ASX

Special Report - Response to recommendations made in the CHESS Program External Review

June 2023

Contents

1. Executive Summary

1.1. Background and purpose

ASX has been undertaking a technology modernisation programme over a number of years.

This work includes a strong focus on continuous improvement, including uplifting the delivery capabilities of the organisation, to improve and scale many aspects of delivery such as quality engineering and project governance.

Since 2019, there have been an increasing number of system changes being undertaken by ASX, and at the same time a pattern of decreasing customer-impacting incidents. This is a positive trend. However, as an operator of critical market infrastructure, change programmes at ASX often impact multiple stakeholders across the financial markets ecosystem.

With a growing programme of change, which in itself comes with risks, it is important that ASX continues to focus on best practice in this area. Delivery uplift therefore continues to be an area of focus and continuous improvement for ASX, including both ASX identified improvement areas and where appropriate, external expert input.

In August 2022, in response to an escalating series of delays to the CHESS Replacement Project, ASX commissioned Accenture to undertake an external review of aspects of the project, focusing on a number of core issues which had been identified. Following their review Accenture made a number of recommendations, all of which ASX accepted and is working to implement. We anticipate that these changes will be helpful in de-risking project delivery. Accenture's report was published on 17 November 2022 (**External Review Report**).

This report details ASX's response to the recommendations from the External Review Report. In doing so, this report responds to sections 2(1) and (2) of the notices issued to ASX Limited, ASX Clear Pty Limited, and ASX Settlement Pty Limited (together, **ASX**) on 21 February 2023 by the Australian Securities and Investments Commission (**ASIC**) (the **Notices**).

ASIC Notices (extract):

2. Special Report on response to recommendations made in the CHESS Replacement Program External Review

> *(1) The Licensee must, by 30 June 2023 give a report to ASIC detailing the Licensee's response plan to the findings and recommendations of the CHESS Replacement Program External Review (the **Special report**).*

> *(2) For the avoidance of doubt and where appropriate, the Special Report must detail implementation plans and specify the date by which remedial actions will be taken.*

1.2. Summary of the Special Report

ASX's response to the Notices is made up of this report, inclusive of a response plan (**the Plan**) to address the recommendations in the External Review Report.

ASX accepts all 45 of the External Review Report findings and recommendations, and has determined 93 actions ASX will take in response across 12 focus areas highlighted in the External Review Report. These actions will enable uplift in framework and capabilities and lead to ASX achieving the following business outcomes:

- De-risk project delivery and provide greater assurance that project outcomes will be achieved.

- Improve capabilities that contribute to project delivery.

- Enhance project outcomes for stakeholders.

- Provide for greater detail and traceability in project planning, in a multi-vendor environment.

- Better alignment of ASX and vendor ways of working.

- A cultural shift in delivery to focus on shared outcomes.

ASX has established the Delivery Excellence 2 Project (**DE2**) to execute the actions responding to the External Review Report.

ASX's actions to address the recommendations in the External Review Report have commenced and implementation will occur in a staged way through to June 2024. Each of the responses to the recommendations in the External Review Report will be observed, inspected, and tested by Ernst & Young (**EY**).

The key sections of this report are as follows:

1. **Executive Summary.**

2. **Background to the External Review Report** – an explanation of the circumstances leading to the preparation by Accenture of the External Review Report.

3. **Overview of the Delivery Excellence 2 Project** – an overview of the project established by ASX to address the recommendations, and the delivery approach that ASX will undertake to close the recommendations.

4. **The Plan to Address the External Review Report Recommendations** – sets out information related to ASX's response plan to address the recommendations, outlines the actions to be taken, timeframes, resources and roles and responsibilities. Furthermore, it provides an explanation of how ASX has developed the Plan in the period since receiving the External Review Report. The Plan is set out in **Attachment 1**.

5. **Project Governance** - the project-specific governance arrangements that have been put in place.

6. **EY Audit Review** – the process of review that has been agreed with EY.

7. **The Response Plan.**

The achievement of these actions and the completion of ASX's DE2 Project will lead to an improvement in ASX's project practices and enhance ASX's arrangements for ensuring predictable change, high quality delivery and optimised velocity.

1.3.   Conclusion

This report describes ASX's plan to address all 45 of the recommendations provided in the External Review Report that ASX published on 17 November 2022 and, has been developed in response to the ASIC Notices dated 21 February 2023.

ASX considers that this report:

1. Represents a complete response to sections 2(1) and (2) of the Notices.

2. Sets out a detailed and comprehensive plan to address all of the 45 recommendations in the External Review Report. ASX is committed to the completion of all actions outlined in the Plan to address the recommendations by end of June 2024. The actions will enable ASX to de-risk program delivery by uplifting frameworks and capabilities.

3. Sets out robust arrangements to ensure the Plan is executed well.

4. Sets out a well-considered process by which each of the actions executed against the 45 recommendations will be independently assessed for adequacy of closure.

ASX has commenced the work that will be required to complete and close the recommendations in the External Review Report. At the time of this report, ASX is on track to deliver the first 10 recommendations as planned in September 2023. The execution of the Plan will be reviewed by EY in a staged approach in the period from September 2023 through to June 2024.

2. Background to the CHESS Replacement Project

The Clearing House Electronic Sub-register System (**CHESS**) is the system used by ASX Clear and ASX Settlement to facilitate clearing, settlement and other post-trade services for the Australian cash equities market. It is a critical piece of market infrastructure, first put in place by ASX in 1994.

ASX first began exploring options to replace the CHESS system in 2015 (**CHESS Replacement Project**), and at this time distributed ledger technology (**DLT**) was emerging as a credible platform solution that could provide the kind of innovation and longevity which allowed CHESS to be world leading when it was first established.

In January 2016, ASX selected Digital Asset (**DA**) as a technology partner to develop, test and demonstrate a working prototype of a DLT-based post-trade platform.

ASX conducted multiple industry consultations as part of the CHESS replacement project. In September 2018, following industry feedback, ASX confirmed it would target a go-live date of March or April 2021 for the replacement system.

In March 2020 ASX witnessed an unprecedented increase in trading volumes, sparked by pandemic market trading volatility. This heightened trading volume, along with feedback from CHESS users that Covid-19 would likely disrupt readiness and testing activity, led ASX to announce that it would seek feedback on pushing out the go-live date. ASX commenced a formal consultation on a new proposed go-live date of April 2022 and by 28 October 2020 it was confirmed ASX would target a new go-live date of April 2023.

