CHESS Replacement: Consultation Paper on Staged Implementation Approach and Implementation of Release 1 (Clearing Services)

14 March 2024

Contents

1. Overview

This consultation paper outlines the proposed staged implementation of the new Clearing House Electronic Subregister System (CHESS) replacement solution, which comprises two major releases.

The first stage (**Release 1**) will replace CHESS' clearing component and introduce Financial Information eXchange (FIX) messaging for trade registration for all Approved Market Operators (AMOs). This release is designed to minimise disruption for Clearing and Settlement (CS) Participants by maintaining the existing CHESS message interface and business processes, and offering a familiar operational environment. Participants will have the opportunity for regression testing to affirm the new system's complete backwards compatibility.

The second stage (**Release 2**) will enhance settlement and subregister functionality and messaging interfaces for participants, registries and payment providers. The details of the proposed implementation approach for Release 2 will be subject to consultation later in 2024.

We invite industry feedback on:

- The **staged approach** and timing for replacing CHESS in two separate releases (Release 1 and Release 2);
- The **design, scope, and schedule** for Release 1; and
- The **testing approach** for Release 1.

This is the first public consultation aimed at refining our approach to CHESS replacement. The stakeholder feedback obtained through this consultation will inform our proposals for consultation on Release 2 later in the year.

Table 1: What does Release 1 mean for you?

CHESS User	What is new?	Impact
Approved Market Operators (AMOs)	A new, modern and scalable CHESS clearing system	High: new messaging gateway
	A new FIX messaging gateway	
Clearing and Settlement Participants, registries, and payment providers	A new, modern and scalable CHESS clearing system	Low: existing messages retained
		Some regression testing

1.1. Background

ASX is responsible for CHESS, which is the clearing and settlement (CS) system for Australia's securities market. CHESS was established in 1994 to replace the manual processes of clearing and settling transactions in the cash equities market. While CHESS continues to serve the Australian market well, we recognise that the current CHESS technology will not sufficiently meet the scalability and flexibility needs of the market which can be provided by more modern technology architecture and design.

We are committed to contribute to the modernisation of Australia's securities market through the CHESS Replacement Project, aiming to support the market's dynamic nature and respond to its evolving needs for scalability, flexibility and innovation. The project initially focused on building a replacement system based on distributed ledger technology. After pausing the project in November 2022, we reassessed a number of solution designs and potential technologies. A Request for Information (RFI) was issued to multiple vendors, and stakeholder input was actively sought through the CHESS Replacement Technical Committee (Technical Committee), working groups, and other channels.

Following this process, we announced the selection of the BaNCS for Market Infrastructure (BaNCS MI) product delivered by TATA Consultancy Services (TCS) to replace CHESS, signifying a move towards a cutting-edge, resilient and secure CS platform. BaNCS MI offers:

- **Enhanced scalability**: The new system maintains operational resilience while exceeding projected stress levels (2x current maximum of 15 million trades daily) and offers capacity for further market growth;

- **Staged implementation**: Modular design enables a staged rollout across two primary releases, mitigating risks and streamlining the transition;
- **Leveraging industry investment**: Significant existing workflow development and global messaging standards hold strong potential for reuse, pending detailed design consultations;
- **Interoperability**: Modular architecture allows market operators, CS facilities and other providers to integrate with clearing, settlement and subregister services via standardised interfaces; and
- **Innovation-readiness**: The solution supports connectivity with distributed ledger and other emerging technologies, creating a foundation for new services driven by market demand.

1.2. The Continuing Role of Stakeholder Engagement

Engaging with our stakeholders has been a pivotal aspect of developing the proposals outlined in this consultation paper. The two-staged approach to the implementation of the CHESS replacement solution has been informed by significant input from the Technical Committee and the ASX Business Committee. These committees have played a key role in providing stakeholder input on the initial planning for the CHESS Replacement Project, including functional scope and the implementation and testing approaches. The Cash Equities Clearing and Settlement Advisory Group will also continue to provide high-level stakeholder input on strategic matters related to the project as the approach is further refined.

To ensure we obtain input across the broad range of stakeholders and also detailed input of stakeholders when required, we are taking a multifaceted approach to consultation by seeking written feedback through public consultation processes and by also engaging with stakeholder working groups that report to the Technical Committee. These working groups are dedicated to exploring various facets of the design and implementation, and include the Implementation and Transition Working Group, the AMO Working Group, the Business Design Working Group and the ISO 20022 Design Working Group.

Your feedback is important to the project and will be integral to the development of a comprehensive project plan for CHESS replacement. Our goal is to achieve a project timeline and plan that reflects a broad consensus across the market by the end of 2024.

1.3. Feedback Requested

We request feedback on our **proposed staged implementation** strategy for CHESS replacement, as well as our **proposed design, scope and schedule for Release 1** and the **testing approach for Release 1**.

This paper is also designed to equip impacted stakeholders with the necessary information to begin initial planning and resource allocation for the implementation of CHESS replacement.

Our primary audience for feedback includes CHESS Users and Software Providers (the latter of which includes both external vendors and CHESS Users developing in-house systems). However, we are also keen to hear from any other stakeholders who wish to contribute. For the purpose of this consultation, "CHESS Users" encompasses:

- Approved Market Operators (AMOs);
- Clearing and Settlement (CS) Participants;
- Settlement-only Participants;
- Payment providers; and
- Share registries.

When providing your feedback, we ask you to consider the broader implications for your business. This means thinking about how CHESS replacement might affect different areas of your operations, including trade execution, risk and compliance. We encourage you to share your insights from every role you play in relation to CHESS, whether you are responding as a CS Participant, a payment provider or in any other capacity.

1.4. Next Steps

By the end of June 2024, we plan to publish ASX's response to the feedback received through this consultation and outline our next steps towards the implementation of Release 1. Following this, we will release detailed functional specifications, messaging requirements and other pertinent documentation related to the proposed changes. Additionally, a thorough review of all relevant technical and legal documentation will be undertaken to ensure amendments necessary for the Release 1 implementation are identified and actioned.

Our engagement with the industry regarding the scope and approach for both Release 1 and Release 2 will be ongoing throughout 2024. The feedback from this current consultation will inform our proposals for Release 2, which we aim to introduce in a second consultation paper in Q3 2024. The response to the planned Release 2 consultation paper is anticipated to be published in late Q4 2024. The objective of this multifaceted and iterative approach to consultation is to ensure stakeholders have an opportunity to provide feedback through a mechanism that best suits them, while also allowing interested stakeholders to participate in detailed design discussions where it is relevant to them.

FEEDBACK REQUESTED:	
1.	**Staged implementation –** Please provide feedback on the proposal to implement the CHESS Replacement Project into two stages, Release 1 (Clearing) and Release 2 (Settlement and Subregister).
2.	**Design, scope and schedule for Release 1 (Clearing) –** Please provide feedback on the design, scope and schedule for Release 1 (Clearing).

