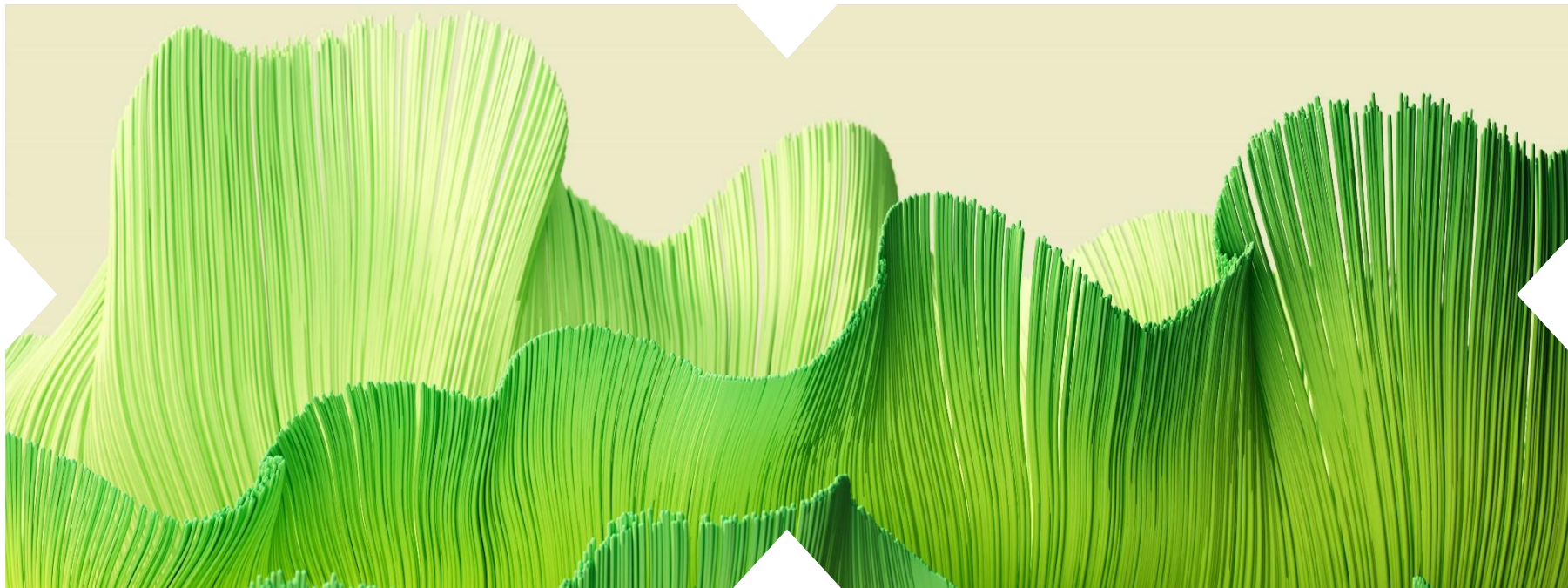


CHESS PROJECT

IMPLEMENTATION & TRANSITION WORKING GROUP

25 November 2025



Acknowledging Country

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

Artwork by Lee Ann Hall
My Country My People



Housekeeping

Troubleshooting

- Please mute yourself when not speaking
- Please use the 'raise hand' feature on MS Teams if you would like to ask a question
- Please introduce yourself when talking for the benefit of all members
- Meeting is being recorded for the purposes of capturing decision and actions
- Dial in details (audio only):
- +61 2 7208 4607
- Phone Conference ID: 815 003 54#
- Presentation materials were distributed before the meeting and will be published on the website.

Important Information

Competition Law Reminder

Workshop 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 Release 2 Connectivity & AMQP

03 Release 1 Update

04 Release 2 Update

05 Forward Engagement 2025

01

Welcome, Open Actions & Feedback

01 – I&T WG Open Actions

As of 18 November 2025

#	Topic	Action	Raised	Update	Status
ITWG_17	Release 1- Incident playbook for roll forward scenarios	Review and discuss incident playbooks for roll forward at Dec TC	Oct I&T WG	Following the Nov TC meeting, ASX recorded an open action to provide the runbook and market management approach for the Monday rollback scenario. This ITWG open action will be incorporated into the TC open action	Closed in I&T WG - to be managed within TC
ITWG_18	Release 1 - Clearing Service outage risk discussion	ASX to discuss risk and potential need to shut down markets during Monday rollback scenario when the clearing service is unavailable	Oct I&T WG	Following the Nov TC meeting, ASX recorded an open action to provide the runbook and market management approach for the Monday rollback scenario. This ITWG open action will be incorporated into the TC open action	Closed in I&T WG - to be managed within TC

01 – I&T WG Open Actions

As of 18 November 2025

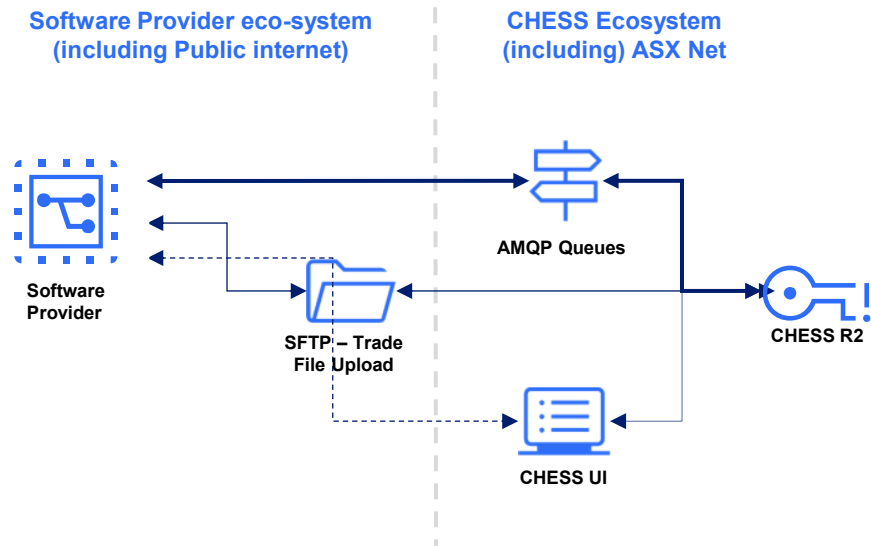
#	Topic	Action	Raised	Update	Status
ITWG_19	Release 2 - AMQP Technical Focus Session	Arrange an AMQP technical focus session for Participants	Oct I&T WG	Planned for Nov I&T WG – see slides in this pack	Propose to close
ITWG_20	Release 2 - Technical documentation consolidation	ASX to review options to consolidate technical documentation into single source	Oct I&T WG	ASX will revert with updated approach to documentation before end of Q4 2025	Open
ITWG_21	Release 2 - Timeline Checkpoint Survey Responses	Industry participants requested to submit timeline checkpoint survey responses by 7 November 2025	Oct I&T WG	Preliminary update planned for Nov I&T WG	Open
TC 2025-11-01	Release 1 - CPs to provide system impacts resulting from holding back clearing messages	Clearing Participants to revert on any identified system impacts resulting from ASX holding back clearing messages until late in the day (possibly as late as 7pm)	Nov 2025 TC	Action to remain open until February 2026 pending Clearing Regression feedback	Open