In 2022 the CHESS replacement project faced a series of escalating delays. On 28 March 2022, ASX advised the market about changes to the CHESS application software release schedule and indicated there was a strong likelihood that the April 2023 go-live date would change, and on 11 May 2023 ASX confirmed that the April 2023 go-live date was no longer viable.

On 3 August 2022 ASX released a market announcement confirming Accenture had been appointed to conduct an external review to assess the remaining work required to complete the delivery of the CHESS application and to identify necessary actions for ASX to communicate a revised timetable to finish the project.

On 17 November 2022, ASX published the report provided by Accenture and announced that it had paused all activities on the CHESS Replacement Project while it revisited the solution design. At the same time, it derecognised the CHESS replacement software, and appointed a Project Director to oversee the next phase of the CHESS Replacement Project.

The External Review Report contained 45 recommendations for ASX to implement in order to deliver the CHESS Replacement Project in a way that aligned with its objectives.

On 17 November 2022, the RBA and ASIC issued a joint letter of expectations in relation to the current CHESS system and the CHESS Replacement project (**Joint Letter of Expectations**). This letter indicated that both regulators acknowledged the publication of the External Review Report and that they intended to ensure that ASX developed a robust response plan to the findings and key recommendations of that report.

On 15 December 2022, the RBA issued a further letter of expectations in addition to the Joint Letter of Expectations. In this letter, the RBA indicated that it expected ASX to publicly respond to the recommendations in the External Review Report by 30 June 2023.

On 21 February 2023, ASIC issued Notices, requiring that ASX provide a report to ASIC detailing its response plan to the findings and recommendations of the External Review Report.

3. The Delivery Excellence 2 Project

3.1. DE2 Project Overview

ASX has established the DE2 project to respond to the findings and recommendations contained in the External Review Report. DE2 is part of a broader continuous improvement and transformation initiative.

The core objectives of Delivery Excellence are:

  (a) **predictable change** – standardised and well managed;

  (b) **high quality** – do it right the first time, safely; and

  (c) **optimised velocity** – the right balance of capacity and capability.

ASX has adopted a whole of enterprise approach to assessing the recommendations in the External Review Report. This means that, whilst the External Review Report included findings specifically related to the CHESS Replacement Project, where appropriate ASX is addressing the report's recommendations across ASX enterprise project portfolio. ASX has determined that of the 45 recommendations; 9 are applicable only to the CHESS Replacement project, with the other 36 recommendations being applicable to the whole of ASX enterprise project portfolio. Current and future projects will adopt and adhere to the 36 new or updated enterprise practices as the changes are added to ASX's frameworks.

DE2 is a multi-year project which commenced in November 2022, with work on a number of the recommendations from the External Review Report already underway. DE2 is a key organisational priority for ASX and in undertaking DE2, ASX has committed to investing in the resources and capabilities required to ensure ASX achieves the projects core objectives.

As part of its delivery approach ASX plans to demonstrate the launch or uplift of a standard or practice and its subsequent adoption and adherence throughout ASX where appropriate. The launch will be the point in time where ASX places into the production environment a standard or practice and includes the change management activities that supports awareness and readiness for affected resources. Following launch, adoption will be supported by the DE2 project, working with capability practices to assist projects with understanding and acceptance of the impact of change and the implementation of the change into a project. Adherence will be demonstrated via examples of a project or projects, implementing the change that ASX has launched.

ASX will engage EY, as an independent expert, to review the closure of the recommendations (refer to section 6 of this report for further details). It is expected that through EY performing this independent review, ASX will be able to demonstrate successful enhancement to existing, or the introduction of new, ways of working into ASX project delivery capabilities and systems.

ASX will engage transparently and constructively with ASIC, the RBA, and EY during its execution of the DE2 project.

3.2. Project Resourcing

ASX has assessed the resources required to meet the Plan schedule set out in **Attachment 1**. In addition to the expertise that ASX already has in-house, ASX has determined that 16 additional resources will be required for the delivery of the project.

The majority of this recruitment has been completed, but there remain some additional resources to be added to the DE2 project team and ASX capability practices.

To assist with managing the changes ASX has developed a change strategy and approach and recruited 2 dedicated organisational change managers. The change managers will work alongside the capability practices to support the period prior to and post implementation of recommendation actions.

4. The Plan to Address the External Review Report Recommendations

The DE2 project team with ASX capability practices and the CHESS Replacement project has developed the Plan in order to address the recommendations in the External Review Report. The Plan sets out the timeline for the 93 ASX actions and the additional resources required to deliver the Plan. The Plan includes detailed task level activities to enable the effective delivery of the 93 ASX actions.

The schedule at **Attachment 1** sets out the following information with regard to ASX's plan:

- Each recommendation in the External Review Report.

- Each of the actions ASX will take to address the corresponding recommendation.

- The ASX due date for the completion of each recommendation and ASX action.

- Status update of the tasks that support the delivery of the ASX action.

- The key deliverable(s) associated with the ASX action.

As set out in **Attachment 1**, ASX's actions to address the recommendations in the External Review Report have commenced and implementation will occur in a staged way through to June 2024.

ASX developed the Plan through engaging internal subject matter experts and in collaboration with Accenture, as follows:

- ASX reviewed the recommendations in the External Review Report and planned initial actions with subject matter experts, in a way designed to address the recommendations in a manner that is fit for ASX strategic delivery objectives and business operations. This review involved Accenture providing clarification and context to explain their recommendations

- ASX reviewed and assessed the actions with capability leaders and capability/process subject matter experts

- The Plan was subject to a Design Adequacy Review, with the purpose of assessing whether the Plan had addressed the recommendations. ASX engaged Accenture to jointly review with ASX, the initial planned actions and timeframes

- During the course of action development and review, ASX was in parallel, creating the detailed task level activity required to deliver the actions

- The development of the Plan factored in that the CHESS Replacement Project was in the 'define and planning' project phase, and is planned to be in this delivery phase until September 2023. The CHESS Replacement Project is scheduled to move to the 'refine and implement' project phase in October 2023. October 2023 to June 2024 is therefore the period in which the CHESS Replacement Project is expected to be in a position to demonstrate the use of the uplifted standards and practices.

