

MINUTES – POC -SWG

MEETING: Systems Working Group Meeting
DATE: Friday, 10 February 2017
TIME: 10:00 – 14:00pm AEDT
LOCATION: AEMO Melbourne Offices; Level 22, 530 Collins St
MEETING #: 1

1. Key Outcomes

LVI & Peer to Peer:

- AEMO presented and walked through the new MSATS browser functionality being offered as part of the 'Power of Choice' implementation to the members.
- The following key discussion points were raised in this session;
 - One member proposed the current B2M transaction screens should start with the prefix 'B2M'. AEMO has considered this proposal but will not be implementing this proposed change.

Peer to Peer:

- Then AEMO introduced and walked through the proposed Peer to Peer message exchange solution.
- The following key discussion points were raised in the session;
 - A member raised the question around adding some standardisation to the 'freeform' aspect of 'Peer to Peer'. AEMO has agreed to add some guiding principles to help participants in the SMP user guide and will work with the members via a focus group to finalise what will be included in these guiding principles.
 - A member also raised the question do we need to introduce TACK's in Peer to Peer. AEMO's response is as follows. Existing acknowledgement patters (MACKs and TACKs) will be used for 'Peer 2 Peer' where it is used in an Asynchronous pattern. Where a participant uses a Synchronous pattern it is up to the participants to determine the best way to manage exceptions (they can agree to use a MACK or a TACK or a combination).
 - AEMO sought feedback from the group around the sizing limits imposed on the Peer to Peer AEMO proposed to the group a 2MB limit. The groups thought was this number was on the low side. AEMO agreed to evaluate this number as part of their internal performance and load testing.
 - AEMO sought feedback on the proposed file formats that should be allowed in Peer to Peer, AEMO proposed pdf, csv, jpeg, gif, zip, txt to the group. One member proposed implementing a 'black list' rather than a 'white list' ie. define what is not allowed through the Peer to Peer rather than what is. AEMO has done some further analysis and will implement a white list containing pdf, csv, jpeg, gif, zip, txt, xls, xlsx any further feedback on this list is welcomed from the members. This will be defined in the SMP

user guide. If there is any additional feedback on this list please respond to the PoC mailbox.

B2B Schema Changes:

- AEMO provided an update to the group noting that B2B schema changes now looking to be published towards the end of March.
- AEMO has agreed that they will publish the aseXML schema mapping document to the members prior. AEMO will publish this mapping document on the 8th March.
- There were questions raised by the members around when AEMO will be releasing a new version of aseXML sample transactions. AEMO has agreed to publish this document to the members by 8th March noting this is before the official release of the schema. Members felt given the project timelines this was still beneficial rather than waiting for the official schema release.

2. Action Items

The following actions were identified in the meeting;

Item	Topic	Action required	Responsible	By

3. Other Business

4. Meeting Critique

5. Next meeting

AEMO proposes to run a focus group on 15th March to review the proposed SMP user guide.

6. Previous action Items

Item	Topic	Action required	Responsible	By
1	Notified Parties & Ack Patterns	AEMO to produce a paper outlining the 2 identified options.	AEMO	26/10
1.1	Request for member preferences of notification model Option.	Members to respond back to AEMO's paper.	Working Group members	28/10
1.2	Context diagram	Volunteered to frame a context diagram for a variation of Option 1 (EHub generating notifications).	Kristen Clarke	02/10
1.3	Establish focus group to further investigate Option 1	AEMO to facilitate session with focus group to Work through the acknowledgment patterns for package 1 & provide a final recommendation for the B2B WG	AEMO	04/11
1.4	Focus Group to white board 'Push-Push' solution.	Focus group to white board a Web Services 'Push-Push' solution and validate it against the 7 principles outlined in the SWG	Focus Group	18/11
1.5	AEMO to document solution	AEMO was tasked to document the white boarded solution and then share with the focus group post session prior for review prior to sharing with wider SWG.	AEMO	24/11
1.6	Manage inflight transactions when changing the interfacing method	AEMO to document the process of managing the inflight transactions when the interfacing method is changed from web services to FTP and vice-versa	AEMO	13/12

