CHESS Replacement Project

Share Registry Readiness working group

2 March 2022

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Important Information – Competition Law Policy

Working group members are reminded to have regard to their obligations under competition law. In particular, please note changes to the Competition and Consumer Act to prohibit 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.

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Agenda

1. Share Registry Readiness working group objectives
    *   Including roles & responsibilities and other stakeholder engagement activities

2. ITE2
    *   Overview of ITE2 timing, test phases and supporting documentation
    *   Getting ready in advance for ITE2 opening
        o   Including access forms, connectivity, onboarding and CHESS user test environment considerations
    *   Getting started once ITE2 is open
        o   Including test data, test tools, availability and schedules

3. Operational Readiness Scenarios
    *   Including how to read scenarios and stepping through some examples

4. Topics for discussion at future working groups

5. Next steps

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Share Registry Readiness Working Group

Share Registries Readiness Working Group

Objectives

> Open to share registries that interface directly with CHESS, plus their bureau providers, where applicable

> Establish and manage a collaborative forum which will allow for the open discussion of activities in preparation for and throughout CHESS user readiness including discussing specific industry considerations and to share best practices with other working group members

> To provide clarity and certainty around significant areas to complement the documentation that has been made available and to help bring-to life key topics

> To ensure readiness for the mandatory phases including operational readiness, industry wide testing and attestation

> Bring together relevant individuals who have the knowledge to collectively advise and discuss fundamental elements, themes and challenges on operational matters

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Share Registries Readiness Working Group

Roles and responsibilities

> ASX will aim to:

- Send calendar invitations two weeks prior to each meeting (working assumption 2pm the 1st Wednesday of every month)

- Confirm an agenda one week prior

- Circulate presentation slides in the morning prior to the meeting; and updated slides post meeting, if relevant

> Working group members are expected to:

- Attend, or send a delegate, to each working group meeting

- Participate in the discussions

- Suggest topics for future discussion

- Respect the views of all working group members, even if they are contrary to their own opinions

- Observe Chatham house rules i.e. do not reveal who made any particular comment outside of the working group

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Share Registries Readiness Working Group

Other stakeholder engagement activities

> Other CHESS user readiness working groups include:

- AMOs

- Clearing and Settlement Participants

- PISPs

- Payment Providers

> CHESS users whose organisation supports multiple CHESS roles (e.g. Share Registry and PISP) will receive invitations to all applicable working groups, noting there will likely be a duplication in content

> Software providers readiness working group to continue (for those Share Registries developing in-house)

> Implementation & Transition working groups to continue

> Bilateral meetings (i.e. between ASX and CHESS users) to continue but in some cases less frequent as engagement is now supplemented through new working groups

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Share Registries Readiness Working Group

Housekeeping

> Please keep your microphones on mute

> Floor open for questions either after an agenda item has been presented or where there is a natural break point

> Please raise your hand if you have a question

> Please switch on your cameras when talking / switch off cameras when you are not talking

> We will endeavor to be fair in managing questions from multiple parties

> To keep the agenda moving, some questions may need to followed up and answered outside of the meeting

> Presentation materials and Q&A to be published to the CHESS replacement web page

> Any feedback welcomed, good or bad

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Overview of ITE2 Timing, Test Phases & Supporting Documentation

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Share Registries Readiness Working Group

ITE2 timing

> ITE2 will open with the same code base as ITE1

> Similar to ITE1 corporate actions will not be available from the opening

> Release of v1.3 of code will be promoted to ITE1 before ITE2

> Performance and fail over testing will be scheduled in ITE1 before ITE2

> Bilateral testing in ITE2, with participants should only commence from July onwards

> ASX encourages share registries already testing in ITE1 to onboard to ITE2 after completing technical accreditation

> Ongoing connectivity to ITE1 and ITE2 is required for share registries who are either software providers and/or developing in-house

  - ITE1 connectivity is required for any new software releases and re-accreditation, if required

  - ITE2 connectivity is required for operational readiness assessment and industry wide testing

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ITE2 Test Phases

> The Industry Test Environment 2 (ITE2) is a shared environment that supports CHESS users in performing:

Phase	Description
CHESS User Testing	• Provides CHESS users with the ability to perform internal testing on software that has been developed in-house or by third party vendors • This phase will allow CHESS users to become familiar with new and upgraded applications by enabling them to undertake a level of testing to provide confidence that their system is ready for the Operational Readiness Assessment phase • During user testing, CHESS users are expected to update their operational procedures to align with new and changed functionality
Operational Readiness	• CHESS users will need to demonstrate that their organisation meets operational requirements by providing test evidence for all applicable operational readiness scenarios
Industry Wide Testing	• CHESS users will be able to participate in testing in a simulated, production-like environment • Testing will be coordinated industry-wide, across multiple CHESS users and all roles

