

# Market Interface Technology Enhancements Working Group (MITE WG)

## Notes

Wednesday 30 October 2024  
(2:00pm to 5:00pm AEDT)

This meeting will be recorded for  
minute taking purposes.





**We acknowledge the Traditional Custodians of the land, seas and waters across Australia. We honour the wisdom of Aboriginal and Torres Strait Islander Elders past and present and embrace future generations.**

We acknowledge that, wherever we work, we do so on Aboriginal and Torres Strait Islander lands. We pay respect to the world's oldest continuing culture and First Nations peoples' deep and continuing connection to Country; and hope that our work can benefit both people and Country.

**'Journey of unity: AEMO's Reconciliation Path' by Lani Balzan**

AEMO Group is proud to have delivered its first Reconciliation Action Plan in May 2024. 'Journey of unity: AEMO's Reconciliation Path' was created by Wiradjuri artist Lani Balzan to visually narrate our ongoing journey towards reconciliation - a collaborative endeavour that honours First Nations cultures, fosters mutual understanding, and paves the way for a brighter, more inclusive future.

Read our  
RAP



# Housekeeping

1. This meeting will be recorded for minute taking purposes
2. Please mute your microphone, this helps with audio quality as background noises distract from the conversation.
3. Use the 'Raise hand' function should you wish to speak to an item.
4. Use the 'Chat' function for any other questions or comments you may have.
5. In attending this meeting, you are expected to:
  - Not only represent your organisation's interests but also the interests of Industry and its customers
  - Have an open mindset
  - Contribute constructively
  - Be respectful, both on the call and in the chat



# 1. Welcome

Blaine Miner



# Objective of today's session

The MITE WG has been established to define and develop Technical Procedures/guides for IDAM, IDX and Portal Consolidation. These initiatives seek to deliver foundational capability supporting interactions between participants and AEMO and based on the agreed scope to transition or enable decisions on transitioning of existing business services

## This workshop aims to cover:

- IDX Archiving
- IDX Foundation Criteria for Validation
- IDX Decision Point 2 Criteria Overview
- IDX and IDAM Future Topics
- Forward Plan

## The ask of participants:

- Invite and share this pack with your technical experts who will support the MITE WG / FG process to provide context and background
- Provide your inputs on criteria – industry input will be key to validating Foundation – welcome both in and out of session
- Engage in the workshop – questions are welcome

[Link](#) to the target state pack established in consultation with the industry stakeholders

# Agenda

#	Indicative Timings	Topic	Presenter
1	2:00pm-2:05pm	Welcome	Blaine Miner
2	2:05pm-3:15pm	IDX Archiving – Working Group Session	Selwyn Sequeira
3	3:15pm-4:20pm	IDX Foundation Criteria for Validation	Andrew Bell
4	4:20pm-4:30pm	IDX Overview of Decision Point 2 criteria	Andrew Bell
5	4:30pm-4:35pm	IDAM Future Topics	Andrew Bell
6	4:35pm-4:45pm	IDX Future Topics	David Freeman
7	4:45pm-4:50pm	Forward Plan	Blaine Miner
8	4:50pm-5:00pm	General Business and Next Steps	Blaine Miner
	Appendix	Appendix A: AEMO Competition Law Meeting Protocol Appendix B: IDX Validation Matrix for Foundation Appendix C: IDAM Session Outline	

# Notes

Blaine spoke to the Agenda.

## The following questions were raised:

- **Participants** asked about the topics and noted that Use cases / Pilot was not included. **AEMO** explained that the first step in this process is to determine the Foundation capabilities we need to assess. A plan for how we get to the use cases for Pilot is presented later in this pack.

# 2. IDX Archiving

Selwyn Sequeira





# Archiving

Presently, there are several archiving patterns in use across the energy industry. During this session, we will define what archiving means, review the capabilities of existing archiving patterns and consider new capabilities as an input to developing a single archiving solution as part of the IDX framework.

## This section will cover:

- Archiving definition and purpose
- Assessment of current state capabilities
- Discovery - new capability requirements
- Decision tree – when to archive, retention periods

## The outcomes we are looking to achieve are:

- Confirming our understanding of the archiving use-cases currently employed and the capabilities they provide
- Provide further context to how archiving is used by participants that AEMO may not be aware of.
- Participate in reviewing and defining new capability requirements for archiving

# Archiving – Definition and purpose

## Definition

Archiving refers to the systematic process of *storing market transaction data exchanged between AEMO and market participants for a defined period.*

## Purpose

Archiving allows for previously sent exchanges to be inspected and retrieved to facilitate:

- Participants to validate that their market systems are receiving and processing market messages
- BCP scenarios where participant systems are unable to recover all transacted data
- Reconciliation where participants wish to ensure they have processed all market messages

# Archiving – inconsistent across markets

## Background

- Across Energy Markets there are different solutions provided for NEM Retail, NEM Wholesale, Gas and WEM participants.

## Current state\*

- NEM Retail: Accessed via Open protocols (FTP) , LVI & Day Zip
- NEM Wholesale: Accessed via Managed interfaces - LVI and Machine to Machine
- GAS: GSH and GBB follows NEM Wholesale, MIBB & MIS archives available over FTP/LVI for a limited duration
- WEM: No access to a formal archive solution (participants are responsible for implementing their own archiving solution)

\* Further details and examples available in appendix B

# Archiving Capabilities

Assessment of current state capabilities and discovery of new capability requirements

# Current State Capabilities

Capability	Description	Target state	Archive Scope
Message retention	The ability to store messages and the length of time those messages can be stored.	IDX Archiving	✓
Accessibility - LVI	The ability to access archive over Low Volume Interface (web browser).	IDX Archiving	✓
Accessibility – M2M	The ability to access archive via a Machine-to-machine mechanism (for example, FTP access to archive folders in Retail, archive re-request in Wholesale)	IDX Archiving	✓
Reconciliation	A mechanism to reconcile multiple messages (for example, Day Zip in Retail and Transaction Manifest in Wholesale)	IDX Archiving - subject to assessment on unification vs market separation	✓
Message search	The ability to search for a specific or set of messages by a unique identifier or other query parameters.	IDX Transaction logging	✗
Transaction search	The ability to search for a transaction by a unique identifier or other query parameters.	IDX Transaction logging	✗
Non-repudiation	Providing immutable proof of who-sent, and who-received a message or transaction.	Enabled by data exchange patterns & transaction logging	✗
Data sharing	Some participants leverage archive to enable sharing of messages (as opposed to more formal data sharing arrangements)	Not facilitated by archiving, leverage data sharing arrangements	✗



Have we missed any current state capabilities participants see as required for archiving?  
Are there any existing capabilities we should not replicate?



# Reconciliation & unification

Reconciliation is the process whereby participants ensure data exchanged within the industry is consistent and accurate (for example; reconciliation of NEM retail messages)

Wholesale	Retail
<p>AEMO’s PDR Software provides functionality to provide guaranteed delivery of outbound market data into a participant Data Model and automated recovery features fetching any missing transactions from archive. This functionality is retained in the target state.</p>	<p>DayZip functionality provides the ability to download a days’ worth of archive material which can then be used to reconcile with participants systems. Participants can optionally build this reconciliation capability themselves</p>



- For Participants using DayZip, what advantage does this provide over and above direct access to archive?
- What would the impact be if IDX only offered the Wholesale (Manifest) model for future state (noting this was intended for data model based exchanges)?
- Does your Organisation have a view as to whether AEMO should maintain the multiple models of reconciliation or whether a single model could be considered across wholesale/retail ?

# New capabilities?

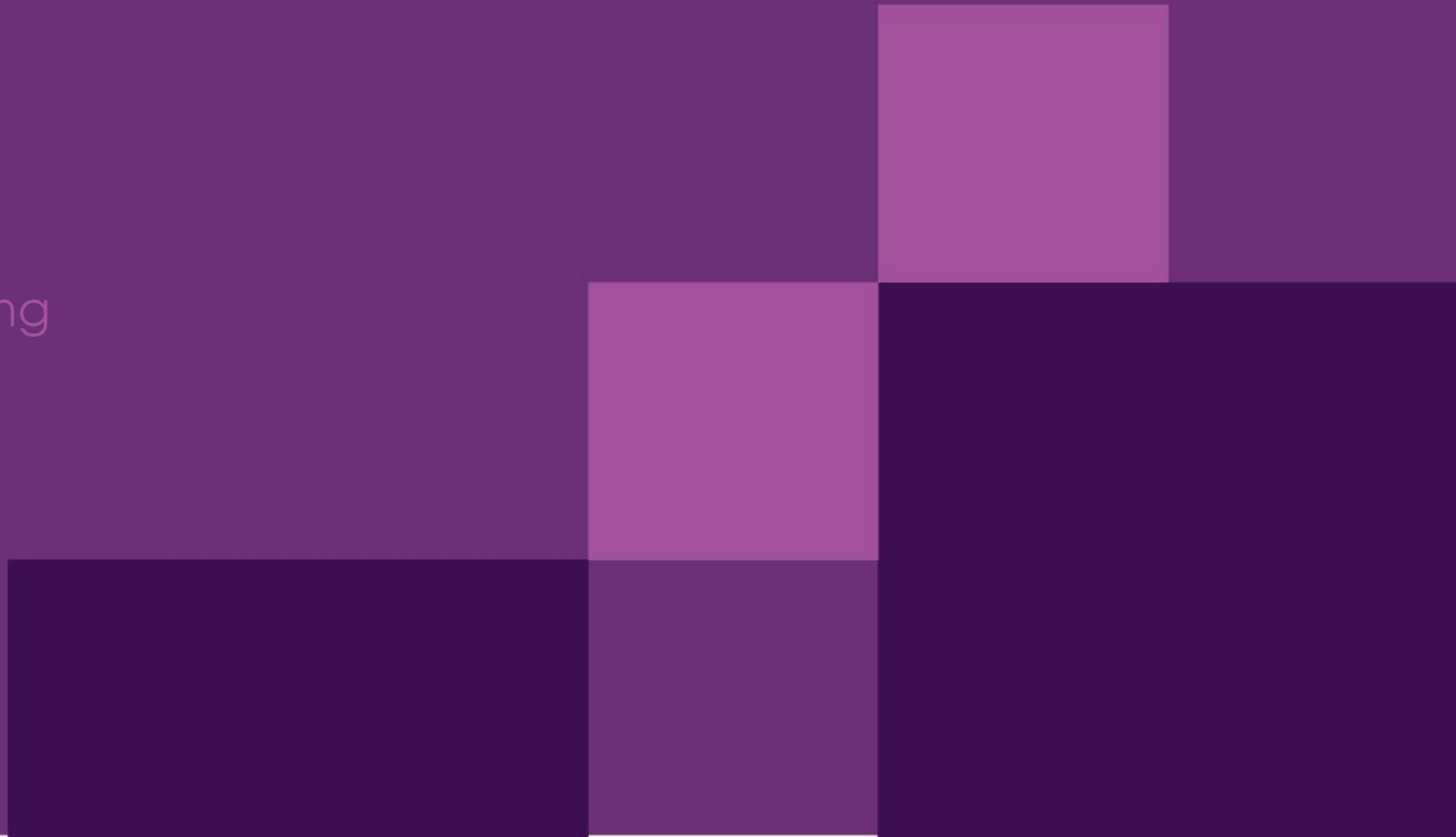
AEMO has reviewed the pain points identified as part of the prior business case phase and not identified any further capability requirements relevant to archiving.



- Do participants have any additional requirements or capability statements AEMO should evaluate as part of defining the Archiving solution?

