

# ASX CHESS Replacement

Technical Committee

10 July 2024



ASX



ASX acknowledges the  
Traditional Owners of  
Country throughout  
Australia.  
We pay our respects to  
Elders past and present.

ARTWORK BY: LEE ANNE HALL, MY COUNTRY MY PEOPLE





# Housekeeping

## Troubleshooting

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- Please introduce yourself when talking for the benefit of all members
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- Presentation materials will be distributed after the meeting

# Important Information

## Competition Law reminder

**Committee members are reminded to have regard to their obligations under competition law.**

In particular, please note that the Competition and Consumer Act prohibits a corporation from engaging with one or more persons in a concerted practice that has the purpose, effect or likely effect of substantially lessening competition.

# Agenda

01 – Welcome, Open Actions & Feedback

02 – Project Status

03 – Options for Staging Release 2

04 – Working Group Updates

05 – Scope Objective Updates

06 – Release 1 Consultation Response Discussion

07 – Interoperability Update

08 – Industry Engagement & Consultation

# 01 – Welcome

*Open actions and member feedback*

# Technical Committee

## Open actions

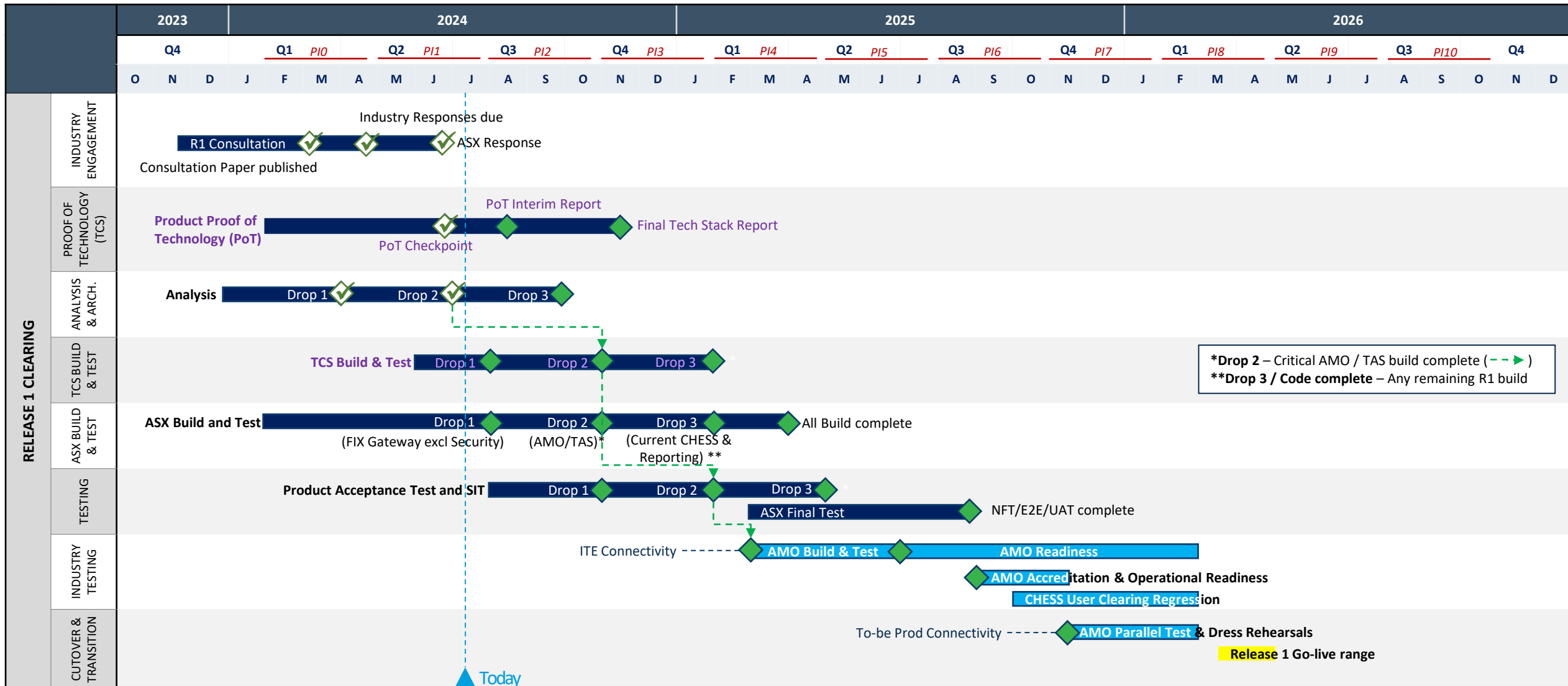
#	Action	Raised	Update	Status
01	ASX to revert to the Committee with the assurance activity schedule when it is available	TC June 2024	<ul style="list-style-type: none"><li>ASX will present the assurance activity schedule at the August Committee Meeting</li></ul>	Open
02	Members to revert to the member representing AFMA and / or ASX with input on the SRN enquiry scope objective	TC June 2024	<ul style="list-style-type: none"><li>Action for AFMA representative</li></ul>	Open
03	ASX to follow up on member query regarding testing timelines with a bilateral meeting	TC June 2024	<ul style="list-style-type: none"><li>Completed 14 June</li></ul>	Complete
04	ASX to capture industry requirements and use cases for the API solution planned for Holding Balances	TC June 2024	<ul style="list-style-type: none"><li>Feedback on API usage requested as part of the Consultation Paper on Release 2 followed by a working group in early 2025</li></ul>	Open

## 02 – Project Status



# O2 – Indicative Release 1 Project Timeline

High level overview of the indicative timeline



# 02 – Project Status

## June 2024 update

The project continues to track **GREEN**. Key updates include:

- **Release 1**

- TCS build for drop 1 is progressing and targeting to complete 31 July, focusing on:
  - ❖ Trade capture and registration
  - ❖ Build for the first backward compatible CHESSE message so TCS BaNCS MI can integrate to CHESSE settlement for Release 1
- TCS drop 2 build is planned commence in August and will target the completion of the scope required to facilitate the commencement of the AMO build and test phase in Q1 2025
- ASX testing team have commenced system test execution of the FIX Channel (the channel used for AMO connectivity)
- The Proof of Technology (PoT) Cycle 2 testing has completed, successfully processing 1 million trades in 30 minutes. Cycle 3 has commenced testing throughput of 4 million trades
- ASX's response to Consultation Paper 1 covering the staged approach, scope and schedule for Release 1 has now been published

- **Release 2**

- Consultation Paper for Release 2 is in progress, targeting Q3 2024 publication
- Release 2 planning has commenced targeting an updated plan in Q4 2024.

# 02 – Project Risks

July 2024

Risks are still tracking as planned and being actively managed.

These risks are expected to be closed as we complete the Proof of Technology testing and finalise the project timeline as part of the Consultation Paper for Release 2.

Area	Description	Mitigation	Residual Exposure	Progress	Status
Scope	Market prioritisation of T+1 would impact the current program timeline and / or costs	The project will monitor the market engagement and provide input as to the optimum plan across CHES Replacement and a T+1 cutover.	Medium	Being managed via industry engagement	Open
Cloud Deployment	Elements of the CHES Replacement schedule may potentially be impacted if the decision is made not to progress with AWS Hosting for licence services	The Cloud Foundations Project is delivering the Cloud Platform and a Cloud Assurance Framework to ensure the ongoing compliance with technology general controls and regulatory compliance.	Medium	Continued engagement with Board on progress of Cloud Foundations Project	Open
Technology	Scalability of the solution on the chosen AWS Technology Stack (PoT)	We are working with TCS to perform a Proof of Technology (PoT). The purpose is to prove how the product and selected underlying technology services will scale. There is a risk that the PoT may change elements of the technology platform design for CHES Replacement solution. The PoT will enable us to confirm the solution, delivery timeframe, related risks and costs.	Medium	The Proof of Technology (PoT) Cycle 2 testing has completed, successfully processing 1 million trades in 30 minutes. Cycle 3 has commenced testing throughput of 4 million trades.	Open
Schedule	Revised timeline may be impacted by Release 2 Consultation Paper response	High priority engagement topics to be discussed in the relevant Working Groups to ensure industry feedback is considered prior to publishing the Release 2 Consultation Paper. Manage and appropriately communicate the timeframe for the Release 2 Consultation Paper to ensure that the critical milestones are met for input into the revised Release 2 plan.	Medium	Being managed via industry engagement	Open
Schedule	If Release 2 project ramp-up commences as planned there may be an impact to shared and critical resources supporting Release 1	Release 2 timeline has been reviewed and impact on overlapping activities has been mitigated to reduce the Release 1 resource contention.	Medium	Release 2 planning in progress however changes have been made to reduce the overlapping activities to minimise the impact to Release 1 resource.	Open

*Disclaimer:* Relevant high-risk items have been included. Medium risk items are included where the inherent risk was high prior to mitigation.



## 03 – Options for Staging Release 2

# 03 – Opportunities for Staged Implementation

## A summary of the assessment of options to further stage Release 2

ASX has assessed the options put forward by stakeholders against factors relating to operational risk, delivery risk, technical feasibility and market impact, and whether these options would reduce overall implementation risk compared to implementing Release 2 as one release. A summary of the assessment of options to further stage Release 2 is outlined below. Early adoption of clearing ISO messages and early access of migrated accounts reporting are options that are currently under review.