02

Release 2 Connectivity & AMQP

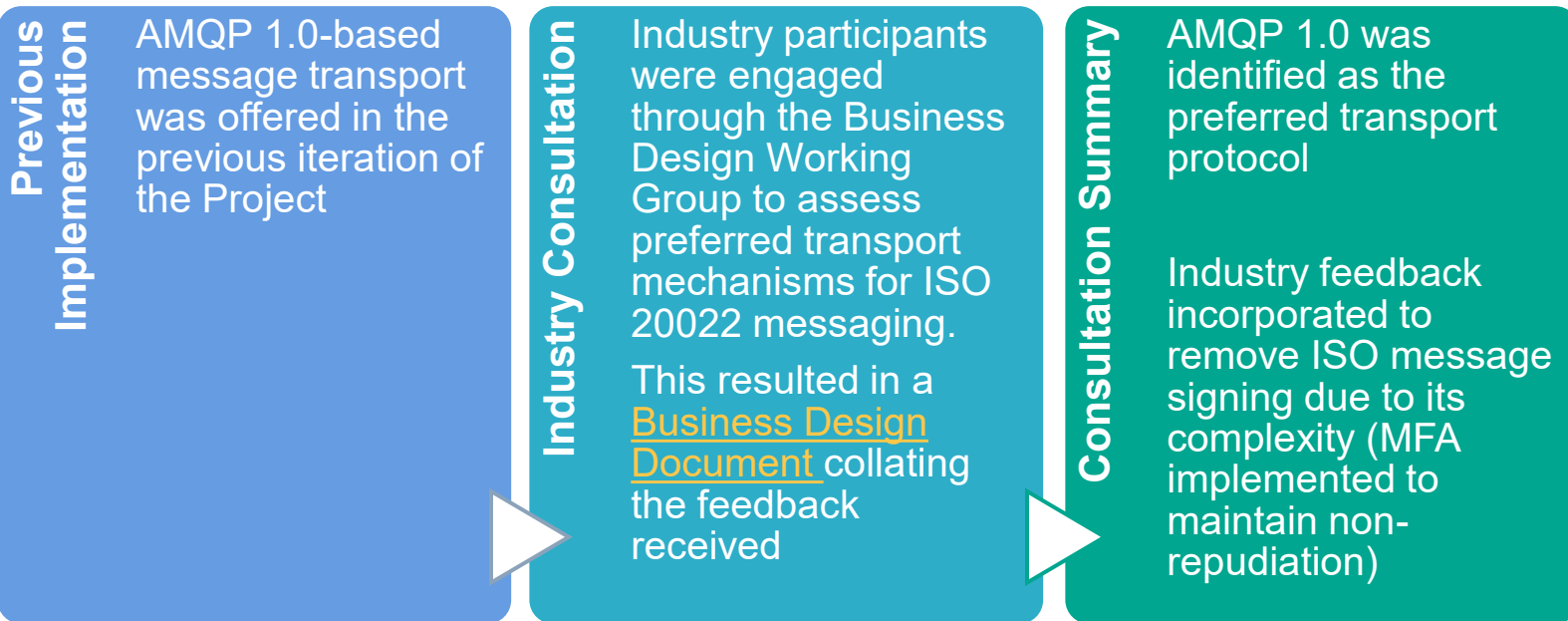
02 - R2 Connectivity Guide

Proposed to be published early December 2025

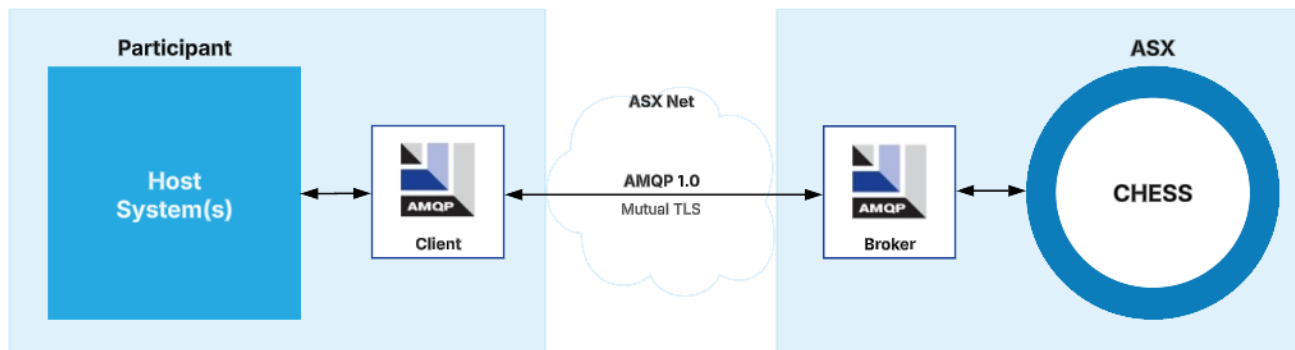


Section	Guide Inclusions
Channel Access, Onboarding, Permissions	<ul style="list-style-type: none">• AMQP• CHES UI• SFTP (to be updated for Drop 2)
ALC & ASXNet Connections <i>(Site to Site IPSEC VPN Test Environment Access for Software Vendors Only)</i>	<ul style="list-style-type: none">• Physical Layer• BGP Peering Requirements• Customer Addressing• Customer Infrastructure• Transport Layer Security (including CSAM Certificate generation and management process)• Multi-Factor Authentication
AMQP Details	<ul style="list-style-type: none">• Message Queues• AMQP Clients• Connection Settings• Synchronous and Asynchronous messaging (<i>ASX recommends the asynchronous send method</i>)• Code samples
AMQP Connectivity	<ul style="list-style-type: none">• Service Name• IP Address• Port Number(s)• Host• DNS Requirements
CHES Test Kits	<ul style="list-style-type: none">• AIC & PIDs

02 - Why AMQP 1.0?




02 – ASX AMQP Message Broker Overview



- Advanced Message Queuing Protocol (AMQP); ISO 19464
- Application layer 'wire-level' protocol to move messages between applications
- AMQP is a specification, **not a product**
- AMQP is programming language **agnostic**
- Participants are expected to build client service using **AMQP 1.0** compatible library (eg Apache Qpid-jms-client, Proton-j2)
- Access to AMQP Message Broker is via **ASXNet**
- Connection to AMQP Message Broker is encrypted and **multi-factor** authenticated.

02 – ASX AMQP Message Broker Connection

- 
- ASXNet connectivity (including via iVPN for Software Providers):** CHES Users to set up for ITE2
 - Connection initiation IP:** To be provided by CHES Users as part of onboarding
 - TLS certificates:** TLS client certification to be obtained via self-service portal (CSAM). Server-side root certificates to be provided by ASX
 - AMQP Endpoint,** queue names with username and password: ASX to provide. Configure DNS conditional forwarder
 - AMQP 1.0 compatible client or app:** CHES User to build or procure. ASX to provide sample code and technical documentation

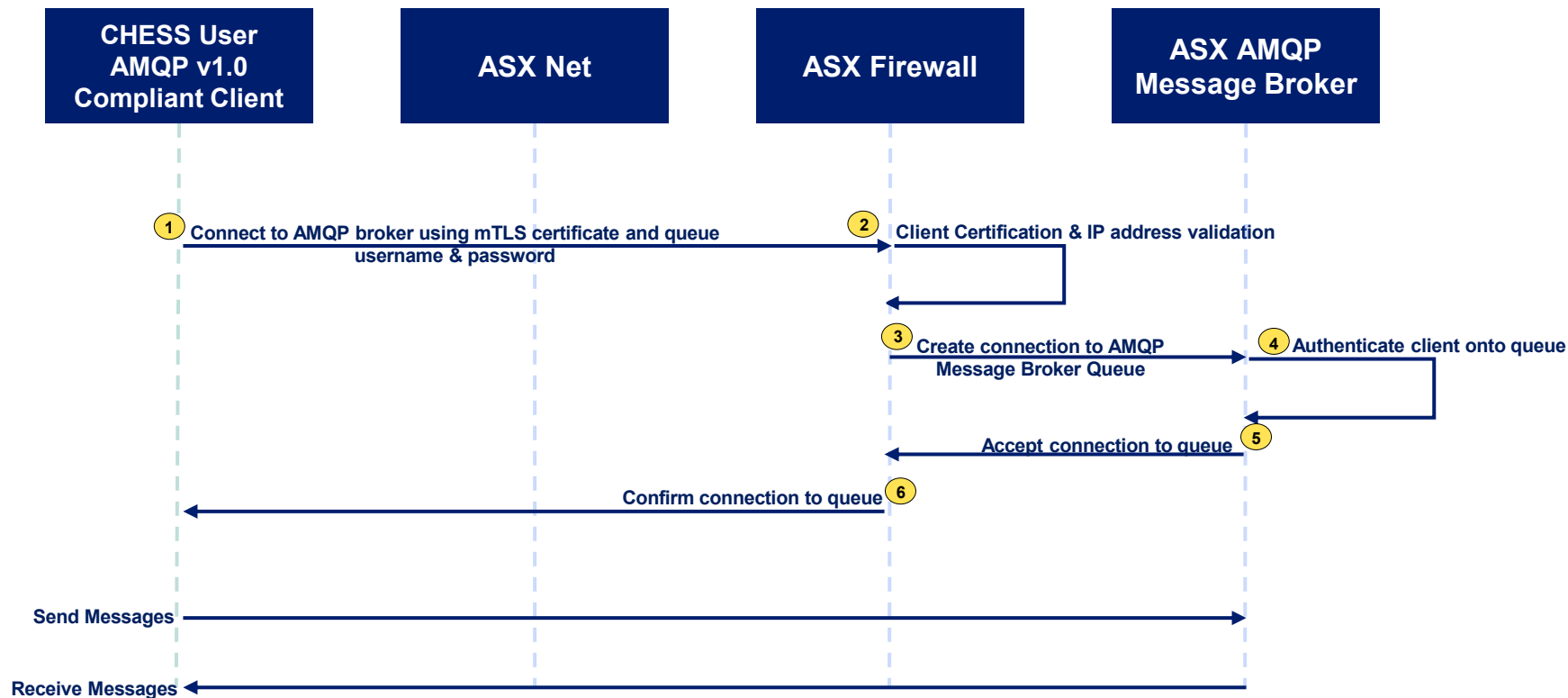
02 – ASX AMQP Sample Connection String

```
connectionUrl=failover:(amqps://<host>:<port>?
transport.tcpKeepAlive=true&
transport.contextProtocol=TLS&
transport.trustStoreLocation=<yourtruststore>.pkcs12&
transport.trustStorePassword=*****&
transport.keyStoreLocation=<yourkeystore>.pkcs12&
transport.keyStorePassword=*****)?

failover.initialReconnectDelay=10000&
failover.reconnectDelay=10000&
failover.maxReconnectDelay=40000&
failover.useReconnectBackOff=true&
failover.reconnectBackOffMultiplier=2.0&
failover.maxReconnectAttempts=-1&
failover.startupMaxReconnectAttempts=5&
failover.warnAfterReconnectAttempts=5&
failover.randomize=false&
```

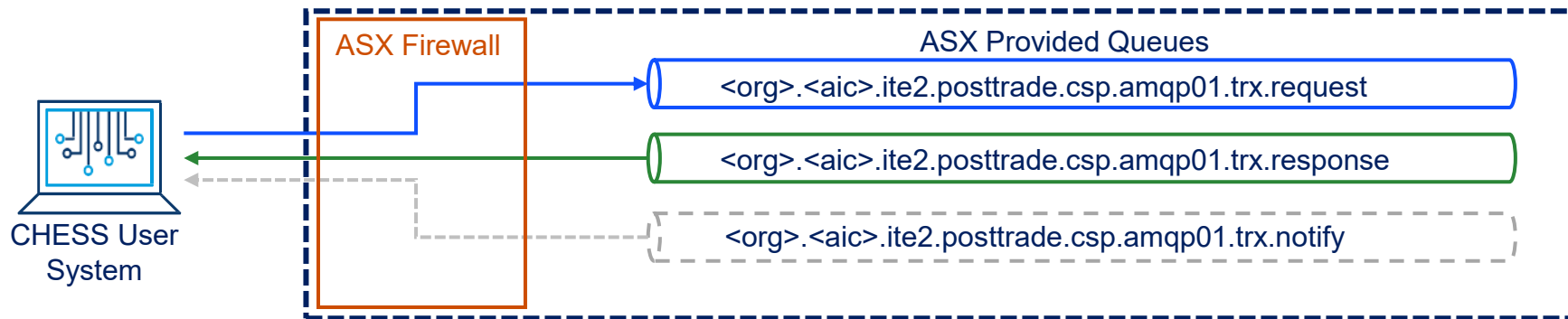
Note 1: Above connection string is based on Apache Qpid-jms-client code, and field names vary depending on the library used.