# Archiving Decision Tree

How and when to apply archiving



# Archiving decision tree

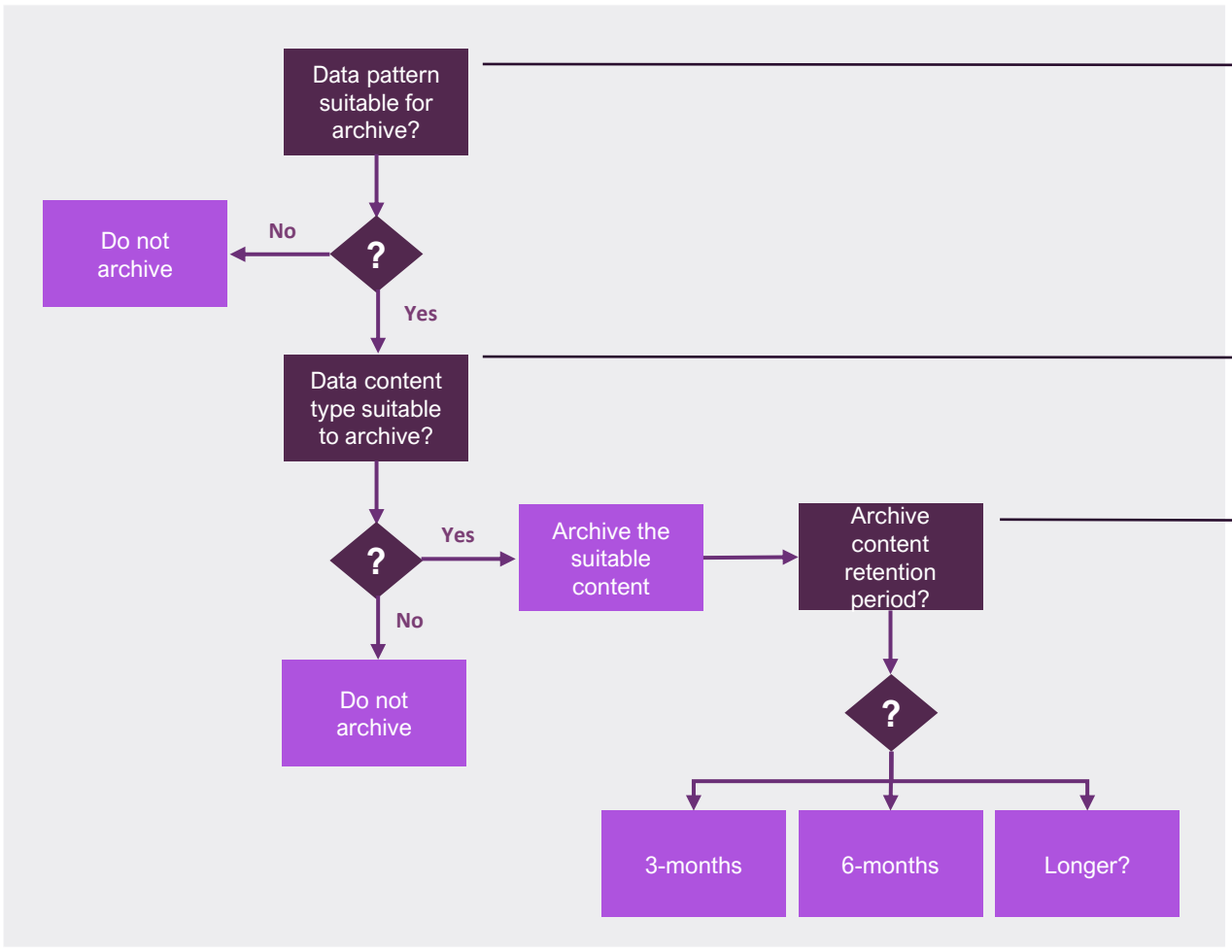
For discussion, some data is more suitable to archiving than others. IDX will set parameters around what needs to be archived in a consistent manner.

Some data patterns, such as Inquiry and Fire & Forget are not a fit for archiving, where-as Synchronous and Asynchronous patterns may be suitable

Some data content types may not need to be archived; for example, data which can be re-requested on demand

What is a reasonable length of time that the data should be archived, keeping in mind that longer retention times increase the market cost of archiving.

What data patterns are suitable for archiving?  
What content should be archived?  
What is a reasonable retention period for archived data?



# Notes

Selwyn, Andrew and Phil spoke to the IDX Archiving topic with lots of great questions and feedback.

## The following questions were raised:

- **AEMO** clarified scope questions around IDX Archiving, **AEMO** confirmed what IDX archiving covers and the other related scope items included in IDX. **AEMO** spoke to reconciliation and the differences between wholesale and Retail.
- **Participants** questioned the existing access method for Dayzip. **AEMO** responded saying its available via FTP and LVI. However, a correction has been made to this feedback with the Dayzip only being available through MSATS LVI (Not FTP).
- **Participants** asked if Gas participants can access transaction logs through TN? **AEMO** response is that yes you can view the metadata through MWS (TN) for Gas transactions
- **AEMO** asked for some feedback on unification of the Wholesale and Retail options? There was no feedback from the industry in this Working group.
- **Participants** asked about access to archives through FTP. **AEMO** responded in the chat with we will have a way to transfer files, but FTP as a protocol is unlikely to be used on IDX, given it has no security around the connection. We expect a more secure file transfer capability, such as SFTP. However, the protocol itself is for a future discussion with an IDAM Focus Group.
- **AEMO** requested participant feedback on archiving retention period as presented in this pack. **Participants** didn't provide any specific recommendation on this topic so **AEMO** will be looking for feedback offline

## AEMO Noted:

- The current archiving solution was created when we had significantly fewer business services that we were supporting and significantly smaller data volumes. We are now in a position where we want to be a little bit more sophisticated and get the right approach to archiving, a key consideration is about data retention where we don't retain data unnecessarily. We are seeking feedback on this topic.



# 3. IDX Foundation CCriteria for validation

Andrew Bell



# Criteria for validation

**Today** we are seeking to define the criteria for the validation of IDX 'Foundation' and provide an overview of the criteria considerations to enable IDX 'Transition' (Decision Point #2).

In the following slides we will cover:

- Foundation vs Decision Point 2 Criteria
- Approach to definition and measurement
- Deep dive into Foundation criteria
- Overview of DP2 criteria

The process on the following slide documents the high-level approach to agreeing the criteria for validation of Foundation. As above, **today** focuses on the '**WHAT**' needs to be validated for Foundation and provides an overview of the Validation Criteria considerations for DP2. **Following sessions** will focus on '**HOW**' that criteria will be satisfied for Foundation and the build out of criteria for DP2.

# Criteria for validation – Foundation vs Decision Point 2

The FaSI Business Case has been scoped to deliver IDX Foundation for all energy markets and enable a 'Decision Point 2' on the transition of NEM legacy services. This division was established to allow for greater certainty regarding industry costs and timelines to transition NEM legacy services.

## IDX Foundation

The purpose of the **IDX Foundation Phase** is to deliver industry data exchange foundational capability that efficiently supports upcoming new reforms in a secure and extensible way.

Foundational capability includes

- All patterns and channels
- Connectivity and security (noting this leverages IDAM)
- Payload formats
- AEMO Gateway Software
- Platform capabilities

Additional topics for consideration may include:

- Non-functional requirements
- Participant capabilities
- Governance

**Foundation** provides capability to be leveraged for new data exchange services for all existing and any emerging markets and fuels under AEMO's remit, including **NEM, WEM and Gas jurisdictions**.

## Enabling Decision Point 2 (NEM legacy data exchange services)

Decision Point 2 (DP2) assesses the case for transition of NEM legacy data exchange services for Retail and Wholesale.

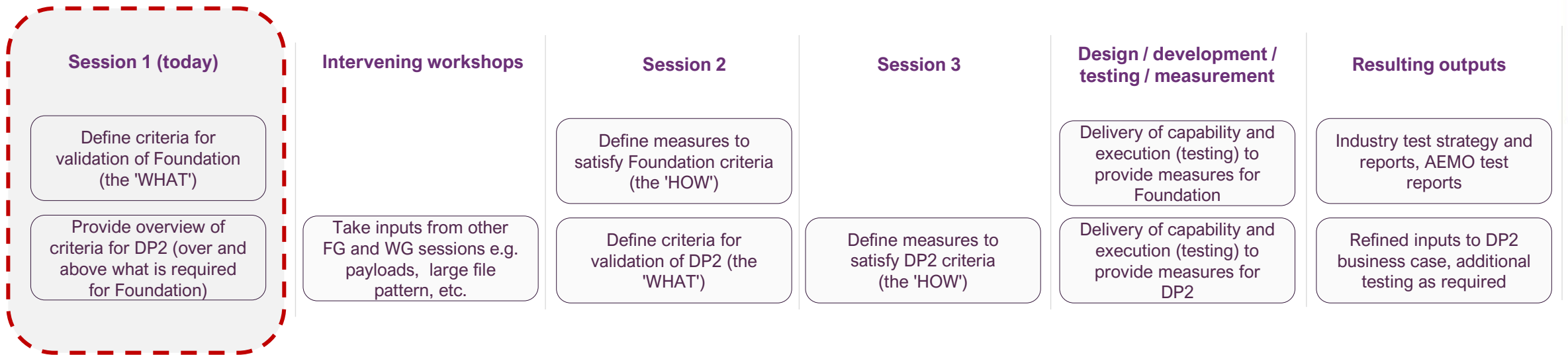
Considerations for Decision Point 2 include:

- Application of new patterns and channels to legacy services
- Payload format decisions
- Transition strategy
- Enabling capabilities supplied by AEMO
- Industry timelines and costs

**Decision Point 2** only contemplates transition of NEM legacy data exchange services, with the output of the decision point being a business case. Criteria is therefore constrained to the inputs to developing this business case, noting criteria to validate transition itself would be developed within the scope of the DP2 business case.

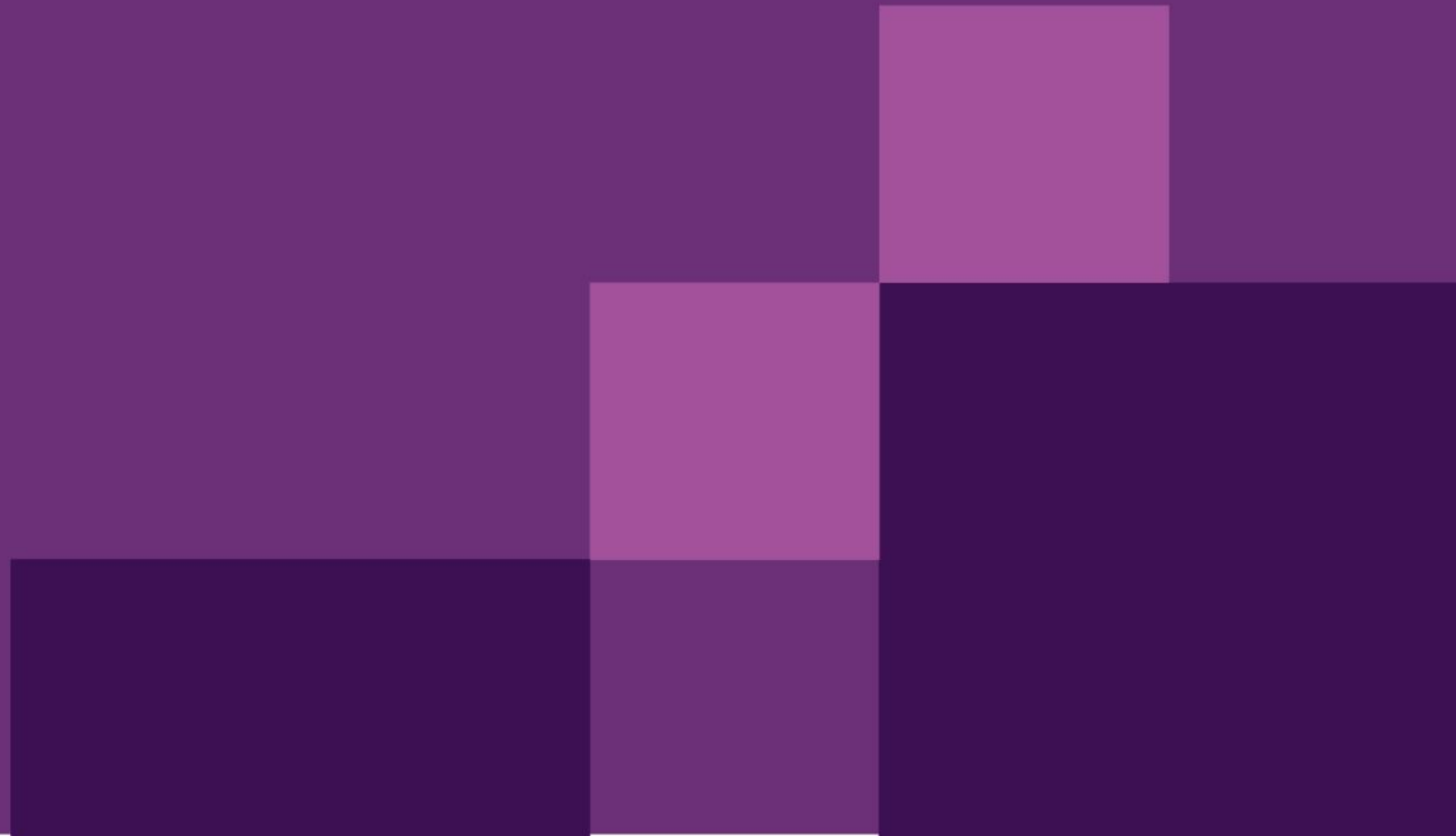
# Approach to defining and measuring criteria

AEMO proposes to collaboratively establish criteria for validation of Foundation and DP2 to provide a structure for then developing the measures needed to confirm these are met in following sessions



Today's session provides an overview to help kick start the thinking with industry on potential criteria for DP2 over and above those which get confirmed as required for Foundation.

# Foundation Capability: Criteria





# Foundation Criteria

The focus of the following slides is to collaboratively develop Foundation Criteria for all energy markets. Please provide feedback through the discussion if there are components for AEMO and / or Market Participants.

Foundational capability includes:

- All patterns
- Network Connectivity and security (noting this leverages IDAM)
- Policies
- Archiving and Logging
- Payload formats and Transforms
- AEMO Gateway Software
- Platform capabilities

Additional topics for consideration may include:

- Non-functional requirements
- Governance

In this session, we are seeking to define the criteria we need to validate (the 'WHAT'), noting we have planned a separate session to then develop the measures (the 'HOW').