1.7	Notified Parties TACK Optionality	AEMO will include optionality for participants to choose whether to receive all TACK's or just negative TACK's in the notified party's solution. This has been updated in the TDS	AEMO	13/12
1.8	Multiparty Paper	AEMO to update the paper to include technical limitations of 1 to many on the existing FTP protocol.	AEMO	14/12
1.9	1st December 17' Schema validation	AEMO will analyse the impact of adding a technical validation to reject previous schema versions	AEMO	13/12
2.0	B2B Schema Changes	AEMO to publish early analysis of the B2B schema changes to the group including confidence weighting of each change.	AEMO	06/01/17
2.1	Multiparty Paper	AEMO to set up a meeting with Kristen to review the multiparty paper and publish back to the group	AEMO	23/12/16
2.2	B2M Schema Feedback	Provide feedback to their ASWG reps with regards to concerns around the removal of enumeration of MeterStatusCode Vacant – 2nd Tier Retailer Annette Reitmann, AGL – Host Retailer Bevan Cole, Western Power – aseXML Subscriber (WA Elec) Carlos Navarro, Powercor – MDA Rob Wilson, Jemena - Distributors	Members	21/12/16

7. Items raised prior to Meeting 10.02.2016

None

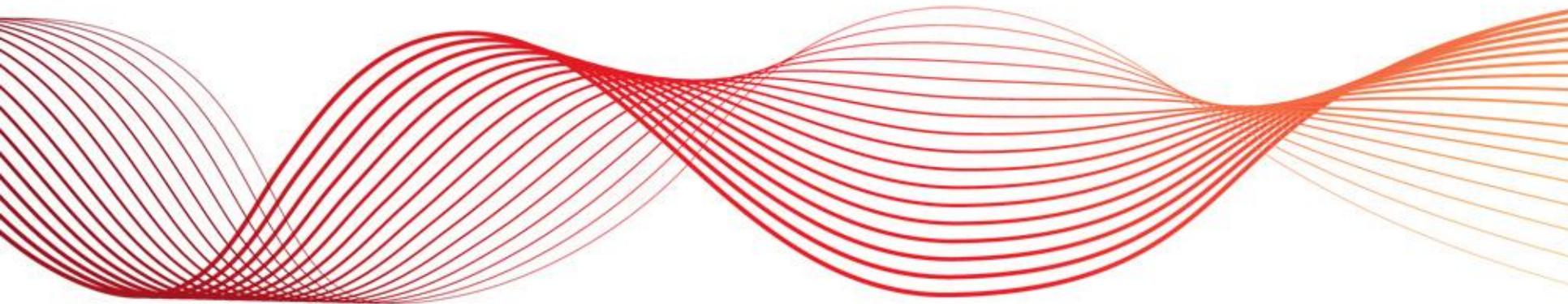
8. ATTENDEES:

Full Name	Company
Jun Liu	Simply Energy
Adam Dubojski	Essential Energy
Keith Graham	Origin Energy Limited
Andrew Mair	M2 Group
Alex Polonetskiy	Ausgrid
Annett Reitmann	AGL
Clinton Gadsden	Lumo Energy
Neville Lewis	Select Data and Measurement Solutions
Justin Wigg	Ausnet Services
Chantal Wright	Momentum
Ben Friebe	Hansen Technologies
Saurabh Sharma	Hydro Tasmania
George Owiti	Red Energy
Sue Richardson	Agilitycis
Andrew Hooker	Powercor Australia Ltd
Chami Fernando	EA
Kevin Boutchard	Aurora Energy
Anna Russo	Endeavour Energy

SHARED MARKET PROTOCOL

LOW VOLUME INTERFACE

10th February 2017



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PREPARED BY: AEMO
TEMPLATE V0.3

KEY REQUIREMENTS



- Provide efficient mechanism for Low Volume Participants to create, send, receive, acknowledge and manage B2M / B2B aseXML messages
- This solution is targeted at low message volume Participants who do not have core systems to support B2B/B2M message exchange
- The MSATS browser is the current LVI for B2B and B2M, it will continue to provide this service with enhancements to handle interactions with the new SMP Hub and enhancements discussed in the SWG Focus Group