02 – ASX AMQP Message Broker Connection Flow



02 – ASX AMQP Message Broker Queue Setup

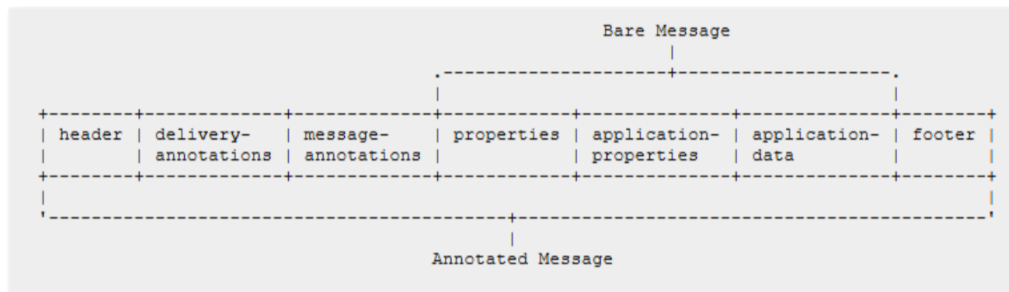
AIC concept carried forward



- **AIC** concept will be carried forward
- Each Participant to be provided a pair of queues (*.request and *.response) per **AIC**
- By default, trade notification messages will be sent via the *.response queue
- Optionally, a *.notify queue for **trade** notification messages can be requested by Participants
- As a result of industry feedback, Message Based Report messages will now always be sent via the *.response queue
- Inbound and outbound messages are asynchronous
- For each queue in the set, a corresponding username and password will be provided.

02 – ASX AMQP Message

AMQP TextMessage will be used



Bare Message Segment	Category	Purpose	Code e.g. JMS TextMessage using Qpid-jms-client Library sample for illustration only
application-data	Business data	ISO 20022 XML payload	<pre>TextMessage message = jmsContext.createTextMessage(); textMessage.setText(<<ISO XML>>);</pre>
properties	Metadata	correlationid : stamped by the workflow originator. Recommended to BizMsgIdr of the message. Note: the correlationid is a AMQP built in property, depending on the client library the name will be slightly different.	<pre>message.setJMSCorrelationID("01109888E888X");</pre>
application-properties	Metadata	Custom properties. Use BizMsgIdr and BizSvc values from the ISO 20022 XML message	<pre>message.setStringProperty("asxBizMsgIdr", "01109888E888X"); message.setStringProperty("asxBizSvc", "acct_002_001_01");</pre>

02 - Sending Messages

Synchronous and Asynchronous Invocations and Delivery Guarantees

Asynchronous Send (ASX recommended approach)

- Send method returns immediately, completion handler informs the message is persisted
- Optionally control the number of inflight messages
- Resend unacknowledged message on failure
- ISO message ID (BizMsgIdr) based duplicate detection in the message processing layer

Synchronous Send

- Once send method returns, message is persisted in the Message Broker

Multiple Producers

- AMQP write throughput scales with number of writers/producer
- Each producer running on its own session and thread

Example 1

```
1 // optional inflight message count restriction mechanism using Semaphore
2 Semaphore inflightSemaphore = new Semaphore(5);
3 ..
4 // set completion handler
5 ~ producer.setAsync( x-> {
6     //mark the message as delivered successfully
7     inflightSemaphore.release();
8 });
9 inflightSemaphore.acquire(); //blocks if the number of inflight message count is 5
10 logger.info("Sending message with Correlation ID: {}", correlationId);
11 producer.send(destination, msg);
```

Example 2

```
15 logger.info("Sending message with Correlation ID: {}", correlationId);
16 producer.send(destination, msg); // synchronous send
```

02 - Receiving Messages

For noting

For discussion

For recommendation

Synchronous and Asynchronous Invocations and Message Acknowledgement

Synchronous Message Receiver

```
1 logger.info("Starting synchronous message reading loop for queue: {}", destination);
2 // simple loop to read messages, the loop exits when there are no message to read from the queue
3 while (true) {
4     Message message = consumer.receive(5_000); // waits up to 5 seconds
5     if (message == null) {
6         logger.info("No more messages received. Exiting loop.");
7         break;
8     } else {
9         //process the message
10        message.acknowledge();
11    }
12 }
```

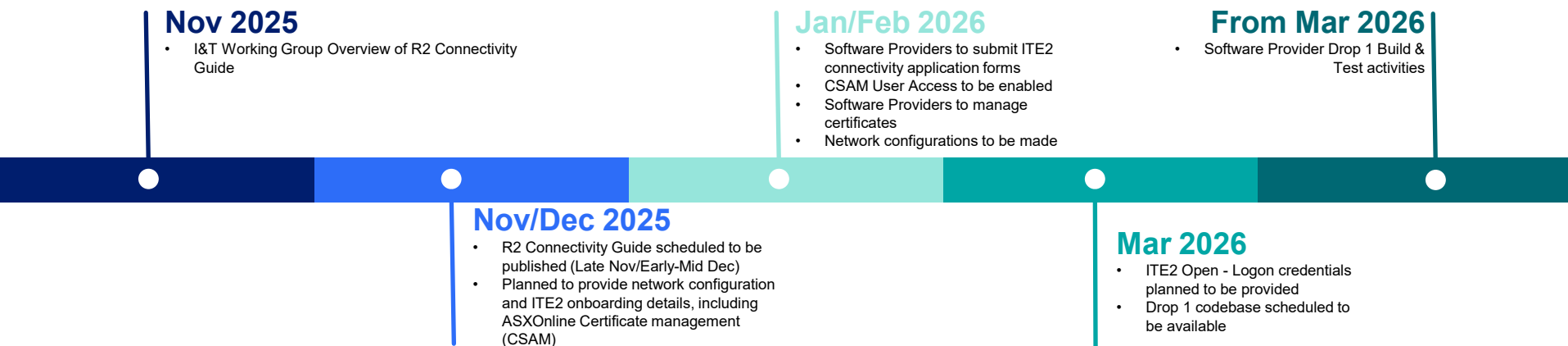
- Messages received from the queue(s) must be duplicate checked using the BizMsgIdr field value. This is because in failover cases messages can be re-sent
- Acknowledge message(s) or commit the session after received messages have been saved or processed and updates committed

Asynchronous Message Receiver (ASX recommended approach)

```
1 // Setup consumer for responses
2 consumer = jmsContext.createConsumer(destination);
3 logger.info("Queue consumer created for Queue: {}", destination);
4 consumer.setMessageListener(x -> {
5     TextMessage textMsg = (TextMessage) x;
6     logger.info("Message received form the Queue: {}", destination.toString());
7     // do message processing.
8     textMsg.acknowledge();
9 });
```

- **Multiple** consumers for a single queue is also possible, with each consumer operating within its own dedicated session
 - The message broker distributes messages to each consumer

02 – Indicative Release 2 Connectivity Schedule



03 Release 1 Update

03 - AMO Industry Readiness Dashboard

As of 17 November 2025

AMO Operational Readiness:

- 1 AMO has completed all elements of Operational Readiness assessment
- 2 AMOs completed all Operational Readiness scenarios – final documentation activities in progress
- 1 AMO in the final stages of completing their last scenario(s)
 - Remediation plans are in progress with the impacted AMO – the risk of impacting any upcoming milestones is mitigated as outstanding scenarios are low volume resiliency scenarios that the relevant AMO does not expect to regularly use but has recently accredited in their AMO software. The relevant AMO has successfully demonstrated Operational Readiness for all other scenarios.

IDRs: All AMOs successfully completed IDR activities. Each AMO successfully connected to the new clearing service, verified through a FIX log on test.

Parallel Test: Participating AMOs commenced sending production Trade and Price messages to the R1 Clearing Service for Parallel Test Cycle 1.

Clearing Regression: AMOs supporting Clearing Regression have enabled Customer Test Environments for Participant testing, including enabling filters as requested by CHES Project to limit trade report volumes to specified securities.

	Milestone				
AMOs	Engagement	AMO Operational Readiness	IDRs	Parallel Test	Clearing Regression
AMO					
AMO		In Remediation			
AMO		In Remediation			
AMO		In Remediation			

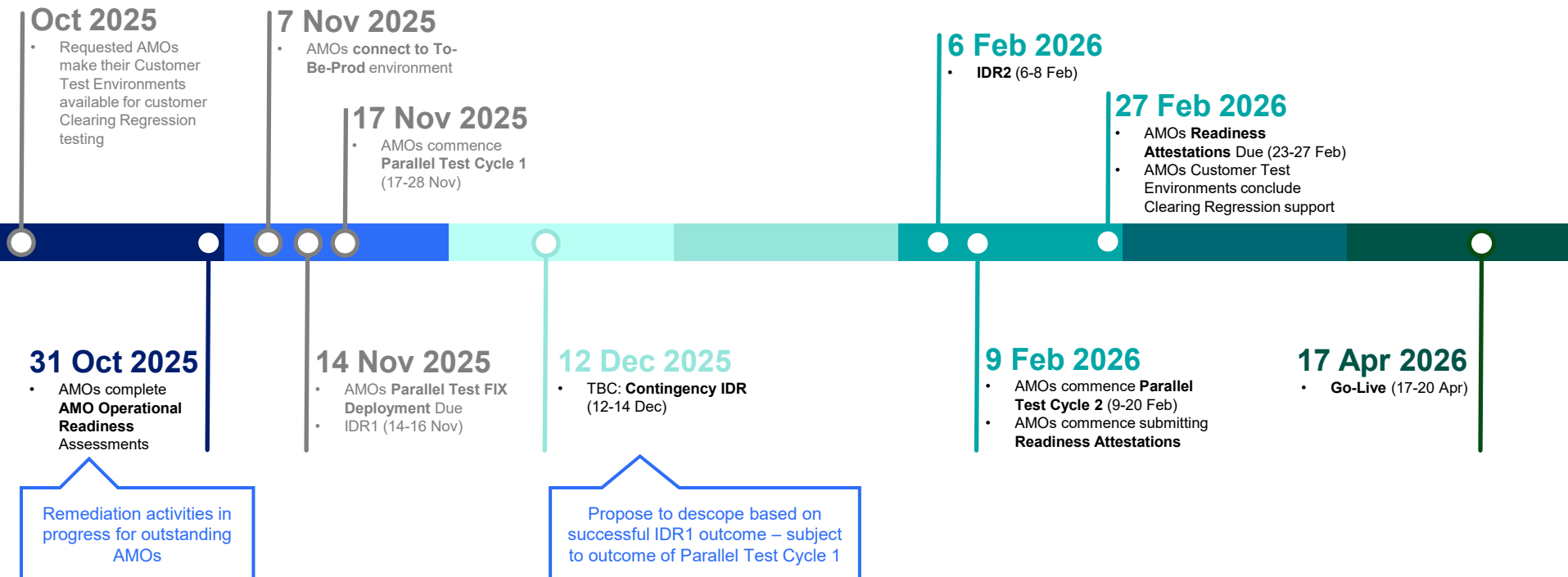
Note: AMOs not supporting Clearing Regression are reported as On Track to enable anonymised reporting.

