



5MS Systems Working Group

SWG#9 - Monday, 15th April 2019

AEMO Offices:

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Agenda (Melbourne Time)

NO	TIME	AGENDA ITEM	RESPONSIBLE
Preliminary Matters			
	10:00am - 10:05am	Welcome, introduction and apologies	Mal Borschman (AEMO)
Matters for Noting			
	10:05am – 10:15am	Minutes and Actions from last meeting	Mal Borschman (AEMO)
	Systems Workstream Updates		
	10:15am – 10:25am	Retail Stream update	Jim Agelopoulos (AEMO)
	10:25am – 10:35am	Settlements Stream update	Bhanu Rajan (AEMO)
	10:35am – 10:45am	Dispatch Stream update	Ian Devaney (AEMO)
Matters for Discussion			
	10:45am – 11:15am	Settlements – Debrief on Focus Group	Austin Tan (AEMO)
	11:15am – 11:45am	Metering – Meter Data Delivery	Simon Tu (AEMO)
	11:45am – 11:50am	Discussion –participants anticipating using API's	Hamish McNeish (AEMO)
Other business			
	11:50am – 11:55am	General questions	Mal Borschman (AEMO)
	11:55am – 12:00pm	Forward meeting plan	Mal Borschman (AEMO)

Matters for Noting

Mal Borschman

Open Actions

- There was only one action from the last meeting

Item	Topic	Action required	Action Update	Responsible	By
1.6	Participant bandwidth implications	<p>AEMO to provide assessment on bandwidth/networking impacts.</p> <p>Internally there have been some changes to AEMO's proposed network architecture with additional cloud deployments. We are working on sizing the expected network traffic first, once this is completed we will be able to review the bandwidth allocations.</p> <p>Next update SEG in May 19.</p>	Pending	AEMO	May 19
7.6	Request for change password API	<p>AEMO to investigate adding an API to allow resetting of a URM useraccount password (as used by API's)</p> <p>AEMO is progressing an API for this, outside of the SMS project. The timeline is still to be confirmed.</p> <p>Next update SWG in May-19.</p>	Pending	AEMO	May 19
7.9	Support of participant domain names	<p>Rather than API addresses, especially with systems now moving to the cloud. AEMO to investigate what is possible, and provide an update at the next SWG.</p> <p>We have confirmed with our IT Integration team that domain names can now be supported.</p>	Closed	AEMO	Mar 19

Actions to Close

Item	Topic	Action required	Action Update	Responsible	By
7.9	Support of participant domain names	Information provided – domain names are supported	Closed	AEMO	Mar 19
8.0	Consider shifting the SWG date to Monday 15 th April	Scheduled for Monday 15 th April	Closed	AEMO	Apr 19