ALERTS & NOTIFICATIONS FOR LV PARTICIPANTS



- e-Hub will have the capability to generate email alerts / notifications (see table in Slide#4) to the Participants who primarily use MSATS browser for managing B2M / B2B messaging
- Participants will be able to nominate an email id for receiving the alerts / notifications via the MSATS browser
- A new 'Participant Contact Type' called 'LV Alert' will be created. Participants will be able to nominate an email id in the 'Participant Contact' screen against this new 'Participant Contact Type'

Participant Contact - Lists

Participant:	NEMMCO - Australian Energy Market Operator Limited	Contact Type:	All
E-mail address:		First Name:	All
Primary:		Last Name:	C11_FINAL - Final Recipients C11_REVIEW - AEMO for Review

- Participants will be able to opt-in to one or more or all of the notifications / alerts listed in Slide#4 via MSATS browser (only if an active contact (email id) is available for the Participant Contact Type 'LV Alert')
- The alerts & notifications apply to both B2M & B2B message exchange / processing

ALERTS & NOTIFICATIONS FOR LV PARTICIPANTS



Type	Item	Schedule	B2B or B2M	Description
Alert	Stop File Alert	Event Driven	B2B	The stop file alert will be sent when a) .stp file for other Participants is placed in the stopbox (OR) b) .stp file is generated for the Participant (OR) c) .stp file is removed
			B2M	The stop file alert will be sent when the stop file is created / removed. The B2M stop file could be created when a) CR activity for the current business day exceed the limits b) CR notification activity for the current business day exceeds the limits c) # of NSRD Notifications (5071) transactions that are queued for the Participant exceeds the limits d) # of NSRD Responses that are queued for initiating MDP exceeds the limits e) # of unacknowledged outbound messages (from the hub) exceeds the limit f) # of unprocessed reports submitted & queued exceeds the limits
Alert	Aged files	Scheduled	B2B & B2M	'Aged files' alert will be issued periodically listing the files / messages that have not been MACKd within the configurable timeframes by the Participant
Notification	New messages	Event Driven	B2B & B2M	This notification is generated whenever a new file or message is received for the Participant

B2M PROCESS



- The MSATS portal provides the following functionality for the Participants
 - Participants can manually submit the following from the MSATS Browser
 - New Change Requests
 - New Objections
 - Withdrawal of existing Change Requests
 - Withdrawal of existing Objections
 - Participants can search for the following via MSATS browser
 - Change Requests
 - Objections
 - Notifications
 - Request for Data
 - Download the .zips/.acks from the B2M Inbox
 - Delete the .zips / .acks from the B2M Inbox
 - Download the .zips/.acks from the B2M Outbox
 - Acknowledge (MACK) the .zips from the B2M Outbox (which will delete the .zip from outbox)
 - View .zips in Inbox Archive (each file/message received and processed by the e-Hub)
 - View .zips in Outbox Archive (each file/messages delivered by the e-Hub)

Summary: The B2M messaging capabilities required for LV Participant are currently available in MSATS browser

B2B PROCESS

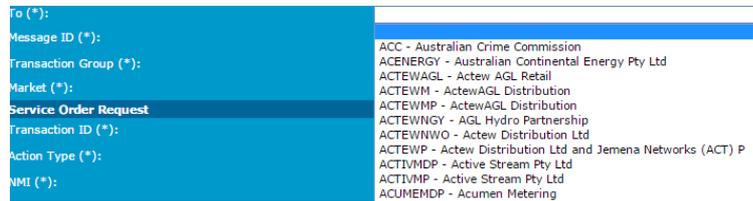


- Participants will have the capability to choose the communication method they would like to opt-in at the transaction group level e.g.

LV Participant 1			LV Participant 2		
Transaction Group	FTP	Webservices	Transaction Group	FTP	Webservices
SORD		✓	SORD	✓	
CUST		✓	CUST	✓	
MTRD		✓	MTRD	✓	

- Participants can utilise the following ways to submit the messages to other B2B Participants
 - Participants (Initiator) opted in for FTP can send the files to other Participants by submitting the files to their 'Inbox' via their FTP gateway/application - *existing functionality*
 - Participants (Initiator) opted in for webservice can send the messages to other Participants by invoking the webservice (at the e-Hub) – *new functionality*
 - Participants can also send new messages/files to other Participants using the MSATS browser (regardless of the opted communication method) via – *existing functionality*
 - 'New Transaction' menu (will be changed to address the requirements in B2B procedures)
 - 'Upload File' screen
 - Participants will be able to retrieve the messages sent to the e-Hub from the Inbox Archive folders. 'Inbox Archive' folders can be accessed by the Participants via MSATS browser or FTP gateway / clients – *existing functionality*

