B2B PROCEDURE:

METER DATA PROCESS

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1. INTRODUCTION

1.1. Purpose and Scope

(a) This B2B Procedure: Meter Data Process (Procedure) is published by AEMO in accordance with clause 7.17.3 of the NER and specifies the standard MDFF data request and Remote Service request processes.

(b) It provides Participants a standard format for:

(i) receiving, requesting and querying *meter data*; and

(ii) receiving and requesting remote services for on demand reads, scheduling reads and *metering installation* inquiries.

1.2. Definitions and Interpretation

(a) The Retail Electricity Market Procedure – Glossary and Framework:

(i) is incorporated into and forms part of this Procedure; and

(ii) should be read with this Procedure.

(b) In the event of any inconsistency between this Procedure and the B2B Procedure: Technical Delivery Specification, unless this Procedure provides otherwise, the B2B Procedure: Technical Delivery Specification shall prevail to the extent of the inconsistency.

(c) In the event of any inconsistency between this Procedure and the Metrology Procedure, the Metrology Procedure shall prevail to the extent of the inconsistency.

(d) In the event of any inconsistency between this Procedure and the Service Level Procedure (MDP), the Service Level Procedure (MDP) shall prevail to the extent of the inconsistency.

1.3. Related Documents

Table 1 Related Documents

Title	Location
Retail Electricity Market Procedures – Glossary and Framework	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Glossary-and-Framework
B2B Procedure Technical Delivery Specification	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Business-to-business-procedures
B2B Procedure Service Order Process	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Business-to-business-procedures
B2B Procedure Customer and Site Details Notification Process	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Business-to-business-procedures
B2B Procedure One Way Notification Process	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Business-to-business-procedures
Metrology Procedure: Part A	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering
Metrology Procedure: Part B	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering
Service Level Procedure Meter Data Provider Services	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Metering-procedures-guidelines-and-processes

Title	Location
Meter Data File Format Specification NEM12 and NEM13	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Metering-procedures-guidelines-and-processes
B2B Guide	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Business-to-business-procedures
NMI Procedure	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Metering-procedures-guidelines-and-processes
MSATS Procedures: CATS Procedure Principles and Obligations	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Market-Settlement-and-Transfer-Solutions

1.4. Guidance Notes

(a) This document contains Guidance Notes that provides the reader with a reference point where an obligation for services is provided in the NEM.

(b) A number of timing requirements that represent common industry practice have also been included. These timings are not associated with the communication of B2B transactions, do not have a head of power and are not enforceable.

(c) Guidance Notes are indicated by the use of [Guidance Note #] at the commencement of the clause in this procedure and highlighted in grey.

(d) Table 2 below lists the document or documents for reference.

Table 2 Guidance Notes

Reference	Document Name
[Guidance Note 1]	This is an accepted or common industry practice that does not reference a specific legal or jurisdictional requirement
[Guidance Note 2]	National Energy Retail Rules (NERR)
[Guidance Note 3]	Service Level Procedure Metering Data Provider Services
[Guidance Note 4]	National Electricity Rules (NER)
[Guidance Note 5]	Essential Services Commission (ESC) Electricity Distribution Code (Victoria)
[Guidance Note 6]	Service Level Procedure Metering Provider Services
[Guidance Note 7]	Victorian Electricity Distributors Service & Installation Rules
[Guidance Note 8]	SA Power Networks Service & Installation Rules
[Guidance Note 9]	Electricity Distribution Network Code (Queensland)
[Guidance Note 10]	Metrology Procedures – Part A and Part B
[Guidance Note 11]	Electricity Distribution Code (South Australia)

2. BUSINESS COMMUNICATION PROCESSES

2.1. Overview

(a) Table 3 details the processes this Procedure applies to, indicates which Business Documents are used to initiate each type of data request and provides a brief description of each.

Table 3 Overview of Applicable Processes

Name of Process	Business Document	Description
Meter Data Notification	MeterDataNotification	A delivery mechanism of MDFF data from an MDP. Includes Scheduled Meter Readings, Meter Readings taken by an MDP in response to a ServiceOrderRequest and other MDFF data (such as Estimations). The type of data that may be requested by an Initiator using ProvideMeterDataRequest or VerifyMeterDataRequest.
Provide Meter Data	ProvideMeterDataRequest	An Initiator can request the provision of the latest version of MDFF data held by the Recipient. It does not involve the investigation of problems with MDFF data. It is not to be used to request meter data under the Meter Data Provision Procedure.
Verify Meter Data	VerifyMeterDataRequest	An Initiator can query MDFF data to ensure that the latest version is being supplied. Normally initiated after a ProvideMeterDataRequest has been completed.
Remote Service	RemoteServiceRequest	An Initiator can request from a Recipient with whom they have a contract for service, an on demand read, a meter installation inquiry or scheduled read.
Remote Service	RemoteServiceResponse	A Recipients response to a RemoteServiceRequest.