Figure 1: 2024 Industry Engagement Mechanisms and Timelines
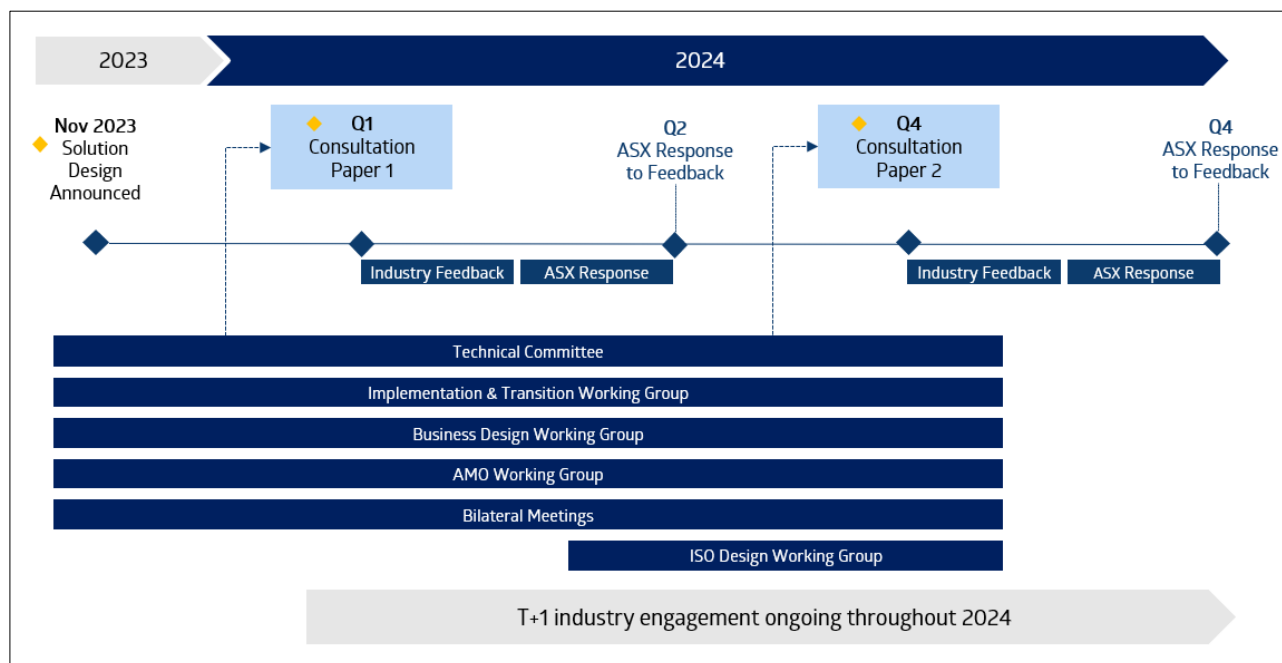
1.5. T+1 Settlement Compression

A key consideration as we progress the implementation of the CHESS Replacement Project is the possibility of transitioning from the current T+2 settlement cycle to T+1 in Australia.

ASX has a role to play in facilitating this discussion and supporting the industry in assessing and understanding whether, and how, shortening the settlement cycle promotes the interests of the Australian market as a whole. In December 2023, acting on a recommendation from the ASX Business Committee, we established the T+1 Working Group. Comprising representatives from various ASX Business Committee members, this group's primary objective is to conduct analysis and provide insights on settlement cycle compression to the ASX Business Committee.

The T+1 Working Group has been tasked with examining costs and benefits of shortening the settlement cycle in the Australian cash equities market. The T+1 Working Group is currently preparing a whitepaper on the key issues for consideration on T+1 in the Australian market, which will be publicly released in May 2024.

As these industry discussions progress, ASX will give consideration to T+1 in the context of the CHESS Replacement Project. This will include assessing scope adjustments and potential impacts on project timelines.

1.6. Interoperability

The current CHESS system offers interoperability in terms of integrating with multiple AMOs (currently ASX Trade, Cboe Australia and the National Stock Exchange of Australia (NSX)), allowing these platforms to interact with CHESS for trading activities. With the completion of Release 1, all AMOs will connect using the same Trade Acceptance Service (TAS) FIX interface. However, this interoperability does not extend to clearing, settlement or subregister services.

This means that while trades which are executed across different marketplaces can be cleared and settled using CHESS, there is no capability for alternative clearing, settlement, and/or subregister services to be integrated into the existing CHESS infrastructure. The introduction of interoperability for these post-trade functions is on the horizon but is not

slated for inclusion in Release 1 of the CHESS Replacement Project. Instead, this significant enhancement is earmarked for Release 2, aiming to provide a more flexible, efficient, and integrated ecosystem for clearing, settlement and subregister services.

2. Staged Implementation

We propose a staged replacement of the CHESS system, commencing with Clearing (Release 1) and subsequently progressing to Settlement and Subregister (Release 2). This approach mitigates industry risk and workload while introducing new industry-standard FIX messaging for AMOs in Release 1 and is intended to minimise disruption for participants, registries and payment providers.

2.1. Staged Implementation Approach

In March and April 2023, ASX consulted the Technical Committee on the different options for a staged implementation of the CHESS replacement solution. The Technical Committee advised against options requiring CHESS Users to connect simultaneously to both the current and replacement systems, excluding issuer-based staging from consideration. The Technical Committee was supportive of a first release focused on trade scalability and AMO connectivity, subject to backwards compatibility being provided for CHESS messaging as it relates to non-AMO CHESS Users on the basis that it would limit the impact to AMOs only.

Based on this feedback, ASX developed the staged implementation approach that was announced in November 2023. The modular technology architecture of the new CHESS replacement solution is integral to achieving the proposed two-stage implementation.

2.2. Staged Implementation Release Scope

Release 1 (Clearing)

The proposed scope of Release 1 includes:

- **Upgrading Core Clearing Systems and Connectivity**

    – Replacing the TAS technology and CHESS clearing service components with a subset of the TCS BaNCS MI product.
    – Introducing a new FIX 5.0 message interface for AMOs (trade and market price reporting).

- **Ensuring Backwards Compatibility**

    – Creating an internal ASX interface to transfer CHESS External Interface Specifications (EIS) messages from the new clearing service to the current CHESS system, for onward routing to CS Participants. This maintains backwards compatibility for CS Participants.

- **Enhancing Scalability**

    – Delivering a significant increase in performance through the new TAS and clearing service components, providing a boost to market volume and scalability within the existing CHESS framework.

Under the proposal, CS Participants and other CHESS Users are expected to experience minimal disruption, as all existing external message workflows (i.e. EIS messages) generated by the new clearing service will be fully backwards compatible. The only change will be the new FIX 5.0 AMO message interface used by AMOs.

**Release 2 (Settlement and Subregister)**

The proposed scope of Release 2 includes:

- **Complete Implementation**: Fully deploying the target state solutions for settlement and subregister services.
- **Messaging Upgrade**: Introducing ISO 20022 messaging for all CHESS Users (excluding AMOs).
- **System Retirement**: Retiring the remaining legacy components of CHESS and ending the use of EIS messaging.

Release 2 will provide the opportunity to incorporate customer-driven enhancements and consider other relevant macro factors including house/client segregation. ASX plans to issue a Release 2 consultation paper in Q3 2024, informed by industry responses to this consultation paper.

Figure 2: Proposed Staged Implementation Approach Overview
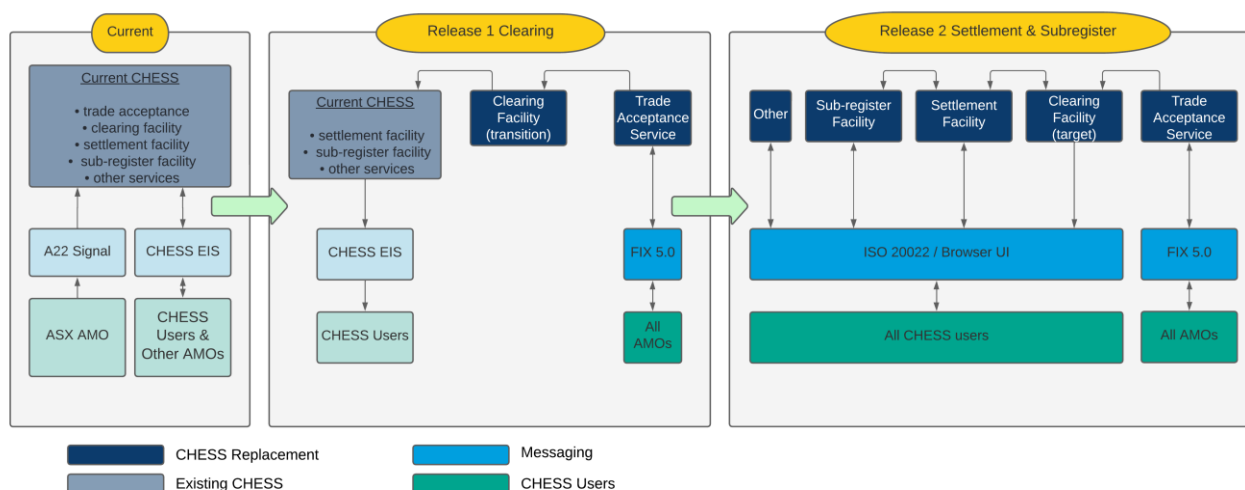
2.3. Implementation Timing

We have actively engaged with the industry to discuss potential timelines for the implementation of Release 1, utilising forums such as the Technical Committee and the Implementation and Transition Working Group for this purpose. Release 1 will require AMOs and their Software Providers to build, test, and accredit their systems. They will also need to attest to their operational readiness. Concurrently, CS Participants will be provided the opportunity to perform regression testing to verify that the implementation of backwards compatibility has not impacted their business processes.