Open AMO Readiness measures

AMO Readiness Metric	Qualitative or Quantitative	Impacted Milestone	Measure	On Track (Start measuring)	At Risk (if not completed)	Requires Remediation (if not completed)
AMO or Software Provider Readiness Self Assessment	Qualitative	Overall timeline	AMO or Software Provider to indicate how they are tracking	AMO or Software Provider to indicate status as part of bilaterals		
Operational Readiness Completion	Quantitative	Operational Readiness	Successful completion of Operational Readiness	1 Sep 25	15 Oct 25	31 Oct 25
AMO Attestation	Quantitative	Go Live	Receipt of Attestation Form by specified dates	1 Feb 26	20 Feb 26	28 Feb 26

Completed AMO measures: (1) Functional Message Workflows, (2) Non-Functional and resilience testing, (3) Software Accreditation Completion, (4) AMO ITE Connectivity (5) To-Be-Prod AMO Connectivity (6) AMO Parallel Test Deployment

03 - Upcoming AMO Activities



03 - CP Industry Readiness Dashboard

As of 17 November 2025

All Clearing Participants (CPs) are actively engaged with testing commenced by most organisations

- **All** CPs (or their Software Provider) have successfully connected to XP1
- **27** CPs (or their Software Provider) completing Clearing Regression
- **25** CPs (or their Software Provider) receiving backwards compatible EIS164 messages, plus resulting netting + corporate action messages.
- **11** CPs testing using the CP Trade File Upload
- **2** organisations have submitted their attestation, **1** CP advised they have completed their backwards compatible EIS testing and will progress with optional settlement workflow processing
- **1** Backwards compatible EIS issue identified – EIS138 Reference Number defect introduced in Clearing Regression Patch 1 (Resolved)

Clearing Participant Readiness Metric	Impacted Milestone	Measure	On Track (Start measuring)	At Risk (if not completed)	Requires Remediation (if not completed)	Status
Clearing Participant Readiness Self Assessment	Overall timeline	Clearing Participant to indicate how they are tracking	<i>Clearing Participant to indicate status as part of bilaterals or check-in survey</i>			
Clearing Regression Testing	Clearing Regression	Testing commenced as demonstrated through monitoring successful transactions in XP1	7 Oct 25	17 Nov 25	15 Dec 25	In Progress
Clearing Regression Testing Complete	Clearing Regression	Testing complete as demonstrated through monitoring successful transactions in XP1	7 Oct 25	16 Feb 26	23 Feb 26	In Progress
CP Attestation	Go Live	Receipt of Attestation Form by specified dates	2 Feb 26	16 Feb 26	28 Feb 26	In Progress

Completed CP measures: (1) Clearing Participants connected to XP1 and file upload folder

CPs	Milestone	
	Engagement	Clearing Regression
CP		5/7
CP		5/7
CP		7/7
CP		7/7
CP		6/7
CP		6/7
CP		6/7
CP		1/7
CP		4/7
CP		4/7
CP		6/7
CP		6/7
CP		5/7
CP		6/7
CP		7/7
CP		7/7
CP		6/7
CP		7/7
CP		6/7
CP		4/7
CP		6/7
CP		4/7
CP		4/7
CP		5/7
CP		6/7
CP		6/7
CP		1/7

Note: Clearing Regression numbers represent the number of backwards compatible message types sent to the CP (or their Software Provider) systems and may represent messages generated on an unsolicited basis

03 - Upcoming CP Activities

7 Oct 2025



- Clearing Participants (CPs) commence **Clearing Regression**
- CPs commence submitting **Readiness Attestations**

19 Dec 2025

- Pre-EoY CP Readiness Attestations requested

23 Feb 2026

- CPs **Readiness Attestations** Due (16-23 Feb)

20 Apr 2026

- Monitor Post Go-Live

Clearing Participants are encouraged to complete Clearing Regression Testing in the October – December 2025 period, to allow for any potential system changes and / or rework

Clearing Participants are asked to test all backwards compatible EIS messages before 19 December to allow time to identify & resolve any potential issues without impacting the R1 Go-live schedule

Note: Indicative only, subject to change based on industry inputs and further planning.

03 - Parallel Test – Initial Observations

Outcomes from Monday 17 November 2025

Trades Reconciled - Aggregated for all AMOs

Count of trades in current CHES	Count of Trades in To-Be-Prod	Count of Unmatched (missing trade) Exception Breaks Reported	Count of Unmatched (missing trade) Exception Break Reporting False Positives Identified	Count of mismatched Exception Breaks Reported	Count of mismatched Exception Break Reporting False Positives Identified	Details
3,324,798	3,324,799	1	1	42	0	<ul style="list-style-type: none"> 1 Unmatched Trade resulting from test trade booked on IDR day to verify system status 42 Mismatched Trades resulting from missing condition code transmitted by AMO to the R1 Clearing Service – Under Investigation

Backwards Compatible EIS Messages Reconciled

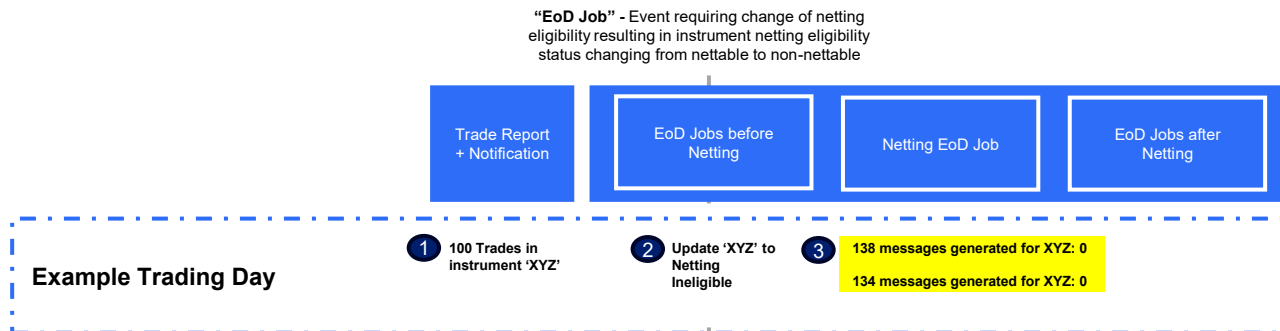
	EIS164	EIS116	EIS124	EIS128	EIS134	EIS138	EIS542	Oblig'ns	Details
Count of mismatch	0	0	0	0	0	0	0	8	<ul style="list-style-type: none"> 1 Price Mismatch in report only – Under Investigation 7 Reporting only BOQ discrepancies (Known Issue CHR-31921)
Count of unmatched	0	0	0	0	0	0	0	111	<ul style="list-style-type: none"> 111 Reporting only Deferred Settlement discrepancies (Known Issue CHR-32115)

03 - Parallel Test – Initial Observations

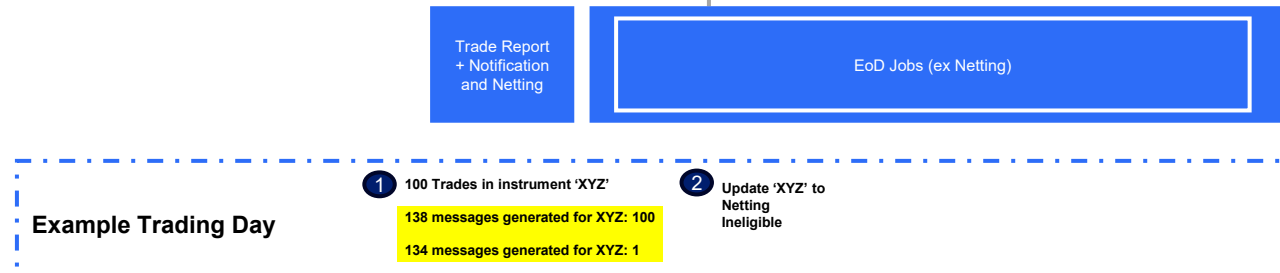
Main Driver of Reconciliation Report False Positives

Intraday netting by the R1 Clearing Service results in a change in sequence of some EoD processes pre/post netting:

Current CHES



R1 Clearing Service



03 - Parallel Test – Known Issues

Reconciliation Issues (1 of 2)

Ref ID	Summary	Details	Impact	Work Around or Mitigation	Impacting	Target Fix Date
CHR-31921	Reconciliation Tool: As At Trades undergoing specific netting indicator reference data events will trigger a False Positive exception break	As a result of BOQ code of 'NA' being enriched in the R1 Clearing Service database for As At Trades undergoing instrument netting eligibility updates, reconciliation report will trigger a false positive as the 'NA' BOQ does not exist in the Current CHES database	AMO and Clearing Participant reconciliation reports will end up with false positive exception breaks being reported for trades that were submitted by an AMO on an As At basis if they have undergone an Instrument Netting Eligibility change	No workaround available – report recipients will need to ignore the false positives when identified	AMOs and CPs	Parallel Test Cycle 2
CHR-32115	Reconciliation Tool: Deferred Settlement Trades are not captured in the R1 Clearing Service Reports resulting in False Positive exception breaks	Due to the timing of when Deferred Settlement Trades are transmitted from the R1 Clearing Service to the integrated settlement service (current CHES) deferred settlement trades are not identified in the R1 Clearing Service reconciliation reports	AMO and Clearing Participant reconciliation reports will end up with false positive exception breaks being reported for deferred settlement trades	No workaround available – report recipients will need to ignore the false positives when identified	AMOs and CPs	Parallel Test Cycle 2
CHR-32419	Reconciliation Tool: Continuous Netting Behaviour After Reference Data Update: Change in system behaviour where Current CHES processes reference data updates before end of day netting occurs and R1 Clearing Service processes reference data updates after intraday continuous netting occurs - Reconciliation Reporting not factoring in these timing and EIS message outcome differences	EIS 134+138 or 124+128 Message counts and/or field reconciliations are expected to be different as a result of the impacts from alternate netting process in the R1 Clearing Service and a Reference Data update such as the Change of a instruments Netting Eligibility is applied, however current reconciliation reports are reporting false positive breaks when this occurs	Clearing Participant Netting or Corporate Action Message reconciliation reports will end up with false positive exception breaks in certain events	No workaround available – report recipients will need to ignore the false positives when identified	CPs	Parallel Test Cycle 2