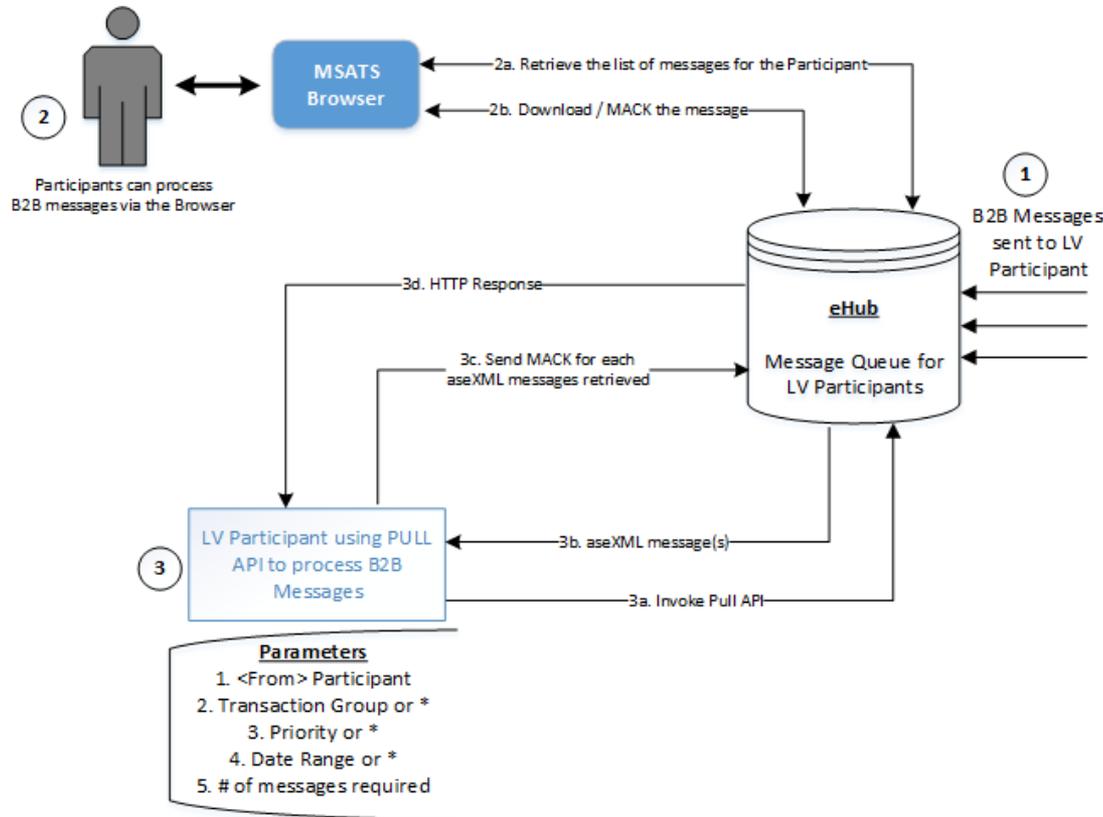
- Enhancements to 'New Transaction' menu
 - Participants will be able to raise transactions such as service orders from the 'New Transaction' menu. New screens (e.g. new service order sub types) / changes to existing screens (e.g. new attributes to the existing transaction types) are required to address the requirements captured in the B2B Procedures
 - Currently, the <To> field contains all the ParticipantIDs ('Create New Transaction' screen)



- Enhancements:
 - The <To> field will be populated with ParticipantIDs based on the roles who could receive that transaction type e.g. Re-energisation Service Orders – ParticipantIDs related to the roles 'LNSP', 'MP' and 'MC' will be populated in the <To> list
 - If the users are submitting messages via 'New Transaction - <Service Order>' screen, the screen will throw confirmation message when the 'NotifiedPartyID' list is left blank
- B2B Validation Module
 - Basic validations in B2B Validation Module, MSATS browser (New Transactions / Upload File) screens and RESPONDER screens will be kept in sync.

