CHESS Replacement Project

**Connectivity & Integration
Working Group**

3rd April 2019

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.
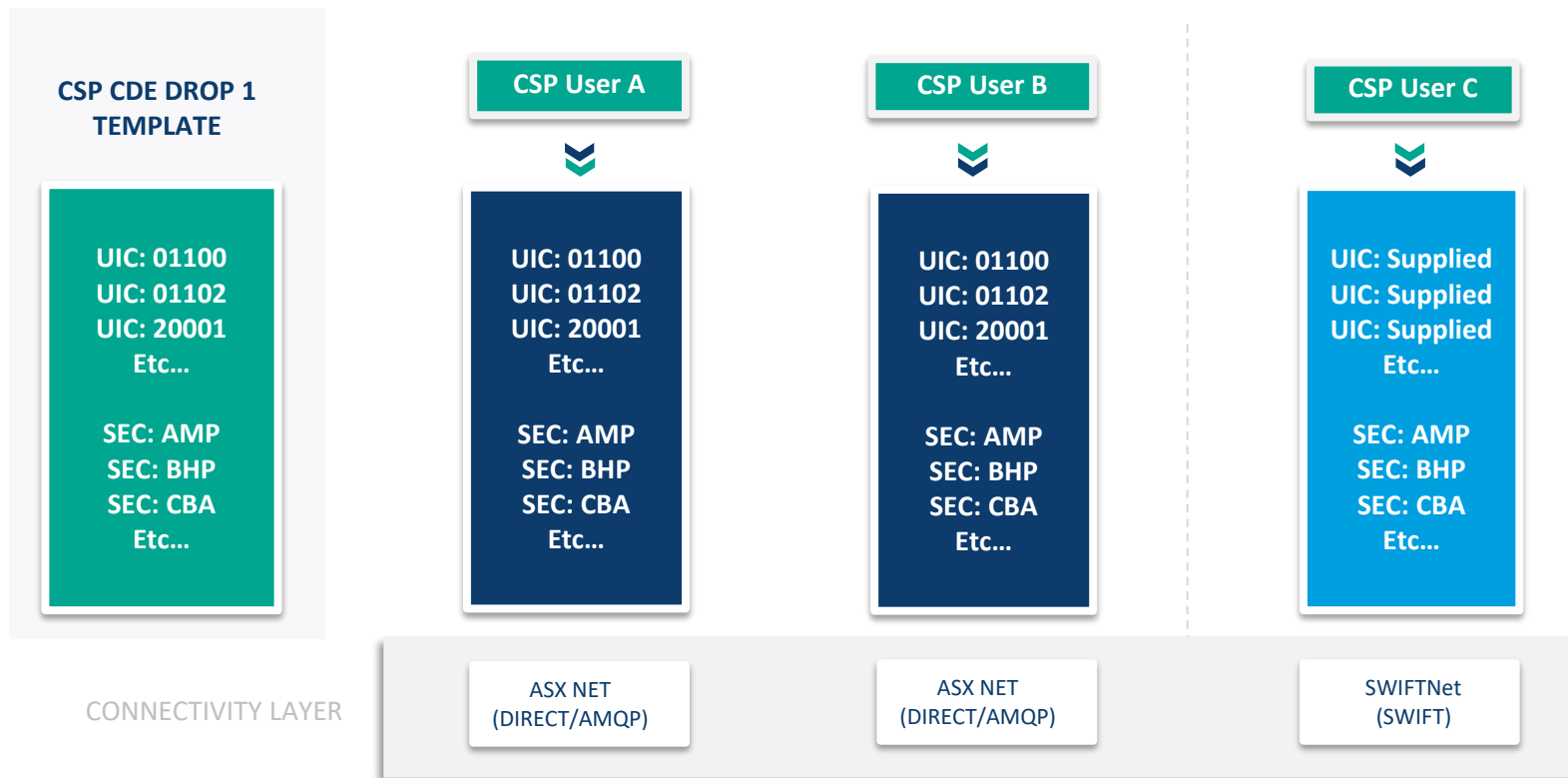
ASX

Agenda

> CDE Update

> Technical Documentation Update

> Connectivity Update

> Accreditation Introduction

> Next Steps

ASX

CDE Update

CDE – Recap

- Working group from the 6th March'19 provided an overview of the initial CDE environment.