03 - Parallel Test – Known Issues

Reconciliation Issues (2 of 2)

Ref ID	Summary	Details	Impact	Work Around or Mitigation	Impacting	Target Fix Date
CHR-32458	Reconciliation Tool: Settlement Only Participants do not exist in the R1 Clearing Service and therefore do not receive EIS542 messages for Netting event notifications	Expected change in system behaviour where only organisations associated with the Clearing function have been created in the R1 Clearing Service and are recipients of EIS542 notifications for netting - which is a difference that was not previously communicated when explaining backwards compatible message behaviours. Question to Settlement Only Participants: Are netting Notifications used in your processes?	Clearing event notification messages will not be sent to Settlement Only Participants as they do not exist in the R1 Clearing Service – Settlement Only Participants requested to inform ASX if Netting Notifications are needed	Expected behaviours - impacted Settlement Only Participants to be informed of change of system behaviour	SPs	Parallel Test Cycle 2

03 - Parallel Test – Known Issues

Functional Issues

Ref ID	Summary	Details	Impact	Work Around or Mitigation	Impacting	Target Fix Date
CHR-32319	First Settlement Date updates not applied to current days Warrant trades during EoD reconstruction job	Current CHES will update First Settlement Date on trades for Warrants undergoing Reconstruction for that business days date when processing at EoD prior to generating EIS134 and EIS673 Messages. R1 Clearing Service not updating current days trades resulting in Current CHES rejecting impacted EIS134 and EIS673 messages prior to sending to Participants	Clearing Participant will not receive impacted EIS message as expected	No Workaround Available - CHES Project Code Change Required	CPs	Parallel Test Cycle 2
CHR-32049	Obligation calculated values incorrect due to rejected EIS093 messages	R1 Clearing Service receives EIS093 messages with a UTC timestamp on last trade date. Current CHES has validation to reject messages not transacting on a valid business date. As a result, where an EIS093 message is generated with a non business date UTC timestamp, e.g. a Sunday, CHES is rejecting the message resulting in it not being transmitted to the recipient. Obligation calculations therefore using different reference price	Calculated Obligation values will not align between R1 Clearing Service and Current CHES when EIS093 is rejected	No Workaround Available - CHES Project Code Change Required	CPs + AMOs	Parallel Test Cycle 2

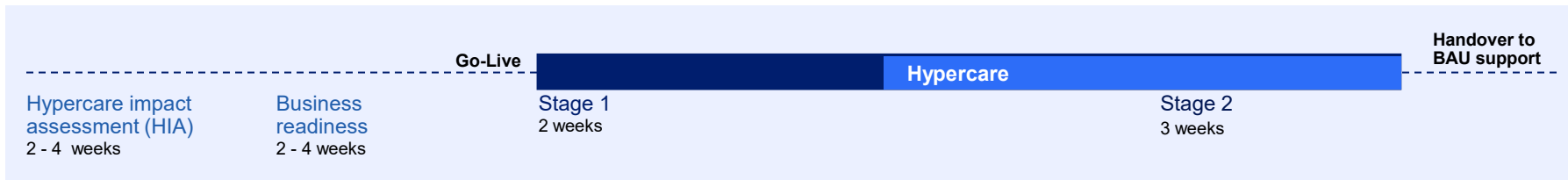
03 - Hypercare Model Outline

Model is in development and is proposed to be published in March 2026

Hypercare Model for CHEAD Users

- CHEAD Users planned to report incidents via existing BAU channels – escalation via Stakeholder Engagement Team
- Bolstered support presence for L1 support
- Reporting for external facing incidents / defects – published daily (following day)
- Hypercare is proposed for 5 weeks – 2 weeks High-touch support / 3 weeks Low-touch support
- Hypercare impact assessment intend to have a timeline / milestones for critical business functions in the first few days, and relevant support teams will be on standby. (Important notifications planned to be available on the System Status Page).

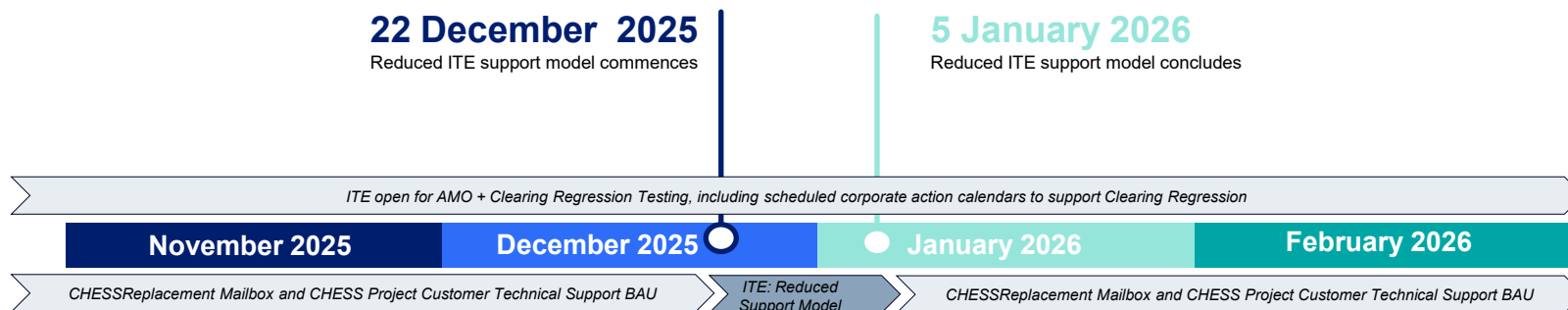
High-level timeline



Are there any particular processes or events that CHEAD Users would like to flag as areas to include in the Hypercare Impact Assessment?

03 - ITE Support Model during Dec 2025 – Jan 2026

ITE scheduled to remain open - there will be reduced support capacity during the end of year / New Year periods



ITE Reduced Support Model ('lights on' only):

1. Proactive Environmental Incident Support – RTO may be extended during this time
2. Functional + Technical enquiries (including potential defect investigations) received from AMOs + CPs and responded to from 5 January 2026

04 Release 2 Update

04 - Timeline Checkpoint 1 – Initial Feedback

Industry identified risks focus on completion of Release 2 solution and timely access to specifications and testing documentation

As of 18 November, 43 responses were received comprising of 26 Clearing and/or Settlement Participants, 3 Industry Associations, 2 Payment Providers, 4 Registries, 5 Vendors and 3 AMOs.

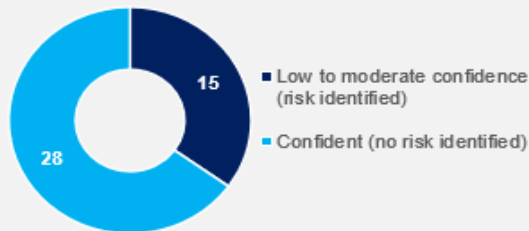
Mar 2026 – Sep 2027

Confidence in meeting the Software Provider timeline starting March 2026 up to Accreditation, starting September 2027



Oct 2027 – Jun 2028

Confidence in meeting the CHES user readiness timeline starting October 2027 up to Ops Readiness, June 2028



Nov 2028 – Mar 2029

Confidence in meeting the Go Live readiness timeline starting November 2028 up to March 2029



Summary of Industry concerns

- Optional vs mandatory accreditation
- Scope and scale of drops vary
- Lack of lead-time in securing SMEs
- Connectivity documentation lead time
- Not all business flows and messages are defined
- Connection between functionality across documentation drops
- Not all business flows and messages are defined
- CHES user upstream and downstream integration testing
- ASX adherence to schedule milestones
- Software Provider adherence to schedule milestones
- ASX Documentation completeness
- Release 2 Parallel Test yet to be finalised
- Data cleansing requirements to be defined
- Go Live approach to be defined
- CHES User system migration at go-live
- Engagement from only a few CHES users in industry conversations
- Time for offshore test teams.

05 Forward Engagement 2025

05 – Indicative Forward Engagement Calendar

	November 2025	December 2025
Technical Committee	5 November – In Person Session <ul style="list-style-type: none"> • CHES Project and Working Group updates • CHES Release 1 industry readiness • Proposed Monday Rollback Approach • Clearing Resiliency Arrangements Overview • Proposed Payment Channel 	3 December <ul style="list-style-type: none"> • CHES Project and Working Group updates • CHES Release 1 industry readiness • ASX Business Resiliency Exercise - Clearing • CHES Release 2 timeline checkpoint update • CHES Release 2 Drop 2 User Technical Documentation overview • 2026 Market engagement plan
Implementation & Transition Working Group	25 November <ul style="list-style-type: none"> • CHES Release 2 timeline checkpoint update 	16 December <ul style="list-style-type: none"> • CHES Release 2 timeline checkpoint update
CHES Release 1 Build & Test Forum	13 November <ul style="list-style-type: none"> • AMO parallel testing • Implementation Dress Rehearsal #1 update 	11 December <ul style="list-style-type: none"> • AMO parallel testing • Implementation Dress Rehearsal #2 update
Business Design Working Group	6 & 26 November <ul style="list-style-type: none"> • (6th) Accounts Migration Deep Dive • (26th) Release 2 Drop 4 Deep Dive (2 of 2) 	December <ul style="list-style-type: none"> • No December meeting
ISO Design Working Group	14 November <ul style="list-style-type: none"> • CHES Release 2 Drop 4 ISO messages and Schema 	9 December <ul style="list-style-type: none"> • CHES Release 2 Drop 4 ISO messages and Schema