- Participants can process their incoming message via the following mechanisms
 - Participants opted in for FTP: The e-Hub will deliver the files to the 'Outbox' – *existing functionality*
 - Participants will be able to process (retrieve .zips and send MACKs) files from their 'Outbox' using their FTP gateways / application
 - Participants will be able to MACK the messages via the MSATS browser (i.e. 'B2B Outbox' screen). MACKing the message will delete the file from the 'Outbox'
 - Participants opted in for Webservices: Participants can use one of the following capabilities to process their incoming B2B messages
 - The e-Hub will provide the following APIs to process Participant's incoming B2B messages
 - ❖ Push API: As discussed in the TDS. This capability will be available to all Participants
 - ❖ Pull API: AEMO will provide 'Pull API' capability only to the LV Participants (i.e. API keys will be provided only to LV Participants). Refer slide#9 for details.
 - MSATS Browser: The messages will be queued in e-Hub if 1) the end point for webservices is not provided 2) push API provided by Participants is not operational 3) LV Participant opted for pull API. Participants can use MSATS browser to download / MACK the above queued messages using browser screen. MACKing the message will delete the message from the queue

B2B PROCESS – PULL API



Advantages of 'Pull API' for LV Participants:

- LV Participants don't have to implement API management systems i.e. LV Participants don't have to expose APIs for AEMO to invoke / push the messages
- LV Participants will always invoke AEMO's APIs; Participants don't have to work with AEMO in opening up their firewalls

- Participants will be able to TACK the messages using the ‘Search Trans Log’ screen – *existing functionality*
- Participants will be able to retrieve the messages delivered by the e-Hub from the Outbox Archive folders. ‘Outbox Archive’ (B2B Archive) folders can be accessed by the Participants via MSATS browser or FTP gateway / clients – *existing functionality*
- Participants can search the transaction logs for various search criteria using the ‘Search Trans Log’ screen. The results of the search can be downloaded to a CSV file. Participants can use the CSV file for any reporting.

Participants in SWG Focus Group provided feedback on the current MSATS user interface and the consensus was that it was in need of modernisation. The key points below were highlighted as areas where modernisation would benefit participants:

- Graphical representation of data and a need for dashboards
- User friendly / intuitive screens / menus
- Enhancements to facilitate business process as opposed to transactional data (e.g. enable participants to view an end to end business process that contain multiple transactions. Process such as New Connections)
- Rationalise B2B & B2M menus and provide consolidated search capability
- Perform dynamic validation of attributes (e.g. New Transactions screens) instead of performing the validation at the time of submitting the transaction

AEMO acknowledges this feedback and will review this internally and look to develop a roadmap if required.

APPENDIX – SUMMARY OF ITEMS DISCUSSED IN LVI SWG FOCUS GROUP MEETINGS



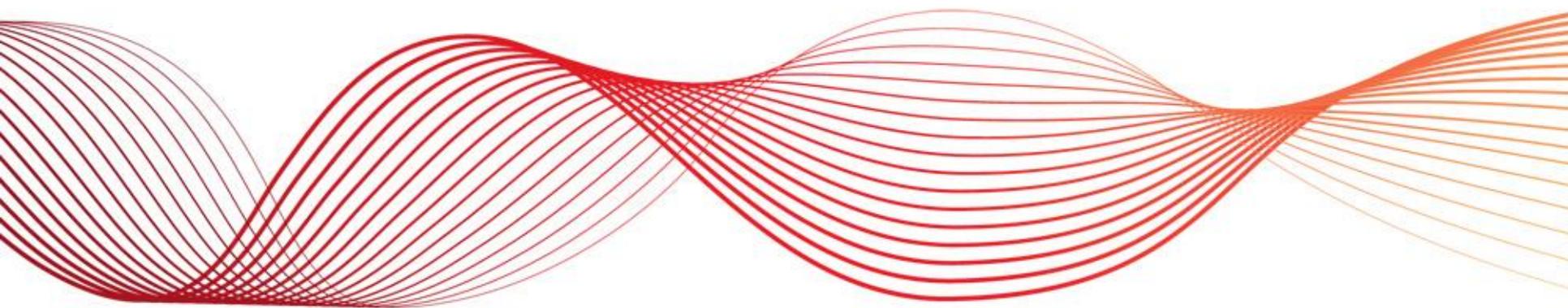
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SHARED MARKET PROTOCOL

