



5MS Systems Working Group

SWG#7 - Monday, 18th February 2019

AEMO Offices:

Level 9, 99 Gawler Place, Adelaide

Level 10, 10 Eagle Street, Brisbane

Level 22, 530 Collins Street, Melbourne

Level 2, 20 Bond Street, Sydney

WebEx: <http://aemo.webex.com>

ACCESS CODE: 576 229 732 PASSWORD: Pc567455

Agenda (Melbourne Time)

NO	TIME	AGENDA ITEM	RESPONSIBLE
Preliminary Matters			
	10:00am - 10:05am	Welcome, introduction and apologies	Hamish McNeish (AEMO)
Matters for Noting			
	10:05am – 10:15am	Minutes and Actions from last meeting	Hamish McNeish (AEMO)
	10:15am – 10:20am	System workstream role changes	Hamish McNeish (AEMO)
	10:20am – 10:30am	Key document review and approval process	Mal Borschman (AEMO)
	10:30am – 10:45am	Retail Stream update	Jim Agelopoulos (AEMO)
	10:45am – 11:00am	Settlements Stream update	Bhanu Rajan (AEMO)
	11:00am – 11:15am	Dispatch Stream update	Hamish McNeish (AEMO)
Matters for Discussion			
	11:15am – 11:35am	AEMO Architecture for 5MS	Satheesh Kumar (AEMO)
	11:35am – 11:50am	Dispatch – Debrief on Focus Group	Pierre Fromager (AEMO)
	11:50am – 12:30pm	Bidding Technical Spec Walkthrough	Hamish McNeish (AEMO)
Other business			
	12:30pm – 12:40pm	General questions	Mal Borschman (AEMO)
	12:40pm – 12:45pm	Forward meeting plan	Mal Borschman (AEMO)

Matters for Noting

Hamish McNeish

Open Actions

- Meeting notes with actions have been emailed and published
- Any feedback?

Item	Topic	Action required	Action Update	Responsible	By
1.6	Participant bandwidth implications	AEMO to provide assessment on bandwidth/networking impacts.	AEMO still reviewing	AEMO	Feb 19
3.2	Bidding data model transition	AEMO to include in data model focus group discussion, date to be scheduled.	Proposed for Feb-19	AEMO	Feb 19
3.3	Bidding data model tables	AEMO to include in data model focus group discussion, date to be scheduled.	Proposed for Feb-19	AEMO	Feb 19

Actions to Close

- None

System Workstream

System Workstream Role Update

- Mal Borschman – 5MS IT Manager
- Hamish McNeish – 5MS Technology Advisor

- Systems Workstream Leads

- Retail Jim Agelopoulos
- Settlements Bhanu Rajan
- Dispatch Hamish McNeish
- Infrastructure Grant Collins

System Workstream

Key document review and approval process

- Previously published dates are the AEMO draft issue dates
 - Participants are requested to review and feedback on Key documents for both draft and final versions
 - Feedback is via a template that will be provided to participants in an email, simply populate the table and email back to 5ms@aemo.com.au
 - The dates shown in the stream timelines are the AEMO issue dates
 - Participants will be requested to provide feedback by populating the feedback template within 2 weeks after being issued by AEMO.

[Company name]	
[Feedback date]	
Document Section/reference	FEEDBACK
e.g. Dispatch HLIA Section 2.10.1 – paragraph 2	[Participant feedback]