Questions



Thank you



ASX

Appendix A

Establishing Connectivity

For noting

For discussion

For recommendation

Peering Requirements, Customer Addressing and Customer Infrastructure requirements

ASXNet / ALC

Peering Requirements - Border Gateway Protocol (BGP)

- Routing protocol is Border Gateway Protocol (BGP)
- either supply a public ASN or be provided a private ASN from an ASX defined range
- BGP passwords will be secured with a MD5 key
- CHES user devices must be configured to enable BGP peering metric for preferred link selection to ASX primary connection

Customer Addressing

- All Addressing is IP version 4
- Customers will be:
 - given a /28 subnet from a specified IP range
 - required to NAT their ASX Net connection to
 - a designated IP within a /28 subnet in the specified IP range
 - given a /30 subnet per CPE for transit addressing from a specified IP range

Customer Infrastructure

- Each line card on the ASX Net CPE (Customer Premise Equipment) will provide a single MAC address for all services deployed
- Customers must cater for this in their network
- ASX Net does not employ Spanning Tree Protocol (STP) for loop prevention in the customer access VLAN on ASX Net routers
- customers must provide loop protection mechanisms to prevent broadcast storms across the VLAN when connected redundantly

iVPN for ITE2 + ITE-M (Software Vendors only)

Peering Requirements

- VPN endpoint IP and source NAT will be supplied by ASX
- Routing protocol is Static

Customer Addressing

- All Addressing is IP version 4
- Software Vendors will be:
 - given a /30 subnet from a specified IP range
 - required to NAT their connection to assigned tunnel interface IP in the provided /30 subnet

Customer Infrastructure

- Software Provider devices should support:
- IPSEC VTI (Virtual Tunnel Interface) VPN functionality
- Virtual tunnel interfaces with IP address assignments
- NAT functionality (Source NAT).

CHESS Release 1 Indicative Project Timeline – Nov 2025

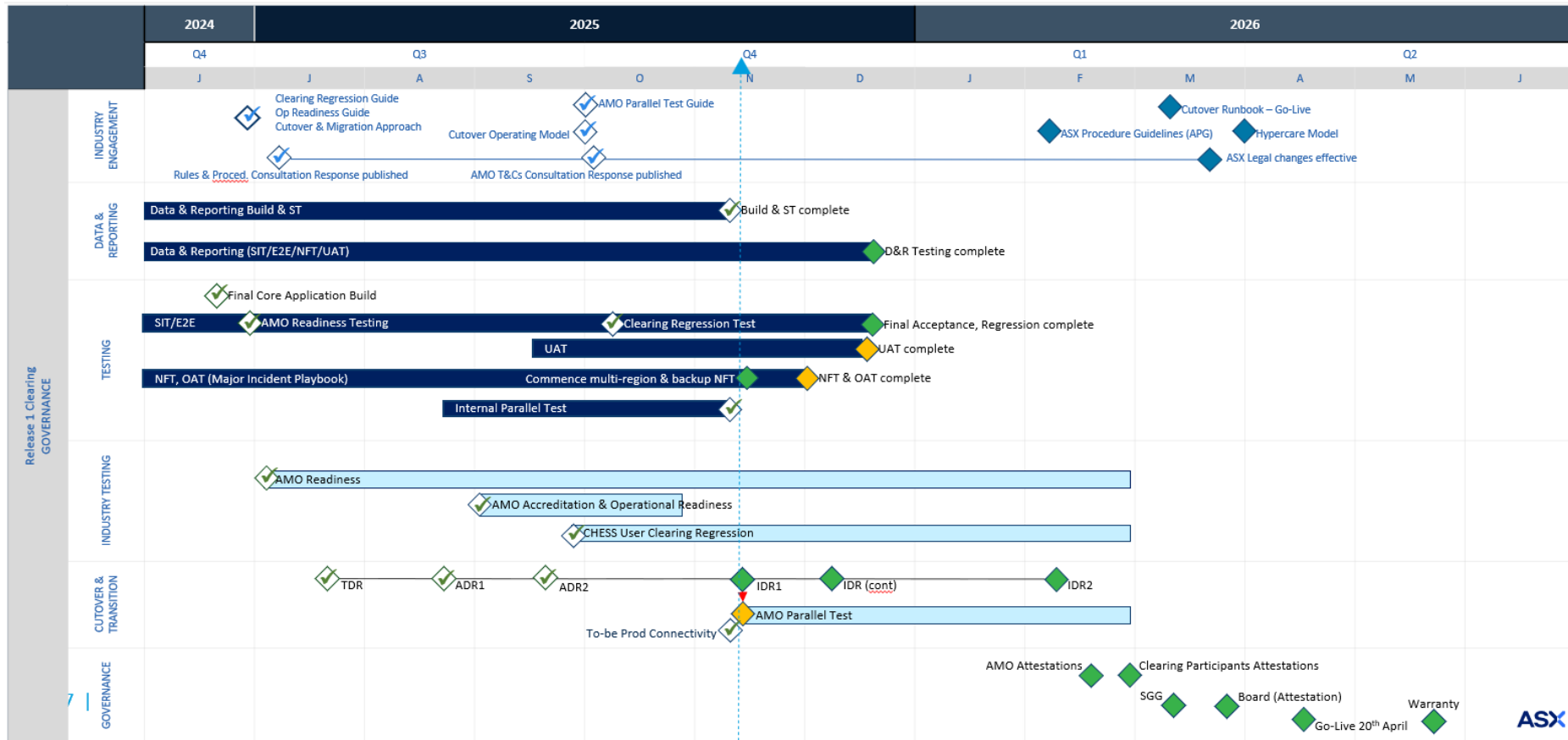
High level overview of the indicative timeline