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CHESS User Readiness

Useful market documentation for reference

>	**Industry Test Strategy**	Outlines the approach to the different industry test stages and test environments. Guidance on the requirements for a successful go-live
>	**ITE2 Application form & Subscriber Technical Access Agreement**	Forms available for download from Dec'21 and can be submitted from Feb'22
>	**Connectivity Guide**	Provide details on technical connectivity requirements
>	**User Guide for ITE2**	User Guide to support testing in ITE2 was published in Jan'22, providing details of the testing environment, datasets and testing phases for CHESS User Readiness
>	**ASX Settlement Procedures Guidelines (APGs)**	Participants and registries can use these guidelines as a base for establishing internal procedures
>	**Operational Readiness Guide**	First tranche of operational readiness scenarios published in Jan'22. Further scenarios in Feb & Mar '22
>	**Failover and Recovery Guide**	Provide details on expected behaviors for failover and recovery
>	**Cutover & Migration Strategy**	Provides software providers and CHESS users with the scope and approach for the migration of CHESS to the CHESS replacement system including the associated Market Dress Rehearsals (MDRs)
>	**ASX Operating Rules**	CHESS Replacement Tranche 3 Operating Rule Amendments, together with the combined package of rule amendments across the three tranches were issued Aug'21

Getting ready for ITE2

ITE2 Readiness

ITE2 Application Form

For access to the ITE2 environment all CHESS Users will be required to submit an Application Form to ASX, as presented in the I&T WG in December 2021.

This form will include:

> Legal entity organisation

> Organisation role to be played in ITE2

> Network connectivity options

> Application access options

> Additional security contact details.

Instructions for completing ITE2 application forms is available on our documentation portal.

ITE2 Readiness

Technical connectivity testing

> Technical connectivity testing can commence following receipt of an ITE2 application form

> CHESS users must use the ASX supplied access details and avoid connecting to the environment until ASX confirms access

> Technical connectivity testing includes:

- Customer side configuration and enablement of all network equipment for access to the ITE2 environment (firewall permissioning, etc.)

- Customers will be able to verify network connectivity by performing a telnet to the designated IP address and port.

- ITE2 network details are available within section 4 of the Connectivity Guide

> As always, for support on connectivity testing please reach out to cts@asx.com.au or your ASX Technical Account Manager (TAM)

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ITE2 Readiness

Onboarding

> Onboarding can commence after technical connectivity testing has been completed at the network level

> Similar to ITE1, CHESS users onboarding processes, ~80+ organisations, will be <u>staggered</u> from April through to June

> As part of ITE2 on-boarding, depending on the CHESS user's access channel preference, customers will be required to:

- Manage Certificates via CSAM portal:
    - Setup Enterprise Administrator and staff accounts
    - Create service accounts and certificates (differ according to each access channel)
    - Install certificates
- CHESS UI: Setup Enterprise Administrator and other user accounts

> In addition, CHESS users are also advised to familiarise themselves with ITE2 resources such as - <u>ITE2 Networking Details</u> , <u>ITE2 Test tooling</u> etc.

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ITE2 Readiness

Network Requirements

ASX Net or IPSEC VPN Connectivity

> CHESS users will be required to connect to ITE2 using their target production connectivity method – ASX Net or Internet (IPSEC) VPN

> If **ASX Net**, start planning early if network changes are required to enable connectivity to ITE2. This process can take several weeks depending on planned connection method, current ASX Net product, and each organisation's network complexity and change processes, including any design approvals and potential firewall changes

- CHESS users with existing connections to CDE or ITE1 - less change is likely required on the customer end e.g. additional IPs in ITE2 and associated firewall rules/routing

- CHESS users without existing connections to CDE or ITE1 - more change is likely required on the customer end e.g. new physical network connection + new IP range required for firewall rules/routing

> Customers who connect to the CHESS replacement system for the first time via **Internet VPN** must configure a site-to-site VPN

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Getting started in ITE2

ITE2 Readiness

CHESS user test environment considerations

CHESS user test environments

> You will need a new test environment to connect to CHESS Replacement – ITE2

> ASX recommends CHESS users keep their existing CHESS BAU test environment intact and establish a new test environment for ITE2

> Environment configuration covered later in the deck (for example UICs and security codes)

> Primarily focused for functional testing although there will be opportunities to test the performance of your interface, therefore you will need to provide considerations for the size and scale of your environment specifications

> ITE2 will open with the same code base as ITE1

> ITE2 will be a long running environment however occasional resets may be required

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ITE2 Readiness

Overview of test data

> ITE2 is a new environment specific to CHESS replacement with new test datasets

> One dataset has been designed to ensure that all three phases can support:

- CHESS user testing

- Operational readiness testing

- Industry wide testing

> CHESS users will be provided production UICs

> Security codes will be a copy of production data taken from a specific as-at date