System Workstream – Metering

Jim Agelopoulos

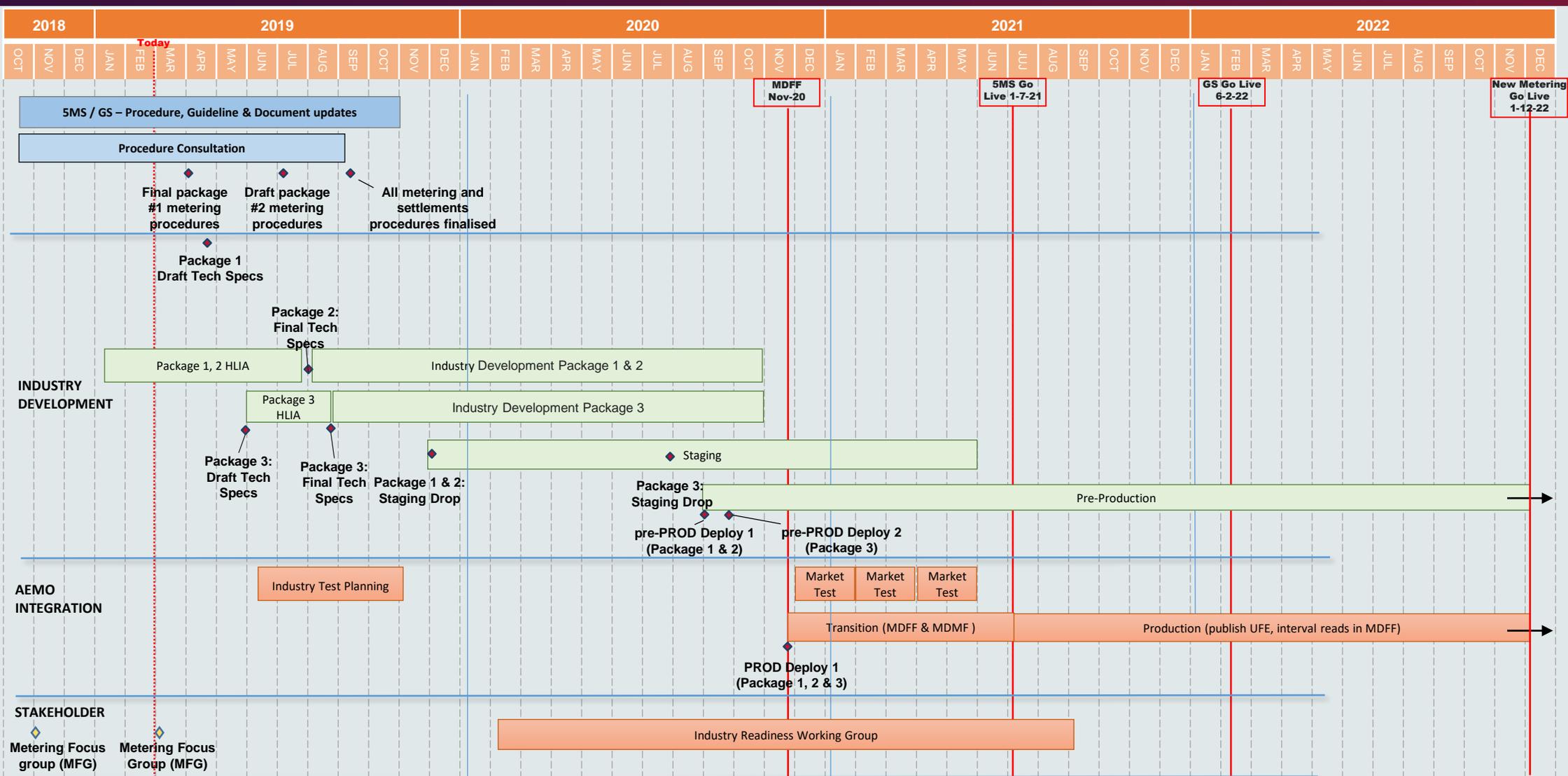
System Workstream - Metering

5 MINUTE SETTLEMENT SYSTEMS TRACKING	TIMING									
	Internal HLIA	Focus/Group	SWG Engagement	External HLIA	Draft Tech Spec	Final Tech Spec	User Guides	5MS Staging	Preprod	Production
METERING										
PACKAGE 1										
Transition	Aug-18	Sep-18	Aug-18	Nov-18	Apr-19	Jun-19	-	Dec-19	-	-
MDFF • MDFF Specification NEM12 NEM13 v20	Aug-18	Oct-18	Oct-18	Nov-18	Jan-19	Apr-19	-	Dec-19	Sep-20	Nov-20
Meter Data - MDFF and MDMF • MDM File Format and Load Process • MSATS Technical Specification	Aug-18	Oct-18	Sep-18	Nov-18	Apr-19	Jun-19	-	Dec-19	Sep-20	Nov-20
PACKAGE 2										
B2M to eHub Technical Guide (new)	Oct-18	-	Mar-19	Apr-19	May-19	Jul-19	-	Dec-19	Sep-20	Nov-20
PACKAGE 3										
MSATS Browser (LVI) Changes • Guide to MSATS Web Portal* • MSATS Technical Specification	Aug-18	May-19	May-19	Apr-19	Jun-19 TBC	Aug-19 TBC	TBC	-	Sep-20	Nov-20
MSATS Report changes • MSATS Procedures MDM Procedure • MDM File Format and Load Process • MSATS Technical Specification General Process & Document Clean-up	Oct-18	May-19	May-19	Apr-19	Jun-19 TBC	Aug-19 TBC	-	-	Sep-20	Nov-20

Level Two Milestones - Metering

#ID	Level	Workstream	Milestone	Description	Date	Status	Notes
L2-M1	2	Metering	<i>AEMO internal Metering solution – Solution Design complete (internal)</i>	Solution Design phase for new AEMO Meter Data Management (MDM) and Profiling Allocation Engine (PAE) complete.	31-May-2019	[Firm]	On Track
L2-M2	2	Metering	Final Technical Specifications for Package 1 published by AEMO	Technical Specification for changes to Transition, Meter Data – MDFF, B2M MDFF (API and FTP) as a result of 5MS and GS available to participants.	30-Jun-2019	[Firm]	On Track, revised dates published in March SWG
L2-M3	2	Metering	Final Technical Specifications for Packages 2 published by AEMO	Technical Specification for changes to and Standing Data and validations, and B2M via eHub, as a result of 5MS and GS available to participants.	31-Jul-2019	[Firm]	On Track, revised dates published in March SWG
L2-M4	2	Metering	Final Technical Specifications for Package 3 published by AEMO	Technical Specification for changes to the MSATS Browser (LVI) and MSATS Report Changes as a result of 5MS and GS available to participants.	31-Aug-2019	[Firm]	On Track, revised dates published in March SWG
L2-M5	2	Metering	Software Drop for Packages 1 & 2 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for Transition, Meter Data – MDFF, B2M MDFF (API and FTP), Standing Data and validations, B2M via eHub and available for participant testing.	01-Dec-2019	[Firm]	On Track
L2-M6	2	Metering	Agreement on requirements for Accreditation & Market Trails	Program agreement of the Accreditation requirements and process, and on market testing requirements and process.	31-Mar-2020	Provisional	Aligned with the MSP Accreditation Plan document
L2-M7	2	Metering	<i>AEMO internal Metering solution – Build complete (internal)</i>	Build phase for new AEMO Meter Data Management (MDM) and Profiling Allocation Engine (PAE) complete	30-Jun-2020	[Firm]	On Track
L2-M8	2	Metering	Software Drop for Package 3 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for MSATS Browser (LVI) and MSATS Report enhancements and available for participant testing.	31-Jul-2020	[Firm]	On Track
33	2	Metering	<i>AEMO internal Metering solution – available for participant testing</i>	Participant regression testing on for new MDM build begins	01-Sep-2020	Provisional	Detail TBC; full market not req'd
L2-M9	2	Metering	<i>AEMO internal Metering solution – Go Live complete (internal)</i>	Go Live date for new AEMO Meter Data Management (MDM) and Profiling Allocation Engine (PAE) complete	31-Oct-2020	Provisional	On Track
L2-M10	2	Metering	New MDFF format accepted by AEMO	AEMO deploys MDFF capable software to PROD, and all market participants can begin submitting files in the new MDFF format.	01-Nov-2020	Provisional	Dependent upon readiness strategy
L2-M11	2	Metering	Market Trial preparation completed by participants	All market participants who are required to submit five-minute meter reads are ready for market trials	30-Nov-2020	Tentative	Content and timing of Market Trials TBD

