparty creditworthiness can increase demand for liquidity and reduce confidence in privately issued settlement assets. A settlement asset that performs adequately under normal conditions may expose participants to material credit, liquidity or redemption risk precisely when certainty of value, immediate availability and reliable convertibility are most important. Settlement in central bank money mitigates these risks by providing a credit-risk-free and commonly accepted asset for the final discharge of interbank obligations.

Private forms of tokenised money may support particular use cases. However, they should not displace central bank money for systemically important settlement where central bank money is practical and available. The availability of tokenised central bank reserves would help ensure that the settlement asset

used in tokenised markets is determined by sound risk-management and public-policy considerations rather than by the limitations of existing infrastructure.

Legal equivalence and settlement finality

Settlement finality is a legal outcome and must be addressed at two related but distinct levels. First, the framework governing a tokenised asset platform or synchronised settlement arrangement must establish when transfers of assets and associated cash obligations become final and irrevocable. Second, if tokenised central bank reserves are introduced, the legal framework must establish the status and finality of the reserve transfer itself. It should not be inferred solely from the technical execution or apparent irreversibility of a ledger entry. A transaction that cannot readily be reversed through a platform's ordinary functionality may nevertheless be subject to challenge or unwinding under applicable insolvency, property or other laws.

For tokenised central bank reserves, the legal framework should establish that each reserve constitutes a direct claim on the RBA and is legally and economically equivalent to an ESA balance. It should:

- clearly identify whether the token itself constitutes the claim on the RBA or is a representation of a claim recorded elsewhere
- identify the authoritative record in the event of a discrepancy between systems
- establish when a transfer of tokenised reserves becomes final and irrevocable, when legal title or the relevant interest in the corresponding asset passes
- establish how each transfer is treated if a participant, intermediary or platform enters external administration.

Separately, the regulatory framework for tokenised asset platforms and synchronised settlement arrangements should address settlement outcomes in the event of platform failure, inconsistent records, connectivity disruption or attempted transaction rollback. Each component of the arrangement should have a clear and enforceable legal basis under Australian law. Where a platform, intermediary, asset, participant or record is subject to a foreign jurisdiction, the applicable governing law, jurisdiction and potential conflicts of law should be identified, together with any implications for settlement finality, the effectiveness of transfers and the exercise of rights in insolvency.

Settlement in RITS benefits from an established legal and regulatory framework, including the RITS Regulations and relevant statutory protections provided by the *Payment Systems and Netting Act 1998*. The legal framework for tokenised reserve transfers should provide equivalent certainty and protection where those reserves are used for systemically important wholesale settlement.

For synchronised arrangements in which the tokenised asset and cash legs are recorded or processed in separate systems, the legal and operational framework should distinguish clearly between reserving or locking cash or assets, committing to settlement, confirming operational execution and achieving legal finality. It should also specify the outcome where one component of the settlement workflow completes but another fails or is delayed.

Technology-neutral, functionally based and proportionate regulation

ASX supports a technology-neutral and functionally based approach to regulating tokenised arrangements, under which requirements reflect the functions performed and risks created rather than the technology used or the type of entity performing them.

Settlement, clearing, custody, asset-control and orchestration functions can create material risks whether performed on a conventional database or a distributed ledger. Regulatory requirements should therefore reflect the substance of those functions, the risks created and the consequences of disruption or failure, including any effect on settlement finality, participant assets, market continuity or financial stability.

Comparable functions and risks should be subject to comparable regulatory outcomes, though not necessarily identical obligations. Requirements should be proportionate to the nature, scale, interconnectedness and systemic importance of the activity, preserving essential safeguards while being calibrated to the risks of the particular arrangement.

Regulatory expectations should increase with the scale, participation and interconnectedness of an activity and the consequences its disruption could have for participants and the wider market. An arrangement operating within a sandbox or at limited scale therefore need not be subject to the same requirements as systemically important infrastructure.

This approach does not presume which type of entity should perform each role in a tokenised ecosystem, allowing different operating models and allocations of responsibility to emerge. However, the entity performing each regulated function should be clearly identifiable, appropriately accountable and subject to requirements commensurate with its risks, so that flexibility does not fragment accountability or create gaps in the protections needed for participants, markets and financial stability.