2.2. Descriptions of Processes

2.2.1. General

(a) Upon receipt of a ProvideMeterDataRequest, VerifyMeterDataRequest, or RemoteServiceRequest a Recipient must return a *BusinessReceipt* to the Initiator.

(b) Upon receipt of a MeterDataNotification from an Initiator, a Recipient must return a *BusinessReceipt* to the Initiator to confirm the receipt of that MeterDataNotification.

2.2.2. Meter Data Notification Process

(a) [Guidance Note 3 and Guidance Note 10] An Initiator must provide MDFF Data to Recipients pursuant to the Metrology Procedure and Service Level Procedure (MDP).

(b) MDFF Data must be provided by way of a MeterDataNotification.

(c) The Recipient must then send a *BusinessAcceptance/Rejection* to the Initiator as follows:

(i) A *BusinessAcceptance/Rejection* with *Status* of “Accept” must be used to indicate acceptance, including the format of the MDFF Data but excluding the business content of the MDFF Data, and that the entire file has been accepted.

(ii) A *BusinessAcceptance/Rejection* with *Status* of "Reject" must be used to indicate rejection, including the format of the MDFF Data but excluding the business content, and that the entire file has been rejected.

[Guidance Note 1] Upon receipt of the *BusinessAcceptance/Rejection* the Initiator must resolve the problem and resend the data if appropriate. If the file format is invalid, the Initiator must resolve the problem and resend the data if appropriate, otherwise the Initiator must communicate the results of the investigation to the Recipient who sent the *BusinessAcceptance/Rejection*.

(iii) A *BusinessAcceptance/Rejection* with *Status* of "Partial" must be used to indicate a rejection, excluding the business content of the MDFF Data that relates to only part of the file. This is indicated by *KeyInfo* fields with one or more line numbers. The data to be returned by the Initiator must include all data relating to each *NMI* that relates to a line number in the *BusinessAcceptance/Rejection*.

[Guidance Note 1] Upon receipt of the *BusinessAcceptance/Rejection* the Initiator must investigate the rejection and determine if it is valid. If it is valid, the Initiator must resolve the problem and resend the data. If the rejection is not valid, the Initiator must communicate the results of the investigation to the Recipient who sent the *BusinessAcceptance/Rejection*.

(iv) If the error relates to the business content of the MDFF Data, the file should be accepted by the Recipient via a *BusinessAcceptance/Rejection*. Queries regarding the MDFF Data must be communicated via either a ProvideMeterDataRequest or a VerifyMeterDataRequest.

(v) The term "business content" in the above refers to the types of issues covered by the *InvestigationCodes* used in VerifyMeterDataRequests.

2.2.3. Provide Meter Data Process

(a) An Initiator may commence the Provide Meter Data Process if they require:

(i) MDFF Data to which they are entitled to under the NER and the NERR;

(ii) historical *metering data* to which they are entitled under the CATS Procedure or a Jurisdictional instrument; or

(iii) a Recipient to re-send specified MDFF Data.

(b) Upon receipt of a ProvideMeterDataRequest, a Recipient must respond to the Initiator as follows:

(i) If the Recipient is able to fully satisfy the ProvideMeterDataRequest, the Recipient must send a *BusinessAcceptance/Rejection* with a *Status* of "Accept" and send a MeterDataNotification in response to the ProvideMeterDataRequest; or

(ii) If the Recipient can partially satisfy the ProvideMeterDataRequest, the Recipient must send a *BusinessAcceptance/Rejection* with a *Status* of "Partial" and send a MeterDataNotification in response to the ProvideMeterDataRequest. The Recipient must provide appropriate *EventCodes* and associated details in the BusinessAcceptance/Rejection to explain why the ProvideMeterDataRequest cannot be fully satisfied. The *EventCodes* in the *BusinessAcceptance/Rejection* must have a *Severity* of "Information"; or

(iii) If the Recipient is unable to satisfy the ProvideMeterDataRequest, the Recipient must send a *BusinessAcceptance/Rejection* with a *Status* of "Reject" and must not send a MeterDataNotification in response to the ProvideMeterDataRequest. The Recipient must provide appropriate *EventCodes* and associated details in the *BusinessAcceptance/Rejectio*n to explain why the ProvideMeterDataRequest cannot be satisfied. The *EventCodes* in the *BusinessAcceptance/Rejection* must have a Severity of "Error".

(c) [Guidance Note 1] If the *BusinessAcceptance/Rejection* transaction sent by a Recipient indicates a problem (using an appropriate *EventCode*) with the

ProvideMeterDataRequest, the Initiator must use reasonable endeavours to resolve the problem and provide a new ProvideMeterDataRequest or VerifyMeterDataRequest, if appropriate.

(d) Where a MeterDataNotification is provided in response to a ProvideMeterDataRequest the Recipient must ensure that the MeterDataNotification contains the MDFF Data requested in the ProvideMeterDataRequest for that *RequestID*.

(e) The Initiator must respond to a MeterDataNotification with *BusinessReceipt* and *BusinessAcceptance/Rejection* transactions.

