

AGENDA - POWER OF CHOICE: SYSTEM WORK GROUP (POC-SWG) MEETING #6

DATE Friday, 10th February 2017

TIME 10:00AM AEDT – 16:00PM

PLACE LEVEL 22, 530 COLLINS STREET MELBOURNE VIC 3000

Join by phone

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	Conference ID: 889451	

WEBINAR

Please register for SYSTEM WORK GROUP (POC-SWG) MEETING on Feb 10, 2017 10:00 AM AEDT at:

<https://attendee.gotowebinar.com/register/3593517740798940931>

After registering, you will receive a confirmation email containing information about joining the webinar.

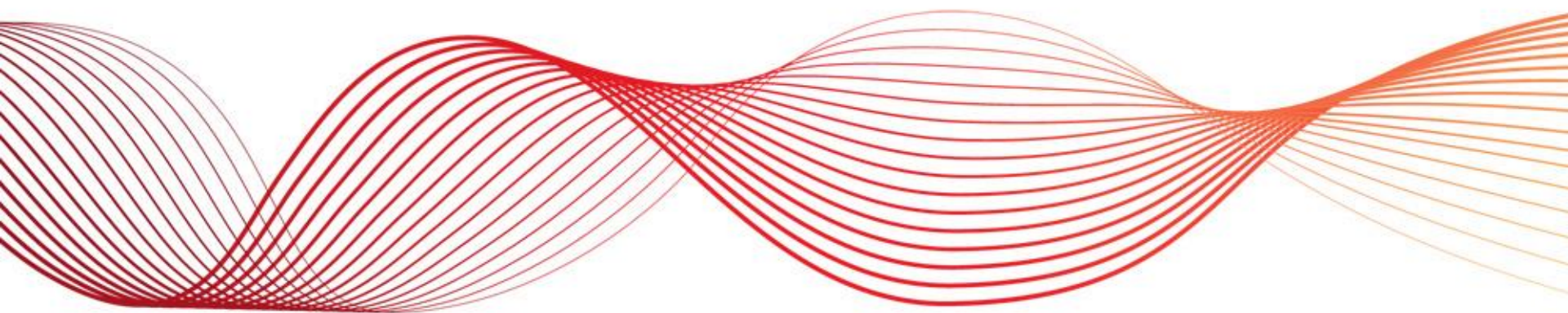
CONTACT INFORMATION poc@aemo.com.au

ITEM	TOPIC	RESPONSIBLE
1.	PoC LVI Changes Overview	AEMO
2	eHub Peer to Peer Overview & Discussion	AEMO
3	B2B Schema Changes: Progress Update	AEMO
4	Any other Business	All