Wholesale scope, access and eligibility

Tokenised central bank reserves should initially be available for wholesale use, and their development should be considered independently of any broader policy consideration of a retail central bank digital currency.

Direct access to tokenised reserves should be governed by principles comparable to those for wholesale ESA access, including the nature and scale of the institution's settlement activity, its regulatory status, financial and operational capacity, liquidity management, governance, cyber security, resilience and capacity to meet its obligations when they fall due. Requirements may need to be adapted to reflect the distinctive features of tokenised reserves and the platforms on which they operate, such as operating hours, transaction processing, record-keeping, access controls and the allocation of operational responsibilities. However, representing a central bank liability in tokenised form should not result in materially lower standards for direct access.

Holder eligibility and platform eligibility should remain distinct. Approval of a platform should not make each of its participants a direct holder of central bank reserves, and an entity authorised to initiate transfers on behalf of an eligible holder need not hold the reserve balance itself. The framework should clearly identify the responsibilities of direct holders, settlement agents, asset-platform operators, synchronisation providers and technology operators.

Platform eligibility should be assessed against transparent, functionally based and consistently applied criteria. Existing regulated infrastructure and new market arrangements should each be eligible where they can demonstrate legal certainty and risk-management outcomes commensurate with the nature, scale and systemic importance of their activities. Eligible platforms should have:

- a clear and enforceable legal basis, defined functions and responsibilities, and an identified regulatory status under the applicable Australian licensing, oversight and supervisory frameworks
- effective governance and accountability arrangements
- robust cyber and operational resilience, with appropriately controlled access and permissions
- records that are authoritative, reconcilable and capable of supporting independent audit
- recovery, contingency and orderly cessation arrangements addressing data integrity, continuity of access to tokenised reserves and the treatment of incomplete or disputed transactions.

Participant risk management

Participants should be able to identify, measure and manage their credit, liquidity and settlement exposures at every stage of settlement, including while cash or assets are reserved, committed, transferred or awaiting final settlement.

This requires timely, granular information on available, reserved and committed cash and assets, the status of each transfer, the point after which instructions can no longer be amended or cancelled, and the consequences of delay, rejection, partial completion or failure.

At each stage of the transaction, participants should also be able to identify:

- the counterparty to their exposure (the RBA, an intermediary, a private issuer, a settlement agent or another participant)
- whether that exposure is secured, conditional or final.

The framework should support participant and system-level transaction limits, liquidity controls, permissions and operational safeguards, including controls over initiating, approving, amending and cancelling instructions. It should also define the actions available following a participant or service-provider default, the arrangements for recovery or orderly cessation, and how losses from failed, incomplete or unauthorised transactions are allocated.

Automated or programmable processes should remain subject to platform and participant controls, applicable operating rules and regulatory requirements, with mechanisms to suspend, override or recover from erroneous or unauthorised execution.

Programmable functionality should implement, rather than operate as an independent or competing source of, the parties' legally enforceable rights and obligations.

Cash and assets in the same trusted environment

The principal potential benefits of tokenised settlement arise when tokenised assets and the settlement asset interact directly within an arrangement that coordinates both legs of the transaction. This requires more than technical connectivity: the arrangement must align transaction states, establish when each transfer becomes final and reliably complete both legs, or release them if settlement cannot proceed.

Transferring cash and assets within the same trusted environment may reduce the sequential steps, reconciliation and intermediary dependencies needed to achieve settlement. Validating and completing both legs as a coordinated workflow may also reduce principal risk, accelerate exception identification and support atomic DvP and programmable settlement.

Tokenised reserves should therefore be usable on, or natively interoperable with, eligible asset platforms through arrangements that preserve their status as a direct claim on the RBA, enabling coordinated cash and asset transfers without repeated conversion, reconciliation or movement through avoidable intermediary layers.

Interoperability should extend beyond message exchange to the safe and legally effective interaction of cash, assets and settlement workflows. This requires consistent transaction identifiers and states, compatible finality and recovery arrangements, and a clear allocation of responsibility for authorisation, execution, record integrity and exception management across connected systems.

