CHESS Replacement Project

Connectivity & Integration Working Group

13 May 2020

ASX

Important Information – Competition Law Policy

Working group members are reminded to have regard to their obligations under competition law. In particular, please note recent 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.

Agenda

- CDE 7
- Connectivity
- ISO 20022 XML Message Signing
- ITE1
- Ledger API – Authorisation Tokens
- Q&A

CDE 7 Update

CDE 7 – Release

The seventh release of code drop is targeted for end of May 2020

CDE 7 - Release	
Functional	**Details**
Account Management	• Lock/Unlock • Cancellation
Batch Settlement	• Settlement Failure Levies
FIX Messaging	• Introduction of types ‘W’ & ‘AU’ for EOD prices
Non-Functional	
Ledger API	• Mutual TLS for Ledger API

* Subsequent code drop release dates will be published in the June consultation paper

CDE 7 – New Testing Features

Static Configuration

- New Corporate Event IDs

Self-Serve Tool

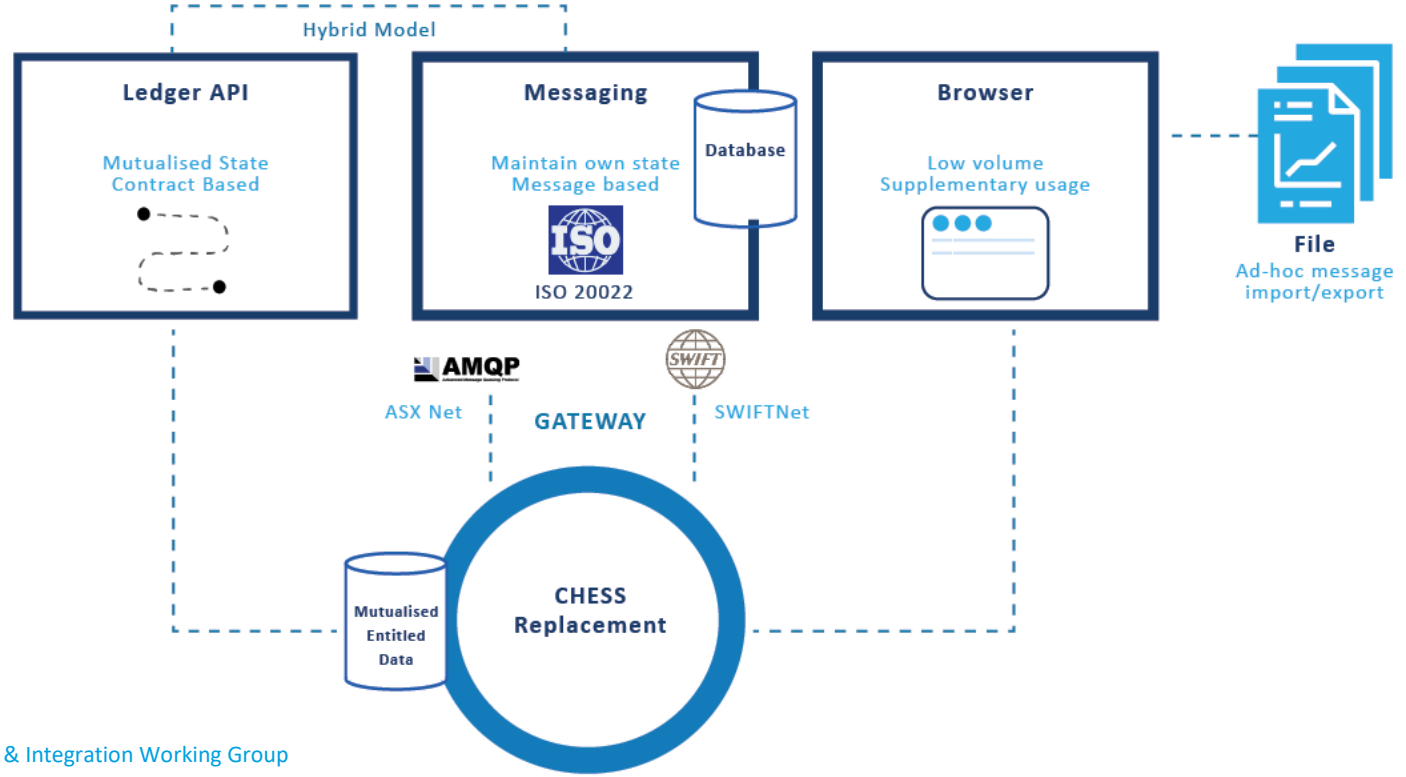
- File upload allowing Share Registries to lock accounts as if they were participants.
- Self-serve tool for CMM & ETO Removal, Release & transfer request.