- subsets of security codes will be identified to support testing needs across all testing phases

> No production transactional data will be provided

> Market events will be scheduled to run throughout the environment

> Current CHESS operating hours apply

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ITE2 Readiness

Test Data

Data	Source	Ongoing maintenance
UICs (production)	CHESS users should configure ITE2 based on their production UICs	any production changes applied after the data cut-off date will not be applied by default
Accounts	No production accounts will be provided. All accounts must be created by the CHESS User. CHESS users will be able to create accounts with test tools: • Account Management Self-Service Tool; or • CHESS UI	CHESS Users have control over the accounts created
Holdings	Holdings must be created by the CHESS User Share registries will be able to hydrate accounts using holding adjustments:	CHESS Users have control over the holdings created

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ITE2 Readiness

Test Data

Data	Source	Ongoing maintenance
Securities (copy of production data)	**ASX has taken a copy of production security codes as at 17 January 2022** CHESS users have various options to migrate or download securities into their own test environments. **Option 1** Migrate a copy from own prod-copy environment, with the following option: a) from date 17 Jan – align to ASX b) alternative date prior to ITE2 open – noting there will be a delta **Option 2** Download from CSV file from ASX website **Option 3** Download from ReferencePoint Security Master List (E01 file) **Option 4** Stream securities directly from the ledger (ledger API clients)	New securities created in production after data cut-off date will not be applied to ITE2 **Security subsets will be identified to support testing needs across all testing phases, including:** • securities allocated to test tooling, allow CHESS users to test in isolation (without dependencies of another CHESS user) • subset to securities will be available for counterparty testing • subsets, to support testing with participants allowing validation on SRNs for transfers, conversions and SRN balance/enquiry end to end workflows

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ITE2 Readiness

Test Data

Data	Source	Ongoing maintenance

Securities (continued)	• In the initial phases of ITE-2 testing, ASX is proposing 3 "buckets of securities" to be assigned from each share registry's own security list, as follows:
	    ○ A subset of securities to be assigned to an ASX Registry responder, to allow for isolated Participant testing
	    ○ A subset of securities to be assigned to each share registry to allow for isolated registry testing
	    ○ A subset of securities to be allocated for end-to-end testing (Participants to Registry and vice versa)
	        ▪ This subset of securities to have a list of dummy issuer sponsored holders available to allow for end-to-end testing by Participants of SRN/balance enquiry and subregister conversions and transfers
	• Remaining securities to be marked as "not available for testing" ie: should Participants submit messages against this group of securities, however no response from the registry is expected for participant requests thus ASX Housekeeping will take place
		New securities created in production after data cut-off date will not be applied to ITE2, this includes change of share registry

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ITE2 Readiness

Test Data

Data	Source	Ongoing maintenance
Corporate Actions and additional securities (non-prod)	Production corporate actions will not be provided A detailed timetable of corporate action events is still being prepared.	

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ITE2 Readiness

Test Tools

Self-Service tools
Enable a user to initiate a workflow (or process step) acting as a different actor through submission of a template csv file to a self-service REST end-point. The self-service adapter validates the file and generates the respective ISO 20022 message and submits to CHESS.

Auto-responder tools
In a multi-party workflow, the user is able to receive an automated response acting as the counterparty for the workflow they initiated. This enables the user to continue the workflow in the absence of a real counterparty.

Auto-injector tools
On a scheduled event, workflows are actioned based on the state of transaction data and/or canned data will be automatically loaded to CHESS (DLT Version) to reflect data that would be generated by the platform in a production environment, such as daily margin settlement advice.

ASX assisted testing will assist CHESS users to conduct test scenarios not supported by tools. Section 5 of the Guide to Testing Services provides a full list of available self-service tools, auto-responders and auto-injectors and a full list of ASX assisted tests.

ITE2 readiness

Availability and schedules

> **Daily environment schedule**:

- ITE2 operates on business days for all connectivity and messaging services, with the exception of required maintenance.

- The ITE2 schedule of system events, including batch settlement, will run according to the schedule detailed in Section 3.2 Test Environment Availability and System Event Times of the Guide to Testing Services.

> **Exception handling events**:

- batch settlement cut-off extension;

- default management / back-out algorithm;

- batch settlement cancellation; and

- broadcast notifications.

> **Support and operating Hours**:

- Support Hours: 8am - 6pm (Industry Test Environment support contact details are available at Support for ITE.)

- Operating Hours: 7am - 7pm (these times may be subject to change)

Operational Readiness Scenarios

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Operational Readiness

What is Operational Readiness?