5MS Participant Timeline – Metering



System Workstream – Dispatch

Ian Devaney

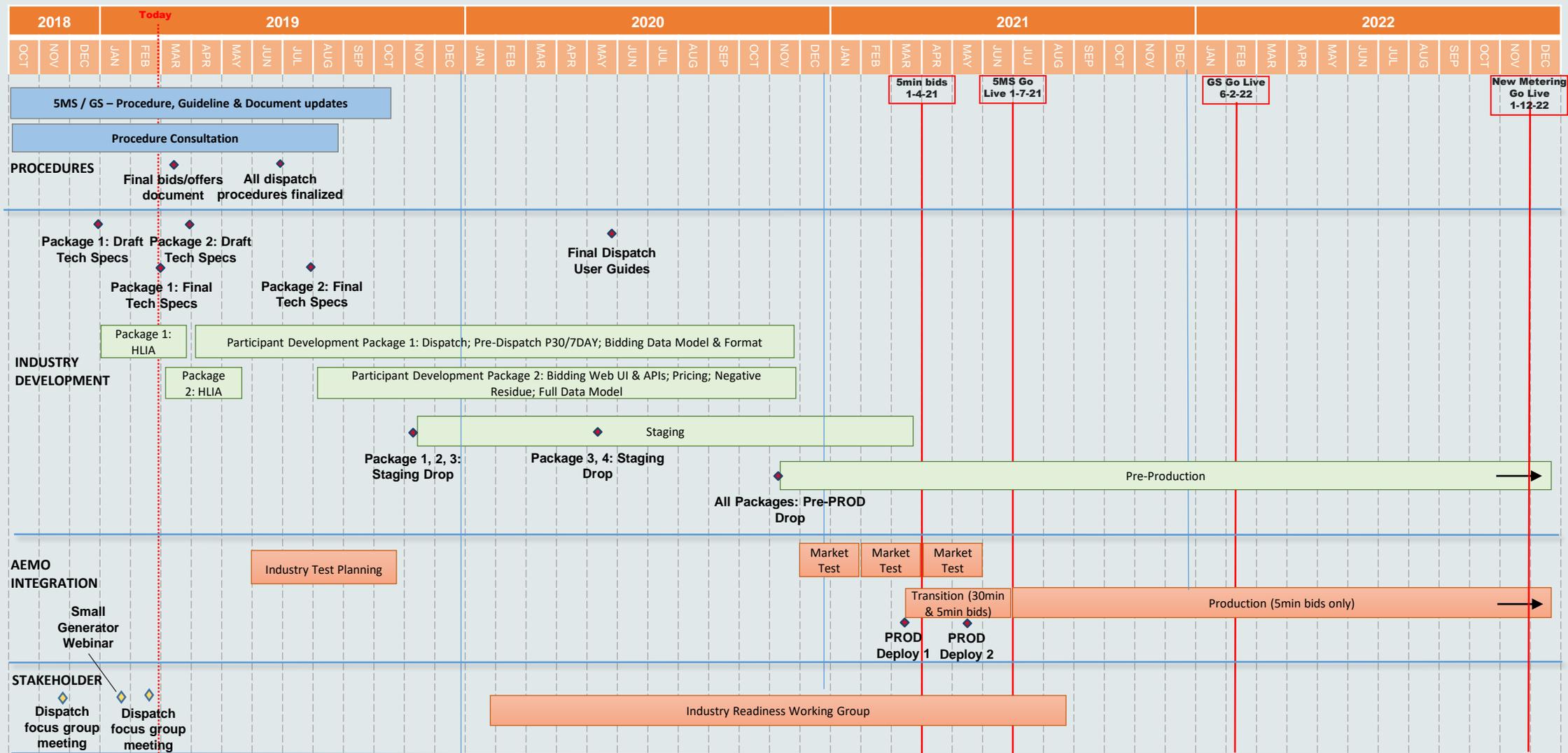
System Workstream - Dispatch

5 MINUTE SETTLEMENT SYSTEMS TRACKING	TIMING									
	Internal HLIA	Focus/Group	SWG Engagement	External HLIA	Draft Tech Spec	Final Tech Spec	User Guides	5MS Staging	Preprod	Production
DISPATCH										
Transition	Aug-18	Oct-18	Aug-18	Nov-18	Dec-18	2-Apr-19	Oct-19	Nov-19	Nov-20	Mar-21
Bidding Web UI and APIs	Aug-18	Nov-18	Dec-18	Jan-19	Mar-19	Jul-19	Oct-19	Nov-19	Nov-20	Mar-21
Bidding Data Model	Aug-18	-	Sep-18	Mar-19	Dec-18	2-Apr-19	Oct-19	Nov-19	Nov-20	Mar-21
Bidding Format	Aug-18	-	Sep-18	Nov-18	Dec-18	2-Apr-19	Oct-19	Nov-19	Nov-20	Mar-21
Dispatch	Aug-18	-	Oct-18	Nov-18	Oct-18	2-Apr-19	-	Nov-19	Nov-20	Mar-21
Predispatch P30/7DAY	Aug-18	-	Oct-18	Nov-18	Oct-18	2-Apr-19	-	Nov-19	Nov-20	Mar-21
Predispatch P5	Nov-18	Oct-18	Nov-18	TBC	TBC	TBC	-	TBC	Nov-20	May-21
Trading Price / Price Revision	Aug-18	-	Feb-19	Nov-18	Mar-19	Jul-19	-	-	Nov-20	May-21
Administered Pricing and CPT	Aug-18	-	Feb-19	Dec-18	Mar-19	Jul-19	-	-	Nov-20	May-21
Suspension Pricing	Sep-18	-	Feb-19	Dec-18	Mar-19	Jul-19	-	-	Nov-20	May-21
Negative Residue Management	Sep-18	-	Feb-19	Dec-18	Jun-19	Jul-19	-	-	Nov-20	May-21
Full Data Model	Sep-18	Ongoing	Ongoing	Apr-19	Ongoing	Jan-20	Oct-20	-	Nov-20	May-21

Level Two Milestones - Dispatch

#ID	Level	Workstream	Milestone	Description	Date	Status	Notes
L2-D1	2	Dispatch	Final Technical Specifications for Package 1 published by AEMO	Technical Specification for changes to Dispatch, Pre-dispatch P30/7DAY, ST PASA, Bidding Data Model and Bidding Format as a result of 5MS and GS available to participants.	2-Apr-2019	[Firm]	Final now published. Delay of 2 days due with confirmation of API naming standard taking longer than expected.
L2-D2	2	Dispatch	Final Technical Specifications for Package 4 published by AEMO	Technical Specification for changes to the Bidding Web UI and APIs as a result of 5MS and GS available to participants.	31-Jul-2019	[Firm]	Package 4, not 2.
L2-D3	2	Dispatch	Software Drop for Packages 1,2 & 3 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for Dispatch, Predispatch P30/7DAY, ST PASA, Bidding Data Model and Bidding Format, Bidding Web UI and APIs and Predispatch P5.	29-Nov-2019	[Firm]	On Track
L2-D5	2	Dispatch	Software Drop for Package 4 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for RERT, Trading Price / Price Revision, Administrated Pricing and CPT, Suspension Pricing, Negative Residue Management, data model for Dispatch	15-May-2020	[Firm]	
L2-D4	2	Dispatch	<i>Development completed (internal)</i>	All AEMO internal development work has completed for the Dispatch stream	31-May-2020	[Firm]	On Track
L2-D6	2	Dispatch	<i>UAT completed (internal)</i>	All AEMO internal UAT has completed for the Dispatch stream	16-Oct-2020	[Firm]	
L2-D7	2	Dispatch	Market Trial preparation completed	All market participants who are required to submit 5MS bids and offers are ready for market trials	30-Nov-2020	Tentative	Content and timing of Market Trials TBD
L2-D8	2	Dispatch	Market Trial preparation completed	AEMO has software deployed to pre-production environment and is ready to deliver the agreed Market Trail scenarios	30-Nov-2020	Tentative	Content and timing of Market Trials TBD
L2-D9	2	Dispatch	5-min Bidding Phased Go Live Begins	Participants can begin submitting 5-min bids to the market	01-Apr-2021	Provisional	
L2-D10	2	Dispatch	Market Trial conclude	Market Trial scenarios related to dispatch have been completed	31-May-2021	Tentative	Content and timing of Market Trials TBD