We are targeting the implementation of Release 1 in **Q1 2026**. Detailed information concerning the Release 1 timeline, including phases for industry testing and the criteria for go-live readiness, is outlined in sections 4 and 5 of this consultation paper.

Feedback from the Release 2 consultation paper will inform the proposed timeline for the implementation of Release 2. It is important to note that the planning for Release 2 and its eventual implementation timeframe may be influenced by various factors, including the discussions around any decision to transition to a T+1 settlement cycle and other relevant industry macro factors.

3. Design, Scope and Schedule of Release 1 (Clearing)

3.1. Overview

The following sections provide further details on the proposed scope of Release 1. The clearing model for the CHESS replacement system retains much of the framework of the existing CHESS clearing model, but it is enhanced with modern technology and aligns with industry-standard messaging protocols. This is to ensure that while the fundamental processes may remain familiar, the efficiency, reliability, and scalability of the system is significantly improved.

Details of the proposed scope of Release 2 will be provided in a subsequent consultation paper due to be released in Q3 2024.

Figure 3: CHESS Replacement High-Level Conceptual Architecture
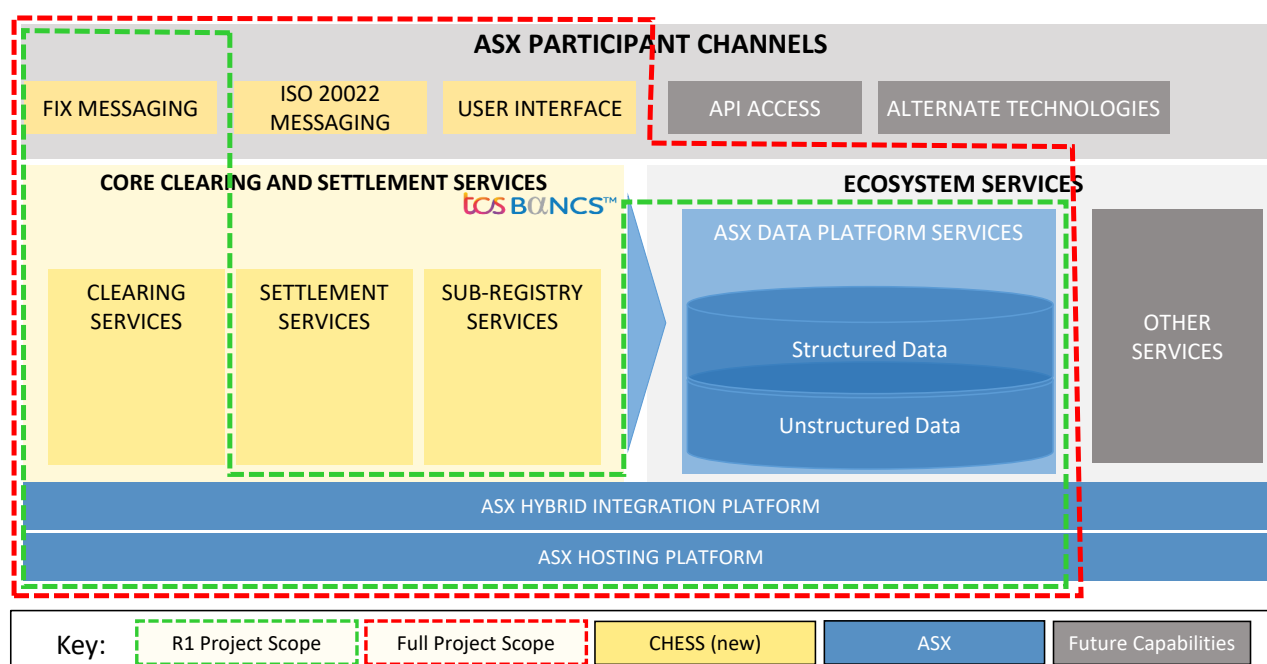
3.2. Release 1 (Clearing) Scope

In Release 1, FIX messaging will be introduced, marking a significant shift from the current use of EIS messaging for trade registration, cancellation and end-of-day (EOD) price reporting by AMOs. This transition to FIX messaging is a key component of Release 1 and will bring benefits to AMOs through the adoption of industry standards.

ISO 20022 messaging for the clearing message workflows is not proposed to be introduced until Release 2. Timing for the introduction of ISO messaging is currently under consideration and will be subject to feedback in the next consultation paper.

The FIX and ISO message specifications that were developed and published during earlier phases of the project will serve as the foundation for the new system. Our goal is to keep modifications to these specifications to a minimum, with the intention of enabling the reuse of the development work already undertaken by CHESS Users.

3.2.1 Release 1 –Participant Interface Impact

Table 1 summarises the impacts of Release 1 on CHESS Users:

Table 1: Release 1 Impacts on CHESS Users

CHESS User Type	Impact	Notes
AMO	Yes	Full replacement of current AMO messaging interfaces with FIX 5.0 based messaging.
CS Participants	No*	* The backwards compatibility design for EIS messaging will ensure minimal to no impact to CS Participants, however a subset of EIS messages associated with clearing will be generated from the new clearing service component. Regression testing is planned for CS Participants to ensure the expected backwards compatibility of this message interface.
Settlement Participants	No	No change to EIS messaging from current CHESS.
Payment Providers	No	No change to EIS messaging from current CHESS.
Share Registries	No	No change to EIS messaging from current CHESS.

3.2.2   AMO EIS Message Interface

The following EIS message workflows, used by AMOs, are being replaced by FIX messaging and batch reporting. Current ASX Trade messages are sent using the Signal B message format. However, following the implementation of Release 1, ASX Trade will move to FIX with all AMOs.

Table 2: EIS Message Workflows

EIS	Name	Replaced by	Sender	Receiver	Notes
093-01	Price Registration	FIX W	AMO	CHESS	To enable an AMO to report price information to CHESS.
096-01	Security Detail	sFTP File	CHESS	AMO	To notify an AMO of security details held in CHESS. The EIS message is replaced by a Batch Secure File Transfer Protocol (sFTP) file transfer – for details see paragraph 3.2.4 CHESS AMO Alternate File Based Interface.
097-02	Price Notification Registration	FIX W	AMO	CHESS	To enable an AMO to report price information to ASX Clear/ASX Settlement.
098-01	Price Notification Acceptance	FIX AU	CHESS	AMO	To notify an AMO that a valid Price Notification has been received by ASX Clear/ASX Settlement.
100-01	Trade Removal Notification	FIX AR	CHESS	AMO	To notify an AMO that a trade which is the subject of an accepted Trade Registration Request has subsequently been removed from the CS facilities by ASX Clear/ASX Settlement.