Auto-injectors

- Auto Injector for Bid finalisation of takeover & buybacks

Connectivity Updates

Connectivity Overview



ISO 20022 XML Message Signing

CDE 7 - ISO Message Signing

ISO Message signing

- ISO 20022 XML message signing applicable to AMQP channel only
- ISO signing used by the receiver to validate a message is authentic and has integrity
- *Egress* messages (CHESS to Client) automatically signed from CDE 6
- *Ingress* messages (Client to CHESS) signatures are optional and clients can opt-in from CDE 6
- Technical document updates (available 14/05/20) based on client feedback
- Software providers will need to enter ITE1 with ISO signing enabled on ingress messages
- ASX do not validate signatures on ingress message in CDE until requested

ISO Signature – Development Approach

ISO Signature - Development	
Step	**Description**
Design	ASX technical documentation provides step by step guide on how to create and verify a signature Link to the underlying ISO BAH document contained on ASX website Standard cryptography libraries allow for signature creation and validation as per specification
Verify	Software developers can take a sample egress message from CDE (or use on-line examples) Using the Signature Validation Guide, create digest values (BAH, Document and KeyInfo) and compare them to the content of the message As a final step create and validate the signature
Create	Implement message signing into your application Once signed use the 'verify' steps above to prove your message can be verified
Enable	Email a request to cts@asx.com.au and request ISO signing to be enable in your environment Once enabled any ingress messages will be verified

