

MSATS 47.2 Technical Specification – October 2022

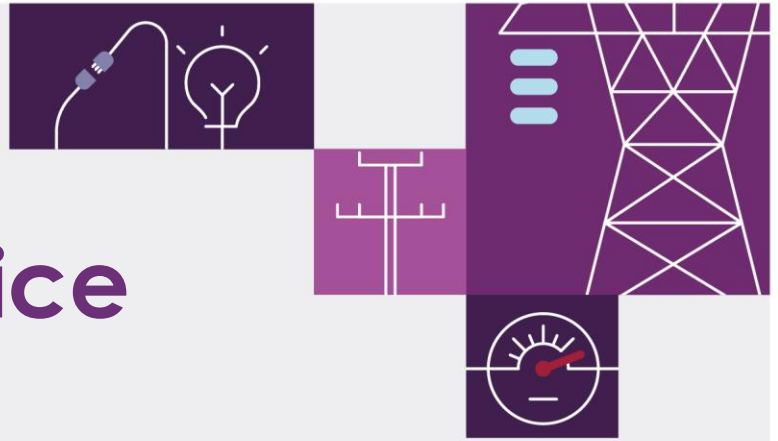
~~V4.01~~V4.02 October 2022

Pre-production: Tuesday 2 August 2022

Production: Wednesday 31 August
2022

Release series: MSATS4710522





Important notice

Purpose & audience

This document describes the technical changes required to participant's systems for the MSATS 47.2 Technical Specification – August 2022 (Release). The Australian Energy Market Operator (AEMO) provides this information as a service targeting business analysts and IT staff in participant organisations. It provides guidance about the changes to their market systems under the National Electricity Rules (Rules), as at the date of publication.

How to use this document

- If you have questions about the business aspects of these changes, please see Consultations on [AEMO's website](#).
- The references listed throughout this document are primary resources and take precedence over this document.
- Unless otherwise stated, you can find resources mentioned in this guide on AEMO's website.
- **Text in this format** is a link to related information. Some links require access to MarketNet.
- **Text in this format**, indicates a reference to a document on [AEMO's website](#).
- **Text in this format** is an action to perform in the MSATS Web Portal.
- This document is written in plain language for easy reading. Where there is a discrepancy between the Rules and information or a term in this document, the Rules take precedence.
- Rules and Glossary Terms are capitalised and have the meanings listed against them in [the National Electricity Rules \(NER\)](#) and [Retail Electricity Market Glossary and Framework](#).

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Distribution

Available to the public.

Document identification

Prepared by: AEMO Digital

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Version history

v4.01 See [Changes in this version](#).

Documents made obsolete

The release of this document changes only the version of MSATS 47.2 Technical Specification – October 2022.

Contact us

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1 Introduction

1.1 Audience

AEMO provides this information as a service targeting business analysts and IT staff in participant organisations.

1.2 Objective

The MSATS 47.2 Technical Specification – August 2022 (Release) describes the projects and enhancements planned by AEMO from a participant perspective and includes the related changes to participants' IT systems.

1.3 Status

This version is for information only. The design is not ready for participant builds.

Version	Status
<u>4.02</u>	<u>Updated submission row limits, submission details and responses for NMI Data, Meter Register and Register Identifier</u>
4.01	Updated with participant feedback
3.00	Presents the Blind Update Tool pre-production design
2.01	Presents the Blind Update Tool evolving design
1.00	Presents the Blind Update Tool evolving design Please provide feedback, proposed agenda items, or questions to gsmsdr@aemo.com.au



1.4 Release dates

Scheduled for implementation in:

- Pre-production: Tuesday 2 August 2022
- Production: Wednesday 31 August 2022

1.5 Version numbers

AEMO releases new versions of this document as the technical requirements are streamlined.

Incremental version numbers such as 0.01, 1.01, 2.01 and so on mean a draft version or a small change to the technical specification.

Major version numbers such as 1.00, 2.00 means there are substantial changes to the technical specification. Participants must carefully review the changes detailed in this Release.

1.6 Changes in this version

- Updated the AEMO environment system fields to PROD and PREPROD from PRODUCTION and PRE-PRODUCTION.

B	C	SYSTEM	The AEMO environment:	UPPERCASE	✓
			PROD		
			PREPROD		

- Updated example in **Business Keys**.

METER_REGISTER	NMI	Meter Serial	n/a	Controlled Load	Y, N, EXT
----------------	-----	--------------	-----	-----------------	-----------

- Updated **BUT use**.
- Added **BUT run time**.
- Added link to **MSDR Data Transition Table**.
- Added link to **MSATS 48.0 Technical Specification**
- Moved MSDR phase 1 details to the **MSATS 48.0 Technical Specification**.



1.7 Rule and procedure changes

Effective	Details
14 March 2022	MSATS Standing data review phase 1
1 May 2022	MSDR and MCPI Effective Date Change Process
7 November	Standing Data for MSATS

1.8 Related technical specifications

Title	Description
MSATS 47.1 technical specification	Global Settlement, MSATS Standing Data Review(MSDR), Metering Coordinator Planned Interruptions (MCPI), aseXML schema r42 The HouseNumberToSuffix field is updated as not required. It is a schema item only. No procedural requirement. The ASWG identified the addition of the HouseNumberToSuffix as an element aligned with the HouseNumberTo concept
MSATS 48.0 Technical Specification	Draft published with ongoing MSDR phase 2 details

1.9 Related documents

These guides and resources are updated according to this technical specification and published for the pre-production Release Date. Once published, they are primary resources and take precedence over this document.

Title	Description	Status
B2M Mapping to aseXML	New guide detailing the mapping between the MSATS B2M procedures and the aseXML schema	In progress

Title	Description	Status
Blind Update Tool API Reference	Updated with Blind Update Tool APIs	Draft published Blind Update Tool API Reference Requires access to MarketNet
Guide to CSV Data Format Standard	Updated with new fields required for the Blind Update Tool (BUT).	Published Requires access to MarketNet
Guide to MSATS reports	Updated with changes to MSATS C1 report and information about the Snapshot report	In progress
Guide to MSATS Web Portal	Updated with: - Using the Blind Update Tool (BUT) interface - How to construct payloads for the web and API interfaces. - Blind Update Tool (BUT) validation matrix	Draft published Guide to Web Blind Update Tool Requires access to MarketNet
Guide to User Rights Management	Updated with new URM entity for the Blind Update Tool	In progress
MSDR Data Transition Table	Full list of new or amended Standing Data fields and the update option	Published
Technical Guide to MSATS	Updated to include information about the Blind Update Tool (BUT) and Snapshot report	In progress
Update MSATS Meter Register Enumerations	A list of enumerations with Code groups and descriptions	Published Requires access to MarketNet



1.10 Approval to change

No approval or agreement to change required from participant change controllers. Agreement was sought in the [May 2022 readiness working group \(RWG\)](#).

1.11 May 2022 readiness working group (RWG)

The **May 2022 Readiness Working Group (RWG)** coordinates readiness activities for Global Settlement (GS), MSATS Standing Data Review (MSDR) and Metering Coordinator Planned Interruption (MCPI) Program releases. For details about the RWG contact gmsdr@aemo.com.au.

1.11.1 Purpose

Provides a forum for Industry and AEMO to consider key milestones, transitions, and mechanisms associated with the successful implementation of MCPI and MSDR. The focus is on areas directly impacted by these projects.

1.11.2 Membership

Open to all participants.

1.11.3 Prerequisites

Familiarity with MCPI and MSDR concepts and requirements.

1.11.4 Meeting frequency

As required (probably monthly)

1.11.5 Communication

Participants can send proposed agenda items, questions or comments to gmsdr@aemo.com.au.



1.12 MSUG meetings

The Market Systems User Group (MSUG) is an industry user group established to discuss NEM wholesale and retail IT systems releases. Its purpose is to facilitate the continuing improvement of AEMO's IT systems by seeking feedback and collaboration from participants.

It is open to all interested parties, with invitations sent to all Registered Participants. If you have a technical question for a project and want to attend the MSUG, so you get an invite, ask your company's support team to include your email address in their **AEMO Help Desk Bulletin (CRM)**.

1.13 Projects and enhancements

1.13.1 Blind Update Tool

The **Blind Update Tool** is a new tool participants can use to submit a csv formatted payload for the initial population of new CATS Standing Data fields.

1.13.2 Consumer Data Right (CDR)

User rights entity for the CDR API and endpoints for Retailers to request standing data, meter data, and distributed energy resource (DER) data to fulfil data requests from Accredited Data Recipients (ADRs).



2 Proposed Timeline

Milestone	Date	Description
Approval required	n/a	AEMO sought approval in the 1.8 May 2022 readiness working group (RWG)
MSDR Focus Group	Monday 20 June 2022	<p>Industry forum for participants and AEMO to consider key milestones, transitions, and mechanisms associated with the successful implementation of MCPI and MSDR</p> <p>Please provide proposed agenda items or questions to gmsdr@aemo.com.au</p> <p>This date is an indication only. Meeting requests and agendas take precedence</p>
MSATS pre-production refresh	<p>Completed: Thursday 24 February 2022 – Tuesday 1 March 2022</p> <p>Available Wednesday 2 March 2022</p>	<p>Refresh of the pre-production systems with data refreshed from the production system Monday 21 February 2022</p> <p>An outage can occur to the pre-production environment during this period. Participant access is not restricted, however, AEMO do not guarantee the pre-production data content or system availability. During the refresh, access to other AEMO systems such as AWEFS, EMMS, OPDMS, and STTM etc. may be intermittently affected</p>
eMDM pre-production refresh	<p>Completed: Thursday 24 February 2022 – Thursday 10 March 2022</p> <p>Available Friday 11 March 2022</p>	
Revised Technical Specification	Only if required	Usually monthly if required, with further details of the changes as the design evolves.
Related Documents publication	Tuesday 2 August 2022	Release of guides and resources mentioned in Related documents on page 3
MSUG pre-release review	21 July 2022 (TBC)	<p>Market Systems User Group Meeting (MSUG) to review the technical specification and ask AEMO technical SMEs questions</p> <p>This date is tentative. The project manager will provide an invitation one week prior to the meeting</p>

Milestone	Date	Description
Pre-production implementation	TBC	AEMO implements components of the Release to pre-production for participant testing AEMO has full access to the system during this period Participant access is not restricted; however, the data content or system availability is not guaranteed
Pre-production systems available	Tuesday 2 August 2022	Testing period begins for participants. AEMO assistance available if required
Industry testing	None	AEMO coordinated testing with participants
Production implementation	TBC	AEMO implements the release to production
MSUG: post-production review	18 May 2022	MSUG to review the implementation of this production release and ask AEMO technical SMEs questions This date is tentative. The project manager will provide an invitation one week prior to the meeting.
Production systems available	Wednesday 31 August 2022	Production systems available to participants
MSUG pre-production review	15 September 2022 (TBC)	Market Systems User Group Meeting (MSUG) to review the implementation of this pre-production release and ask AEMO technical SMEs questions This date is tentative. The project manager will provide an invitation one week prior to the meeting
MCPI compliance holiday finishes	Monday 1 May 2023	A specific time period where AEMO has granted temporary relief to participants to comply with procedural obligations
MSDR compliance holiday finishes (exc. GPS)	Tuesday 7 November 2023	
GPS compliance holiday finishes	Friday 7 November 2025	



3 Participant Impact

3.1 Blind update tool

Purpose	Procedural obligations	Data history	CATS notifications	Data synchronisation	Used by
Tool to submit a csv formatted payload for the initial population of new CATS Standing Data fields For details, see Blind Update Tool (BUT)	✓	Blind, the History Model is not updated	✗	C1 report Snapshot report	Participants

3.2 Blind update submissions

See [MSDR phase 1](#).