161-02	Trade Registration Request	FIX AE	AMO	CHESS	To enable an AMO to submit or cancel a trade so that the trade (or cancellation) can be validated for acceptance into the CS facilities by ASX Clear/ASX Settlement.
184-01	Trade Registration Acceptance	FIX AR	CHESS	AMO	To notify an AMO that the trade which is the subject of a Trade Registration Request was approved for acceptance into the CS facilities by ASX Clear/ASX Settlement.
503-04	Reporting Request	N/A	USER	CHESS	To enable CHESS Users to submit a request for reporting functions in CHESS.
518-01	Rejected Transaction	FIX AR	CHESS	AMO	To notify a CHESS User that a message which has been sent to CHESS has been rejected.

The transition from EIS to FIX messaging impacts a number of business message and information flows:

- **Trades and trade cancellations** will be submitted via FIX as they occur on the AMO matching systems.
- **EOD Prices**: AMOs are required to report EOD closing prices to CHESS, which will be submitted via FIX after the AMO market has closed.
- **Subregister Security Report:** The current CHESS system provides a facility for AMOs to request the Security Detail EIS message by sending in a subscription request. The Security Detail messages provide the AMO with a full list of the securities that are currently recorded in the CHESS subregisters. The current EIS 096 message will be replaced by a daily batch report available using the ASX sFTP service.

### 3.2.3   Non-AMO EIS Message Interface

The implementation strategy for Release 1 is designed to facilitate continuity and minimise disruption through the following key measures:

- **Continuation of CHESS EIS Messaging**: The CHESS replacement system is designed to generate and dispatch CHESS EIS messages to the current CHESS system, which will, in turn, route these messages as before to CS Participants. This approach aims to ensure that the established messaging protocol remains largely the same for non-AMO Chess Users, maintaining a seamless operational flow.
- **Backwards Compatibility**: This is a critical aspect of Release 1, aimed at ensuring a smooth transition with minimal impact on the day-to-day operations of CS Participants and other non-AMO CHESS Users. Except for the EIS 096-01 (Security Report), there will be no changes to the CHESS EIS messages, and CS Participants will continue to receive all downstream EIS messages generated by CHESS as before. This underscores our commitment to preserving the existing connectivity between CHESS and its non-AMO users.
- **Future Transition to ISO 20022 Messaging**: It is important to note that with Release 2, the project will retire the non-AMO EIS message interface along with all EIS messaging. This shift will mark the full adoption of ISO 20022 messaging standards, aligning with global best practices and enhancing the efficiency, clarity, and scalability of financial communications.

This phased approach to transitioning messaging protocols from the current TAS EIS to FIX in Release 1, and from the remainder of EIS to ISO 20022 in Release 2, enables non-AMO CHESS Users to plan and prepare for the Release 2 changes without immediate disruption to their existing systems.

Figure 4 illustrates the proposed message flows between the current CHESS system, the CHESS replacement system and CHESS Users for Release 1.

Figure 4: Release 1 Backwards Compatibility and Messaging
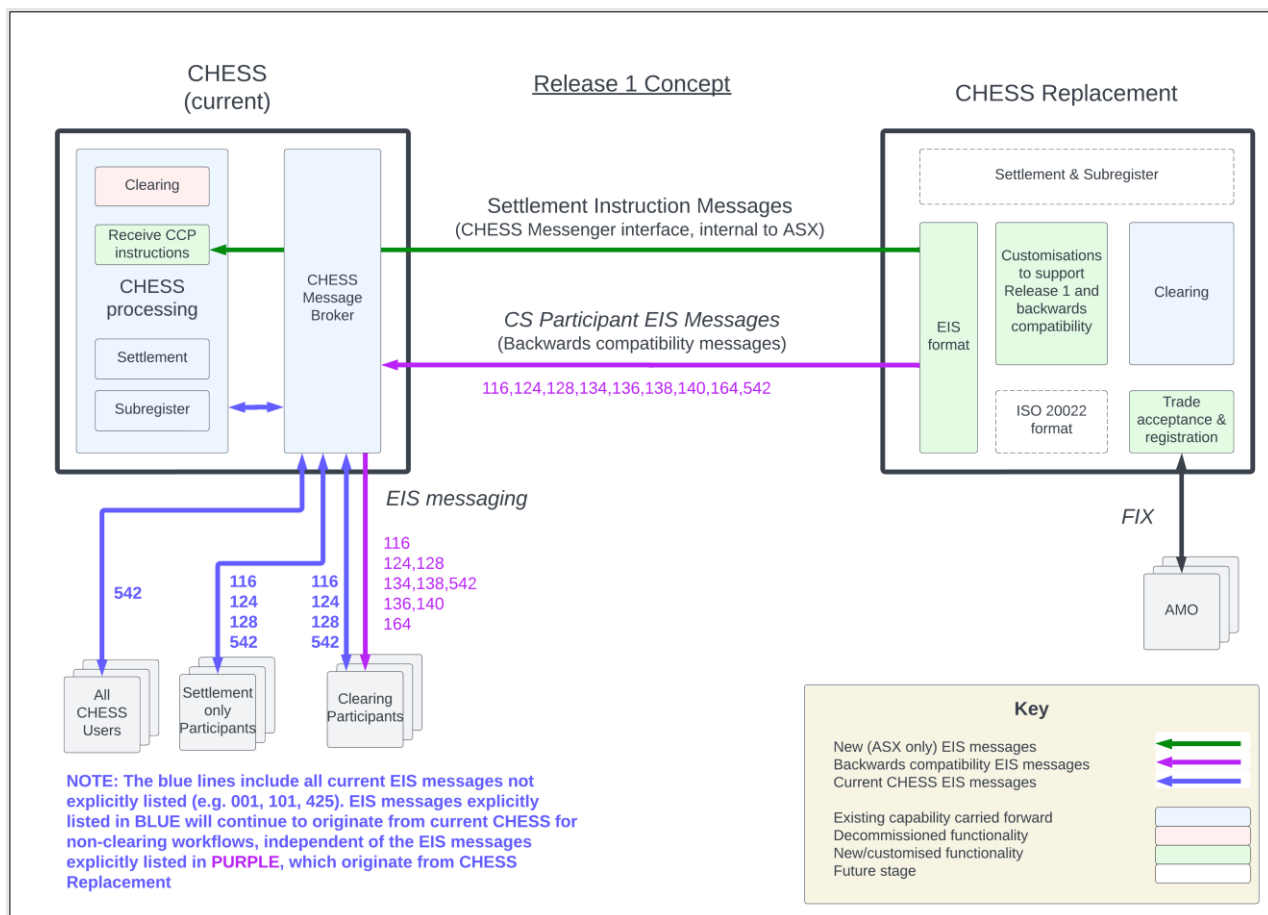
With the implementation of Release 1, the following EIS messages will be generated by the CHESS replacement clearing solution and transmitted to CS Participants via the current CHESS Message Broker component. Some of these messages will also continue to be generated in the existing CHESS system.