#	How to transition	Key enabler	Summary of risk relative to Release 2 as one release
1	Stage by Participant	Full message backwards compatibility (EIS to ISO 20022 like-for-like)	<ul style="list-style-type: none"><li>• <b>Significant increase in delivery risk</b> due to the need to implement a like-for-like interim release</li><li>• <b>Significant delay</b> to implementing CHES Replacement target state</li><li>• <b>Increase in operational risk and market impact</b> due to a phased ISO release approach</li><li>• <b>Participant cutover risk remains</b> with single cutover from like-for-like to enhanced ISO state</li></ul>
2	Stage by Issuer	ASX and the market operate two separate systems in Production for settlement	<ul style="list-style-type: none"><li>• <b>Increase in operational risk and market impact</b> due to operating two production systems for settlement</li><li>• <b>Increase in delivery risk</b> relating to complexities of running two production settlement batches</li></ul>
3	Stage by function a) Bilateral Settlement matching b) Account maintenance c) Holdings d) Pass-through transactions	CHES users to interface to both EIS and ISO 20022 Requires systems to be synchronised for functions in scope	<ul style="list-style-type: none"><li>a) <b>Increase in delivery risk and market impact</b> moving to final settlement matching ISO state</li><li>b) and d) <b>Increase in delivery and operational risk</b> due to need for interim like-for-like translation and complexities of data synchronisation between CHES and CHES Replacement</li><li>c) <b>Not technically feasible</b> due to significant change requires in current CHES</li></ul>

# 03 – Staged Implementation

## Staging by Participant

Options	Enablers	Current CHES	CHES Replacement	Benefits	Operational Risk	Technical Feasibility	Market Impact	Delivery Risk	Overall Risk Assessment
<b>Enhanced</b>	<ul style="list-style-type: none"> <li>Stateful universal centralised message translation requiring complex rules</li> <li>Supplementary temporary interfaces</li> </ul>	<ul style="list-style-type: none"> <li>EIS messaging</li> </ul>	<ul style="list-style-type: none"> <li>All data and business logic</li> </ul>	<ul style="list-style-type: none"> <li>Incident vectors constrained to one or a small number of Participants at a time</li> <li>Single release</li> </ul>	<ul style="list-style-type: none"> <li>Increased incidents due to stateful and complex message translation</li> </ul>	<ul style="list-style-type: none"> <li>Not viable – low technical feasibility</li> </ul>	<ul style="list-style-type: none"> <li>Does not avoid build in legacy systems</li> <li>Schedule increase</li> </ul>	<ul style="list-style-type: none"> <li>Complex build (likely not even possible)</li> <li>Schedule increase</li> </ul>	<ul style="list-style-type: none"> <li>Not technically viable</li> </ul>
<b>Like-for-like</b>	<ul style="list-style-type: none"> <li>Centralised universal message translation</li> <li>3 phase approach (Phase 0, 1, 2)</li> <li>Restricted to 'like-for-like' for Phase 1</li> </ul>	<ul style="list-style-type: none"> <li>EIS messaging</li> </ul>	<ul style="list-style-type: none"> <li>All data and business logic</li> </ul>	<ul style="list-style-type: none"> <li>Incident vectors constrained to one or a small number of Participants at a time</li> </ul>	<ul style="list-style-type: none"> <li>3 major market impacting releases, including one for current CHES</li> <li>Support complexity of message translation</li> </ul>	<ul style="list-style-type: none"> <li>Viable – but large build due to large number of CHES message types</li> </ul>	<ul style="list-style-type: none"> <li>Schedule increase</li> <li>Cost increase</li> <li>Build needed for Phase 0, 1 and 2</li> <li>Enhancement Phase 2 is a still single cutover</li> <li>Enhancements delivered late</li> </ul>	<ul style="list-style-type: none"> <li>Phase 0 = current CHES build</li> <li>Phase 1 = TCS build to match current CHES + large build for CMT</li> <li>Phase 2 = redo TCS build to target state</li> <li>Schedule increase</li> </ul>	<ul style="list-style-type: none"> <li>Significantly increases market impact and delivery risk, without addressing original concern of single-cutover avoidance</li> </ul>

Note: All options will have an impact to project timelines with specifics to be determined post analysis of each option



# 03 – Staged Implementation

## Staging by Issuer

Options	Enablers	Current CHES	CHES Replacement	Benefits	Operational Risk	Technical Feasibility	Market Impact	Delivery Risk	Overall Risk Assessment
<b>Staging by Issuer</b>	<ul style="list-style-type: none"> <li>• CHES users connect to two systems</li> <li>• 2<sup>nd</sup> settlement batch</li> <li>• Data synchronisation (Accounts)</li> </ul>	<ul style="list-style-type: none"> <li>• EIS messaging</li> <li>• All holdings, obligations and logic for Issuers that have not migrated</li> <li>• Account maintenance and data (master)</li> </ul>	<ul style="list-style-type: none"> <li>• ISO 20022 messaging</li> <li>• All holdings, obligations and business logic for Issuers that <b>have</b> been migrated</li> <li>• Account data (replicated)</li> </ul>	<ul style="list-style-type: none"> <li>• Potentially initial reduced market wide impact from incidents occurring in new systems (assuming small number of issuers are initially transitioned)</li> </ul>	<ul style="list-style-type: none"> <li>• ASX/market operating two separate systems in Production for settlement</li> <li>• Operation of two settlement batches</li> </ul>	<ul style="list-style-type: none"> <li>• Account data replication would be asynchronous and therefore out of date in CHES</li> <li>• Replacement for a short time</li> </ul>	<ul style="list-style-type: none"> <li>• CHES user systems must support connecting to both CHES and CHES Replacement based on Issuer</li> <li>• Participants, banks and RBA must support 2<sup>nd</sup> batch</li> <li>• Potential batch netting inefficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Rules changes / default process / reporting impacts from having two batches</li> <li>• RBA / Payment bank alignment</li> <li>• Schedule increase</li> </ul>	<ul style="list-style-type: none"> <li>• Arguable reduction in operational risk offset by need to operate two systems for settlement, increased market risks and delivery risk</li> </ul>

Note: All options will have an impact to project timelines with specifics to be determined post analysis of each option