While we will endeavour to capture any measures mentioned today, we ask members to focus on the definition of the criteria themselves.

# Patterns and Capability Matrix

Features and their corresponding capabilities delivered by IDX foundation will be realised through patterns developed to support business functions across IDX Foundation. To determine the coverage of the IDX feature categories AEMO has created a matrix to demonstrate the suite of capabilities linked to each proposed pattern.

Below is a sample of the Matrix\* and a demonstration of how capabilities and patterns tie together:

Feature Category	Features / Capabilities	Sync API	Async API Inbound	Async API Outbound	Async Large File Inbound	Async Large File Outbound	Fire & Forget API Outbound	Fire & Forget Large File Outbound	Inquiry Flat	Inquiry Dynamic	Event Notifications
Connectivity	Connectivity: MarketNet & Internet	X	X	X	X	X	X	X	X	X	X
	Certificate Management	X	X	X	X	X	X	X	X	X	X
	Transport Layer Security	X	X	X	X	X	X	X	X	X	X
IDAM	IDAM Authentication & Authorisation Patterns	X	X	X	X	X	X	X	X	X	X
Policies	Encryption & encoding	X	X	X	X	X	X	X	X	X	X
	Flow control & spike management	X	X	X	X	X	X	X	X	X	
	Round Robin				X	X	X	X			X
	Virus & malware scans				X	TBC	X	TBC			
	Enforce file/message size limitations		X		X						
	Enforce file masking		TBC		X		X				
	Other policy enforcements	X	X	X	X	X	X	X	X	X	X

In the following slides AEMO will review with industry these patterns, capabilities and the suggested criteria to feed into the overall validation criteria for IDX Foundation.

\*The full matrix produced by AEMO can be found in Appendix C

# Foundation: IDX Patterns

The **IDX Foundation Phase** will build the foundational capability for a suite of Patterns and Channels, supported through a decision tree. These patterns are the mechanisms to provide the capabilities which can be leveraged by all markets and fuels under AEMO's remit, including **NEM, WEM and Gas**.

IDX Foundation Patterns	Pattern specific Criteria
Sync API	<ul style="list-style-type: none"> <li>• Business document received, validated, processed and business response delivered in the blocking thread (API methods: POST, PATCH, DELETE, PUT)</li> </ul>
Async API Inbound	<ul style="list-style-type: none"> <li>• Business document received, validated (technical validations) and a technical response is sent.</li> <li>• Business response is delivered using the Async API outbound pattern</li> <li>• Endpoint to indicate the status of the Async inbound message submitted</li> </ul>
Async API Outbound	<ul style="list-style-type: none"> <li>• Pull outbound message based on the outbound message event notification</li> <li>• View metadata of the outbound queue (with or without filters)</li> <li>• Pull outbound messages periodically (for Participant not subscribing to outbound message event notification – with or without filters)</li> <li>• Sequence of outbound data delivery when no messageID nor filter criteria is supplied – LIFO or FIFO @ business function level</li> <li>• Send business/technical acknowledgement for the messages pulled</li> </ul>
Async Large File Inbound	<ul style="list-style-type: none"> <li>• Business document received, validated (technical validations including policy enforcements)</li> <li>• Technical and/or Business response is delivered using the Async Large File Outbound Pattern</li> </ul>
Async Large File Outbound	<ul style="list-style-type: none"> <li>• Business document delivered to the recipient               <ul style="list-style-type: none"> <li>• Pull outbound message based on the outbound message event notification</li> <li>• View metadata of the outbound large file location</li> <li>• Pull outbound files periodically (for Participant not subscribing to outbound message event notification)</li> </ul> </li> <li>• Technical and/or Business response related to the Async Large File Inbound submission delivered to the sender</li> </ul>

# Foundation: IDX Patterns

IDX Foundation Patterns	Pattern specific Criteria
Fire & Forget API Outbound	<ul style="list-style-type: none"><li>• Pull outbound message based on the outbound message event notification</li><li>• View metadata of the outbound queue</li><li>• Pull outbound messages periodically (for Participant not subscribing to outbound message event notification)</li><li>• No business response / acknowledgement is received</li><li>• Messages in the outbound delivery queue are removed post TTL (time-to-live) or post the message is pulled</li></ul>
Fire & Forget Large File Outbound	<ul style="list-style-type: none"><li>• Business document delivered to the recipient<ul style="list-style-type: none"><li>• Pull outbound files based on the outbound message event notification</li><li>• View metadata of the outbound large file location</li><li>• Pull outbound files periodically (for Participant not subscribing to outbound message event notification)</li></ul></li><li>• No message/technical acknowledgement is received</li><li>• Messages in the outbound delivery queue are removed post TTL (time-to-live) or post the message is pulled</li></ul>
Inquiry Flat	<ul style="list-style-type: none"><li>• Sender requests for the data in AEMO by defining the required business parameters; parameters sent via<ul style="list-style-type: none"><li>• Query string parameter</li><li>• http request header</li><li>• Request payload (for complex input criteria)</li></ul></li><li>• Request is received, validated, processed and business response is delivered in the blocking thread (API methods: GET, POST (for complex input criteria))</li></ul>

# Foundation: IDX Patterns

IDX Foundation Patterns	Pattern specific Criteria
Inquiry Dynamic	<ul style="list-style-type: none"><li>• Discover the GraphQL schemas &amp; endpoints</li><li>• Sender requests for the data by defining the following<ul style="list-style-type: none"><li>• Query specification</li><li>• Attributes required in the response payload</li></ul></li><li>• Request is received, validated, processed and business response is delivered in the blocking thread (API methods: POST)</li><li>• Validate the response from Inbound Dynamic endpoint post a non-breaking schema version upgrade</li></ul>
Event Notifications	<ul style="list-style-type: none"><li>• Deliver event notifications (meta data of the message only) to the recipient</li><li>• Receive Asynchronous technical acknowledgements to the events sent</li><li>• Event notifications are not sent when that events are already technically acknowledged (or) the corresponding outbound messages are pulled and acknowledged when required</li><li>• Event notification channel has an outage --&gt; Outbound event notifications are stockpiled -&gt; event notification channel is restored – The outbound events are efficiently delivered</li></ul>



# Foundation: Network Connectivity and Security

IDX Foundation Feature Category	Criteria
Network connectivity and security	<ul style="list-style-type: none"> <li>• <b>Certificate Management</b> process is established</li> <li>• Participant admin can provision / deprovision <b>Certificates</b></li> <li>• <b>Transport layer security</b> standards are established</li> <li>• Service accounts can securely connect to channels where compliant with <b>Transport Layer Security</b> standards and hold a current Certificate via the network layer defined by their Business Service (i.e. <b>MarketNet</b> and/or <b>public internet</b>)</li> <li>• <b>Encryption</b> is applied as part of transport layer security</li> </ul>
IDAM	<p><i>NOTE: criteria for IDAM will be specifically considered under the IDAM stream</i></p> <ul style="list-style-type: none"> <li>• The <b>IDAM Authentication and Authorisation</b> pattern is established (including the concept of federated service accounts)</li> <li>• Invalid tokens prevent data exchange:                             <ul style="list-style-type: none"> <li>• Tokens expire when reaching the end of their time to live</li> <li>• Token revocation takes effect once triggered</li> </ul> </li> <li>• Identity and entitlements, as limited by scopes, are applied when calling a service</li> <li>• Large file <b>Folder access</b> enforced via IDAM configurations</li> </ul>

Feature Category	Features / Capabilities	Sync API	Async API Inbound	Async API Outbound	Async Large File Inbound	Async Large File Outbound	Fire & Forget API Outbound	Fire & Forget Large File Outbound	Inquiry Flat	Inquiry Dynamic	Event Notifications	Other Categories
Network Connectivity and Security	Connectivity: MarketNet & Internet	X	X	X	X	X	X	X	X	X	X	
	Certificate Management	X	X	X	X	X	X	X	X	X	X	X
	Transport Layer Security	X	X	X	X	X	X	X	X	X	X	
IDAM	IDAM Authentication & Authorisation Patterns	X	X	X	X	X	X	X	X	X	X	
	Folder access enforced via IDAM configurations				X	X		X				

# Foundation: Policies

IDX Foundation Feature Category	Criteria
Policies	<ul style="list-style-type: none"> <li>• <b>Encryption &amp; Encoding</b> policies are established</li> <li>• <b>Flow control &amp; Spike Management</b> mechanisms are established, including:               <ul style="list-style-type: none"> <li>• Message throttling application where a threshold is reached at a business function level</li> <li>• Message throttling release at a business function once a participant sufficiently drains transactions</li> </ul> </li> <li>• <b>Round Robin</b> process established</li> <li>• <b>Virus and Malware Scans</b> are implemented</li> <li>• <b>File/Message size limitations</b> are documented and enforced</li> <li>• <b>File Masking</b> standards documented and enforced</li> <li>• <b>Onboarding</b> policy for IDX is defined</li> </ul>

Feature Category	Features / Capabilities	Sync API	Async API Inbound	Async API Outbound	Async Large File Inbound	Async Large File Outbound	Fire & Forget API Outbound	Fire & Forget Large File Outbound	Inquiry Flat	Inquiry Dynamic	Event Notifications	Other Categories
Policies	Encryption & encoding	X	X	X	X	X	X	X	X	X	X	
	Flow control & spike management	X	X	X	X	X	X	X	X	X		
	Round Robin				X	X	X	X			X	
	Virus & malware scans				X	TBC	X	TBC				
	Enforce file/message size limitations		X		X							
	Enforce file masking		TBC		X		X					
	Onboarding	X	X	X	X	X	X	X	X	X	X	X

# Foundation: Archives and Logging

IDX Foundation Feature Category	Criteria
Archiving	<ul style="list-style-type: none"> <li>Messages flagged for archiving are <b>retained</b></li> <li>Archived messages are <b>removed</b> once they exceed their retention period</li> <li>Participant users with appropriate entitlements are able to <b>search</b> archived messages with criteria</li> <li>Participant users with appropriate entitlements are able to <b>download</b> archived messages or request them to be re-triggered through the original delivery channel</li> </ul>
Non-repudiation	<ul style="list-style-type: none"> <li>Patterns supporting <b>non-repudiation</b> provide an audit trail to confirm the origin and status of delivery of messages</li> </ul>
Manifest & Reconciliation Process	<ul style="list-style-type: none"> <li>Accept the <b>manifest</b> request and deliver the <b>manifest</b> response which is a true reflection of the messages that were delivered post the 'reconciliation point-in-time'</li> <li>Facilitate and provision of required data to run the <b>reconciliation process</b> in the AEMO gateway software</li> <li>Receive the request for outbound business documents to be <b>re-delivered</b> (outcomes from the reconciliation process), validate flow control and process the request</li> </ul>
Logging and Monitoring	<ul style="list-style-type: none"> <li><b>Technical audit logs</b> (end-end) are captured and are made available</li> <li><b>Monitoring</b> for business functions (e.g. health check of the business functions, flow control status of business functions etc)</li> </ul>

Feature Category	Features / Capabilities	Sync API	Async API Inbound	Async API Outbound	Async Large File Inbound	Async Large File Outbound	Fire & Forget API Outbound	Fire & Forget Large File Outbound	Inquiry Flat	Inquiry Dynamic	Event Notifications	Other Categories
Archiving	Archiving	X	X	X	X	X	X	X				
Non-Repudiation	Non-Repudiation	X	X	X	X	X	X	X	X	X	TBC	
Manifest & Reconciliation Process	Patterns where message exchange will logged for Manifest Process			X		X	X	X				
	Reconciliation process for the messages/files transacted using the patterns:			X		X	X	X				
	Retrigger transactions			X		X	X	X				
Logging & Monitoring	Technical Audit Logs - Capture & LVI views	X	X	X	X	X	X	X	X	X	X	
	Monitoring via LVI	X	X	X	X	X	X	X	X	X	X	

# Foundation: Payloads and Transformation

IDX Foundation Feature Category	Criteria
Payloads	<ul style="list-style-type: none"> <li>• <b>Payload compression</b> is enabled for outbound data delivery (as per decision tree)</li> <li>• <b>Payload compression</b> validations are enforced for inbound data submission (as per decision tree)</li> <li>• <b>Schema validation</b> framework is established; covering                             <ul style="list-style-type: none"> <li>• JSON payloads</li> <li>• AEMOCSV payloads</li> </ul> </li> <li>• Schema definitions of the header and error blocks are established</li> </ul>
Transformation	<ul style="list-style-type: none"> <li>• <b>Support for 'n' &amp; 'n-1'</b> versions</li> <li>• <b>On-Demand transformation</b> for delivery outbound business document (pending pattern discussion)</li> <li>• Outbound business documents are delivered according to the <b>Participants' opted-in version</b> (pending pattern discussion)</li> </ul>