5MS Participant Timeline - Dispatch



System Workstream – Settlements & Operations

Hamish McNeish

System Workstream – Settlement and Operations

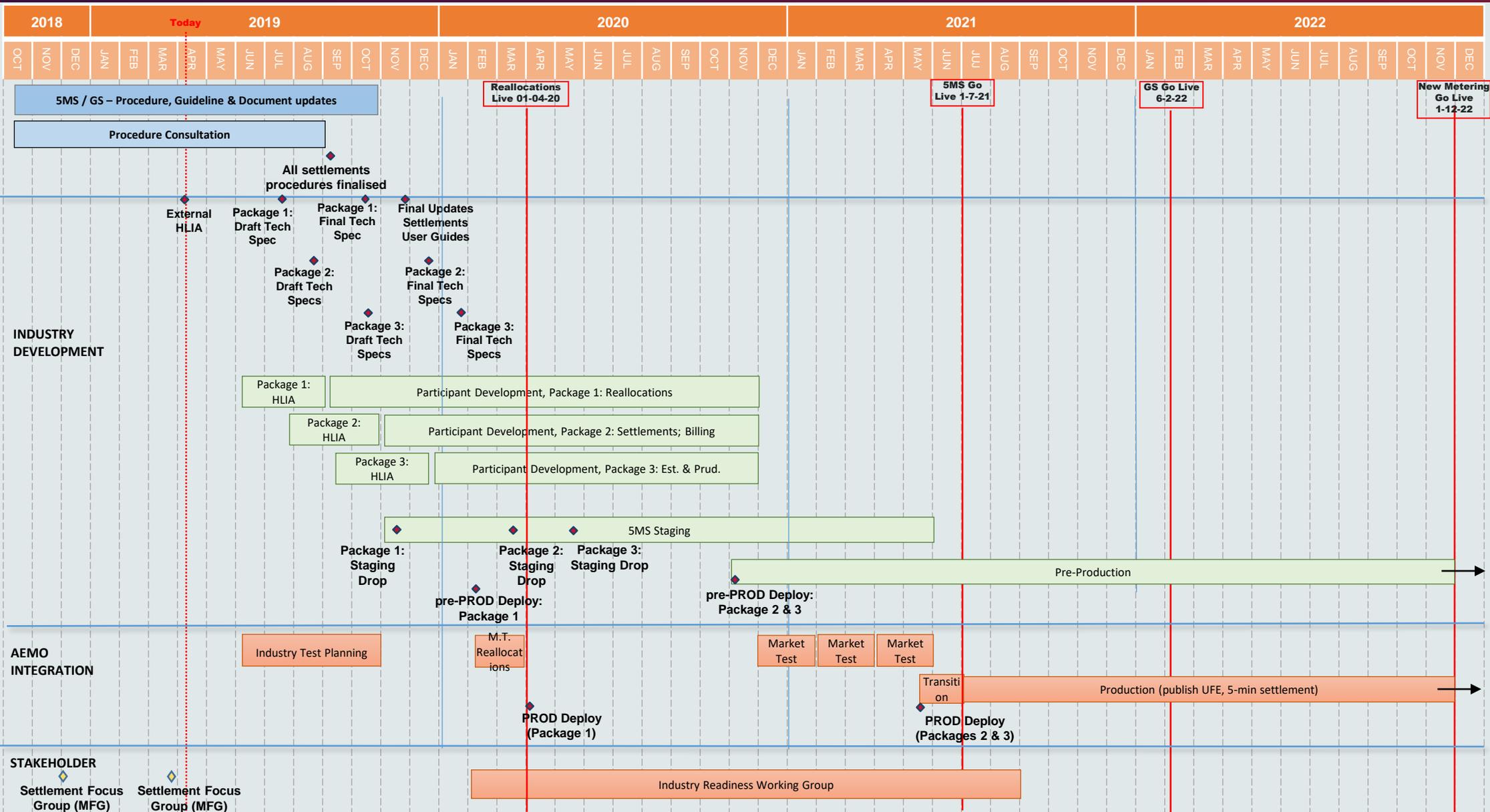
- Current estimated timeline

5 MINUTE SETTLEMENT SYSTEMS TRACKING	TIMING									
	Internal HLIA	Focus/Group	SWG Engagement	External HLIA	Draft Tech Spec	Final Tech Spec	User Guides	SMS Staging	Preprod	Production
SETTLEMENTS										
Estimation	Oct-18	Nov-18	Dec-18	Mar-19	Oct-19	Jan-20	-	May-20	Nov-20	May-21
Settlements	Oct-18	Nov-18	Dec-18	Mar-19	Aug-19	Dec-19	-	Mar-20	Nov-20	May-21
Reallocation	Dec-18	Nov-18	Dec-18	Mar-19	Jul-19	Oct-19	Nov-19	Nov-19	Mar-20	May-20
Billing	Oct-18	Nov-18	Dec-18	Mar-19	Aug-19	Dec-19	-	Mar-20	Nov-20	May-21
Prudentials	Sep-18	Nov-18	Dec-18	Mar-19	Oct-19	Jan-20	Nov-19	May-20	Nov-20	May-21
Full Data Model	Refer DISPATCH									
POWER SYSTEM OPS (TBC)										
PASA (ST/PD)	Aug-18	-	Oct-18		TBC	TBC	Oct-19	Nov-19	Nov-20	Mar-21
RERT	Oct-18	TBC	TBC		TBC	TBC	TBC	-	Nov-20	May-21
Negative Residue Management	Refer DISPATCH									