# 03 – Staged Implementation

## Staging by Function

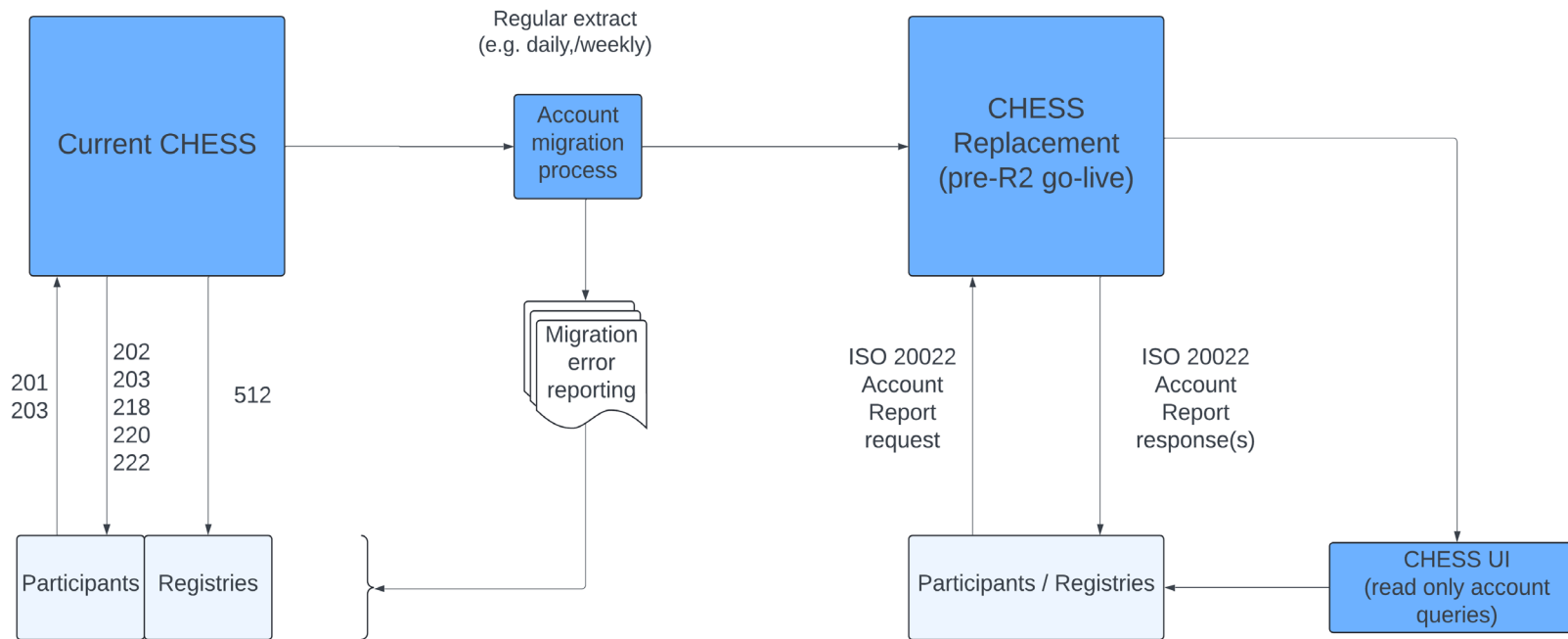
Options	Enablers	Current CHES	CHES Replacement	Benefits	Operational Risk	Technical Feasibility	Market Impact	Delivery Risk	Overall Risk Assessment
<b>Clearing – with EIS backwards compatibility</b> (Release 1)	<ul style="list-style-type: none"> <li>Interoperability between CHES replacement (clearing) and current CHES (settlement)</li> <li>EIS backwards compatibility for Clearing</li> </ul>	<ul style="list-style-type: none"> <li>EIS messaging</li> <li>Subregister (accounts/holdings)</li> <li>Settlement (matching/obligations management/batch)</li> </ul>	<ul style="list-style-type: none"> <li>AMO Interface (FIX)</li> <li>Trade acceptance and registration</li> <li>Trade cancellation</li> <li>Netting</li> </ul>	<ul style="list-style-type: none"> <li>Solves trade scalability in shortest timeframe</li> <li>Isolates majority of ASX and AMO build from market build</li> </ul>	<ul style="list-style-type: none"> <li>ASX operating two systems in Production</li> <li>Solves trade scalability in shortest timeframe</li> </ul>	<ul style="list-style-type: none"> <li>Leverages existing CHES interface</li> <li>No technical blockers</li> </ul>	<ul style="list-style-type: none"> <li>No interface changes for CHES users (regression rest only)</li> <li>AMOs welcome FIX interface</li> </ul>	<ul style="list-style-type: none"> <li>Current CHES release (internal only)</li> <li>Interface between systems</li> <li>Throw away TCS build for R1</li> <li>Schedule increase</li> </ul>	<ul style="list-style-type: none"> <li>Stages project in a technically feasible way to solve and trade scalability in the shortest timeframe without impact CHES users</li> </ul>
<b>Clearing – with optional 20022 and/or CHES UI</b>	<ul style="list-style-type: none"> <li>ISO 20022 messaging</li> <li>TCS BaNCS UI</li> </ul>	<ul style="list-style-type: none"> <li>As above</li> </ul>	<ul style="list-style-type: none"> <li>As above + optional ISO 20022 version of clearing messages and CHES UI</li> </ul>	<ul style="list-style-type: none"> <li>Ability to validate trade notifications in Productions before R2</li> </ul>	<ul style="list-style-type: none"> <li>Supporting multiple interfaces</li> </ul>	<ul style="list-style-type: none"> <li>No technical blockers</li> </ul>	<ul style="list-style-type: none"> <li>Optional and can be in parallel</li> </ul>	<ul style="list-style-type: none"> <li>Schedule increase</li> </ul>	<ul style="list-style-type: none"> <li>Market demand would need to justify schedule impact</li> </ul>
<b>Settlement – Bilateral with message translation</b>	<ul style="list-style-type: none"> <li>CHES users must (optionally) interface to EIS and ISO20022</li> <li>Data synchronisation (Accounts)</li> <li>Centralised message translation for bilateral messages only</li> </ul>	<ul style="list-style-type: none"> <li>All data and logic, except bilateral matching</li> </ul>	<ul style="list-style-type: none"> <li>ISO20022 bilateral matching (101, 135, 102, 194, 166, 116)</li> <li>Allegements</li> <li>Data synchronisation (Accounts)</li> </ul>	<ul style="list-style-type: none"> <li>Incident vectors constrained to one or a small number of Participants at a time, but only for this specific function</li> </ul>	<ul style="list-style-type: none"> <li>Support complexity of message translation and account synchronisation</li> <li>Dual connectivity</li> </ul>	<ul style="list-style-type: none"> <li>Requires "like-for-like" message translation for 6 message types</li> <li>Account data replication would be asynchronous and therefore out of date in CHES</li> <li>Replacement for a short time</li> </ul>	<ul style="list-style-type: none"> <li>Restricted to "like-for-like"</li> <li>Requires subsequent release for enhanced process</li> <li>Optional CHES user build to support EIS and ISO20022 concurrently</li> </ul>	<ul style="list-style-type: none"> <li>CHES and TCS build</li> <li>Schedule increase</li> </ul>	<ul style="list-style-type: none"> <li>Market demand would need to justify increase in support complexity, need for a subsequent release to introduce target state and schedule and cost increased</li> </ul>
<b>Subregister – Account maintenance</b>	<ul style="list-style-type: none"> <li>CHES users must interface to EIS and ISO 20022</li> <li>Data Synchronisation (Accounts)</li> </ul>	<ul style="list-style-type: none"> <li>All data and logic, except bilateral matching</li> </ul>	<ul style="list-style-type: none"> <li>ISO 20022 Account maintenance</li> <li>Accounts (master)</li> </ul>	<ul style="list-style-type: none"> <li>Isolates migration to new account model from other functionality</li> </ul>	<ul style="list-style-type: none"> <li>Support complexity of account synchronisation</li> <li>Dual connectivity</li> </ul>	<ul style="list-style-type: none"> <li>Retail account data replication would be asynchronous and therefore out of date in CHES for a short time</li> </ul>	<ul style="list-style-type: none"> <li>Mandated CHES user build to support EIS and ISO 20022 concurrently</li> </ul>	<ul style="list-style-type: none"> <li>CHES and TCS build</li> <li>Schedule increase</li> </ul>	<ul style="list-style-type: none"> <li>Technical risk due to need to replicate retail level account details</li> </ul>
<b>Subregister – holdings</b>	<ul style="list-style-type: none"> <li>CHES users must interface to EIS and ISO 20022</li> <li>Settlement to Subregister interoperability</li> </ul>	<ul style="list-style-type: none"> <li>All data and logic, except accounts and holdings</li> </ul>	<ul style="list-style-type: none"> <li>ISO20022 Account maintenance, holdings/subposition maintenance demand transfers</li> <li>Accounts &amp; Holdings</li> </ul>	<ul style="list-style-type: none"> <li>Isolates migration of holding related functionality from other functionality</li> </ul>	<ul style="list-style-type: none"> <li>Introduces complexity and risk into batch settlement process</li> <li>Dual connectivity</li> </ul>	<ul style="list-style-type: none"> <li>Requires settlement (current CHES) to Subregister (CHES Replacement) interoperability. Major build in current CHES</li> </ul>	<ul style="list-style-type: none"> <li>Mandated CHES user build to support EIS and ISO20022 concurrently</li> </ul>	<ul style="list-style-type: none"> <li>Complex build</li> <li>Schedule increase</li> </ul>	<ul style="list-style-type: none"> <li>Major changes to current CHES increases risk significantly</li> </ul>
<b>Pass-through transactions</b>	<ul style="list-style-type: none"> <li>CHES users must (optionally) interface to EIS and ISO 20022</li> <li>Data synchronisation (Accounts/Holdings)</li> </ul>	<ul style="list-style-type: none"> <li>All data and logic, except validation of pass-through messages</li> </ul>	<ul style="list-style-type: none"> <li>ISO 20022 SRN enquiry and investor details</li> <li>Accounts and holding (replicated)</li> </ul>	<ul style="list-style-type: none"> <li>Incident vectors constrained to one or a small number of Participants at a time, but only for these specific functions</li> </ul>	<ul style="list-style-type: none"> <li>Support complexity of account/holding synchronisation</li> <li>Dual connectivity</li> </ul>	<ul style="list-style-type: none"> <li>Requires "like-for-like" message translation for 6 message types</li> <li>Account data replication would be synchronous and therefore out of date in CHES</li> <li>Replacement for a short time</li> </ul>	<ul style="list-style-type: none"> <li>Optional CHES user build to support EIS and ISO20022 concurrently</li> </ul>	<ul style="list-style-type: none"> <li>Schedule increase</li> </ul>	<ul style="list-style-type: none"> <li>Technical risk due to need to replicate retail level accounts and holding details</li> </ul>

Note: All options will have an impact to project timelines with specifics to be determined post analysis of each option

# 03 – Staged Implementation

## Early access to migrated accounts reporting

Options	Enablers	Current CHES	CHES Replacement	Benefits	Operational Risk	Technical Feasibility	Market Impact	Delivery Risk	Overall Risk Assessment
Early access to migrated accounts reporting	<ul style="list-style-type: none"> <li>Account migration process</li> <li>ISO 20022 messaging</li> <li>TCS BaNCS UI</li> </ul>	<ul style="list-style-type: none"> <li>EIS messaging</li> <li>Account maintenance</li> </ul>	<ul style="list-style-type: none"> <li>Migrated accounts (updated periodically)</li> <li>ISO 20022 account detail reporting</li> </ul>	<ul style="list-style-type: none"> <li>Validate end to end processing / CHES UI access ahead of R2</li> <li>Receive explicit advice from ASX on migrated accounts rather than relying only on tool</li> </ul>	<ul style="list-style-type: none"> <li>ISO 20022 is optional, and for reporting only</li> </ul>	<ul style="list-style-type: none"> <li>No technical blockers</li> </ul>	<ul style="list-style-type: none"> <li>ISO 20022 and CHES UI reporting for accounts is optional</li> </ul>	<ul style="list-style-type: none"> <li>Schedule increase</li> </ul>	<ul style="list-style-type: none"> <li>Market demand would need to justify schedule impact</li> </ul>



Note: All options will have an impact to project timelines with specifics to be determined post analysis of each option