PEER TO PEER MESSAGE EXCHANGE

10th February 2017



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TEMPLATE V0.3

e-Hub

B2B Regulated Services

B2B Industry Standard Services

Peer-to-Peer Services

Market Designated Service

B2M Regulated Services

Peer-to-Peer Services

- To leverage the investment in the B2B e-hub participant gateways and the e-Hub platform to support free-form communications between parties
- The free-form communications could support tailored or sensitive communications through a trusted service

KEY SOLUTION HIGHLIGHTS



- Participants can exchange the following information via e-Hub
 - Free-form information
 - Documents / attachments
- e-Hub will only validate the core components such as <From>, <To>, <TransactionType>. The structure of the payload (format of the free-form text) has to be mutually agreed between the Participants. The e-Hub will not validate the structure of the free-form text
- Advantages of Peer-to-Peer (P2P) solution
 - Participants are not required to exchange information via emails
 - The Participants can leverage the existing e-Hub Infrastructure and capabilities such as security, authentication, API management to exchange information that are required outside of B2B procedures

USE CASES FOR P2P MESSAGE EXCHANGE

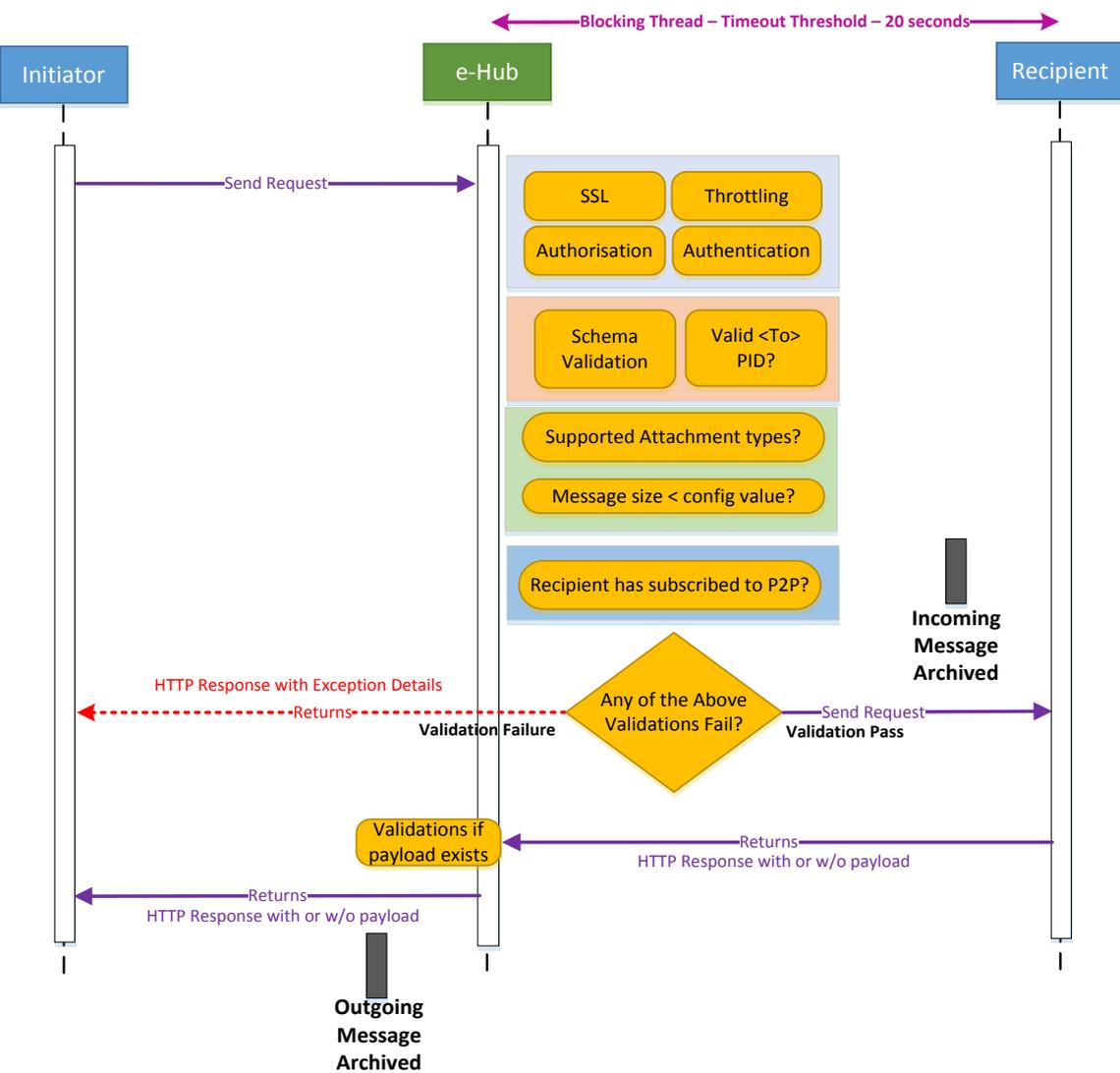


- The following are few examples where documents are shared between Participants
 - 'Intention to Wire' as part of 'Allocate NMI' process
 - 'Safety Certificate' as part of 'Establish Service Works' process
 - 'Metering Safety Certificate' after the completion of Metering Works
 - 'Life Support application' as part of the CDN process

Such documents could be shared via the e-Hub infrastructure instead of legacy communication methods such as emails

- Information exchanged between the Participants as a result of bilateral agreements can be shared via the e-Hub

NEW P2P API



- AEMO will offer new API to exchange P2P information between Participants
- The new API will support exchange of
 - Free-form text / Information (and/or)
 - Attachments
- P2P API will be implemented as ‘Sync webservises’ i.e. message sent by the initiator will be sent to the Recipient in a blocking thread
- The response to the P2P API invocation could result in 1) Validation failures 2) Response from the Recipient

NEW P2P API



- The Initiators will invoke AEMO's P2P API; refer [Appendix-A](#) for details
- The e-Hub will perform the following validations