Feature Category	Features / Capabilities	Sync API	Async API Inbound	Async API Outbound	Async Large File Inbound	Async Large File Outbound	Fire & Forget API Outbound	Fire & Forget Large File Outbound	Inquiry Flat	Inquiry Dynamic	Event Notifications	Other Categories
Payloads	Payload compression	X	X	X	X	X	X	X	X	X		
	JSON payload data exchange	X	X	X	X	X	X	X	X	X	X	
	AEMOCSV payload data exchange	X	X	X	X	X	X	X	X	X		
	Unstructured payloads	X	X	X	X	X	X	X	X	X		
	Schema validations	X	X	X	X	X	X	X	X	X	X	
Transformation	On-Demand transformation (TBC)	X		X			X		X			
	Hub transformation based on opt-in version (TBC)					X		X				
	Support for 'n' & 'n-1'	X	X		X				X	X		

# Foundation: Business Acks, Msg Enrichment and Exception Management



IDX Foundation Feature Category	Criteria
Business Acks	<ul style="list-style-type: none"> <li>• <b>Message and Transaction Acknowledgements</b> are delivered for inbound data submission as per the pattern the business function is implemented on</li> <li>• <b>Message and Transaction Acknowledgements</b> are accepted for outbound data submission as per the pattern the business function is implemented on</li> </ul>
Message Enrichment	<ul style="list-style-type: none"> <li>• Message is received from the sender, message is <b>enriched</b> per procedural requirements with additional information by the hub before delivering it to the recipient</li> </ul>
Exception Management & Error Handling	<ul style="list-style-type: none"> <li>• Manage <b>business validation</b> failures</li> <li>• Manage <b>technical validation</b> failures (e.g. IDAM unauthorised)</li> <li>• <b>Business and technical validation</b> failures are notified to the require parties as per the agreed standards and guidelines</li> </ul>

Feature Category	Features / Capabilities	Sync API	Async API Inbound	Async API Outbound	Async Large File Inbound	Async Large File Outbound	Fire & Forget API Outbound	Fire & Forget Large File Outbound	Inquiry Flat	Inquiry Dynamic	Event Notifications	Other Categories
Business Acks	Manage message acknowledgements		X	X	X	X					X	
Message Enrichment	Message enrichment	X	X	X	X	X	X	X	X	X		
Exception Management & Error Handling	Business exceptions & errors	X	X	X	X	X			X	X		
	Technical exceptions & errors	X	X	X	X	X	X	X	X	X		

# Foundation: IDX LVI and Developer Experience

IDX Foundation Feature Category	Criteria
IDX LVI	<ul style="list-style-type: none"> <li>• <b>IDX LVI Capabilities</b> established and implemented: Participant users with appropriate entitlements can                             <ul style="list-style-type: none"> <li>• <b>submit</b> business documents</li> <li>• <b>view</b> meta data of outbound delivery queue (business documents to be delivered via API &amp; IDX)</li> <li>• <b>download and acknowledge</b> outbound business documents</li> <li>• view <b>status of the transactions that are</b> in-flight or complete through Business logs</li> <li>• <b>self-manage</b> IDX data exchange configurations and subscriptions</li> </ul> </li> </ul>
Business Logs	<ul style="list-style-type: none"> <li>• <b>Business Message and Transaction Logs</b> are recorded</li> <li>• Participant users with appropriate entitlements can view <b>status of the transactions that are</b> in-flight or complete through Business logs</li> </ul>
IDX Self Certification	<ul style="list-style-type: none"> <li>• <b>IDX Technical Self Certification</b> process and mechanisms defined</li> <li>• <b>Responder capability</b> defined and delivered</li> <li>• <b>Validation module</b> defined and available</li> </ul>
Enhance Developer Experience	<ul style="list-style-type: none"> <li>• <b>Developer tools</b> available for participant technical teams</li> <li>• <b>AEMO Developer Portal</b> enhanced to support IDX</li> </ul>

Feature Category	Features / Capabilities	Sync API	Async API Inbound	Async API Outbound	Async Large File Inbound	Async Large File Outbound	Fire & Forget API Outbound	Fire & Forget Large File Outbound	Inquiry Flat	Inquiry Dynamic	Event Notifications	Other Categories
IDX LVI	IDX LVI capabilities	X	X	X	X	X	X	X				X
Business Logs	Business Message & Transaction Logs		X	X	X	X	X	X				
IDX Self Certification	IDX Technical Self Certifications	X	X	X	X	X	X	X		X	X	
	Responder capability	X	X	X	X	X	X	X	X	X		
	Validation Module											X
Enhance Developer Experience	Developer experience (API, MFT Portals, Data dictionary, system documentation)	X	X	X	X	X	X	X	X	X	X	X

# Foundation: Orchestration & Routing, Fan in/out and Events

IDX Foundation Feature Category	Criteria
Orchestration & Routing	<ul style="list-style-type: none"> <li>Orchestration capabilities defined as required by a business process are applied to that service</li> <li>Messages are received from the sender and <b>routed</b> to the party identified as the recipient of the message</li> </ul>
Fan In & Out	<ul style="list-style-type: none"> <li>Business services identified as requiring <b>fan out</b> have messages delivered to the multiple recipients defined by their procedure</li> <li>Business services identified as requiring <b>fan in</b> have inbound messages received from multiple senders and delivered as one output message to the recipient; as defined by their procedure</li> </ul>
Event Notifications	<ul style="list-style-type: none"> <li>Deliver <b>event notifications</b> to the recipient for the following (not limited to)                             <ul style="list-style-type: none"> <li>Outbound document ready for the recipient to pull (applicable where document is to be delivered via API channel or FTP channel)</li> <li>Flow control event notifications (e.g. stop files)</li> <li>System Health notifications related to the exchange platform</li> </ul> </li> </ul>

Feature Category	Features / Capabilities	Sync API	Async API Inbound	Async API Outbound	Async Large File Inbound	Async Large File Outbound	Fire & Forget API Outbound	Fire & Forget Large File Outbound	Inquiry Flat	Inquiry Dynamic	Event Notifications	Other Categories
Orchestration & Routing	Orchestration	X	X	X	X	X	X	X	X	X		
	Routing	X	X	X	X	X	X	X	X	X		
Fan In & Out	Fan-out		X	X	X	X	X	X			X	
	Fan-In		X		X							
Event Notifications*	Trigger outbound message event notification			X		X		X			X	
	Flow control notifications (stop files)					TBC			X		X	
	System health & notifications				TBC	TBC			X		X	

\*Event notifications will be discussed in the Async and Event notification focus group

# Foundation: IDX Platform Capabilities

IDX Foundation Feature Category	Criteria
AEMO Gateway software	<ul style="list-style-type: none"> <li>• AEMO Gateway software is <b>available</b> for participants to deploy</li> <li>• AEMO Gateway supports all <b>IDX patterns, Channels and Payloads</b></li> <li>• Integrates with <b>AEMO IDAM</b></li> <li>• Provides a framework to integrate the <b>validation module</b></li> <li>• Provides integration capabilities for the Participants to integrate the AEMO gateway software with their backend applications</li> <li>• Provides <b>transformation framework</b> for the Participants to implement transformations between the AEMO gateway software and their backend applications</li> <li>• Provides a framework to define additional data exchange <b>validations</b></li> <li>• Provides <b>configuration capabilities</b> (self-managed) using a simple user interface; covering scenarios (not limited to) such as ability to define the priority of the business functions that are to be processed in priority</li> <li>• Ability to run the AEMO gateway software on a virtual machine or a containerised platform</li> </ul>

Feature Category	Features / Capabilities	Sync API	Async API Inbound	Async API Outbound	Async Large File Inbound	Async Large File Outbound	Fire & Forget API Outbound	Fire & Forget Large File Outbound	Inquiry Flat	Inquiry Dynamic	Event Notifications	Other Categories
AEMO Gateway	AEMO Gateway supported patterns, Channels and Payloads	X	X	X	X	X	X	X	X	X	X	

AEMO Gateway software capabilities to enable transition will be verified as part of the transition strategy and the criteria defined in those sessions

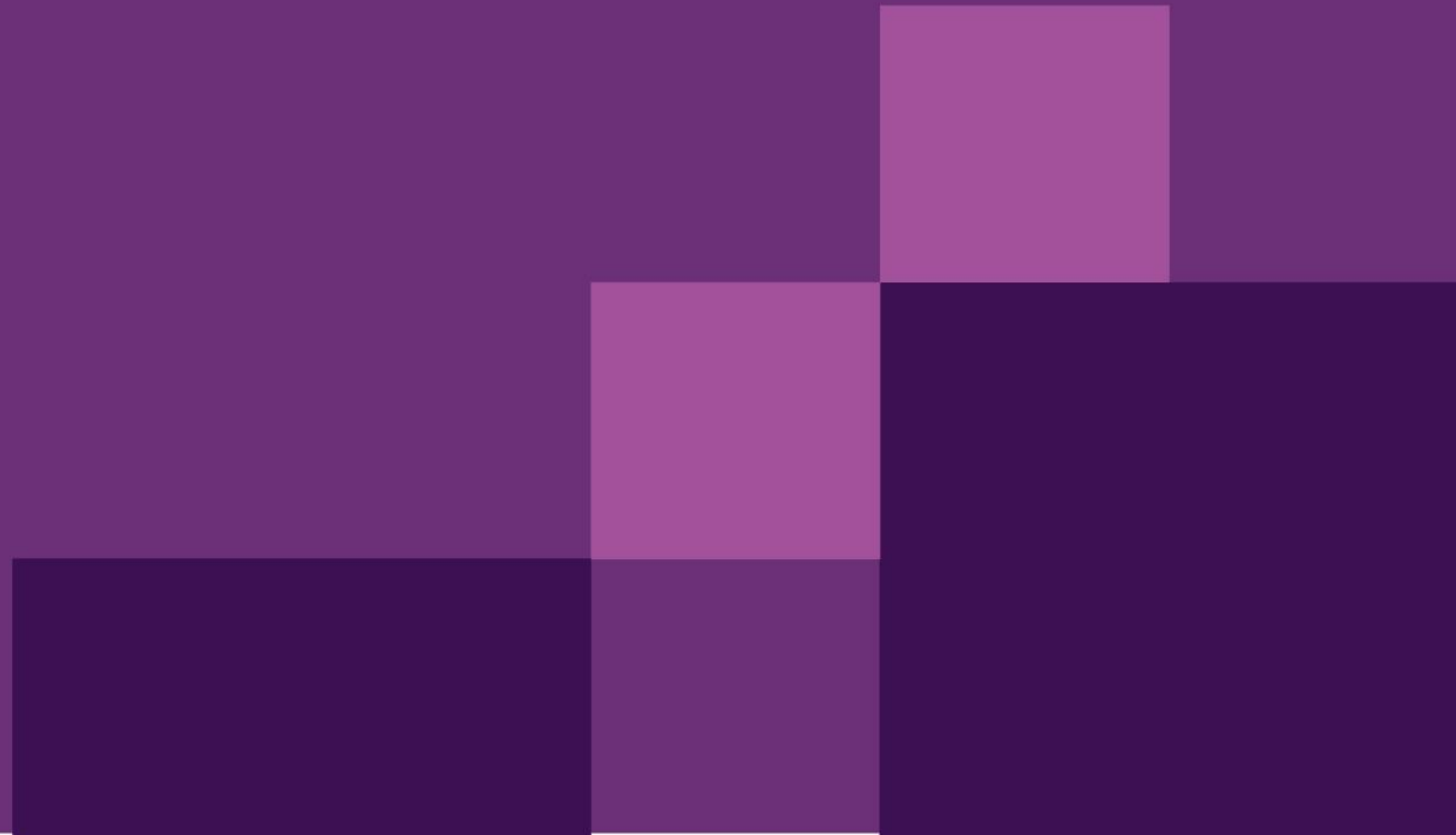


# Foundation: Non-Functional Requirements

IDX Foundation Feature Category	Criteria
Non Functionals	<ul style="list-style-type: none"> <li>• <b>Availability:</b> <ul style="list-style-type: none"> <li>• Tier 1 Service is <b>available</b> 24/7 meeting SLA</li> <li>• Tier 2 Service is <b>available</b> 24/7 meeting SLA</li> </ul> </li> <li>• <b>Performance:</b> <ul style="list-style-type: none"> <li>• IDX exchange patterns and channels meet performance targets</li> <li>• IDX exchange patterns and channels are performant, efficient and meet targets when they recover from an outage with stockpiled messages to process</li> </ul> </li> <li>• <b>Volume simulation:</b> <ul style="list-style-type: none"> <li>• System is performant for the BAU volumes, peak volumes and future volume growths</li> <li>• Message size thresholds are optimised and tuned</li> </ul> </li> </ul>

Feature Category	Features / Capabilities	Sync API	Async API Inbound	Async API Outbound	Async Large File Inbound	Async Large File Outbound	Fire & Forget API Outbound	Fire & Forget Large File Outbound	Inquiry Flat	Inquiry Dynamic	Event Notifications	Other Categories
Non Functionals	Highly available services (Tier 1 services)	X	X	X					X	X	X	
	Highly available services (Tier 2 services)				X	X	X	X				
	Performance & volume simulation	X	X	X	X	X	X	X	X	X	X	X

# Foundation non matrix criteria



# Foundation: Governance

The **IDX Foundation Phase** will be required to deliver technical documentation and standards and to ensure there is a governance model in place to support it the IDX platform that will span across Fuels and Markets.