# 04 – Working Group Updates



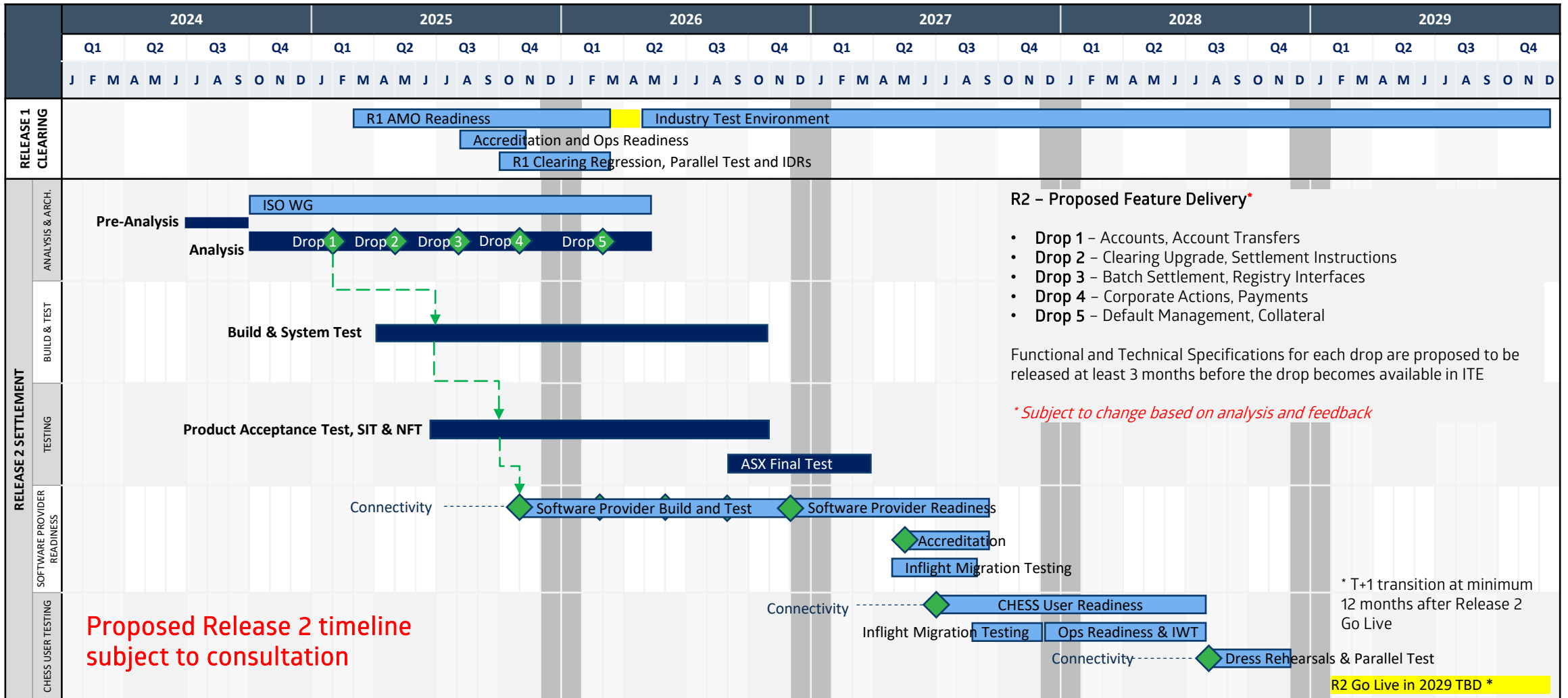
# 04a – Implementation & Transition Working Group

*4 July 2024*

# 04a – Implementation and Transition WG update

## Proposed R2 timeline subject to industry consultation & assessment

ASX is considering a number of scenarios for the timing of Release 2 in 2028 and 2029. One 2029 scenario is set out below:



# 04a – Deferred Settlement

Options comparison to be discussed in I&TWG (13 August)

Options

## Option 1 – Separate Settlements

**Overview:** Manage deferred settlement trades in the system where they were captured (i.e. current CHES vs CHES Replacement) with two resulting sets of settlement instructions (either net or gross)

### Pros

- + Eliminate need for trade migration - lower overall effort and risk for ASX and the industry
- + Would utilise existing messages and processes supported by participant systems

### Cons

- Non-typical scenario that may require regression testing in participant systems.

## Option 2 – Migration

**Overview:** Migrate trades captured in the current CHES system to the CHES Replacement system to allow them to net all deferred settlement trades on S-1

### Pros

- + No change to the existing process, would appear to be least impactful from a Participant's backward compatibility viewpoint

### Cons

- A more complex solution requiring more effort, testing and carrying more risk.
- Trades registered in current CHES would need to be removed and loaded into CHES Replacement.

Proposal

ASX proposes to go with Option 1.

This applies to deferred settlement securities that span the go-live weekend only.



# 04a – Deferred Settlement – Option 1 (split approach)

Sub-options of Option 1 to be discussed in I&TWG (13 August)

Options

## Option 1 – Separate Settlements

### Sub-option 1 – Net/Net

**Overview:** Net trades separately in current CHES & CHES Replacement resulting in two NBOs for the settlement date

**Pros**

- + Least number of settlement lines
- + Eliminate need for trade migration - lower overall effort and risk for ASX and the industry

**Cons**

- Results in 2 x:
  - NBOs per CP/Security
  - Batches of EIS134/138 messages per CP/Security

### Sub-option 2 – Gross/Net

**Overview:** Settle trades gross in current CHES, net those registered in CHES Replacement resulting in an NBO and gross settlements for the same settlement date

**Pros**

- + Fewer settlement lines
- + Only 1 x NBO & EIS 134 per CP (likely to be less impactful)

**Cons**

- Still has potential to create high-volume of gross settlements

### Sub-option 3 – Gross/Gross

**Overview:** Disable all netting and settle all deferred transactions on a gross basis

**Pros**

- + May be less impactful to participants

**Cons**

- Results in highest number of settlement instructions

Proposal

ASX proposes to go with Sub-option 2.

This applies to deferred settlement securities that span the go-live weekend only.



# 04b – AMO Industry Working Group

*FIX Specifications Update*

*3 July 2024*



# 04c – Business Design Working Group

*Registration Details & Investor Information*

*20 June 2024*

# 04c – Business Design Working Group

## Upcoming and completed sessions

#	Proposed Topic	Objectives	Proposed Date	Applicable Users
-	Kick-off and Planning	-	11 December 2023	Technical Committee Members
1	Clearing Design – Trade Acceptance and Netting	4.1, 5.3	31 January 2024	AMOs, Clearing Participants, Software Providers
2	SRN Enquiries & Issuer Sponsored Holdings	1.3, 1.4	28 February 2024	Settlement Participants, Share Registries, Software Providers
3	Data & Connectivity	1.6	27 March 2024	Software Providers, Settlement Participants, Share Registries
4	T+1 Considerations for CHES Replacement	NEW	2 May 2024	Settlement Participants, Software Vendors, Share Registries, Payment Providers, AMOs
5	Settlement Design (Matching, Batch Settlement, Non-Batch DVP & Related Payments)	4.2, 5.3, 2.1, 2.2, 3.2	29 May 2024	Settlement Participants, Payment Providers, Software Providers
6	Registration Details & Investor Information	1.1, 3.6	20 June 2024	Settlement Participants, Share Registries, Software Providers
7	Corporate Actions – DRP, Entitlements, Distribution Information & Related Payments	3.2, 3.3, 3.5, 3.7, 3.8, 4.5	11 July 2024	Settlement Participants, Share Registries, Software Providers, Payment Providers
8&9	Cum Entitlement Balance Design Review & Settlement Design (cont...)	3.4, 5.5, 1.5, 2.1, 2.2, 2.6, 4.3, 4.4, 4.5	21 August 2024	Software Providers, Settlement Participants, Share Registries
10	Market Claims (Diary Adjustments)	3.1	September 2024	Settlement Participants, Software Providers
11	ETFs Creation/Redemption Process Deep Dive	1.5	October	Share Registries, Custodians (impacted firms)
12	Transaction Basis Process Deep Dive	2.5	November	Settlement Participants (impacted firms)



# 04c – Business Design Working Group

## Update on Release 2 Consultation & Business Design Documents

- The Consultation Paper on Release 2 is planned to be published in Q3 2024
- This will include high level summaries of all scope items planned for CHES Replacement, with some targeted questions to elicit further industry feedback
- The Business Design Documents are a further level of detail that sits below the Consultation Paper and consolidate industry feedback and design considerations. The purpose of these is to capture detailed feedback from the BDWG's and provide inputs into the detailed design and build phase for Release 2
- Business Design Working Groups will continue following publication of Consultation Paper 2, with upcoming sessions including:
  - **Cum Entitlement Balances** in August (covered on the subsequent slide)
  - **Market Claims & Adjustments** in September (detailed industry feedback provided in 2023, expected to leverage TCS BaNCS solution out of the box features)
- Business Design Documents will continue to be published and refined after consultation and will remain open to further feedback