System Workstream – Metering

Jim Agelopoulos

System Workstream - Metering

- 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	Sandbox	Preprod	Production
METERING										
Transition	Aug-18	Sep-18	Aug-18	Nov-18	Apr-19 TBC	May-19 TBC	-	Nov-19	-	-
Meter Data - MDFF	Aug-18	Oct-18	Oct-18	Nov-18	Apr-19 TBC	May-19 TBC	-	Nov-19	Sep-20	Nov-20
B2M MDFF (API and FTP)	Aug-18	Oct-18	Sep-18	Nov-18	Apr-19 TBC	May-19 TBC	-	Nov-19	Sep-20	Nov-20
Standing Data and validations	Oct-18	Nov-18	Nov-18	Dec-18	Apr-19 TBC	Jul-19	-	Nov-19	Sep-20	Nov-20
B2M via eHub	Aug-18	-	Jan-19	Jan-19	Apr-19 TBC	Jul-19	-	-	Nov-20	May-21
MSATS Browser (LVI) changes	Oct-18	TBC	TBC	TBC	TBC	TBC	TBC	-	Nov-20	May-21
MSATS report changes (RM reports)	Oct-18	TBC	TBC	TBC	TBC	TBC	TBC	-	Nov-20	May-21

System Workstream - Metering

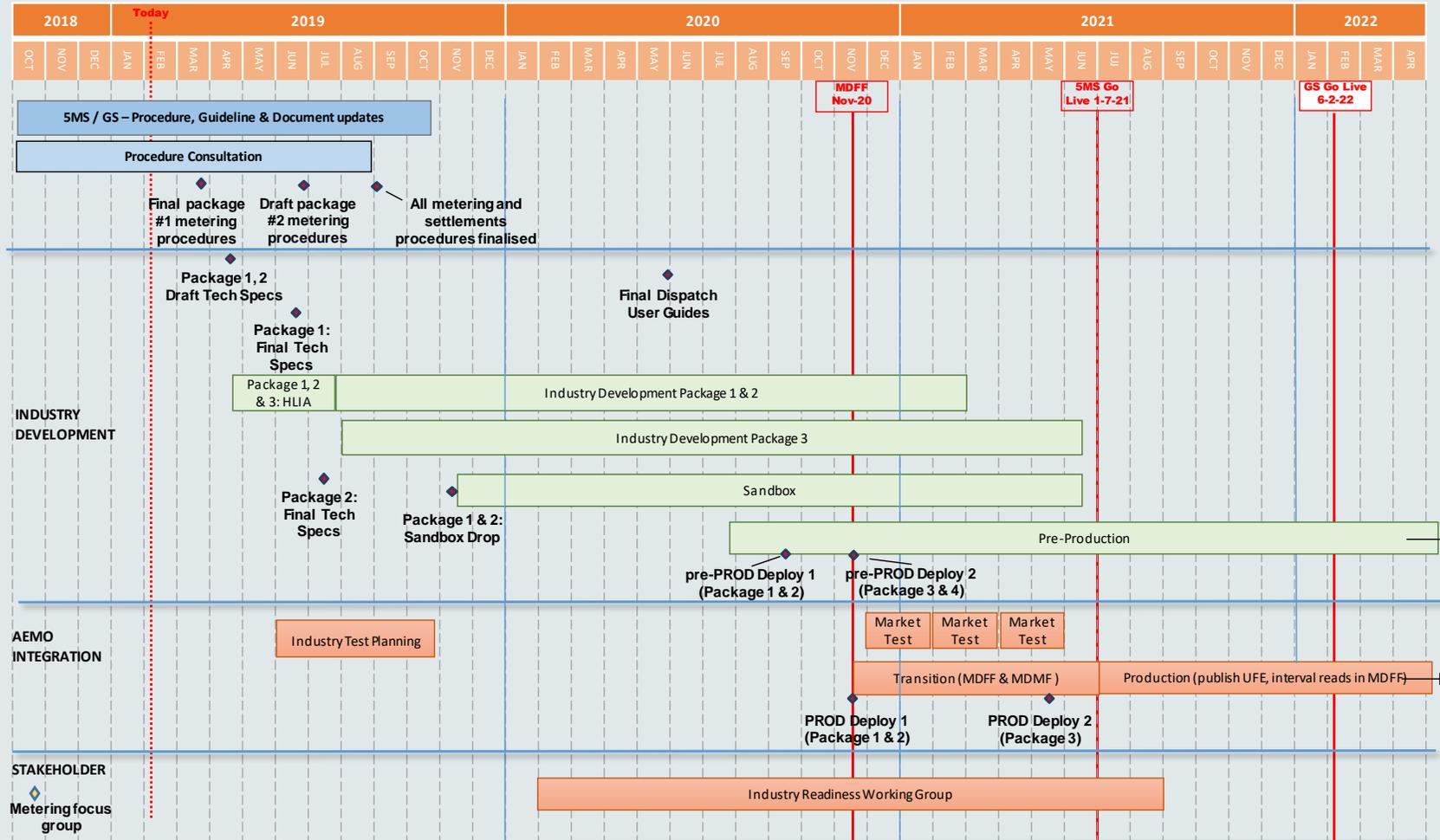
- Current estimated timeline

5 MINUTE SETTLEMENT SYSTEMS TRACKING		TIMING									
		Internal HLIA	Focus/Group	SWG Engagement	External HLIA	Draft Spec	Final Spec	User Guides	Sandbox	Preprod	Production
METERING											