- Key topics covered;

  - CDE a low volume test environment for functional development and testing (non-functional testing should occur in IWT).

  - Functionality progressively deployed by ASX every 2 months.

  - All key connectivity models supported from day 1 (Direct Ledger, AMQP, SWIFTNet)

  - Each organisation is allocated their own dedicated test environment.

  - CDE seeded with a range of party identifiers allowing clients to self serve testing.

  - SWIFT Readiness Portal used to validate schema off-line before moving to on-line testing.

  - Application process (forms available from the technical documentation website).

ASX

CDE Overview - Architecture

CSP CDE DROP 1 TEMPLATE

UIC: 01100
UIC: 01102
UIC: 20001
Etc...

SEC: AMP
SEC: BHP
SEC: CBA
Etc...

CSP User A

UIC: 01100
UIC: 01102
UIC: 20001
Etc...

SEC: AMP
SEC: BHP
SEC: CBA
Etc...

CSP User B

UIC: 01100
UIC: 01102
UIC: 20001
Etc...

SEC: AMP
SEC: BHP
SEC: CBA
Etc...

CSP User C

UIC: Supplied
UIC: Supplied
UIC: Supplied
Etc...

SEC: AMP
SEC: BHP
SEC: CBA
Etc...

CONNECTIVITY LAYER

ASX NET
(DIRECT/AMQP)

ASX NET
(DIRECT/AMQP)

SWIFTNet
(SWIFT)

ASX

CDE – Update

- ASX have completed internal infrastructure build to support CDE and deployment of environments.

- Completed external connectivity and functional tests for both Direct and AMQP external to the ASX firewall to mirror client connectivity.

- ASX SWIFT infrastructure used to send/receive test messages within the CSP Closed User Group (CUG) - sending message to/from the ASX Distinguished Name.

- Currently undergoing functional testing of the CDE1 release.

- ASX have received a number of application forms for CDE1 covering all key connectivity options (Countersigned forms will be returned to clients shortly)

- ASX Technical Account Management will call to discuss/configure ASX Net or IPSec VPN configuration and BDM's will contact once the environment is available.

ASX

CDE – Technical Documentation Update

- ASX released the next tranche of documentation at the end of March.

- Release 2 introduces new functions – Market Trade & Payment Facilities for Batch Settlement

- Release 2 also includes updates to the initial Dec'18 documentation, this is based on queries from the market – clarifications, corrections, updates.

- March 2019 Release Notes – calls out how we will manage 'versions' in our online portal

- ASX have created a 'point in time' PDF Archive, this can be under Release Notes – Documentation Archive.

CDE Function Availability

Function	Drop 1 (April'19)	Drop 2 (June'19)	Drop 3 (Aug'19)
Unilateral Demand Transfers	X	X	X
Bilateral Demand Transfers	X	X	X
Bilateral Demand Settlement Instructions	X	X	X
Settlement Locks	X	X	X
Payment Facilities		X	X
Market Trade (Capture, Registration, Novation)		X	X
Netting			X
CHESS to / from Issuer Sponsored Transfer			X
CHESS to / from Issuer Sponsored Conversion			X

CDE 2 – Trade Capture / Trade Notification

> ASX developing a test tool to upload FIX instructions.

> Test trades uploaded into CDE2 to simulate trade capture and generation of sett_101 instructions to clearing & settlement participants.

> ASX looking to provide a REST API to provide clearing and settlement participants self service testing (independent of client connectivity type)

CDE – Questions?