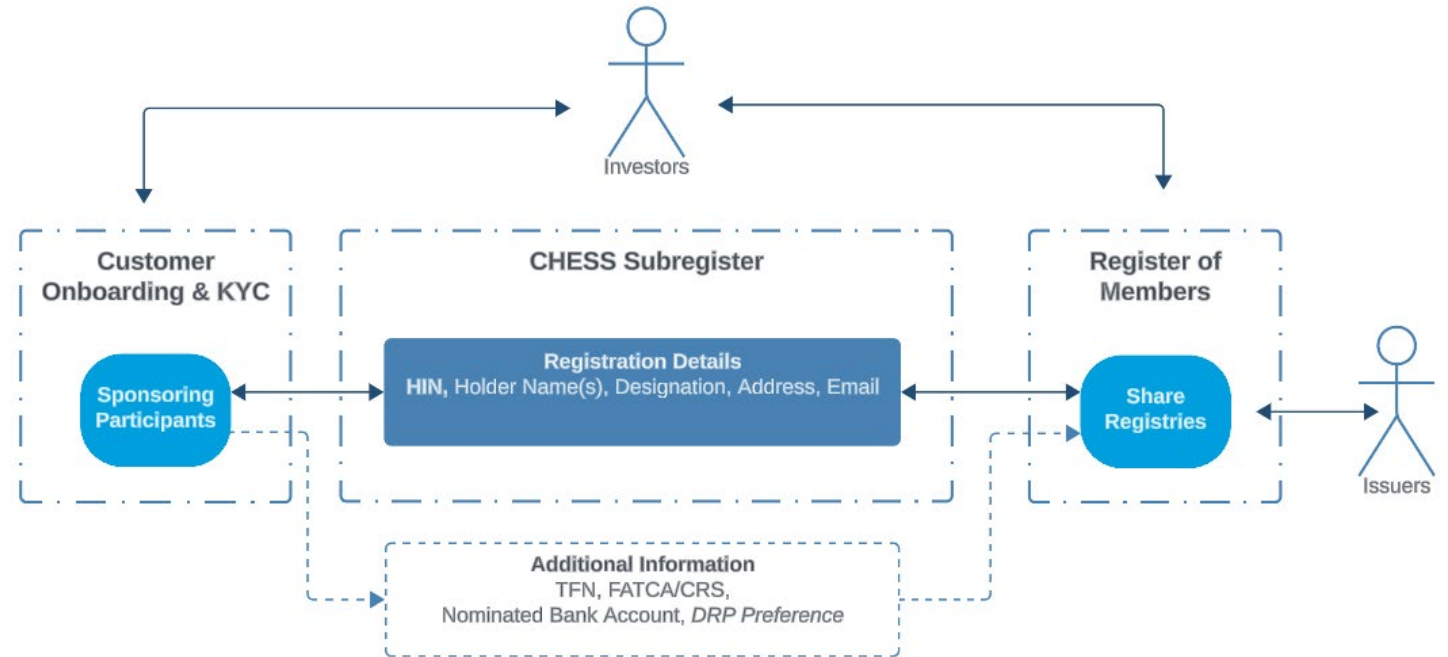
### In Summary:

- **Consultation Paper 2 purpose:** Elicit high level industry feedback on proposed scope and timeline
- **Business Design Document purpose:** Capture detailed industry feedback and design considerations to ensure the accepted scope is aligned to the intended purpose and takes into consideration all industry stakeholders

# 04c – Business Design Working Group Updates

## Overview of the 20 June BDWG

- The CHES Replacement project aims to modernise the format of registration details recorded on the CHES sub-register
- Registration details will continue to comprise of name, address, communication preference and residency indicator. Feedback is sought on the best way to structure this information for the market.
- The CHES Replacement system will continue to facilitate the communication of additional investor information. ASX is considering potential changes to make this more efficient



# 04c – Cum Entitlement Balance

## Proposed approach for CHES Replacement

- The Cum Entitlement Balance feature is a unique function of the Australian market that allows for the movement of securities on a “cum” or “ex” basis, i.e. with or without the entitlement to the corporate action
- To support the functionality, CHES is currently required to maintain separate balances for up to five concurrent corporate actions per security and must be supported across all transactions in CHES and CHES Users' systems. This substantially increases overall system complexity for both ASX and software providers, leading to higher industry costs, testing, and maintenance overhead
- Although the Cum Entitlement Balance has been beneficial in the past, settlement timeframes have reduced substantially since the introduction of this functionality to T+2, and with the anticipated move to T+1 the usage and need for the Cum Entitlement Balance as currently designed has diminished
- To simplify design complexity, lower costs, and streamline operations, ASX plans to limit the ability to transfer instructions on an "ex" basis to two specific use cases:
  1. **Priming:** Moving securities from a seller's HIN to a settlement account where the entitlement remains with the seller
  2. **Securities Lending:** Settling a DvP securities lending transaction where the entitlement should remain with the lender
- This simplification may enable entitled balances to be calculated at the end of the day on the record date and provided to Share Registries and Participants in a similar manner to the current process, without the need to track as separate balances in the HINs of all holders over a two-day period

# 05 – Scope objectives backlog update



# 05 – CHES Replacement Scope Objectives

## Prioritised backlog (1/2)

### Proceed to CHES Replacement design evaluation and consultation Scope Objectives:

The following Scope Objectives were identified as items that should proceed to CHES Replacement design evaluation and consultation

Functionality	Ref	Scope Objective	Status	Update
<b>Changes to Netting Process</b>	4.1	Review the design for netting in the context of the solution	BDD Complete	Business Design Document prepared, feedback received and incorporated.
<b>SRN enquiry and validation</b>	1.3	Implement a faster and more efficient SRN enquiry process	BDD Complete	Business Design Document prepared, feedback received and incorporated.
<b>Issuer sponsored improvements</b>	1.4	Reduce settlement risk in relation to issuer sponsored sales	BDD Complete	As above
<b>Interoperability</b>	5.3	Ensure the solution is designed to enable potential future interoperability between CCPs, SSFs and/or sub-registers	July TC	Approach presented in July TC
<b>Payments</b>	2.8	Payment processes for corporate actions, batch and non-batch DvP settlement processes	July/August BDWG	Ongoing discussions in the Settlement and Corporate Actions BDWGs, additional engagement with the Payment Providers via ESPPSC
<b>Continuous holding balance</b>	1.6	Provide more efficient, reliable and faster access to holding information	BDD Complete	BDWG completed, draft BDD completed, and feedback is being accepted. Final draft to be shared following the TC.
<b>Registry HIN Validation</b>	1.7	Provide the ability for Share Registries to validate account details to facilitate CHES allotment of investor accepted offers	BDD Complete	As above, captured in requirement CD_4.6 in the Interfaces and Data BDD.
<b>Changes to settlement process</b>	4.2	Review the design for settlement in the context of the solution	Draft BDD circulated	May BDWG held, draft BDD complete and feedback is being accepted. Further discussions in August.
<b>Bilateral Matching Improvements</b>	2.1	Reduce operational risk by ensuring participants are able to submit and match transactions in the system as soon as practical whilst minimising the likelihood of incurring a failed settlement (e.g. being able to separately match and schedule a transaction)	Draft BDD circulated	May BDWG held, draft BDD complete and feedback is being accepted. Further discussions in August.
<b>Bilateral Matching Improvements</b>	2.2	Reduce operational risk by minimising mismatches and failed matches by increasing the data sharing and matching fields available and/or making use of information available in upstream systems	Draft BDD circulated	May BDWG held, draft BDD complete and feedback is being accepted. Further discussions in August.
<b>Non-batch DvP Bilateral Settlement</b>	4.5	Bilateral Non-Batch DvP Settlement – review and evaluate in the context of payment processes	Draft BDD circulated	May BDWG held, draft BDD complete and feedback is being accepted. Further discussions in August.

Proceed to CHES replacement design

Note: indicative order, subject to change based on industry inputs and further planning. Multiple sessions may be required per topic.

# 05 – CHES Replacement Scope Objectives (cont...)

## Prioritised backlog (2/2)

Proceed to CHES Replacement design evaluation and consultation Scope Objectives:

The following Scope Objectives were identified as items that should proceed to CHES Replacement design evaluation and consultation

Functionality	Ref	Scope Objective	Status	Update	
Proceed to CHES replacement design	Linking Bilateral Settlements	4.3	Settlement Linking – review and evaluate solution design	Draft BDD circulated	May BDWG held, draft BDD complete and feedback is being accepted. Further discussions in August.
	Settlement Lock for CHES Holdings	4.4	Settlement Locking – review and evaluate solution design	Draft BDD circulated	May BDWG held, draft BDD complete and feedback is being accepted. Further discussions in August.
	Registration details and investor information	1.1	Standardise, improve and better synchronise the data sharing between participants and share registries	BDD in drafting	June BDWG held, BDD in drafting.
	Corporate action election and acceptance processing	3.2	Provide standardised straight through processing capability for corporate action elections and cost-effective associated payments	July BDWG	Planned for July BDWG on corporate actions (DRP, entitlements and distribution information). Engagement on Payments via ESPPSC starting March.
	Corporate action election and acceptance processing	3.3	Reduce operational risk in relation to DRP standing instructions	July BDWG	Planned for July BDWG on corporate actions (DRP, entitlements and distribution information)
	Electronic notification of payment advice	3.5	Provide standardised electronic transmission of corporate action distribution information to create opportunities for automation and process improvement.	July BDWG	Planned for July BDWG on corporate actions (DRP, entitlements and distribution information)
	Bid Offeror Automation	3.10	Provide an electronic Bid Offeror finalisation process in relation to Takeovers & Buybacks.	July BDWG	Planned for July BDWG - Corporate Actions (DRP, entitlements and distribution information)
	Cum entitlement balances	5.4	Review use cases for Cum Entitlement balances and assess its continued effectiveness for the Australian market	August BDWG	New objective to evaluate opportunities to improve or re-design the current entitlement transfer process in context of the solution.
Electronic Dividend Claims	3.1	Review and enhance the current processes for automated claims (diary adjustments) to ensure it continues to meet the market needs.	September BDWG	Planned for September BDWG on market claims (diary adjustments)	

Note: indicative order, subject to change based on industry inputs and further planning. Multiple sessions may be required per topic.