3.3 Retrieving BUT updates

See [How do I see the updated fields?](#)

3.4 MSATS C1 report

The modified C1 may have records where both the Create and Update timestamps fall outside the C1 reporting period. Ensure this change does not cause an issue to your C1 processing.

For details about C1 changes, see [MSATS Reports > Change](#).



3.5 MSATS enumerations

So participants can validate the enumerations against the procedures, AEMO has published the list of MSATS Meter Register enumerations with Code groups and descriptions:

https://portal.preprod.nemnet.net.au/help/Content/MSATSuserGuides/UpdateMeteringData.htm?TocPath=MSATS%7CMetering%20Data%7C____5



4 Blind Update Tool (BUT)

4.1 Purpose

A new tool enabling participants to submit data to AEMO, called **Blind Update Tool (BUT)**. The BUT performs blind updates by taking the current record and overwriting NMI Standing Data records. The creation and maintenance dates remain unchanged.

BUT **does not**:

- Send notifications to participants.
- Create new records.

BUT is new capability, different to the existing **Bulk Change Tool (BCT)** or **Bulk Data Tool (BDT)**. For more details, see [AEMO Update Toolbox](#).

4.2 BUT use

Post-November 2022, for the nominated Field ID and Business Key, you can update an existing field using BUT for any of these parameters:

- NEW NOT NULL: Submitted value cannot be NULL
- BUT ONCE: Field can only be updated once
- CURRENT IS NULL: Will update where the current value is NULL or not NULL

4.3 How can I update?

Participants can use the following methods to populate or update values:

- Blind Update Tool
- Existing fields: CR2xxx & CR5xxx

4.4 BUT run time

For this Release the BUT run time is every 3 minutes.

This time is configurable and may change when the BUT is used for other Releases.

4.5 When and what can I update?

4.5.1 MSDR phase 1

Field name	Type	Data type	Value	Required	Description	Updater	BUT table ID	From	Due
Shared Isolation Point Flag AEMO populates the default value as NULL when it is created	New fields only	String(1)	I	Yes	The metering installation is Isolated independently but still part of a shared fuse arrangement	LNSP	NMI_DATA	Pre-production: Tuesday 2 August 2022	1 May 2023
			N		No shared fuse arrangement is present			Production: Wednesday 31 August 2022	
			U		Unknown				
			Y		A shared fuse arrangement is present				

4.5.2 MSDR phase 2

For details, see [MSATS 48.0 Technical Specification – November 2022](#).

4.6 Who can update?

Only participant Roles having a current relationship with the NMI (and AEMO) can use BUT to update Standing Data for all Jurisdictions.

For more details about participant NMI relationships, see:

- [Technical Guide to MSATS](#) > Participant Role Relationship.
- [MSATS Procedures – CATS Procedure Principles and Obligations](#) > Access To Cats Standing Data.

4.6.1 Fields and roles

MSDR phase 1

Field	FRMP	LR	LNSP	MDP	MPB	MPC	RP	RoLR	NEMM	NSP2 DSRP
SHARED_ISOLATION_POINT_FLAG	x	x	✓	x	x	x	x	x	x	x

MSDR phase 2

For details, see [MSATS 48.0 Technical Specification](#).

4.7 Which interfaces can I use?

Participants can use the following interfaces to submit their csv payload and retrieve the processing results:

1. **MSATS Web Portal:** Upload, track status, and retrieve submission results.
2. **AEMO's API Gateway:** Submit, track status, and retrieve submission results via API calls. AEMO will provide the OAS specification and endpoint details as the design progresses.

The interfaces are interchangeable, for example you can upload a Payload to the MSATS Web Portal and retrieve the results using AEMO's API Gateway.

4.8 How do I see updated fields?

4.8.1 Submitting party

For the party submitting the BUT Payload, you can download the Submission response with the status of the update using the API or MSATS Web Portal interfaces.

4.8.2 Other parties

For other parties having a relationship with the NMI, you can see the modified fields in a C1 or MSATS Snapshot report, retrieved using API, file, or web interface. The reports provide no specific indication the Blind Update Tool altered the data or when.

A Blind Update Submission does not trigger CATS CR Notifications.

4.9 Submission

4.9.1 Prerequisites

Before upload or submit, you must:

1. Have a Participant ID.
2. Have a user ID and password with BUT access rights provided by your company's participant administrator. For details, see User Rights Management (URM) [on page 37](#) ~~on page 36~~.
3. Understand the **MSATS procedures > Provision and maintenance of CATS Standing Data**.
4. Test your submission in the pre-production environment interface before submitting to production. AEMO encourages participants to use the pre-production environment to test procedures and train staff.

4.9.2 Submission row limit

The limit for a single Payload is **75,000** rows (configurable). Submission process

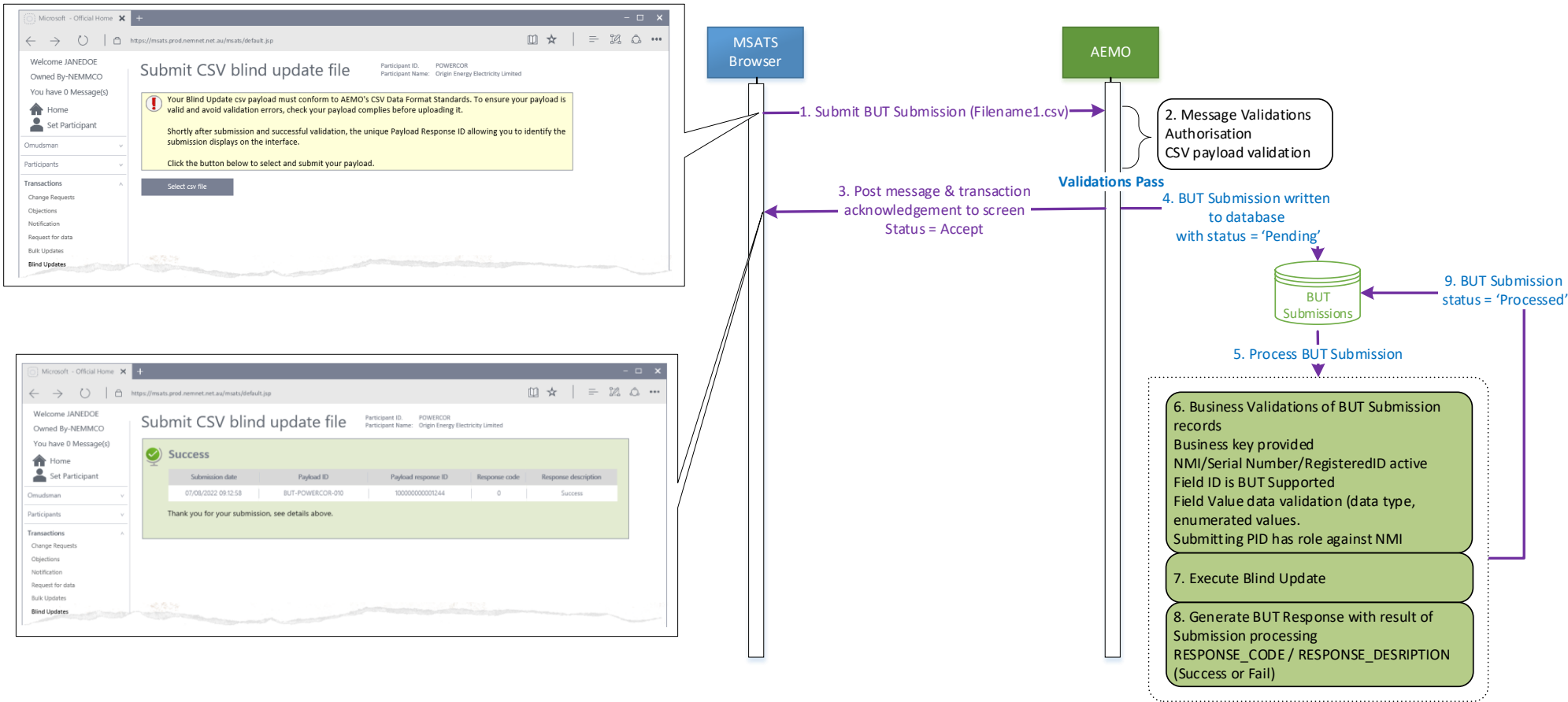
Participant Roles having a current relationship with the NMI use the following self-service process to upload and view Blind Update Submissions. There is no coordination required with AEMO.

The high-level submission process is:

1. Participants create a csv Payload with their Blind Update Submissions following **AEMO's CSV Data Format Standard**.
2. Participants send the csv Payload to AEMO using one of the following interfaces:
 - **MSATS Web Portal**
 - **API e-Hub Gateway**
3. AEMO receives and validates the submission for security and syntax (typically not business validations at this stage).
4. AEMO acknowledges the submission with Accept or Reject. Accept or Reject applies to the **entire** payload.
5. If AEMO accepts the submission, it applies business validations and processes the updates later.
6. Participants can track their **submission status** using the API or MSATS Web Portal interfaces.
7. Participants can download the processing results when they are ready using the API or MSATS Web Portal interfaces. The processing results are a mixture of payload successes and failures. The content is a similar csv format to the Submission with some extra columns.

A rejection on submission, results in the entire payload being rejected.

4.9.3 Submission process diagram



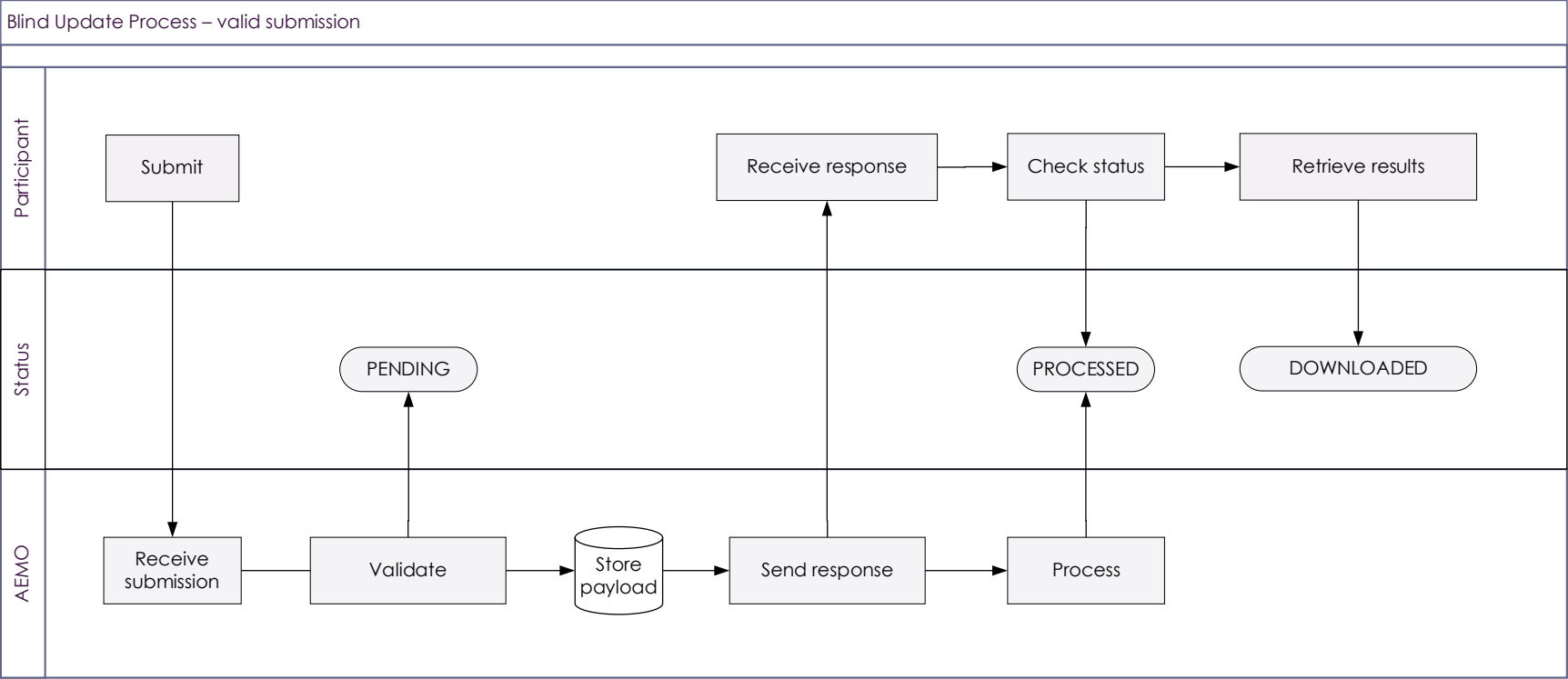
4.9.4 Submission status

For each step in the process, your submission has the following statuses:

Who	Action	From status	To status	Description	Response?
Participant	Submit	n/a	ERROR	Security & syntax validation fail Applies to the entire payload, not individual rows The entire submission is rejected No further processing	Acknowledgement Payload is not stored
Participant	Submit	n/a	PENDING	Security & syntax validation pass Applies to the entire payload, not individual rows Initial accepted status	Yes, Payload is stored
AEMO	Process	PENDING	PROCESSED	All rows processed where each payload row is updated with a success or fail reason and a timestamp Result awaiting participant download	Yes, with row level responses
Participant	Retrieve result	PROCESSED	DOWNLOADED	BUT end-to-end process complete Downloads can be repeated Only the first download moves status from PROCESSED to DOWNLOADED	Yes, with row level responses

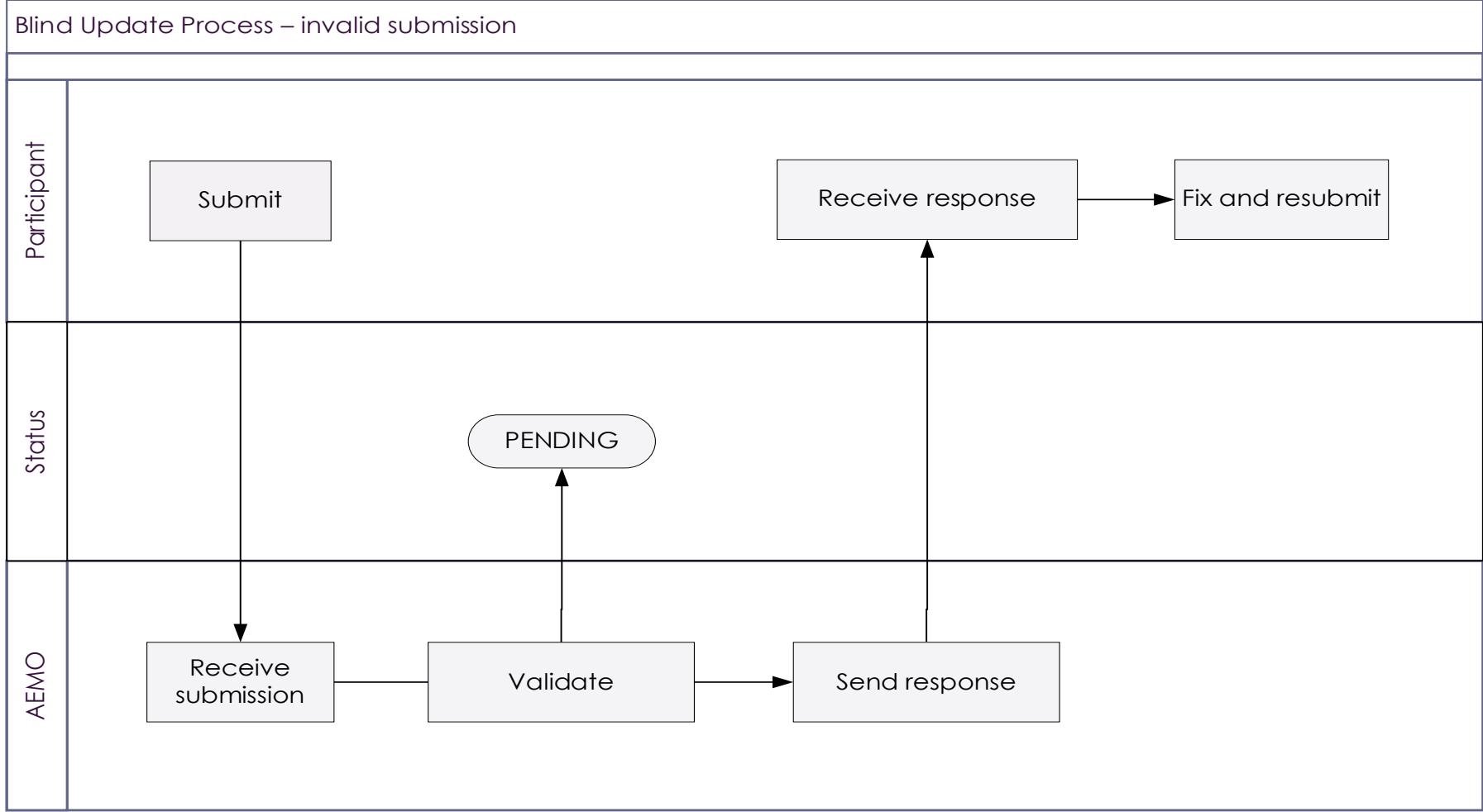


Valid submission





Invalid submission



4.9.5 Submission payload and subtypes

There are new record types for Blind Update Submissions:

Type	Payload type	Payload subtype	CATS table
Participant submission	BLIND_UPDATE_SUBMISSION (BUS)	NMI_DATA	NMI DATA
		METER_REGISTER	METER_REGISTER
		REGISTER_IDENTIFIER	REGISTER_IDENTIFIER
AEMO acknowledgement	BLIND_UPDATE_TOOL (BUT)	n/a	n/a
	BLIND_UPDATE ACKNOWLEDGEMENT (BUA)	n/a	n/a
AEMO response	BLIND_UPDATE_RESPONSE (BUR)	NMI_DATA	NMI DATA
AEMO response	BLIND_UPDATE_RESPONSE (BUR)	<u>METER_REGISTER</u>	<u>METER_REGISTER</u>
AEMO response	BLIND_UPDATE_RESPONSE (BUR)	<u>REGISTER_IDENTIFIER</u>	<u>REGISTER_IDENTIFIER</u>

4.9.6 Business keys

A BUT Submission D field can only contain unique record type business-key combinations. For each record type, the business keys are defined as a combination of the following D fields and the updated column.

Subtype	D row 1	D row 2	D row 3	Column	Example
NMI_DATA	NMI	n/a	n/a	Section Number	N123456789,Section 23K
				DP Number	N123456789,DP 825310
				Connection Configuration	N123456789,L1
METER_REGISTER	NMI	Meter Serial	n/a	<u>Manufacturer</u>	<u>6305185888,4047808,LANDIS AND GYR</u>
				<u>Model</u>	<u>6305185888,4047808,E350 U1200</u>
				<u>Use</u>	<u>6305185888,4047808,REVENUE</u>
REGISTER_IDENTIFIER	NMI	Meter Serial	Register ID	<u>Controlled Load</u>	<u>6305185888,4047808,13,NO</u>
				<u>TimeOf Day</u>	<u>6305185888,4047808,13,OFFPEAK</u>

4.9.7 Submission rules

A BUT Submission, can contain mixed record types in the CSV Payload I and D records.

The submission:

- Must adhere to AEMO's **CSV Data Format Standard**.
- Each record in the Blind Update Payload must start with one of the following 3 characters:
 - **C = comment (metadata)**
 - **I = information**
 - **D = data**
- Must have a C record for its first and last row.
- Can have each csv row containing a single new value for a single column for a specific MSATS record. If you are updating multiple columns for a single MSATS record in the same submission payload, there is one csv row per column.
- Can have any mixture of tables and columns.
- Can have mixed BUT **record types**.

For more details, see [Guide to CSV Data Format Standard](#).

4.9.8 C – comment data

First payload row

The first row of the Blind Update Payload is C and must consist of the following 13 comma separated values:

Column	Row	Field	Example	Data format	Required
A	C	Row type (C, I, D)	C	UPPERCASE	✓
B	C	SYSTEM	The AEMO environment: PROD PREPROD	UPPERCASE	✓
C	C	REPORT ID	BLIND_UPDATE_SUBMISSION: For participants to send blind update requests to AEMO BLIND_UPDATE_RESPONSE: For AEMO to send blind update responses to participants	UPPERCASE	✓
D	C	FROM	<u>The Participant ID that matches the role authorised to submit the nominated field.</u> <u>PARTICIPANTID</u> <u>MYLNSPID</u> <u>MYMPBID</u>	UPPERCASE	✓
E	C	TO	NEMMCO	UPPERCASE	✓
F	C	PAYLOAD CREATION DATE	2021/09/03	YYYY/MM/DD (Market Time e.g. AEST)	✓
G	C	PAYLOAD CREATION TIME	22:04:05	HH24:MI:SS (Market Time)	✓
H	C	EVENT QUEUE ID	EMMS only. Empty column for BUT submissions		Blank column
I	C	DATA MODEL FILE ID			Blank column

Column	Row	Field	Example	Data format	Required
J	C	EVENT QUEUE GROUP ID			Blank column
K	C	MARKET	NEM	UPPERCASE	✓
L	C	PAYLOAD ID	Initiator provided payload reference. It can be any combination of characters; however, it should be unique	UPPERCASE Free text (50)	✓
M	C	PAYLOAD RESPONSE ID	Empty for a BLIND_UPDATE_SUBMISSION Responder (AEMO) provided unique payload reference for the BLIND_UPDATE_RESPONSE (e.g. 324-BB321) Also provided in the sync payload acknowledgement	UPPERCASE	✗

First record C - participant submission example

The commas represent the H, I, J columns used by other payloads and not used by a Blind Update Payload. These are vital containers in the csv data format structure and cannot be ignored.

```
C,PROD,BLIND_UPDATE_SUBMISSION,PARTICIPANTID,NEMMCO,2021/09/03,
22:04:05,,,,NEM,000000000123002
```

First C row spreadsheet example

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	C	PREPROD	BLIND_UPDATE_SUBMISSION	PARTICIPANTID	NEMMCO	14/06/2022	14:14:07				NEM	1456-SM12	
2	I	BUS	METER_REGISTER		1 NMI	METER_SERIAL	FIELD	NEW_VALUE					
3	D	BUS	METER_REGISTER		1 6305185888	4047808	MODEL	E350 U1200					
4	D	BUS	METER_REGISTER		1 6305185888	4047808	METER_MANUFACTURER	LANDIS AND GYR					
5	C	END OF REPORT		5									