(f) [Guidance Note 1] If the *BusinessAcceptance/Rejection* transaction for a MeterDataNotification has a *Status* of “Reject” or “Partial”, the Recipient must use reasonable endeavours to resolve the problem which may include providing the correct MDFF Data to the Initiator in a new MeterDataNotification, if appropriate. Any additional MeterDataNotification which is dealing with a problem from a previous MeterDataNotification must have the same *RequestID* as in the original MeterDataNotification.

(g) Refer to section 2.4 for timings.

2.2.4. Verify Meter Data Process

(a) An Initiator may commence the Meter Data Verification Process if:

(i) the MDFF Data specified in the MeterDataNotification is erroneous; or

(ii) the response provided to a previous ProvideMeterDataRequest or VerifyMeterDataRequest that has not resolved their query.

(b) An Initiator must ensure that a VerifyMeterDataRequest sent to a Recipient contains sufficient details to enable the Recipient to investigate and resolve the Initiator's query.

(c) Upon receipt of a VerifyMeterDataRequest, a Recipient must use reasonable endeavours to verify the MDFF data which is the subject of the Initiator's VerifyMeterDataRequest. The required verifications consists of a re-validation of the MDFF without the requirement to perform a field visit.

(d) Upon completion by the Recipient of the verification required by paragraph (c), the Recipient must respond to the Initiator who sent the VerifyMeterDataRequest as follows:

(i) If the Recipient is able to fully satisfy the VerifyMeterDataRequest, the Recipient must send a *BusinessAcceptance/Rejection* with a *Status* of "Accept" and send a MeterDataNotification in response to the VerifyMeterDataRequest; or

(ii) If the Recipient can partially satisfy the VerifyMeterDataRequest, the Recipient must send a *BusinessAcceptance/Rejection* with a *Status* of "Partial" and send a MeterDataNotification in response to the VerifyMeterDataRequest. The Recipient must provide appropriate *EventCodes* and associated details in the *BusinessAcceptance/Rejection* to explain why the VerifyMeterDataRequest cannot be fully satisfied. The *EventCodes* in the *BusinessAcceptance/Rejection* must have a *Severity* of "Information" or "Error"; or

(e) If the Recipient is unable to satisfy the VerifyMeterDataRequest, the Recipient must send a *BusinessAcceptance/Rejection* with a *Status* of "Reject" and must not send a MeterDataNotification in response to the VerifyMeterDataRequest. The Recipient must provide appropriate *EventCodes* and associated details in the *BusinessAcceptance/Rejection* to explain why the VerifyMeterDataRequest cannot be satisfied. The *EventCodes* in the *BusinessAcceptance/Rejection* must have a *Severity* of "Error".

[Guidance Note 1] If the *BusinessAcceptance/Rejection* transaction indicates a problem (using an appropriate *EventCode*) with the VerifyMeterDataRequest, the Initiator must use reasonable endeavours to resolve the problem which may include providing a new VerifyMeterDataRequest, if appropriate.

(f) Where a MeterDataNotification is provided in response to a VerifyMeterDataRequest the Recipient must ensure that the MeterDataNotification contains the MDFF Data requested in the VerifyMeterDataRequest for that *RequestID*.

(g) An Initiator must respond to the MeterDataNotification with *BusinessReceipt* and *BusinessAcceptance/Rejection* transactions.

(h) [Guidance Note 1] If the *BusinessAcceptance/Rejection* transaction for a MeterDataNotification has a *Status* of "Reject" or "Partial", the Initiator must use reasonable endeavours to resolve the problem which may include providing the correct MDFF Data to the Initiator in a new MeterDataNotification, if appropriate. Any additional MeterDataNotification which is dealing with a problem from a previous MeterDataNotification must have the same *RequestID* as in the original MeterDataNotification.

(i) Refer to section 2.4 for timings.

2.2.5. Remote Service Process

(a) [Guidance Note 1] Prior to commencing the use of the Remote Service Process the Initiator and Recipient must agree the scope of the service(s) and the format of the response to the service request.

(b) An Initiator may commence a RemoteServiceRequest process if they:

(i) [Guidance Note 4] are authorised to receive the requested information and

(ii) Require remote retrieval of information from a specified metering installation, or

(iii) require a reading on demand, or

(iv) require a scheduled reading to commence, end or change.

(c) Upon receipt of a RemoteServiceRequest, a Recipient must respond to the Initiator who sent the RemoteServiceRequest, as follows:

(i) If the Recipient is able to fully satisfy the RemoteServiceRequest, the Recipient must send a *BusinessAcceptance/Rejection* with a *Status* of “Accept” and send a RemoteServiceResponse, in response to the RemoteServiceRequest; or

(ii) If the Recipient is unable to satisfy the RemoteServiceRequest, the Recipient must send a *BusinessAcceptance/Rejection* with a *Status* of “Reject” and must not send a RemoteServiceResponse in response to the RemoteServiceRequest. The Recipient must provide appropriate *EventCodes* and associated details in the *BusinessAcceptance/Rejection* to explain why the RemoteServiceRequest cannot be satisfied. The *EventCodes* in the *BusinessAcceptance/Rejection* must have a *Severity* of “Error”.