Key

Industry

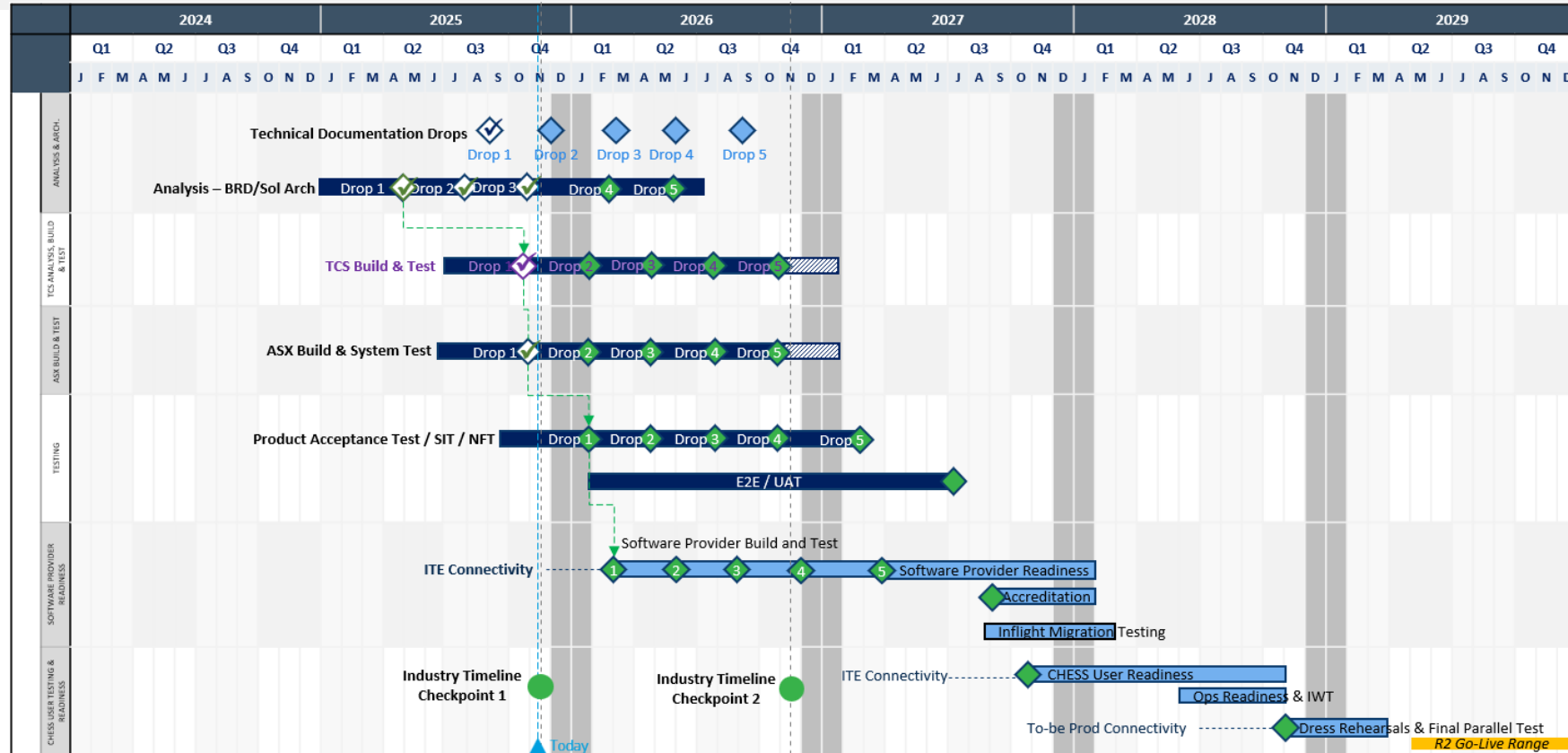
ASX / Vendor

Status



CHESS Release 2 Indicative Project Timeline – Nov 2025

High level overview of the indicative timeline



Release 1 Engagement Activities: Completed

Activities and Documentation to Support R1 Industry Readiness

Activity	Subject	Purpose	Planned Date	Status
Publish Documentation	Release 1 Industry Test Approach	Documentation describing the detailed industry test approach and expected activities of each involved party, as well as timing, entry and exit criteria and expected test outcomes of all Release 1 industry test phases	Q3 2024	Published 6 Sep 2024
Publish Documentation	Release 1 FIX Specifications	Documentation providing a detailed specification of all FIX messages, including message structures, rules, and message flow diagrams. Market-relevant specifications will be published in iterations as ASX analyses and completes designs for each drop	Q4 2024	Published 14 Nov 2024
Publish Documentation	Release 1 Connectivity Guide	Documentation detailing the technical connectivity requirements to connect to the CHES replacement system, including connectivity method(s), network details and security details	Q4 2024	Published 17 Dec 2024
Engagement Activity	Release 1 ITE Open Overview	I&T WG session to provide overview of the opening of ITE, and discuss ASX proposed approach to tracking and reporting test phase activity	Q1 2025	Completed 27 Feb 2025
Publish Documentation	Release 1 AMO Build and Test Release Notes	Release Notes for the AMO Build and Test phase, including delivered functionality, FAQs and known issues in the environment	Q1 2025	Published 28 Feb 2025
Publish Documentation	Release 1 AMO Accreditation Guide	Documentation providing detail on the CHES replacement AMO Accreditation phase, expectations regarding conduct and expected results including the Accreditation process, connectivity, and message scenarios	Q1 2025	Published 31 March 2025
Engagement Activity	Release 1 Operational Readiness Overview	I&T WG session to provide overview & discuss the prerequisites & process for completing the Operational Readiness phase	Q2 2025	Completed 29 April 2025
Engagement Activity	Release 1 Clearing Regression Overview	I&T WG session to provide overview & discuss the prerequisites & process for completing the Clearing Regression phase	Q2 2025	Completed 29 April 2025 & 27 May 2025
Engagement Activity	Release 1 Cutover Overview	I&T WG session to provide overview & discuss the prerequisites & process for completing Release 1 cutover activities	Q2 2025	Completed 27 May 2025
Publish Documentation	Release 1 Guide to Operational Readiness Phase	Documentation detailing the Operational Readiness scenarios including mandatory success criteria	Q2 2025	Published 28 May 2025

Note: Indicative only, subject to change based on industry inputs and further planning.

Release 1 Engagement Activities: Completed

Activities and Documentation to Support R1 Industry Readiness

Activity	Subject	Purpose	Planned Date	Status
Publish Documentation	Release 1 Clearing Regression Test Guide	Documentation detailing the minimum ASX-specified Clearing Regression test scenarios, key activities and expectations regarding conduct and expected results including entry and exit criteria	Q2 2025	Published 25 Jun 2025
Publish Documentation	Release 1 Cutover Approach	Documentation detailing the cutover and migration approach, key activities, responsibilities including all verifications and validations required by ASX and the market, and milestones across the cutover and dress rehearsal windows	Q2 2025	Published 26 Jun 2025
Publish Documentation	Release 1 AMO Readiness Release Notes	Release Notes for the AMO Readiness phase, including delivered functionality, FAQs and known issues in the environment	Q2 2025	Published 02 Jul 2025
Engagement Activity	AMO IDR & AMO Parallel Phase Overview	I&T WG session to provide overview & discuss the prerequisites & process for completing the IDR & AMO Parallel Test phase	Q3 2025	Completed 29 Jul 2025
Publish Documentation	Release 1 Guide to AMO Parallel Test	Documentation providing detail on the AMO Parallel Test phase, key activities and expectations and expected results including entry and exit criteria	Q3 2025	Published 29 Sep 2025
Publish Documentation	R1 Cutover Operating Model	Documentation providing AMOs with key cutover tasks and milestones, with an outline of detailed steps including planned timing.	Q3 2025	Published 26 Sep 2025
Publish Documentation	R1 Cutover Runbook	The R1 Cutover 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 rollback	Q4 2025	Published 31 Oct 2025
Publish Documentation	Release 1 Clearing Regression Release Notes	Release Notes for the Clearing Regression phase, including delivered functionality, FAQs and known issues in the environment	Q4 2025	Published 7 Oct 2025
Publish Documentation	Release 1 AMO Implementation Dress Rehearsal Release Notes	Release Notes for the AMO IDR phase, including AMO Parallel Test, delivered functionality, FAQs and known issues in the environment	Q4 2025	Published 14 Nov 2025

Note: Indicative only, subject to change based on industry inputs and further planning.

Release 2 Readiness Activities: Proposed for 2025

Activities and Documentation to Support R2 Industry Readiness

Activity Planned	Subject	Purpose	Planned Date
Engagement Activity	Release 2 Industry Test Tooling High Level Approach	I&T Working Group (I&T WG) workshop providing an overview of ASX planned approach to test environments, data, and tooling to enable CHES User testing in Release 2, and discuss/identify unmet industry needs or challenges for additional consideration	Completed 27 Mar 2025
Engagement Activity	ISO 20022 and Business Design Working Groups	Workshops to obtain industry input and feedback into the design of Release 2 ISO messages and specified CHES	Q4 2024 – Q2 2026
Engagement Activity	Release 2 Industry Test Tooling Focus Groups	I&T WG workshops to walk through Release 2 message initiation and response testing once ISO specifications and message workflows drafted. Schedule will incrementally follow collation of industry feedback to Drop 1 – 5 documentation	Q2 2025 – Q3 2026
Publish Documentation	ISO 20022 Specifications & Functional and Technical Specs	Documentation providing a detailed specification of all ISO messages including message structures, rules message flow diagrams, and tooling to support testing ASX will target release this documentation incrementally in line with the 5 feature drops	Q3 2025 – Q3 2026
Engagement Activity	Phase High Level Approach 1 - Release 2 Parallel Test	I&T WG session providing high level overview of Release 2 Parallel Test Approach, to discuss/identify unmet industry needs for additional consideration	Completed 26 Aug 2025
Engagement Activity	Guide Overview 1 - Release 2 Industry Test Approach	I&T WG session providing overview of draft Release 2 Industry Test Approach, to inform industry and obtain feedback prior to publishing	Completed 26 Aug 2025
Publish Documentation	Release 2 Industry Test Approach	Documentation describing the approach, responsibilities, timing, entry and exit criteria and expected outcomes for each Industry Test phase	Published 19 Sep 2025
Publish Documentation	Release 2 Connectivity Guide	Documentation detailing the technical connectivity requirements to connect to the CHES replacement system including connectivity method(s), network details and security details	Q4 2025
Engagement Activity	Release 2 Timeline Checkpoint 1	Gauge industry progress and obtain industry feedback to ascertain its ability to continue meeting the Release 2 project timeline following the release of the Industry Test Approach and initial Functional & Technical Specifications	Q4 2025

Note 1: Release 2 Cutover topics are scheduled to be planned out as part of the 2026 engagement plan.

Note 2: Indicative only, subject to change based on industry inputs and further planning.

Key

Focus Groups

Documentation

Overviews

Checkpoints

Release 2 Readiness Activities: Proposed for 2026

Activities and Documentation to Support R2 Industry Readiness

Activity Planned	Subject	Purpose	Planned Date
Engagement Activity	ISO 20022 and Business Design Working Groups	Workshops to obtain industry input and feedback into the design of Release 2 ISO messages and specified CHES functionality	Q4 2024 – Q2 2026
Engagement Activity	Release 2 Industry Test Tooling Focus Groups	I&T WG workshops to walk through Release 2 message initiation and response testing once ISO specifications and message workflows drafted. Schedule will incrementally follow collation of industry feedback to Drops 1 – 5 documentation	Q2 2025 – Q3 2026
Publish Documentation	ISO20022 Specifications & Functional & Technical Specs	Documentation providing a detailed specification of all ISO messages including message structures, rules message flow diagrams and tooling to support testing. ASX will target release this documentation incrementally in line with the 5 feature drops	Q3 2025 – Q3 2026
Engagement Activities	Functionality Drop Overviews – Drops 1-4	I&T WG session to provide overview of functionality to be delivered in upcoming Functionality Drop	Q1-Q4 2026
Publish Documentation	Release 2 Release Notes: Drops 1 -4 + Software Provider Build & Test	Release Notes for functional drops 1-4, including delivered functionality, industry test tooling available (including user guides where applicable) FAQs and known issues in the environment	Q1–Q4 2026
Engagement Activity	Activity and Progress Tracking Overview	I&T WG session to provide overview and discuss ASX proposed approach to tracking and reporting test phase activity	Q1 2026
Engagement Activity	Phase Overview 1 - ITE Open	I&T WG session to provide overview & discuss the prerequisites + process for completing the Software Provider B&T Phase	Q1 2026
Engagement Activity	Guide Overview 2 - Release 2 Connectivity Guide	I&T WG session providing overview of draft Release 2 Connectivity guide and process	Q1 2026
Engagement Activity	Guide Overview 3 - Release 2 Failover & Recovery Guide	I&T WG session providing overview of draft Failover & Recovery guide, to inform industry and obtain feedback prior to publishing	Q3 2026
Publish Documentation	Release 2 Failover and Recovery Guide	Documentation providing information on failover testing, covering what components ASX will simulated-fail and proposed frequencies	Q3 2026
Engagement Activity	Release 2 Timeline Checkpoint 2	Gauge industry progress and obtain industry feedback to ascertain its ability to continue meeting the Release 2 project timeline following the release of all Functional & Technical Specifications. Identify and incorporate agreed industry requirements into CHES User test phases schedule	Q4 2026
Engagement Activity	Guide Overview 4 - Release 2 Accreditation Guide	I&T WG session providing overview of draft Release 2 Accreditation Guide, to inform industry and obtain feedback prior to publishing	Q4 2026
Publish Documentation	Release 2 Accreditation Guide	Documentation providing overview of the Release 2 Accreditation phase, including accreditation process, connectivity scenarios & message scenarios	Q4 2026

Note: Indicative only, subject to change based on industry inputs and further planning.