Package 1	Transition	Aug-18	Sep-18	Aug-18	Nov-18	Apr-19 TBC	Jun-19 TBC	-	Nov-19	-	-
	MDFF • <i>MDFF Specification NEM12 NEM13 v20</i>	Aug-18	Oct-18	Oct-18	Nov-18	Jan-19	Apr-19	-	Nov-19	Sep-20	Nov-20
	Meter Data - MDFF and MDMF • <i>MDM File Format and Load Process</i>	Aug-18	Oct-18	Sep-18	Nov-18	Apr-19	Jun-19	-	Nov-19	Sep-20	Nov-20
	MSATS Report Changes • <i>MSATS Procedures MDM Procedure</i> • <i>MDM File Format and Load Process</i>	Oct-18	Nov-18	TBC	TBC	Apr-19	Jun-19	TBC	-	Nov-20	May-21
Package 2	<i>B2M to eHub Technical Guide (new)</i>	Aug-18	-	March-19	Feb-19	Apr-19	Jul-19	-	-	Nov-20	May-21
Package 3	MSATS Browser (LVI) Changes • <i>Guide to MSATS Web Portal</i>	Oct-18	TBC	TBC	TBC	TBC	TBC	TBC	-	Nov-20	May-21

System Workstream - Metering

5 Minute & Global Settlements Program – INDICATIVE TRANSITION OVERVIEW – METERING SYSTEMS

Indicative Transition Overview V0.3 – 29 January 2019



Package 1: Transition; MDF; Meter Data – MDF and MDFM; MSATS Report Changes;

Package 2: B2M to eHub Technical Guide;

Package 3*: MSATS Browser (LVI) Changes;