2.3. Diagrams

Each of the five processes described in section 2.2 are illustrated in Figures 1-4:

Figure 1 Overview of the Meter Data Process

Figure 2 Meter Data Notification Process

Figure 3 Provide or Verify Meter Data Process

Figure 4 Remote Service Process

2.4. Timing Requirements

The Timing Points associated with each of the processes described in section 2.3 are illustrated as points A to F in Figures 1-4 and are defined in table 4 and the associated Timing Periods are defined in table 5.

Table 4 Timing Points

Timing Point	Definition
A	When the Initiator issues a Request to the Recipient.
B	When the Initiator receives a *BusinessReceipt* from the Recipient.
C	When the Recipient is attempting to satisfy the initiators Request and sends a *BusinessAcceptance/Rejection*.
D	When the Recipient sends a *BusinessAcceptance/Rejection* for a Request to the Initiator.
E	When the Recipient sends a Notification or Response to the Initiator.
F	When the Recipient receives a *BusinessAcceptance/Rejection* for a Notification or Response from the Initiator.

Table 5 Timing Periods

Timing Period	Definition	Usage
BusinessReceipt for Requests	This is from the Initiator sending the Request to the receipt of a *BusinessReceipt* by the Initiator. Commences at Timing Point A and ends at Timing Point B.	Used by the Initiator to determine whether the Request has been received and can be read. If the *BusinessReceipt* has not been received before the expiry of this timing period the Initiator may escalate the non-receipt and/or resend the original request.
BusinessAcceptance/ Rejection for Requests	This is from the Initiator sending the Request to the receipt of a *BusinessAcceptance/Rejection* for the Request by the Recipient. Commences at Timing Point A and ends at Timing Point C.	Used by the Initiator to determine whether a Request has been accepted by the Recipient. If the *BusinessAcceptance/Rejection* has not been received before the expiry of this Timing Period, the Initiator may escalate the non-receipt.
MeterDataNotification/ Response for Requests	This is from the Initiator sending a Request to the Initiator receiving the associated MeterDataNotification or Response from the Recipient. Commences at Timing Point A and ends at D.	If the MeterDataNotification or Response has not been received before the expiry of this Timing Period, the Initiator may escalate the non-receipt.
BusinessReceipt for MeterDataNotification/ Response	This is from the Recipient sending the MeterDataNotification or Response to the receipt of a BusinessReceipt by the Recipient. Commences at Timing Point D and ends at Timing Point E.	Used by the Recipient to determine whether a MeterDataNotification or Response has been received and can be read. If the *BusinessReceipt* has not been received before the expiry of this timing period the Recipient may escalate the non-receipt and/or resend the original MeterDataNotification or Response.
BusinessAcceptance/ Rejection for MeterDataNotification	This is the period from the Recipient sending the MeterDataNotification or Response to the receipt of a *BusinessAcceptance/Rejection* for the Request by the Recipient. Commences at Timing Point D and ends at Timing point F.	Used by the Recipient to determine whether a MeterDataNotification or Response has been accepted by the Initiator. If the *BusinessAcceptance/Rejection* has not been received before the expiry of this Timing Period, the Recipient may escalate the non-receipt.

2.4.1. Timing Requirements for Business Signals

(a) The Timing Requirements for a *BusinessReceipt* and a *BusinessAcceptance/Rejection* other than those detailed in section 2.4.2 are as specified in the B2B Procedure: B2B Technical Delivery Specification.

2.4.2. Timing Requirement for Normal MeterDataNotification Process

(a) An Initiator must send a MeterDataNotification within the timeframe specified in Jurisdictional instruments, contractual arrangements and the Service Level Procedure (MDP).

2.4.3. Timing Requirement for ProvideMeterDataRequest and VerifyMeterDataRequest

[Guidance Note 1] Unless otherwise agreed between the parties the timings for PMD and VMD will be as follows:

(a) An Initiator must not issue a ProvideMeterDataRequest relating to a scheduled reading event until:

(i) The Fourth Business Day following the read event for remotely read *metering installations*;

(ii) The Sixth Business Day following the published Next Scheduled Read Date for manually read *metering installations*; and

(iii) The Seventh Business Day of the calendar month for the previous month's MDFF data for *Unmetered Loads*.

(b) An Initiator must not issue a ProvideMeterDataRequest, relating to a ServiceOrderRequest for a manually read *metering installation* until the fourth Business Day following the receipt of the completed ServiceOrderResponse.

(c) Where a Recipient is required to send a MeterDataNotification in response to a ProvideMeterDataRequest, the Recipient must send the MeterDataNotification within one Business Day of receiving the ProvideMeterDataRequest.

(d) Where a Recipient is required to send a MeterDataNotification in response to a VerifyMeterDataRequest, the Recipient must send the MeterDataNotification within five Business Days of receiving the VerifyMeterDataRequest.