Table 3: Backwards Compatibility EIS Messages

EIS	Name	Business Context
116-01	Cancelled Settlement Instruction	To notify a Participant that a broker/broker trade has been cancelled.
		(Sent intraday for each trade cancellation initiated by either the originating AMO or ASX Clear, one message each for the buying and selling CS Participants of the trade)
124-01	Rescheduled Settlement Instruction	To notify a Participant that an un-netted settlement instruction has been rescheduled to a future settlement cycle subsequent to a diary adjustment related to a corporate action.
		(This message is sent intraday, after completion of a corporate action process, for each broker/broker trade of a security that has had an update to its deferred settlement date by the issuer, one

EIS	Name	Business Context
		message each for the buying and selling CS Participants of the trade)
128-02	Adjusted Settlement Instruction	To notify a Participant that a scheduled settlement instruction has been adjusted through the application of a corporate action.
		(Sent intraday where there is a security code change, one message each for the buying and selling CS Participants of each broker/broker trade received that day for the affected security)
136-01	Reinstated Broker Broker Trade	To notify a Participant that a broker/broker trade that was previously netted is now scheduled for settlement as an individual line due to the reversal of the netting process.
		(These messages are sent along with the related EIS 140-01 messages, sent intraday, after completion of an un-netting batch event, for each broker/broker trade received from AMOs that has been netted and previously notified via EIS 138-01, one message each for the buying and selling CS Participants of the trade)
140-01	Cancelled Net Broker Broker Obligation	To notify a Participant that a previously advised net broker/broker obligation has been cancelled due to the reversal of the netting process. The individual broker/broker trades that were netted are now individually scheduled for future settlement.
		(These messages are sent along with the related EIS 136-01 messages, sent intraday, after completion of an un-netting batch event, one message per CS Participant per security in which they have either a receive or deliver netted settlement obligation, as previously notified via EIS 134-01)
134-01	Scheduled Net Broker Broker Obligation	To notify a Participant of their new settlement obligation as a result of one or more scheduled broker/broker trades being netted.
		(These messages are sent along with the related EIS 138-01 messages, sent EOD, after completion of the netting batch event, one message per CS Participant per security in which they have either a receive or deliver netted settlement obligation)
138-01	Netted Broker Broker Trade	To notify a Participant that a broker/broker trade has been netted with other eligible broker/broker trades.
		(These messages are sent along with the related EIS 134-01 messages, sent EOD, after completion of the netting batch event, for each trade received from AMOs that has been netted, one message each for the buying and selling CS Participants of the trade)
164-03	Notified Broker Broker Trade	To notify a Participant that a broker/broker trade has been received and is scheduled for future settlement.
		(Sent intraday for each trade received from AMOs, one message each for the buying and selling CS Participants of the trade)
542-01	CHESS Event Notification	To notify a user that a specific event has occurred in CHESS.

| EIS	Name	Business Context
		(Sent at the end of the netting and un-netting batch events to signal completion of the process, one message for each CS Participant)

3.2.4   CHESS AMO Alternate File Based Interface

The current CHESS system provides a facility for AMOs to report trades and prices offline. This facility is critical in the mitigation of operational risks associated with system or network outages, ensuring that AMOs have the capacity to communicate trade and price data in the event of technical failures and downtime.

In Release 1, we are introducing a significant update in the form of a new Alternate File Based Interface. This interface is designed to replace the existing offline reporting service, offering an alternative method for submitting FIX messages to the CHESS replacement system when the standard FIX interface is unavailable.

Transitioning from the EIS message formats used in the current system, the new Alternate File Based Interface will employ FIX message formats based on the AMO TAS FIX specification. This service will maintain the use of the ASX Secure File Transfer Protocol (sFTP) service for sending and receiving files, to continue providing a secure and reliable method for data exchange.

Figure 5: AMO Alternate File Based Interface Operation
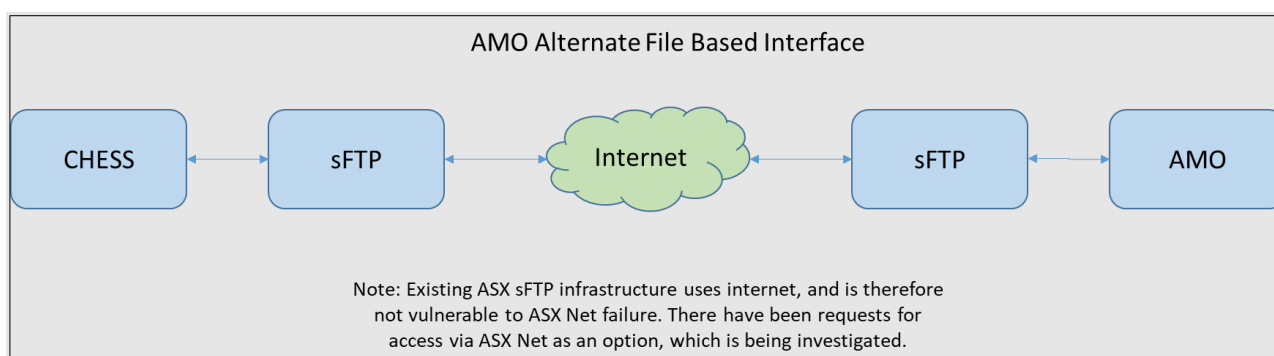
When a batch file is received by the replacement CHESS system, it will be processed and a set of FIX acceptance or rejection messages will be generated and returned to the AMO.

3.2.5   Clearing

The CHESS replacement system will greatly enhance the way trades are novated and netted for clearing and settlement. Unlike the current system where CHESS performs netting in a batch operation at the end of the day, the new platform using the TCS BaNCS MI product introduces a continuous netting model. This model is in line with industry best practices observed in modern clearing systems worldwide.

Continuous Netting

As trades are received from AMOs and registered by the new clearing service, they are immediately novated to the central counterparty (CCP). Following novation, these trades are netted into a single net broker obligation (NBO) per CS Participant by security. This process calculates the net quantity of each security and the net cash amount that a CS Participant is obligated to deliver or entitled to receive from the CCP, thereby streamlining the clearing and settlement process.

Backwards Compatibility and Daily NBO Messages

To maintain existing operational practices and ensure a smooth transition for CS Participants, the system will continue to generate NBO messages at the close of the business day.

Trade Registration and Cancellation Workflows

It is important to note that the trade registration and cancellation message workflows will remain unaffected by this transition. These processes will continue to operate throughout the trading day, with the final daily netted positions being communicated via EIS messaging, following the current batch timelines. Trade cancellations received intraday will be appropriately applied to the relevant Clearing Account in accordance with the CS rules.

4. Release 1 Industry Testing

The aim of this section is to explain the proposed strategy for the various industry test phases and provide details on the associated Industry Test Environment (ITE). A suite of documents will be distributed following the publication of the response to this consultation, including the Release 1 Industry Test Approach and the Release 1 Cutover Approach. These documents will set out the testing strategy and cutover plan in detail to assist all parties in preparing for the transition.

As part of the Release 1 Industry Test Approach document, we will publish a Release 1 technical documentation release plan to give further information about the purpose, target audience and anticipated publication dates for each technical document and artefact.

4.1. Overview of Industry Testing

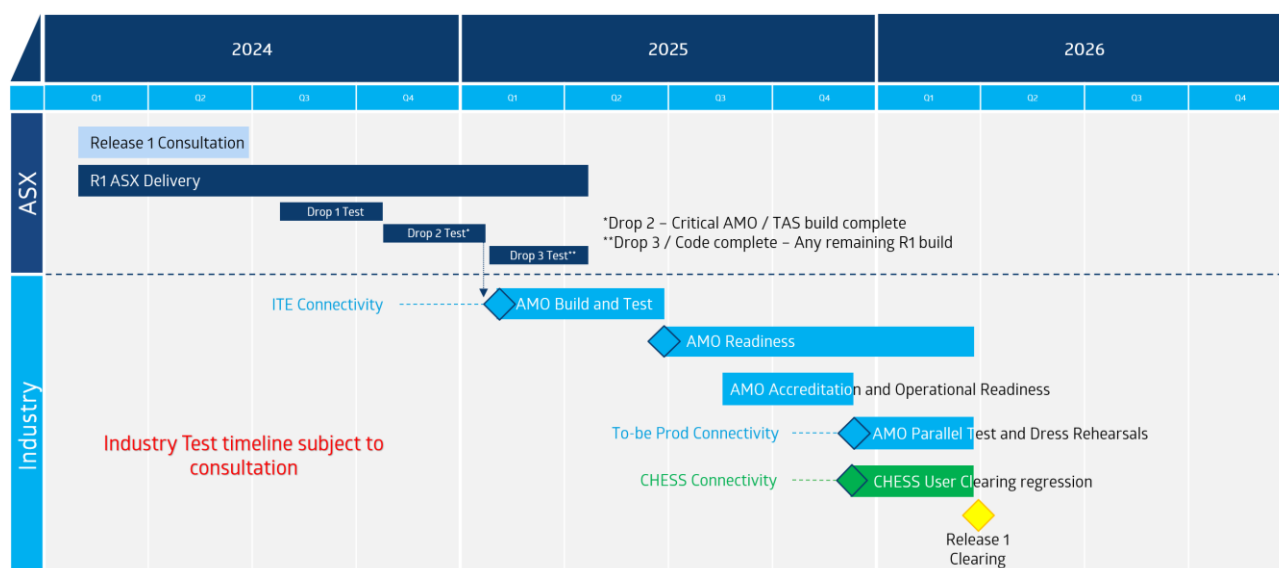The proposed industry test phases for Release 1 are set out in the table below.