* Dates TBC for External HLIA, Tech Spec and User Guides

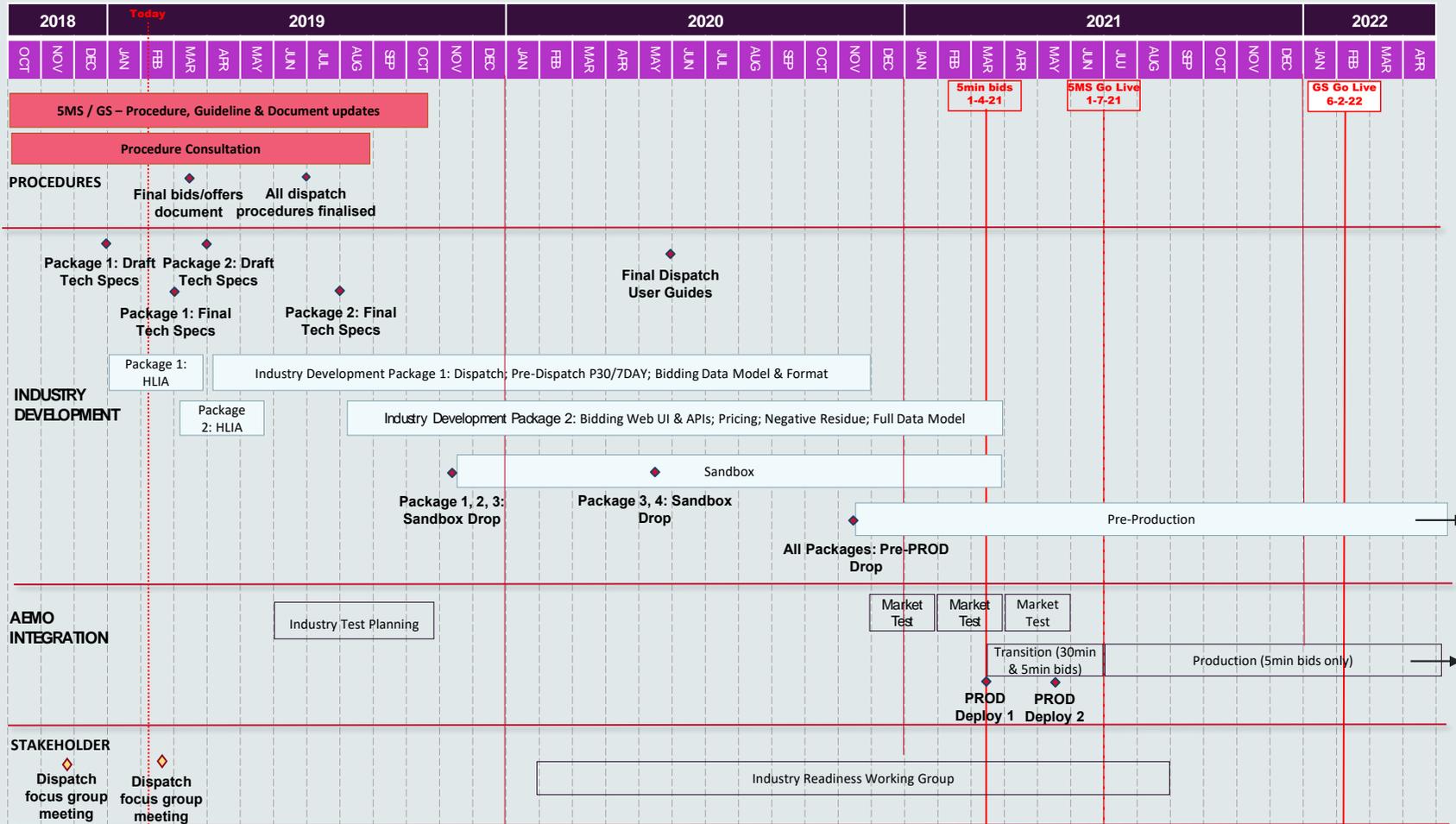
System Workstream – Dispatch

Hamish McNeish

System Workstream - Dispatch

5 Minute & Global Settlements Program – INDICATIVE TRANSITION OVERVIEW – DISPATCH AND BIDDING SYSTEMS

Indicative Industry Overview V0.1 – 29 January 2019



Package 1: Dispatch; Predispatch P30/ 7DAY; PASA; Bidding Data Model; Bidding Format.

Package 2: Bidding Web UI and APIs

Package 3*: Predispatch P5

Package 4*: RERT, Trading Price / Price Revision; Administrated Pricing and CPT; Suspension Pricing; Negative Residue Management; Full Data Model[^]

* Dates TBC for External HLIA, Tech Spec and Sandbox

[^] Includes Settlements Data Models

For Information: HLIA = High Level Impact Assessment

 Milestone
 Working group meeting

For detailed meeting schedule and agendas, see AEMOs Stakeholder Relations Website

System Workstream - Dispatch

- 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	Sandbox	Preprod	Production
DISPATCH										
Transition	Aug-18	Oct-18	Aug-18	Nov-18	Dec-18	Feb-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	Feb-19	Oct-19	Nov-19	Nov-20	Mar-21
Bidding Format	Aug-18	-	Sep-18	Nov-18	Dec-18	Feb-19	Oct-19	Nov-19	Nov-20	Mar-21
Dispatch	Aug-18	-	Oct-18	Nov-18	Oct-18	Feb-19	-	Nov-19	Nov-20	Mar-21
Predispatch P30/7DAY	Aug-18	-	Oct-18	Nov-18	Oct-18	Feb-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	Mar-19	Jul-19	-	-	Nov-20	May-21
Full Data Model	Sep-18	Feb-19	Mar-19	Mar-19	Mar-19	Jul-19	Oct-20	-	Nov-20	May-21