2.4.4. Timing Requirement for RemoteServiceRequest

(a) All timings are as agreed between the Recipient and the Initiator.

2.5. Business Rules

2.5.1. Common

(a) [Guidance Note 1] MeterDataNotifications may be received out of sequence.

(b) [Guidance Note 1] Prior to rejecting a MeterDataNotification, ProvideMeterDataRequest or VerifyMeterDataRequest on the basis that the Initiator does not have the correct Role for the *connection point*, Recipients must confirm that this is correct on the basis of information held in MSATS.

(c) [Guidance Note 1] If a Recipient accepts a MeterDataNotification (with a *BusinessAcceptance/Rejection*) and subsequently discovers a problem with the MDFF data provided, the Recipient may raise a ProvideMeterDataRequest or VerifyMeterDataRequest to resolve the situation.

(d) Any ProvideMeterDataRequest or VerifyMeterDataRequest with a *StartReadDate* earlier than the time limit prescribed in the NER for holding online data may be rejected by the Recipient.

2.5.2. Meter Data Notification

(a) An Initiator issuing a MeterDataNotification must ensure that the MeterDataNotification contains either Accumulation Meter (a *CSVConsumptionData* record) or Interval Meter (a *CSVIntervalData* record) data and does not contain a mixture of the two.

(b) An Initiator must ensure that the MDFF data provided in a MeterDataNotification is the latest version of that data.

2.5.3. Provide Meter Data

(a) A Recipient who receives a ProvideMeterDataRequest must determine which Meter Readings the Initiator has requested in accordance with the following:

(i) For Accumulation Meters, the Recipient must provide all available MDFF data that the Initiator is entitled to for the inclusive period of the *StartReadDate* and *EndReadDate* specified in the ProvideMeterDataRequest. This includes all reading periods that ended in the requested date range.

(ii) For Interval Meters, the Recipient must provide all available MDFF data that the Initiator is entitled to for the inclusive period of the *StartReadDate* and *EndReadDate* specified in the ProvideMeterDataRequest.

(b) If the *EndReadDate* is not provided in a ProvideMeterDataRequest, the Recipient must provide all MDFF data on and after the *StartReadDate* that the Initiator is entitled to receive.

(c) [Guidance Note 1] Initiators must not repeatedly request MDFF data as a result of a fault within the processing of the data by the Initiator's systems.

(d) Where an Initiator requests MDFF data in a ProvideMeterDataRequest for a period that covers a change between an Accumulation Meter and an Interval Meter, the Recipient must provide to the Initiator MeterDataNotifications with the MDFF data required for each date range applicable to each *metering installation* type.

2.5.4. Verify Meter Data

An Initiator must provide values in the fields in the VerifyMeterDataRequest to match the level of the data being queried:

(a) If the data being queried is at the *NMI* level, only the *NMI* needs to be provided.

(b) If the data being queried is at the single *meter* level, the *NMI* and the *MeterSerialNumber* must be provided.

(c) If the data being queried is at an individual Datastream level, the *NMI*, *MeterSerialNumber* and *NMISuffix* must be provided.

(d) If the data being queried relates to the configuration of a Site, the *NMI* and *NMIConfiguration* must be provided.

(e) The Initiator must ensure that the *InvestigationCode* and *InvestigationDescription* match the level of data provided as provided in paragraphs (a) - (d).

2.5.4.1. Investigation Codes Usage

(a) The Initiator must use the appropriate *InvestigationCode* as specified in table 6 to communicate the reason for the VerifyMeterDataRequest.

Table 6 Investigation Code Explanations

InvestigationCode	**Use**
Confirm Reading For Vacant Site	Used where *substituted metering data* or *estimated metering data* is provided for a vacant site and the Initiator reasonably believes the consumption is overstated.
Confirm Zero Consumption	Used where the Initiator requires confirmation of a zero consumption value.
Incomplete Data	Used where the Initiator reasonably believes that they have not received a complete set of data. This code must only be used following a ProvideMeterDataRequest that has resulted in incomplete MDFF data being provided.
Invalid MDFF Data	Used where the Initiator reasonably believes that data in the MDFF data (300/350 line) does not match the configuration information in the MDFF data (200/250 line).
Invalid Standing Data	This code is used where the Initiator reasonably believes that the configuration data in the MDFF data is inconsistent with MSATS. The Initiator must not use this code until the required timeframes for updating MSATS have passed.
Missing Datastream	Used where the Initiator reasonably believes that the channel/s are incomplete based on the configuration information provided. This could be in the MDFF file or information obtained elsewhere. This code must only be used following a ProvideMeterDataRequest that has resulted in incomplete MDFF Data being provided.
Require Actual Reading or Substitute	Used where the Initiator reasonably believes that they are entitled to Actual *metering data* or *substituted metering data* for a specified period. This code must only be used following a ProvideMeterDataRequest that has not provided actual or *substituted metering data*.
Require Final Substitute	Used where the Initiator has received a Substitution and reasonably believes they should have received a Substitution with a quality flag of 'F' (see section 2.4 of Metrology Procedure: Part B).
Scheduled Reading Required	Used where the Initiator reasonably believes that the NSRD has lapsed and the MDFF data has not been provided within the required timeframe. This code must only be used following a ProvideMeterDataRequest that resulted in Estimated *metering data* being provided.
Service Order Reading Required	Used where the Initiator has received a *ServiceOrderResponse* with a *ServiceOrderStatus* of 'Partially Completed' or 'Completed' and the associated MDFF data has not been provided within the required timeframe. The Initiator must provide the *ServiceOrderNumber* in the *InvestigationDescription* field. This code must only be used following a ProvideMeterDataRequest that has resulted in Estimated MDFF Data being provided.
Verify High Reading	Used where the Initiator reasonably believes the Meter Reading is too high compared to Historical Data, or following a customer complaint. The verification required does not involve a field visit.
Verify Low Reading	Used where the Initiator reasonably believes the Meter Reading is too low compared to Historical Data, or following a customer complaint. The verification required does not involve a field visit.
Verify/Missing Register	Used where the Initiator reasonably believes that the registers received in the MDFF do not align with those in MSATS. This code must only be used following a ProvideMeterDataRequest that has resulted in incomplete MDFF Data being provided
Require Estimate Data	Used where the Initiator reasonably believes they are entitled to an *Estimation*. This code must only be used following a ProvideMeterDataRequest that has resulted in a business event code of no data found
Meter Churn	Used where the Initiator reasonable believes that they have not received actual Meter Churn data.