- Following the Design Adequacy Review, a comprehensive set of actions and tasks were finalised to respond to the recommendations from the External Review Report.

As at the date of this special report, ASX has commenced activity related to all 45 of the recommendations to deliver on the actions in the Plan.

The design of the Plan is informed by specific goals and outcomes developed by ASX, directly linked to satisfying the 12 focus areas highlighted in the External Review Report (set out in the table below).

External Review Report key recommendation area	Goal / Outcome
Simplification – reduce complexity to increase transparency and operate more effectively	
1. Solution Design Simplify the architecture, technology stack, options for functionality on-chain/off-chain	Solution Design for projects is aligned to the ASX Enterprise IT Strategy and Enterprise Architecture principles and is governed through the ASX Enterprise Architecture governance processes.

External Review Report key recommendation area	Goal / Outcome
2. Operating Model Clear roles & mandates to optimise, scale & better align to business objectives	The Operating Model includes clear roles and mandates that optimize operations, enables scalability, and aligns with the ASX strategic objectives.
3. Delivery Execution Data clarity, access & reporting to inform decisions, on cost, scope, time	Transparency between and across ASX and Vendors through improved and aligned reporting, estimation and change control.
4. Standardised Artefacts Inputs and outputs of processes driving outcomes must be consistent throughout delivery	Consistency and standardisation in deliverables to optimize delivery outcomes
Working Smarter – optimise technology, tools and capabilities	
5. Release Management Ephemeral, build once, branching and tagging, monitoring & logging	Effective delivery of software through a release management process which is aligned to the ASX Delivery Framework.
6. Collaboration Tools Standardised tools and processes for tracking, reporting, drive transparency	Standardised collaboration tools and processes for effective tracking, reporting, and transparency.
7. Delivery Agility Right size, cross-functional, dedicated owners, clear metrics to progress	Continuous pipeline integration practices that provide linkage between requirements, development and testing velocity - to deliver high quality software.
8. Quality Engineering Shift-left long tail of sequential control processes: "Definition of Ready", before feature development	The Quality Engineering framework is embedded in the mindset of the program, allowing us to test at the earliest opportunity in the delivery lifecycle.
Foundational – enable and 'stick to' the vision over time	
9. Ways of working Tech direction & change governance with a clear link to business objectives	Change management enables organizational change impact analysis and effective management of change across delivery, business, and technology operations.
10. Design Maturity Clarity to continuously improve and align to business objectives	Design focus practices in our delivery teams drive understanding and implementing of business objectives.
11. Product Ownership Clear lines of ownership for CHESS+ rollout functions / tech across ASX / vendors	End-to-end product, service and operational requirements are identified, prioritised and managed to support realisation of customer and business outcomes.

External Review Report key recommendation area	Goal / Outcome
12. Reporting	
Progress on waterfall targets, not leveraging agile metrics to demo value or identify impediments	Reporting practices demonstrate value, identify impediments, and track progress towards targets.

5. Project Governance

In accordance with the ASX Delivery Framework, ASX has implemented a structured project governance approach to ensure the effective management and monitoring of the DE2 project. The governance arrangements establish clearly defined roles and responsibilities to ensure risks are identified, monitored and appropriately managed.

DE2 Project Governance Overview

5.1. Strategic Governance Group

In accordance with ASX's delivery framework, a Strategic Governance Group (**SGG**) has been established to oversee the DE2 project and to act as a control point and oversight body for the DE2 project.

The SGG meets monthly, or more frequently if required, and receives reports from work stream leaders on status, progress and any relevant risks, issues or changes (whether those changes relate to the recommendations in the External Review Report or the ASX actions required to implement those recommendations). The SGG provides direction to resolve risks, issues and changes and is the initial review and approval body for decisions related to DE2 and any other projects where a dependency is established.

The SGG is chaired by the Program Director, Delivery and Risk, with other members being at the level of General Management for the relevant capability areas of; Project Delivery and Technology Security & Governance, and the Chief Technology Officer. This group is supported by the project manager, which undertakes day-to-day running and reporting of DE2.

A Line 2 Enterprise Risk representative provides independent oversight and objective challenge at the SGG. This is intended to ensure appropriate governance, risk management rigour, escalation and reporting are practiced. The Line 2 Enterprise Risk representative promotes discussion, challenge, and effective risk management practices on the project, and positive risk culture and behaviour in the delivery of the project.

In accordance with ASX's governance framework, the SGG provides monthly updates to the Customer and Digital Portfolio Working Group (PWG) and the Portfolio Governance Group (PGG).

5.2.   Customer and Digital Portfolio Working Group

The PWG is an ASX senior management governance group chaired by the Portfolio Executive Sponsor. This PWG oversees all projects within the scope of the Customer and Digital portfolio to ensure the strategy, objectives and benefits of the portfolio remain aligned and are achieved, resources are committed, and prioritisation of effort is appropriate. The PWG acts as an escalation point for projects in the portfolio and a pathway to ASX's Portfolio Governance Group as required.

Members of this PWG are General Managers in Customer, Digital and Delivery functions, along with representatives from Finance, Line 2 Enterprise Risk Management, Project Delivery Risk Management, Architecture and Infrastructure Service Delivery. This group is supported by the Project Officer.

A Line 2 Enterprise Risk representative provides independent counsel to the PWG on resolution of escalated issues, risks, priorities and dependencies and contributes to ensuring delivery is executed in line with the ASX Delivery Framework.

In accordance with ASX's governance framework, the PWG is scheduled to meet monthly, provides monthly reporting to the PGG and may make recommendations to PGG as required.

5.3.   Portfolio Governance Group

The Portfolio Governance Group (PGG) is ASX's senior management delivery working group chaired by the Program Director, Delivery and Risk or alternative group executive. The PGG provides oversight of the overall ASX Group project portfolio roadmap to monitor the health and progression of priority initiatives, including DE2. The PGG also oversees allocation and prioritisation of resources in accordance with the ASX Group strategy, annual budget and financial plans.

The PGG meets monthly with members including the Chief Executive Officer, Chief Financial Officer, Chief Risk Officer and the Chief Information Officer. The PGG provides updates to the Executive Team, as required, including DE2.

The information and outcomes from the PGG are included in management's regular updates to the ASX Limited Board and Clearing and Settlements **(CS)** Boards.