# 05 – Current CHESS

## Prioritised backlog

### Evaluate in current CHESS:

The following Scope Objectives were identified as items that should proceed to CHESS Replacement design evaluation and consultation (and where possible, evaluate the opportunity to make improvements in current CHESS).

Functionality	Ref	Scope objectives for evaluation in current CHESS	Status	Update
<b>Corporate actions – holding adjustments</b>	3.7	Ensure holding adjustment reason codes are up to date and being used correctly	Recommendation Provided	Recommendation provided for consideration in May TC.
<b>ETF Creations &amp; Redemptions</b>	1.5	Reduce operational risk in relation to the current ETF creation/redemption workflow	Recommendation Provided	Holding Adjustments recommendation provided for consideration in May TC. <a href="#">Small group ETF session scheduled for October 2024.</a>
<b>Corporate actions – bank account information</b>	3.6	Evaluate whether ASX can help with the transmission of bank account information in relation to bid offers	Recommendation Provided	Recommendation provided for consideration in May TC.
<b>Corporate actions – sub-register state</b>	3.8	Make sub-register state more readily available to participants to help improve processes in relation to de-listings	Future TC	Factored into CHESS Replacement scope – to be captured in Data BDD Potential improvements in current CHESS to be presented in future TC (TBD)
<b>Settlement Improvements</b>	2.6	Scheduled Settlement CHESS to CHESS Transfer Request (MT107) - support usage within a participant group structure	Deferred to CHESS Replacement	Discussed at Settlement BDWG in May, <a href="#">captured in Settlement BDD</a>

Evaluate in current CHESS

*Note: indicative order, subject to change based on industry inputs and further planning. Multiple sessions may be required per topic.*

# 05 – Further Consideration Scope Objectives

## Prioritised backlog

The following Scope Objectives will remain with the Technical Committee for further consideration until a time where they can be brought back to the Business Committee for recommendation to ASX Clear and ASX Settlement Board.

Functionality	Ref	Scope objectives in backlog for further consideration	Status	Update
House/Client Segregation	*5.2	House/client segregation consultation and potential impacts to the CHESSE Replacement Project	June TC update	Presented at June TC, to be included in scope
Standing Instructions	2.3	Reduce operational overhead in relation to payment provider authorisations by allowing for automated approvals in the system within cash limits.	Draft BDD circulated	Considered in Settlement BDD, leveraging TCS out of the box functionality
Preliminary Payment Notifications	2.4	Provide more certainty by enabling more frequent and/or configurable access to preliminary payment data.	Draft BDD circulated	Considered in Settlement BDD, leveraging TCS out of the box functionality
Bilateral Matching Improvements	2.5	Bilateral Matching – use of Transaction Basis (on and off-market)	Recommendation Provided	Recommendation provided for consideration in May TC. Small group session scheduled for November 2024.
Registration Details and Investor Information	1.2	Foreign restricted securities - review and simplify the current processes for holdings and transfers	BDD in drafting	Proposed solution discussed in June BDWG – to be included in draft BDD.
Settlement Improvements	2.7	Deferred settlement securities – review process to ensure/improve settlement efficiencies	Future TC	To be presented at a future TC, timing to be advised
Cum Entitlement Balance Transfer	3.4	Evaluate opportunities to facilitate the transfer of entitlements (pre and/or post Record Date) ensuring this does not impact issuer schedules.	On hold	To be assessed based on outcomes of April-August BDWG on Cum Entitlement Balances
Proxy voting	3.9	Standardised electronic proxy voting	Future backlog	Improvements in CHESSE Replacement to be evaluated at a later stage

Further consideration required

\* New objective(s) added since the Business Committee recommendation in Oct 23.

Note: indicative order, subject to change based on industry inputs and further planning. Multiple sessions may be required per topic.