 - Technical validations such as authentication, authorisation and throttling
 - Schema validation
 - Valid <To> ParticipantID
 - Endpoint configuration of the <To> Participant
 - Total message size (size of the xml payload + all attachments) < 2* MB
 - Attachment type is one of the following* – pdf, csv, jpeg, gif, zip, txt
- If any of the above validations fail, the e-Hub will send exception details to the Initiator. The message will not be routed to the Recipient

* - configurable parameters – These parameters will be fine tuned (i.e. increasing the size of the messages & supporting additional attachment types) in future subject to AEMO's performance test and security review results

NEW P2P API



- If the validations are successful, message will be routed to the Recipient (push from e-Hub to Recipient)
- The messages between Initiator and Recipient will be delivered in synchronous mode i.e. blocking thread
- If the Recipient is unavailable, the e-Hub will not queue P2P messages for guaranteed delivery / implement 'retry logic'. The e-Hub will send appropriate exception message to the Initiator
- P2P message and attachment(s) delivered by the Initiator will be archived in Initiator's 'Inbox Archive' and Recipient's 'Outbox Archive'
- e-Hub will log the transaction details of P2P messages exchanged between Participants. These transaction logs can be searched / viewed via the MSATS browser
- P2P API will use aseXML schema to exchange P2P information between the Participants (Refer slide#8 on the changes required to aseXML schema)

ASEXML SCHEMA CHANGE TO SUPPORT P2P



Changes to aseXML schema are in bold

```
<ase:aseXML .....>
  <Header>
    <From>Participant A</From>
    <To>Participant B</To>
    <MessageID>MSG-1234</MessageID>
    <MessageDate>YYYY-MM-DDTHH:MI:SS.uuu+10:00</MessageDate>
    <TransactionGroup>P2PE</TransactionGroup>
    <Priority>Low</Priority>
    <Market>NEM</Market>
  <Header>
  <Transactions>
    <Transaction transactionID="T-1234" transactionDate="YYYY-MM-DDTHH:MI:SS.uuu+10:0">
      <P2PDataExchange>
        <FreeFormData format="text" >.....Definition in XSD will be "<xs:any>"
          NMI: XXXXXXXXXX
          Job Code: ABCD-1234
          Instruction: YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
          :
        <FreeFormData>
        <AttachmentList>
          <Attachment type="CSV" name="sord1.csv">.....Repeats
        <AttachmentList>
      </P2PDataExchange>
    </Transaction>
  </Transactions>
</ase:aseXML>
```