Level Two Milestones - Settlements

#ID	Level	Workstream	Milestone	Description	Date	Status	Notes
L2-D1	2	Settlements	Final Technical Specifications for Package 1 published by AEMO	Technical Specification for changes to Reallocation as a result of 5MS and GS available to participants.	15-Oct-2019	[Firm]	On Track
L2-D2	2	Settlements	Software Drop for Package 1	Software deployed into the 5MS Staging environment for Reallocations.	01-Nov-2019	[Firm]	On Track
L2-D3	2	Settlements	Final Technical Specifications for Package 2 published by AEMO	Technical Specification for changes to Settlements and Billing as a result of 5MS and GS available to participants.	15-Dec-2019	[Firm]	On Track
L2-D4	2	Settlements	Final Technical Specifications for Package 3 published by AEMO	Technical Specification for changes to Prudentials as a result of 5MS and GS available to participants.	31-Jan-2020	[Firm]	On Track
L2-D5	2	Settlements	<i>Development completed (internal)</i>	All AEMO internal development work has completed for Settlements stream	31-May-2020	[Firm]	On Track
L2-D6	2	Settlements	Software Drop for Package 2 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for Settlements and Billing.	16-Mar-2020	[Firm]	On Track
L2-D7	2	Settlements	Software Drop for Package 3 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for Estimations and Prudentials.	15-May-2020	[Firm]	On Track
L2-D8	2	Settlements	Market Trials for reallocations	Market participants pass UAT for the upgraded reallocations web portal.	13-Mar-2020	Provisional	Content of Market Trials TBD
L2-D9	2	Settlements	<i>UAT completed (internal)</i>	All AEMO internal UAT has completed for Settlements stream	16-Oct-2020	[Firm]	
L2-D10	2	Settlements	Market Trial preparation completed by participants	All market participants who will receive Wholesale settlement invoicing are ready for market trials.	30-Nov 2020	Tentative	Content and timing of Market Trials TBD
L2-D11	2	Settlements	Market Trial preparation completed by AEMO	AEMO has deployed all relevant software to the 5MS pre-Production environment and is ready to deliver the agreed Market Trail scenarios.	30-Nov-2020	Tentative	Content and timing of Market Trials TBD
L2-D12	2	Settlements	Reallocations Go Live	AEMO has deployed reallocation software to the PROD environment and 5-minute reallocation requests are enabled.	01-Apr-2020	Tentative	

5MS Participant Timeline – Settlements



Matters for Discussion

Mal Borschman

Settlements – Debrief from Focus Group

Austin Tan

Settlements Focus Group: Wednesday 20 March, Melbourne

- Held on Wednesday 20 March in Melbourne
- Session covered both Settlements in the 5MS context and also Global Settlements
- 23 attendees representing mainly retailers
- Meeting notes and actions distributed to focus group, PWG and SWG on Friday 29 March

Topics Discussed at the Settlements Focus Group

Topics Discussed

5MS Settlements

- Settlement Procedures Update
- Overview of 5MS Metering and Dispatch – Settlement considerations
- Reallocations
- 5MS Settlements Transition Approach
- AEMO Settlement Interfaces
- 5MS Readiness Approach
- Reconciliation Support

Global Settlements

- Global Settlement overview
- UFE Calculation and Application
- UFE Verification Reporting
- UFE Trends Reporting
 - PWG to provide feedback on what content would be most useful to participants in the UFE Trends Report

Topic Outcomes

Topic	AEMO Proposal	Discussion	Outstanding Issues	Next Steps	Outcome
Transitional billing arrangements	<p>AEMO to produce SR Report and PDF Tax Invoice and per current process. Data tables in Data Interchange can be utilised to identify 5 and 30 minute data.</p> <p>AEMO will provide a mapping document between invoices and data interchange to assist participants in the reconciliation process.</p>	<p>Some participants expressed a preference for separate reports during the billing week when the 5MS transition occurs on 1 July 2021.</p> <p>AEMO noted it was not cost effective to provide two separate SR reports during the transition week. It was also noted that 5 minute and 30 minute data will be available in Data Interchange.</p> <p>Participants agreed that a mapping document between data interchange and invoices will assist with reconciliation</p>	n/a	AEMO to provide mapping document between invoices and data interchange to the System's working Group	<p>AEMO to produce SR Report and PDF Tax Invoice and per current process. Publish 5 minute and 30 minute data in Data Interchange.</p> <p>AEMO to provide mapping document to assist reconciliation activities</p>

System – Action Items

Action	Responsible	By
AEMO to provide information through the Systems Working Group (SWG) on mapping between Data Interchange and SR Reports	AEMO	15-Apr-2019
Participants to highlight priorities for AEMO to provide mapping information between SR Reports and the EMMS data model	Participants	15-Apr-2019

Transition Billing Week and Data Interchange discussions included:

- 1 July 2021 is mid billing week and AEMO's system will handle both 30-min and 5-min energy volumes across different settlement runs within the billing week of 27 June 2021 to 3 July 2021 (transition billing week)
- SR Reports and PDF Tax Invoices will be produced as per the current process
- AEMO noted it was not cost effective to provide two separate SR reports during the transition week.
- Data tables in Data Interchange can be utilised to identify 5min vs 30min
- AEMO is proposing to provide mapping document between invoices (PDF and SR Reports) and data tables (data interchange, EMMS data model) – date TBC
- Awaiting feedback, next steps will be to do a scoping exercise

Topic Outcomes

Topic	AEMO Proposal	Discussion	Outstanding Issues	Next Steps	Outcome
Approach to support reallocations after 5MS	<p>Reallocations interface to be capable of processing 5-minute reallocations 6 months prior to July 2021.</p> <p>5-minute reallocations interface to be available in pre-production by mid 2020 for market participant testing.</p> <p>Market participants to be restricted from inputting 30-minutes reallocations for any time periods beyond 1 July 2021.</p>	<p>Participants had a preference for the reallocations system to be capable of processing 5 minute reallocations 6 months prior to July 2021, with pre-production available mid-July 2020.</p> <p>Agreement that there is minimal value in supporting 30 minute reallocations past July 2021 if sufficient time is given to participants to enter 5 minute reallocation contracts before July 2021.</p>	n/a	n/a	AEMO is working towards having the reallocations production interface being available to market participants at least 6 months prior to the implementation of 5MS.