SHARED MARKET PROTOCOL

PEER TO PEER MESSAGE EXCHANGE

10th February 2017



CONFIDENTIAL – RESTRICTED
PREPARED BY: AEMO
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

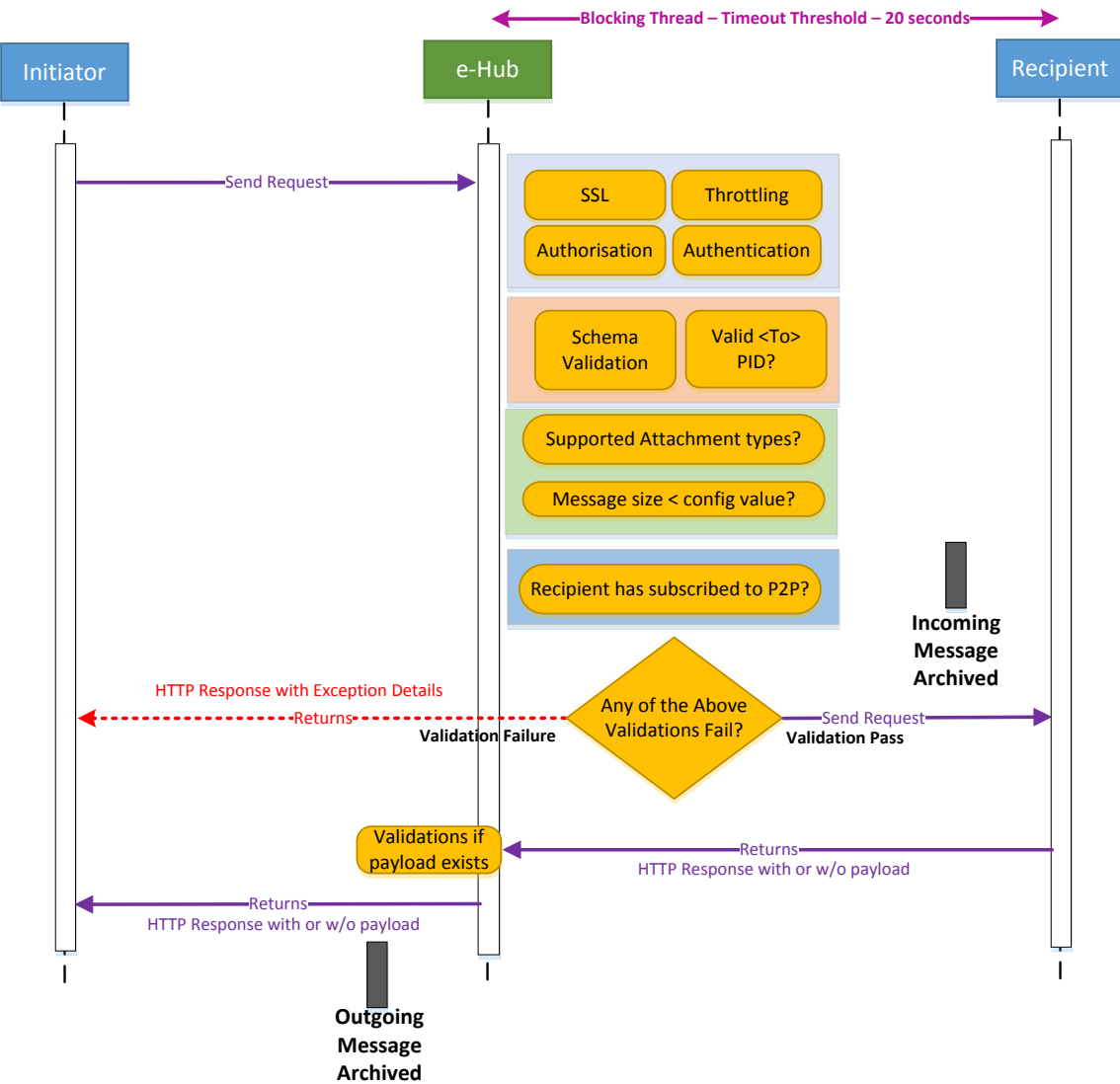


- The following are few examples where documents are shared between Participants
 - 'Intention to Wire' as part of 'Allocate NMI' process
 - 'Safety Certificate' as part of 'Establish Service Works' process
 - 'Metering Safety Certificate' after the completion of Metering Works
 - 'Life Support application'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

- 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--

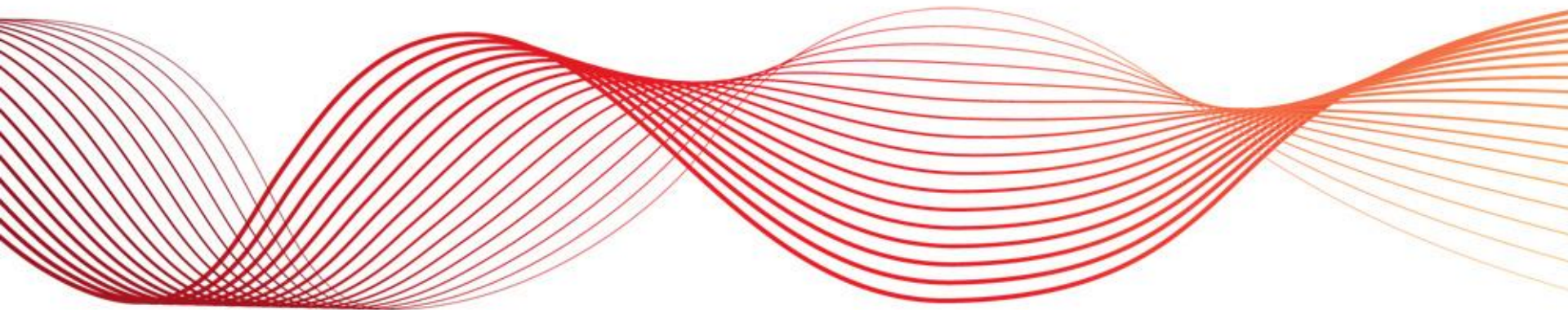
--SMP--

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

SHARED MARKET PROTOCOL

LOW VOLUME INTERFACE

10th February 2017



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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

E-mail address: [text input]

Primary: [dropdown]

Contact Type: All

First Name: [text input]

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

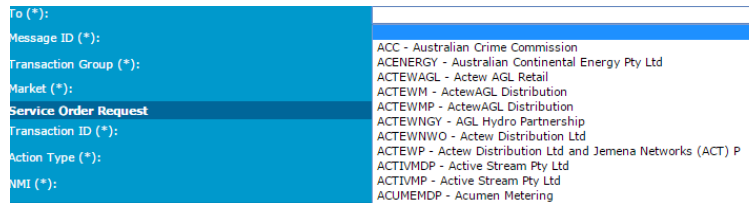


- Participants will have the capability to choose the communication method they would like to opt-in at the transaction group level e.g.