Table 4: Proposed Release 1 Industry Test Phases

Industry Test Phase and Purpose	Who is Involved	Indicative Time
AMO Build and Test provides AMOs' Software Providers a phase to complete their development and undertake testing.	AMOs' Software Providers*	End Feb 2025 – Jun 2025
AMO Readiness provides the opportunity to complete further testing including optional performance testing and an optional simulated network outage in preparation for AMO accreditation.	AMOs' Software Providers*	Jul 2025 – Mar 2026
AMO Accreditation (technical accreditation) is a mandatory industry test phase where AMOs' Software Providers will need to demonstrate their software's ability to connect and interact with the CHESS replacement system.	AMOs' Software Providers*	AMO Accreditation and AMO Operational Readiness is intended to be scheduled between Sep 2025 – Nov 2025
AMO Operational Readiness is a mandatory industry test phase where AMOs will need to demonstrate that their organisation meets the operational requirements for their business.	AMOs	
CHESS User Clearing Regression provides CS Participants with the ability to perform internal testing and validation of all downstream EIS messages received that result from trade registration services.	AMOs and CS Participants	CHESS User Clearing Regression and AMO Parallel Test is intended to be scheduled between Nov 2025 – Mar 2026
AMO Parallel Test is a key risk mitigation step providing the opportunity to reconcile an AMO's production feed of trade registrations to current CHESS against its feed of trade registrations to the CHESS replacement system. This also provides an opportunity for CS Participants to validate the downstream EIS messages from AMOs.	AMOs and CS Participants	

* AMOs' Software Providers include both those developing in-house systems as well as external vendors.

Figure 6 provides an indicative timeline for Release 1, including the delivery and implementation activities.

Figure 6: Indicative Release 1 Project Timeline

4.2.   Release 1 Industry Test Phases

During our recent bilateral engagement with AMOs, feedback was received concerning the proposed duration allocated for the AMO Build and Test and AMO Accreditation test phases. One AMO has indicated that the timeframes may be longer than required, and suggested consideration of a shorter testing period.

While we have taken a prudent approach to testing phase durations, we are open to further discussions and feedback on this through the consultation process. We encourage all interested parties to provide their insights and views on the timeframes for these test phases, including any constraints they may face in their ability to meet a shorter testing window.

4.2.1   AMO Build and Test

Following the completion of necessary development efforts by both ASX and AMOs, we will invite AMOs to connect to the ASX ITE. To complete this onboarding process, each AMO or their Software Provider must complete a series of connectivity tests with the purpose of verifying the stability and reliability of their systems' interaction with the ITE.

4.2.2   AMO Readiness

At the outset of the AMO Readiness phase, it is expected that every AMO or its Software Provider will have concluded the AMO Build phase and successfully executed its own internal AMO system test cases.

As part of the preparation for AMO Accreditation and Operational Readiness, it will be important for AMOs to engage in comprehensive testing beyond the basic functionality. This includes testing network failure events to evaluate the resilience and recovery capabilities of their systems under adverse conditions. Additionally, security features will need to be tested to ensure that the system's defences are robust and capable of protecting against potential threats and vulnerabilities.

Performance testing is another aspect of the AMO Readiness phase. This testing is to assess the system's efficiency, scalability, and stability under various conditions. This is to ensure that the system can manage the expected load and perform optimally even under peak demand scenarios.

The aim of these preparatory tests - encompassing network failure events, security features, and performance testing - is to ensure that AMOs are not only technically ready but also operationally prepared to meet the demands of the new environment. This comprehensive approach to readiness testing is designed to mitigate risks, enhance system robustness and ensure a smooth transition to the CHESS replacement system for all parties involved.

AMO Accreditation (Technical Accreditation)

Technical Accreditation is required for all external systems that aim to connect to the CHESS replacement system within the production environment. This accreditation is a key element in a broader framework of requirements designed to uphold the stability and integrity of the CS facility. It is essential for both third-party system vendors and AMOs developing their proprietary in-house systems (Software Providers).

The primary objective of Technical Accreditation is not to validate the functional compliance of the host system with the end-to-end workflow of the CHESS replacement system. This will be thoroughly evaluated during the Operational Readiness testing phase. Technical Accreditation focuses specifically on verifying two critical components:

- **Connectivity Accreditation**: This confirms that the systems can establish and maintain a secure and resilient connection to the CHESS replacement system. It is vital to ensure that the underlying infrastructure supports reliable and secure communications between the participating entities and the CHESS replacement system; and
- **Messaging Accreditation**: This confirms the compliance of the new message formats, particularly in the context of Release 1, which adopts FIX messaging. Messaging accreditation requires systems to demonstrate that they can accurately generate, send and receive FIX message constructs before these systems are deployed for use by CHESS Users in the production environment.

Prior demonstration of successful testing in the ITE is a prerequisite for Technical Accreditation. The successful completion of Technical Accreditation is mandatory before progressing to the Operational Readiness phase, to ensure that all systems are vetted for stability and compliance before full-scale implementation.

To facilitate thorough testing and accreditation processes, Software Providers will be provided with an ITE that includes the Release 1 target state code base with production reference data. Detailed guidelines, including specific scenarios for Technical Accreditation, will be made available in the CHESS Replacement Industry Test Approach and Technical Accreditation Guide. The proposed comprehensive approach aims to ensure that all systems connected to the CHESS replacement system are rigorously tested, accredited and ready for operational deployment, thereby safeguarding the stability and efficiency of the CS facility.

AMO Operational Readiness

The AMO Operational Readiness phase is a mandatory test phase designed to ensure that AMOs are fully prepared for the transition to the CHESS replacement system at go-live. This phase focuses on verifying that AMOs have established appropriate processes and procedures, thus significantly reducing potential risks to their own operations and the broader market. Achieving Operational Readiness demonstrates an AMO's capability to manage the new system's requirements effectively and safely.

For an AMO to reach Operational Readiness, it must first demonstrate the successful end-to-end business flows utilising software that has passed Technical Accreditation. This involves several key steps:

1. Completing Technical Accreditation to ensure the software meets all required standards for connectivity and messaging.
2. Deploying the accredited software within their own test environment to mirror the operational settings as closely as possible.
3. Preparing and executing detailed test scripts during the Operational Readiness phase, which cover a comprehensive range of scenarios to validate the system's performance under various conditions.

It will be essential for the AMOs' surrounding systems to integrate with the accredited software to ensure full compatibility with the CHESS replacement system within the ITE. This integration must demonstrate an AMO's overall system readiness for the operational demands post-go-live.

Although Release 1 Operational Readiness specifically targets AMOs, Software Providers (especially third-party vendors) play a supportive role by assisting their clients through the Operational Readiness activities. This collaboration will be vital for ensuring that all components of the system function harmoniously and are prepared for the transition.

Operational Readiness encompasses the completion of each AMO's test scripts, including meeting the minimum Operational Readiness scenarios outlined by ASX. These scenarios, to be detailed in the industry testing documentation, will be made available well in advance, allowing AMOs time to prepare for and execute their readiness activities.

As part of the assessment process, AMOs will be required to furnish evidence and satisfy ASX of their preparedness across all business-as-usual (BAU) functions they perform. This step is required for affirming an AMO's capability to operate smoothly within the new system environment, ensuring a stable and efficient market ecosystem post-implementation.