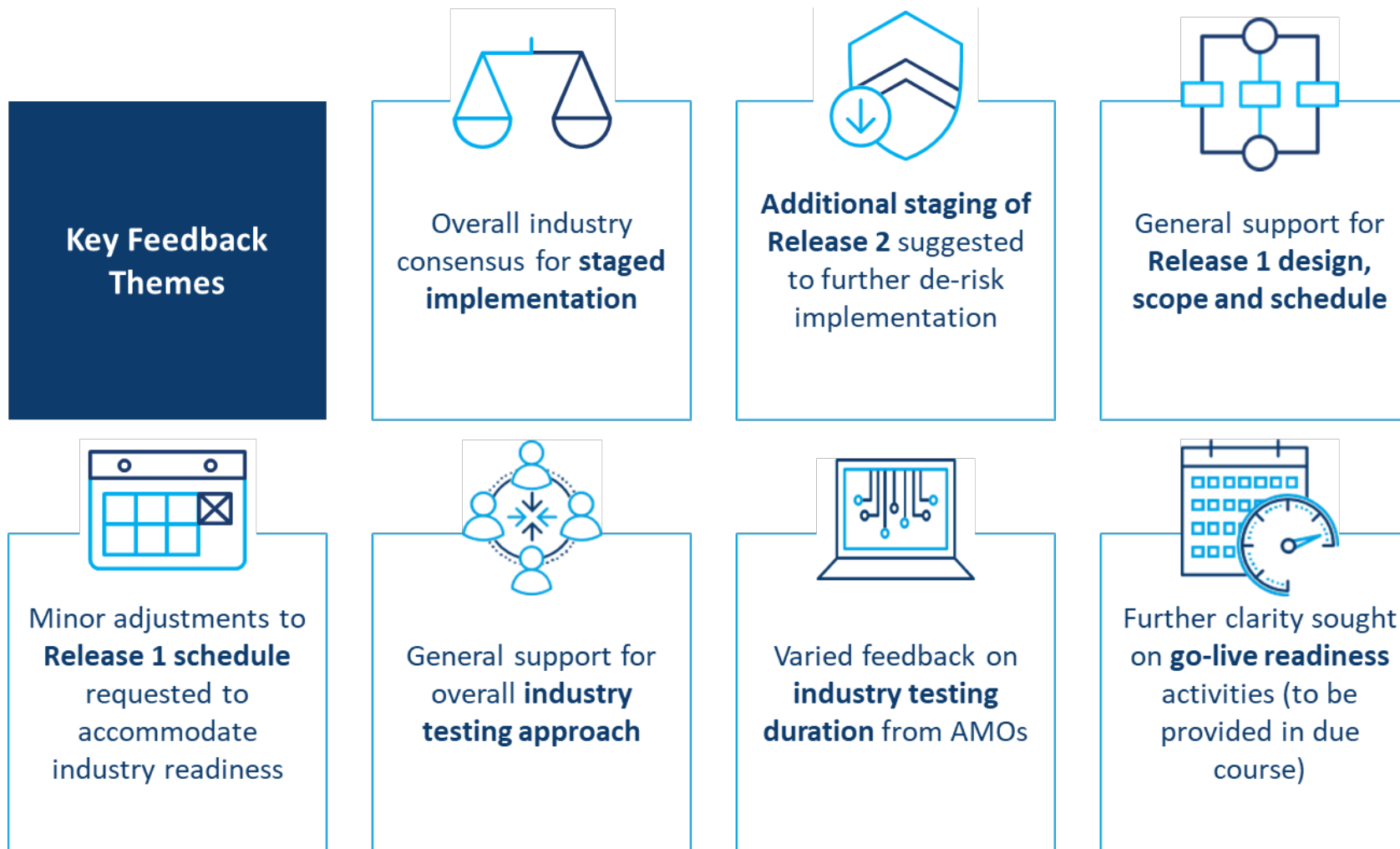




# 06 – Release 1 Consultation Response Discussion

# 06 – Consultation on Release 1

## ASX response summary



# 06 – Consultation on Release 1

## ASX response summary

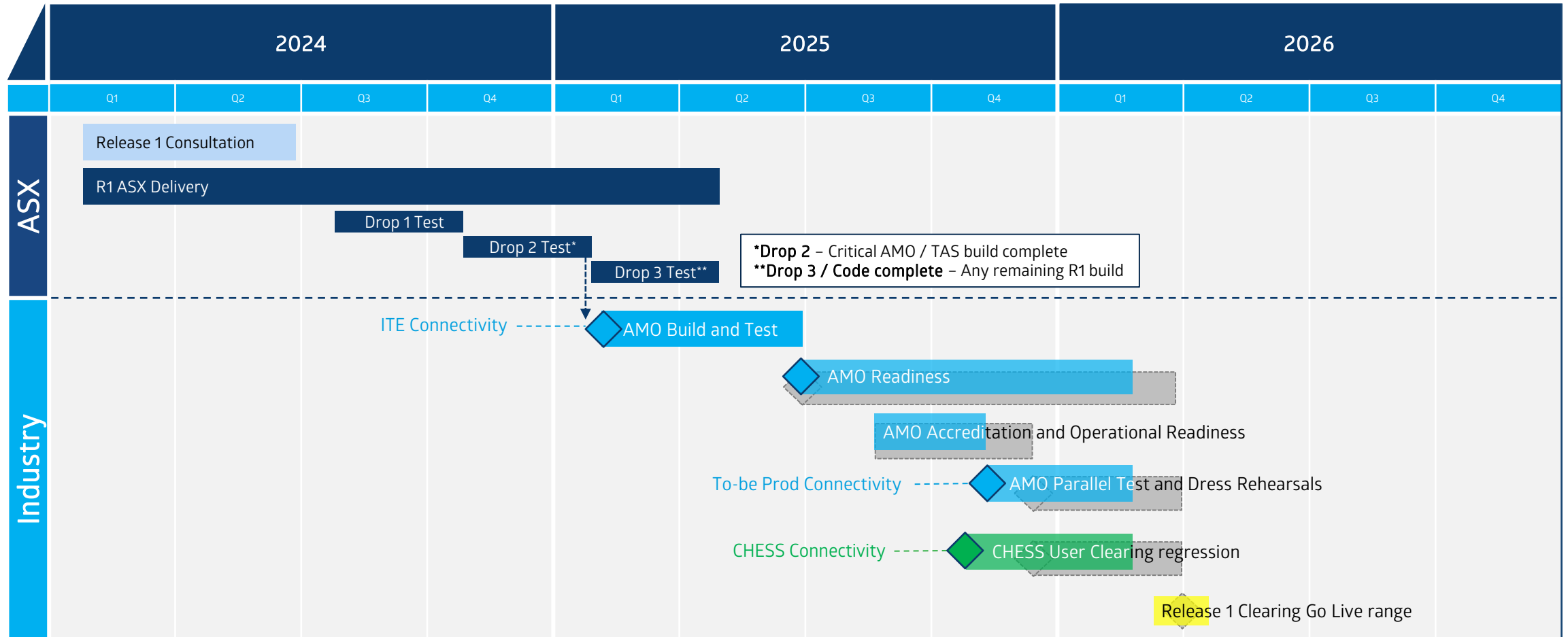
### Adjustments to Release 1 Schedule

Industry Test Phase and Purpose	Proposed Timing (in Consultation Paper)	Indicative Timing (Post-Consultation)
<b>AMO Build and Test</b> provides AMOs' Software Providers a phase to complete their development and undertake testing.	End Feb 2025 – Jun 2025	End Feb 2025 – Jun 2025
<b>AMO Readiness</b> provides the opportunity to complete further testing including optional performance testing and an optional simulated network outage in preparation for AMO accreditation.	Jul 2025 – Mar 2026	Jul 2025 – <a href="#">Feb 2026</a>
<b>AMO Accreditation</b> (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 CHES replacement system.	Intended to be scheduled between Sep 2025 – Nov 2025	Intended to be scheduled between Sep 2025 – <a href="#">Early Nov 2025</a>
<b>AMO Operational Readiness</b> is a mandatory industry test phase where AMOs will need to demonstrate that their organisation meets the operational requirements for their business.		
<b>Clearing Regression</b> provides CS Participants with the ability to perform internal testing and validation of all downstream EIS messages received that result from trade registration services.	Intended to be scheduled between Nov 2025 – Mar 2026	Intended to be scheduled between <a href="#">Oct 2025 – Feb 2026</a>
<b>AMO Parallel Test</b> provides the opportunity to reconcile an AMO's production feed of trade registrations to current CHES against its feed of trade registrations on to-be Production infrastructure.	Intended to be scheduled between Nov 2025 – Mar 2026	Intended to be scheduled between Nov 2025 – <a href="#">Feb 2026</a>

# 06 – Consultation on Release 1

## ASX response summary

### Indicative R1 timeline & timing





# 07 – Interoperability Update

*For discussion*



# 07 – Interoperability

## CHESS Replacement

### How does the CHESS Replacement solution design provide foundations for interoperability?

- A **modular architecture** that has separate components for clearing, settlement, depository and ancillary services (e.g. corporate actions processing)
- A software solution (TCS BaNCS) that has **demonstrated support for interoperability** in other markets such as Finland (Euroclear) with interoperable clearing, external SSF (T2S) and cross-CSDs settlement (CSD links)
- **ISO20022 support** meaning business processes are aligned to international best practice and can be common across competing facilities
- A solution architecture that can be **enabled to support third party data access** via API.

# 07 – Interoperability

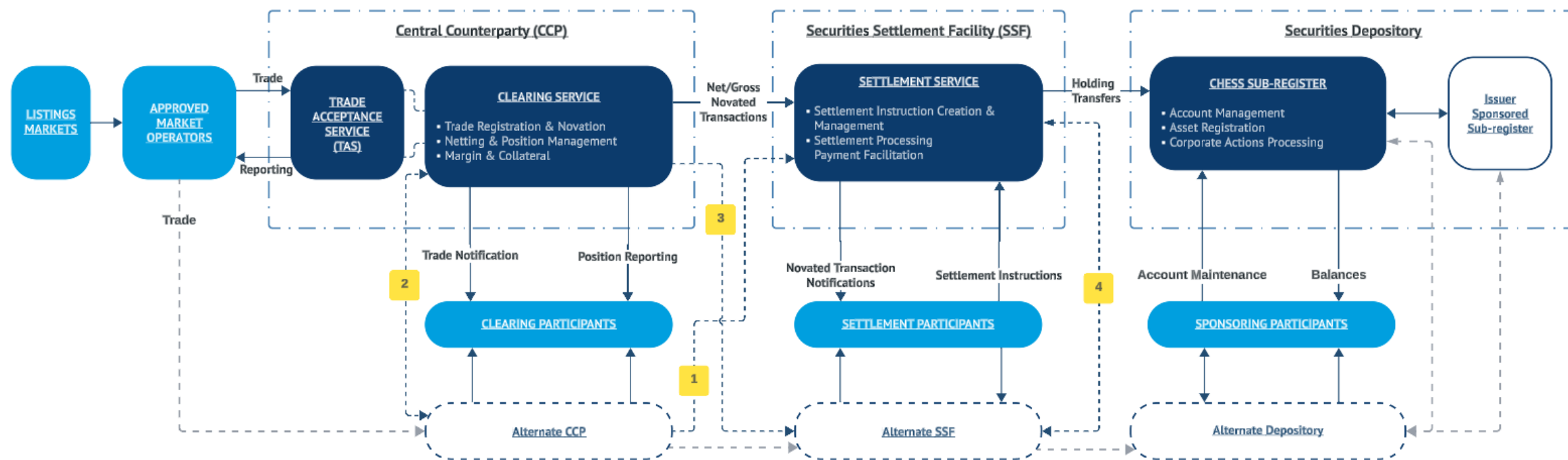
## CHES Replacement

### What does the CHES Replacement project propose to deliver to demonstrate interoperability?

- **Release 1 is planned to be the first demonstration of the modular architecture** and ability for TCS BaNCS to connect to an external settlement facility (i.e. CHES)
- **As part of Release 2 ASX plans to verify interoperability** by testing specific scenarios to ensure the technology is enabled for interoperability
- Testing is planned to be limited to a separately configured version of the software, performed by ASX. This approach aims to reduce the additional testing risk & complexity in the core replacement project
- **The CHES Replacement system is being designed to facilitate interoperability:**
  - Analysis artefacts and documentation are intended to clearly delineate clearing, settlement and sub-register functions
  - Clearing participant and settlement participant roles and responsibilities are planned to be functionally segregated
  - ISO20022 messaging is designed to ensure there is the ability to specify the relevant clearing facility and/or settlement facility in the message

# 07 – Interoperability

## CHESS Replacement - Logical Design



#	Scenario	Detail	Technical Foundations For
1	Multi-CCP Settlement	Settlement Facility's ability to receive novated positions from multiple CCPs and process these for settlement in a single settlement batch	Preferred Clearing
2	Multi-CCP Clearing	Clearing Facility's ability to register trades and maintain positions against a competing CCP	Interoperable Clearing
3	External-SSF Clearing	Clearing Facility's ability to register trades and accumulate positions for settlement at an external SSF	Competing Settlement Facility (ASX Clear provides clearing)
4	Cross-SSF Settlement	Settlement Facility's ability to support settlement with an external SSF/CSD	Competing Settlement Facility / Cross Border Transactions

# 07 – Interoperability

## Interoperability after CHES Replacement system goes live

### Additional actions that may be required to facilitate interoperability after the CHES Replacement system goes live:

- Information on how a competing service plans to interoperate with ASX C&S, including how customers plan to utilise the competing service
- Understanding of what model is to be supported (e.g. preferred clearing versus interoperable clearing)
- Definition of the technical interfaces between ASX C&S and the competing service
- Development of any additional functionality required to support industry requirements in relation to the chosen interoperability model
- Industry-wide testing of interoperability, including both ASX C&S and the competitor
- Operational changes and/or business structure changes
- Risk management changes, including changes in relation to the management of margin and/or collateral if required (systems currently outside CHES Replacement project scope)