Bridges and orchestration layers may be necessary where cash and assets remain on separate platforms, or where common coordination services avoid multiple bespoke connections. However, each layer can add governance, reconciliation, cyber, operational and liquidity dependencies, and blur responsibility when a transaction fails or records diverge. Such layers should therefore be used only where they provide a clear functional benefit, with dependencies, controls and recovery responsibilities that remain transparent and manageable.

Liquidity efficiency and financial stability

A significant risk is that liquidity and collateral become fragmented across RITS, the FSS, tokenised reserve holdings and private settlement assets. If balances or collateral cannot move readily between these environments, participants may be unable to use resources held in one settlement channel to meet obligations in another, even where they have sufficient liquidity or collateral in aggregate.

Fragmentation could require duplicative liquidity buffers, increase prefunding and reduce the benefits of existing netting and liquidity-saving arrangements, raising settlement costs and tying up liquidity needed for other obligations. In periods of stress, uneven or rapidly changing liquidity demands across separate environments could also make funding needs harder to anticipate and amplify concentrated demand for central bank liquidity.

Participants should have consolidated visibility of balances and efficient mechanisms to fund, redeem and rebalance positions across approved settlement channels, potentially including automated threshold-based transfers or sweeps.

Tokenised reserves should receive appropriate economic and prudential treatment relative to ESA balances, including clearly defined remuneration, value dating and prudential liquidity recognition. If materially disadvantaged in any of these respects, participants are likely to minimise overnight or precautionary holdings and rely on frequent funding and redemption. This could reduce the depth and stability of tokenised liquidity, increase operational demands at points of conversion with ESA balances and contribute to concentrated redemption demands during periods of stress.

This treatment will therefore affect not only initial adoption, but also the ongoing depth, efficiency and stability of tokenised liquidity.

Resilience, privacy and recovery by design

Tokenised arrangements should preserve or improve the resilience, confidentiality, access controls, recoverability and transaction integrity achieved by existing wholesale infrastructure.

The interconnection of RITS, tokenised asset platforms, synchronisation providers, participants and technology operators may create new operational and cyber dependencies. A disruption in one component could interrupt an end-to-end transaction even where the other components continue to operate, including by preventing instructions, confirmations or authoritative records from being exchanged or reconciled. The design should therefore identify critical dependencies and potential single points of failure across the complete transaction lifecycle.

Eligibility and design requirements should address fault isolation, fault tolerance, appropriate standards for validator participation, business continuity, incident management, cyber security, fallback settlement, recovery and reconciliation following an outage. They should establish how affected components can be isolated without unnecessarily disrupting the wider settlement chain, how pending, incomplete or disputed transactions will be identified and treated, how authoritative records will be restored and reconciled, and how participants and regulators will receive timely information during an incident and recovery.

These requirements should apply to the complete settlement chain rather than being assessed only at the level of individual components.

Response to consultation questions

Question 1: DvP synchronisation models

ASX considers that RITS and the FSS should be capable of supporting asset-lock, central bank reserve-lock and combined asset-and-reserve-lock models. Different models may be appropriate for different use cases and stages of market development.

Asset locking provides a practical basis for near-term settlement through existing RITS services. It is consistent with the broad approach currently used in Austraclear and CHESS, under which the asset platform coordinates the asset and cash components of the settlement workflow.

Reserve locking may be more appropriate where the asset cannot be effectively immobilised prior to settlement or where settlement involves multiple paying institutions. It can provide greater certainty that the cash leg will be available before the asset transfer process proceeds.

Combined asset-and-reserve locking may provide stronger settlement certainty for complex or multi-party transactions by confirming that both legs are available before execution. However, locking both legs may also immobilise cash and assets. The framework would therefore need effective timeout, cancellation, release and exception-management arrangements.

For securities recorded and settled through an asset platform with clear responsibility for the authoritative asset record and the end-to-end settlement process, asset-platform-led synchronisation supported by the ability to reserve central bank funds is likely to provide an appropriate near-term model.

Over the longer term, synchronisation across separate asset and cash systems is unlikely to provide the same level of integration as tokenised reserves capable of operating within the same trusted environment as the asset. Synchronisation may nevertheless remain appropriate where it provides an efficient and proportionate means of achieving the required settlement and risk-management outcomes.

ASX therefore supports asset-lock and enhanced reserve-locking capability within one to three years and notification capability to FMI feeders and batches, combined-lock arrangements during extended hours and tokenised reserve capability within three to five years, and broader cross-platform arrangements over the longer term once the relevant legal and operational models have been demonstrated.