IDX Foundation: Governance	Criteria
Technical standards	<ul style="list-style-type: none"><li>• Technical Specifications established</li><li>• IDX decision tree branches and outcomes defined</li></ul>
Governance	<ul style="list-style-type: none"><li>• IDX Governance body established</li><li>• Working Group appointed to develop and maintain technical standards</li></ul>

# Poll: Foundation Validation Criteria



Do the proposed Validation Criteria for Foundation Capability cover the key criteria required to validate Foundation for new services?

Option A: Yes, the coverage is sufficient.

Option B: No, additional criteria or clarifications required, will reply by COB Tuesday 12 November with details.

Option C: Require further internal assessment within my organisation, will reply by COB Tuesday 12 November.

# Notes

Andrew spoke to the IDX Foundation Validation with lots of great questions and feedback.

## The following questions were raised:

- **AEMO** clarified this session is about the ‘what’ not the ‘how’ we validate Foundation.
- **Participants** asked what's the rationale for moving away from using the term pilot? **AEMO** responded that with the pilot we find it has a lot of assumptions about being a very specific testing phase and that there are non-testing criteria beyond just testing that participants were keen to see validated to enable a full decision. The pilot does not consider other areas such as governance. There will be a pilot, however we are not limiting our thinking about all the criteria to enable these decisions so we can move forward with confidence.
- **Participants** asked is participation in the Pilot still optional? **AEMO** responded that this is the ‘How’ conversation, where we will work through ‘How’ participants want to be involved.
- **Participants** asked if the schedule would change based on the plan on slide 22 or would this be overlaid onto the existing schedule. **AEMO** responded that it will more likely be overlaid over the existing, with the existing workshops focused on capabilities. There will be updates shared through the PCF in relation to timeline.
- **Participant** asked a question around confidentiality, and auditability **AEMO** Noted this question, and an action is on AEMO to investigate this and come back to the Working Group to discuss the confidentiality, and auditability question in a future session.
- **Participant** asked about Event notification not being flagged for Archiving in the matrix on slide 29. **AEMO** is more than happy to receive feedback on all the matrix provided in this pack. At present Event notification are not seen by AEMO as a good candidate for archiving, but happy to receive feedback on this.
- **Participants** asked if it is possible for capability for participants to have the option to manage the preference to opt in opt out for specific transactions and transaction types? **AEMO** responded that there's a little bit of complexity there, we need to respect procedural obligations. AEMO went into more detail about opt in and opt out considerations.

# Notes (continued)

## The following questions were raised:

- **Participants** asked about the AEMO Gateway software specific capabilities **AEMO** noted that there is an upcoming Focus Group session on AEMO Gateway software where we will need to work through these questions.
- **Participants** question the 'Other Categories' in the matrix. **AEMO** responded saying there were some categories that weren't specific to a pattern that we wanted to capture. AEMO also noted the full matrix is in the appendix of this presentation.
- **Participants** asked questions about environments to facilitate testing scenarios. **AEMO** took an action to review and potentially add some criteria around environments and pre-production. Noting these are already drafted as requirements at AEMO.
- **AEMO** presented a POLL to the WG Members, the results are below:

Do the proposed Validation Criteria for Foundation Capability cover the key criteria required to validate Foundation for new services?	Responses	Percentage
No, additional criteria or clarifications required, will reply by COB Tuesday 12 November with details.	4	14%
Require further internal assessment within my organisation, will reply by COB Tuesday 12 November.	17	59%
Yes, coverage is sufficient	8	28%
<b>Grand Total</b>	<b>29</b>	<b>100%</b>

Based on the results of the POLL AEMO will look to revise these results based on feedback provided by participants, due by the 12<sup>th</sup> of November.

- **Participants** asked if commercials and support arrangements for AEMO Gateway Software be part of DP2? **AEMO** responded that AEMO gateway software is available today and details will be discussed during the Focus group and further discussed in the DP2 discussion

# Notes and Actions

## **AEMO Noted:**

- Noted action for **AEMO**: AEMO will come back to industry regarding the 'What' for DP2 in future sessions to discuss the potential for onboarding a few legacy NEM business services into IDX foundation to validate the capabilities and provide better inputs for DP2.
- **AEMO action**: to review and potentially add some criteria around environments and pre-production. Noting these have been noted as Business Requirements within AEMO.
- **AEMO action**: AEMO to investigate and come back to the Working Group to discuss the confidentiality, and auditability question raised in a future session.

# 4. IDX Overview of Decision Point 2 Criteria



Andrew Bell





# Overview of Decision Point 2 Criteria

Decision Point 2 (DP2) assesses the case for the transition of NEM legacy data exchange services for Retail and Wholesale. In advance of resolving the Transition Strategy to be considered under DP2, this overview is intended to kick start thinking on the additional criteria which might be required over and above those for Foundation to enable DP2.

## Additional criteria for Decision Point 2 may include:

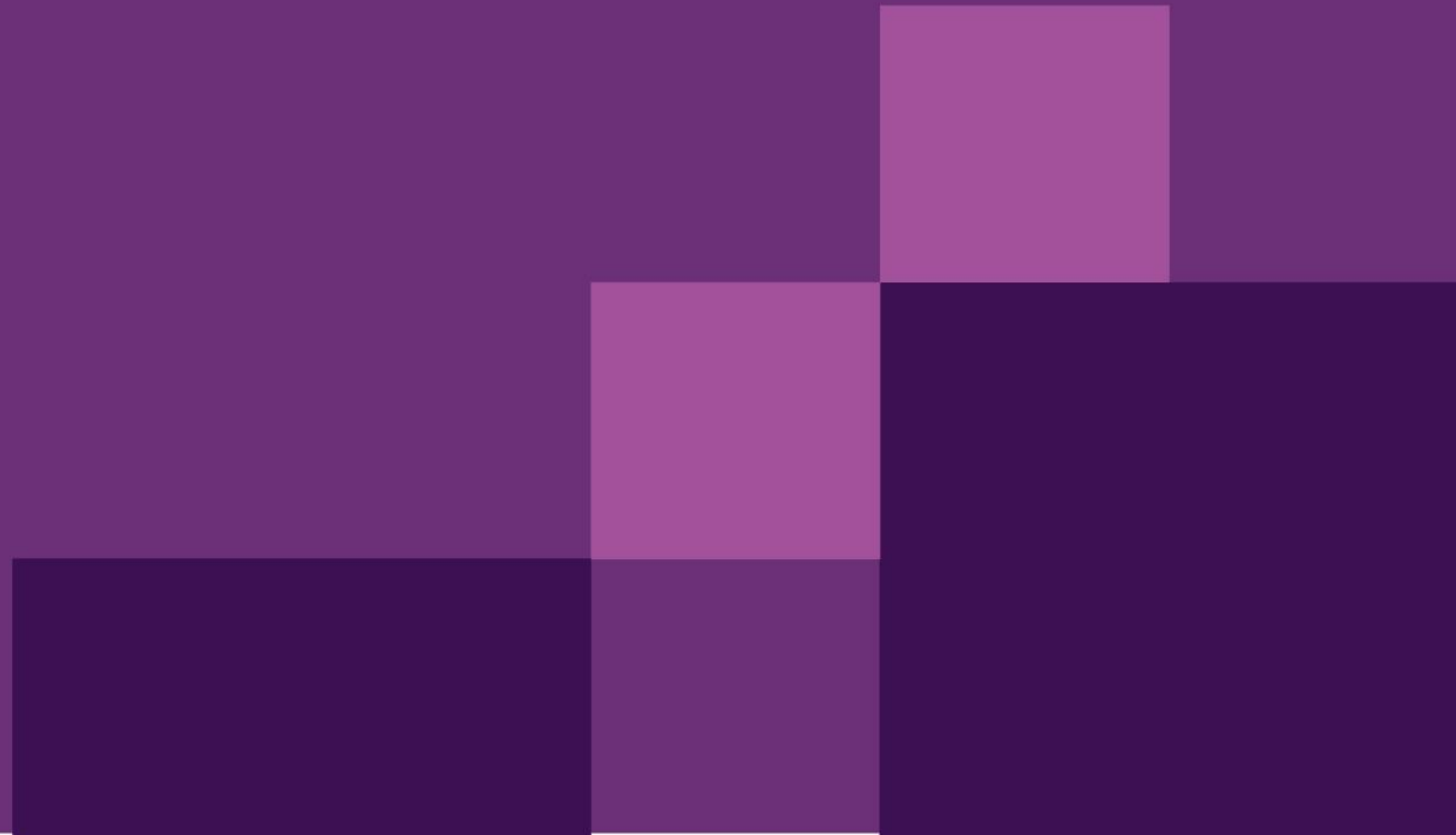
- Application of new patterns and channels to legacy services
- Payload format decisions
- Transition strategy
- Enabling capabilities supplied by AEMO
- Industry timelines and costs

This introduction is intended to kick start thinking on the delta criteria for DP2 noting we have a separate session planned to finalise criteria to validate (the 'WHAT'), as well as a separate session to then develop the measures (the 'HOW').

While we will endeavour to capture any measures in a parking lot, we ask participants to focus on the definition of the criteria themselves.

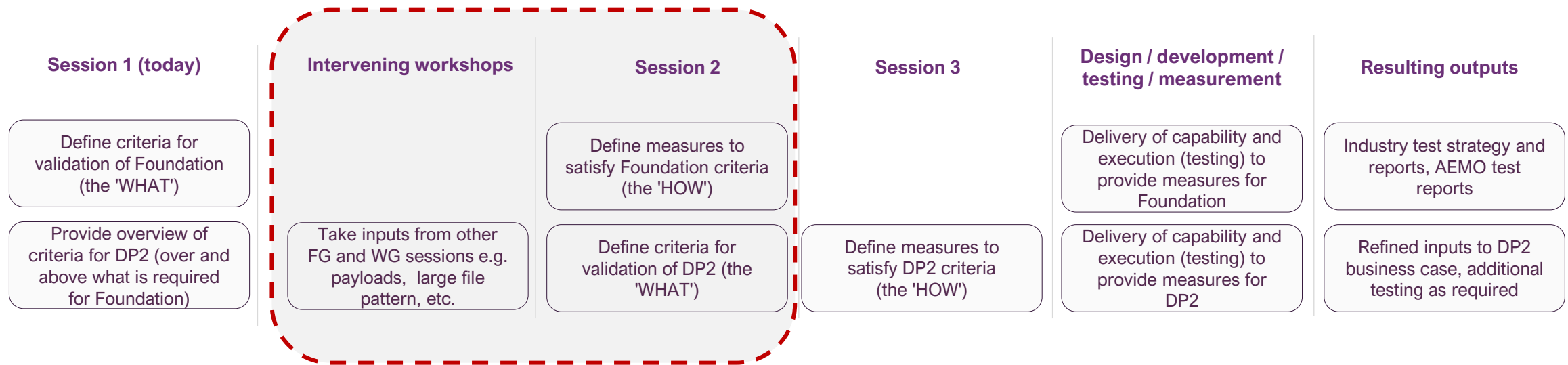
**\*Note: Decision Point 2** only contemplates transition of NEM legacy data exchange services, with the output of the decision point being a business case. Criteria therefore are constrained to the inputs to developing this business case, noting criteria to validate transition itself would be developed within the scope of the DP2 business case.

# Next Steps



# Approach to defining and measuring criteria

AEMO will return to stakeholders after considering the inputs from today's discussions, plus the outcomes from upcoming FG & WG sessions. Members will be advised of the timing of **Session 2** in advance.



Please provide any further feedback from your organisation on the validation criteria for the Foundation capability and high-level Decision Point 2 Criteria via email to [NEMReform@aemo.com.au](mailto:NEMReform@aemo.com.au) by **COB Tuesday 12 November**.



# Notes

Andrew spoke to Next Steps.

## The following questions were raised:

- **Participants** asked around the Plan on a Page. **AEMO** responded that we will provide an update in terms of the wider POAP at the next WG. AEMO noted we are still working through the detail, so as advised to the PCF until we've completed the industry consults and aligned on the details it will be considered draft.

# 5. IDAM Future Topics

# IDAM Focus Group: Security Compliance Overview

Early 2025



In this session we will discuss security compliance in terms of what AEMO will require participant solution to provide for machine-to-machine connectivity as well as participant process requirements noting these will in part be required to meet AEMO and participants obligations including SOCI and AESCSF.



## Audience Skill Set for Focus Group Discussion

- Security representatives
- Technical leads support federation within your Organisation
- Participant administrators

We will discuss policy and delve into process and technical controls that will be required to enforce such policy.

## Topics for discussion

- Identity
- Entitlements
- Federation Enrolment

***Note:** There are other obligations relating to cyber controls and existing participant obligations to connect to AEMO services not proposed to be included in this session which will focus specifically on the introduction of the new IDAM capability*

# Notes

Andrew spoke to IDAM Future topics.