Topic Outcomes

Topic	AEMO Proposal	Discussion	Outstanding Issues	Next Steps	Outcome
Updates to the Reallocations user interface	<p>A range of new additional system functionalities were suggested based on participant feedback. These include:</p> <ul style="list-style-type: none"> • APIs • Regional calendar option • Fill functionality • New business alerts • Single list of all reallocations • Reverse/Cancel feature • Copy/paste functionality 	<p>Participants suggested that a notifications feature would be of value. Additional thought required as to which format will suit best (Email/Push notifications)</p> <p>Discussion regarding additional functionality to report on net reallocations</p>	<p>Participants to continue providing further suggestions through the SWG to improve current reallocations user interface and functionality</p>	<p>AEMO will consult with participants as necessary on the implementation of these new features</p>	<p>APIs will be made available for participants to develop own reallocation interfaces</p> <p>Procedural changes gives AEMO the option of adding in regional calendars for reallocations. AEMO is still exploring the best implementation approach</p> <p>Fill functionality will be implemented with 5MS</p> <p>New business alerts currently under consideration.</p>

System – Action Items

Action	Responsible	By
Participants to provide feedback on whether there are additional alerts that will be beneficial features in the reallocations system	Participants	5-Apr-2019

Reallocations Additional System Functionality discussion included:

- API to be available for participants to develop own reallocation interfaces
- Regional calendars
- Fill functionality
- Single list of all reallocations
- Reverse / Cancel feature
- New business alerts
 - Under consideration – development of a new set of business alerts using the business alert functionality currently available.
 - This would enable new Settlements Direct subscription to alerts, reminders and notifications.
 - Currently, participant can subscribe to available alerts to be received by email or SMS.
 - AEMO noted that the current design will notify participants when:
 - The user is nominated as a counter party to a reallocation and is required to authorise the reallocation
 - The counterparty authorises the reallocation

Topic Outcomes

Topic	AEMO Proposal	Discussion	Outstanding Issues	Next Steps	Outcome
Data interchange	<p>5-minute settlement DI reports will use the same table names and structures as existing 30-minute feeds, with the definition of “PeriodId” changing from a 30-minute period (1 to 48) to a 5-minute period (1 to 288).</p> <p>Indicator will be added for ‘interval length’ to specify what the length of interval Is with each settlement run</p>	<p>Participants agreed that 5 minute data feed is preferred after 1 July 2021, a 30 minute legacy feed is not required</p> <p>Some participants also expressed that there could be value in retaining data in the DI archive for more than 6 months</p>	Finalise which reports will be retained in the DI archive for longer than 6 months	Participants to provide further feedback on which reports in the DI archive should be retained for longer than 6 months	<p>5-minute settlement DI reports will use the same table names and structures as existing 30-minute feeds</p> <p>AEMO is considering retaining PDF Tax Invoices / RCTIs, PDF Adjustment Notes / RC Adjustments Notes and SR Reports for longer than 6 months</p>

System – Action Items

Action	Responsible	By
Participants to advise which reports should be retained for longer in the AEMO DI archive, and how long it should be retained for	Participants	5-Apr-2019

Data Interchange Archive discussion included:

- AEMO DI archive contains a copy of all reports distributed through either Data Interchange or Publishing Direct, includes PDF and Text reports, CSV/XML files, Elec and Gas Data Model files, etc.
- Currently, AEMO stores up to at least 6 months of historic data for all reports.
- Participants have provided feedback that some reports should have their retention period increased to 2-3 years.
- AEMO is looking at modifying the archiving system to support per-report retention periods. Reports under consideration for longer retention periods are:
 - PDF Tax Invoices / RCTI's
 - PDF Adjustment Notes / RC Adjustment Notes
 - SR Reports
 - ...feedback on any other reports we should consider is welcomed
- Awaiting feedback, next steps will be to do a scoping exercise

Topic Outcomes

Topic	AEMO Proposal	Discussion	Outstanding Issues	Next Steps	Outcome
MDMF file transition	n/a	A participant queried if there was a planned date to cease support for MDMF files.	n/a	n/a	<p>AEMO clarified that interval metering data will have to be in MDFF data from 30 June 2021.</p> <p>Currently there is no sunset date yet for MDMF accumulation metering data.</p>

Topic Outcomes

Topic	AEMO Proposal	Discussion	Outstanding Issues	Next Steps	Outcome
Granularity of UFE allocation	Calculation of UFE will be done in AEMO settlement systems at a TNI level instead of a NMI level. However this calculation will align with NMI level allocation as defined in the Rules.	<p>AEMO's current system design will calculate UFEA at TNI level granularity. The final GS rule implies that UFEA will have to be calculated for each NMI (i.e. 10 million) for every trading interval (288 per day).</p> <p>Assuming the intent of the AEMC is to allocate to each market customer based on its share of energy in the local area, mathematically the settlement outcome will be identical if the calculation is done at a TNI or NMI level given that UFEA will be aggregated to local area.</p> <p>Participants at the SFG have indicated that they are largely comfortable with the approach of TNI level calculation, but the view was that AEMO should discuss the implementation approach with the AEMC.</p>	n/a	n/a	AEMO has discuss this item with the AEMC. Agreed that AEMO's current approach of performing settlements at the TNI level is appropriate.

