

ASX CHESS Replacement

Implementation & Transition Working Group

4 July 2024



ASX

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

ARTWORK BY: LEE ANNE HALL, MY COUNTRY MY PEOPLE



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- > Please use the 'raise hand' feature on MS Teams if you would like to ask a question
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- > Meeting is being recorded for the purposes of capturing decision and actions
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 - **+61 2 7208 4607**
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- > Presentation materials were distributed before the meeting and will be published on the website

Important Information

Competition Law Reminder

- > Committee members are reminded to have regard to their obligations under competition law. In particular, please note that the Competition and Consumer Act prohibits a corporation from engaging with one or more persons in a concerted practice that has the purpose, effect or likely effect of substantially lessening competition.

Agenda

01 – Welcome & Actions

02 – Staged Implementation

03 – Release 2 Timeline

04 – Deferred Settlement

05 – Forward Engagement and AOB

01 – Welcome & Actions

For discussion

01 – Open Actions

July 2024

#	Topic	Action	Raised	Due	Owner	Status
1	Deferred Settlement	Provide further detail on deferred settlement for further consideration and reissue questionnaire to confirm position(s)	5 June I&T WG	4 July I&T WG	ASX	In Progress – refer to slide 18
2	Staged Implementation	Provide any additional feedback or suggestions on industry testing or otherwise to further de-risk Release 2 to CHESSReplacement@asx.com.au	5 June I&T WG	4 July I&T WG	I&T Member Organisations	In Progress
3	Staged Implementation	Provide a more detailed view of staged implementation options and revalidate industry views and support since the 12 April 2023 TC	5 June I&T WG	4 July I&T WG	ASX	In Progress – refer to slides 9 - 12
4	R2 Timeline	Update Release 2 timeline to incorporate any T+1 assumptions and analysis requirements	5 June I&T WG	4 July I&T WG	ASX	In Progress – refer to slide 15
5	Staged Implementation	Consider the option of a staged data migration of investor accounts to the CHESS Replacement system in parallel during the period between R1 and R2, to allow for the industry to reconcile and cleanse investor data over an extended period	20 June BDWG	4 July I&T WG	ASX	In Progress – refer to slide 13

02 – Staged Implementation

Updated analysis of staged implementation options

02 – Opportunities for Staged Implementation

A summary of the assessment of options to further stage Release 2

ASX has assessed the options put forward by stakeholders against factors relating to operational risk, delivery risk, technical feasibility, and market impact, and whether the alternatives would reduce overall implementation risk compared to implementing Release 2 as one release. A summary of the assessment of options to further stage Release 2 is outlined below. Early adoption of clearing ISO messages and early access of migrated accounts reporting are options that are currently under review.

#	How to transition	Key enabler	Summary of risk relative to Release 2 as one release
1	Stage by Participant	Full message backwards compatibility (EIS to ISO 20022 like-for-like)	<ul style="list-style-type: none">• Significant increase in delivery risk due to the need to implement a like-for-like interim release• Significant delay to implementing CHES Replacement target state• Increase in operational risk and market impact due to a phased ISO release approach• Participant cutover risk remains with single cutover from like-for-like to enhanced ISO state
2	Stage by Issuer	ASX and the market operate two separate systems in Production for settlement	<ul style="list-style-type: none">• Increase in operational risk and market impact due to operating two production systems for settlement• Increase in delivery risk relating to complexities of running two production settlement batches
3	Stage by function a) Bilateral Settlement matching b) Account maintenance c) Holdings d) Pass-through transactions	CHES users to interface to both EIS and ISO 20022 Requires systems to be synchronised for functions in scope	<ul style="list-style-type: none">a) Increase in delivery risk and market impact moving to final settlement matching ISO stateb) and d) Increase in delivery and operational risk due to need for interim like-for-like translation and complexities of data synchronisation between CHES and CHES Replacementc) Not technically feasible due to significant change requires in current CHES



Are there any additional ways ASX can mitigate the risks associated with implementing Release 2 as a single release?

02 – Staged Implementation

Staging by Participant

Options	Enablers	Current CHES	CHES Replacement	Operational Risk	Technical Feasibility	Market Impact	Delivery Risk	Overall Risk Assessment
Enhanced	<ul style="list-style-type: none"> Stateful universal centralised message translation requiring complex rules Supplementary temporary interfaces 	<ul style="list-style-type: none"> EIS messaging 	<ul style="list-style-type: none"> All data and business logic 	<ul style="list-style-type: none"> Incidents due to complex message translation 	<ul style="list-style-type: none"> Not viable – low technical feasibility 	<ul style="list-style-type: none"> Does not avoid build in legacy systems Schedule increase 	<ul style="list-style-type: none"> Complex build (likely not even possible) Schedule increase 	<ul style="list-style-type: none"> Not technically viable
				↑	↑	↑	↑	↑
Like-for-like	<ul style="list-style-type: none"> Centralised universal message translation 3 phase approach (Phase 0, 1, 2) Restricted to "like-for-like" for Phase 1 	<ul style="list-style-type: none"> EIS messaging 	<ul style="list-style-type: none"> All data and business logic 	<ul style="list-style-type: none"> 3 major market impacting releases, including one for current CHES 	<ul style="list-style-type: none"> Viable – but large build due to large number of CHES message types 	<ul style="list-style-type: none"> Schedule increase Cost increase Build needed for Phase 0, 1 and 2 Enhancement Phase 2 is a still single cutover Enhancements delivered late 	<ul style="list-style-type: none"> Phase 0 = current CHES build Phase 1 = TCS build to match current CHES + large build for CMT Phase 2 = redo TCS build to target state Schedule increase 	<ul style="list-style-type: none"> Significantly increases market impact and delivery risk, without addressing original concern of single-cutover avoidance
				↑	↑	↑	↑	↑