**No questions or concerns raised by industry on IDAM future topics.**

# 6. IDX Future Topics



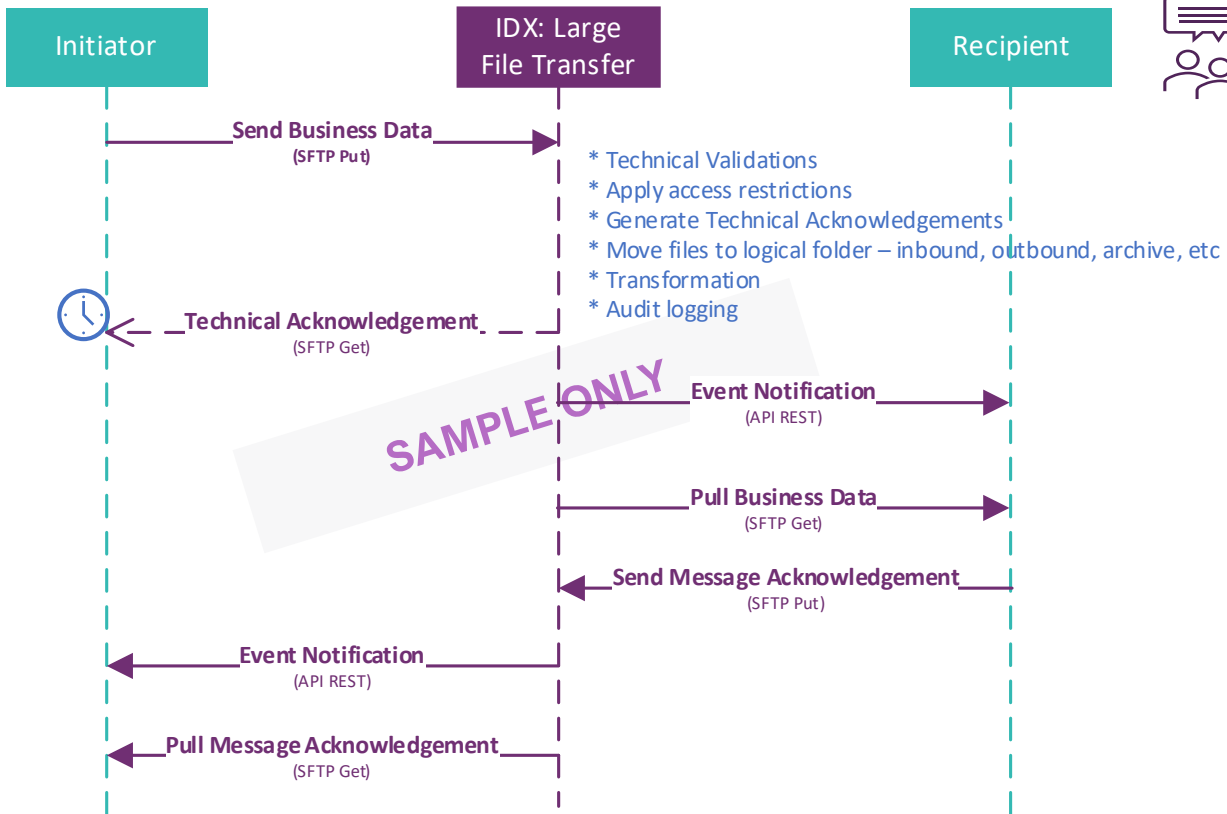
# IDX Focus Group Session: Large File Transfer

Thursday 7 November, 1:00pm – 4:00pm ADST

Nominations closed



The objective of this focus group is to discuss the high-level overview and technical topics for the proposed Large File Transfer solution



## Audience Skill Set for Focus Group Discussion

- Technical Leads
- Integration Architecture Teams (Market Interface Specific)

## Topics for discussion

- Principles used to develop Large File Share solution
- Overview of target state Large File Share solution
- Interface requirements for Large File Transfer
- High-level sequence diagram of the end-to-end business use case
- Roles and responsibilities
- Proposed folder structures and file naming conventions

This Focus group discussion will be relevant to all stakeholders who participate in exchanging data between AEMO and energy stakeholders

# IDX Focus Group Session “Payloads”

Friday 15 November, 1:00pm – 4:00pm ADST

Nominations closed



The objective of this working group session is to discuss the high-level overview of target state payloads.

A	B	C	D	E	F	G	H	I	J		
1	C	NEMP.WORLD	BIDMOVE SUMMARY	AEMO PUBLIC	2021/04/01	04:43:09	339145123	BIDMOVE SUMMARY	339145118		
2	I	BID	BIDDAYOFFER_D	2	SETTLEMENTDATE	DUID	BIDTYPE	BIDSETTLEMENTDATE	OFFERDATE	VERSIONNO	PARTICIP
3	D	BID	BIDDAYOFFER_D	2	2021/03/31 00:00	DUID1	ENERGY	2021/03/30 00:00	2021/03/30 12:19		1
4	D	BID	BIDDAYOFFER_D	2	2021/03/31 00:00	DUID2	RAISE6SEC	2021/03/31 00:00	2021/03/31 01:07		1
5	D	BID	BIDDAYOFFER_D	2	2021/03/31 00:00	DUID3	RAISE60SEC	2021/03/31 00:00	2021/03/30 20:05		1
6	D	BID	BIDDAYOFFER_D	2	2021/03/31 00:00	DUID4	RAISE6SEC	2021/03/31 00:00	2021/03/30 20:05		1
7	D	BID	BIDDAYOFFER_D	2	2021/03/31 00:00	DUID5	RAISE60SEC	2021/03/23 00:00	2021/03/23 17:00		1
8	D	BID	BIDDAYOFFER_D	2	2021/03/31 00:00	DUID6	RAISE5MIN	2021/03/31 00:00	2021/03/01 09:53		1
9	D	BID	BIDDAYOFFER_D	2	2021/03/31 00:00	DUID7	RAISE6SEC	2021/03/31 00:00	2021/03/01 09:53		1
10	D	BID	BIDDAYOFFER_D	2	2021/03/31 00:00	DUID8	RAISEREG	2021/03/31 00:00	2021/03/01 09:53		1
11	D	BID	BIDDAYOFFER_D	2	2021/03/31 00:00	DUID9	ENERGY	2021/03/31 00:00	2021/03/01 09:53		1
12	D	BID	BIDDAYOFFER_D	2	2021/03/31 00:00	DUID10	LOWER6SEC	2021/03/31 00:00	2021/03/01 09:53		1
13	D	BID	BIDDAYOFFER_D	2	2021/03/31 00:00	DUID11	ENERGY	2021/03/26 00:00	2021/02/25 17:21		1

## Payloads discussion points:

- Proposed Payloads
- Schema Validation
- Transition Implications
- Other considerations

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1 ID_CD_CODEGROUP_CODE_VALUE_STARTDATE_ENDDATE_MAINTENANCE
2 168,C5_M74_METER_INSTALL_CODES_BASIC,6,1,1/1/2017,01/01/2017,0
3 349,C5_M74_METER_INSTALL_CODES_BASIC,2,1,1/1/2017,01/01/2017,0
4 163,C5_M74_METER_INSTALL_CODES_BASIC,2,1,1/1/2017,01/01/2017,0
5 164,C5_M74_METER_INSTALL_CODES_COMMS2,2,1,1/1/2017,01/01/2017,0
6 165,C5_M74_METER_INSTALL_CODES_COMMS3,3,1,1/1/2017,01/01/2017,0
7 166,C5_M74_METER_INSTALL_CODES_COMMS4,4,1,1/1/2017,01/01/2017,0
8 344,C5_M74_METER_INSTALL_CODES_COMMS4C,5,1,1/12/2017,01/12/2017,0
9 345,C5_M74_METER_INSTALL_CODES_COMMS4D,6,1,1/12/2017,01/12/2017,0
10 347,C5_M74_METER_INSTALL_CODES_MRAM,8,1,1/12/2017,01/12/2017,0
11 167,C5_M74_METER_INSTALL_CODES_MRIM,5,1,1/12/2017,01/12/2017,0
12 346,C5_M74_METER_INSTALL_CODES_MRIM,7,1,1/12/2017,01/12/2017,0
13 162,C5_M74_METER_INSTALL_CODES_NEW,-1,1,1/1/2012,01/11/2012,0
14 169,C5_M74_METER_INSTALL_CODES_UMCP,7,1,1/1/2012,01/11/2012,0
15 350,C5_M74_METER_INSTALL_CODES_UMCP,11,1,1/12/2017,01/12/2017,0
16 170,C5_M74_METER_INSTALL_CODES_UNKN,8,1,1/1/2012,01/11/2012,0
17 351,C5_M74_METER_INSTALL_CODES_UNKN,12,1,1/12/2017,01/12/2017,0
18 348,C5_M74_METER_INSTALL_CODES_VICAMI,9,1,1/12/2017,01/12/2017,0
19
    