System Workstream – Settlements & Operations

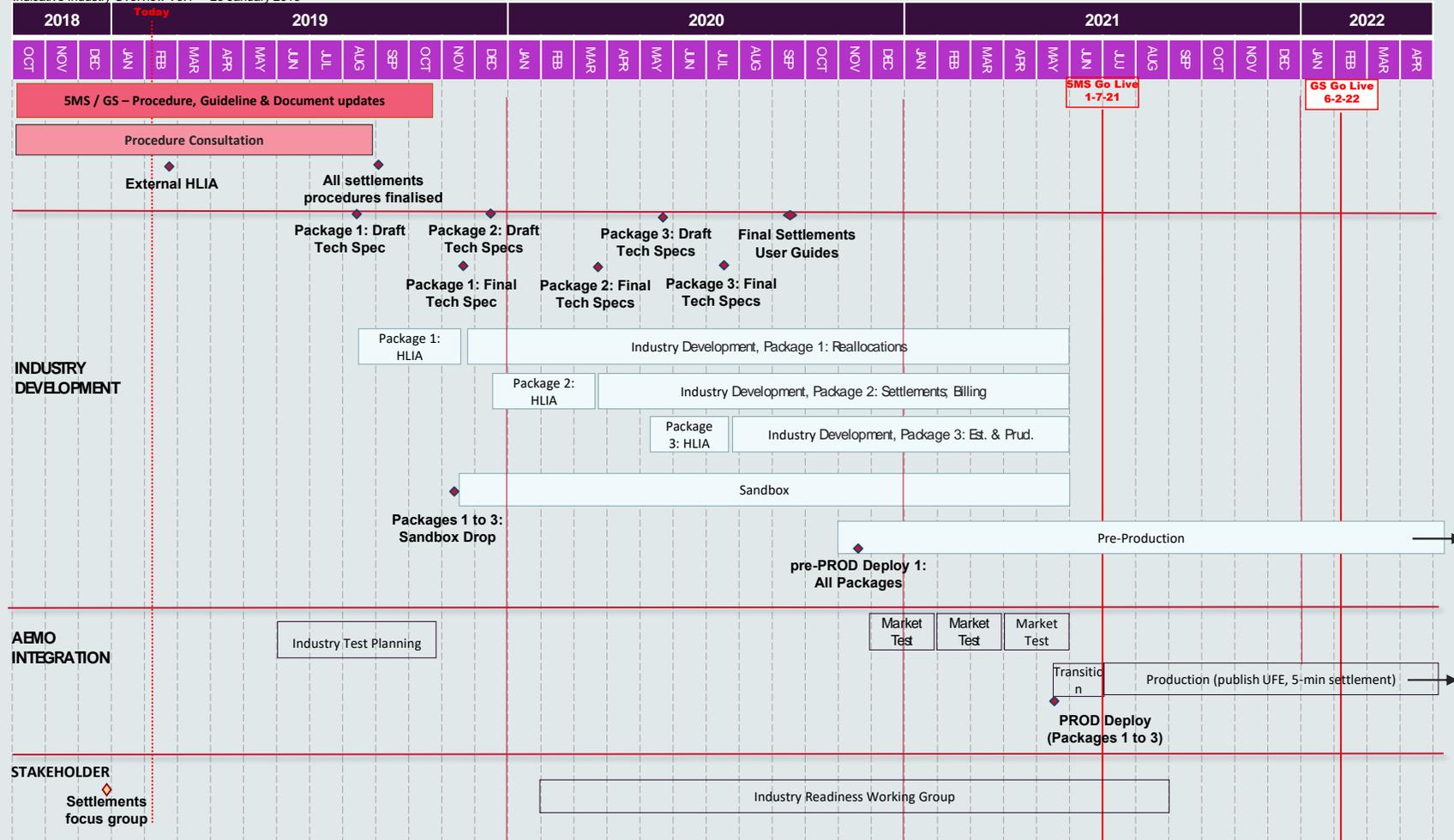
Bhanu Rajan

System Workstream – Settlement and Operations

5 Minute & Global Settlements Program – INDICATIVE TRANSITION OVERVIEW – SETTLEMENT (and OPERATIONS) SYSTEMS



Indicative Industry Overview V0.1 – 29 January 2019



- Package 1:** Reallocation
- Package 2:** Settlements; Billing
- Package 3:** Estimation; Prudentials

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	Sandbox	Preprod	Production
SETTLEMENTS										
Estimation	Oct-18	Nov-18	Dec-18	Feb-19	Feb-20	May-20	-	-	Nov-20	May-21
Settlements	Oct-18	Nov-18	Dec-18	Feb-19	Nov-19	Feb-20	-	-	Nov-20	May-21
Reallocation	Dec-18	Nov-18	Dec-18	Feb-19	Aug-19	Nov-19	Feb-20	-	Nov-20	May-21
Billing	Oct-18	Nov-18	Dec-18	Feb-19	Dec-19	Mar-20	-	-	Nov-20	May-21
Prudentials	Sep-18	Nov-18	Dec-18	Feb-19	Apr-20	Jul-20	Sep-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									