First C row text editor example

```
1 C,PREPROD,BLIND_UPDATE_SUBMISSION,PARTICIPANTID,NEMMCO,14/06/2022,14:14:07,,,,NEM,1456-SM12
2 I,BUS,METER_REGISTER,1,NMI,METER_SERIAL,FIELD,NEW_VALUE,,,,,
3 D,BUS,METER_REGISTER,1,6305185888,4047808,MODEL,E350 U1200,,,,,
4 D,BUS,METER_REGISTER,1,6305185888,4047808,METER_MANUFACTURER,LANDIS AND GYR,,,,,
5 C,END OF REPORT,5
```

Last payload row

The last row in the Payload is also a C row with the record count to check all records are received. The record count includes all rows in the payload (C, I, and D). It must have the following values:

Field	Example	Data format	Required
End of report indicator	END OF REPORT	UPPERCASE	Yes
Count of records	45917	Numeric	Yes

Last C row spreadsheet example

45911	D	BID	BIDPEROFFER_D	1	1
45912	D	BID	BIDPEROFFER_D	2	1
45913	D	BID	BIDPEROFFER_D	2	1
45914	D	BID	BIDPEROFFER_D	2	1
45915	D	BID	BIDPEROFFER_D	2	1
45916	D	BID	BIDPEROFFER_D	2	1
45917	C	END OF REPORT	45917		
45918					

Last C row spreadsheet example

```

1 C,PREPROD,BLIND_UPDATE_SUBMISSION,PARTICIPANTID,NEMMCO,14/06/2022,14:14:07,,,,NEM,1456-SM12
2 I,BUS,METER_REGISTER,1,NMI,METER_SERIAL,FIELD,NEW_VALUE,,,,,
3 D,BUS,METER_REGISTER,1,6305185888,4047808,MODEL,E350 U1200,,,,,
4 D,BUS,METER_REGISTER,1,6305185888,4047808,METER_MANUFACTURER,LANDIS AND GYR,,,,,
5 C,END OF REPORT,5

```

4.9.9 I and D rows

Below are the I – information row and D – data row record definitions for each BUT submission.

NMI_DATA BUT submission

Field	I row	D row	Data format/notes
Record type	I	D	Fixed value
Payload type	BUS	BUS	See payload types and subtypes
Payload subtype	NMI_DATA	NMI_DATA	See payload types and subtypes
Payload version	1	1	Fixed value
NMI	NMI	N123456789	10-character NMI
Field ID	FIELD	SHARED_ISOLATION_POINT_FLAG SECTION_NUMBER DP_NUMBER CONNECTION_CONFIGURATION	See Field details
Value	NEW _VALUE	Y Section 23K DP 825310 L1	See Field details

NMI_DATA BUT submission example

Spreadsheet

	A	B	C	D	E	F	G	H	I	J	K	L
1	C	PREPROD	BLIND_UPDATE_SUBMISSION	CNRGYP	NEMMCO	2022/07/04	10:10:15				NEM	ABHI-0001
2	I	BUS	NMI_DATA	1	NMI	FIELD	NEW_VALUE					
3	D	BUS	NMI_DATA	1	4001001080	SHARED_ISOLATION_POINT_FLAG	Y					
4	C	END OF REPORT		4								

Text

```

1 C,PREPROD,BLIND_UPDATE_SUBMISSION,CNRGYP,NEMMCO,2022/07/04,10:10:15,,,,NEM,ABHI-0001
2 I,BUS,METER_REGISTER,1,NMI,MODEL,NEW_VALUE,,,,,
3 D,BUS,METER_REGISTER,1,6305185888,4047808,MODEL,E350 U1200,
4 C,END OF REPORT,4

```

METER_REGISTER BUT submission

BUS,METER_REGISTER,1 row

Field	I row	D row	Data format/Notes
Record type	I	D	Fixed value
Payload type	BUS	BUS	See payload types and subtypes
Payload subtype	METER_REGISTER	METER_REGISTER	See payload types and subtypes
Payload version	1	1	Fixed value
NMI	NMI	6305185888	10-character NMI
Meter Serial	METER_SERIAL	4047808	12 characters
Field ID	FIELD	MODEL METER_MANUFACTURER	See Field details
Value	NEW VALUE	E350 U1200 LANDIS AND GYR	See Field details

METER_REGISTER BUT submission example**Spreadsheet**

	A	B	C	D	E	F	G	H	I	J	K	L
1	C	PREPROD	BLIND_UPDATE_SUBMISSION	PARTICIPANTID	NEMMCO	14/06/2022	14:14:07				NEM	1456-SM12
2	I	BUS	METER_REGISTER		1 NMI	METER_SERIAL	FIELD	NEW_VALUE				
3	D	BUS	METER_REGISTER		1 6305185888	4047808	MODEL	E350 U1200				
4	D	BUS	METER_REGISTER		1 6305185888	4047808	METER_MANUFACTURER	LANDIS AND GYR				
5	C	END OF REPORT		5								

Text

```

1 C,PREPROD,BLIND_UPDATE_SUBMISSION,PARTICIPANTID,NEMMCO,14/06/2022,14:14:07,,,,NEM,1456-SM12
2 I,BUS,METER_REGISTER,1,NMI,METER_SERIAL,FIELD,NEW_VALUE,,,,,
3 D,BUS,METER_REGISTER,1,6305185888,4047808,MODEL,E350 U1200,,,,,
4 D,BUS,METER_REGISTER,1,6305185888,4047808,METER_MANUFACTURER,LANDIS AND GYR,,,,,
5 C,END OF REPORT,5

```

REGISTER_IDENTIFIER BUT submission

BUS,REGISTER_IDENTIFIER,1 row

Field	I row	D row	Data format/Notes
Record type	I	D	Fixed value
Payload type	BUS	BUS	See payload types and subtypes
Payload subtype	REGISTER_IDENTIFIER	REGISTER_IDENTIFIER	See payload types and subtypes
Payload version	1	1	Fixed value
NMI	NMI	6305185888	10-character NMI
Meter Serial	METER_SERIAL	4047808	12 characters
Register ID	REGISTER_ID	13	2 characters
Field ID	FIELD	TIME_OF_DAY CONTROLLED_LOAD	See Field details
Value	NEW_VALUE	OFFPEAK YES	See Field details

REGISTER_IDENTIFIER BUT submission example

Spreadsheet

	A	B	C	D	E	F	G	H	I	J	K	L
1	C	PREPROD	BLIND_UPDATE_SUBMISSION	PARTICIPANTID	NEMMCO	14/06/2022	14:14:07				NEM	1456-SM12
2	I	BUS	REGISTER_IDENTIFIER	1	NMI	METER_SERIAL	REGISTER_ID	FIELD	NEW_VALUE			
3	D	BUS	REGISTER_IDENTIFIER	1	6305185888	4047808	13	TIME_OF_DAY	OFFPEAK			
4	C	END OF REPORT		4								

Text

```

1 C,PREPROD,BLIND_UPDATE_SUBMISSION,PARTICIPANTID,NEMMCO,14/06/2022,14:14:07,,,,,NEM,1456-SM12
2 I,BUS,REGISTER_IDENTIFIER,1,NMI,METER_SERIAL,REGISTER_ID,FIELD,NEW_VALUE,,,,
3 D,BUS,REGISTER_IDENTIFIER,1,6305185888,4047808,13,TIME_OF_DAY,OFFPEAK,,,,
4 C,END OF REPORT,4

```

4.10 Validation

There is a change to BUT NMI validation where BUT can update NMIs regardless of their Status Code. This means BUT can update Standing Data for active (NMI Status Code = A), not energised (D, G), Extinct (X), or off market NMIs.

Message (submission action) Accept or Reject applies to the entire Payload.

4.10.1 MSDR enumerations

So participants can validate the enumerations against the procedures, AEMO will publish the list of enumerations with Code groups and descriptions on the website. We will provide more detail as the design evolves.

4.10.2 Validation rules

Pass

If the entire submission is valid, the Initiator receives a positive **Acknowledgement** 200 with the response code and description.

Fail

The entire Submission is rejected with a negative message acknowledgment sent to the Initiator if it:

- 1. Fails header validation
- 2. Fails CSV Payload validation
- 3. Fails message level validation
- 4. Has duplicate update instructions (same field for the same NMI Standing Data record)
- 5. Where a D row or field within the row fails validation, MSATS does not update the CATS Standing Data field.
- 6. The submission response D record is updated with the validation failure code and description, for example:

Field	I record	D Record example
Response code	RESPONSE_CODE	56
Response description	RESPONSE_DESRIPTION	The participant does not have a current role for the NMI

4.10.3 ASCII character validation

MSATS validates the following ASCII characters as one character each:

&
====
"
====
,
====

Valid character sets for each field may differ, such validations will be performed as part of processing the payload.

Some MSATS fields do not allow the use of special characters, so AEMO advises participants to always use the word **and** rather than the ampersand (&). MSATS generates the following error:

```
<Code description="Schema validation failure">2</Code>
  <Explanation>Schema validation failure The entity name must
  immediately follow the '&amp;'' in the entity
  reference.</Explanation>
```

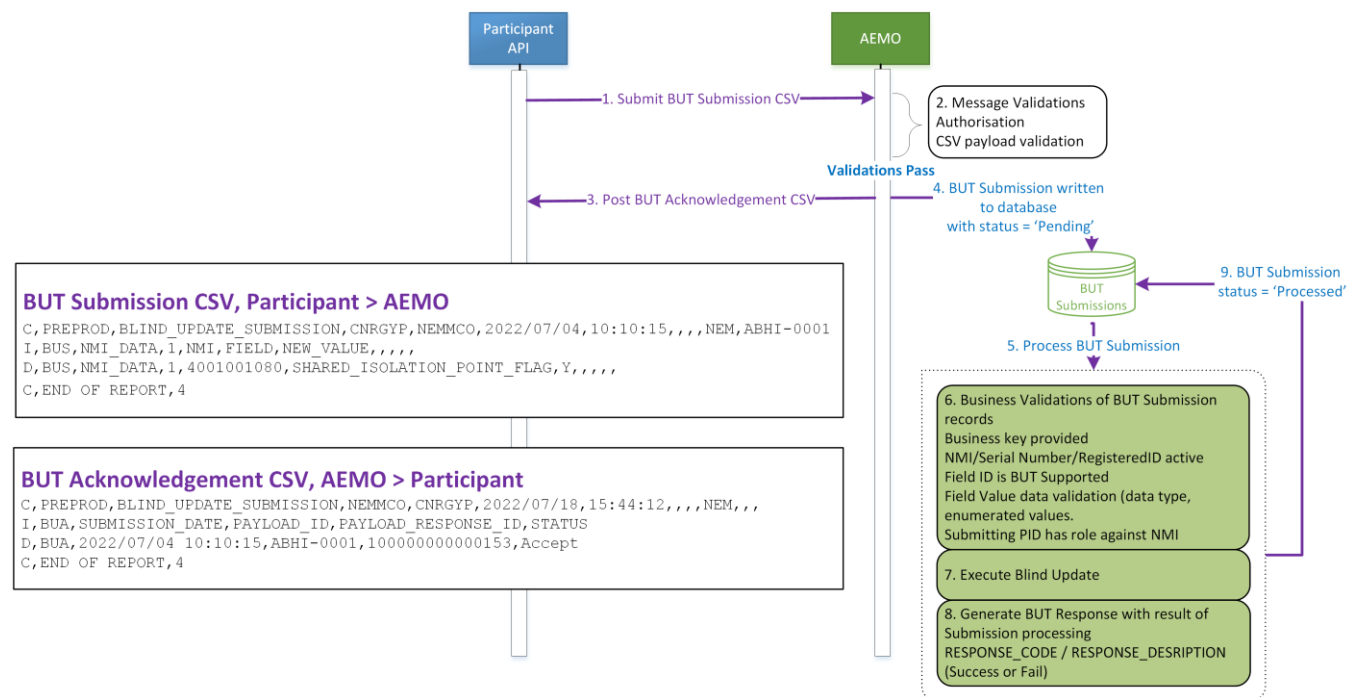
4.10.4 Codes and Descriptions

See [Guide to Web Blind Update Tool > Validation](#) (draft).