Key |

Focus Groups

Documentation

Overviews

Checkpoints

Release 2 Readiness Activities: Proposed for 2027

Activities and Documentation to Support R2 Industry Readiness

Activity	Subject	Purpose	Planned Date
Publish Documentation	Release 2 Release Notes: Drop 5 + Software Provider Readiness, Accreditation, Inflight Migration and CHES User Readiness	Release Notes for each functional drop, including delivered functionality, industry test tooling available (including user guides where applicable) FAQs and known issues in the environment	Q1-Q4 2027
Engagement Activity	Functionality Drop Overview – Drop 5	I&T WG session to provide overview of functionality to be delivered in upcoming Functionality Drop	Q1 2027
Engagement Activity	Phase Overview 2 – Software Provider Readiness	I&T WG session to provide overview and discuss the prerequisites and process for completing the Software Provider Readiness Phase	Q1 2027
Engagement Activity	Guide Overview 5 - Release 2 Operational Readiness Guide	I&T WG session providing overview of draft Release 2 Operational Readiness Guide, to inform industry and obtain feedback prior to publishing	Q2-Q3 2027
Publish Documentation	Release 2 Guide to Operational Readiness Phase	Documentation outlining the Operational Readiness scenarios including mandatory success criteria	Q3 2027
Engagement Activity	Phase Overview 3 - Release 2 Inflight Migration	I&T WG session to provide overview and discuss the approach to the Inflight Migration testing phase	Q3 2027
Engagement Activity	Phase Overview 4 - Release 2 Software Provider Accreditation	I&T WG session to provide overview and discuss the approach to the Software Accreditation phase	Q3 2027
Engagement Activity	Phase Overview 5 - Release 2 CHES User Readiness	I&T WG session to provide overview and discuss the approach to the CHES User Readiness phase	Q3 2027
Engagement Activity	Guide Overview 6 - Release 2 Parallel Test	I&T WG session to provide overview of draft Release 2 Parallel Test Guide, to inform industry and obtain feedback prior to publishing	Q3 2027
Publish Documentation	Release 2 CHES User Readiness Release Notes	Release Notes for the CHES User Readiness phase, including delivered functionality, FAQs and known issues in the environment	Q4 2027
Publish Documentation	Release 2 Guide to Parallel Test	Documentation providing details of key activities and expectations regarding test and scope boundaries, expected results including entry and exit criteria	Q4 2027
Engagement Activity	Guide Overview 7 - Release 2 Cutover & Migration Approach	I&T WG session to provide overview of draft Cutover and Migration Approach, to inform industry and obtain feedback prior to publishing	Q4 2027
Publish Documentation	Release 2 Cutover and Migration Approach	Documentation detailing the cutover and migration approach, key activities and responsibilities	Q4 2027
Engagement Activity	Cutover Date Focus Group	I&T WG session to identify the appropriate weekend/month that has broad industry support, to schedule Primary and Secondary cutover dates in 2029	Q4 2027

Release 2 Readiness Activities: Proposed for 2028

Activities and Documentation to Support R2 Industry Readiness

Activity	Subject	Purpose	Planned Date
Publish Documentation	Release 2 Release Notes: Operational Readiness, Industry Wide Testing, Dress Rehearsals/Parallel Test	Release Notes for each functional drop, including delivered functionality, industry test tooling available (including user guides where applicable) FAQs and known issues in the environment	Q1-Q4 2028
Engagement Activity	Guide Overview 8 - Release 2 Guide to Industry Wide Testing	I&T WG session providing overview of draft Guide to Industry Wide Testing to inform industry and obtain feedback prior to publishing	Q1-Q2 2028
Publish Documentation	Release 2 Guide to Industry Wide Testing	Documentation providing an overview of the Release 2 Industry Wide Test phase, detailing key activities, expected behaviours, scope boundaries, and expected outcomes including entry and exit criteria	Q2 2028
Engagement Activity	Guide Overview 9 - Release 2 Cutover Runbook	I&T WG session providing overview of draft Cutover Runbook to inform industry and obtain feedback prior to publishing	Q1-Q2 2028
Engagement Activity	Phase Overview 6 - Release 2 Operational Readiness	I&T WG session to provide an overview and discuss the approach to the Operational Readiness phase	Q2 2028
Engagement Activity	Phase Overview 7 - Release 2 Industry Wide Testing	I&T WG session to provide an overview and discuss the approach to the Industry Wide Testing phase	Q3 2028
Publish Documentation	Release 2 CHESS Industry Wide Testing Release Notes	Release Notes for the Industry Wide Testing phase, including delivered functionality, FAQs and known issues in the environment	Q3 2028
Publish Documentation	Release 2 Cutover Runbook	Documentation providing CHESS Users with detail on the tasks, milestones and steps associated with cutover, including planned timing. The runbook will be used in dress rehearsals and refined as required ahead of the final go-live event. Note that this document will also include the steps required to backout	Q2 2028
Engagement Activity	Phase Overview 8 - Release 2 Implementation Dress Rehearsals & Parallel Test	I&T WG session to provide an overview and discuss the approach to Implementation Dress Rehearsal and Parallel Test phase	Q3-Q4 2028
Publish Documentation	Release 2 Implementation Dress Rehearsal Release Notes	Release Notes for the IDR phase, including Parallel Testing, delivered functionality, FAQs and known issues in the environment	Q4 2028
Engagement Activity	Go/No-Go and Rollback Decision Focus Group	I&T WG session to identify appropriate decision framework that has broad industry support that will be employed during cutover activities	Q4 2028

Note: Indicative only, subject to change based on industry inputs and further planning.

Appendix B

Closed Actions

Appendix B - Closed Actions

#	Topic	Action	Raised	Due	Owner	Status
1	Industry Test Approach	ASX to provide an update on when the industry test approach will become available	11 Jul TC	6 Aug I&T WG	ASX	CLOSED
2	Deferred Settlement	ASX to provide further detail on deferred settlement for further consideration	5 Jun I&T WG	4 Jul I&T WG	ASX	CLOSED
3	Deferred Settlement	Working Group members to review pre-read content from 4 July I&TWG and provide feedback to CHESSReplacement@asx.com.au	4 Jul I&T WG	6 Aug I&T WG	I&T Member Organisations	CLOSED
4	Staged Implementation	ASX to include additional industry benefit analysis to capture industry perspectives on staging options	4 Jul I&T WG	6 Aug I&T WG	ASX	CLOSED
5	R2 Timeline	ASX to update Release 2 timeline to incorporate any T+1 assumptions and analysis requirements	5 Jun I&T WG	4 Jul I&T WG	ASX	CLOSED
6	Reporting	ASX to revert with timeline for reporting drops	6 Aug I&T WG	4 Sep I&T WG	ASX	CLOSED
7	R2 Risk Mitigation	ASX to present the assessment of additional options, seeking industry input on viability and risk assessment. Discussion required on day 1 non settlement day, and incremental release of market settlements.	11 Jul TC	2 Oct I&T WG	ASX	CLOSED
8	R2 Risk Mitigation	Working Group members to provide any additional feedback or suggestions on industry testing or otherwise to further de-risk Release 2 to CHESSReplacement@asx.com.au	5 Jun I&T WG	-	I&T Member Organisations	CLOSED
9	R2 Timeline	Working Group members to provide feedback on latest R2 timeline	4 Jul I&T WG	-	I&T Member Organisations	CLOSED
10	R2 Risk Mitigation	ASX to revert with cohort-level risk assessment of staging options & engage with cohorts as required to validate risk assessment	6 Aug I&T WG	2 Oct I&T WG	ASX	CLOSED

Appendix B - Closed Actions

#	Topic	Action	Raised	Due	Owner	Status
11	Synthetic securities for Corporate Actions during the Clearing Participant Regression Test Phase	ASX to advise how Corporate Actions testing can be facilitated	27 Mar 2025	29 Apr I&T WG	ASX	CLOSED
12	Integrated AMO trade flow expectations	ASX to advise how AMO integrated testing is planned to be facilitated	27 Mar 2025	29 Apr I&T WG	ASX	CLOSED
13	Impact of including Priming functions in the Clearing Participant Regression Test Phase	ASX to consider how to reduce impact of settlement Priming if required	27 Mar 2025	29 Apr I&T WG	ASX	CLOSED
14	R2 Operating Rule Changes	ASX to revert with timeline and approach to rule change consultation	6 Aug 2024	6 May TC	ASX	CLOSED
15	CP Clearing Regression survey	ASX to consider information required and advise method for collection	27 Mar 2025	27 May I&T WG	ASX	CLOSED

Appendix B - Closed Actions

#	Topic	Action	Raised	Due	Owner	Status
16	Deferred settlement approach for migration	ASX to review and advise approach to testing inflight, deferred settlements during migration	27 Mar 2025	26 June I&T WG	ASX	CLOSED
17	Clarification if environment reset in XP1 expected	ASX to determine whether reset of XP1 environment required to fix defects or issues and advise	27 May 2025	26 June I&T WG	ASX	CLOSED
18	Clearing Regression Throttling	ASX to confirm how AMO throttling will be applied during Clearing Regression	27 May 2025	26 June I&T WG	ASX	CLOSED
ITWG_07	AMO Parallel Test Engagement	ASX to consider viability to bring forward its engagement on Parallel Testing	29 April 2025	29 July I&T WG	ASX	CLOSED
ITWG_11	Release 1 Clearing Regression Scenarios	ASX to finalise the Clearing Regression CP scenario exemption process	26 June 2025	29 July I&T WG	ASX	CLOSED

Appendix B - Closed Actions

#	Topic	Action	Raised	Due	Owner	Status
ITWG_12	ASX Trade Release 1 Clearing Regression test platform	ASX Trade to confirm which test platform is planned to support Clearing Regression	26 June 2025 I&T WG	29 July I&T WG	ASX	CLOSED
ITWG_13	CHES Release 1 Clearing Regression Readiness Tracker	ASX to update Readiness Tracker target dates inline with CP feedback	July 2025 I&T WG	6 August TC	ASX	CLOSED
ITWG_14	CHES Release 1 rollback option – hold back EIS messages during Cutover	Participants to advise impact receiving AMO trade execution confirmation messages (e.g. Signal B) if CHES EIS messages are held back on Monday following Cutover weekend	July 2025 I&T WG	26 August I&T WG	AMOs & Trading Participants	CLOSED
ITWG_15	Release 1 Clearing Regression	Mandatory - Clearing Participants to submit their Clearing Regression SFTP/Test Kit applications	August 2025 I&T WG	25 September I&T WG	Clearing Participants	CLOSED

Appendix B - Closed Actions

#	Topic	Action	Raised	Due	Owner	Status
ITWG_10	Release 1 rollback options	ASX to finalise its CHES Release 1 rollback options for I&T WG consideration	May 2025 I&T WG	29 October I&T WG	ASX	Closed
ITWG_16	Release 1 AMO Parallel Test	Optional - Clearing Participants to opt-in to receive Parallel Test data	August 2025 I&T WG	24 October	Clearing Participants	Closed

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