```

## Audience Skill Set

- Technical Leads / Gateway / Support teams
- Integration Architecture Teams (Market Interface Specific)

## Topics for discussion

- High level overview of target state for Payloads
- Current Payload formats across NEM Retail , NEM Wholesale, Gas and WEM.
- Schema validation
- Drafting requirements/use cases for target state Payload formats for NEM Retail , NEM Wholesale, Gas and WEM.

This working group discussion will be relevant to all stakeholders who participate in exchanging data between AEMO and energy stakeholders

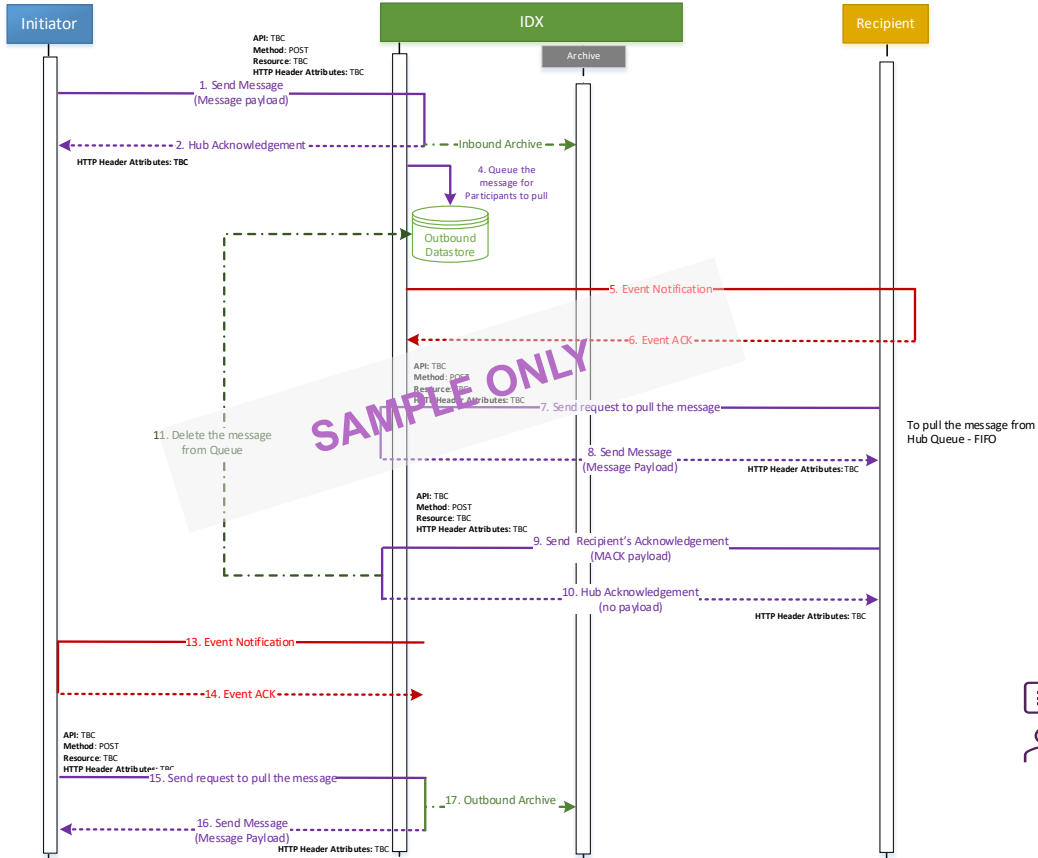
# IDX Focus Group Session: Async and Event Notification

Monday 25 November, 12:30pm – 4:30pm ADST



Nominations closed

The objective of this focus group is to review an End to End Asynchronous pattern (including events) and discuss technical topics related to this type of data exchange.



**Asynchronous** data exchange patterns are used for business processes that require a multi-legged approach to facilitate a data exchange.

**Asynchronous Inbound discussion points:**

- Push data to IDX
- API, Method and Resource
- HTTP Header attributes
- Acknowledgements

**Asynchronous Outbound discussion points:**

- Pull data from IDX
- API, Method and Resource
- HTTP Header attributes
- Acknowledgements

**Event Notification** is the interface delivery pattern presented in the target state which delivers events such as outbound message notification and other event types.

**Event notification Discussion points:**

- Event Interface, Event Payload
- Event Acknowledgements, Event Optionality

**Audience Skill Set for Focus Group Discussion**

- Technical Leads
- Integration Architecture Teams (Market Interface Specific)

**Topics for Discussion**

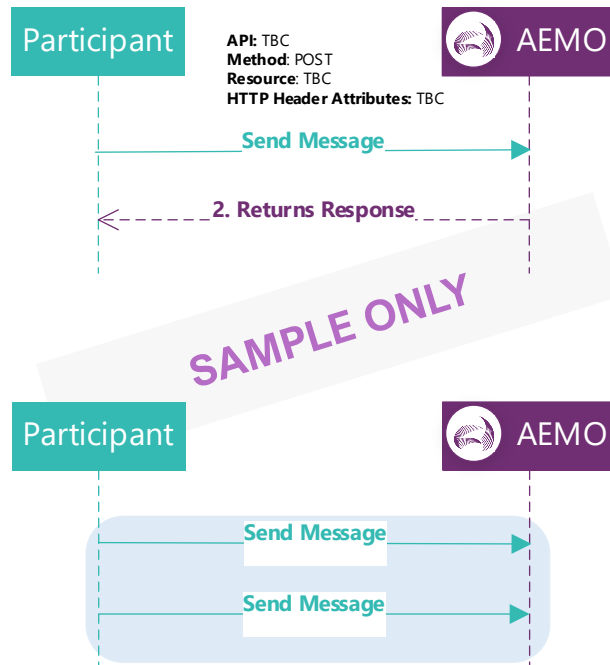
- A draft end to end business use case for asynchronous flow
- Sequence diagram demonstrating the Asynchronous pattern (including events) to support the end to end business case.
- Interface requirements for Asynchronous pattern (including events).

*This Focus group discussion will be relevant to all stakeholders who participate in exchanging data between AEMO and energy stakeholders*

# IDX MITE WG Session: “Sync, Fire & Forget patterns”

Wednesday 27 November, 1:00pm – 5:00pm ADST

The objective of this focus group is to review an End-to-End Synchronous pattern, Fire & Forget Pattern and discuss technical topics related to this type of data exchange.



**Synchronous** data exchange patterns are used for business processes that require a multi-legged approach to facilitate a data exchange.

#### Synchronous data exchange discussion points:

- API, Method and Resource
- HTTP Header attributes
- Acknowledgements

**Fire & Forget** data exchange patterns are used for business processes that require a multi-legged approach to facilitate a data exchange.

#### Fire & Forget Inbound discussion points:

- Push data to IDX
- API, Method and Resource
- HTTP Header attributes

#### Fire & Forget Outbound discussion points:

- Pull data from IDX
- API, Method and Resource
- HTTP Header attributes



#### Audience Skill Set for Focus Group Discussion

- Technical Leads
- Integration Architecture Teams (Market Interface Specific)

#### Topics for Discussion

- A draft end to end business use case for Synchronous, Fire & Forget flow
- Sequence diagram demonstrating the Synchronous pattern, Fire & Forget pattern (including events) to support the end to end business case.
- Interface requirements for Synchronous pattern, Fire & Forget pattern (including events).

This Focus group discussion will be relevant to all stakeholders who participate in exchanging data between AEMO and energy stakeholders

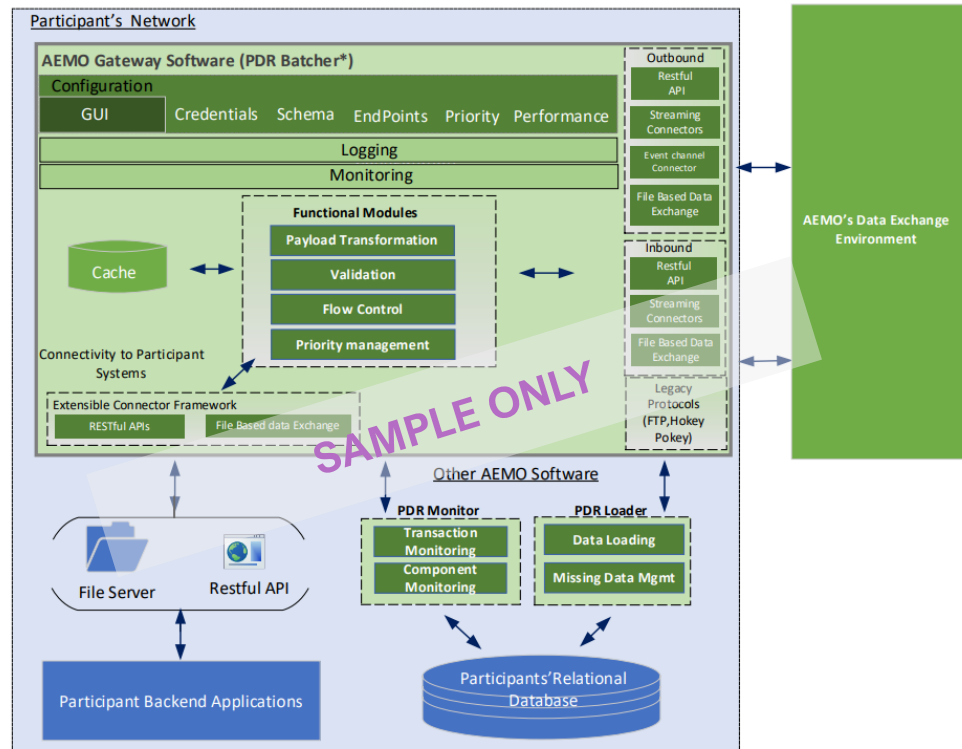
# IDX Focus Group Session: AEMO Gateway Software

Wednesday 4 December, 1:00pm – 4:00pm ADST

Nominations closed



The objective of this focus group session is to discuss capabilities to be delivered by the AEMO Gateway Software, which is proposed to combine the Participant Batcher, pdrBatcher capabilities and is extended to support the target state AEMO IDX Environment.



The **AEMO Gateway Software** will be participant-side software, developed by AEMO, to allow participants to easily interface with new services on the IDX platform. Primarily the AEMO Gateway Software will offer the same services as pdrBatcher does today and allow the translation of existing integration to the new IDX patterns.

Sample business drivers for consideration in the focus group are:

- As part of transition, reduce or remove the need for participants to “recode” their integrations to AEMO's new IDX patterns.
- Support participants using the existing pdrBatcher software.
- Allow 3<sup>rd</sup> party integrators a cost-effective mechanism to integrate their applications into IDX.



## Audience Skill Set

- Technical leads from participants using pdrBatcher.
- Technical/business leads who wish to use existing integration patterns during transition.

## Topics for discussion

- Scope of the AEMO Gateway Software
- Existing pdrBatcher features
- Capabilities required by the AEMO Gateway Software e.g.:
  - Connectivity and integration services
  - Data handling and Transformation
  - Flow and priority management
  - Configuration and monitoring
  - Logging and error management

*This focus group discussion will be relevant to all stakeholders who currently use pdrBatcher, and participants who may look to use AEMO Gateway Software to integrate with services transitioned to the new IDX platform.*

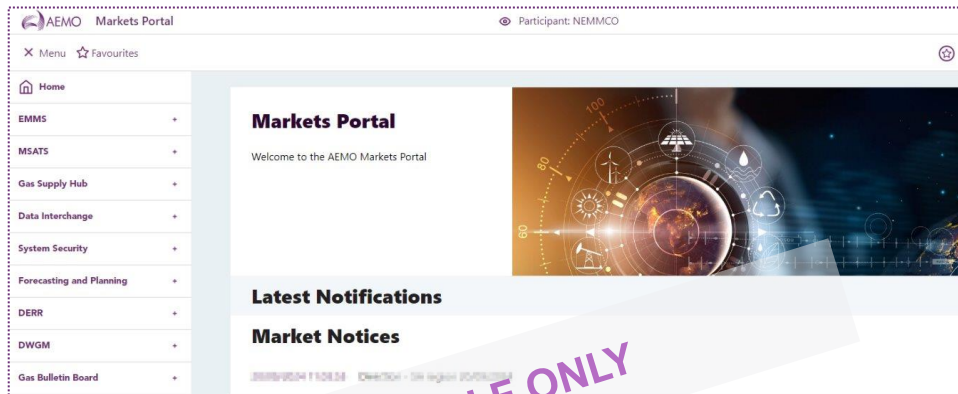


# IDX Focus Group Session: “Low Volume Interface”

Tuesday 10 December, 1:00pm – 4:00pm ADST

Nominations closed

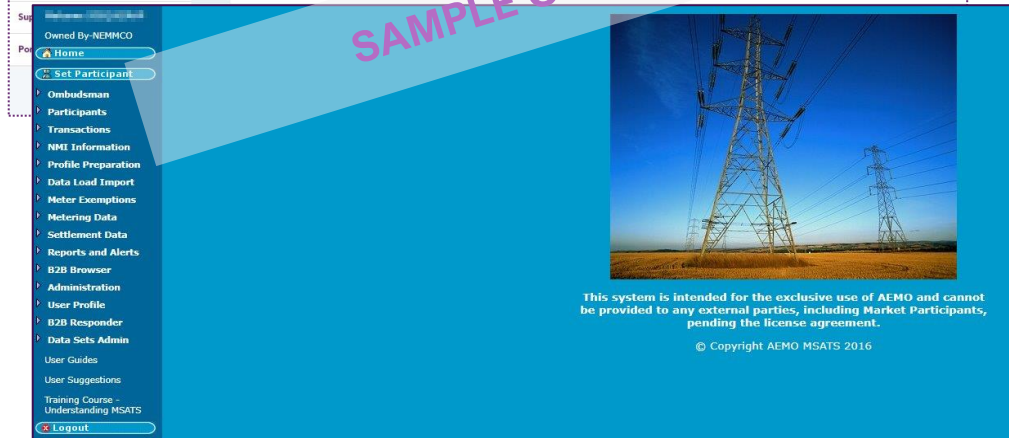
The objective of this focus group session is to discuss capabilities to be delivered in the IDX Low Volume Interface (LVI).



The **Low Volume Interface** is a user interface mechanism to allow participant to manage aspects of data exchange without the requirement of having a system-to-system interface.

Sample business drivers for consideration in the focus group are:

- Contingency (e.g. when participant systems fail)
- Operating small business without the need for system-to-system integration
- Accreditation



## Audience Skill Set

- Users of existing market interfaces to input and receive market data.
- Technical/business leads who understand the use cases for existing User Interfaces

## Topics for discussion

- Scope of the LVI
- Current user interface pain-points (e.g. as per the MSATS and Market Portal interfaces today)
- Capabilities required by the LVI e.g.:
  - Dashboards
  - Create, view and acknowledge transactions
  - Reports, analytics and insights.

*This focus group discussion will be relevant to all stakeholders who participate in exchanging data between AEMO and energy stakeholders via user interfaces*

# Notes

Andrew spoke to IDX Future topics.

## The following questions were raised:

- **Participants** asked about Fire and Forget and Sync now being a Working group. **AEMO** noted that these are simpler patterns and AEMO considered these a good candidate for a working group session as opposed to a dedicated Focus group.

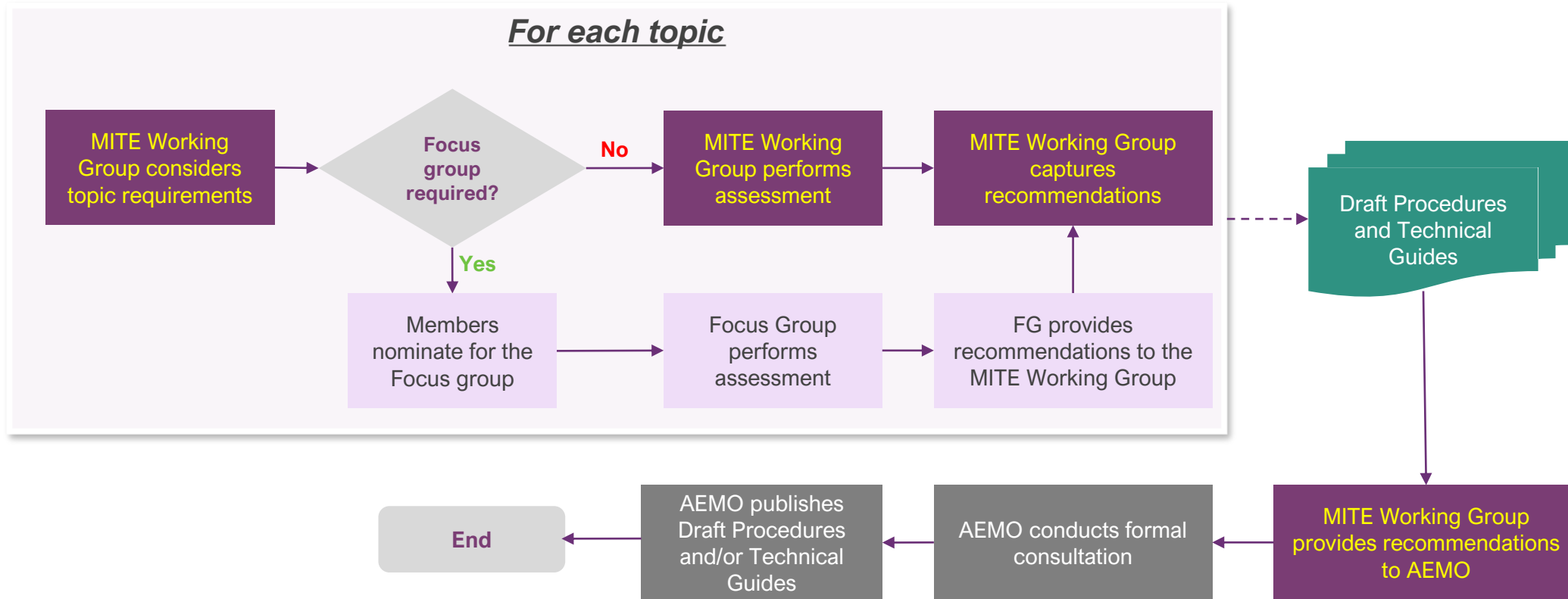
# 7. Forward Plan

Blaine Miner





# Consultation Workshop Structure



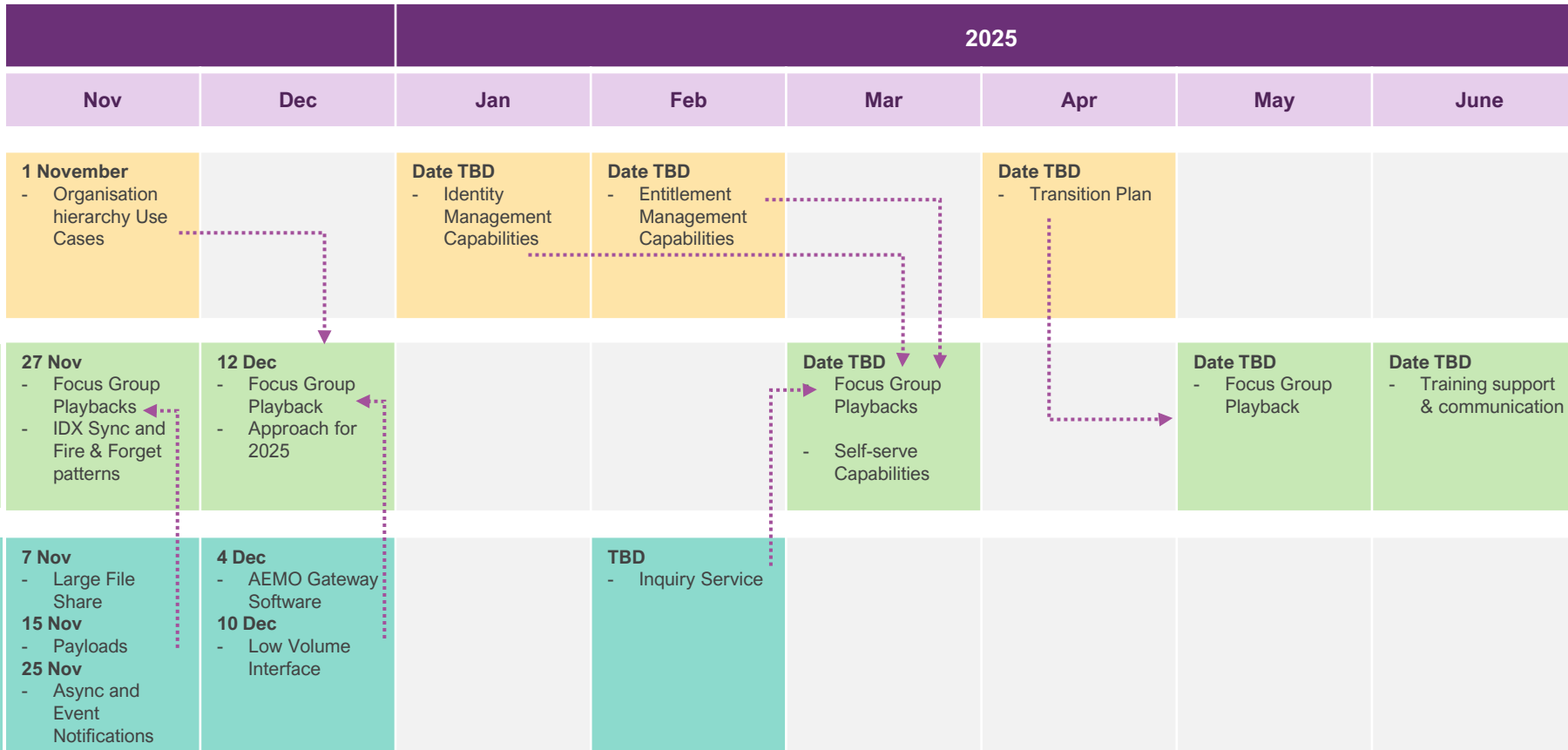
## **MITE Working Group**

- **Actively participate** in highly technical workshop discussions to assess options, co-design draft deliverables.
- **Review key drafts** of documentation prepared by the Focus Group.
- **Consult** internally within own organisation to test, socialise and ultimately champion.

## **Focus Group (as required)**

- **Co-design** draft deliverables for consultation with working group members