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*

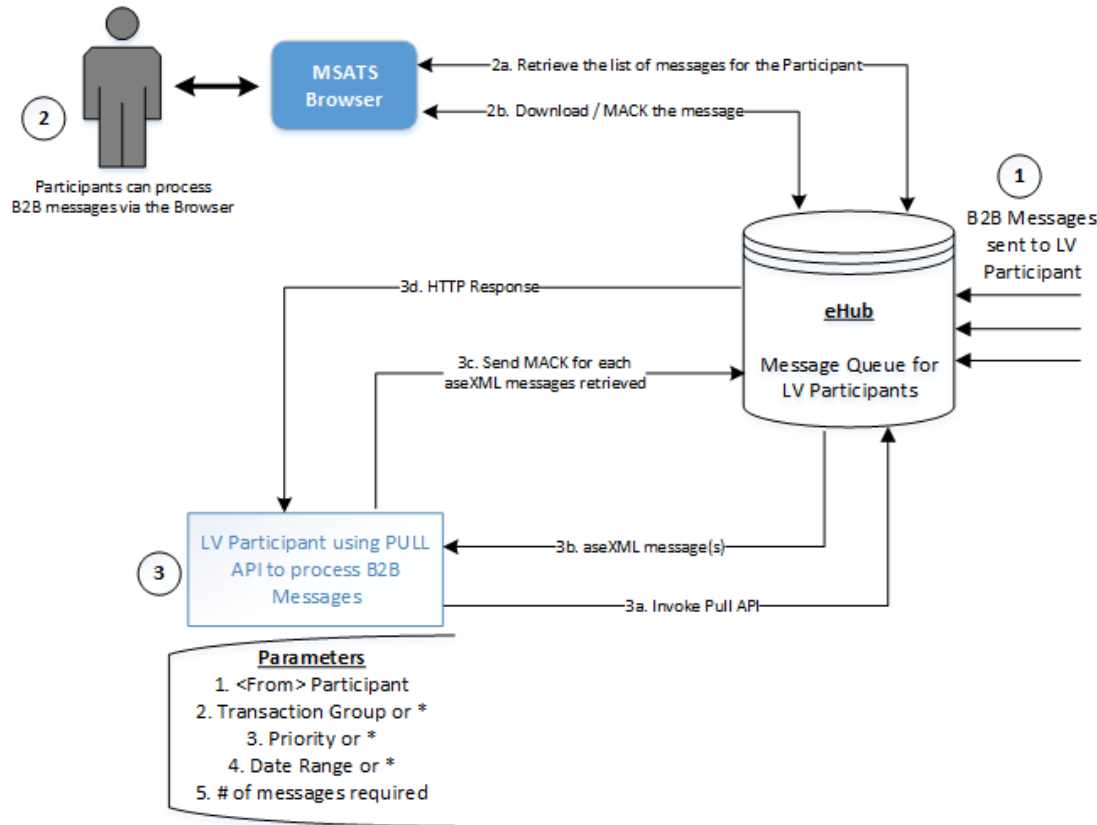
- Enhancements to 'New Transaction' menu
 - Participants will be able to raise transactions such as service orders from the 'New Transaction' menu. New screens (e.g. new service order sub types) / changes to existing screens (e.g. new attributes to the existing transaction types) are required to address 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



SWG FG 16Jan V0

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Priority 0 - High, 1 - Medium, 2 - Low