System – Action Items

Action	Responsible	By
AEMO and the SWG to consider the number of decimal places of UFE and UFEA	AEMO, Participants	15-Apr-2019

AEMO's response to the UFE and UFEA decimal places discussion/question:

- Settlements are calculated up to 8 decimal places
- Sum of UFEA for all market participants in local area will match sum of UFE in local area
- UFE in local area can be negative, it will be apportioned to market participants in local area the same way as positive UFE will be apportioned

Metering – Meter Data Delivery

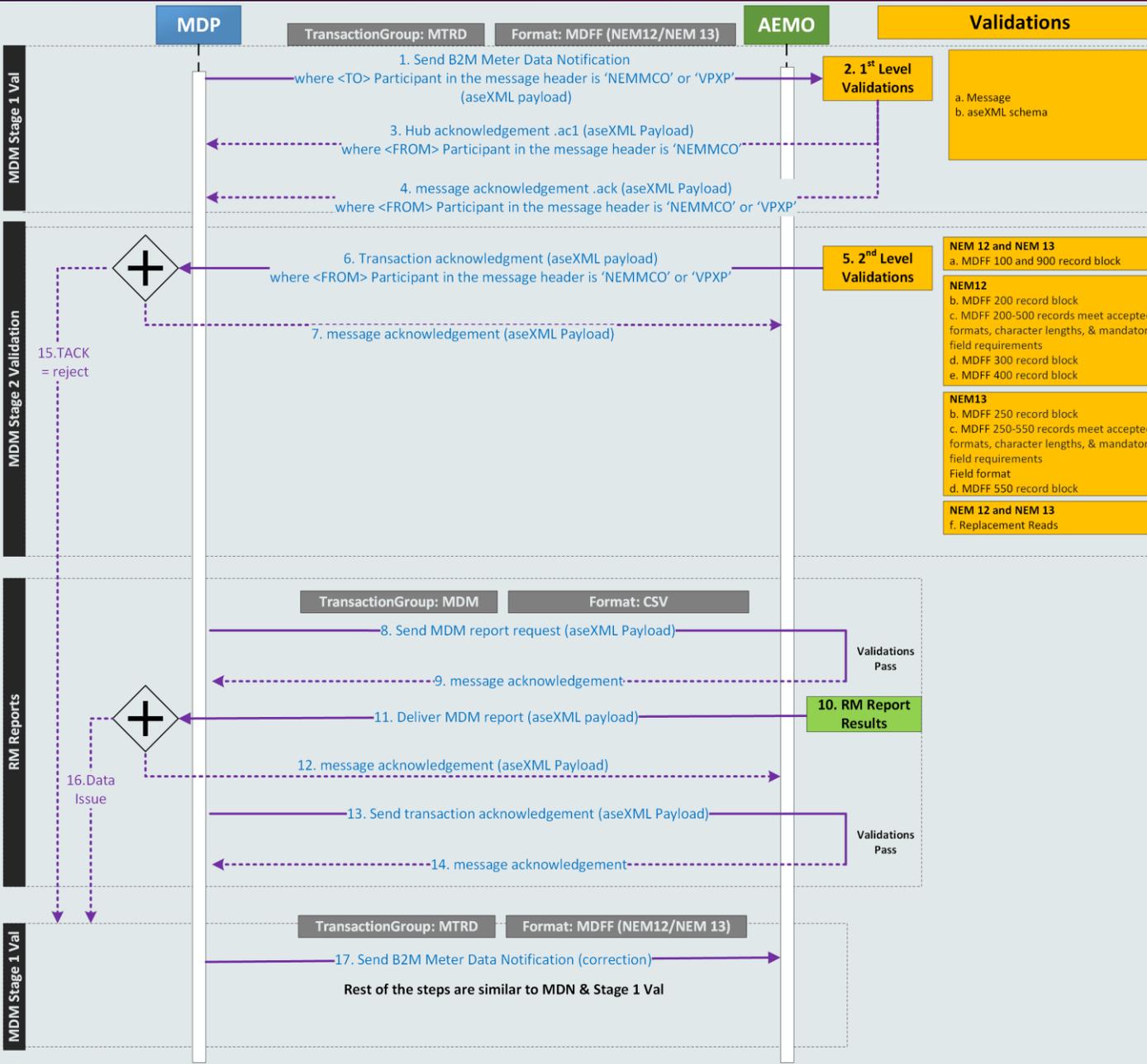
Simon Tu

MTRD Meter Data Delivery

AEMO Proposal

- The MTRD shall support three distinct purposes:
 - B2B MTRD Meter Data Notifications – For Retail Settlements
 - B2M MTRD Meter Data Notifications – For Transmission Use of System (TUoS) billing
 - B2M MTRD Meter Data Notifications – For Market Settlements
- MDPs to identify MTRD Meter Data for Market Settlements
 - 'NEMMCO' as the To Party Identifier in the aseXML Header record
 - 'NEMMCO' as the Participant ID in the MDFF Header record (100) ToParticipant
- Message patterns for MTRD B2M Market Settlements shall mirror that described in the B2B Procedure Technical Delivery Specification
- AEMO is not proposing to use Provide Meter Data (PMD) or Verify Meter Data (VMD) processes for requesting missing meter data reads.
- AEMO to provide MDFF validations in the Transaction Acknowledgement based on error codes defined in the Service Level Procedure: Metering Data Providers

MTRD Meter Data Delivery



AEMO Proposal

MTRD Message Exchange

1. MDP sends MTRD message with 'NEMMCO' as To
2. AEMO performs 1st level validation of message & aseXML schema
3. AEMO sends Hub Ack
4. AEMO sends Message Ack with validation results
5. AEMO performs 2nd level validation of MDFF & replacement reads
6. AEMO sends Trans Ack with validation results
7. MDP to send Message Ack