Question 2: Synchronisation arrangements

The appropriate synchronisation arrangement should reflect where the authoritative asset record is maintained and which entity is accountable for the end-to-end settlement workflow.

Where an asset platform maintains the authoritative asset record, applies the relevant participation and transaction rules and controls the transfer of the asset, it will generally be well placed to coordinate the asset and cash legs.

Third-party synchronisation may be appropriate where multiple independent platforms need to be coordinated or where an asset platform does not have direct access to the relevant RITS or FSS functionality. A common third-party utility may also provide efficiency where it avoids multiple bespoke bilateral connections.

Central-bank-supported orchestration could provide value where common infrastructure is required. However, ASX considers that the most valuable RBA functions are likely to be secure technical interfaces, reservation management, settlement confirmation, liquidity information and exception handling. The RBA should avoid duplicating commercial workflow functions more appropriately undertaken by the relevant asset platform or service provider. It should instead establish proportionate and transparent criteria for authorising synchronisation providers to access relevant central bank settlement functionality. These criteria should support participation and innovation while addressing legal certainty, operational resilience, security, governance and the risk that unconstrained entry could fragment liquidity or weaken confidence in settlement arrangements.

Regardless of the structure adopted, responsibilities should remain clear. The presence of a synchronisation provider should not obscure responsibility for the integrity of the asset record, application of participant controls, verification of settlement events or management of transaction failure.

Question 3: Extent to which existing capability is sufficient

Existing RITS and FSS capabilities can support initial tokenised asset use cases, but they are unlikely to support an efficient tokenised wholesale market at scale without enhancement.

Austraclear can settle DvP transactions using its existing RITS feeder during RITS operating hours. CHESS can submit net settlement obligations through the RITS settlement-only batch. Existing reservation batches also demonstrate that ESA funds can be reserved before an external asset process is completed.

These capabilities provide a useful foundation. However, a tokenised market operator may need to combine several services with different connectivity arrangements, messaging standards, operating windows and functionality.

Material limitations include operating hours, the absence of common APIs, limited access to reservation functionality, limited event-driven status information and differences between the functionality available through the RITS System Queue and the FSS. Central bank liquidity tools are also limited outside core RITS operating hours.

The FSS provides continuous final settlement but does not currently provide the reservation or liquidity-saving functionality available through the RITS System Queue and is accessed only through the NPP, where the domestic banks place limits on the value of payments they are willing to accept and these limits are determined separately by each bank. This may restrict its suitability for high-value use cases requiring liquidity reservation, coordinated settlement or more advanced liquidity management.

Existing services may therefore support controlled initial use cases, but are unlikely to provide an efficient or scalable long-term basis for continuous tokenised wholesale markets without further development.

Question 4: Enhancements required

ASX considers that the initial priority should be the development of common APIs and more consistent ISO 20022-aligned messaging across relevant settlement, feeder, batch and reservation services.

These interfaces should support the submission of instructions, transaction and reservation status enquiries, real-time event notifications, settlement confirmation and exception management. Common end-to-end transaction identifiers would assist platforms and participants in reconciling cash and asset events.

Reservation capability should be made available to eligible feeder and settlement processes where the use case requires cash certainty before the corresponding asset process proceeds. Over time, consideration should also be given to whether appropriate high-value FSS functionality could support reservation or equivalent liquidity-control outcomes.

The RBA should also consider refreshing the existing RTGS feeder capability so it can support eligible real-time use cases, including potential non-batch DvP transactions and other wholesale settlement processes.

Extended operating hours will be important as tokenised markets mature. However, extended hours should be supported by appropriate liquidity arrangements, participant readiness and operational support. Out-of-hours central bank liquidity, potentially including against eligible tokenised collateral, may be necessary to support scale and resilience.

These near-term enhancements should proceed in parallel with the design and eventual issuance of tokenised central bank reserves.

Questions 5 to 8: Exchange models for private tokenised money

RITS and the FSS should continue to support exchange between commercial bank money and private tokenised money. Depending on the use case, this may involve simple exchange, synchronised exchange or, over time, exchange involving multiple tokenised platforms.