ASEXML SCHEMA CHANGE TO SUPPORT P2P



- Following changes are required to aseXML schema
 - New Transaction Group (P2PE – Peer-to-Peer Exchange)
 - New Transaction Type as illustrated in slide#8
- The new P2P API will process messages only if the Transaction Group is set to 'P2PE'. The e-Hub will reject messages containing non-'P2PE' transaction groups
- Since aseXML schema is being enhanced to support exchange of free-form information, P2P capability can also be offered via FTP protocol, Async B2B and Sync B2B APIs as illustrated in the following table

	Supported Transaction Groups	Supports Free Flow Text?	Supports HTTP Attachments?
FTP Hokey Pokey Protocol	Existing B2B Transaction Groups P2PE	✓	X
Async API	Existing B2B Transaction Groups P2PE	✓	X
Sync API	Existing B2B Transaction Groups P2PE	✓	X
P2P API	P2PE	✓	✓

P2P FREE-FORM MESSAGING USING FTP & B2B API(S)



- Features of P2P free-form information exchange using
 - FTP and Async APIs
 - Supports interoperability i.e. P2P capability will be available via the following protocols
 - FTP to FTP
 - FTP to webservice
 - Webservice to FTP
 - Webservice to webservices, Async APIs – Push-Push & LVI Push-Pull
 - Only MACKs are required for P2P message exchange; no TACKs are required
 - FTP, Async or Sync APIs
 - Does not support exchange of attachments / documents. If the incoming API request contains attachment(s), the e-Hub will reject the incoming webservice invocation
 - If Participants send document(s) via FTP folders (e.g. pdf documents in FTP Inbox), the e-Hub will not process the documents
 - Existing e-Hub capabilities such as message/file archival, transaction logging will be inherited for P2P message exchange

BROWSER CHANGES TO SUPPORT P2P



- Participants will be able to create P2P messages from the MSATS browser (if agreed bilaterally with the intended Recipient):
 - Participants can send attachments (with or without free-form text) from MSATS browser if the Recipient is configured to receive attachments via P2P API
 - Participants can send free-form text to other Participants using the LVI capabilities

APPENDIX – EXAMPLES OF HOW FREE FORM TEXT AND/OR ATTACHMENTS CAN BE SENT VIA APIS



Exchange free-form text

Content-Disposition: form-data; name="freeflow"
Content-Type: text/xml; charset="UTF-8"

<<<<<<<<P2PE XML payload>>>>>>>>

Exchange attachment

Content-Type: multipart/form-data; boundary=SMP

--SMP
Content-Disposition: form-data; name="freeflow"
Content-Type: text/xml; charset="UTF-8"

<<<<<<<<P2PE XML payload>>>>>>>>

--SMP
Content-Disposition: form-data; name="files";
filename="sord123.txt"
Content-Type: text/plain

<<<<<<<<Contents of the file>>>>>>>>

--SMP--

Exchange Free-form text & multiple attachments

Content-Type: multipart/form-data; boundary=SMP

--SMP
Content-Disposition: form-data; name="freeflow"
Content-Type: text/xml; charset="UTF-8"

<<<<<<<<P2PE XML payload>>>>>>>>

--SMP
Content-Disposition: form-data; name="files"
Content-Type: multipart/form-data; boundary=SMPAttach

--SMPAttach
Content-Disposition: file; filename="sord123.txt"
Content-Type: text/plain

<<<<<<<<Contents of the TXT file>>>>>>>>

--SMPAttach
Content-Disposition: file; filename="sord123.gif"
Content-Type: image/gif
Content-Transfer-Encoding: binary

<<<<<<<<Contents of the GIF file>>>>>>>>

--SMPAttach--
--SMP--

Note: The content in this slide are samples. The actual make up of the HTTP call will be formalised and documented in SMP Guide.