System WorkStream – Infrastructure

Grant Collins

Matters for Discussion

Mal Borschman

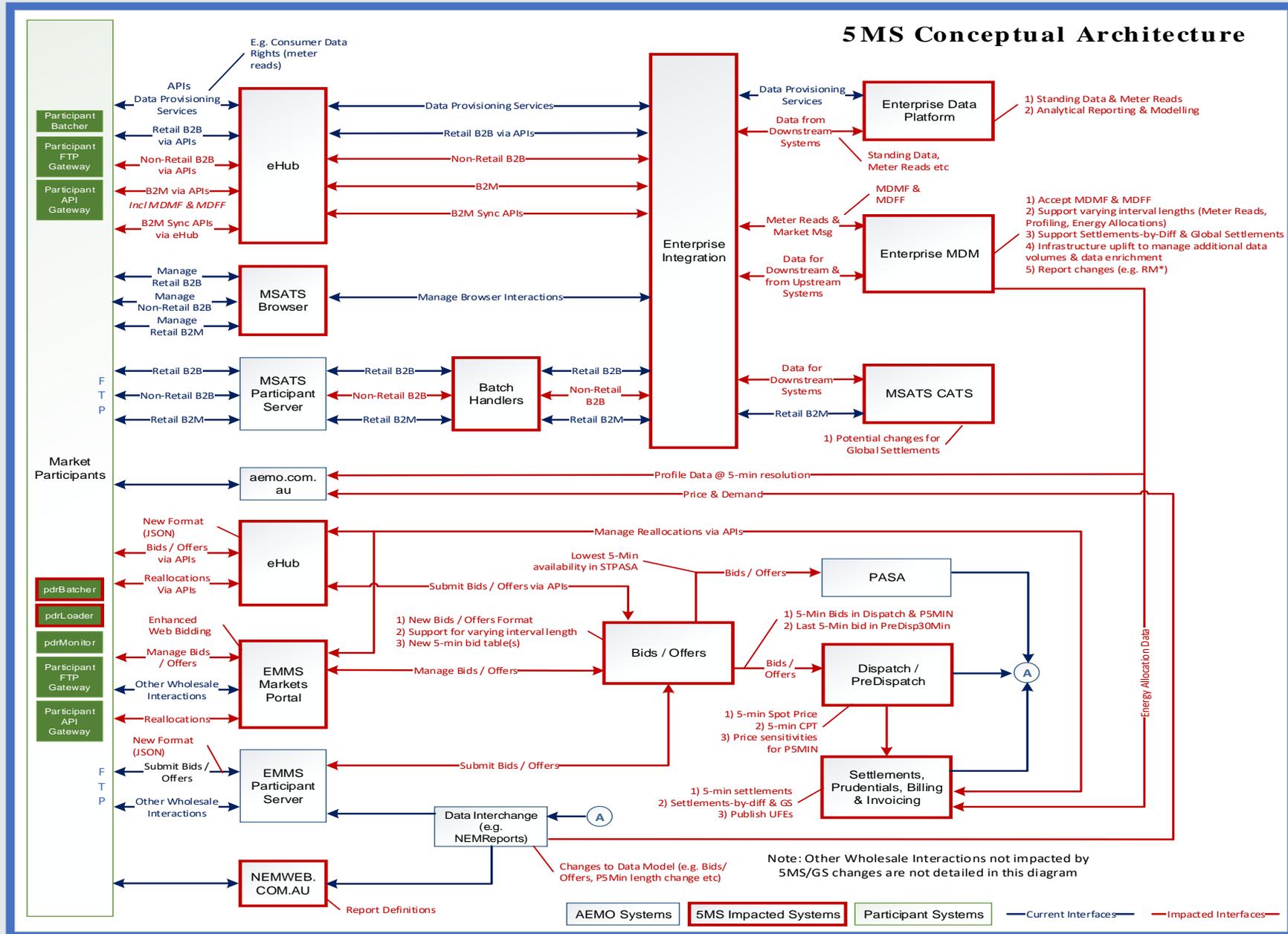
AEMO architecture for 5MS

Satheesh Kumar

5MS Architecture Overview

- Systems uplift (application, integration, data, infrastructure and security) to meet the
 - 5MS and GS Rule Change requirements
 - Non-functional requirements arising primarily due to increase in the volume of data (current and future volumes) and enriched data (e.g. MDFF data)
- Implement modern data exchange protocols (e.g. RESTful APIs) and formats (e.g. JSON) for the new functionalities and current functionalities where there are significant changes
- Provide support for legacy interfaces to support transition / contingency
- Provide an accompanying API where a significant change to a web application occurs
- Modern data exchange protocols over Internet

5MS Architecture On a Page



System Change Heatmap

NEM Retail System Changes

Market Interfaces

B2M MTRD

B2M via APIs

MDMT

Non-Retail B2B

MSATS Sync APIs

CATS

NMID

Retail B2B

VIC TUoS

MDM Processes

Meter Read Upload

AEMO Estimation

Profiling

Energy Allocation

UFE Calculations

CATS Processes

Standing Data