The RBA's infrastructure should support safe and efficient exchange between different forms of Australian-dollar money without prescribing a particular model for private tokenised money.

Common settlement functions should, where possible, be reused across asset settlement and private-money exchange. This includes the ability to reserve, lock, settle, release and notify. Reusing common functions would reduce duplicated infrastructure and support more consistent risk controls.

Bilateral exchange arrangements may be viable where there are a limited number of issuers. At greater scale, a multilateral utility or scheme arrangement may be more efficient. Where the exchange of private money forms part of a securities settlement workflow, responsibility for coordinating the cash and asset components should remain clearly allocated.

Existing RITS and FSS capability can support simple exchange and some synchronised models. However, scaled and continuous exchange across multiple token platforms would benefit from enhanced reservation functionality, more standardised connectivity and real-time event information.

Reliable mechanisms for transferring liquidity between RITS, the FSS and tokenised reserve holdings will also be important to avoid fragmented liquidity pools.

Questions 9 to 11: Stablecoin issuer access to central bank reserves

ASX does not take a position on the preferred commercial models of stablecoin issuers.

In considering access arrangements, the RBA should distinguish between access to central bank reserves for backing purposes and access to central bank settlement functionality. These serve different purposes and need not involve the same access requirements or functionality.

Where stablecoins are used in wholesale markets, backing through transparently and legally segregated central bank reserves may reduce credit and liquidity risk relative to weaker backing arrangements. However, a reserve-backed stablecoin remains legally and operationally distinct from a direct claim on the RBA.

Such arrangements continue to involve issuer, governance, reconciliation and redemption risk. Legal certainty will also be needed regarding the segregation of backing reserves, the beneficial interests of token holders and the treatment of the reserves in insolvency.

A reserve-only or omnibus account may be proportionate where an issuer's principal need is to hold backing assets. Full ESA access should be considered only where an issuer undertakes material settlement activity and can meet the associated operational, liquidity, resilience and governance requirements.

Any access to central bank reserves should be subject to requirements proportionate to the functions performed and risks created. Essential safeguards should not be lowered merely to facilitate access or the use of a particular technology.

The provision of access to an issuer should also not displace the preferred use of central bank money itself for systemically important wholesale settlement where practical and available.

Question 12: Use cases materially improved by tokenised reserves

ASX considers that tokenised reserves would provide the greatest benefits where synchronisation is constrained by existing RITS operating hours or where sequential interaction between separate asset and cash systems limits functionality.

ASX puts forward its tokenised Austraclear collateral mobility service as an early use case for tokenised wholesale markets because of its potential to provide tangible liquidity and risk-management benefits across wholesale market participants. Tokenised reserves could support repo settlement, collateral substitution, securities lending and recalls through Austraclear, including outside current RITS hours, subject to the necessary settlement capability and legal and operational arrangements.

Tokenised reserves could also support out-of-hours margin payments by allowing Australian-dollar liquidity to be provided closer to the time at which risk arises. This may become increasingly important as Australian participants interact with international markets and infrastructures operating across different time zones.

Tokenised debt issuance and lifecycle events represent a further potential use case. Issuance, coupon, maturity and repo-related payments could be coordinated with the relevant asset and eligibility rules.

In CHESS, tokenised reserves could provide participants with greater visibility and certainty regarding central bank funds positioned for settlement while preserving the netting and liquidity efficiencies of the batch. Tokenised reserves may also support optional non-batch DvP for eligible transactions where there is demonstrated demand, while retaining the batch as the default for transactions that benefit from multilateral netting.

Over time, tokenised reserves may support cross-asset or composite settlement workflows involving fixed income, equities, collateral and cash. These more complex use cases should follow successful implementation of simpler domestic arrangements.

Question 13: Functional outcomes for tokenised reserves

Legal equivalence and settlement finality are essential preconditions for tokenised reserves.

Subject to those foundations, the priority functional outcomes should include interoperability with eligible asset platforms, atomic or appropriately coordinated settlement, real-time liquidity management, operational resilience, privacy and controlled programmability.

Interoperability should mean that tokenised reserves can operate safely and with legal certainty alongside the relevant asset and settlement workflow. The capacity to exchange messages between systems will not be sufficient if the systems apply inconsistent transaction states, finality rules or recovery arrangements.

Privacy, permissioning, transaction visibility, cyber security, fallback and recovery arrangements should provide protection commensurate with that expected of wholesale financial market infrastructure.

Programmability should be implemented within clear legal, governance and risk-management parameters. Participants and relevant infrastructure operators should retain the capacity to impose limits, permissions and controls. Automated execution should remain subject to applicable rules, legal rights and regulatory obligations.

Question 14: Issuance and distribution

The RBA should issue and redeem tokenised reserves as a direct liability of the RBA.

ASX supports commencing with a model closely linked to ESA balances, provided that it is capable of supporting the functionality required for tokenised wholesale markets. The service should not be artificially

limited to the functionality of the existing account-based environment where additional functionality can be provided safely.

ASX supports an initial single-tier distribution model under which tokenised reserves are available directly to eligible wholesale holders. This would align with the wholesale purpose of the service and minimise unnecessary intermediation.

Indirect access could be provided through eligible settlement agents or intermediaries for participants that do not hold tokenised reserves directly. A broader two-tier model should be considered only if a demonstrated scaling or access need emerges and the resulting legal, liquidity and operational dependencies are justified.

Tokenised reserves should be capable of being used through eligible platforms. Platform eligibility criteria should be transparent, outcome-based and consistently applied to existing regulated infrastructure and new market arrangements. They should address legal finality, governance, resilience, privacy, cyber security, access controls, auditability, authoritative records and recovery.

Question 15: Funding, redemption and liquidity management

Funding and redemption should be available in real time during the operating hours of the tokenised reserve service.

At launch, the service should operate for sufficiently extended hours to support the intended wholesale use cases. A 24/5 service may provide a practical production starting point if there is demonstrated market demand and the design can subsequently be extended to 24/7 without fundamental reconfiguration.

Participants should have consolidated, real-time visibility of relevant RITS, FSS and tokenised reserve balances. The framework should support efficient rebalancing and, where appropriate, automated sweeps or threshold-based transfers.

Eligible market infrastructure should have appropriate visibility of funds positioned for settlement, subject to privacy and access-control requirements. This would support settlement certainty without providing unnecessary access to participant information.

The arrangements should also include contingency redemption and fallback settlement processes whenever the tokenised reserve service is operating.

Tokenised reserves should receive clearly defined treatment in relation to remuneration, value dating and prudential liquidity recognition. If they are economically or prudentially disadvantaged relative to ESA balances, participants may seek to minimise their holdings and redeem them frequently. This would reduce the utility of the service and could create additional liquidity demands.

Over time, the RBA should also consider the availability of central bank liquidity against eligible collateral, including eligible tokenised securities. Appropriate eligibility, valuation, haircut and risk-control requirements should continue to apply.

Concluding remarks

ASX supports the RBA's work to enable tokenised wholesale markets, anchored in central bank money and the public-policy outcomes that underpin confidence in Australia's financial system. A technology-neutral, function-based approach will allow innovation to develop safely and at scale. Timely progress, supported by enabling regulatory settings, will be important to ensuring Australia remains an attractive and competitive destination for capital markets, including for domestic and international investors.

In the near term, enhancements to RITS and the FSS, including standardised interfaces, real-time information and reserve-locking functionality, would support practical synchronisation of tokenised asset settlement in central bank money. Austraclear collateral mobility is a suitable early use case. Extended

operating hours, a pathway for high-value settlement through the FSS and more flexible liquidity management, including appropriate NPP liquidity arrangements, should follow based on market need and operational readiness.

In parallel, the RBA should progress the design of tokenised central bank reserves, ASX's preferred end-state for wholesale tokenised settlement. If introduced, they should be a direct claim on the RBA, legally and economically equivalent to ESA balances, benefit from equivalent settlement finality protections and be available to eligible wholesale participants under access principles comparable to those for ESA access.

The proposed Project Acacia sandbox, or an equivalent, should provide an on-ramp to production for high-value wholesale use cases, with activity limits that scale as readiness is demonstrated and a defined pathway into the enduring framework.

ASX looks forward to working with the RBA and other stakeholders to develop Australia's settlement infrastructure for a tokenised ecosystem, including by progressing its tokenised Austraclear collateral mobility service and other practical applications of tokenisation.

Kind regards,

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