4.11 Acknowledgement

API Participants receive a message acknowledgment after a BUT submission indicating AEMO received it. This message is acknowledgment of receipt only for API submissions.

4.11.1 API acknowledgement process diagram



4.11.14.11.2 Format

The acknowledgement content is in [AEMO's CSV Data Format Standard](#).

4.11.24.11.3 API acknowledgement payload

Field	Comment
Submission Date	The submission date and time, e.g. 2022-04-07T10:10:33+10:00
Payload ID	The submitting participant provided value in the C record of the BUT Submission CSV Payload, e.g. BUT-PARTID-010
Payload Response ID	The AEMO generated unique identifier provided as a reference, e.g. 100000000001244

4.11.34.11.4 API Acknowledgement example

1	C,PREPROD,BLIND_UPDATE_SUBMISSION,NEMMCO,CNRGYP,2022/07/18,15:44:12,,,,NEM,,,
2	I,BUA,SUBMISSION_DATE,PAYLOAD_ID,PAYLOAD_RESPONSE_ID,STATUS
3	D,BUA,2022/07/04 10:10:15,ABHI-0001,100000000000153,Accept
4	C,END OF REPORT,4

4.12 Submission response

Depending on the interface used, participants download (web) or request (API) the submission response.

4.12.1 Format

The content of a submission response is in [AEMO's CSV Data Format Standard](#).

4.12.2 Submission response contents

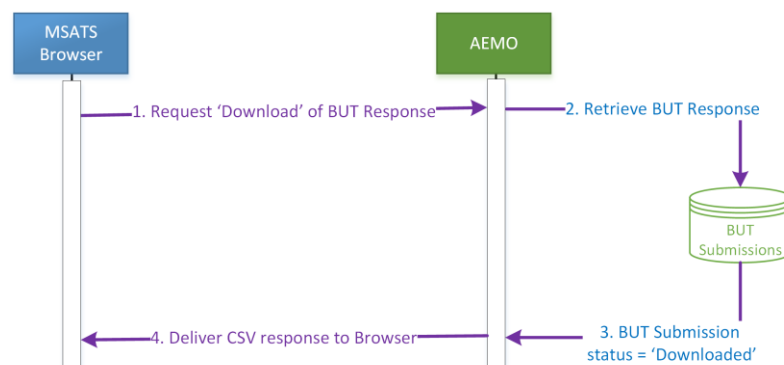
The response payload contains the submission payload with the following changes:

- From and To are reversed
- Creation time is updated

- Payload ID is populated with the same value provided by the Initiator in the C row (L column) of the Submission.
- Response Payload ID has the AEMO-generated unique identifier provided as a reference in the BUT Submission Message acknowledgment and the BUT Response.
- BUS Payload Type is changed to BUR

Field	I record	D Record
Response Code	RESPONSE_CODE	1
Response Description	RESPONSE_DESCRIPTION	Success/Error

4.12.3 Submission response process diagram



BUT Response CSV, AEMO > Participant

```

C, PREPROD, BLIND_UPDATE_RESPONSE, NEMMCO, CNRGYP, 2022/07/18, 15:46:54, , , NEM, ABHI-0001, 1000000000000153
I, BUR, NMI_DATA, 1, NMI, FIELD, NEW_VALUE, STATUS, RESPONSE_CODE, RESPONSE_DESCRIPTION, OLD_VALUE, UPDATED_ROW_ID, BUT_UPDATE_TS
D, BUR, NMI_DATA, 1, 4001001080, SHARED_ISOLATION_POINT_FLAG, Y, UPDATED, 0, Success, , 114052342, 2022/07/18 15:46:54
C, END OF REPORT, 4
  
```

4.12.34.12.4 Submission response payload

NMI_DATA BUT response

Field	I row	D row examples	Data format/notes
Record type	I	D	Fixed value I or D
Payload type	BUR	BUR	

Field	I row	D row examples	Data format/notes
Payload subtype	NMI_DATA	NMI_DATA	Identical to the participant provided BUT submission For effective dates, see payload types and subtypes
Payload version	1	1	
NMI	NMI	N123456789	
Field ID	FIELD	SHARED_ISOLATION_POINT_FLAG SECTION_NUMBER DP_NUMBER CONNECTION_CONFIGURATION	
<u>New Value</u>	<u>NEW_VALUE</u>	Y Section 23K DP 825310 L1	
Response Code	RESPONSE_CODE	1 -nn Etc.	Numeric result of BUT Submission D record validation
Response description	RESPONSE_DESCRIPTION	Success/fail	Character 100 result of BUT Submission D record validation
<u>Old Value</u>	<u>OLD_VALUE</u>	<u>Y</u> <u>Section 23K</u> <u>DP 825310</u> <u>L1</u>	<u>Previous value of Standing Data item</u>
<u>Updated Row ID</u>	<u>UPDATED_ROW_ID</u>	<u>nnnnnnnnnnnn</u>	<u>Max 11 Characters</u>
<u>BUT Update timestamp</u>	<u>BUT_UPDATE_TS</u>	<u>yyyy/mm/dd hh24:mi:ss</u> <u>2022/06/23 09:23:43</u>	

BUT NMI_DATA response example

```

1 C, PREPROD, BLIND_UPDATE_RESPONSE, NEMMCO, CNRGYP, 2022/07/18, 15:46:54, , , , NEM, ABHI-0001, 1000000000000153
2 I, BUR, NMI_DATA, 1, NMI, FIELD, NEW_VALUE, STATUS, RESPONSE_CODE, RESPONSE_DESCRIPTION, OLD_VALUE, UPDATED_ROW_ID, BUT_UPDATE_TS
3 D, BUR, NMI_DATA, 1, 4001001080, SHARED_ISOLATION_POINT_FLAG, Y, UPDATED, 0, Success, , 114052342, 2022/07/18 15:46:54
4 C, END OF REPORT, 4

```

METER_REGISTER BUT response

Field	I row	D row	Data format/notes
Record type	I	D	Fixed value I or D
Payload type	BUR	BUR	Identical to the participant provided BUT submission
Payload subtype	CATS_ METER_REGISTER	CATS_ METER_REGISTER	
Payload version	1	1	
Field ID	FIELD	GPS_COORDINATES_LAT GPS_COORDINATES_LONG	For effective dates, see payload types and subtypes
NMI	NMI	<u>6305185888</u>	
Meter Serial	METER_SERIAL	<u>4047808</u>	
<u>Field ID</u>	<u>FIELD</u>	<u>MODEL METER_MANUFACTURER</u>	
New Value	NEW_VALUE	<u>E350 U1200 LANDIS AND GYR</u>	
Status	STATUS	ERROR UPDATED	
Return Code	RETURN_CODE	1 -nn Etc.	Numeric result of BUT Submission D record validation
Return Message	<u>RESPONSE_DESCRIPTION</u>	Success/error description	Character 100 result of BUT Submission D record validation

Blind Update Tool (BUT)

Field	I row	D row	Data format/notes
Old Value	OLD_VALUE	<u>11ML2/S11</u> <u>Landis Gyr</u>	<u>Previous value of</u> <u>Standing Data item</u>
Updated Row ID	UPDATED_ROW_ID	nnnnnnnnnnnn	<u>Max 11 Characters</u>
BUT Update timestamp	BUT_UPDATE_TS	yyyy/mm/dd hh24:mi:ss 2022/06/23 09:23:43	

BUT METER REGISTER response example

```

1 C,PREPROD,BLIND_UPDATE_RESPONSE,NEMMCO,SPANMDP,2022/07/18,17:33:35,,,,NEM,1456-SM12,100000000000157
2 I,BUR,METER_REGISTER,1,NMI,METER_SERIAL,FIELD,NEW_VALUE,STATUS,RESPONSE_CODE,RESPONSE_DESCRIPTION,OLD_VALUE,UPDATED_ROW_ID,BUT_UPDATE_TS
3 D,BUR,METER_REGISTER,1,6305185985,4047808,MODEL,E350 U1200,UPDATED,0,SUCCESS,11ML2/S11,95661096,2022/07/18 17:33:35
4 C,END OF REPORT,4

```

REGISTER IDENTIFIER BUT response

<u>Field</u>	<u>I row</u>	<u>D row</u>	<u>Data format/notes</u>
<u>Record type</u>	<u>I</u>	<u>D</u>	<u>Fixed value I or D</u>
<u>Payload type</u>	<u>BUR</u>	<u>BUR</u>	<u>Identical to the</u> <u>participant provided</u> <u>BUT submission</u>
<u>Payload subtype</u>	<u>REGISTER IDENTIFIER</u>	<u>REGISTER IDENTIFIER</u>	
<u>Payload version</u>	<u>1</u>	<u>1</u>	
<u>NMI</u>	<u>NMI</u>	<u>6305185888</u>	
<u>Meter Serial</u>	<u>METER_SERIAL</u>	<u>4047808</u>	

<u>Field</u>	<u>I row</u>	<u>D row</u>	<u>Data format/notes</u>
<u>Register ID</u>	<u>REGISTER_ID</u>	<u>13</u>	
<u>Field ID</u>	<u>FIELD</u>	<u>TIME_OF_DAY</u> <u>CONTROLLED_LOAD</u>	
<u>New Value</u>	<u>NEW_VALUE</u>	<u>OFFPEAK</u> <u>YES</u>	
<u>Status</u>	<u>STATUS</u>	<u>ERROR</u> <u>UPDATED</u>	
<u>Return Code</u>	<u>RETURN_CODE</u>	<u>1</u> <u>-nn</u> <u>Etc.</u>	<u>Numeric result of BUT Submission D record validation</u>
<u>Return Message</u>	<u>RESPONSE_DESCRIPTION</u>	<u>Success/error description</u>	<u>Character 100 result of BUT Submission D record validation</u>
<u>Old Value</u>	<u>OLD_VALUE</u>	<u>OP2</u> <u>Yes</u>	<u>Previous value of Standing Data item</u>
<u>Updated Row ID</u>	<u>UPDATED_ROW_ID</u>	<u>nnnnnnnnnn</u>	
<u>BUT Update timestamp</u>	<u>BUT_UPDATE_TS</u>	<u>yyyy/mm/dd hh24:mi:ss</u> <u>2022/06/23 09:23:43</u>	

BUT REGISTER IDENTIFIER response example

```

1 C,PREPROD,BLIND_UPDATE_RESPONSE,NEMMCO,PARTICIPANTID,2022/07/18,17:33:35,,,NEM,1456-SM12,1000000000000157
2 I,BUR,REGISTER_IDENTIFIER,1,NMI,METER_SERIAL,REGISTER_ID,FIELD,NEW_VALUE,STATUS,RESPONSE_CODE,RESPONSE_DESCRIPTION,OLD_VALUE,UPDATED_ROW_ID,BUT_UPDATE_TS
3 D,BUR,REGISTER_IDENTIFIER,1,6305185888,4047808,13,TIME_OF_DAY,OFFPEAK,UPDATED,0,Success,OP2,95661096,2022/07/18 17:33:35
4 C,END OF REPORT,4

```

4.12.44.12.5 Message response example

You can download the results using the MSATS Web Portal or API

```

C,PROD,BLIND_UPDATE_TOOL,NEMMCO,PARTICIPANTA,2022/06/03
10:14:42,,,,NEM,,,

```

```

I,BUR,METER_REGISTER,1,FIELD,NMI,METER_SERIAL,NEW_VALUE,STATUS,RETURN_CODE,RETURN_MESSAGE,OLD_VALUE,UPDATED_ROW_ID,BUT_UPDATE_TS
I,BUR,NMI_DATA,1,FIELD,NMI,NEW_VALUE,STATUS,RETURN_CODE,RETURN_MESSAGE,OLD_VALUE,UPDATED_ROW_ID,BUT_UPDATE_TS
I,BUR,REGISTER_IDENTIFIER,1,FIELD,NMI,METER_SERIAL,REGISTER_ID,NEW_VALUE,STATUS,RETURN_CODE,RETURN_MESSAGE,OLD_VALUE,UPDATED_ROW_ID,BUT_UPDATE_TS
D,BUR,METER_REGISTER,1,NEXT_SCHEDULED_READ_DATE,2001058020,450899,2022-07-03,ERROR,-25,UMPLP is not privileged to update this Table/Record/Field at this time,,,
D,BUR,METER_REGISTER,1,NEXT_SCHEDULED_READ_DATE,2001527079,450920,2022-07-03,ERROR,-25,UMPLP is not privileged to update this Table/Record/Field at this time,,,
D,BUR,METER_REGISTER,1,NEXT_SCHEDULED_READ_DATE,2001615590,450796,2022-07-03,ERROR,-25,UMPLP is not privileged to update this Table/Record/Field at this time,,,
D,BUR,NMI_DATA,1,CONNECTION_CONFIGURATION,2001000647,AB,ERROR,-14,This field has been updated by a prior BUT run,,,
D,BUR,NMI_DATA,1,CONNECTION_CONFIGURATION,2001000734,AB,ERROR,-14,This field has been updated by a prior BUT run,,,
D,BUR,NMI_DATA,1,CONNECTION_CONFIGURATION,2001003565,AB,ERROR,-14,This field has been updated by a prior BUT run,,,
D,BUR,NMI_DATA,1,DP_NUMBER,2001000647,a DP number,ERROR,-14,This field has been updated by a prior BUT run,,,
D,BUR,NMI_DATA,1,DP_NUMBER,2001000734,a DP number,ERROR,-14,This field has been updated by a prior BUT run,,,
D,BUR,NMI_DATA,1,DP_NUMBER,2001003565,a DP number,ERROR,-14,This field has been updated by a prior BUT run,,,
D,BUR,NMI_DATA,1,SECTION_NUMBER,2001000647,a section number,ERROR,-14,This field has been updated by a prior BUT run,,,
D,BUR,NMI_DATA,1,SECTION_NUMBER,2001000734,a section number,ERROR,-14,This field has been updated by a prior BUT run,,,
D,BUR,NMI_DATA,1,SECTION_NUMBER,2001003565,a section number,ERROR,-14,This field has been updated by a prior BUT run,,,

```

```

D,BUR,NMI_DATA,1,SHARED_ISOLATION_POINT_FLAG,2001000647,U,ERROR,
-14,This field has been updated by a prior BUT run,,,
D,BUR,NMI_DATA,1,SHARED_ISOLATION_POINT_FLAG,2001000734,U,ERROR,
-14,This field has been updated by a prior BUT run,,,
D,BUR,NMI_DATA,1,SHARED_ISOLATION_POINT_FLAG,2001003565,U,ERROR,
-14,This field has been updated by a prior BUT run,,,
D,BUR,REGISTER_IDENTIFIER,1,DIAL_FORMAT,2001006971,300531,1,70.2
1,ERROR,-14,This field has been updated by a prior BUT run,,,
D,BUR,REGISTER_IDENTIFIER,1,DIAL_FORMAT,2001007639,351684,1,70.2
1,ERROR,-14,This field has been updated by a prior BUT run,,,
D,BUR,REGISTER_IDENTIFIER,1,DIAL_FORMAT,2001007639,351684,2,70.2
1,ERROR,-14,This field has been updated by a prior BUT run,,,
D,BUR,REGISTER_IDENTIFIER,1,NT_INFO,2001006971,300531,1,R
feed,ERROR,-12,Table/Column is not valid for processing at this
time,,,
D,BUR,REGISTER_IDENTIFIER,1,NT_INFO,2001007639,351684,1,R
feed,ERROR,-12,Table/Column is not valid for processing at this
time,,,
D,BUR,REGISTER_IDENTIFIER,1,NT_INFO,2001007639,351684,2,R
feed,ERROR,-12,Table/Column is not valid for processing at this
time,,,
C,END OF REPORT,26

```

5 MSATS Web Portal

Participants can only access submissions for their own Participant ID.

5.1 Blind update tool

For Blind Update Submissions, the MSATS Web Portal has new interfaces for:

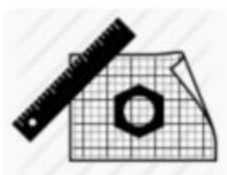
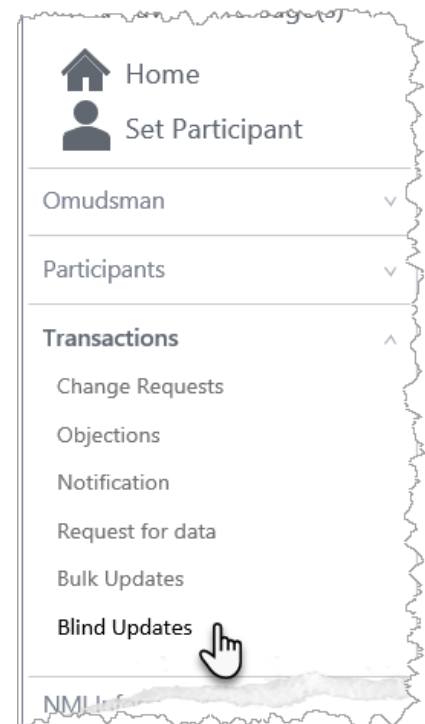
- Submission uploads.
- Viewing and searching all submissions and responses regardless of the **interface** used.

For Participant User access to Blind Updates, see [User Rights Management \(URM\)](#).

5.2 Blind update menu item

The MSATS menu has a new Blind Updates option under the Transactions.

5.3 Guide to blind update tool



This help topic is under construction

Link to draft guide: [Guide to Web Blind Update Tool](#)

6 Blind Update Tool API

6.1 Assumed knowledge

1. API and JSON or YAML basics
2. [Connecting to AEMO's Electricity IT systems](#)
3. [Guide to AEMO's e-Hub APIs](#)
4. [Guide to NEM Retail APIs](#)

6.2 Prerequisites

Before you can use the BUT API's you must:

1. Understand the [MSATS procedures](#) > provision and maintenance of CATS Standing Data.
2. Have a Participant ID. If your company is a Registered Participant, it is set up during the registration process.
3. Register with AEMO to use APIs.
4. Have a Participant API Gateway setup and a [TLS certificate](#).
5. Have a user ID and password with access rights provided by your company's participant administrator. For details, see User Rights Management (URM) [on page 37](#)~~on page 36~~.
6. Build the APIs according to the [BUT API specifications](#).
7. Test your submission in the pre-production environment before submitting to production. AEMO encourages participants to use the pre-production environment to test procedures and train staff.

6.3 Authentication

The BUT API has the following security:

- URM username and password (encoded in base64).
- [TLS certificates](#) (for each environment). Before obtaining a TLS certificate, determine if you need a new certificate or if you can use an existing one.

The TLS certificate to access pre-production and production are different.

6.4 URI

The BlindUpdateTool API is available over Internet and MarketNet.

Environment	MarketNet base URL	Internet direct base URL
Pre-production	<a href="https://apis.preprod.marketnet.net.au:9319/NEMRetail/BlindUpdateUI/v1/<endpointName>">https://apis.preprod.marketnet.net.au:9319/NEMRetail/BlindUpdateUI/v1/<endpointName>	<a href="https://apis.preprod.aemo.com.au:9319/NEMRetail/BlindUpdateUI/v1/<endpointName>">https://apis.preprod.aemo.com.au:9319/NEMRetail/BlindUpdateUI/v1/<endpointName>
Production	<a href="https://apis.prod.marketnet.net.au:9319/NEMRetail/BlindUpdateUI/v1/<endpointName>">https://apis.prod.marketnet.net.au:9319/NEMRetail/BlindUpdateUI/v1/<endpointName>	<a href="https://apis.prod.aemo.com.au:9319/NEMRetail/BlindUpdateUI/v1/<endpointName>">https://apis.prod.aemo.com.au:9319/NEMRetail/BlindUpdateUI/v1/<endpointName>

6.5 Format

A BUT POST message request has the following 2 elements:

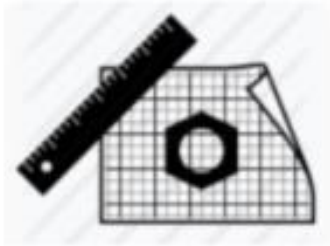
1. A **request header**
2. A **csv Payload** (no query parameters)

6.6 BUT API specifications

There are 4 BUT endpoints:

1. **submissions endpoint**: BUT submission upload.
2. **submissionlist endpoint**: BUT response to Participant ID.
3. **response endpoint**: Participant ID download of the next available response with a Processed status.
4. **response endpoint**: Participant ID download of a payloadResponseId nominated response

6.7 Blind Update Tool API Reference



This help topic is under construction

For details about the in-progress API design, see [Blind Update Tool API Reference](#).

7 MSATS Reports

7.1 C1 Data Replication Resynchronisation Report

7.1.1 Purpose

A synchronisation report designed for participants to replicate data from a single MSATS table if they did not receive all notifications or lost access to MSATS for a short time. It assists participant to keep local copies of CATS Standing Data in sync with MSATS.

To work with records in a C1 Report you must understand the CATS History Model and the Standing Data Access Rules. For details, see [Technical Guide to MSATS](#).

7.1.2 Change

AEMO is making the following changes to the C1 report, so it identifies records altered by the Blind Update Tool:

- The nominated field on the current Active record is updated.
- The creation and maintenance dates remain unchanged.

In the existing C1 report, all reported records have either Create or Update timestamps within the C1 reporting period. The modified C1 may have records where both the Create and Update timestamps fall outside the C1 reporting period. Ensure this change does not cause an issue to your C1 processing.

C1 report Message Header and Transaction Block

```

<?xml version="1.0" ?>
<ase:aseXML xmlns:ase="urn:aseXML:r42" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="urn:aseXML:r42
http://www.nemmco.com.au/aseXML/schemas/r42/aseXML_r42.xsd">
  <Header>
    <From description="Australian Energy Market Operator Limited">NEMMCO</From>
    <To description="Acme Energy Pty Ltd">ACME</To>
    <MessageID>NEMMCO-MSG-879817585</MessageID>
    <MessageDate>2020-08-13T14:53:12+10:00</MessageDate>
    <TransactionGroup>CATS</TransactionGroup>
    <Priority>Medium</Priority>
    <SecurityContext>NEMMCOBATCH</SecurityContext>
    <Market>NEM</Market>
  </Header>
  <Transactions>
    <Transaction transactionID="CATS-879817585" transactionDate="2020-08-13T14:53:12+10:00">
      <ReplicationNotification version="r10">
        <ReplicationParameters>
          <TableName>CATS_NMI_DATA</TableName>
          <CreationFromDate>2022-07-14T00:00:00+10:00</CreationFromDate>
          <CreationToDate>2022-08-13T23:59:59+10:00</CreationToDate>
          <LastSequenceNumber>0</LastSequenceNumber>
          <MaximumRows>200</MaximumRows>
        </ReplicationParameters>
      </ReplicationNotification>
    </Transaction>
  </Transactions>
</ase:aseXML>

```

The C1 report's <CreationFromDate> and <CreationToDate> parameters. This will return:

- Any NMI Data records that have a <CreationDate> or <MaintenanceDate> updated between these dates
- OR
- Any NMI Data records that have been updated between these dates by the BUT regardless of their <CreationDate> or <MaintenanceDate>

C1 report ElectricityNMIMaster ReplicationBlock for Active highend date record for NMI 6288888888

```

<Row xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ase:ElectricityNMIMasterRow">
  <SequenceNumber>107208620</SequenceNumber>
  <CreationDate>2019-07-15T16:49:39+10:00</CreationDate>
  <MaintenanceDate>9999-12-31T00:00:00+10:00</MaintenanceDate>
  <RowStatus>A</RowStatus>
  <FromDate>2019-06-22T00:00:00+10:00</FromDate>
  <ToDate>9999-12-31T00:00:00+10:00</ToDate>
  <NMI>6288888888</NMI>
  <JurisdictionCode>VIC</JurisdictionCode>
  <NMIClassificationCode>SMALL</NMIClassificationCode>
  <TransmissionNodeIdentifier>VATS</TransmissionNodeIdentifier>
  <DistributionLossFactorCode>KES</DistributionLossFactorCode>
  <Aggregate>Yes</Aggregate>
  <Status>A</Status>
  <HouseNumber>88</HouseNumber>
  <LotNumber>88</LotNumber>
  <StreetName>PLEASANT</StreetName>
  <StreetType>DR</StreetType>
  <SuburbOrPlaceOrLocality>PLEASANTVILLE</SuburbOrPlaceOrLocality>
  <StateOrTerritory>VIC</StateOrTerritory>
  <PostCode>3888</PostCode>
  <DeliveryPointIdentifier>888888888</DeliveryPointIdentifier>
  <CustomerClassificationCode>RESIDENTIAL</CustomerClassificationCode>
  <CustomerThresholdCode>LOW</CustomerThresholdCode>
  <TransmissionNodeIdentifier2>NALX</TransmissionNodeIdentifier2>
  <SharedIsolationPointFlag>Y</SharedIsolationPointFlag>
</Row>

```

As a blind update has occurred this report row is included despite the NMI Data record's <CreationDate> or <MaintenanceDate> being outside the reports <CreationFromDate> and <CreationToDate> parameters.

Note: The <SequenceNumber>, <CreationDate> and <MaintenanceDate> report values remain unchanged due to BUT updates from values defined when the 2D record was created.

<SharedIsolationPointFlag> value set by Blind Update Tool

7.1.3 Identifying BUT updated records

To find records updated by the Blind Update Tool, AEMO uses a lookup for the C1 against the BUT log table.

The BUT log table catalogues all Standing Data updated records initiated through a BUT Submission. These rows do not have an updated SequenceNumber, FromDate, ToDate, CreationDate, MaintenanceDate.

Because participants do not have direct access to the BUT log table so they can assume rows appearing in the C1 with no CreationDate or MaintenanceDate falling between the report selection criteria are updated by the BUT.

7.2 Snapshot report

There is no change to the Snapshot Report.

7.2.1 Purpose

Reports on all NMI Standing Data records a participant ID can access, according to the CATS Standing Data Access Rules. It includes current, historic, active, and inactive records.

Use the snapshot report infrequently during bulk data correction or bulk data loading exercises.

7.2.2 CATS Standing Data Access Rules

Participants are entitled to all rows where, during the period the row was active, the participant had a relationship with the NMI overlapping at least part of the period between the Start Date and End Date on the row.

7.2.3 Row limits

There are no row limits, but high volumes of data may impact performance during busy times. AEMO mitigate this risk by running snapshot reports at its discretion.

7.2.4 File size

To keep file sizes manageable, AEMO may split a report across multiple files and zipped.

7.2.5 File name

Example zipped file name: **Snapshot_PARTID_CMR_20020423111741.zip**

Example report file name: **Snapshot_PARTID_CMR_20020423111741_P000001.xml**

Where **CMR** is short for CATS_METER_REGISTER and **P000001** is the split file count for large reports.

7.2.6 Report output

The report output is in aseXML format using the same: `<ReportResults xsi:type="ase:ReplicationReportFormat" />` used by C4 reports to present NMI Standing Data.

If participants use schema validation on input to their systems, their schema version must be compatible with AEMO's schema version.

For details about the latest B2M schema version, see MSATS Web Portal > Participants > Participant aseXML Schema > aseXML schema version.

For more details about the CATS Standing Data Access Rules, see Technical Guide to MSATS.

7.2.7 Report detail

The NMI Standing Data for an individual NMI is spread across multiple files, with each report file containing records from only one table.

You can request records from the following tables:

- CATS_NMI_DATA
- CATS_PARTICIPANT_RELATIONS
- CATS_NMI_DATA_STREAM
- CATS_METER_REGISTER
- CATS_REGISTER_IDENTIFIER

7.2.8 Report parameters

```
<ReportParameters xsi:type="ase:CATSSnapshotReportParameters">
  <ReportName>Snapshot</ReportName>
  <Participant>TEST</Participant>
  <AsAtDateTime>2002-04-23T11:17:53+10:00</AsAtDateTime>
  <Tables>
    <Table>CATS_NMI_DATA_STREAM</Table>
  </Tables>
  <LastSequenceNumber>0</LastSequenceNumber>
</ReportParameters>
```

7.2.9 Allocation

Two free reports each year. To reduce the load on AEMO's systems, participants should request snapshot reports infrequently.

7.2.10 Report Delivery

- Files less than 1 MB zipped are emailed or delivered to the root directory of the participants MSATS Participant File Server.
- Files over 1 MB zipped are delivered via web transfer.

7.2.11 Obtaining a snapshot report

You request a snapshot report from the Support Hub, providing the following relevant details:

Requestor details	MSATS tables required
Participant ID	CATS_NMI_PARTICIPANT_RELATIONS
Name	CATS_NMI_DATA
MSATS User ID *	CATS_NMI_DATA_STREAM
Position	CATS_METER_REGISTER
email	CATS_REGISTER_IDENTIFIER
Contact number	
Reason for report request *	Preferred delivery method (dependent on file size)
	CD
	Mailing address (if file is over 1 MB)
	Email
	Participant File Server

8 User Rights Management (URM)

For details about Participant Administration and User Rights Access, see [Guide to User Rights Management](#).

8.1 Blind update tool URM

Participant administrators have new User Rights Management (URM) entities for managing their Participant User access to submit, view, or download Blind Updates:

8.1.1 MSATS Native API

1. submission: Web Service Submit CSV BUT
2. submissionList: Web Service getBlindUpdateRunList
3. downloadFile: Web Service Get CSV BUT

8.1.2 MSATS web portal

- Blind Update Tool Screens

8.2 Consumer Data Right (CDR)

Retail Participant Administrators assign the following interactive entity to their Participant User to allow access to the CDR APIs:

- CDR - Energy API access

Maintain Rights - View	Participant ID:	NEMMCO			
	Participant Name:	Australian Energy Market Operator Limited			

Participant: NEMMCO - AUSTRALIAN ENERGY MARKET OPERATOR LIMITED

Rights Name: CDR

Description: CDR - API Access

Right Type: Interactive

Administrator Right: Ordinary Right

Activity Status (*): Active

Users sharing the given right:

Participant ID - Name	User Name			
Interactive:				
Entity Description	Delete	Create	Update	Read
CDR - Energy API access	N	N	N	Y

9 FAQs

9.1 Availability

9.1.1 When is the blind update tool available?

Scheduled for implementation in:

- Pre-production: Tuesday 2 August 2022
- Production: Wednesday 31 August 2022

9.1.2 Will the blind update tool be available in pre-production?

Yes, see [Release dates](#).

9.1.3 Can I use the blind update tool for NMIs identified prior to 1 May 2022?

You can use BUT as soon as it is available, see [Release dates](#).

9.2 Change requests

9.2.1 When a CR is used to update fields for Basic sites, is it from the last read date or retrospective 130 business days?

This is a business decision, for each business to determine what is best for them.

9.3 Compliance

9.3.1 What is a compliance delay?

A compliance holiday is a specific time period where AEMO has granted temporary relief to participants to comply with procedural obligations.

They are typically provided when responsible parties must provide high volumes of data to AEMO. They do not remove the responsible parties' obligations to populate mandatory and required field values in CATS CRs from the applicable procedures' effective date.

For MCPI, AEMO has granted LNSPs an additional 12 months from the Standing Data for MSATS (v5.11) effective date, 1 May 2022, to have **all** of their Shared Isolation Point Flag (SIPF) field values populated in MSATS.

9.4 Documentation

9.4.1 Is there a validation matrix?

AEMO will provide a matrix for the validation occurring at each effective date, for each of the new or amended fields.

9.5 Reports

9.5.1 Is new data from a blind update available in a C1 report?

Yes, for details of the changes to the C1 report for this Release, see [C1 Data Replication Resynchronisation Report](#).

9.5.2 Can I use a C1 report for BUT notifications?

Yes, the C1 report shows changed records during the request C1 window, it does **not** show the reason the row changed or show which fields changed (for example CR vs BUT vs BCT).

9.5.3 Does this change make other fields that don't update maintenance dates, such as NSRD, visible in the requested C1 date range, or only updates related to BUT?

DPID (quarterly) and NSRD are always blind and not included in the C1. AEMO are considering making BUT available for NSRD and including it in the C1. The existing NSRD CR process continues to **not** trigger inclusion in the C1. AEMO can consider the inclusion of quarterly DPID updates in C1 reports also.

9.5.4 How many snapshot reports can I request annually before costs are incurred?

Participants can request 2 snapshot reports per year before costs are incurred.

9.6 SIPF

9.6.1 Once the SPIF is populated, can I use BUT to change the value?

No, you can only use BUT for initial field population. After initial population you can use CRs.

9.7 Submission

9.7.1 What is a realistic expectation of the elapse time between a BUT submission and data updated in MSATS?

Similar to report responses, anywhere from a few minutes to 24 hours depending on the volume of requests and when the BUT process is scheduled to run. ~~(TBC)~~.

9.7.2 Are participants informed if the value already exists in the BUT response payload?

Yes, the response includes success or failure messages (with the failure reason) for all eligible BUT records.

9.7.3 What happens if I include a value in my submission that is already populated?

Providing BUT is configured to only allow updates to empty fields, it skips the row without error and continues validating other rows in the Payload.

9.7.4 How many rows can I update at a time?

For details, see [Submission row limit](#).

9.7.5 Can I use the blind update tool to update existing fields?

No, see [BUT use](#).

9.7.6 How many bulk updates can I submit?

There are no limits as to how many BUT files a Participant can submit.



9.8 Updates

9.8.1 How do we know when a blind update is made?

For the party submitting the BUT Payload, they can download the submission response with the status of the update.

For other parties having a relationship with the NMI, they can see the modified fields in a C1 report, C4 report, or NMI Discovery search (API, file, or web interface). There won't be specific indication the data was altered by BUT.

9.8.2 Do I receive a notification if AEMO make an update?

AEMO can make updates using a script or BUT. In either case participants are not notified of the change via a CATS notification.

Participants having a relationship with the NMI can see the modified fields in a C1 report, C4 report, or NMI Discovery search (API, file, or web interface).

10 Implementation

To maintain systems in-line with AEMO's market systems, participants need to:

- Review and assess the impact on their market systems with respect to the changes implemented as part of this Release.
- Schedule staff and resources to upgrade their market systems for the production implementation of this Release.

10.1 Key considerations

- See [Participant Impact](#).

10.2 Upgrade options

10.2.1 Option 1

- Update local processes and technical interfaces to suit the changes.

10.2.2 Can each LNSP set their own update options?

The owner of the Blind Update Submission has control over the data in the file.

10.2.3 Option 2

- If changes are irrelevant to participant business processes and technical interfaces, ignore this release.

10.3 Risks

- No critical impacts to participants identified.

11 Terms

11.1 Rules and procedure terms

You can find the following terms defined in the [National Electricity Rules \(NER\)](#).

Term	Term	Term
Accept	Market Participant	Participant User
AEMO	Meter	Registered Participant
CATS Standing Data	Metering Data	Reject
CATS Standing Data Access Rules	NEM	Role
Initiator	NMI	Validation
jurisdiction	NMI Standing Data (subset of CATS Standing Data)	
Market	Participant ID	

11.2 Glossary

You can find a full list of MSATS glossary terms in:

1. [Retail Electricity Market Glossary and Framework](#)
2. [Guide to NEM Retail B2M APIs](#)

Abbreviation/Term	Explanation
AEMO API Gateway	The gateway on AEMO's side providing participant communication options, accessible over the internet or MarketNet. It uses resources and methods to push messages to Participants' API Gateways
API e-Hub Gateway	API submission to AEMO from a participant's API Gateway
Base64	Security encoding of Participant ID and password
Blind Update Submission	A Blind Update Payload submission
BCT	Bulk Change Tool (not part of this Release) For details, see AEMO Toolbox

Abbreviation/Term	Explanation
(BDT)	Bulk Data Tool/Bulk Update Tool (not part of this Release) For details, see AEMO Toolbox
Blind Update Payload	A csv file for a Blind Update Submission in AEMO's CSV Data Format Standard
CR	Change request
DPID	Delivery point identifier
Endpoint	Where the API request is sent and where the response comes from
Market Time	Australian Eastern Standard Time (AEST)
MCPI	Metering Coordinator Planned Interruptions
MSDR	MSATS Standing Data Review
NSDR	Next scheduled read date
Participant API Gateway	Participant's endpoint for AEMO responses
Payload	CSV payload
Release	MSATS 47.2 Technical Specification – October 2022
Release Dates	Pre-production: Tuesday 2 August 2022 Production: Wednesday 31 August 2022
Resource	The data set returned by an API request
SIPF	Shared Isolation Point Flag
Submission	Blind update submission via the MSATS Web Portal or API Gateway

Terms

Abbreviation/Term	Explanation
TBC	To be confirmed

12 References

API Web Portal: Documentation for AEMO's API's.

Guide to AEMO's e-Hub APIs: Provides details for the e-Hub API interface to communicate with AEMO.

Connecting to AEMO's Electricity IT systems: Explains the IT interfaces available for participants and how to connect to them.

Guide to CSV Data Format Standard: Describes the generic csv (comma-separated-variables) data format standard used in numerous interfaces in AEMO's energy market systems, including some csv payloads.

Guide to MSATS reports: Explains the purpose, attributes, request, and delivery methods for MSATS participant retail reports.

Guide to MSATS Web Portal: Assists participants to use the MSATS web portal functions.

Guide to NEM Retail B2M APIs: Explains how to build B2M retail metering APIs.

Guide to User Rights Management: Assists participant administrators (PAs) to use the user rights management functions in the MSATS Web Portal.

MDM File Format and Load Process: Specifies the Meter Data Management (MDM) Format used by MDPs for the provision of Metering Data to AEMO.

MSATS Procedures: Current and previous procedure versions.

Technical Guide to MSATS: Supplement to the MSATS B2M policies, procedures, and guides providing an understanding of MSATS functionality and business rules.

TLS certificates: About TLS Certificates.

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A1. Version History

13.1 V3.00

- Added more **BUT submission, acknowledgement, and response examples**.
- Updated the **History Model versus BUT update scenarios** (removed postcode scenario).
- Added link to updating **MSATS Meter Register enumerations**.
- Added link to **Draft MSATS 48.0 Technical Specification**.
- Added the **BlindUpdateTool API URIs**.

13.2 V2.01

- Added details about **Business Keys** for BUT submissions.
- A change to BUT NMI validation where BUT can update NMIs regardless of their Status Code. For details, see **Validation**.

13.3 V2.n

- Title updated to August 2022.
- Additional design information about the **Blind Update Tool**.
- A new **payload type** for acknowledgements: Blind Update Acknowledgement.
- Further detail about BUT **Acknowledgement** and **Submission responses**.
- Link to the draft **Blind Update Tool API Reference**.
- Link to the draft **Guide to Web Blind Update Tool**.
- **User rights entity** for the CDR API and endpoints.

A2. AEMO Update Toolbox

Tool	Description	Use	Enforces procedural obligations	Data history	CATS notifications	Data synchronisation	Used by
Blind Update Tool (BUT)	<p>Allows participants to submit a csv formatted payload containing data for new CATS Standing Data fields requiring a value</p> <p>A limited subset of CATS CR validations is applied to a BUT Submission</p> <p>The History Model is not updated so not suitable for Settlement or Compliance Standing Data</p>	Update NMI Metering Installation details	✓	Blind	✗	C1 report Snapshot report	Supports participant self-service
Bulk Change Tool (BCT)	<p>Used for bulk data changes</p> <p>The History Model is updated so suitable for Settlement or Compliance Standing Data</p>	<p>NMI Role changes</p> <p>Retailer of Last Resort (ROLR) invocation</p> <p>TNI or DLF code updates</p>	✗	History Model	✓	C1 report Snapshot report	AEMO only

Tool	Description	Use	Enforces procedural obligations	Data history	CATS notifications	Data synchronisation	Used by
DPID Update	Run once every quarter to update the Delivery point identifier (DPID) field based on Australia Post's Postal Address File (PAF)	Maintain NMI	✗	Blind	✗	Snapshot report	AEMO only
NSRD Update	<p>AEMO processes CR5070 & CR5071 Next Scheduled Read Date (NSRD) separately to other CATS Change Request types. They are completed immediately resulting in a blind update outside of the History Model</p> <p>This process is run as a subset of CR processing and is fully aligned to the CATS & WIGS Procedures</p>	Update NSRD small & large	✓	Blind	✗	Snapshot report	AEMO only

A3. History Model Updates vs Blind Updates

The following scenarios illustrate how business events appear in the MSATS CATS Database:

- **Scenario 1** Creation of a new NMI via a CATS Change Request.
- **Scenario 2** Maintain NMI via a CATS Change Request to reflect a Postcode change.
- **Scenario 3** A Bind update via the BUT tool to reflect a Postcode change.

Every record in the five NMI Standing Data tables contains the following key fields to manage a NMI's history:

aseXML field	Database field	Name	Data type
FromDate	StartDate	The start of a billing period (i.e. the settlement date) where the version of NMI Standing Data in this record applies	Trading Date
ToDate	EndDate	The end of the billing period where the version of the NMI Standing Data in this record applies	Trading Date
RowStatus	MaintActFlg	The status of this record: A: active I: inactive	Flag
CreationDate	MaintCreateDt	The date this record was created	Timestamp
MaintenanceDate	MaintUpdtDt	The date this record was updated When a record is created, the MaintUpdtDt date defaults to the MSATS 'high date' of '31-Dec-9999' If the record is subsequently updated, its MaintUpdtDt is changed to the date and time the record was updated. However, the 'real' NMI Standing Data in a record (including its StartDate and End Date) never changes	Timestamp



13.4 Scenario 1: Creation of a new NMI via a CATS change request

The Change Request to create the NMI will include the following data:

Field	Value
Postcode	3000
ActualChangeDate	01-Feb-2002
ActualEndDate	Null

In the overnight processing for 1-Feb-2002 (i.e. at approx. 01:00 on 2-Feb-2002), the CATS Standing Data record shown is created in the CATS_NMI_DATA table.

ID_ND	NMI	MAINTACTFLG	POSTCODE	STARTDATE	ENDDATE	MAINTCREATEDT	MAINTUPDTDT
123	NMI1	A	3000	01/02/2002	31/12/9999	03/01/2000 00:15:00	31/12/9999

Notes:

- EndDate is the high date because this record is active into the future
- MaintActFlg is A
- MaintUpdtDt is the high date because that is the default when the record is created
- ID_ND is a unique identifier number assigned to each record.

13.5 Scenario 2 Maintain NMI via a CATS change request to reflect a postcode change

The Change Request to update the postcode is based on the following:

Field	Value
Postcode	3106

Field	Value
ActualChangeDate	01-Mar-2022
ActualEndDate	Null

In the overnight processing for 1-Mar-2022 (i.e. at approx. 01:00 on 2-Mar-2022), the following will happen:

- The existing record on the CATS_NMI_DATA Table, made redundant by this change, is made Inactive and its MaintUpdtDt is updated with the system date and time. Once the data is superseded by an update, the original record is made inactive.
- Two new active records are created, one for the period up to the day before the ActualChangeDate on the Change Request, containing the old version of the data, and one for the period starting from the actual change date.

ID_ND	NMI	MAINT ACTFLG	POSTCODE	STARTDATE	ENDDATE	MAINTCREATEDT	MAINTUPDTDT
123	NMI 1	A --> I	3000	01/02/2002	31/12/9999	03/01/2000 0:15:00	31/12/9999 -- > 02/03/2022 1:02:00
123	NMI 1	A	3000	01/02/2002	28/02/2022	02/03/2022 1:02:00	31/12/9999
125	NMI 1	A	3106	01/03/2022	31/12/9999	02/03/2022 1:02:00	31/12/9999

13.6 Scenario 3 A blind update via the BUT tool to reflect a Connection Configuration change

The blind update to update the Connection Configuration is based on the following:

Field	Old value	New value
Connection Configuration	L1	H3



When the BUT process runs, the following happens:

- The Connection Configuration on the current active record on the CATS_NMI_DATA Table is updated.
- The MAINT ACTFLG, MAINTCREATEDT, MAINTUPDTDT all remain unchanged.
- The values of STARTDATE (ActualChangeDate) and ENDDATE are not updated.
- No new records are created. The update sees only the nominated field on the current active record updated from value A to value B.