> Provides both ASX and CHESS users assurance that they are able to successfully operate their Business As Usual (BAU) functions using the CHESS replacement system

> Sufficient processes and procedures are in place for standard functions and exception handling scenarios

> CHESS users will be allocated a window within the Operational readiness phase to perform their assessment

> CHESS users will be required to provide evidence that they have sufficient processes and procedures in place for all BAU functions they are required to perform

> Operational readiness scenarios covering all CHESS user types were published end January and February 2022; remaining scenarios to be published March 2022

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Operational Readiness Scenarios

Supporting documentation to help you

> ASX published the Operational Readiness Guide at end January to provide an overview of the Operational Readiness Assessment phase and to set expectations regarding the testing criteria CHESS users will be assessed against and the expected results

> The Operational Readiness Guide provides:

- An overview of the operational readiness assessment phase

- Details on performing operational readiness

- Operational readiness scenarios

> CHESS users will be able to determine which functions are required to be tested based on their CHESS user type(s) and operating model as outlined in the CHESS User by Function table

> The operational readiness scenarios provided to users will similarly be based on the user type and will contain scenarios to test the relevant features for each function as outlined in the CHESS User by Feature, Message table

> CHESS users can also leverage the CHESS replacement Operational Procedures & Guidelines to support their operational readiness

> ASX encourages CHESS users to review these documents to help in defining your own CHESS user test plans for ITE2

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Operational Readiness Scenarios
How to read the operational readiness scenarios

Content	Explanation
Function List	Identifies the CHESS user type and provides links to each support function, with sub-functions listed where appropriate.
Header	Provides a description of the scenarios, the CHESS user type the scenario is applicable to, links to technical documentation, the high-level ISO 20022 message related to the scenario, and the scenarios where ASX will be required to assist in performing the function.
Scenario Code	Identifies the test case number. The scenario code will contain representation of the CHESS user type, function and a sequence number for each script.
Scenario Description	Identifies the business function the test relates to.
Scenario Action	Conditions required for a successful scenario.
Scenario Pre-condition	Identifies the required pre-condition that must be met prior to the conducting the test.
Test Tool	Provides information on the test tooling available to CHESS users to perform isolated testing.
Considerations	Identifies notes or hints for successful testing and turnaround time of events based on the event schedule. For example, whether certain business rules apply that need to be taken into consideration when performing the test or when updates are effected overnight.
ISO or FIX Messaging	Provides links to specific ISO 20022 or FIX messaging specifications and identifies the sender and recipient of the workflow.
Evidence Required	Identifies the specific evidence required to be provided to ASX to investigate the successful/unsuccessful completion of the test.

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Operational Readiness Scenarios

Examples

Scenario Code	Scenario Description	Scenario Action	Scenario Pre-condition	Test Tool	Considerations	ISO20022 Messaging			Evidence Required
						Sender	Recipient	Message Reference	
IR-HT-01	Transfer - Participant (CHESS) to Issuer Sponsored - New Security holder Reference Number (SRN)	- Create a new Security holder Reference Number (SRN) - Confirm the new SRN holding balance	1) SRN Holder does not exist with the Issuer (Registry) 2) Controlling Participant has initiated a Account Creation Request to create a valid registration identifier (RGID) 3) Controlling Participant has initiated a transfer request	Transfer and Conversions (highlighted)		Participant	CSP	Account Creation Request (acct_001)	Supply the Transaction ID and Date.
						Participant	CSP	Transfer / Conversion Request (hold_211)	
						CSP	Issuer (Registry)	Account Notification (acct_002)	
						CSP	Issuer (Registry)	Transfer Confirmation (hold_216)	

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Operational Readiness Scenarios

Examples

Scenario Code	Scenario Description	Scenario Action	Scenario Pre-condition	Test Tool	Considerations	ISO20022 Messaging			Evidence Required
						Sender	**Recipient**	**Message Reference**	
IR-HT-02	Transfer - Participant (CHESS) to Issuer Sponsored - Existing SRN - Units increased	Confirm the SRN holding balance has increased	1) SRN Holder does exist with the Issuer (Registry) 2) Account (HIN) is in a different name to the SRN Holder. 3) Controlling Participant has initiated a transfer request.	Transfer and Conversions (highlighted)	A single RGID can be reused and is valid for the current business day. RGID will be housekept at EOD.	Participant	CSP	Account Creation Request (acct_001)	Supply the Transaction ID and Date.
						Participant	CSP	Transfer / Conversion Request (hold_211)	
						CSP	Issuer (Registry)	Account Notification (acct_002)	
						CSP	Issuer (Registry)	Transfer Confirmation (hold_216)	

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Topics for discussion at future working groups

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Q&A

Next steps

Review and feedback:

> Slides and Q&A will be published on the CHESS Replacement webpage

> Provide feedback or additional questions by contacting **CHESSReplacement@asx.com.au** – use "Share Registries – WG" as the subject heading by 16 March 2022

Next Share Registry Readiness meeting:

> Target date: Wednesday 6 April 2022

> Topics to include cutover & migration considerations

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Thank you.

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