6. EY Audit – observe, inspect and test

6.1.   This Special Report

EY will conduct an audit of this Special Report including the Plan, as required by the Notices. As part of the audit, EY will review key elements of this Special Report, including the appropriateness of the Plan and implementation timelines. ASX expects to provide to EY, relevant detailed planning artefacts that support the actions in the Plan including, but not limited to the following:

- Detailed tasks underpinning the actions.

- Resource assignment.

- Dependencies.

- Delivery risks and risk mitigation approach.

- Completion criteria.

- Business outcomes.

- Change management strategy and approach.

- Design Adequacy Review.

- Project governance artefacts.

ASX will respond to any clarification requests related to the detailed planning documentation; via email or through meeting requests, and make available, ASX subject matter experts that contribute to EY's understanding of the Plan.

EY will produce an Audit Report as defined in the Notice and ASX will provide to ASIC, this report, by 31 July 2023.

ASX will publish this Special Report and EY's Audit Report of this Special Report.

6.2. Quarterly reports

ASX has commenced discussions with EY to act as an independent expert to provide review and validation of ASX's implementation of the actions that address all 45 recommendations in the External Review Report. In this role ASX expect EY will observe, inspect, and test ASX's implementation of the recommendations. The work will be undertaken following a similar approach to the quarterly reports produced in respect of ASX's actions to address the independent expert recommendations made following the ASX Trade Outage review.

ASX expects to submit to EY, at the end of each quarter from September 2023 through to June 2024, a quarterly report and recommendation closure packs. The report and closure pack will:

- Provide an update on progress in implementing the recommendations in the External Review Report and the ASX actions required to do so.

- Highlight any issues implementing the actions, the reasons for those issues and what steps ASX will take to address them.

- Describe any risks that ASX foresees to meeting the timelines in the Plan and actions to mitigate those risks.

- Provide a recommendation closure pack with supporting documents and information that addresses the executed, appropriate and sustainable review criteria.

To demonstrate that it is appropriate to close a recommendation in the External Review Report, ASX intends to demonstrate three things to EY:

1. Actions taken in response to the relevant recommendation have been Executed.
2. That those actions are Appropriate.
3. That any standards and practices put in place are Sustainable.

Each of these three things is equally important for the completion of a recommendation and its associated actions. ASX intends to publish EY's findings from their quarterly reviews.

7. Attachment 1 – The Response Plan

The data in this table is current as at 7 June 2023.
This data has been extracted from ASX's enterprise systems Jira and Confluence.

Independent Expert Recommendation	ASX Recommendation Status	ASX Recommendation Closure Date	ASX Action	ASX Action Status	ASX Action Completion Date	Tasks Completed	Tasks In Progress	Tasks To Commence	ASX Action Deliverable
R01 - Refine Change Request Impact Assessment	In Progress	March 2024	A1.1 - Uplift Project Change Control process	In Progress	August 2023	1	1	4	Uplifted Project Change Control process, guidance and templates
			A1.2 - Implement controls for Project Change Control	In Progress	August 2023	0	1	2	Controls implemented to support Project Change Control
			CR1.1 - Update CR Process for CHESS Replacement	To Commence	March 2024	0	0	2	Updated Project Change Control process, guidance and templates implemented for CHESS Replacement
R02 - Revise Program (PWG) reporting	In Progress	March 2024	CR2.1 - Define Status Reporting requirements in Vendor and SI Contracts for CHESS Replacement	In Progress	September 2023	2	0	1	Included ASX reporting requirements in CHESS Replacement Vendor/s and System Integrator/s signed contract
			A2.1 - Create and implement appropriate on-boarding for consultants to ensure they adhere to ASX relevant standards and policies	In Progress	December 2023	1	8	4	Introduced Consultant on-boarding for capability practices
			CR2.2 - Ensure vendor adherence to ASX Delivery Framework Status Reporting Guidelines for CHESS Replacement	To Commence	February 2024	0	0	2	CHESS Replacement Vendor/s and System Integrator/s metric based performance reporting to Securities and Payments Portfolio Working Group
R03 - Calibration of Program Risk Management framework	In Progress	March 2024	CR3.1 - Define Risk Management requirements in Vendor and SI Contracts for CHESS Replacement	In Progress	September 2023	2	0	1	Included ASX risk management requirements in CHESS Replacement Vendor/s and System Integrator/s signed contract
			CR3.2 - Conduct Risk Management session with Vendor and SI for CHESS Replacement	To Commence	February 2024	0	0	3	CHESS Replacement Vendor/s and System Integrator/s contribute to Delphi Technique risk management session
R04 - Augment the Program plan to provide greater detail and transparency	In Progress	March 2024	A4.4 - Estimation Framework: Create and Implement Appropriate Controls	In Progress	January 2024	0	0	5	Controls implemented to support ASX Estimation Framework
			CR4.1 - Define Project Planning in Vendor and SI Contracts for CHESS Replacement	In Progress	September 2023	2	0	1	Included ASX project planning standards in CHESS Replacement Vendor/s and System Integrator/s signed contract
			A4.2 - Create and implement standard estimation framework	In Progress	January 2024	2	1	7	Implemented estimation framework
			CR4.2 - Project Planning adherence by Vendor and SI for CHESS Replacement	To Commence	February 2024	0	0	2	Monitoring of the adherence to ASX contractual requirements by CHESS Replacement Vendor/s and System Integrator/s
R05 - Update ASX vendor agreement with DA to reflect the go-forward approach	In Progress	March 2024	A3.1 - Uplift vendor contracting standard and related agreements to detail considerations including solution design, vendor compliance and ASX vendor management	In Progress	March 2024	2	0	7	Uplifted ASX Vendor Management Framework
			CR5.1 - Define Business Outcomes in Vendor and SI Contracts for CHESS Replacement	In Progress	September 2023	2	0	1	Included ASX business outcomes in CHESS Replacement Vendor/s and System Integrator/s signed contract
R06 - Refine the Program operating model with DA in line with the change in vendor's delivery model	In Progress	December 2023	A3.1 - Uplift vendor contracting standard and related agreements to detail considerations including solution design, vendor compliance and ASX vendor management	In Progress	March 2024	2	0	7	Uplifted ASX Vendor Management Framework
			A11.1 - Uplift Ways of Working in Delivery Approach	In Progress	August 2023	1	2	2	Uplifted Delivery Approach guidelines and template

The data in this table is current as at 7 June 2023.
This data has been extracted from ASX's enterprise systems Jira and Confluence.