ASX

Connectivity Options
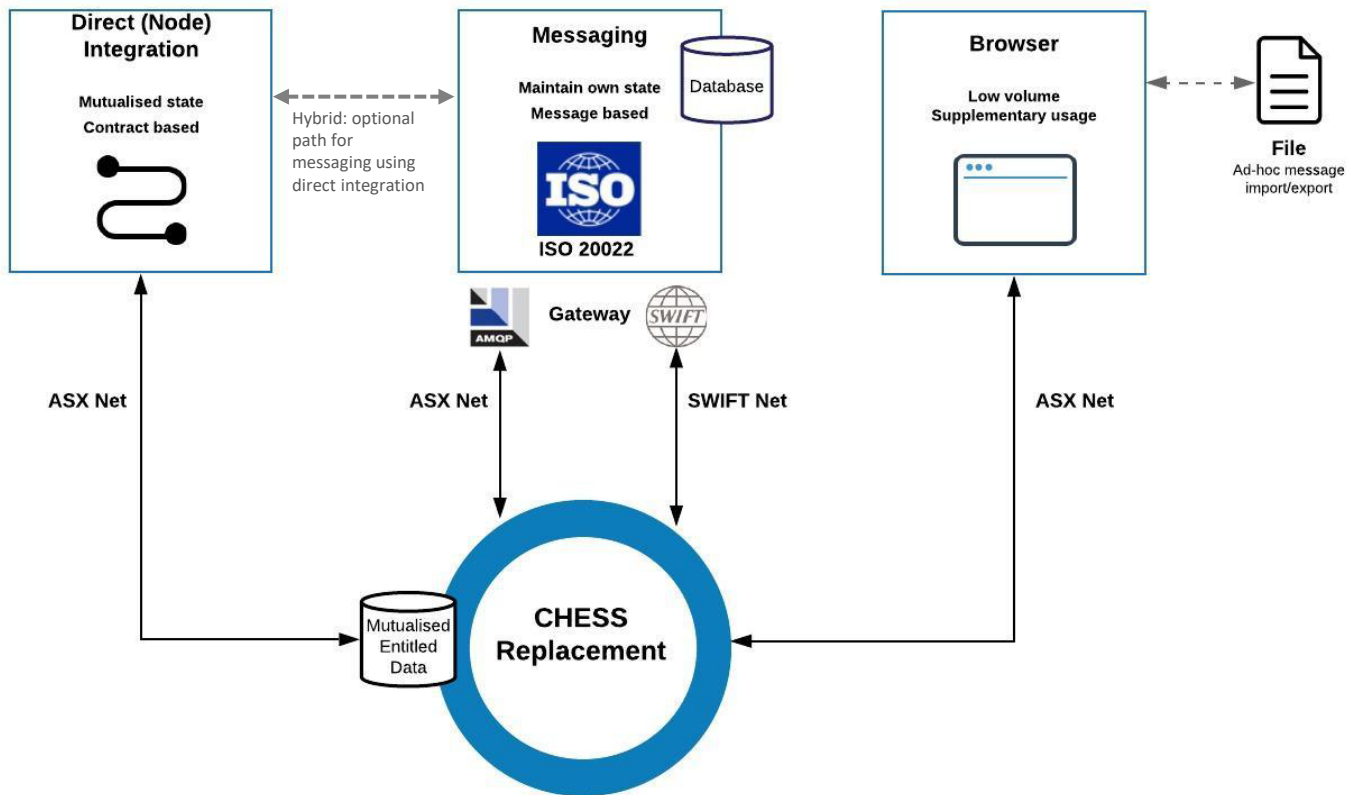
Connectivity Updates

- Direct Ledger

  - New JAVA classes to support the development of ISO message constructs in DAML.

  - JAVA classes deployed to participants using sFTP server.

  - Ledger API documentation providing details of using the JAVA classes will be updated in April and prior to release of CDE1

- AMQP

  - Continuing analysis of enterprise design – due Q3 '19

- Secure Browser

  - ASX will provide C&I working group a demonstration when the solution is sufficiently mature, due Q4 '19

ASX

Accreditation

Accreditation and Operational Readiness

SYSTEM VENDORS & IN-HOUE SOLUTIONS

Connectivity Accreditation

> Successfully connect, handle failure scenarios and achieve required performance for chosen connectivity channel(s)

Functional System Accreditation

> Successfully test transaction processing for target stakeholder group

SYSTEM USERS

Operational Readiness

Provision of attestation which includes but not limited to:

> updates to processes and procedures

> staff training and knowledge shared

> participation in IWT, migration rehearsals and go-live readiness

ASX

General Principles

In order to provide a robust and efficient accreditation process in order to maintain high standards of system integrity:

> Vendors and in-house builds must be accredited for their systems

 - Connectivity Accreditation

 - Functional System Accreditation

> ASX to provide sufficient test environments, turn around processors and support

> Successfully accredited vendor products publically available on ASX Website

> The accreditation process serves as risk mitigation and should not be onerous for vendors or the ASX but must ensure system integrity

ASX

Connectivity Accreditation - Examples

Session Management	Failure Management	Performance Management
• Successful logon • ASX logoff – originated by CHESS • Successful logoff – originated by user	• Demonstration of message resilience and no messages lost. • Successful connection / failover via DR	• Performance testing based on stakeholder type

- Interface systems must pass basic connectivity and communication tests.
- Each connectivity type needs to be accredited separately (SWIFT, AMQP, Direct, FIX)
- Browser will not require client accreditation

ASX

Functional System Accreditation

Functional system accreditation tests API or messages in order to prove the set of transactions required to support specific workflows.

- ASX technical documentation defines ASX Workflows.

- Each role has a defined list of supported ASX Workflows (for example a Clearing and Settlement Participant supports, Account Management, Holding Management and Settlements etc.)

- System vendors will be required to accredit for each role the associated workflows as well as unsolicited messages.

Functional System Accreditation

CSP Role
- Trading, Clearing and Settlement Participant

ASX Workflow
- Trade Capture Process Flow   (EIS164/116)

Message Reference
- Trade Confirmation Notification (sett_101/104)

Message Usage Guidelines
- Business Values and Rules
- MyStandards

ASX

Functional System Accreditation (cont.)

CSP Role
- Trading, Clearing and Settlement Participant

ASX Workflow

Unilateral Demand Transfer (EIS001)	Unilateral Demand Transfer (Group Participation) (EIS003)	Bilateral Demand Transfer (EIS005)

Message Reference
- Demand Transfer Request (hold_201)

Message Usage Guidelines
- Business Values and Rules
- MyStandards

Technical Documentation – Function Specification

ASX CHESS Replacement Documentation

Functional Specification

- Accounts
- Market Trade
- Holding Transfers
  - Holding Transfer Overview
  - Holding Transfer Changes
  - Common Business Principles
  - Unilateral Demand Transfer Overview
    - Unilateral Demand Transfer Process
  - Bilateral Demand Transfer Overview
  - Unilateral Settlement Instruction Overview
  - Bilateral Settlement Instruction Overview
  - Bilateral Demand Settlement Instruction Overview
- Common Business Values
- Settlement Locks
- Payment Facilities

MyStandards
Standards made simple | Search the platform

ASX CHESS Replacement CLOSED
ASX
ASX CHESS Replacement

Collections | Members

> ASX_AU_CHS_rel1_hold

Unilateral Demand Transfer Process

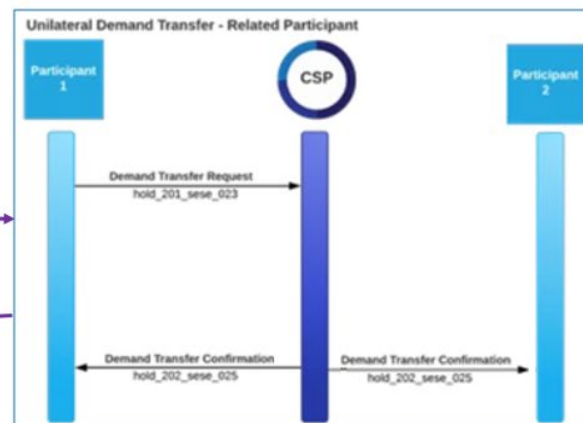| Step	Description	Party	Recipient	Message Reference
1	The Participant populates the Demand Transfer Request with the following: 1. Mandatory ISO 20022 elements defined in the Message Usage Guidelines; 2. Optional ISO 20022 elements defined in the Message Usage Guidelines where applicable to their transaction; 3. Related ASX business values and rules applicable to their transaction. The Participant sends the Demand Transfer Request to the CSP.	Sender Participant	CSP	Demand Transfer Request (hold_201)
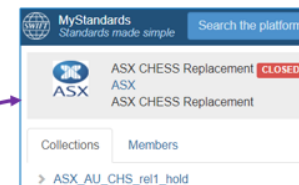
Business Values and Rules
Unilateral Demand Transfer Request