InvestigationCode	**Use**
Other	Any other reason not covered by any other *InvestigationCode*.

2.5.5. Remote Service Request

(a) The Initiator must populate a RemoteServiceRequest (see Section 3.4)

(b) The Recipient must send a RemoteServiceResponse (see Section 3.5).

(c) The details provided in a RemoteServiceResponse must be as per the date and time provided in the request.

3. TRANSACTIONS

Key

M = Mandatory (must be provided in all situations).
R = Required (must be provided if this information is available or has changed).
O = Optional (may be provided and should be used if provided).
N = Not required (not required and may be ignored if provided).

3.1. ProvideMeterDataRequest Data

(a) Initiators must ensure that the ProvideMeterDataRequest conforms to the usage, format and definitional rules detailed in table 7:

Table 7 ProvideMeterDataRequest Data

Field	Format	Use	Definition
InitiatorRole	VarChar(4)	M	The Initiator's Role requesting the MDFF Data. Participant Role as published in MSATS.
RequestID	VarChar(15)	M	Initiator defined reference, used for reference and tracking. Must be a new (unused) number, unique for the Initiator.
NMI	Char(10)	M	*NMI* for the *connection point* missing data.
NMIChecksum	Char(1)	O	*NMI* Checksum for the *connection point* missing data.
StartReadDate	DATE	M	The start date for the period for which the Initiator is requesting MDFF data.
EndReadDate	DATE	O	The end date for the period for which the initiator is requesting MDFF data.

3.2. VerifyMeterDataRequest Data

(a) Initiators must ensure that the VerifyMeterDataRequest conforms to the usage, format and definitional rules detailed in table 8:

Table 8 VerifyMeterDataRequest Data

Field	Format	Use - Interval Data	Use - Accumulation Data	Definition
InitiatorRole	VarChar(4)	M	M	The market role of the Initiator querying the MDFF Data. Participant Role as published in MSATS.
RequestID	VarChar(15)	M	M	Initiator defined reference, used for reference and tracking. Must be a new (unused) number, unique for the Initiator.
NMI	Char(10)	M	M	*NMI* for the *connection poin*t being queried.
NMIChecksum	Char(1)	O	O	*NMI* Checksum for the *connection point*.
NMIConfiguration	VarChar(240)	M/N	M/N	The *NMIConfiguration* provided in the MDFF Data being queried. If this value is provided, the expected *NMIConfiguration* or the perceived problem of the configuration must be provided in the *InvestigationDescription* field. Refer to 2.5.4 for the rules regarding the usage of this field.
MeterSerial	VarChar(12)	M/N	M/N	Meter Serial ID. Only required if the data being queried is at the single *meter* level or an individual Datastream level. Refer to section 2.5.4 for the rules regarding the usage of this field.
NMISuffix	Char(2)	M/N	M/N	As defined in the NMI Procedure eg. 'E1','K1','Q2' etc. Mandatory if the data being queried is at an individual Datastream level (ie a single NMISuffix) or if a *CurrentRead* is provided. Refer to section 2.5.4 for the rules regarding the usage of this field.
RegisterID	VarChar(10)	O	O	Register identifier. Defined the same as the RegisterID field in the CATS_Register_Identifier table. May be provided where the data being queried relates to a single *RegisterID* or if a *CurrentRead* is provided