*ASX proposes to build the technical foundations for interoperability as part of the CHES Replacement Project. Further work would be required to facilitate interoperability based on the prospective competitor's specific operational requirements.*

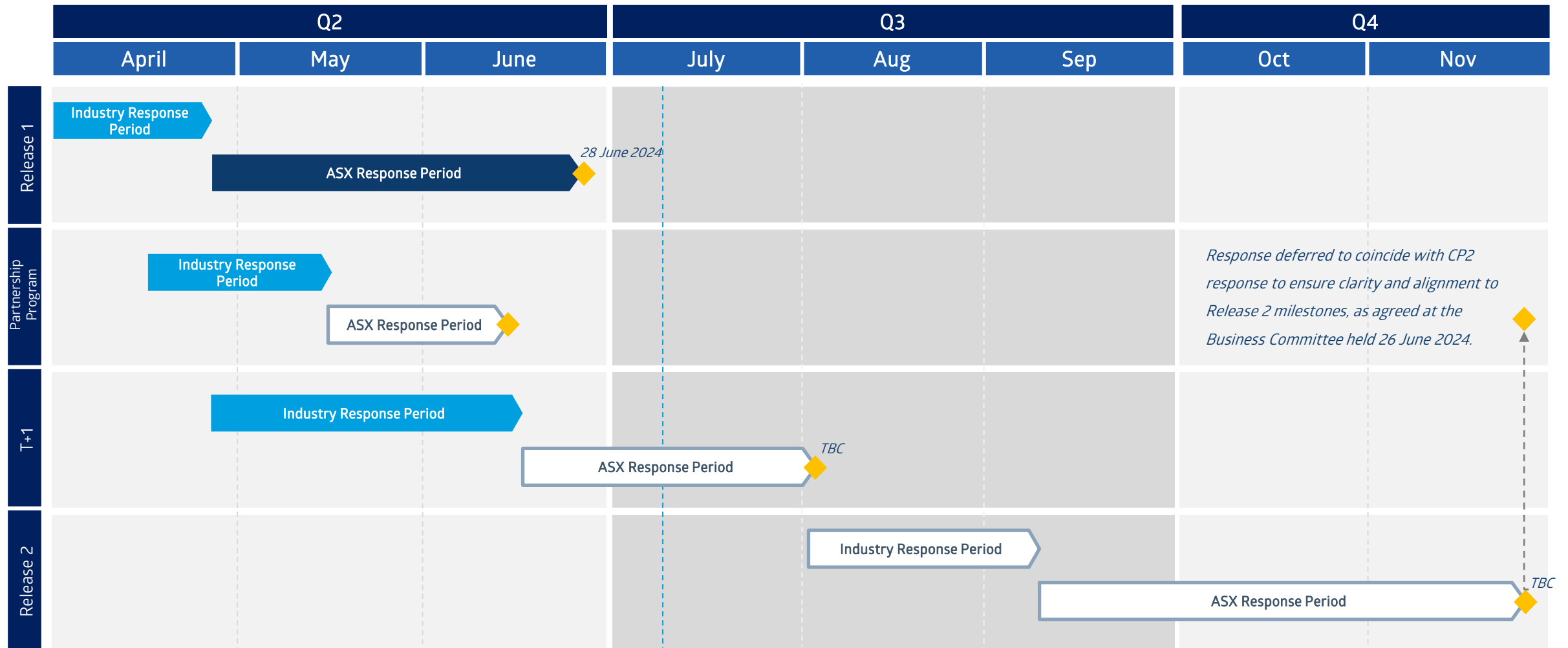


## 08 – Industry Engagement and Consultation Updates



# 08 – Public Consultation Update

## Indicative inflight & planned CY 2024 public consultation



# 08 – Consultation Updates

## Consultation Paper 2

### Overview

Consultation Paper 2 will address four key items:

- **Design, scope, and schedule** for Release 2
- **Testing and industry readiness approach** for Release 2
- High level plan for the timing and approach regarding a transition to a **T+1 settlement cycle**
- Approach to **interoperability** for CHES replacement

### Timeline

- **Publication on track** for early August
- **Consultation feedback** due 6 weeks post publication
- **ASX Response on CP2** then planned to be published in Q4 2024
  - **Detailed Partnership Paper Response** to also planned to be published at this time

# 08 – Forward plan

## CY2024 Committee Schedule

Month	Date	Time
<b>Technical Committee</b>		
August meeting	Wednesday 7 Aug	2pm – 3.30pm
September meeting	Wednesday 11 Sept	2pm – 3.30pm
October meeting	Wednesday 9 Oct	2pm – 3.30pm
November meeting	Wednesday 6 Nov	2pm – 3.30pm
December meeting	Thursday 5 Dec	2pm – 3.30pm
<b>Business Committee</b>		
September meeting	Wednesday 18 Sept	12pm – 2pm
December meeting	Wednesday 11 Dec	4pm – 6pm

Upcoming Working Groups	Proposed Topic	Month
Business Design	Corporate Actions	11 July
AMO	FIX Actions and Options	15 August
Implementation & Transition	Awaiting WG inputs to co-create topics	13 August
ISO 20022 Design	Kick-off, ISO 20022 concepts and MyStandards usage	October

### Pulse Survey Update

- Feedback will be requested on the working groups, Technical Committee and Consultation Paper 1
- The survey will be open for 3 weeks. A reminder will be shared the week the survey is due
- Results and next steps will form part of the September Technical Committee Agenda



ASX

Q&A



# Observer feedback



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Thank you.



# Appendix

# Insights from Migration Case Studies

## Relevant Market/Payments Infrastructure Implementation Approaches

Market Infrastructure	Relevance	Implementation Approach	Messaging Migration Approach	Centralised Message Translation	Insights
LSEG LCH	<ul style="list-style-type: none"> <li>Similar cash equities CCP model to CHES at larger scale</li> <li>Unlike CHES, positions are maintained on connected CSDs</li> <li>Connections to 16 markets (AMOs) and 19 CSDs</li> </ul>	<p>Replacement platform</p> <ul style="list-style-type: none"> <li>Technology replacement project with no impact to interfaces</li> <li>Bespoke build (did not use product)</li> </ul>	N.A - existing interfaces were carried forward	<ul style="list-style-type: none"> <li>N/A - existing interfaces were carried forward</li> </ul>	<ul style="list-style-type: none"> <li>Technology replacement only with no interface changes.</li> <li>Bespoke build (did not use product)</li> <li>Unlike LCH, CHES is an enhancement project and will use a product-based solution</li> </ul>
TMX	<ul style="list-style-type: none"> <li>Similar capabilities as CHES (CSD instead of sub-register).</li> <li>Migrating to TCS BaNCS MI and ISO 20022</li> </ul>	<p>Technology uplift</p> <ul style="list-style-type: none"> <li>"like-for-like" project with minimal Participant impact. ISO 20022 interfaces are optional.</li> <li>Large customisation to TCS product</li> </ul>	ISO 20022 is completely optional and like-for-like with respect to existing ISO 15022 interface	<ul style="list-style-type: none"> <li>N/A</li> <li>Natively supporting both ISO 15022 and ISO 20022 on a like-for-like basis</li> </ul>	<ul style="list-style-type: none"> <li>TMX heavily customised the TCS product to retain like-for-like business processes and interfaces, with ISO 20022 being completely optional..</li> <li>Unlike TMX, CHES is an enhancement project</li> </ul>
SGX	<ul style="list-style-type: none"> <li>Similar capabilities as CHES (CSD instead of sub-register).</li> </ul> <p>However:</p> <ul style="list-style-type: none"> <li>No existing message standard was in use.</li> <li>Participants were all using an SGX supplied system, so migration was <b>green fields from vendor and messaging perspective.</b></li> </ul>	<p><b>Hybrid</b></p> <ul style="list-style-type: none"> <li><b>Phase 1</b> - SGX only to create ISO 20022 interface</li> <li><b>Phase 2</b> - Market transition over 14 months</li> <li><b>Phase 3</b> - Enhancement Single cutover SGX and market wide enhancement release</li> </ul>	<b>Like-for-like</b> in Phase 2 followed by <b>Enhanced</b> in Phase 3	<ul style="list-style-type: none"> <li>N/A</li> <li>There was no centralised message translation since the market was not using messaging prior to Phase 2.</li> </ul>	<ul style="list-style-type: none"> <li>Participant systems were a green fields build as they were previously using an SGX supplied system with no messaging interface</li> <li>This is a key difference from CHES where there are 30+ distinct systems that have built to CHES messaging and business processes</li> </ul>
SIX Interbank Clearing	<ul style="list-style-type: none"> <li>Implemented centralised message translation to Enhanced state</li> <li>&gt;500 Participants</li> <li>20 message types</li> </ul>	<p><b>Phased</b></p> <ul style="list-style-type: none"> <li>Gradual transition approach with dedicated migration windows for the participants with a given end date</li> </ul>	<b>Enhanced</b> , supported by centralised message translation	<ul style="list-style-type: none"> <li><b>Yes</b> (required a repository in which legacy format users can look up data lost in the transformation from rich ISO 20022 to legacy)</li> </ul>	<ul style="list-style-type: none"> <li>Use case highlights the complex translation service required to avoid a "like-for-like" stage when targeting Enhanced messaging.</li> <li>CHES has 5 times the number of ISO 20022 messages from across 12 ISO 20022 business domains which would make this infeasible for CHES.</li> </ul>