Independent Expert Recommendation	ASX Recommendation Status	ASX Recommendation Closure Date	ASX Action	ASX Action Status	ASX Action Completion Date	Tasks Completed	Tasks In Progress	Tasks To Commence	ASX Action Deliverable
			A3.5 - Align consultant roles to ASX roles and job families	In Progress	September 2023	0	7	2	Standardised job descriptions, for capability practices, aligned to ASX roles
			CR6.1 - Define Governance in Vendor and SI Contracts for CHESS Replacement	In Progress	September 2023	2	0	1	Included ASX project governance in CHESS Replacement Vendor/s and System Integrator/s signed contract
			A2.1 - Create and implement appropriate on-boarding for consultants to ensure they adhere to ASX relevant standards and policies	In Progress	December 2023	1	8	4	Introduced Consultant onboarding for capability practices
R07 - Clarify definition and purpose of a Change Control and the CR process	In Progress	September 2023	A1.1 - Uplift Project Change Control process	In Progress	August 2023	1	1	4	Uplifted Project Change Control process, guidance and templates implemented
			A1.2 - Implement controls for Project Change Control	In Progress	August 2023	0	0	3	Controls implemented to support Project Change Control
			CR7.1 - Define Change Control in Vendor and SI Contracts for CHESS Replacement	In Progress	September 2023	2	0	1	Included ASX project change control in CHESS Replacement Vendor/s and System Integrator/s signed contract
R08 - Embed tracking of CR impacts to milestones (post-impact assessment)	In Progress	March 2024	A1.1 - Uplift Project Change Control process	In Progress	August 2023	1	1	4	Uplifted Project Change Control process, guidance and templates implemented
			A1.2 - Implement controls for Project Change Control	In Progress	August 2023	0	0	3	Controls implemented to support Project Change Control
			CR8.1 - Implement Change Control Process for CHESS Replacement	To Commence	February 2024	0	0	2	Included ASX project change control in CHESS Replacement Vendor/s and System Integrator/s signed contract
R09 - Review and define the technology delivery methodology going forward	In Progress	December 2023	A9.1 - Implement controls for Delivery Approach guidelines and template	In Progress	August 2023	0	1	3	Uplifted controls for Delivery Approach guidelines and template
			CR9.1 - Ways of working in Delivery Approach for CHESS Replacement	In Progress	December 2023	1	0	3	Agreed with CHESS Replacement Vendor/s and System Integrator/s Project Charter
R10 - Alignment of tools and data-driven reporting of key information and metrics	In Progress	March 2024	A10.2 - Define the standard ASX Delivery Framework tools	In Progress	September 2023	0	1	1	Consolidate and publish the ASX Delivery Framework toolset
			CR10.1 - Define Delivery Tools in Vendor and SI Contracts for CHESS Replacement	In Progress	September 2023	2	0	3	Included ASX project delivery toolset in CHESS Replacement Vendor/s and System Integrator/s signed contract
			CR10.2 - Delivery approach to define tools to be used for CHESS Replacement	In Progress	November 2023	1	0	4	Agreed with CHESS Replacement Vendor/s and System Integrator/s Project Charter Introduced a Vendor and System Integrator Project/Program On-boarding Program
			A10.7 - Ensure project toolkit available to support ASX Quality Management Plan	To Commence	March 2024	0	0	4	Introduced ASX Project Quality Management capability
R11 - Review of Program Leadership and Culture	In Progress	September 2023	A9.1 - Implement controls for Delivery Approach guidelines and template	In Progress	August 2023	0	1	3	Uplifted controls for Delivery Approach guidelines and template
			A11.1 - Uplift Ways of Working in Delivery Approach	In Progress	August 2023	1	2	2	Uplifted Delivery Approach guidelines and template
			CR11.1 - Define accountabilities and ways of working in Vendor and SI Contracts for CHESS Replacement	In Progress	September 2023	2	0	3	Included ASX ways of working and responsibilities in CHESS Replacement Vendor/s and System Integrator/s signed contract

The data in this table is current as at 7 June 2023.
This data has been extracted from ASX's enterprise systems Jira and Confluence.

Independent Expert Recommendation	ASX Recommendation Status	ASX Recommendation Closure Date	ASX Action	ASX Action Status	ASX Action Completion Date	Tasks Completed	Tasks In Progress	Tasks To Commence	ASX Action Deliverable
									Agreed with CHESS Replacement Vendor/s and System Integrator/s Project Charter
R12 - Uplift NFR definition process and template	In Progress	December 2023	A12.2 - Uplift control to report and monitor adherence to BA framework	In Progress	December 2023	5	0	6	Introduce a BA Framework Adherence Tracker
			CR12.1 - Uplift NFR Definition Process for CHESS Replacement	Done	June 2023	3	0	0	Implemented Non Functional Requirement Framework into CHESS Replacement
			CR12.2 - Requirement definition timeline alignment between FR and NFR for CHESS Replacement	In Progress	September 2023	0	0	2	Implemented Non Functional Requirement Framework into CHESS Replacement project plan
			A12.1 - Roll out NFR Framework to relevant departments	Done	June 2023	3	0	0	Implemented Non Functional Requirement Framework Developed training for Non Functional Requirement Framework
R13 - Implement top-down traceability reporting	In Progress	December 2023	A13.2 - Uplift Jira standards	In Progress	December 2023	0	0	10	Uplifted JIRA standards to accommodate top down traceability
			CR13.1 - Improve traceability through requirements, build, test for CHESS Replacement	In Progress	November 2023	0	0	2	Requirements Traceability Matrix developed for CHESS Replacement project Requirements Traceability reporting developed for CHESS Replacement project
			A13.6 - Create appropriate PA/BA capability to support tooling and the BA Framework	To Progress	December 2023	0	1	9	Updated Business Analysis Framework Execute process training in business process mapping for Business Analysis capability practice
R14 - Ensure DA solution design is visible to the ASX	In Progress	March 2024	A3.1 - Uplift vendor contracting standard and related agreements to detail considerations including solution design, vendor compliance and ASX vendor management	In Progress	March 2024	2	0	7	Uplifted ASX Vendor Management Framework
			CR14.1 - Define Solution Design Deliverables for inclusion in Vendor and SI Contracts for CHESS Replacement	In Progress	September 2023	2	0	1	Included ASX solution design deliverables in CHESS Replacement Vendor/s and System Integrator/s signed contract
			CR14.2 - Preparation and review of Vendor design artefacts for CHESS Replacement	In Progress	December 2023	1	0	1	Include ASX minimum design artefacts as a requirement in the CHESS Replacement product Request For Proposal Perform technical design review on CHESS Replacement Request For Proposal product responses
			A2.1 - Create and implement appropriate on-boarding for consultants to ensure they adhere to ASX relevant standards and policies	In Progress	December 2023	1	8	4	Introduced Consultant onboarding for capability practices
R15 - Establish a design review of CHESS Application artefacts	To Commence	September 2023	CR15.1 - Technical Design Review process established for CHESS Replacement	To Commence	September 2023	0	0	2	CHESS Replacement project Technical Design Review process
R16 - Review and enable contemporary engineering practices	In Progress	March 2024	A16.2 - Uplift Solution Engineering processes around Governance - Solution Design	In Progress	December 2023	9	4	12	Uplifted Solution Engineering Framework - Solution Design
			A16.3 - Uplift Continuous Integration Controls to align	In Progress	March 2024	0	2	7	Uplifted Solution Engineering

Attachment 1 - The Response Plan

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Independent Expert Recommendation	ASX Recommendation Status	ASX Recommendation Closure Date	ASX Action	ASX Action Status	ASX Action Completion Date	Tasks Completed	Tasks In Progress	Tasks To Commence	ASX Action Deliverable
			with Industry Standards						Framework - Continuous Integration
			A16.4 - Uplift Solution Engineering processes around Governance - Solution Engineering (DevSecOps)	In Progress	March 2024	1	2	8	Uplifted Solution Engineering Framework - Solution Engineering
			A16.5 - Uplift Solution Engineering processes around Governance - Release Management	In Progress	March 2024	4	5	3	Uplifted Solution Engineering Framework - Code Release Management
			A16.6 - Uplift Solution Engineering processes around Governance - Test Environment Management	In Progress	March 2024	11	8	8	Uplifted Solution Engineering Framework - Test Environment Management
			CR16.1 - Engineering practices review and explanation included in the Solution Design artefact for CHESS Replacement	To Commence	March 2024	0	0	5	CHESS Replacement project Solution Architecture
R17 - Reassess options to streamline test phases, strategy and accelerate retest	In Progress	December 2023	A18.1 - Create a Group wide Test Strategy template	In Progress	December 2023	0	1	7	Implemented ASX Quality Engineering and Testing Strategy template
			A17.1 - Ensure Test Strategy mandated for Tier 1 and Tier 2 projects	Done	June 2023	2	0	0	Restate ASX Quality Engineering and Testing Strategy
			CR17.1 - Program Test Strategy (test phases, efficiency, production data) for CHESS Replacement	To Commence	September 2023	0	0	3	CHESS Replacement project Test Strategy
R18 - Uplift governance on test data creation	In Progress	December 2023	A18.1 - Create a Group wide Test Strategy template	In Progress	December 2023	0	1	7	Implemented ASX Quality Engineering and Testing Strategy template
			CR18.1 - Define accountability for Test Data in Vendor and SI Contracts for CHESS Replacement	In Progress	September 2023	2	0	1	Included ASX Quality Engineering and Testing test data accountabilities in CHESS Replacement Vendor/s and System Integrator/s signed contract
			CR18.2 - Test Strategy (test data) uplifted for CHESS Replacement	In Progress	September 2023	1	0	1	CHESS Replacement project Test Strategy
R19 - Implement a single defect management tool	In Progress	September 2023	CR19.1 - Define Defect Management in Vendor and SI Contracts for CHESS Replacement	In Progress	September 2023	2	0	1	Included ASX Quality Engineering and Testing defect management process in CHESS Replacement Vendor/s and System Integrator/s signed contract
			CR19.2 - Program Test Strategy (test tool requirements) for CHESS Replacement	In Progress	September 2023	2	0	3	CHESS Replacement project Test Strategy Included ASX Quality Engineering and Testing defect management process in CHESS Replacement Vendor/s and System Integrator/s signed contract
R20 - Establish robust test execution and defect reporting including defect template and supporting information	In Progress	December 2023	CR20.1 - Define Test Quality Assurance in Vendor and SI Contracts for CHESS Replacement	In Progress	September 2023	2	0	1	Included ASX Quality Engineering and Testing test quality assurance in CHESS Replacement Vendor/s and System Integrator/s signed contract
			CR20.2 - Program Test Strategy (tooling, traceability, defect management) for CHESS Replacement	In Progress	September 2023	2	0	2	CHESS Replacement project Test Strategy
			A20.1 - Implement standard set of test reports	To Commence	December 2023	0	0	8	Restate ASX Quality Engineering and Testing governance, metrics and reporting
			A20.3 - Uplift Quality Engineering Controls	To Commence	December 2023	0	0	6	Restate ASX Quality Engineering and

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Independent Expert Recommendation	ASX Recommendation Status	ASX Recommendation Closure Date	ASX Action	ASX Action Status	ASX Action Completion Date	Tasks Completed	Tasks In Progress	Tasks To Commence	ASX Action Deliverable
									Testing controls
R21 - Refresh Test Strategy	In Progress	March 2024	A18.1 - Create a Group wide Test Strategy template	In Progress	December 2023	0	1	7	Implemented ASX Quality Engineering and Testing Strategy template
			CR21.1 - Define testing accountabilities in Vendor and SI Contracts for CHESS Replacement	In Progress	September 2023	2	0	1	Included ASX Quality Engineering and Testing accountabilities in CHESS Replacement Vendor/s and System Integrator/s signed contract
			CR21.2 - Program Test Strategy for CHESS Replacement to include accountabilities	In Progress	September 2023	1	0	2	CHESS Replacement project Test Strategy CHESS Replacement project Risk Based Testing Assessment
R22 - Consider defining a Program quality management plan	In Progress	March 2024	A22.1 - Create and Implement Quality Management plan template	In Progress	March 2024	4	1	13	Implemented ASX Quality Management template
			CR22.1 - Ensure compliance to ASX Delivery Framework (including Quality Plan) for CHESS Replacement	In Progress	December 2023	1	0	2	CHESS Replacement project adoption of ASX Quality Management Framework CHESS Replacement project project deliverable adherence tracker
			A22.2 - Quality Management Plan: Confirm controls in place	To Commence	March 2024	0	0	4	Implemented ASX Quality Management Template Introduce ASX Project Deliverable Adherence Tracker
R23 - Remove pipeline backpressure	In Progress	March 2024	A18.1 - Create a Group wide Test Strategy template	In Progress	December 2023	1	0	7	Implemented ASX Quality Engineering and Testing Strategy template
			CR23.1 - Test Strategy for CHESS Replacement includes quality gates and test phases	In Progress	September 2023	0	0	2	CHESS Replacement project Test Strategy
			A23.1 - Implement the Release Management process within the ASX Delivery Framework	To Commence	March 2024	0	1	10	Uplifted Solution Engineering Framework - Code Release Management
			A23.3 - Monitor and Report on Release Management Process	To Commence	March 2024	0	1	5	Uplifted Solution Engineering Framework - Code Release Management
R24 - DA to provide reusable tools	In Progress	December 2023	A27.1 - Update Readiness Criteria including guidelines, processes and templates	In Progress	October 2023	1	2	6	Uplifted controls for ASX Implementation Readiness process and guidance
			CR24.1 - Supportability Requirements included in Solution Architecture (Proposal) for CHESS Replacement	In Progress	September 2023	1	0	3	CHESS Replacement project Solution Options Analysis (Strawperson)
			A27.2 - Implement monitoring of Readiness Uplift	To Commence	October 2023	0	0	5	Uplifted ASX Implementation Readiness process and guidance
R25 - On-board suitably experienced Change Management lead and team	In Progress	March 2024	CR25.1 - Change Management Lead assigned for CHESS Replacement	To Commence	March 2024	2	1	0	CHESS Replacement Project on-board Change Management Lead
R26 - Embed business change management activities	Backlog	June 2024	A25.2 - Create an OCM capability within the organisation to support projects	To Commence	December 2023	0	0	4	On-board additional Change Management resources
			CR26.1 - OCM Strategy (change and readiness tracking) for CHESS Replacement	To Commence	June 2024	0	0	3	CHESS Replacement Project Organisational Change Management Strategy CHESS Replacement Project Organisational Change Management Plan

Independent Expert Recommendation	ASX Recommendation Status	ASX Recommendation Closure Date	ASX Action	ASX Action Status	ASX Action Completion Date	Tasks Completed	Tasks In Progress	Tasks To Commence	ASX Action Deliverable
R27 - Review of service introduction and IT Operating Model for CHESS Replacement across key areas with the IT organisation	In Progress	March 2024	A27.1 - Update Readiness Criteria including guidelines, processes and templates	In Progress	October 2023	1	2	6	Uplifted controls for ASX Implementation Readiness process and guidance
			A27.2 - Implement monitoring of Readiness Uplift	To Commence	October 2023	0	0	5	Uplifted ASX Implementation Readiness process and guidance
			A27.3 - Uplift ASX framework to include guidance for supporting OP model design for OCM resources	To Commence	September 2023	0	0	6	Uplifted ASX Organisational Change Management Framework - operating model design guidelines
			CR27.1 - IT Op Model defined for CHESS Replacement	To Commence	March 2024	0	0	1	CHESS Replacement project operating model
R28 - Leadership and culture assessment to define the future needs of the organisation and impacted business units	In Progress	March 2024	A11.1 - Uplift Ways of Working in Delivery Approach	In Progress	August 2023	1	2	2	Uplifted Delivery Approach guidelines and template
			CR28.1 - OCM Strategy for CHESS Replacement to include culture and behaviour requirements	To Commence	March 2024	1	0	4	CHESS Replacement Project Organisational Change Management Strategy CHESS Replacement Project Organisational Change Management Plan
R29 - Generate talent and skills map	In Progress	June 2024	A29.1 - Complete SFIA assessment for 6 identified capabilities	In Progress	September 2023	4	3	0	Completed capability practice skills assessments
			CR29.1 - OCM Strategy for CHESS Replacement to include talent and skills requirements	To Commence	June 2024	0	0	5	CHESS Replacement Project Organisational Change Management Strategy CHESS Replacement Project Organisational Change Management Plan
R30 - Establish of a training tracker and survey to measure effectiveness of upskilling effort	In Progress	June 2024	CR30.1 - OCM Strategy for CHESS Replacement to include tracking learning and training effectiveness/impact and engagement	In Progress	June 2024	1	0	3	CHESS Replacement Project Organisational Change Management Strategy
			A25.2 - Create an OCM capability within the organisation to support projects	To Commence	December 2023	0	0	4	On-board additional Change Management resources
R31 - Assess change readiness tracking tools and establish appropriate reporting metrics and template	In Progress	March 2024	A26.4 - Create controls over the OCM framework	In Progress	September 2023	6	3	0	Introduce an OCM Framework Adherence Tracker
			CR31.1 - OCM Strategy for CHESS Replacement to include Readiness Tracking	In Progress	March 2024	1	0	4	CHESS Replacement Project Organisational Change Management Strategy CHESS Replacement Project Organisational Change Management Plan
R32 - Refine internal communications	In Progress	September 2023	A26.4 - Create controls over the OCM framework	In Progress	September 2023	6	0	3	Introduce an OCM Framework Adherence Tracker
			CR32.1 - OCM Strategy for CHESS Replacement to include Internal stakeholder engagement/communications	In Progress	September 2023	2	0	5	CHESS Replacement Project Organisational Change Management Strategy CHESS Replacement Project Organisational Change Management Communications Plan CHESS Replacement Project Organisational Change Management Key Stakeholder Matrix
R33 - Consolidate and review operational readiness criteria and implement dashboard reporting	In Progress	June 2024	A27.1 - Update Readiness Criteria including guidelines, processes and templates	In Progress	October 2023	1	2	6	Uplifted ASX Implementation Readiness process and guidance
			A27.2 - Implement monitoring of Readiness Uplift	To Commence	October 2023	0	0	5	Uplifted ASX Implementation Readiness process and guidance

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Independent Expert Recommendation	ASX Recommendation Status	ASX Recommendation Closure Date	ASX Action	ASX Action Status	ASX Action Completion Date	Tasks Completed	Tasks In Progress	Tasks To Commence	ASX Action Deliverable
reporting									process and guidance
			CR33.1 - Adopt enterprise Implementation Readiness for CHESS Replacement	To Commence	June 2024	0	0	2	CHESS Replacement Project Implementation Readiness Assessment Plan and Go / No Go
R34 - Build and implement relevant dashboards	In Progress	March 2024	A27.1 - Update Readiness Criteria including guidelines, processes and templates	In Progress	October 2023	1	2	6	Uplifted ASX Implementation Readiness process and guidance
			CR34.1 - Define QA Policies in Vendor and SI Contracts (performance monitoring NFRs) for CHESS Replacement	In Progress	September 2023	2	0	1	Included ASX quality management in CHESS Replacement Vendor/s and System Integrator/s signed contract
			A27.2 - Implement monitoring of Readiness Uplift	To Commence	October 2023	0	0	5	Uplifted ASX Implementation Readiness process and guidance
			CR34.2 - NFR Test Strategy for CHESS Replacement	To Commence	March 2024	0	0	5	CHESS Replacement project Test Strategy
R35 - Revisit the project governance approach to establish a standard estimation methodology	In Progress	March 2024	A4.4 - Estimation Framework: Create and Implement Appropriate Controls	In Progress	January 2024	0	0	5	Implemented estimation framework with controls
			CR35.1 - Adhere to the Estimation Process in CHESS Replacement	In Progress	September 2023	1	1	1	CHESS Replacement project plan CHESS Replacement project business case
			A4.2 - Create and implement standard estimation framework	In Progress	January 2024	2	1	7	Implemented estimation framework
R36 - Establish a standard and governed contingency management plan	In Progress	June 2024	A4.4 - Estimation Framework: Create and Implement Appropriate Controls	In Progress	January 2024	0	0	5	Implemented estimation framework with controls
			CR36.1 - Define Contingency for CHESS Replacement	In Progress	September 2023	0	1	2	CHESS Replacement project plan
			A4.2 - Create and implement standard estimation framework	In Progress	January 2024	2	1	7	Implemented estimation framework
			CR36.2 - Manage contingency in Governance Forums for CHESS Replacement	To Commence	June 2024	0	0	2	CHESS Replacement project governance reporting
R37 - Proactively validate the design against the root causes identified in the Core Issues Report	In Progress	December 2023	A18.1 - Create a Group wide Test Strategy template	In Progress	December 2023	0	1	7	Implemented ASX Quality Engineering and Testing Strategy template
			CR37.1 - Program Test Strategy for CHESS Replacement includes shift left testing, production like data/volumes	In Progress	September 2023	1	0	3	CHESS Replacement project Test Strategy
R38 - Reshape delivery plan with interim milestones	In Progress	March 2024	A38.1 - Ensure alignment on Engineering and Testing Process and Release Milestones	In Progress	March 2024	0	2	4	CHESS Replacement project Delivery Plan
			CR38.1 - Define Delivery Plan to support early identification of issues in CHESS Replacement	In Progress	February 2024	2	0	1	CHESS Replacement project Delivery Plan
R39 - Introduce dedicated teams from DA to support ASX's NFT, and E2E testing	In Progress	December 2023	A18.1 - Create a Group wide Test Strategy template	In Progress	December 2023	0	1	7	Implemented ASX Quality Engineering and Testing Strategy template
			CR21.1 - Define testing accountabilities in Vendor and SI Contracts for CHESS Replacement	In Progress	September 2023	2	0	1	Included ASX Quality Engineering and Testing accountabilities in CHESS Replacement Vendor/s and System Integrator/s signed contract
			CR39.1 - Test Strategy for CHESS Replacement includes vendor responsibilities to support NFT and E2E test	In Progress	September 2023	0	0	3	CHESS Replacement project Test Strategy
R40 - Solution design review to meet future growth and ASX's strategic objectives	In Progress	September 2023	CR40.1 - Solution design of CHESS Replacement to meet future strategy	In Progress	September 2023	4	0	1	CHESS Replacement project solution design CHESS Replacement project business strategy

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Independent Expert Recommendation	ASX Recommendation Status	ASX Recommendation Closure Date	ASX Action	ASX Action Status	ASX Action Completion Date	Tasks Completed	Tasks In Progress	Tasks To Commence	ASX Action Deliverable
									CHESS Replacement project business requirements
R41 - Explore opportunities to simplify solution design	In Progress	September 2023	CR41.1 - Explore opportunities to simplify solution design for CHESS Replacement through defining clear principles, reference architecture and evaluation processes	In Progress	September 2023	6	0	1	CHESS Replacement project Solution Options Analysis (Strawperson)
R42 - Review Daml use to meet long-term objectives	In Progress	September 2023	CR42.1 - Review DAML Use to meet objectives for solving and simplifying business workflows for CHESS Replacement	In Progress	September 2023	1	0	2	CHESS Replacement project Solution Options Analysis (Strawperson)
			CR42.2 - Strategy & Vision enhanced for C&S supporting areas to ensure alignment with CHESS Replacement objectives	Done	September 2023	2	0	0	CHESS Replacement project business strategy for EPT and Issuer Services
R43 - Optimise on-ledger and off-ledger processing for transactions	In Progress	September 2023	CR43.1 - Review on ledger off ledger processing for transactions to identify options to optimise processing for CHESS Replacement	In Progress	September 2023	6	0	1	CHESS Replacement project Solution Options Analysis (Strawperson)
R44 - Shift Left testing to compress long sequential feedback loops	In Progress	December 2023	A18.1 - Create a Group wide Test Strategy template	In Progress	December 2023	0	1	7	Implemented ASX Quality Engineering and Testing Strategy template
			CR44.1 - Program Test Strategy for CHESS Replacement includes Shift Left Testing and NFR test approach	In Progress	September 2023	1	0	4	CHESS Replacement project Test Strategy
R45 - Remediate root causes of (known) Core Issues	In Progress	September 2023	CR45.1 - Remediate root causes of known core CHESS Replacement issues with reference to the solution principles, technology capabilities and reference architecture	In Progress	September 2023	6	0	1	CHESS Replacement project Solution Options Analysis (Strawperson)