Field	Format	Use - Interval Data	Use - Accumulation Data	Definition
CurrentRead	VarChar(15)	N	M/N	Original Meter Reading provided in the MDFF data being queried. This must be presented as a Register Read. Example of values: 1234567.123 or 0012456.123. Values must include leading zeros. Values must be exclusive of *meter* multipliers. Mandatory for Accumulation Meters if any of the following *InvestigationCodes* are used: • Confirm Reading For Vacant Site • Verify High Reading • Verify Low Reading • Confirm Zero Consumption If this field is populated, the *NMISuffix* must be populated and the *RegisterID* may be populated.
CurrentReadDate	DATE	N	M/N	Date of the Meter Reading in the MDFF data being queried. Must be provided if *CurrentRead* is populated.
CurrentConsumption	Numeric(15,3)	N	M/N	Original consumption figure (in kWh) in the MDFF data being queried. Must be provided if *CurrentRead* is populated.
StartReadDate	DATE	M	M	The first day of the period the Initiator is querying.
EndReadDate	DATE	M	O	The last day of the period the Initiator is querying. If querying a single day's *interval metering data* or a single accumulation Meter Reading, this date is the same as the *StartReadDate*.
InvestigationCode	VarChar(40)	M	M	Allowed values: • Confirm Reading For Vacant Site • Confirm Zero Consumption • Incomplete Data • Invalid MDFF Data • Invalid Standing Data • Missing Datastream • Require Actual Reading or Substitute • Scheduled Reading Required • Require Final Substitute • Service Order Reading Required • Verify High Reading • Verify Low Reading • Verify/Missing Register • Require Estimate Data • Meter Churn • Other
InvestigationDescription	Varchar(240)	M	M	Free text that must be used to assist the investigation. The Initiator must specify the Meter Reading, the period and the description of the problem.

3.3. MeterDataNotification Data

(a) Initiators must ensure that the MeterDataNotification conforms to the usage, format and definitional rules detailed in table 9:

Table 9 MeterDataNotification Data

Field	Format	Use	Definition
RecipientRole	VarChar(4)	M	The Recipient's Role as published in MSATS.
RequestID	VarChar(15)	M/N	The RequestID provided in the initiating Request. Not required when transaction sent as part of the normal Meter Data Notification Process. Mandatory when the transaction is sent to the requesting Initiator as a response to a ProvideMeterDataRequest, VerifyMeterDataRequest or RemoteServiceRequest.
CSVConsumptionData	CSVDATA	R	Contains embedded data in CSV format for Accumulation Meters. This is the standard file format for *accumulated metering data*-defined in a valid MDFF. Refer to 2.5.2a for details of the usage of this field.
CSVIntervalData	CSVDATA	R	Contains embedded data in CSV format for Interval Meters. This is the standard file format for *interval metering data*-defined in a valid MDFF. Refer to 2.5.2 a for details of the usage of this field.

3.4. RemoteServiceRequest Data

(a) Initiators must ensure that the RemoteServiceRequest conforms to the usage, format and definitional rules detailed in table 10:

Table 10 RemoteServiceRequest Data

Field	Format	Use	Definition
RequestID	VARCHAR(15)	M	Initiator defined reference, used for reference and tracking. Must be a new (unused) number, unique for the Initiator.
NMI	CHAR(10)	M	*NMI* for the *connection point*.
NMIChecksum	CHAR(1)	O	*NMI* Checksum for the *connection point*.
MeterSerialNumber	VARCHAR(12)	O	Meter Serial ID(s). This is a repeatable field to allow for the provision of multiple *meters*. When left blank it indicates that the service applies to all meters associated with the *NMI*.
ServiceType	VARCHAR(40)	M	Describes the specific service required Standard Values: • Remote On Demand Meter Read • Metering Installation Inquiry • Start Remote Scheduled Meter Read • Stop Remote Scheduled Meter Read • Change Remote Scheduled Meter Read • <User Defined>
RequestCode	VARCHAR(40)	M	Describes the specific type of measurement/data that the initiator requires. Standard values: • Meter Contactor Status • Voltage • Current • Average Voltage • Events • Frequency • Active Energy • Reactive Energy • Index Read • <User Defined>

Field	Format	Use	Definition
ResponseFormat	VARCHAR(20)	M	This defines the structure of the response payload as agreed between the Initiator and Recipient Standard Values: • MDN • CSV • MDFF • XML • BASE64 • <User Defined> Where MDN is used the response will follow existing meter data delivery mechanisms. Otherwise the return data will be in the response payload
FromDateTime	DATETIME	O	When blank assumes current date and time. The time will be EST unless otherwise agreed.
ToDateTime	DATETIME	O	When blank assumes current date and time. The time will be EST unless otherwise agreed.
UserDef1	VARCHAR(240)	O	Usage agreed between initiator and recipient. Can be used for example to define different measurement periods for the response, or measurement such as power factor, or request secondary data streams in the response.
UserDef2	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef3	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef4	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef5	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef6	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef7	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef8	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef9	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef10	VARCHAR(240)	O	Usage agreed between initiator and recipient.