CR Processing

MSATS Browser / Reports

RM* Reports

PMS Reports

C* Reports

B2M Hub Queue
Screens

Meter Data Screens

NEM Wholesale System Changes

Dispatch Stream

Bids/Offers - API

Bids/Offers - FTP & UI

Data Model

Dispatch &
PreDispatch

EMMS Markets Portal

pdrBatcher

pdrLoader

Spot Price, Admin. &
Suspension Pricing

nemweb.com.au

Data Interchange

Constraints

Registration

Settlement Stream

Settlements by Diff &
Global Settlements

Reallocations

Estimation &
Prudentials

Data Model

EMMS Markets Portal

nemweb.com.au

Data Interchange

SRA

Causer Pay

Power System Stream

Negative Residue
Management*

STPASA

RERT*

Data Model

EMMS Markets Portal

nemweb.com.au

Data Interchange

MTPASA

Demand Forecasting

Wind/Solar
Availability

VAR/MW Dispatch

Dispatch – Debrief from Focus Group

Pierre Fromager

Bidding Tech Spec Walkthrough

Hamish McNeish

General Questions

Mal Borschman

Forward Meeting Plan

Mal Borschman

Upcoming Meetings

- Systems Working Group
 - SWG#8 - Mon, 18 March 2019
- Focus groups:
 - Metering, Settlement – *to be scheduled*
 - Special focus group on settlement reconciliation and profiling – *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>