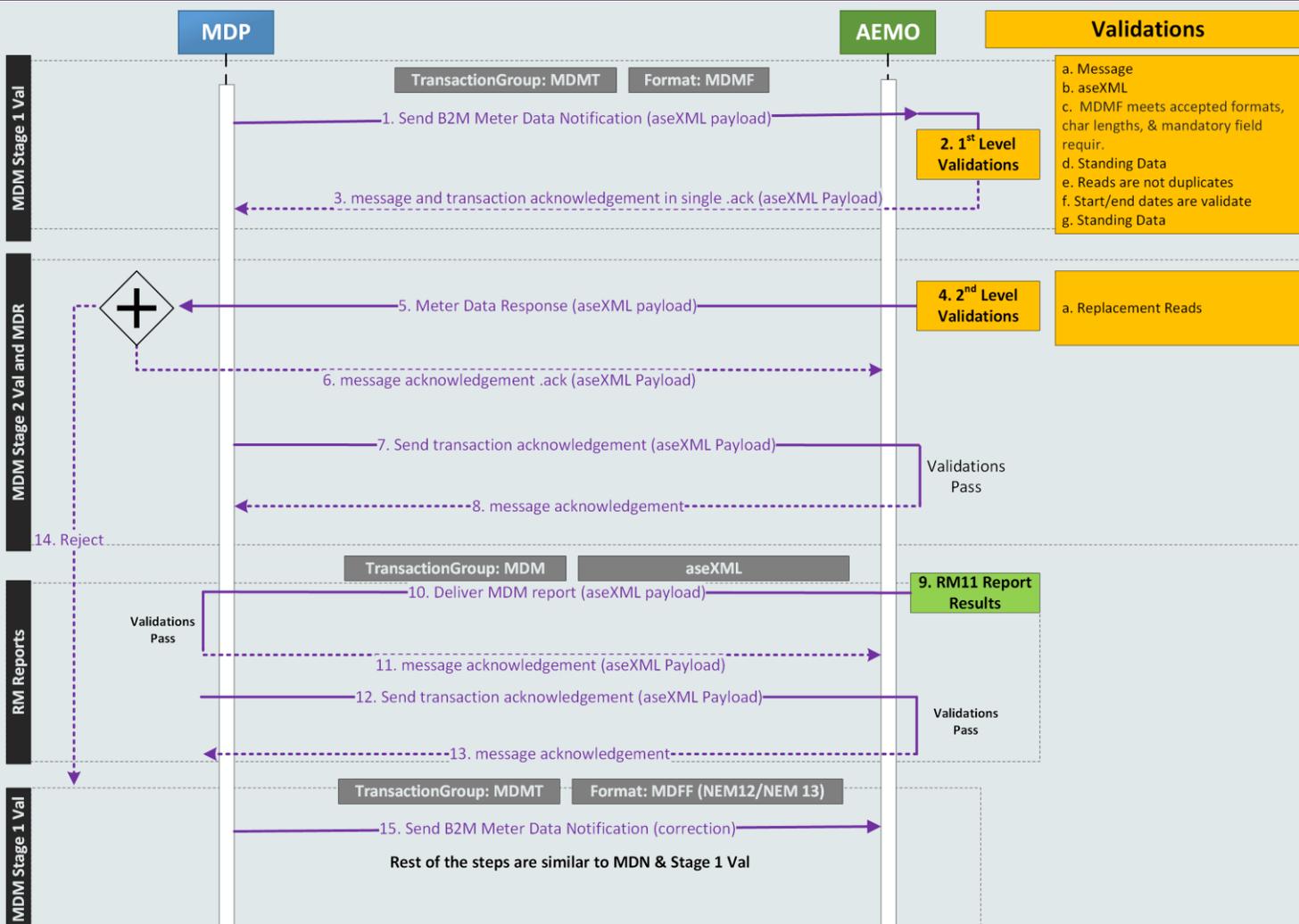
After the Fact Reporting Message Exchange

8. MDP requests MDM report
9. AEMO sends Message Ack for the MDM report request
10. RM report generated
11. AEMO delivers MDM report message
12. MDP to send Message Ack for the MDM report
13. MDP to send Trans Ack for the MDM report
14. AEMO sends Message Ack for the Trans Ack

Resend MTRD Message Exchange

17. In response to a (15.) Trans Ack reject or (16.) after the fact identified meter data issues the MDP resends MTRD message with 'NEMMCO' as To

MDMT Meter Data Delivery



AEMO Proposal

- 1 July 2021
 - AEMO will stop accepting new MDMF interval reads
 - AEMO will continue to accept MDMF consumption reads
- Existing MDMT Message Exchange pattern to be supported
- Existing error codes to be supported
- New facility for 'PUSH' RM11 reports

RM Reports

AEMO Proposal	Discussion
<p>Reports to be Retired</p> <ul style="list-style-type: none">• RM07 – MDP Data Delivery Report• RM08 – Date PPS BMP Generated Report• RM10 – Load Aggregation Error Report• RM12 – Wholesale Maximum Value Report• RM14 – MDP Data Version Comparison Report• RM15 – Multiple Version Report• RM18 – Electricity Interval Data Report• RM19 – Aggregated Actual vs Estimate Report <p>Existing Report Updates</p> <ul style="list-style-type: none">• Existing Reports will be updated to display 5 minute intervals from 1 July 2021• Existing Reports will include Tier 1 and Tier 2 meter data	<p>List of retired reports have been reviewed and agreed at a previous Joint Working Group (JWG).</p> <p>Reports that display Interval Data will increase from the 48 interval periods to 288 interval periods All tier1 and Tier 2 data will be included in existing reports to support Global Settlements.</p>

RM Reports

AEMO Proposal

New Meter Reading Reports

- RM37 – High Priority Missing Data Report – for Wholesale, generator and interconnector NMI's
- RM38 – DataStream Missing Data Report – DataStream level (NEM12) missing readings
- RM39 – Mismatch Data Report – identifies where AEMO has received readings that do not match the standing data.

New UFE Report

- RM43 – UFE Factors by Profile Area – profile area data used to calculate UFE.

Performance Monitoring Report

- Investigation into additional participant obligations may include additional categories into the RM30 report

Report Delivery

- All new reports will be pushed to Participants to allow:
 - Delivery prior to settlement
 - Information to support settlement run

Discussion

Focus on Delivery of Reading to support Settlements.

- RM37 1 day prior to "Prelim" Settlement
- RM38 2 days prior to "Final" Settlement
- RM39 2 days prior to "Final" Settlement

AEMO to publish a Guide to Retail Reporting

AEMO to investigate Performance Monitoring Requirements

New reports will not be available for request only, each report can be subscribed to by affected participants.

Discussion –participants anticipating using API's

Hamish McNeish

General Questions

Mal Borschman

Forward Meeting Plan

Mal Borschman

Further information

- AEMO 5MS Program contacts:
 - Mal Borschman - Wholesale Lead
 - Bhanu Rajan - Settlements
 - Ian Devaney - Dispatch & Bidding
 - Grant Collins - Infrastructure
 - Hamish McNeish - Technical Advisor
 - Jim Agelopoulos - Retail Lead

- Contact details:
 - 5MS email: 5ms@aemo.com.au
 - 5MS webpage: <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement>

Upcoming Meetings

- Systems Working Group
 - SWG#10 - Mon, 20 May 2019
- Focus groups:
 - Further metering focus group meetings expected in the coming months as procedures stream work through metering procedures package #2 – *to be scheduled*
 - Reconciliation support workshop – likely Melbourne in May – *to be scheduled*
- Other AEMO IT Meetings
 - None
- 5MS Meetings and Forum Dates:
<http://aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement>