



5MS & GS Systems Working Group #16

22 November 2019

Agenda

No	Time (AEDT)	Agenda item	Presenter
1	10:00 – 10:10	Welcome, introduction and apologies	Sammy Wainrit
2	10:10 – 10:25	Actions update and managing emerging Procedures process	Sammy Wainrit / Emily Brodie
3	10:25 – 10:30	Retail stream update	Jim Agelopoulos
4	10:30 – 10:35	Retail – functionality available in Staging	Simon Tu
5	10:35 – 10:55	MSATS 46.96 Technical Specification and Other feedback	Simon Tu
6	10:55 – 11:05	10MB File Size & NEM12 Validation Events	Simon Tu
7	11:05 – 11:10	Meter Data Validation Matrix	Simon Tu
8	11:10 – 11:35	aseXML schema	Paul Lyttle
Break 11:35 – 11:45			
9	11:45 – 11:50	Dispatch stream update	Ian Devaney
10	11:50 – 12:10	Dispatch packages 1, 2 & 3	Deborah Armenante
11	12:10 – 12:25	Dispatch Bidding API set in Staging	Vijay Krishna / Shalindra Kulasuriya
12	12:25 – 12:35	Staging environment	Sammy Wainrit
13	12:35 – 12:40	Settlements stream update	Mark Hillaby
14	12:40 – 12:45	Settlements Package 3 Prudentials	Pierre Fromager
15	12:45 – 12:55	Readiness Working Group update (inc Reconciliation Focus Group)	Greg Minney
16	12:55 – 13:00	Forward meeting plan	Sammy Wainrit

Open actions

Item	Action required	Responsible	Action update	By
1.6	AEMO to provide assessment on bandwidth/networking impacts.	AEMO	Pending Design completed and AEMO is currently assessing implications	November 2019
12.12.1	AEMO to advise SWG of first Testing Focus Group when details available.	AEMO	Ongoing Details will be provided when TFG activities commence	Ongoing
13.12.3	AEMO will confirm that the HLIA and Technical Specification are consistent in regard to the fixed load fields.	AEMO	Pending An update will be provided during the meeting	November 2019
14.3.1	Participants to provide feedback on the meter data approach, including reasons for not providing support	SWG Participants	Ongoing	1 November 2019
14.5.1	Participants to provide feedback on the proposed CR19	SWG Participants	Ongoing	1 November 2019
14.7.1	AEMO to request feedback on the Settlements and Billing Technical Specification to the SWG	AEMO SWG Participants	Closed	1 November 2019

Open actions

Item	Action required	Responsible	Action update	By
14.8.2	AEMO to confirm approach to including Interval Length field	AEMO	To be updated during meeting	25 October 2019
14.8.3	Provide AEMO with any feedback on the engagement structure and potential improvements	SWG Participants	Closed	23 October 2019
15.5.1	Participants to provide feedback on the MDM File Format and Load Process , MSATS 46.96 Technical Specification and Meter Data Validation Matrix .	SWG Participants	To be updated during meeting	November 2019
15.5.2	AEMO to provide an update at SWG #16 regarding MDP discussions regarding the removal of the N Quality Flag	AEMO	To be updated during meeting	November 2019
15.5.3	Participants to provide any objections to removing the N Quality Flag in the MDPs to AEMO.	SWG Participants	To be updated during meeting	November 2019
15.8.1	Participants to provide feedback on the bidding web interface.	SWG Participants	To be updated during meeting	November 2019

Managing emerging 5MS/GS procedures issues

- Anticipate that procedure changes will emerge as Participants' and AEMO's 5MS/GS implementations and testing ramp-up
- As 5MS/GS procedures workstream in hibernation, approach to managing procedures issues is to:
 - Use AEMO's BAU processes to:
 - consider procedure change requests
 - process these changes where appropriate
 - Communicate AEMO's responses to procedure change requests via 5MS/GS engagement channels in addition to BAU channels
 - 5MS program to track 5MS/GS procedures issues/changes via an action log
- 5MS procedures workstream can be reactivated on an ad hoc basis to respond to material procedures issues if need be

BAU channels for procedures issues

Area	Channel
Metering / metering data / standing data	<p>B2M Electricity Retail Consultative Forum (ERCF)</p> <ul style="list-style-type: none"> Follow change process <p>B2B Information Exchange Committee</p> <ul style="list-style-type: none"> Follow change process
Settlements	email: settlements@aemo.com.au
Prudentials	email: prudentials@aemo.com.au
Dispatch	<p>NEM Wholesale Consultative Forum</p> <ul style="list-style-type: none"> email: nemwcf@aemo.com.au

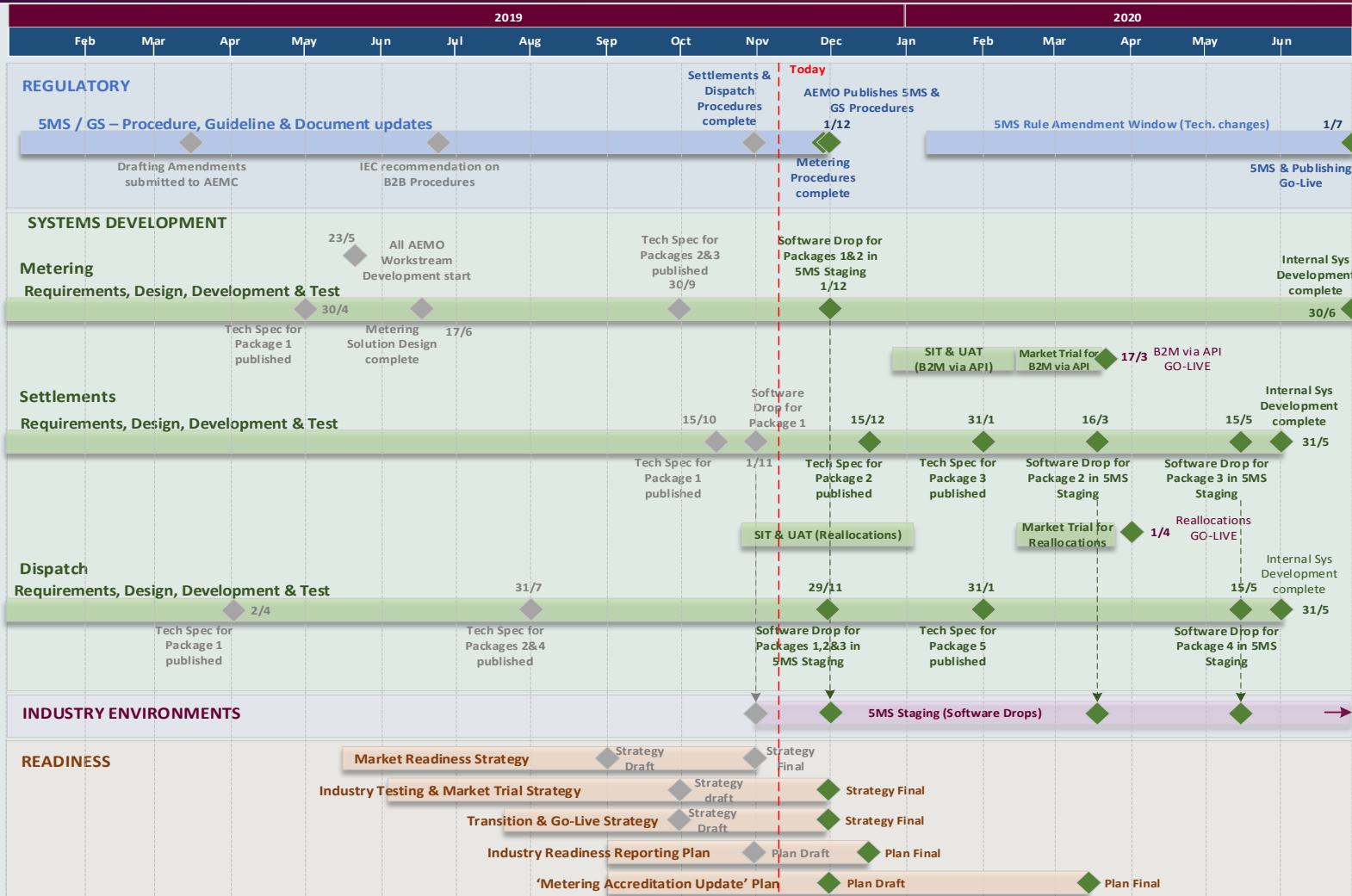
Level 1 and 2 Milestones – timeline

Sammy Wainrit

5MS Program Timeline (to July '20)

Level 1 and External Level 2 Milestones

Current as at 07 Nov 2019



Retail stream update

Jim Agelopoulos

Systems Workstream - Metering

Revised as at 15 Nov 2019

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
METERING										
PACKAGE 1 - Metering Data & Metrology										
MDFF • MDFF Specification NEM12 NEM13 v20	Aug-18	Oct-18	Oct-18	Nov-18	Jan-19	Apr-19	-	1 Dec 19	Sep-20	Nov-20
PACKAGE 2 - MSATS & SLPs										
Transition • MSATS Technical Specification	Aug-18	Sep-18	Aug-18	Nov-18	31-May-19	30-Sep-19	-	-	-	-
Meter Data - MDFF and MDMF • MDM File Format and Load Process (User Guide) • MSATS Technical Specification	Aug-18	Oct-18	Sep-18	Nov-18	31-May-19	30-Sep-19	-	1 Dec 19	Sep-20	Nov-20
PACKAGE 3 - Miscellaneous										
B2M via API • MSATS Release Schedule & Technical Specification	Oct-18	-	Apr-19	9-May-19	31-May-19	30-Sep-19	17-Feb-20	N/A	17-Feb-20	17-Mar-20
MSATS Browser (LVI) changes • MSATS Technical Specification	Aug-18	-	May-19	9-May-19	28-Jun-19	30-Sep-19	31-Jul-20	31-Jul-20	Sep-20	Nov-20
MSATS Report changes • MSATS Procedures MDM Procedure • MDM File Format and Load Process (User Guide) • MSATS Technical Specification General Process & Document Clean-up	Oct-18	-	Apr-19	Apr-19	28-Jun-19	30-Sep-19	-	31-Jul-20	Sep-20	Nov-20

Systems Workstream - Metering

Revised as at 15 Nov 2019

Key Milestones (Program)						
x	Milestone	Description	Target Date	Expected Date	Status	Comments
L2-M1	AEMO internal metering solution – solution design complete (internal)	Solution Design phase for new AEMO Meter Data Management (MDM) and Profiling Allocation Engine (PAE) complete.	31-May-2019	17-Jun-2019	Complete	
L2-M2	Final technical specifications for Package 1 published by AEMO	Technical Specification for changes to MDFF NEM12 NEM13 as a result of 5MS and GS available to Participants.	30-Jun-2019	30-Apr-2019	Complete	
L2-M3	Final technical specifications for Package 2 published by AEMO	Technical Specification for changes to Transition, Meter Data Load – MDFF as a result of 5MS and GS available to Participants.	30-Sep-2019	30-Sep-2019	Complete	
L2-M4	Final technical specifications for Package 3 published by AEMO	Technical Specification for introduction of B2M via API as well as changes to the MSATS Browser (LVI) and MSATS Report changes as a result of 5MS and GS available to Participants.	30-Sep-2019	30-Sep-2019	Complete	
L2-M5	Software drop for Packages 1 & 2 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for Meter Data Load – MDFF available for Participant testing.	01-Dec-2019	01-Dec-2019		On Track
L2-M6	Agreement on requirements for accreditation & Market Trial	Program agreement of the Accreditation requirements and process, and on market testing requirements and process.	31-Mar-2020	[31-Mar-2020]		Aligned with the MSP Accreditation Plan document
L2-M7	AEMO internal metering solution – build complete (internal)	Build phase for new AEMO Meter Data Management (MDM) and Profiling Allocation Engine (PAE) complete	30-Jun-2020	30-Jun-2020		On Track
L2-M8	Software drop for Package 3 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for B2M via API, MSATS Browser (LVI) and MSATS Report enhancements and available for Participant testing.	31-Jul-2020	31-Jul-2020		On Track
L2-M9	AEMO internal metering solution – go live complete (internal)	Go Live date for new AEMO Meter Data Management (MDM) and Profiling Allocation Engine (PAE) complete	31-Oct-2020	[31-Oct-2020]		On Track
L2-M10	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	[01-Nov-2020]		Dependent upon readiness strategy
L2-M11	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	[30-Nov-2020]		Content and timing of Market Trials TBD
L2-M12	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 Trial scenarios	30-Nov-2020	[30-Nov-2020]		Content and timing of Market Trials TBD
L2-M13	Market Trials conclude	All relevant Market Participants have completed Market Trials to submit five-minute read data.	31-May-2021	[31-May-2021]		Content and timing of Market Trials TBD

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Retail – functionality available in Staging

Scope of functionality

- Manage hokey pokey message exchange for MTRD Transactions through their Participant inbox and outbox.
- Allow MDPs to send through the FTP protocol 5 and 30 minute MTRD Meter Data Notification in the MDFF meter reads format to AEMO.
- AEMO shall perform validations, and generate and return to the initiating MDP (via the FTP protocol) the following business documents and business signals, upon receipt of the MTRD Meter Data Notification:
 - a Hub Acknowledgment as a .ac1 file.
 - an ase:MessageAcknowledgement/@status="Accept" as a standalone .ack file acknowledgement.
 - an ase:MessageAcknowledgement/@status="Reject" as a standalone .ack file acknowledgement.
 - a bundled ase:MessageAcknowledgement/@status="Accept" and ase:TransactionAcknowledgement/@status="Reject" and as an .ack file acknowledgement
 - an ase:TransactionAcknowledgement/@status="Accept" as a standalone .zip file message
 - an ase:TransactionAcknowledgement/@status="Reject" as a standalone .zip file message
 - an ase:TransactionAcknowledgement/@status="Partial" as a standalone .zip file message

Retail – functionality available in Staging

Assumptions/Constraints

- Only message exchange for MTRD Meter Data Notification where the <To> Participant ID is 'NEMMCO' shall be supported
- Connectivity is only via AEMO's MarketNet
- Only the FTP protocol preference is supported
- Only the r38 schema for MTRD Meter Data Notification shall be supported
- Only NEM12 MTRD shall be supported
- Only one transaction per MTRD message shall be supported
- Standing Data shall be static and shall consist of a Production data snapshot
- B2M CATS, NMID, and MDM transactions (inclusive of RM reports) shall not be supported
- B2B message exchange shall not be supported

MSATS 46.96 Technical Specification feedback

Document	MSATS 46.96 Technical Specification	Required Action
Document version	1.01	
N/A	<p>The spec doesn't seem to indicate what role the MDFF data needs to be delivered to AEMO as. Currently in the xml payload to FRMP's it is sent as either LR or FRMP as follows:</p> <pre data-bbox="204 515 513 755"> 200,1234567891,B1E1K1Q1,Q1,Q1,N 300,20190403,0,0,0,0,0,0,0,0, 376,376,376,0,376,0,0,0,0,0, 190409101700, 900 </CSVIntervalData> <ParticipantRole> <Role>LNSP</Role> </ParticipantRole> </MeterDataNotification> </Transaction> </Transactions> </ase:aseXML> </pre> <ul style="list-style-type: none"> • The B2B Procedure: Meter Data Process defines ParticipantRole for a MeterDataNotification as <i>"Recipient's Role as published in MSATS."</i> • Within B2B this value is used to clarify what presumed role the recipient holds for the connection point. • ParticipantRole is mandatory from a B2B procedures perspective • ParticipantRole is not aseXML schema mandatory • ParticipantRole does not have enumerated values <p>For the purpose of a Market Settlements:</p> <ul style="list-style-type: none"> • AEMO's MDM won't make use of this B2B value. • AEMO will not validate it i.e. AEMO shall ignore it • AEMO will not store it <p>MDPs need to resolve what value they would like to apply to the ParticipantRole element so they can gauge the impact to their systems and processes.</p>	Participant feedback required

MSATS 46.96 Technical Specification feedback

Document	MSATS 46.96 Technical Specification	Required Action
Document version	1.01	
Section 7	<p>Direction by AEMO Architecture Board to make updates to the published B2M via API URLs to meet new AEMO API standards.</p> <p>Standardisation of REST of URLs: receiveMessage To getMessages</p> <p>Simplification of URLs: NEMRetail/B2MMessagingPull/v1/msats/ws/getMessages To NEMRetail/B2MMessagingPull/v1/getMessages</p> <p>Removal of JSON examples. Only aseXML responses are supported</p>	<p>AEMO has updated the MSATS 46.96 Technical Specification</p> <p>Participants to indicate if there is an impact to their program</p>
Section 4.9.2	<p>For RM38 report the Content states that it checks if 'Data Stream Nx is registered in the CATS NMI Data Stream table'. What happens if the data stream in CNDS is Ex?</p> <p>The use case for the RM38 report is to identify when Ex/Bx suffix reads required to derive a net (Nx) datastream are missing. The existing RM11 reports when readings are missing for any NMI data stream whether it be a Nx, Ex, or Bx.</p>	None
Section 6.4.2	<p>Tech spec incorrectly states that Transmission Network to Distribution Network connection points have the Local retailer (LR) Participant ID changed to GLOPOOL. My understanding is that the LR at Transmission to Distribution connection points is to remain as POOL%.</p> <p>AEMO notes this, the LR will remain as 'POOL%'. MSATS Release Schedule and Technical Specification has been updated.</p>	<p>None</p> <p>AEMO has updated the MSATS 46.96 Technical Specification</p>

MSATS 46.96 Technical Specification feedback

Document	MSATS 46.96 Technical Specification		Required Action
Document version	1.01		
Section 3.3.3	<p>The spec indicates that a FRMP can receive reports for RM11, RM37, and RM38 reports by submitting a report request using their MSATS Participant Inbox. I just wanted to query why FRMP's were called out separately here? Am I correct in assuming that an MDP can also receive report responses via submitting a request to their Participant Inbox for each corresponding RM report, in addition to receiving the scheduled report?</p> <p>Both FRMPs and MDPs will be able to request ad hoc reports. Ad hoc reports allow Participants to specify custom report parameters within the MDMT ReportRequest transaction.</p>		<p>None AEMO has updated the MSATS 46.96 Technical Specification</p>
Section 1.5	<p>AEMO to include a link to the program timelines on the AEMO website in the MSATS 46.96 Technical Specification</p> <p>A link has been added</p>		<p>None AEMO has updated the MSATS 46.96 Technical Specification</p>

Other feedback

Document	N/A	Required Action
Document version	N/A	
B2M aseXML	Proposal for MDM to only support for inbound B2M MDMT MeterDataNotifications the Current (35) and Superseded (31) aseXML schemas.	Participant feedback required
Status Flag of 'N'	Concern that raising of the removal of the Status Flag of 'N' via the SWG, a change that has an Procedural impact, doesn't follow the correct process Refer to the slide "Managing emerging SMS/GS procedures issues" within this pack	None
Status Flag of 'N'	Reticence by Participants to re-open the Procedures for consultation to make small changes like the Status Flag of 'N' : Refer to the slide "Managing emerging SMS/GS procedures issues" within this pack	None

10MB file size

- MTRD File size is being considered by the IEC B2B working group.
- Current proposal:
 - MTRD uncompressed file size to be a maximum of 10 MB
 - An MTRD must not contain more than 1000 bundled transactions i.e. one MTRD PMD file > one message > max 1000 transactions
- The outcome of the IEC's decision will require an update to the MDM File Format and Load Process
- The 5MS project also suggests revising the MDM File Format and Load Process documented MDMT max transaction size to 1MB.
 - There is no used case for increasing MDMT file size
 - A 1MB file size does not require a transaction cap to be applied
 - Minimises the impact to existing MDM builds

NEM12 validation events

- NEM12 validation events can be returned at both a **NMI record 200** and **read record 300** level reflecting the record structure of MDFF

Validation error thrown on the NMI data details record (200)

Example: RecordIndicator, NMI, NMIConfiguration, RegisterID, NMISuffix, MDMDataStreamIdentifier, MeterSerialNumber, UOM, IntervalLength, NextScheduledReadDate

```
<Event severity="Information">
  <EventCode>1085</EventCode>
  <KeyInfo>63</KeyInfo>
  <Context>RIP0000321,E1,,</Context>
  <Explanation>Invalid NMI: Possible causes include invalid CSV data or NMI has not been
established in CATS Standing Data.</Explanation>
</Event>
```

Validation error thrown on the Interval data record (300)

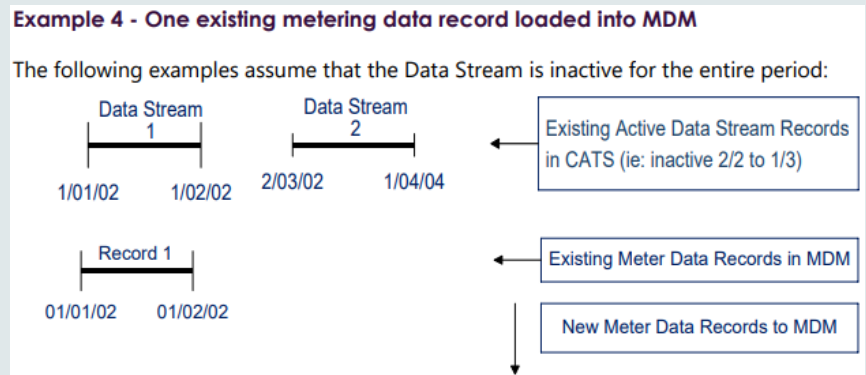
Example: RecordIndicator, IntervalDate, IntervalValue1 . . . IntervalValueN, QualityMethod, ReasonCode, ReasonDescription, UpdateDateTime, MSATSLoadDateTime

```
<Event severity="Information">
  <EventCode>1085</EventCode>
  <KeyInfo>63</KeyInfo>
  <Context>RIP0000321,E1,03-JAN-2019,,11-JAN-2019 13:14:11</Context>
  <Explanation>Invalid NMI: Possible causes include invalid CSV data or NMI has not been
established in CATS Standing Data.</Explanation>
</Event>
```

Meter Data Validation Matrix

Changes of Note:

- To align with MDM File format and Load document, Appendix 1: Consumption Meter Data Record Date relationship Example 4, a consumption read send via either MDMF or MDFF should be **Rejected** if no active CNDS record exists for the period.



Record Number	Scenario	Description
1.	01/01/02 — 10/04/02	This record does not load , - as it spans period where Data Stream is inactive.
8.	02/02/02 — 25/02/02	This record does not load – spans a period where Data Stream is inactive
9.	05/02/02 — 25/03/02	This record does not load – spans a period where Data Stream is inactive

- Added existing MDMF validation to ensure existing error codes are returned

aseXML schema

Paul Lyttle

aseXML Schema Changes

To support changes to RM Reporting and Global Settlements a number of changes have been identified for the aseXML Schema. These include:

- RM Reports
 - Addition of new reporting types
 - Updating the Last Sequence Number field to Optional
 - Addition of a X of Y messages
- NMI Data
 - Second TNI to record the receiving distribution network TNI on Cross Boundary NMIs
 - Multi Use NMI details

To minimise impact on Participants we intend to implement the changes in conjunction with the Customer Switching changes.

aseXML Schema Changes – RM Reports

The following changes have been proposed to support RM reports:

- Addition of new reporting types
 - For Participants to request new reports via FTP or API.
 - Requests sent prior to new reports release will receive a NACK
- Updating the Last Sequence Number field to Optional
 - Requests for RM reports will provide all report data, therefore the Last Sequence Number will no longer be used (if provided)
 - Change the Last Sequence number to Optional to support backwards compatibility
 - Default the Last Sequence Number to 0 prior to release of new MDM.
- X of Y messages
 - Requests for RM reports will provide all report data
 - New message response fields will be included to identify:
 - The message number for this message
 - The total number of messages to be received
- Removal of retired RM reports
 - No update to aseXML, this will be included in a future release

aseXML Schema Changes – NMI data

The following changes have been proposed to support Global Settlements reports:

- Second TNI
 - Cross boundary NMIs pass energy from one distribution network to an adjacent distribution network
 - Each Distribution network has their own TNI codes
 - The second TNI (TNI2) will allow the creation of a single NMI for cross boundary connection points:
 - The TNI relating to the Supplying Distribution Network
 - The LNSP relating to the Supplying Distribution Network
 - The TNI relating to the Receiving Distribution Network (TNI2)
 - The LNSP relating to the Receiving Distribution Network (NSP2)
- Multi Use NMIs
 - Some NMIs are used for settlements and other functions (i.e. Vic TUoS)
 - The current MDMT & MDFF file provides separate data for both functions
 - The use of MDFF to support settlements removes the ability to identify when a NMI is used for multiple functions
 - New NMI data will provide information if the NMI is used for other functions
 - Vic TUoS
 - Sample metering
 - System Load

aseXML Schema Changes – Schedule

Current Proposed schedule



Break (10 mins)

Dispatch stream update

Ian Devaney

Systems Workstream – Dispatch and Operations

Current as at 15 Nov 2019

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
DISPATCH and OPERATIONS										
PACKAGE 1 - Bidding FTP and API										
Transition	Aug-18	Oct-18	Aug-18	Nov-18	Dec-18	2-Apr-19	31-Oct-19	29-Nov-19	Nov-20	Mar-21
Bidding Data Model	Aug-18	-	Sep-18	Mar-19	Dec-18	2-Apr-19	31-Oct-19	29-Nov-19	Nov-20	Mar-21
Bidding Format	Aug-18	-	Sep-18	Nov-18	Dec-18	2-Apr-19	31-Oct-19	29-Nov-19	Nov-20	Mar-21
PACKAGE 2 - Bidding Web UI										
Bidding Web UI and APIs	Aug-18	Nov-18	Dec-18	Jan-19	Mar-19	31-Jul-19	29-Nov-19	29-Nov-19	Nov-20	Mar-21
PACKAGE 3 - Dispatch, Pre-dispatch and PASA										
Dispatch	Aug-18	-	Oct-18	Nov-18	Oct-18	2-Apr-19	-	29-Nov-19	Nov-20	Mar-21
Predispatch P30/7DAY	Aug-18	-	Oct-18	Nov-18	Oct-18	2-Apr-19	-	29-Nov-19	Nov-20	Mar-21
Predispatch P5	Nov-18	Oct-18	Nov-18	TBC	TBC	TBC	-	TBC	Nov-20	May-21
ST and PD PASA	Aug-18	-	Oct-18	Nov-18	Oct-18	2-Apr-19	31-Oct-19	29-Nov-19	Nov-20	Mar-21
PACKAGE 4 - Pricing and Miscellaneous										
Trading Price / Price Revision	Aug-18	-	Feb-19	Nov-18	Mar-19	31-Jul-19	-	15-May-20	Nov-20	May-21
Administered Pricing and CPT	Aug-18	-	Feb-19	Dec-18	Mar-19	31-Jul-19	-	15-May-20	Nov-20	May-21
Suspension Pricing	Sep-18	-	Feb-19	Dec-18	Mar-19	31-Jul-19	-	15-May-20	Nov-20	May-21
Negative Residue Management	Sep-18	-	Feb-19	Dec-18	Jun-19	31-Jul-19	-	15-May-20	Nov-20	May-21
RERT	Oct-18	-	-	-	-	-	-	-	-	-
PACKAGE 5 - Full Data Model										
Full Data Model	Sep-18	Ongoing	Ongoing	Apr-19	Ongoing	31-Jan-20	16 Mar 20	29-Nov-19	Nov-20	May-21

Web Bidding User Guide delayed



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Systems Workstream – Dispatch and Operations

Current as at 15 Nov 2019

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
DISPATCH and OPERATIONS										
PACKAGE 1 - Bidding FTP and API										
Transition	Aug-18	Oct-18	Aug-18	Nov-18	Dec-18	2-Apr-19	31-Oct-19	29-Nov-19	Nov-20	Mar-21
Bidding Data Model	Aug-18	-	Sep-18	Mar-19	Dec-18	2-Apr-19	31-Oct-19	29-Nov-19	Nov-20	Mar-21
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PACKAGE 2 - Bidding Web UI										
Bidding Web UI and APIs	Aug-18	Nov-18	Dec-18	Jan-19	Mar-19	31-Jul-19	16-Dec-19	29-Nov-19	Nov-20	Mar-21
PACKAGE 3 - Dispatch, Pre-dispatch and PASA										
Dispatch	Aug-18	-	Oct-18	Nov-18	Oct-18	2-Apr-19	-	29-Nov-19	Nov-20	Mar-21
Predispatch P30/7DAY	Aug-18	-	Oct-18	Nov-18	Oct-18	2-Apr-19	-	29-Nov-19	Nov-20	Mar-21
Predispatch P5	Nov-18	Oct-18	Nov-18	TBC	TBC	TBC	-	TBC	Nov-20	May-21
ST and PD PASA	Aug-18	-	Oct-18	Nov-18	Oct-18	2-Apr-19	31-Oct-19	29-Nov-19	Nov-20	Mar-21
PACKAGE 4 - Pricing and Miscellaneous										
Trading Price / Price Revision	Aug-18	-	Feb-19	Nov-18	Mar-19	31-Jul-19	-	15-May-20	Nov-20	May-21
Administered Pricing and CPT	Aug-18	-	Feb-19	Dec-18	Mar-19	31-Jul-19	-	15-May-20	Nov-20	May-21
Suspension Pricing	Sep-18	-	Feb-19	Dec-18	Mar-19	31-Jul-19	-	15-May-20	Nov-20	May-21
Negative Residue Management	Sep-18	-	Feb-19	Dec-18	Jun-19	31-Jul-19	-	15-May-20	Nov-20	May-21
RERT	Oct-18	-	-	-	-	-	-	-	-	-
PACKAGE 5 - Full Data Model										
Full Data Model	Sep-18	Ongoing	Ongoing	Apr-19	Ongoing	31-Jan-20	16 Mar 20	29-Nov-19	Nov-20	May-21

Level 2 Milestones - Dispatch

Current as at 15 Nov 2019

Key Milestones (Program)						
ID	Milestone	Description	Target Date	Expected Date	Status	Comments
L2-D1	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	2-Apr-2019	Complete	
L2-D2	Final technical specifications for Package 2 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	31-Jul-2019	Complete	
L2-D3	Software drop for Packages 1,2 & 3 in 5MS Staging Environment	Software deployed into the 5MS Staging environment for Dispatch, Predispach P30/7DAY, ST PASA, Bidding Data Model and Bidding Format, Bidding Web UI and APIs and Predispach P5.	29-Nov-2019	29-Nov-2019	[Firm]	
L2-D4	Development completed (internal)	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	31-May-2020	31-May-2020	[Firm]	
L2-D5	Software drop for Package 4 in 5MS Staging Environment	All AEMO internal development work has completed for the Dispatch stream	15-May-2020	15-May-2020	[Firm]	
L2-D6	UAT completed (internal)	All AEMO internal UAT has completed for the Dispatch stream	30-Nov-2020	30-Nov-2020	[Firm]	
L2-D7	Market Trial preparation completed by Participants	All Market Participants who are required to submit 5MS bids and offers are ready for market trials	30-Nov-2020	[30-Nov-2020]	Provisional	Content and timing of Market Trials TBD
L2-D8	Market Trial preparation completed by AEMO	AEMO has software deployed to pre-production environment and is ready to deliver the agreed Market Trail scenarios	30-Nov-2020	[30-Nov-2020]	Provisional	Content and timing of Market Trials TBD
L2-D9	5-min bidding phased go live begins	Participants can begin submitting 5-min bids to the market	01-Apr-2021	[01-Apr-2021]	Provisional	
L2-D10	Market Trial concludes	Market Trial scenarios related to dispatch have been completed	31-May-2021	[31-May-2021]	Provisional	Content and timing of Market Trials TBD
L2-D11	30-min bidding no longer accepted by AEMO	All Wholesale Market Participants now submitting five-minute bids and offers to AEMO	01-Jul-2021	01-Jul-2021	Mandatory	
L2-D12	Final technical specifications for Package 4 published by AEMO	Technical Specification for changes to Pricing (and Miscellaneous) as a result of 5MS and GS available to Participants.	31-Jul-2019	31-Jul-2019	Complete	
L2-D13	Final technical specifications for Package 5 published by AEMO	Technical Specification for changes to the full data model as a result of 5MS and GS available to Participants.	31-Jan-2020	31-Jan-2020*	[Firm]	

Dispatch packages 1, 2 & 3

Deborah Armenante

Outline

1. Format and Validation for Energy, FCAS, and MNSP Bids and Offers
2. Guide to Energy and FCAS Web Bids and Offers
3. Guide to Energy and FCAS API Bids and Offers
4. Participant feedback & suggestions
5. Q & A

Format and Validation for Energy, FCAS, and MNSP Bids and Offers

Purpose

Describes the JSON Dispatch Bid/Offer submission format and validations for Energy, FCAS, and MNSP bids and how to submit them using FTP.

Primary audience

Developers of systems handling Energy, FCAS, and MNSP Bids/Offers and *Market Participants* submitting and maintaining them.

Format

PDF

Link to guide

<https://aemo.com.au/-/media/Files/Electricity/NEM/5MS/Systems-Workstream/2019/Format-and-Validation-for-Energy-FCAS-and-MNSP-Bids-and-Offers.pdf>

Guide to Energy and FCAS Web Bids and Offers

Purpose

Explains how to submit and maintain web-based Energy and FCAS bids in the EMMS Markets Portal.

The [Format and Validation for Energy, FCAS, and MNSP Bids and Offers](#) is a companion to this guide because the JSON schema and validations are the same.

Primary audience

Developers of systems handling web-based Energy and FCAS Bids/Offers and *Market Participants* submitting and maintaining them.

Format

Web help and PDF

Link to guide

This is a link to the current guide in the Markets portal. The updated guide will replace this one:

https://portal.preprod.nemnet.net.au/help/#energyfcas/energyfcasoffers.htm%3FTocPath%3DMarket%2520Management%2520System%7COffers%2520and%2520Submissions%7CEnergy%2520%2526%2520FCAS%2520Offers%7C_0

Guide to Energy and FCAS API Bids and Offers

Purpose

Explains the specific context for the Energy, FCAS, and MNSP Bids and Offers using AEMO's e-Hub. The methods, parameters, endpoints etc. are explained in the e-Hub.

The [Format and Validation for Energy, FCAS, and MNSP Bids and Offers](#) is a companion to this guide because the JSON schema and validations are the same.

Primary audience

Developers of systems handling API Energy and FCAS Bids/Offers and *Market Participants* submitting and maintaining them.

Format

Web help in the e-Hub.

e-Hub work is still in progress.

Link to technical specification with API details

<https://aemo.com.au/-/media/Files/Electricity/NEM/5MS/Systems-Workstream/2019/EMMS-Release-Schedule-and-Technical-Specification---5MS---Dispatch-and-Operations.pdf>

Participant feedback & suggestions

Feedback and suggestions for improvement so we know how you use the guides and what you need in them is much appreciated?

Any feedback or suggestions?

You can provide feedback at any time to the Support Hub:

- Phone: 1300 AEMO 00 (1300 236 600)
- The [Contact Us](#) form on AEMO's website.

Questions and Answers?

Dispatch Bidding API set in Staging

Vijay Krishna

Shalindra Kulasuriya

Bidding Service and Dispatch verification in Staging

- Bidding Service via Web, API and FTP will available on the 29th of November.
- Additional to this we will have Dispatch, Pre-Dispatch and PASA.
- Release notes will be available on the morning of the 29th detailing the known defects (if any) of the releases.

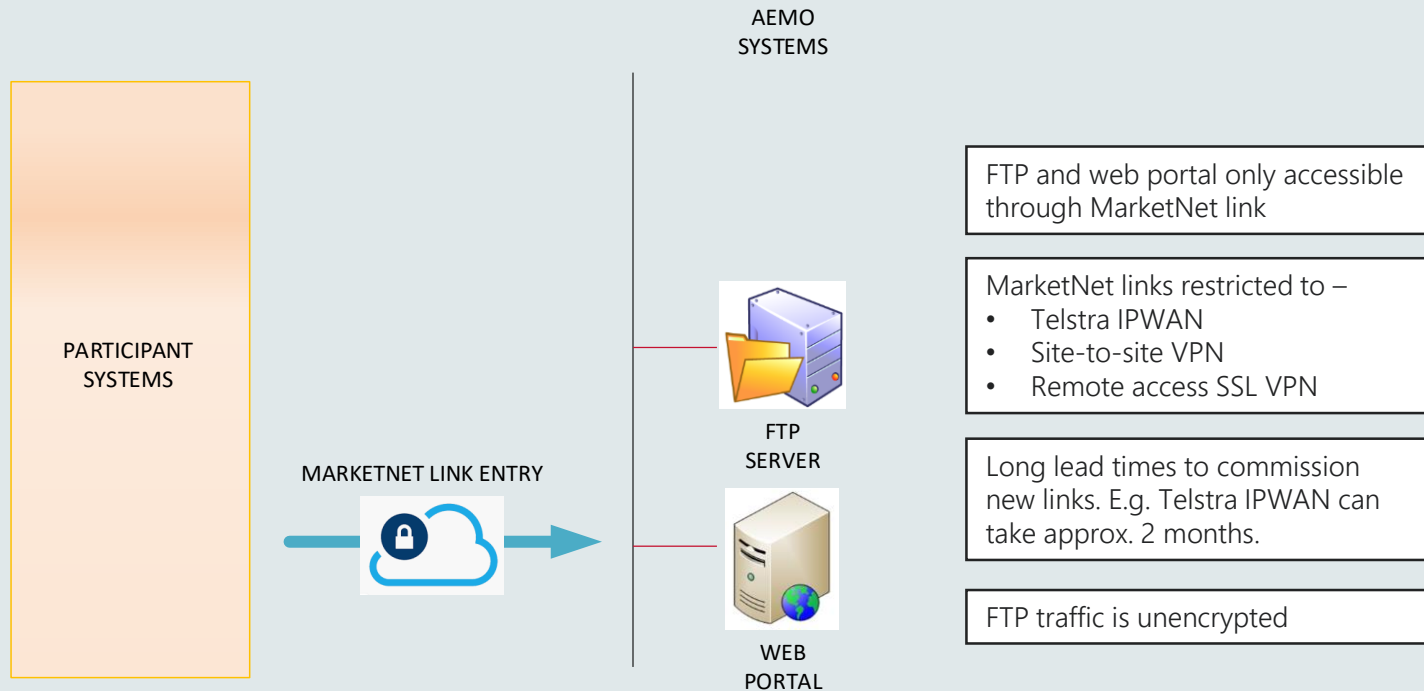
Dispatch- Bidding – functionality available in staging

Objectives

- New web-based APIs allow Participants to test submitting/retrieving 5-minute bids/offers to AEMO from their system via APIs
- System allows Participants to retrieve information regarding the Bids/offers via APIs
- It also allows Participants to submit bids via Web portal and FTP
- System allows Participants to receive and test the new Bidding data model reports.

5MS Staging Environment – Dispatch – Bidding APIs

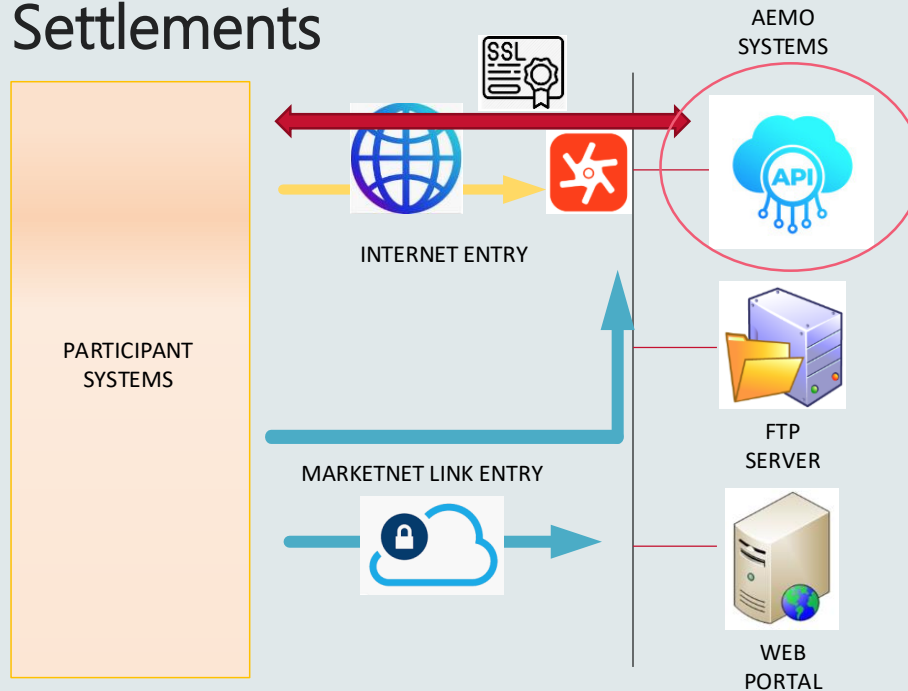
Current



QUESTIONS ?

5MS Staging Environment – Dispatch – Bidding APIs

5-minute Settlements



API connections use SSL Certificate to secure transport layer

AEMO issues the SSL certificates to Participants on request

Five Bidding APIs to support Energy, FCAS and MNSP bids

POST API response will be compressed

Throttling on API calls to 1 call per second per Participant ID

Participants required to change their systems to produce a JSON format for Energy, FCAS and MNSP bids, replacing the existing TXT format by 1 July 2021

QUESTIONS ?

How to access the Staging environment

Access will be via the following URLs/protocols, with the same login details that Participants were using for AEMO Pre-Production (Pre-PROD) as at 1 October 2019. The naming conventions are consistent with the Pre-PROD and Production environments.

Accessible through MarketNet link

- <https://portal.5ms.staging.test.marketnet.net.au>
- EMMS FTP*: 146.178.211.26

Internet Accessible

- API portal*: <https://partner.api.5msstaging.aemo.com.au/>

**IMPORTANT: Before using APIs or FTPs, Participants need to arrange a certificate by contacting AEMO Support Hub.*

How to access the Staging environment

API Portal: <https://partner.api.5msstaging.aemo.com.au/>

- Self-service user interface.
- Participants can register to receive a key and tokens.
- Can see API specifications and try API endpoints.
- AEMO publish their APIs to the portal.

API - operations

API Name	Support Methods	Entity Description	Required URM Entity and Right
submitBids	POST	Submit Energy, FCAS and/or MNSP bids	EMMS – Offers and Submissions – Energy FCAS MNSP Bids Create
getBids	GET	Returns a list of bids based on search criteria	EMMS – Offers and Submissions – Energy FCAS MNSP Bids Read
getBid	GET	Retrieve the details for a specific bid, this including the submission details	EMMS – Offers and Submissions – Energy FCAS MNSP Bids Read
getSubmission	GET	Retrieve submission meta data and validation status	EMMS – Offers and Submissions – Energy FCAS MNSP Bids Read
getSubmissions	GET	Returns a list of submissions based on search criteria	EMMS – Offers and Submissions – Energy FCAS MNSP Bids Read

Providing Feedback

- Questions regarding the program will continue to be directed to the 5MS mailbox and will be addressed as per the current process.
- 5MS Staging support questions received in the 5MS mailbox will be transferred to the support queue for resolution.
- Questions related to 5MS staging can be directed to the AEMO Support Desk.
- The support desk will log all calls received and assigned to them 5MS program support queue.
- The program will be actively monitoring the queue and respond to all tickets.

Background – 5MS Staging Environment

Expectation Setting:

- Staging is *not*
 - A Market Trial environment. There will be no co-ordination of Settlement Runs, Testing, Market Simulations, 7Day Pre-Dispatch, etc.
 - The Market Trial approach and timing will be communicated with the Readiness approach.
 - An end-to-End environment i.e. meter data information submitted won't be reflected in a Settlement Run.
 - A place to deploy functions that are not impacted by 5MS.
- Performance is not guaranteed.
- Defects can be raised, will be triaged and fixes scheduled into AEMO's 5MS development work. There are no SLAs for updating software in Staging.
- Input data (i.e. SCADA, demand forecasts) is likely

Access & Support

- Participants arrange access to Staging by contacting AEMO Support Hub (5MS resolver group has been established in Service Now).
- We encourage Participants to log defects via the AEMO Support Hub process too.

Staging environment

Sammy Wainrit

Status of 5MS Staging

- Reallocation has been available to Participants in this environment since the 1st of November.
- One defect related to display of the counterparty has been identified by Participants and is now addressed.
- Support calls regarding this environment to date have been in relation to access from Participants' sites (which has required Participants IT departments to white list the site), user password resetting and requests for FTP and API access.

Informal Staging test meetings

- Three informal (no agenda) Staging environment test meetings have been scheduled.
- This is an opportunity for anyone to dial in and speak to 5MS Test Team representatives regarding questions on testing in the Staging environment, staging, password reset, URLs etc .
- Invitations were sent out to the RWG membership list.
- Scheduled times (AEDT) are:
 - Tuesday 19 November at 11:00
 - Tuesday 03 December at 11:00
 - Tuesday 17 December at 11:00

Settlements stream update

Mark Hillaby

Systems Workstream - Settlements

Current as at 15 Nov 2019

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										
PACKAGE 1 - Reallocations										
Reallocations	Dec-18	Nov-18	Dec-18	Mar-19	31-Jul-19	15 Oct 19	1-Nov-19	1-Nov-19	1-Mar-20	1-Apr-20
PACKAGE 2 - Settlements and Billing										
Settlements	Oct-18	Nov-18	Dec-18	Mar-19	30-Aug-19	20 Dec 19	-	16 Mar 20	Nov-20	May-21
Billing	Oct-18	Nov-18	Dec-18	Mar-19	30-Aug-19	20 Dec 19	-	16 Mar 20	Nov-20	May-21
PACKAGE 3 - Prudentials and Estimation										
Prudentials	Sep-18	Nov-18	Dec-18	Mar-19	31-Oct-19	31 Jan 20	15 May 20	15 May 20	Nov-20	May-21
Estimation	Oct-18	Nov-18	Dec-18	Mar-19	31-Oct-19	31 Jan 20	-	15 May 20	Nov-20	May-21
Full Data Model	Refer DISPATCH									

Alerts & notifications

Several new alerts were introduced for Reallocations:

- Reallocation due date reminder
- New or changed reallocation notification

Assumptions:

- Reallocations cannot be amended – only the status can be changed.
- A user can subscribe, or unsubscribe, from an alert.
- To subscribe to an alert, for a Participant, a user must have rights to represent that Participant.
- The alert is based on audited actions.
- A user has subscribed to an alert for a Participant, *P*.

Alerts & notifications

EADD: *ex ante* due date

EPDD: *ex post* due date

WD: warning date

- **Reallocation due date reminder**

- Daily notification to Participants for all the reallocations that are going to reach either the EADD or EPDD in a configurable number of days (EADD WD and EPDD WD).
- Trigger: At 9:00am on EADD WD or EPDD WD and the reallocation is in the stage of "Submitted"

- **New or changed reallocation notification**

- Users may subscribe to a notification that is triggered when a reallocation, involving the Participant they represent, has been created or has changed status
- There are two alerts:
 - *Other party*: Send me an alert whenever a reallocation is created or changed, where P is either the debit or credit party, and the change is made by anyone other than P (i.e. another Participant or AEMO)
 - *Any party*: Send me an alert whenever a reallocation is created or changed, where P is either the debit or credit party, regardless of who made the change.

(Questions &) Answers

- Interval length (30 then 5) is stored in the data model (DM) in `'Settlement_ Data. Day Track. Settlement Interval Length'`
- Deprecated tables are still provided in the DM, albeit not updated, but discontinued tables must be removed.
- All data in the reports is available in the data model.
- The project team is working on a reconciliation document for UFE, to be discussed at the next reconciliation workshop.
- Providing 30mn data after commencement date has been raised as a change request (#19).

Settlements Package 3 Prudentials

Pierre Fromager

Heading

- Small fixes to Prudentials dashboard:
 - Add row showing MCL becoming effective in the next 30 days
 - provide company ID
 - rearrange dates
 - replace yellow for better visibility
- Prudentials functions provided as APIs
 - getPrudentialCompanySummary
 - getCumulativePrice
 - getPrudentialCalendar
 - getPrudentialRunVersion
 - getForecastCompanySummary
 - getForecastRegionalPrice
 - getForecastRevenue
 - getForecastRunVersion
- Re-instate the Credit Support pages.