4.2.3   CHESS User Clearing Regression Testing

Although the changes made in Release 1 clearing functionality and the transition to the FIX messaging format do not directly impact upstream CS Participants, a regression test phase will provide CS Participants the opportunity to validate that no issues arise from the downstream EIS messages received from current CHESS as a result of the new trade acceptance and clearing services. Refer to section 3.2.2 of this document for the list of messages.

CS Participants will need to coordinate with their relevant AMO for such testing.

4.2.4   AMO Parallel Test

Parallel testing is an important phase in the rollout of the CHESS replacement system. It is designed to mitigate risk and bolster confidence in both the new system and its integration with external systems. The primary goal during this phase is to ensure the accuracy and consistency of trade registration feeds between the current CHESS system and the CHESS replacement system. This testing will be undertaken in a to-be production (to-be-prod) infrastructure. This phase is also crucial for CS Participants as it allows them to validate downstream EIS messages generated as a result of AMO trade registration and price reporting.

To facilitate effective parallel testing, a to-be-prod environment will be established, featuring production reference data and configured to the Release 1 target state (which will encompass both the current CHESS and CHESS replacement systems). Over a predetermined period, AMOs will be required to duplicate their trade registration and pricing data requests to the CHESS replacement system in the same manner as they are currently sent to the production CHESS. The results from these parallel tests will then be securely shared for thorough verification and validation with AMOs, and upon request, with CS Participants.

The benefits of conducting such comprehensive parallel testing include:

- Providing a realistic testing scenario using actual production volumes and configurations, which helps in identifying and addressing potential issues in a controlled environment;
- Ensuring that trade registration and price reporting data from AMOs reconcile accurately with the data received by the current production CHESS, thereby validating the integrity and reliability of data processing and reporting;
- Validating the functionality and compatibility of AMO and ASX FIX messaging within the production infrastructure, ensuring seamless communication between systems; and
- Offering an opportunity to monitor system performance and gain hands-on experience with the live system environment before the official go-live, helping to ensure a smoother transition.

To proceed with this extended parallel testing, certain prerequisites must be met, including the successful completion of all prior test phases. Additionally, it requires establishing connectivity between ASX's to-be-prod environment and the AMOs' respective to-be-prod, pre-prod, or prod environments. Participants must also demonstrate their ability to execute production processes in collaboration with ASX throughout the duration of this test phase, ensuring readiness for the final transition to the new CHESS system.

	FEEDBACK REQUESTED:
3.	**Release 1 Industry Testing approach –** Should the scope or approach for the industry test phases be changed in any way to ensure each are appropriate and fit for purpose for AMOs, CS Participants and Software Providers? Please provide supporting detail.
4.	**Release 1 Industry Testing duration** – As an AMO, with the information currently provided, how much time do you estimate will be required to complete your build and test and prepare for Accreditation and Operational Readiness? As a CS participant, how much time will be required to complete regression testing for impacted messages?

5. Cutover and Transition – Release 1

Cutover and transition readiness activities are essential to ensure that all necessary steps are completed on time for a smooth transition to the new system within the designated timeframe. For Release 1, we will transfer and verify all essential reference data needed for trade acceptance and clearing services in the CHESS replacement system, including data related to issuers and securities. During the transition period, we will create and securely distribute migration reports to AMOs containing information about their listed securities, a complete roster of Trading Participants and the Clearing Participants that have been established in the new CHESS replacement system.

5.1. Implementation Dress Rehearsals

To ensure the successful implementation of Release 1, a series of critical readiness activities will be conducted before the cutover period. Once the industry testing phase concludes, AMOs will need to engage in implementation dress rehearsals (IDRs) and provide a final attestation leading up to the cutover.

ASX will organise IDRs well ahead of the Release 1 go-live date. The exact timing for these rehearsals will be determined based on the feedback from this consultation and will be detailed in the subsequent technical documentation release plan. Participation in the IDRs by all AMOs is crucial, as it involves a comprehensive walkthrough of the end-to-end activities that both AMOs and ASX will perform during the go-live period. These rehearsals will take place in the to-be-prod environment, which mirrors the full infrastructure and non-functional characteristics of the final production setting. This environment serves as a critical platform for executing dress rehearsals to fine-tune go-live preparation. Post successful go-live, this environment will transition to become the production setting for the CHESS replacement clearing solution.

The goals of the IDRs include allowing AMOs to:

- Validate, test, and refine their cutover strategies, ensuring the sequence of activities is accurately planned;
- Make necessary adjustments to the runsheet to guarantee all tasks can be completed within the allotted cutover timeframe;
- Test their communication lines with the ASX Command Room;
- Evaluate the cutover incident management protocols; and
- Assess the backout procedures in case of unforeseen issues.

A detailed runsheet outlining all requisite activities for the IDRs will be provided in advance by ASX, including the timing of tasks and contact information for support.

Additionally, ASX will conduct disaster recovery testing with AMOs in the ASX to-be-prod environment, which will feature a full-scale production-level setup and security measures.

To further support AMOs, we plan to hold information workshops in late 2024. These sessions will cover all necessary cutover activities and offer detailed discussions on specific changes such as the migration of reference data. These preparatory steps are designed to ensure that all involved parties are fully equipped and ready for a seamless transition to the new system.

5.2. Attestations

Following the final IDRs and the completion of all compulsory industry test phases, AMOs will be tasked with submitting readiness attestations to ASX. This is the final requirement for readiness confirmation, in which AMOs officially declare their preparedness for the day 1 go-live of the CHESS replacement system. The attestations must cover several crucial areas, including:

- **Connectivity Accreditation of Production Software**: AMOs must attest to the successful accreditation of their production software's connectivity capabilities, ensuring it can establish and maintain a stable and secure connection to the CHESS replacement system;
- **Message Accreditation of Production Software**: This involves attesting to the production software's compliance with the required messaging standards, verifying that it can accurately generate, send and receive messages as per the new system's specifications;
- **Evidence of Participation in Operational Testing**: AMOs are required to provide proof of their active engagement in the operational testing phases conducted with the accredited software. This demonstrates the thorough testing of software functionalities and operational workflows; and
- **Demonstration of Participation in the IDRs**: Finally, AMOs must show evidence of their participation in the IDRs, demonstrating their commitment to ensuring that all end-to-end activities scheduled for the go-live window have been rigorously tested and verified.

These attestations play an important role in safeguarding the transition to the CHESS replacement system by ensuring that all AMOs have meticulously validated their systems' readiness and compliance with the required standards and protocols. By fulfilling these attestation requirements, AMOs contribute significantly to the overall stability and reliability of the market's transition to the new CS infrastructure.

5.3.   Cutover Window

The commencement of the cutover window for the CHESS replacement system will be scheduled to begin after the completion of the Friday night BAU EOD batches in the ASX source systems. This timing strategically positions the start of the cutover activities to minimise disruption and take advantage of the weekend period for the transition. The cutover window has been planned to include:

- **ASX Data Migration & Reconciliation**: A critical portion of the cutover window is dedicated to the migration and reconciliation of ASX data. This step ensures that all necessary data is accurately transferred to the CHESS replacement system and that any discrepancies are addressed;
- **AMO Activities**: AMOs will engage in a series of activities such as proving connectivity to the new system and performing verification checks. These activities are vital for confirming that AMOs' systems can communicate effectively with the CHESS replacement system and that all necessary preparations are in place for a seamless transition;
- **Final Go/No-Go Checkpoint**: Towards the end of the cutover window, a final go/no-go decision will be made. This critical checkpoint assesses the readiness of all components and determines whether the transition can proceed as planned; and
- **Contingency Period**: A contingency period has been factored into the cutover window to address any unforeseen issues that may arise during the transition. This period provides a buffer to ensure that any challenges can be managed without impacting the overall schedule.