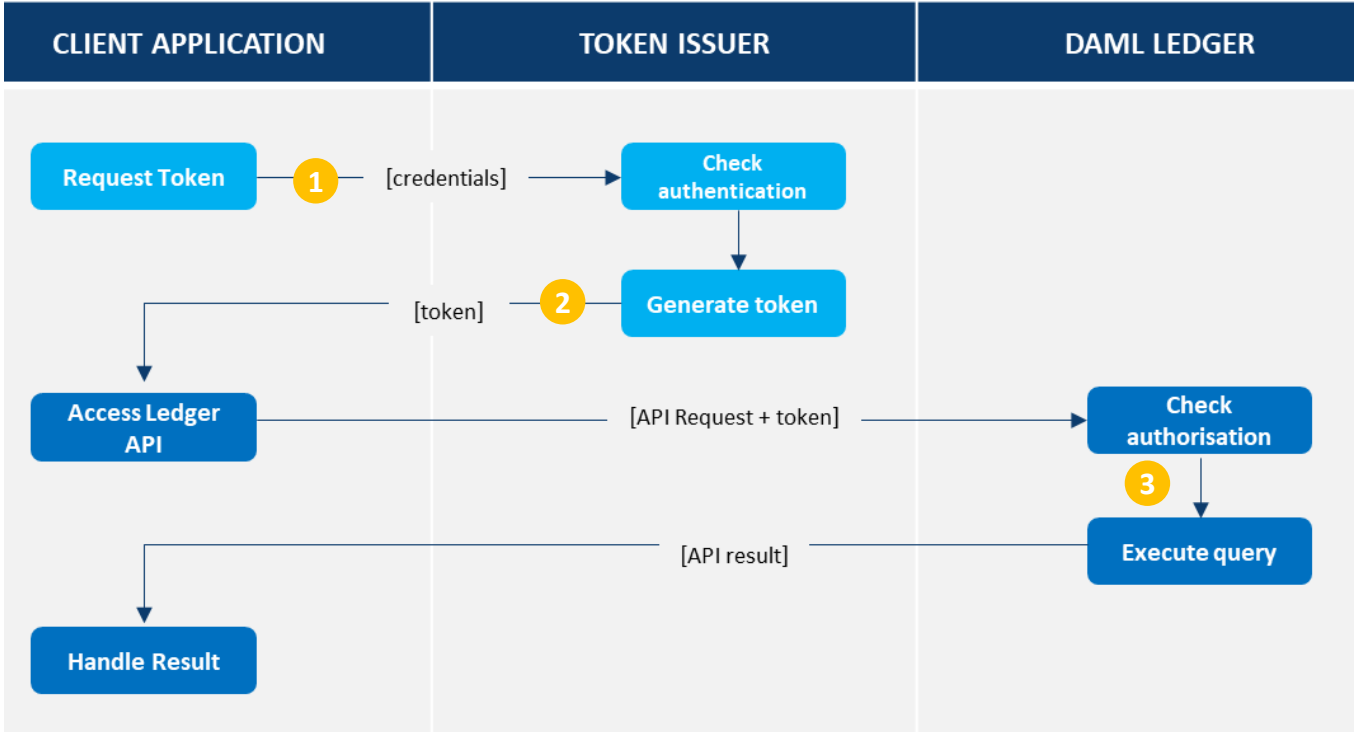
Ledger API Updates

Ledger API – Authorisation Tokens

- ITE1 is a single environment and requires all access to be authenticated and authorised
- To meet this requirement, Ledger API authentication and authorisation will be introduced in ITE1
- Ledger API users will be required to securely request an authorisation token using a standards based API
- The authorisation token
  - is signed by the ASX
  - describes the DAML party level rights
  - can be inspected by the user (not opaque)
  - must be used in all Ledger API calls

Ledger API - Authorisation Tokens

1. Application makes a token request (user ID and secret supplied by CTS)
2. If successfully authenticated, ASX issues a standards based authorisation token
3. DAML ledger server will verify the token includes the required access rights for the requested command



https://docs.daml.com/app-dev/authentication.html#authentication

Ledger API – Authorisation Tokens

- Mandatory usage of authorisation tokens from the opening of ITE1
- The DAML ledger supports the OAuth 2.0 standard https://oauth.net/2/
- Tokens have a time-based expiry, applications will need to request a new token prior to the expiry of any current tokens (based on expiry within the current token)
- ASX will publish technical documentation in June (current documentation available on DAML.com https://docs.daml.com/app-dev/authentication.html#authentication)

ITE1 Updates

ITE1 - Software providers – Key Points

Industry Test Environment (ITE1) consists of two environments

- ITE1 – Software providers (vendors and those developing in-house) (available July'20)
- ITE2 – Production Users Test Environment (targeted October'20)

ITE1 – Software Providers

- Single integrated development environment
- All software providers will be issued a new CHESS test kit
  - Dedicated security codes (non-production)
  - Multiple UICs (covering all CHESS Roles)
- CDE will be decommissioned later in the year

ITE1 - Software providers – Key Points

Connectivity Notes

- **Ledger API**
  - Applications will be required to request and use Authorisation Tokens
- **AMQP**
  - Applications must sign ingress message
  - Separate certificates for TLS & ISO signing (vs. shared TLS/ISO certificate in CDE)
  - 2 queues by default (a 3rd for report request responses can be enabled)
- **SWIFT**
  - Existing users can connect via the existing Closed User Group (CUG)
- **CHESS User Interface**
  - Available from the opening of ITE1
- **FIX Gateway**
  - Provided for AMO testing

Industry Test Environment - Forms

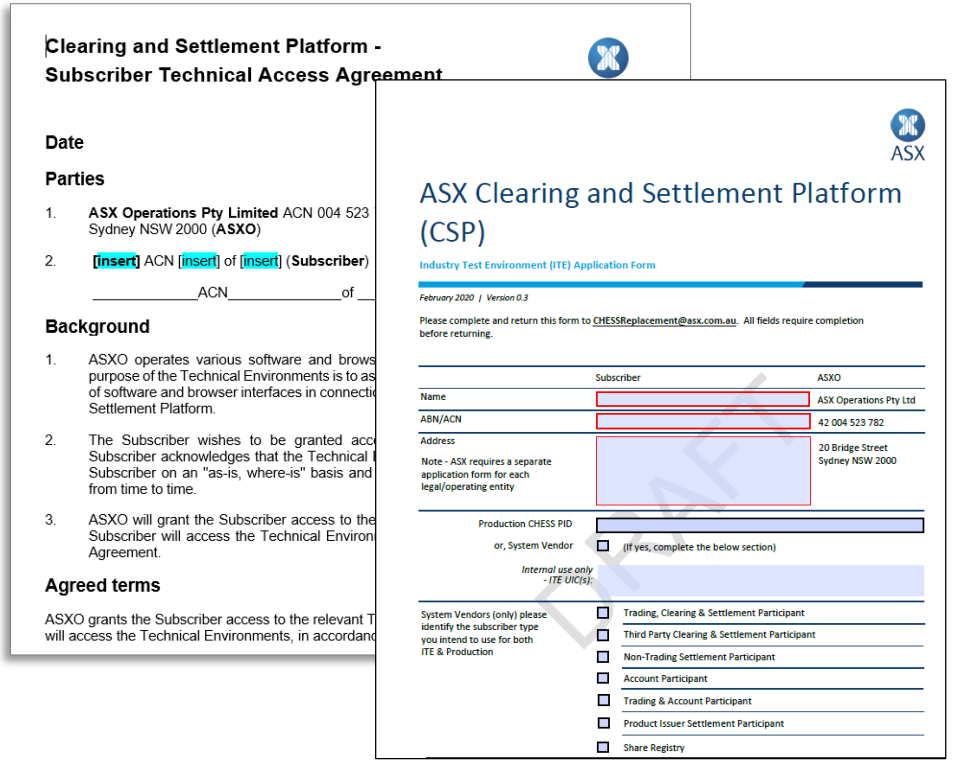
Forms

- Subscriber Technical Access agreement
- ITE Application including SWIFTNet Appendix

Please return both these completed forms to:

CHESSReplacement@asx.com.au

- For those organisation that have already submitted your application, network connectivity will commence from w/c 18 May
- Recommendation is for developers to transition from CDE to ITE1 from July (CDE will be decommissioned later in the year)



Clearing and Settlement Platform -
Subscriber Technical Access Agreement

Date

Parties

1. **ASX Operations Pty Limited** ACN 004 523
Sydney NSW 2000 (**ASXO**)

2. **[insert]** ACN [insert] of [insert] (**Subscriber**)

_____ACN_____of

Background

1. ASXO operates various software and brows
purpose of the Technical Environments is to as
of software and browser interfaces in connecti
Settlement Platform.

2. The Subscriber wishes to be granted acc
Subscriber acknowledges that the Technical
Subscriber on an "as-is, where-is" basis and
from time to time.

3. ASXO will grant the Subscriber access to the
Subscriber will access the Technical Environ
Agreement.

Agreed terms

ASXO grants the Subscriber access to the relevant T
will access the Technical Environments, in accordanc

ASX

ASX Clearing and Settlement Platform (CSP)

Industry Test Environment (ITE) Application Form

February 2020 | Version 0.3

Please complete and return this form to CHESSReplacement@asx.com.au. All fields require completion before returning.

	Subscriber	ASXO
Name		ASX Operations Pty Ltd
ABN/ACN		42 004 523 782
Address Note - ASX requires a separate application form for each legal/operating entity		20 Bridge Street Sydney NSW 2000
Production CHESS PID		
or, System Vendor	☐ (If yes, complete the below section)	
Internal use only - ITE UIC(s):		
System Vendors (only) please identify the subscriber type you intend to use for both ITE & Production	☐ Trading, Clearing & Settlement Participant ☐ Third Party Clearing & Settlement Participant ☐ Non-Trading Settlement Participant ☐ Account Participant ☐ Trading & Account Participant ☐ Product Issuer Settlement Participant ☐ Share Registry	

DRAFT

Questions

Next Working Groups

2020

27 May 2020

- Implementation & Transition Webinar – ITE1

Thank you

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