- **Actively participate** in the Focus Group workshops and activities
- **Participate in highly technical discussions**, including engaging within their business prior, to provide detailed responses to matters under discussion
- **Champion** technical discussions with their peers and within own organisations

# Indicative Timeline for Upcoming Sessions



**Notes:**

- *Due to a dependency on the Identity Management Capabilities Focus Group topic currently scheduled for Jan 2025, the Security compliance obligations focus group, previously scheduled for 14 Nov, has been deferred until early 2025, exact timings TBD*
- *The above dates are indicative only*
- *Focus group session overviews are provided in the Appendix*

# Notes

Blaine spoke to the Forward Plan.

## The following questions were raised:

- **Participants** asked when the 'How' conversation will be scheduled? **AEMO** responded that we are working on this plan and look to the feedback from participants (Due 12 November) to help inform this schedule.

# 8. General Business and Next Steps



[NEMReform@aemo.com.au](mailto:NEMReform@aemo.com.au)



# General Business and Next Steps

MITE Working Group Forward Plan		
Stream	Content	Timing
<b>IDX</b>	<b>IDX</b> <ul style="list-style-type: none"> <li>Focus Group Playbacks:               <ul style="list-style-type: none"> <li>Large File Share, Payloads, Async and Event Notifications</li> </ul> </li> <li>Sync and Fire &amp; Forget Pattern</li> </ul>	<b>27 November</b>
<b>IDAM and IDX</b>	<ul style="list-style-type: none"> <li>Focus Group Playbacks:               <ul style="list-style-type: none"> <li>IDX - AEMO Gateway Software, Low Volume Interface</li> <li>IDAM - Organisation hierarchy</li> </ul> </li> <li>Approach for 2025</li> </ul>	<b>12 December</b>

Focus Group Forward Plan		
Stream	Topic	Timing
<b>IDAM</b>	Organisation Hierarchy Use cases Focus Group	<b>1 November</b>
IDX	Large File Share Focus Group	<b>7 November</b>
IDX	Payloads Focus Group	<b>15 November</b>
IDX	Asynchronous Pattern Focus Group	<b>25 November</b>
IDX	AEMO Gateway Software	<b>4 December</b>
IDX	Low Volume Interface Focus Group	<b>10 December</b>





For more information visit

[aemo.com.au](http://aemo.com.au)

# Appendix A

AEMO Competition Law - Meeting Protocol



# AEMO Competition Law Meeting Protocol

AEMO is committed to complying with all applicable laws, including the Competition and Consumer Act 2010 (CCA). In any dealings with AEMO, all participants agree to adhere to the CCA at all times and to comply with appropriate protocols where required to do so.

AEMO has developed meeting protocols to support compliance with the CCA in working groups and other forums with energy stakeholders. Before attending, participants should confirm the application of the appropriate meeting protocol.

To access the full protocol at AEMO's website, visit: <https://aemo.com.au/en/consultations/industry-forums-and-working-groups>



# Appendix B

Validation matrix for Foundation



# Validation Matrix for Foundation

Feature Category	Features / Capabilities	Sync API	Async API Inbound	Async API Outbound	Async Large File Inbound	Async Large File Outbound	Fire & Forget API Outbound	Fire & Forget Large File Outbound	Inquiry Flat	Inquiry Dynamic	Event Notifications	Other Categories
Network Connectivity and Security	Connectivity: MarketNet & Internet	X	X	X	X	X	X	X	X	X	X	
	Certificate Management	X	X	X	X	X	X	X	X	X	X	X
	Transport Layer Security	X	X	X	X	X	X	X	X	X	X	
IDAM	IDAM Authentication & Authorisation Patterns	X	X	X	X	X	X	X	X	X	X	
Policies	Encryption & encoding	X	X	X	X	X	X	X	X	X	X	
	Flow control & spike management	X	X	X	X	X	X	X	X	X		
	Round Robin				X	X	X	X			X	
	Virus & malware scans				X	TBC	X	TBC				
	Enforce file/message size limitations		X		X							
	Enforce file masking		TBC		X		X					
	Other policy enforcements	X	X	X	X	X	X	X	X	X	X	X
Archiving	Archiving	X	X	X	X	X	X	X				
Non-Repudiation	Non-Repudiation	X	X	X	X	X	X	X	X	X	TBC	
Logging & Monitoring	Technical Audit Logs - Capture & LVI views	X	X	X	X	X	X	X	X	X	X	
	Monitoring via LVI	X	X	X	X	X	X	X	X	X	X	
Payloads	Payload compression	X	X	X	X	X	X	X	X	X		
	JSON payload data exchange	X	X	X	X	X	X	X	X	X	X	
	AEMOCSV payload data exchange	X	X	X	X	X	X	X	X	X		
	Unstructured payloads	X	X	X	X	X	X	X	X	X		
	Schema validations	X	X	X	X	X	X	X	X	X	X	
Transformation	On-Demand transformation	X		X			X		X			
	Hub transformation based on opt-in version					X		X				
	Support inbound 'n' & 'n-1'	X	X		X				X	X		
	Ability to define the outbound data elements									X		
Business Acks	Manage message acknowledgements		X	X	X	X					X	

# Validation Matrix for Foundation

Feature Category	Features / Capabilities	Sync API	Async API Inbound	Async API Outbound	Async Large File Inbound	Async Large File Outbound	Fire & Forget API Outbound	Fire & Forget Large File Outbound	Inquiry Flat	Inquiry Dynamic	Event Notifications	Other Categories
Orchestration & Routing	Orchestration	X	X	X	X	X	X	X	X	X		
	Routing	X	X	X	X	X	X	X	X	X		
Fan In & Out	Fan-out		X	X	X	X	X	X			X	
	Fan-In		X		X							
Message Enrichment	Message enrichment	X	X	X	X	X	X	X	X	X		
Business Logs	Business Message & Transaction Logs		X	X	X	X	X	X				
Event Notifications	Trigger outbound message event notification			X		X		X			X	
	Flow control notifications (stop files)					TBC			X		X	
	System health & notifications				TBC	TBC			X		X	
AEMO Gateway	AEMO Gateway supported patterns, Channels and Payloads	X	X	X	X	X	X	X	X	X	X	
IDX Self Certification	IDX Technical Self Certifications	X	X	X	X	X	X	X		X	X	
	Responder capability	X	X	X	X	X	X	X	X	X		
	Validation Module											X
IDX LVI	IDX LVI capabilities	X	X	X	X	X	X	X				X
Manifest & Reconciliation Process	Patterns where message exchange will be logged for Manifest Process			X		X	X	X				
	Reconciliation process for the messages/files transacted using the patterns:			X		X	X	X				
	Retrigger transactions			X		X		X				
Enhance Developer Experience	Developer experience (API, MFT Portals, Data dictionary, system documentation)	X	X	X	X	X	X	X	X	X	X	X
Non Functionals	Highly available services (Tier 1 services)	X	X	X					X	X	X	
	Highly available services (Tier 2 services)				X	X	X	X				
	Performance & volume simulation	X	X	X	X	X	X	X	X	X	X	X
Exception Management & Error Handling	Business exceptions & errors	X	X	X	X	X			X	X		
	Technical exceptions & errors	X	X	X	X	X	X	X	X	X		

# Appendix C

Focus Group session overviews



# FG Session Outlines



# Organisation Hierarchies and Enhanced Data Sharing

The objective of this focus group meeting is to thoroughly explore the technical capabilities introduced as part of the new Organisation Hierarchy and Enhanced Data Sharing Capabilities.

In the target state for Entitlements Management AEMO proposed a new set of capabilities known as Organisation Hierarchy and Enhanced Data Sharing, which will enable participants to more accurately model their corporate group structures within AEMO systems. These capabilities will facilitate the management of complex data sharing and user entitlements scenarios in a structured manner, including those involving third-party service providers.



The focus group will discuss the application flows and would seek inputs on design decisions regarding the Organisational Hierarchies and Data Sharing Framework.

## Audience Skill Set for Focus Group Discussion

- Business leads who coordinate multiple PIDs arrangements
- Service Provider leads who support data sharing configurations
- Technical leads / Architects supporting multiple PID solutions and data sharing solutions

## Topics for discussion

- New and enhanced Entitlements Management capabilities due to the Organisation Hierarchies
- Enhanced Data Sharing Framework.

*Note: This focus group discussion will be relevant to the organisations with multiple participants lds and all stakeholders who leverage data sharing capabilities.*