The sequence of activities and the accuracy of the activity flows planned for the cutover window will be thoroughly validated during the IDRs prior to the actual Release 1 go-live event. This rehearsal is a crucial step in confirming that all planned activities are feasible, coordinated and timed accurately to ensure a smooth and efficient cutover to the new system.

FEEDBACK REQUESTED:	
5.	**Release 1 Go Live Readiness –** Are there any processes in addition to Implementation Dress Rehearsals and Disaster Recovery Testing that would assist AMOs in preparing for go-live of Release 1?

6. Release 1 Industry Test Supporting Documentation

We will provide a suite of Release 1 documentation at least three months prior to the commencement of the corresponding industry test phase, with the aim of providing adequate time for AMOs and CS Participants to prepare. The documents to be provided are listed below, with accompanying descriptions.

Table 5: Release 1 Industry Test Documentation

Document	Purpose of Document	Audience
Functional and Technical Specifications for AMOs	Provide a detailed specification of all FIX messages including message structures, rules, message flow diagrams etc.	AMOs and their Software Providers
CHESS Replacement Release 1 Industry Test Approach	Describe the detailed approach and responsibilities, timing, entry and exit criteria and expected test outcomes etc.	AMOs and their Software Providers, and CS Participants
Release 1 Connectivity Guide	Detail the technical connectivity requirements to connect to the CHESS replacement system including connectivity method(s), network details and security details.	AMOs and their Software Providers
Release 1 Technical Accreditation Guide (with detailed accreditation scenarios)	Provide an overview of the CHESS replacement Technical Accreditation phase, expectations regarding conduct and expected results including the accreditation process, connectivity scenarios and message scenarios.	AMOs and their Software Providers
Release 1 Guide to Operational Readiness Phase (with ASX mandated Operational Readiness scenarios)	Outline the Operational Readiness scenarios including mandatory success criteria.	AMOs
Guide to AMO Parallel Test Guide	Provide details of the onboarding process, key activities and expectations regarding conduct and expected results including entry and exit criteria.	AMOs and their Software Providers, and CS Participants
Release 1 Cutover and Migration Approach	Detail the cutover and migration approach, key activities, responsibilities and milestones across the cutover window and dress rehearsal windows.	AMOs and their Software Providers, and CS Participants
Cutover Runbook	Provide AMOs with key tasks and milestones with an outline of detailed steps including planned timing. The runbook will be used in dress rehearsals and refined as required ahead of the final go-live event. Note that the cutover runbook will also include the steps required to backout.	AMOs

7. Operating Rules and Arrangements with AMOs

7.1. CS Participants

CS Participants are subject to the ASX Clear Operating Rules and/or the ASX Settlement Operating Rules. We will give further consideration to whether amendments to those rules may be required at the appropriate time to operationalise our finalised implementation approach.

7.2. AMOs

As Release 1 involves the implementation of FIX connectivity for trade registration for all market operators (including ASX Limited), we expect that certain changes to the underlying TAS legal documentation (which currently forms the legal and contractual relationships between ASX Clear Pty Limited and ASX Settlement Pty Limited and AMOs) will be required. The amended TAS legal documentation will apply in the same way to all AMOs, including ASX Limited.

ASX proposes to consult with AMOs regarding the proposed changes to the existing TAS legal documentation in the first half of 2025. An indicative timeline for consulting on TAS and product services legal terms and standards is set out below.

Figure 7: Indicative TAS consultation timeline for Release 1
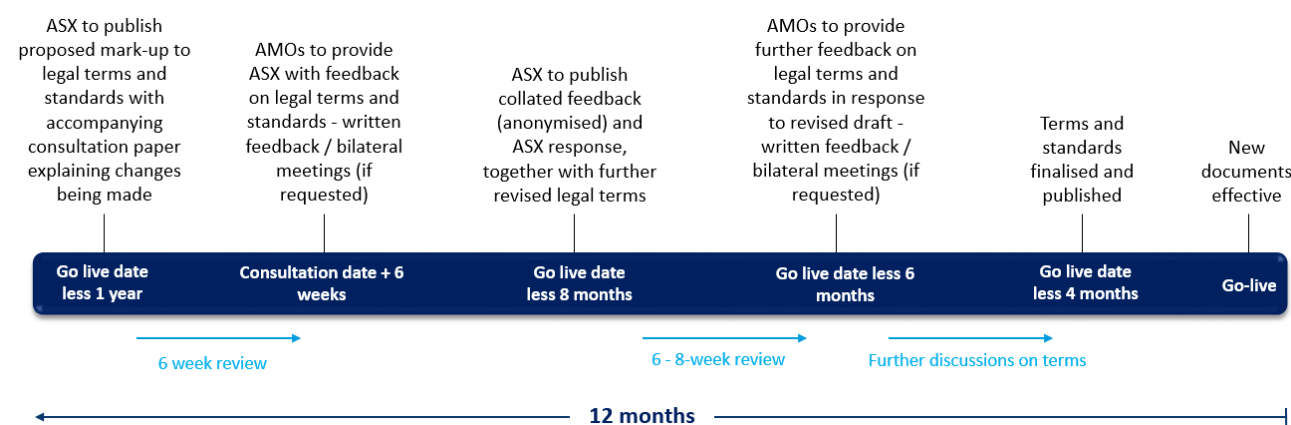
8. Glossary

Acronym	Description
AMO	Approved Market Operator
BAU	Business As Usual
CCP	Central Counterparty
CS	Clearing and Settlement
CHESS	Clearing House Electronic Subregister System
CHESS Users	CS Participants, Settlement Participants, AMOs, PISPs, Payment Providers and Share Registries
EIS	CHESS External Interface Specifications
EOD	End of day
FIX	Financial Information eXchange (FIX®) Protocol
IDRs	Implementation Dress Rehearsal
ISO	International Organization for Standardization
ITE	Industry Test Environment
NBO	Net Broker Obligation
RBA	Reserve Bank of Australia
sFTP	ASX Secure File Transfer Protocol service
Software Providers	Vendors and those developing in-house systems
TAS	Trade Acceptance Service
TCS	TATA Consultancy Services

9. Useful Links

ASX CHESS Replacement webpage

ASX Business Committee webpage

ASX CHESS Replacement Technical Committee webpage

Cash Equities Clearing and Settlement Advisory Group webpage

ASX CHESS brochure

ASX Rules, Guidance Notes and Waivers webpage

ASX Trade Acceptance Service webpage

ASX Trade Acceptance Service Legal Terms

ASX Operational and Technical Standards applicable to the ASX Trade Acceptance Service Legal Terms

Reserve Bank of Australia (RBA) website

RBA Financial Stability Standards (FSS)

Australian Securities and Investments Commission (ASIC) website

10. Summary of Feedback Requested

We welcome stakeholder feedback on the proposals in this consultation paper, as well as any other feedback on relevant areas of interest or concern. We would particularly benefit from understanding stakeholder views on the below subject matters and questions.

1. **Staged implementation** – Please provide feedback on the proposal to separate the CHESS Replacement Project into two stages, Release 1 (Clearing) and Release 2 (Settlement, Subregister).

2. **Design, scope, and schedule for Release 1 (Clearing) –** Please provide feedback on the design, scope and schedule for Release 1 (Clearing).

3. **Release 1 Industry Testing approach –** Should the scope or approach for the industry test phases be changed in any way to ensure each are appropriate and fit for purpose for AMOs, CS Participants and Software Providers? Please provide supporting detail.

4. **Release 1 Industry Testing duration –** As an AMO, with the information currently provided, how much time do you estimate will be required to complete your build and test and prepare for Accreditation and Operational Readiness? As a CS participant, how much time will be required to complete regression testing for impacted messages?

5. **Release 1 Go Live Readiness –** Are there any processes in addition to Implementation Dress Rehearsals and Disaster Recovery Testing that would assist AMOs in preparing for go-live of Release 1?