ASX Element Name	ISO Message Element	Condition	Type	Guidelines
Sender Participant	BAH/From	Mandatory	UIC or BIC	The Participant submitting the request, who has appropriate permissions.
Transaction ID	Transaction Identification	Mandatory	Text	The Transaction ID is a unique identifier for the Demand Transfer Request. Further details of Transaction Identifications are detailed here.
...	...	...	...	...

ASX

Technical Documentation - Messaging

ASX CHESS Replacement Documentation

Messaging

- MC - List of messages
- MC - Account Creation
- MC - Account Modification
- MC - Unilateral Demand Transfer
- MC - Bilateral Demand Transfers
- MC - Settlement Locks
- MC - Unilateral Settlement Instructions
- MC - Bilateral Settlement Instruction
- MC - Bilateral Demand Settlement Instruction
- MC - Payment Facilities
- MC - Market Trade

Unilateral Demand Transfer - Related Participant

Participant 1 — CSP — Participant 2

Demand Transfer Request
hold_201 sese_023

Demand Transfer Confirmation
hold_202 sese_025

Demand Transfer Confirmation
hold_202 sese_025

Demand Transfer Request

EIS	Message ID	ISO 20022 base message	Message Type	Message Description	Sender	Receiver	Pre-requisites	Requirements that include this message
001 003 005	hold_201	sese_023	Request	A submission from the Sender Participant to the CSP requesting a Demand Transfer.	Sender Participant	CSP	None	• Unilateral Demand Transfer • Bilateral Demand Transfer

Demand Transfer Confirmation

EIS	Message ID	ISO 20022 base message	Message Type	Message Description	Sender	Receiver	Pre-requisites	Requirements that include this message
002 004 006 010	hold_202	sese_025	Confirmation	An update from the CSP to the Participant advising a Demand Transfer Request has been effected.	CSP	Sender Participant	Receipt of a hold.201 Demand Transfer Request	• Unilateral Demand Transfer • Bilateral Demand Transfer

ASX

Next Steps

ASX have an internal working group to review and define accreditation.

Current review topics include;

- Accreditation by role (Clearing and Settlement Participants, Payment Providers, Share Registries, AMO's, PISPs etc)
- Multi-channel support
- Opt out messages
- Single gateway / multi-host system
- Optional tags within workflow (consideration to inbound, outbound, transfer)

ASX requesting input from C&I Working Group members prior 30th April.

ASX

Q&A

ASX

Closing

> Forward calendar of working group meetings will be updated on CHESS Replacement web page

> We will follow up on all unanswered questions from today's session

> Contact CHESSReplacement@asx.com.au with any additional questions matters

> Next working group meeting 1 May 2019:

> > Direct Connectivity – Ledger API, ISO to DAML, ODS Update

ASX

Thank you.

ASX

Disclaimer

This document provides general information only and reflects matters put forward for discussion at a point in time. You should obtain independence advice before making any decisions. ASX Limited (ABN 98 008 624 691) and its related bodies corporate ("ASX") makes no representation or warranty with respect to the accuracy, reliability or completeness of the information. To the extent permitted by law, ASX and its employees, officers and contractors shall not be liable for any loss or damage arising in any way (including by way of negligence) from or in connection with any information provided or omitted or from anyone acting or refraining to act in reliance on this information.

ASX