S.No	Feedback from Participants	Date Raised	Priority	Feedback from AEMO
1	If a Participant is on webservices for all the Transaction Groups, can the FTP specific menus such as 'B2B Inbox' be hidden?	16/01/2017	2	This can be enabled (or) disabled by the Participant admins via MSATS browser. The Participant admin can enable / disable access to FTP specific menus such as 'B2B Inbox' in the 'Maintain Rights' screen and provide appropriate Rights access to their users.
2	New Transaction -> Any Service Order 'To Participant' shows all Participant IDs. If a FRMP user logs in and is attempting to generate a service order, it should only list the Recipients (based on the role) who are eligible to receive that service order. e.g. if a Retailer is attempting to generate a Re-en SO, the 'To' drop down list should only contain the LNSP/MP* Participant IDs who could receive the Re-en SO; it should not list ParticipantIDs such as other FRMPs.	16/01/2017	2	AEMO will implement this change for the 'New Transaction' menu item(s). For each of the transaction type, 'To' drop down list will be populated based on the roles who could receive the transaction type (e.g. 'Re-energisation Service Orders' - ParticipantIDs related to the roles 'LSNP', 'MP' and 'MC' will be available in <To> list.)
3	Consolidated view of B2M and B2B message flow in one screen e.g. the user should have the capability to search by NMI and the results should be a consolidated view of B2M & B2B messages exchanged. Currently, the users have to toggle between B2B and B2M menus to identify the sequence of activities / messages exchanged for a given NMI.	16/01/2017	0	This change will be prioritised post Dec 1, 2017.
4	For all the search screens and one identified in point '3' Technical details such as 'file name', 'message status', transactionID are displayed. The business details are available in the sub menus/link available in each of the line item / search results (e.g. 'Search Related Record', 'View' links). Alternatively, the results should provide the core business details and the sub menus/links when clicked should provide the technical details	16/01/2017	0	Current Transaction Logs are used by <u>all</u> participants for tracking transactions. This is done by referring to header information in messages. AEMO is reluctant to make changes to this screen as part of Power of Choice due to the impact on all participants not just LVI users. AEMO will forward this suggestion to the BAU change team to analyse impacts to all participants and to implement if deemed to be a benefit to the broader industry.
5	Example: New Connection Process With the new SO B2B Procedures, 'Allocate NMI' Service Order is created first followed by other service orders. When performing search in the browser (e.g. Search by providing a NMI), it should list the messages that the Participant sent and also the messages the Participant received. If a user chooses 'Allocate NMI' service order response in the search results, it should provide link(s) for the services orders that could be subsequently generated following an 'Allocate NMI' service order.	16/01/2017	1	This change will be prioritised post Dec 1, 2017.
6	New Transaction -> Any Transaction Currently, the users can enter the mandatory and optional fields in the screen and the validations are performed when the user submits the transaction / chooses to validate before submitting the transaction. The recommendation is to validate the fields as and when the values are filled and not when the user submits the transaction.	16/01/2017	1	AEMO recommends that the validations are performed when the user chooses to 'Submit' or 'Validate' the transaction and not as and when the user keys in the value in a particular field. This is due to additional load forecasted on AEMO systems if this type of validation was to be implemented
7	New Transaction -> Any Service Order transaction Can the CC (Notified Party) field(s) be auto populated based on the Service Order Type? If it cannot be derived, leave it empty.	16/01/2017	1	<ol style="list-style-type: none"> The 'New Transaction' screens are designed in such a way that NMI is entered after a particular service order type is selected. The NMI is not available when the 'Create Transaction - <SOType>' screen is displayed. So, the CC list cannot be derived when the screen is launched. If the Initiators opt to use Option 2 (trigger Notify Party messages from Initiator's systems), the Initiator has to clear the CC (NotifyParty) field everytime they use 'New Transaction' screens. As per AEMO's feedback on line item#6, no field level validation will be performed until the user submits the transaction. Hence, the CC list cannot be derived as the NMI is validated only at the time of submitting the transaction. Recommendation from SWG & B2BWG was: e-Hub will not be able to populate the CC list in certain scenarios such as Allocate NMI and it is the responsibility of the Initiators to populate the CC list. <p>Due to the above reasons, CC list will not be auto populated by the browser.</p>

8	New Transaction -> Any Service Order transaction If a user submits the transaction with CC (Notified Party) fields being empty, provide a warning before submitting the message/transaction.	16/01/2017	2	AEMO will implement this change.
9	Ombudsman -> NMI Enquiry screen The screen should display the NMI Enquiry results in a diagrammatic representation (more user friendly) and the user should be able to slide through the timelines to analyse the search results	16/01/2017	2	AEMO recommends that requirements & improvements related to graphical representation of data is evaluated, prioritised and considered post Dec 1, 2017.
10	B2B Validation Module (VM) AEMO will be publishing the new version of B2B Validation Module for the Participants. But a. Will the validation logic in the VM and the screen be in sync? B. If any defects are identified in VM, will they be fixed in the screen validations as well and vice-versa? c. Any future changes, will VM be automatically updated and published?	16/01/2017	1	a. The validations that VM, Responders and 'New Transactions' screen will be the same. b. If a defect is identified in one of the above 3, validations will be kept in sync across all three modules c. If there are any future B2B changes that will require changes to validation rules; it will be applicable to all 3 modules - VM, Responder & screen validations. New version of VM will be published. Please note: VM only performs basic validation and will be in sync with the screens and responders. The Screens and Responders perform extended validations such as 'NMI keyed is valid', 'ParticipantID entered is valid' which will not be available in VM. This is how the existing VM works and will continue to work this way.
11	Report to list all the transactions/messages exchanged by a Participant via the hub. The Participants could use these reports to reconcile the transactions and its status in their system.	16/01/2017	1	The results of 'Search Trans Log' can be downloaded as CSV which could be utilised by the Participants to perform the required reconciliation.