Readiness Working Group update

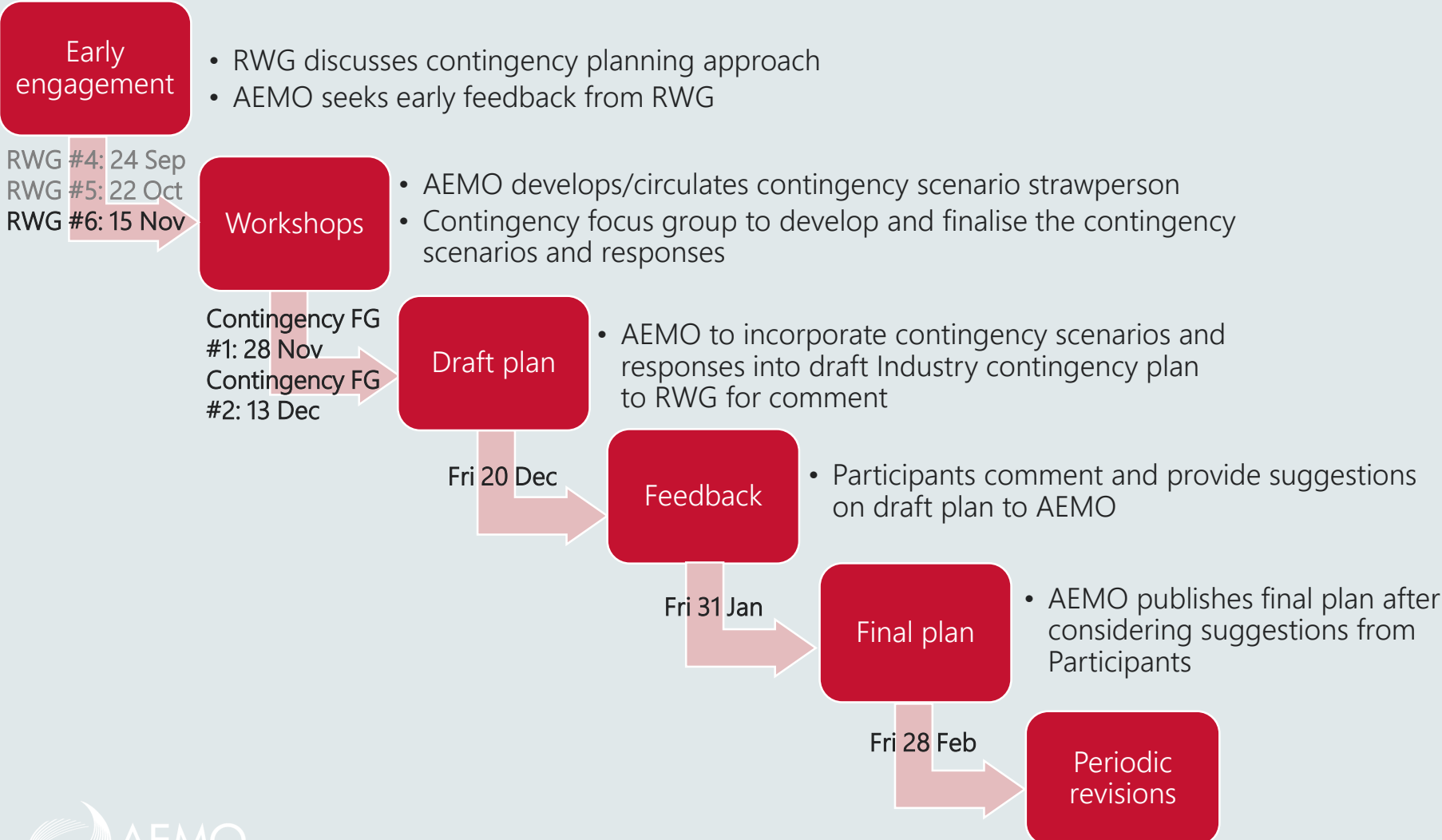
Greg Minney

Readiness papers - timelines

Item	RWG/FG engagement	Draft paper	Consultation	Comments due	Final paper
Market readiness strategy	Jun-19	30-Aug	3 weeks	20-Sep	30-Oct
Industry test and market trial strategy	Jul-19	30-Sep	4 weeks	28-Oct	29-Nov
Transition and go-live strategy	Jul-19	30-Sep	4 weeks	28-Oct	29-Nov
Metering transition plan	Aug-19 onwards	29-Nov	TBC	TBC	TBC
Industry contingency plan	Nov-19	20-Dec	6 weeks	31-Jan-20	13-Mar-20
Industry readiness reporting plan	Sep-19	31-Oct	3 weeks	21-Nov	13-Dec
MSP accreditation update plan	Oct-19	29-Nov	11 weeks	31-Jan-20	13-Mar-20

NOTE: early feedback on documents is welcome

Developing the Industry contingency plan (1)



Developing the Industry contingency plan (2)

- **CFG Workshop #1: Scope**
 - Proposed 10am – 1pm, Thursday 28 November
 - Confirm the contingency scenarios to be included in Industry contingency plan
 - Identify scenarios addressed by existing NEM exception procedures
 - Identify trigger points
 - **For discussion: face-to-face meeting in one location or via VC at AEMO offices?**
 - Call for nominations will be issued shortly and will include information on experience and expertise required.
 - Nominations due by 22 November to 5ms@aemo.com.au
- **Debrief to RWG #7**
 - Tuesday 10 December
- **CFG Workshop #2: Actions and responsibilities**
 - Proposed 10am – 1pm, Friday 13 December
 - Assign actions and responsibilities to contingency scenarios
 - **Discussion: should Workshop 2 be split by subject area?**
- **DRAFT Industry contingency plan**
 - Released to RWG for comment Fri 20 December

Reconciliation Workshop 18 Nov: Settlements by Difference vs Global Settlements

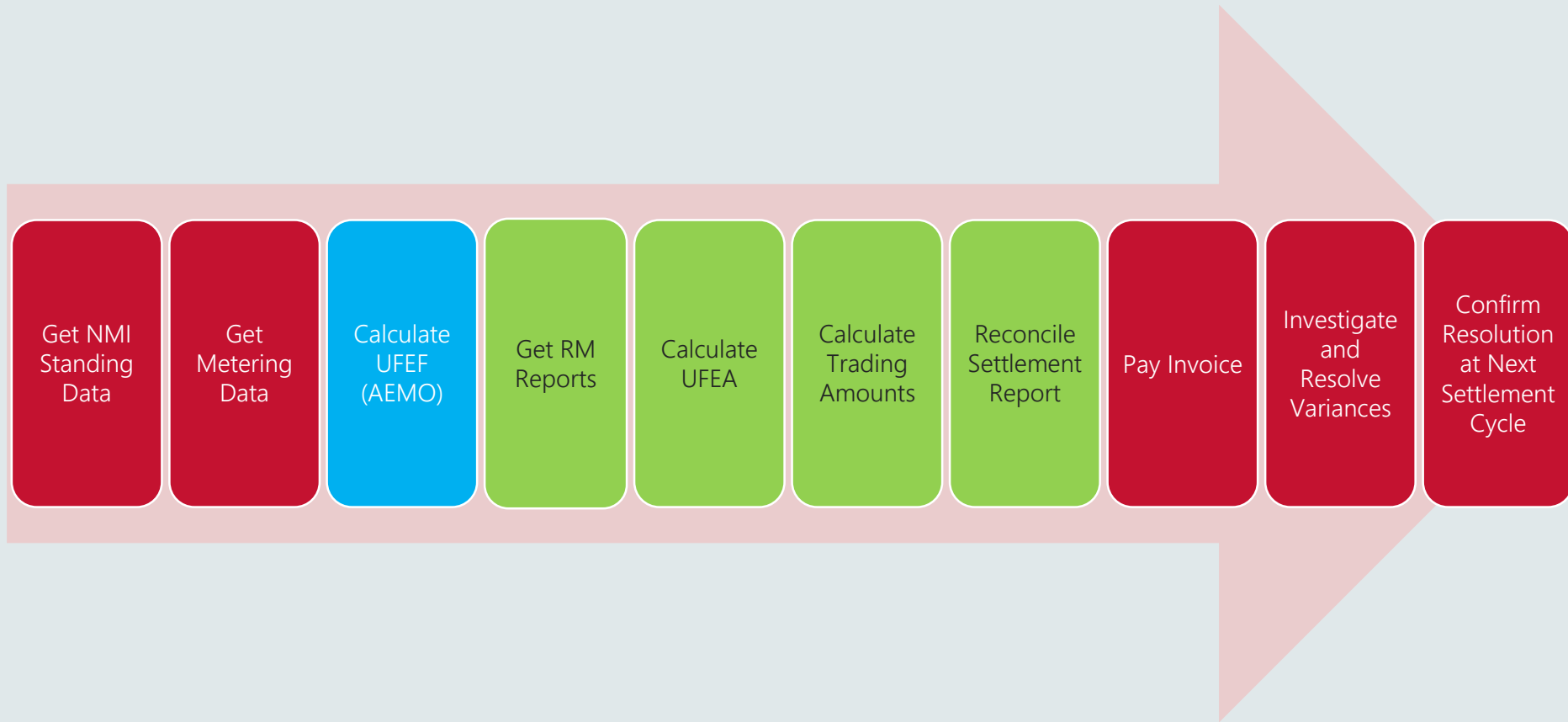
Reconciliation today:

- For LRs, a simple 'top down' check that the MWh at the TNI less MWh of 2nd tier NMIs x DLF equalled MWh billed at the TNI
- For FRMPs, that the MWh of their NMIs x DLF equalled MWh billed at a TNI.
- LRs and FRMPs get these NMI level quantities in reports from AEMO.

Reconciliation in a GS environment:

- Only performed by FRMPs (as there is no longer an LR)
 - A 'bottom up' check by summing the MWh of all of their NMIs x DLF plus UFEA to make sure it equals the MWh billed at each TNI for each trading interval.
 - There is no 'balancing item' as in the past for LRs, as UFE is now allocated to each FRMP's NMI (that has a net load).
 - FRMPs need to do a calculation and not just use data provided by AEMO.

High-Level Reconciliation Overview



Forward meeting plan

Sammy Wainrit

Proposed upcoming SWG meeting content

Date	Meeting	Proposed content
Mon, 16 Dec	SWG #17	<ul style="list-style-type: none">• Feedback from Participants on usage of Staging environment – facilitated discussion

Upcoming information sessions calendar

Meetings and forum dates

<http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement>

NOVEMBER

Su	Mo	Tu	We	Th	Fr	Sa
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
1	2	3	4	5	6	7

DECEMBER

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4
5	6	7	8	9	10	11

Forums/Working Groups
Executive (EF)
Program Consult. (PCF)
Procedures (PWG)
Systems (SWG)
Readiness (RWG)

Focus Groups
Dispatch
Metering
Settlements
Transition
Reconciliation
Contingency

National Public Holiday
State Public Holiday*

*Relevant state has been marked in a comment. WA, NT, TAS, ACT holidays have not been marked.