Note: All options will have an impact to project timelines with specifics to be determined post analysis of each option

02 – Staged Implementation

Staging by Issuer

Options	Enablers	Current CHES	CHES Replacement	Operational Risk	Technical Feasibility	Market Impact	Delivery Risk	Overall Risk Assessment
Staging by Issuer	<ul style="list-style-type: none"> • CHES users connect to two systems • 2nd settlement batch • Data synchronisation (Accounts) 	<ul style="list-style-type: none"> • EIS messaging • All holdings, obligations and logic for Issuers that have not migrated • Account maintenance and data (master) 	<ul style="list-style-type: none"> • ISO 20022 messaging • All holdings, obligations and business logic for Issuers that have been migrated • Account data (replicated) 	<ul style="list-style-type: none"> • ASX/market operating two separate systems in Production for settlement (risk increasing) • Operation of two settlement batches (risk increasing) • Offset by only small portion of market volume/value exposed to initial roll out (risk reducing) 	<ul style="list-style-type: none"> • Account data replication would be asynchronous and therefore out of date in CHES • Replacement for a short time 	<ul style="list-style-type: none"> • CHES user systems must support connecting to both CHES and CHES Replacement based on Issuer • Participants, banks and RBA must support 2nd batch • Potential batch netting inefficiency 	<ul style="list-style-type: none"> • Rules changes / default process / reporting impacts from having two batches • RBA / Payment bank alignment • Schedule increase 	<ul style="list-style-type: none"> • Arguable reduction in operational risk offset by need to operate two systems for settlement, increased market risks and delivery risk



Note: All options will have an impact to project timelines with specifics to be determined post analysis of each option

02 – Staged Implementation

Staging by Function

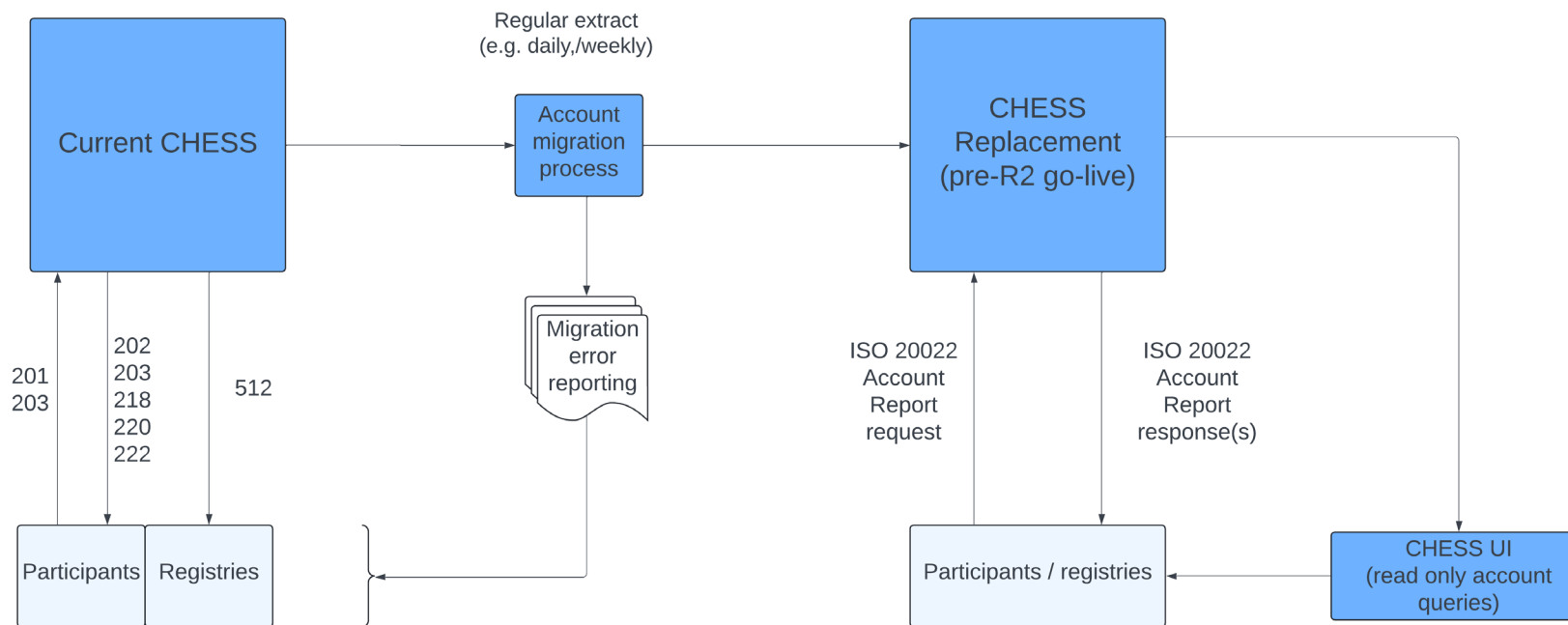
Options	Enablers	Current CHES	CHES Replacement	Operational Risk	Technical Feasibility	Market Impact	Delivery Risk	Overall Risk Assessment
Clearing – with EIS backwards compatibility (Release 1)	<ul style="list-style-type: none"> Interoperability between CHES replacement (clearing) and current CHES (settlement) EIS backwards compatibility for Clearing 	<ul style="list-style-type: none"> EIS messaging Subregister (accounts/holdings) Settlement (matching/obligations management/batch) 	<ul style="list-style-type: none"> AMO Interface (FIX) Trade acceptance and registration Trade cancellation Netting 	<ul style="list-style-type: none"> ASX operating two systems in Production Solves trade scalability in shortest timeframe 	<ul style="list-style-type: none"> Leverages existing CHES interface No technical blockers 	<ul style="list-style-type: none"> No interface changes for CHES users (regression test only) AMOs welcome FIX interface 	<ul style="list-style-type: none"> Current CHES release (internal only) Interface between systems Throw away TCS build for R1 Schedule increase 	<ul style="list-style-type: none"> Stages project in a technically feasible way to solve and trade scalability in the shortest timeframe without impact CHES users
Clearing – with optional 20022 and/or CHES UI	<ul style="list-style-type: none"> ISO 20022 messaging TCS BaNCS UI 	As above	As above + optional ISO 20022 version of clearing messages and CHES UI	ISO 20022 is optional and can be in parallel	No technical blockers	ISO 20022 and CHES UI is optional and can be in parallel	Schedule increase	Market demand would need to justify schedule impact
Settlement – Bilateral with message translation	<ul style="list-style-type: none"> CHES users must (optionally) interface to EIS and ISO20022 Data synchronisation (Accounts) Centralised message translation for bilateral messages only Restricted to “like-for-like” 	All data and logic, except bilateral matching	<ul style="list-style-type: none"> ISO20022 bilateral matching (101, 135, 102, 194, 166, 116) Allegements Data synchronisation (Accounts) 	<ul style="list-style-type: none"> Support complexity of message translation and account synchronisation (risk increasing) Offset by ability to transition participants individually over time (risk reducing) 	<ul style="list-style-type: none"> Requires “like-for-like” message translation for 6 message types Account data replication would be asynchronous and therefore out of date in CHES Replacement for a short time 	<ul style="list-style-type: none"> Restricted to “like-for-like” Requires subsequent release for enhanced process Optional CHES user build to support EIS and ISO20022 concurrently 	<ul style="list-style-type: none"> CHES and TCS build Schedule increase 	Market demand would need to justify increase in support complexity, need for a subsequent release to introduce target state and schedule and cost increased
Subregister – Account maintenance	<ul style="list-style-type: none"> CHES users must interface to EIS and ISO 20022 Data Synchronisation (Accounts) 	All data and logic, except bilateral matching	<ul style="list-style-type: none"> ISO 20022 Account maintenance Accounts (master) 	Support complexity of account synchronisation	Retail account data replication would be asynchronous and therefore out of date in CHES for a short time	Mandated CHES user build to support EIS and ISO 20022 concurrently	<ul style="list-style-type: none"> CHES and TCS build Schedule increase Cost increase 	Technical risk due to need to replicate retail level account details
Subregister – holdings	<ul style="list-style-type: none"> Dual EIS and ISO2022 Settlement to Subregister interoperability 	All data and logic, except accounts and holdings	<ul style="list-style-type: none"> ISO20022 Account maintenance, holdings/subposition maintenance demand transfers Accounts Holdings 	Introduces complexity and risk into batch settlement process	Requires settlement (current CHES) to Subregister (CHES Replacement) interoperability. Major build in current CHES	Mandated CHES user build to support EIS and ISO20022 concurrently	<ul style="list-style-type: none"> Complex build Schedule increase 	Major changes to current CHES increases risk significantly
Pass-through transactions	<ul style="list-style-type: none"> CHES users must (optionally) interface to EIS and ISO 20022 Data synchronisation (Accounts/Holdings) 	All data and logic, except validation of pass-through messages	<ul style="list-style-type: none"> ISO 20022 SRN enquiry and investor details Accounts and holding (replicated) 	Support complexity of account/holding synchronisation	<ul style="list-style-type: none"> Requires “like-for-like” message translation for 6 message types Account data replication would be synchronous and therefore out of date in CHES Replacement for a short time 	Optional CHES user build to support EIS and ISO20022 concurrently	Schedule increase	Technical risk due to need to replicate retail level accounts and holding details

Note: All options will have an impact to project timelines with specifics to be determined post analysis of each option

02 – Staged Implementation

Early Access to Migrated Accounts Reporting

Options	Enablers	Current CHES	CHES Replacement	Operational Risk	Technical Feasibility	Market Impact	Delivery Risk	Overall Risk Assessment
Early access to migrated accounts reporting	<ul style="list-style-type: none"> Account migration process ISO 20022 messaging TCS BaNCS UI 	<ul style="list-style-type: none"> EIS messaging Account maintenance 	<ul style="list-style-type: none"> Migrated accounts (updated periodically) ISO 20022 account detail reporting 	<ul style="list-style-type: none"> ISO 20022 is optional, and for reporting only 	<ul style="list-style-type: none"> No technical blockers 	<ul style="list-style-type: none"> ISO 20022 and CHES UI reporting for accounts is optional 	<ul style="list-style-type: none"> Schedule increase 	<ul style="list-style-type: none"> Market demand would need to justify schedule impact
				↓	↓	↓	↑	→



Note: All options will have an impact to project timelines with specifics to be determined post analysis of each option

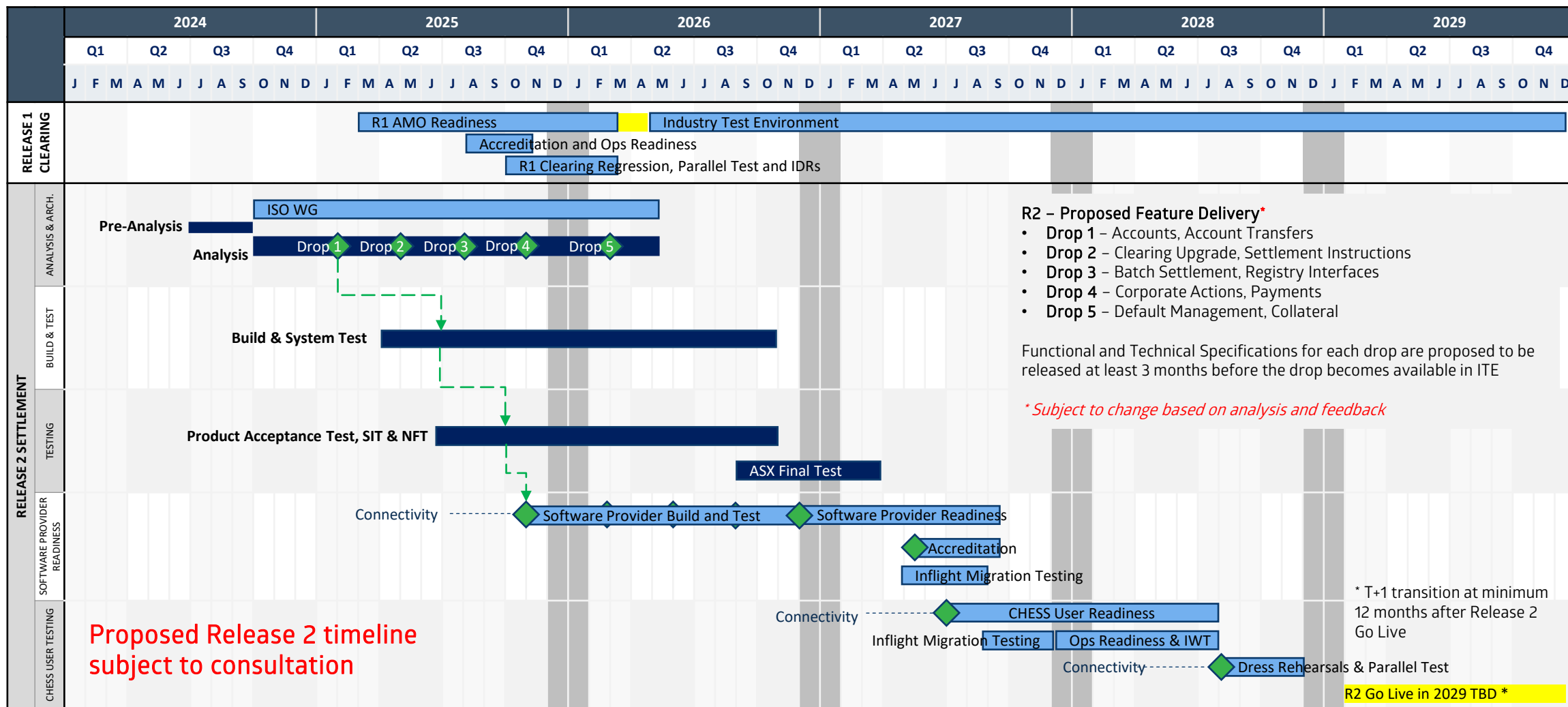
03 – Release 2 Timeline

For discussion

Proposed Release 2 Timeline

Subject to industry consultation & assessment

ASX is considering a number of scenarios for the timing of Release 2 in 2028 and 2029. One 2029 scenario is set out below:



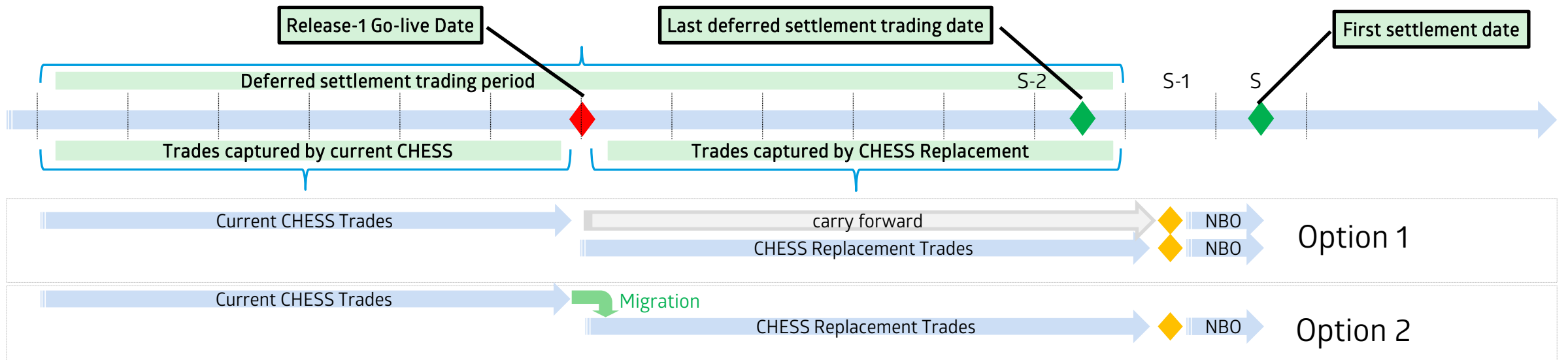
04 – Deferred Settlement

For discussion

04 – Deferred Settlement

Two High-level Options

- Deferred settlement trades currently get held gross and netted on S-1 when they reach settlement date
- If the deferred settlement trading period of a security spans the R1 go-live date, an approach is needed to determine how to deal with the trades matched prior to and post go-live
- Two general options are available:
 - Option 1: Manage deferred settlement trades in the system where they were captured (i.e. current CHES vs CHES Replacement) with two resulting sets of settlement instructions (either net or gross)
 - Option 2: Migrate trades captured in the current CHES system to the CHES Replacement system to allow them to net all deferred settlement trades on S-1



04 – Deferred Settlement

Options comparison

Options

Option 1 – Separate Settlements

Overview: Manage deferred settlement trades in the system where they were captured (i.e. current CHES vs CHES Replacement) with two resulting sets of settlement instructions (either net or gross)

Pros

- + Eliminate need for trade migration - lower overall effort and risk for ASX and the industry
- + Would utilise existing messages and processes supported by participant systems

Cons

- Non-typical scenario that may require regression testing in participant systems.

Option 2 – Migration

Overview: Migrate trades captured in the current CHES system to the CHES Replacement system to allow them to net all deferred settlement trades on S-1

Pros

- + No change to the existing process, would appear to be least impactful from a participants backward compatibility viewpoint

Cons

- A more complex solution requiring more effort, testing and carrying more risk.
- Trades registered in current CHES would need to be removed and loaded into CHES Replacement.

Proposal

ASX proposes to go with Option 1.

Ask: We would like feedback and to align on the proposed options and to set up a detailed working group if agreed.

This applies to deferred settlement securities that span the go-live weekend only.

04 – Deferred Settlement – Option 1 (split approach)

Sub-options of Option 1

Options

Option 1 – Separate Settlements

Sub-option 1 – Net/Net

Overview: Net trades separately in current CHES & CHES Replacement resulting in two NBOs for the settlement date

Pros

- + Least number of settlement lines
- + Eliminate need for trade migration - lower overall effort and risk for ASX and the industry

Cons

- Results in 2 x:
 - NBOs per CP/Security
 - Batches of EIS134/138 messages per CP/Security

Sub-option 2 – Gross/Net

Overview: Settle trades gross in current CHES, net those registered in CHES Replacement resulting in an NBO and gross settlements for the same settlement date

Pros

- + Fewer settlement lines
- + Only 1 x NBO & EIS 134 per CP (likely to be less impactful)

Cons

- Still has potential to create high-volume of gross settlements

Sub-option 3 – Gross/Gross

Overview: Disable all netting and settle all deferred transactions on a gross basis

Pros

- + May be less impactful to participants

Cons

- Results in highest number of settlement instructions

04 – Deferred Settlement – Sub-option 2 (Gross/Net)

Message flows for deferred trading

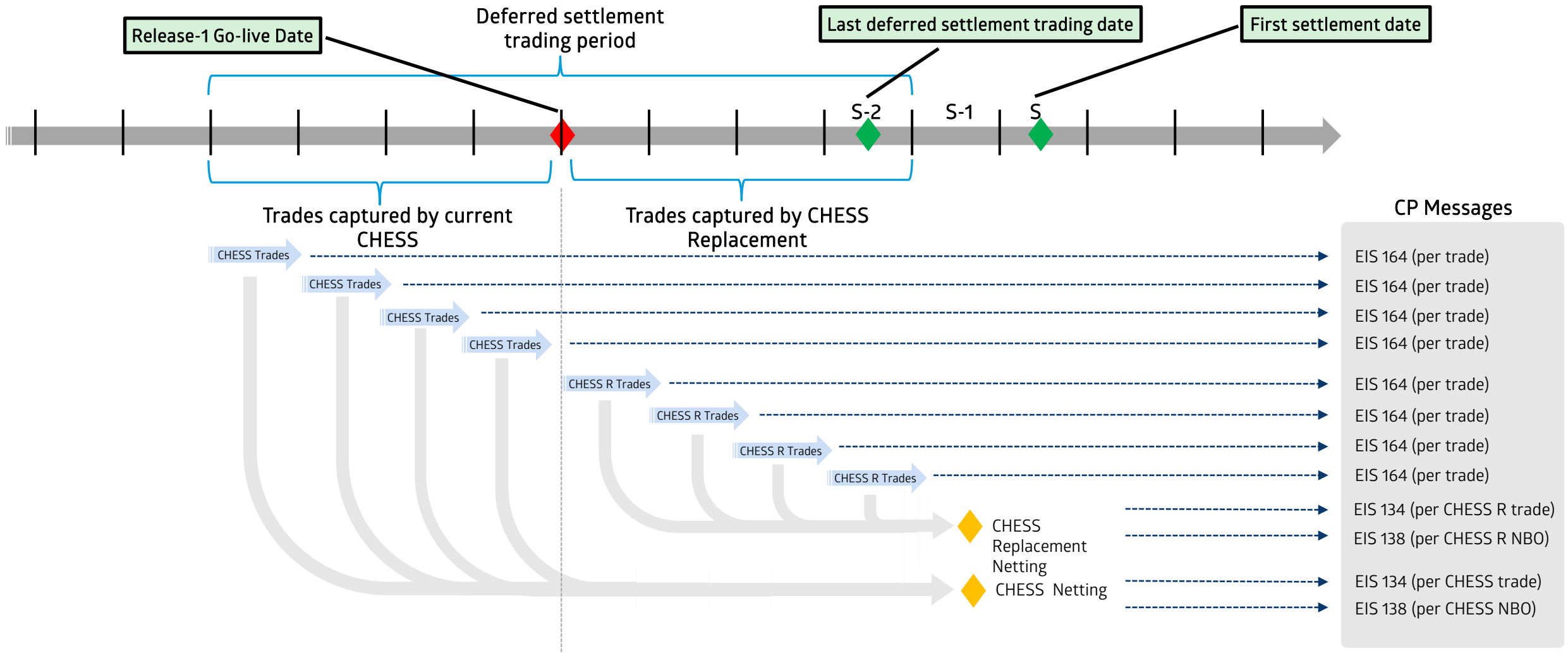
Sub-option 2 – Gross/Net

Overview: Settle trades gross in current CHES, net those registered in CHES Replacement resulting in an NBO and gross settlements for the same settlement date.

CHES	Before Go-Live	After Go-Live	S-1
Current CHES	<p>New Trade</p> <ul style="list-style-type: none"> EIS 164 per Clearing Participant (receiver & deliverer) <p>Updated First Settlement Date</p> <ul style="list-style-type: none"> EIS 124 per deferred trade per Clearing Participant (receiver & deliverer) 	<p>Updated First Settlement Date</p> <ul style="list-style-type: none"> EIS 124 per (current CHES) deferred trade per Clearing Participant (receiver & deliverer) 	<p>Code Merge</p> <ul style="list-style-type: none"> EIS 128 per (current CHES) deferred trade per Clearing Participant (receiver & deliverer)
CHES Replacement	n/a	<p>New Trade</p> <ul style="list-style-type: none"> EIS 164 per Clearing Participant (receiver & deliverer) <p>Updated First Settlement Date</p> <ul style="list-style-type: none"> EIS 124 per (CHES Replacement) deferred trade per Clearing Participant (receiver & deliverer) 	<p>Code Merge</p> <ul style="list-style-type: none"> EIS 128 per (CHES Replacement) deferred trade per Clearing Participant (receiver & deliverer) <p>Netting</p> <ul style="list-style-type: none"> EIS 134 per (CHES Replacement) deferred trade per Clearing Participant (receiver & deliverer) EIS 138 per deferred trading security per Clearing Participant (receiver & deliverer)

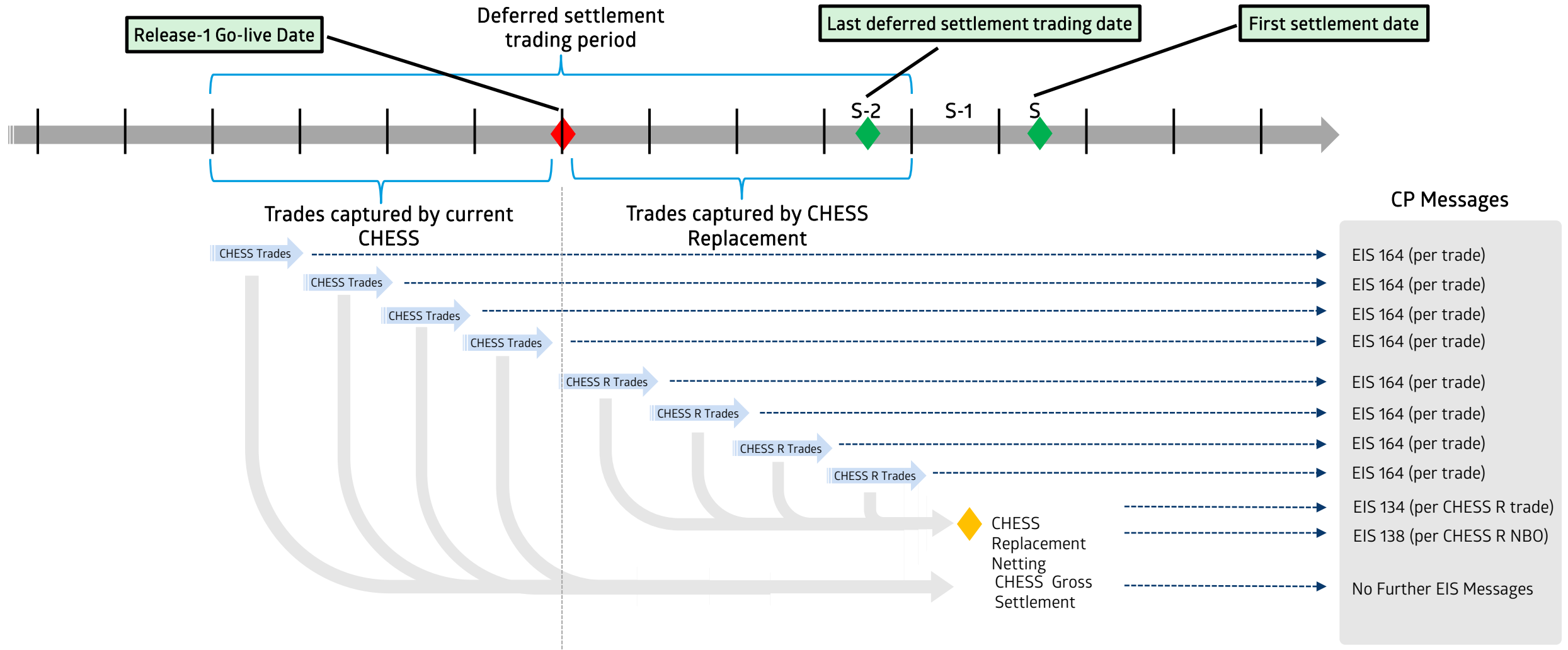
04 – Deferred Settlement – Net/Net Settlement

Deferred Settlement



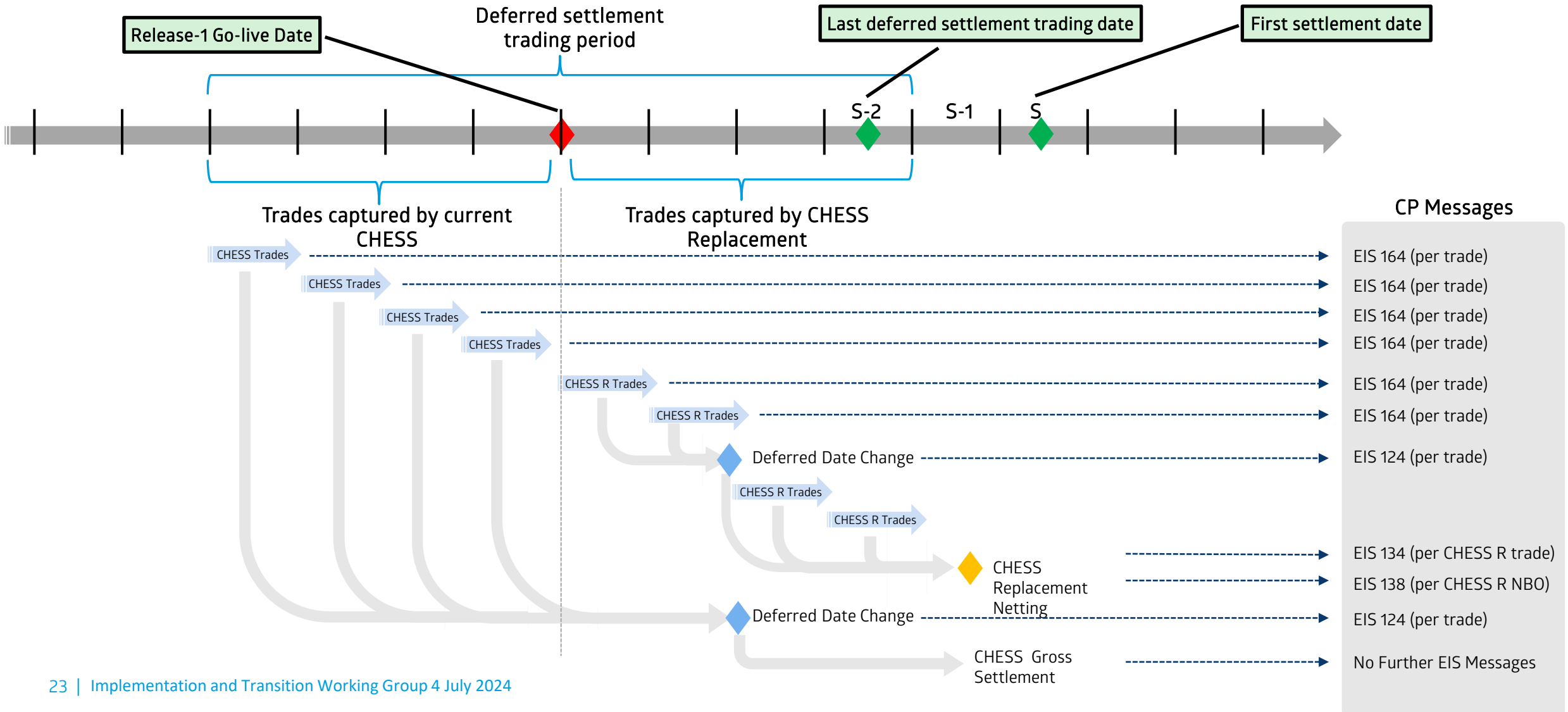
04 – Deferred Settlement – Gross/Net Settlement

Deferred Settlement



04 – Deferred Settlement – Change in Deferred Settlement Date

Deferred Settlement



04 – Deferred Settlement – Option 1 (split approach)

Sub-options of Option 1

Options

Option 1 – Separate Settlements

Sub-option 1 – Net/Net

Overview: Net trades separately in current CHES & CHES Replacement resulting in two NBOs for the settlement date

Pros

- + Least number of settlement lines
- + Eliminate need for trade migration - lower overall effort and risk for ASX and the industry

Cons

- Results in 2 x:
 - NBOs per CP/Security
 - Batches of EIS134/138 messages per CP/Security

Sub-option 2 – Gross/Net

Overview: Settle trades gross in current CHES, net those registered in CHES Replacement resulting in an NBO and gross settlements for the same settlement date

Pros

- + Fewer settlement lines
- + Only 1 x NBO & EIS 134 per CP (likely to be less impactful)

Cons

- Still has potential to create high-volume of gross settlements

Sub-option 3 – Gross/Gross

Overview: Disable all netting and settle all deferred transactions on a gross basis

Pros

- + May be less impactful to participants

Cons

- Results in highest number of settlement instructions

Proposal

ASX proposes to go with Sub-option 2.

Ask: We would like to seek feedback and alignment on the proposed option and to set up a detailed working group if agreed.

This applies to deferred settlement securities that span the go-live weekend only.

05 – Forward Engagement & AOB

For discussion

05 – Upcoming Engagement

What's on the horizon

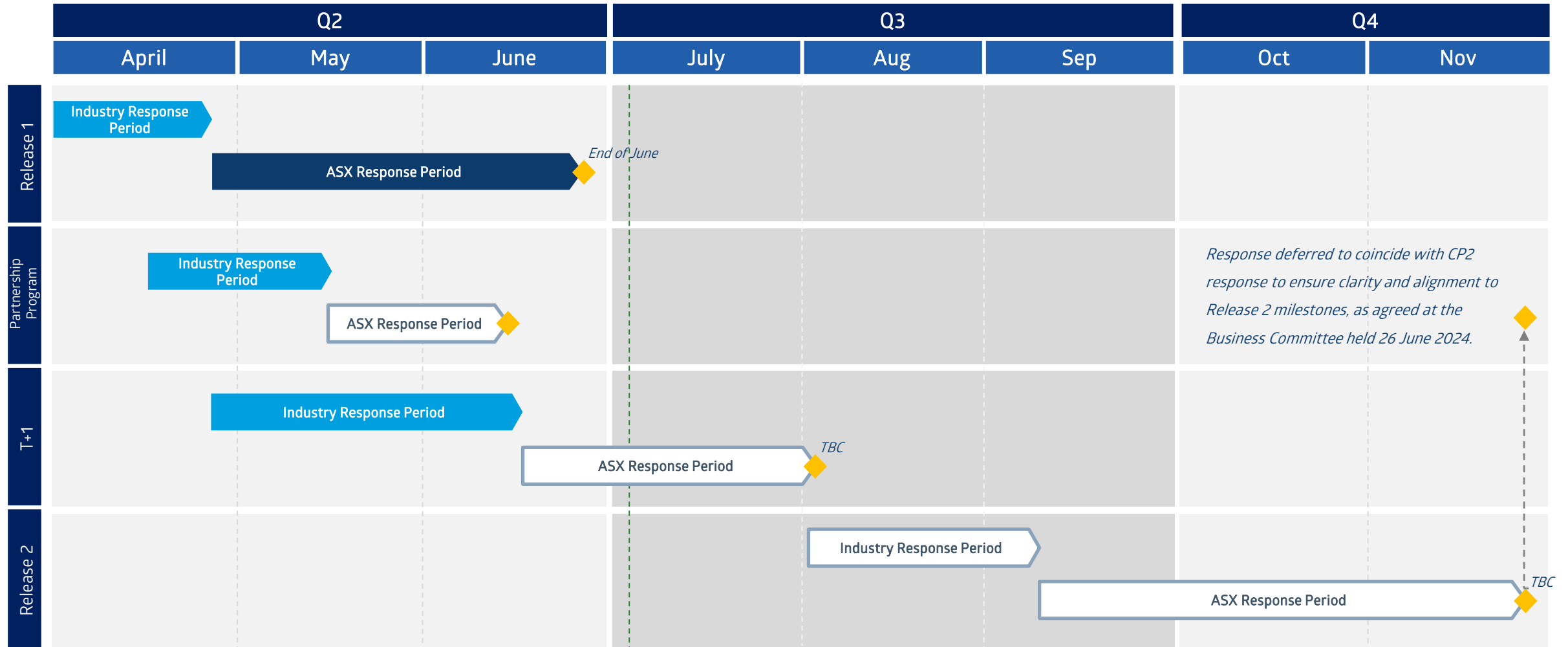
		2023		2024											
		Nov 23	Dec 23	Jan 24	Feb 24	Mar 24	Apr 24	May 24	Jun 24	Jul 24	Aug 24	Sep 24	Oct 24	Nov24	Dec 24
Business Committee	Business Committee		06/12 BC			20/03 BC			26/06 BC			18/09 BC			11/12 BC
	Technical Committee	24/11 TC			07/02 TC	07/03 TC	03/04 TC	08/05 TC	06/06 TC	10/07 TC	07/08 TC	11/09 TC	09/10 TC	06/11 TC	05/05 TC
	I&T WG		12/12 Kick-off & Approach (R1)		20/02 R1 consultation overview			03/05 T+1	05/06 R1 scope, R2 timeline, staged implementation	04/07 R2 timeline, staged implementation, deferred settlement	R2 Consultation discussion	(as required)	(as required)	(as required)	(as required)
		CY23 Q4		Q1			Q2			Q3			Q4		

TC Meeting	Date	Time
July meeting	Wednesday 10 July	2pm – 3.30pm
August meeting	Wednesday 7 Aug	2pm – 3.30pm
September meeting	Wednesday 11 Sept	2pm – 3.30pm
October meeting	Wednesday 9 Oct	2pm – 3.30pm
November meeting	Wednesday 6 Nov	2pm – 3.30pm
December meeting	Thursday 5 Dec	2pm – 3.30pm

BC Meeting	Date	Time
June meeting	Wednesday 26 June	12pm – 2pm
September meeting	Wednesday 18 Sept	12pm – 2pm
December meeting	Wednesday 11 Dec	4pm – 6pm

05 – Public Consultation Update

Inflight & planned CY 2024 public consultation





Q&A



Appendix

For reference

02 – Opportunities for Staged Implementation (Clearing)

Playback Industry feedback from April 23 TC

No Feedback	Supportive	¹ Conditionally Supportive	² Unsupportive / Too early
20	6	10	1

- ¹Support generally conditional on minimizing changes to Participant systems through EIS and ISO 20022 compatibility
- ²Require more information about the final solution and timeframes
- Some participants requesting ability to optionally receive ISO 20022 trade notifications in parallel with EIS trade notifications

OUTCOME (Apr 23): Candidate for further analysis. Look for ways to minimize or eliminate mandatory impacts to Participants and their vendors.

UPDATE (Jul 24): Plan and approach for staging clearing confirmed as part of Release 1. Impact to participants minimised through backwards compatibility for clearing messages

02 – Opportunities for Staged Implementation (Pass-Through)

Playback Industry feedback from April 23 TC

No Feedback	Supportive	¹ Conditionally Supportive	Unsupportive
27	4	2	4

- Concerns it will introduce cost and /or complexity, and may not be viable
- ¹Conditional support provided subject to:
 - Review with users
 - That if offered, it must be optional

OUTCOME (Apr 23): Mixed support. Revisit once target solution is better defined.

UPDATE (Jul 24): Assessed as increased risk (see slide 12)

02 – Opportunities for Staged Implementation (2nd Settlement)

Playback Industry feedback from April 23 TC

No Feedback	Supportive	¹ Conditionally Supportive	Unsupportive
19	2	8	8

- Concerns it will introduce cost and/or complexity and/or may not be viable
- Concerns it increases risk rather than reduces it
- ¹Conditional support provided subject to
 - Review with users / whether my vendor can support it
 - Optional migration to new HINs instead of existing ones
 - Netting the split batch into single payment
 - Single margin settlement

OUTCOME (Apr 23): Mixed support. Revisit once target solution is better defined. May still be possible to offer a limited pilot.

UPDATE (Jul 24): Assessed as increased risk (see slide 12)

Thank you.

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