3.5. RemoteServiceResponse Data

(a) Recipients must ensure that the RemoteServiceResponse conforms to the usage, format and definitional rules detailed in table 11:

Table 11 RemoteServiceResponse Data

Field	Format	Use	Definition
RequestID	VARCHAR(15)	M	Initiator defined reference, used for reference and tracking. Must be a new (unused) number, unique for the Initiator.
NMI	CHAR(10)	M	*NMI* for the *connection point*.
NMIChecksum	CHAR(1)	O	*NMI* Checksum for the *connection point*.
MeterSerialNumber	VARCHAR(12)	M	Meter Serial ID(s). This is a repeatable field to allow for the provision of multiple *meters*.
ServiceType	VARCHAR(40)	M	Describes the specific service required Standard Values: • Remote On Demand Meter Read • Metering Installation Inquiry • Start Remote Scheduled Meter Read • Stop Remote Scheduled Meter Read • Change Remote Scheduled Meter Read <User Defined>

Field	Format	Use	Definition
RequestCode	VARCHAR(40)	M	Describes the specific type of measurement/data that the initiator requires. Standard values: • Meter Contactor Status • Voltage • Current • Average Voltage • Events • Frequency • Active Energy • Reactive Energy • Index Read • <User Defined>
ResponseFormat	VARCHAR(20)	M	This defines the structure of the response payload as agreed between the Initiator and Recipient Standard Values: • MDN • CSV • MDFF • XML • BASE64 • <User Defined> Where MDN is used the response will follow existing meter data delivery mechanisms. Otherwise the return data will be in the response payload
FromDateTime	DATETIME	O	When blank assumes current date and time. The time will be EST unless otherwise agreed.
ToDateTime	DATETIME	O	When blank assumes current date and time. The time will be EST unless otherwise agreed.
UserDef1	VARCHAR(240)	O	Usage agreed between initiator and recipient. Can be used for example to define different measurement periods for the response, or measurement such as power factor, or request secondary data streams in the response.
UserDef2	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef3	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef4	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef5	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef6	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef7	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef8	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef9	VARCHAR(240)	O	Usage agreed between initiator and recipient.
UserDef10	VARCHAR(240)	O	Usage agreed between initiator and recipient.
ResponsePayload	DATA	O	Payload in the format as described in Response Format
ErrorCode	VARCHAR(4)	M	0 = success. Other codes as agreed between parties
ErrorDescription	VARCHAR(240)	M/N	Description of the Error Mandatory when Error Code does not equal 0
ProductCode	VARCHAR(10)	O	Product code of the service This field repeats to allow provision of details for multiple Product Codes.

3.6. *BusinessAcceptance/Rejection*

(a) A Participant must ensure that a *BusinessAcceptance/Rejection* has a *Status* as specified in table 12:

Table 12 *Business Acceptance/Rejection* Data

Field	Format	Use	Definition
Status	Enumeration	M	Permitted content: • Accept • Partial • Reject Refer to Clause 2.2.2, 2.2.3, 2.2.4, 2.2.5 and the B2B Guide for usage.

(b) If the *Status* is not 'Accept', a Participant must provide one or more of the Event blocks in table 13:

Table 13 *BusinessAcceptance/Rejection* Data for MeterDataNotification if not Accepted

Field	Format	Use	Definition
EventCode	NUMERIC(4)	M	A code to indicate the reason for the rejection. Applicable codes are in the table at 3.7. A positive number.
KeyInfo	NUMERIC(~~x~~8)	M/N	If this field is populated with a number, the number is the line number within the CSV data block that the event occurred. If the field is not populated, the *EventCode* refers to the aseXML transaction, not the CSV data.
Context	EventContext	M/N	The Data Element in the received Business Document that cause the Event. For an error in the CSV data block (*KeyInfo* is populated) this will be a copy of the line where the event was found. Where the line is longer than the field size available, the field is to be fully populated starting from the first character of the line.
Explanation	Unlimited Varchar	M/O	An explanation of the event. Must be provided where the Business Event requires an *Explanation*.

3.7. Applicable Events

(a) Participants must use the most relevant Business Event(s). Where multiple *EventCode(s)* are applicable these may be provided.

(b) Where the *EventCode* is not in the aseXML reserved range (0-999), an *EventCodeDescription* should be included in accordance with the aseXML Guidelines.

(c) The relevant Business Events and *EventCode(s)* are in table 14.

Table 14 Meter Data Process - Business Event Details

Business Event	Explanation Required	Severity	MeterData Notification	ProvideMeter DataRequest	VerifyMeter DataRequest	RemoteService Request	Event Code	Relevant Procedure Clause or Reference Notes
Requested data has previously been sent in response to a previous ProvideMeterDataRequest.	No	Error		Yes			1936	Initiator has made more than one request for the same version of the MDFF data.
Participant is not entitled to requested data for part of the date range requested	No	Information		Yes			1934	The *Severity* is 'Information' as the Recipient will send a MeterDataNotification to the Initiator with the available MDFF data. Refer Clauses 2.2.3 & 2.2.4
Participant is not entitled to requested data for part of the date range requested	No	Error			Yes		1934	The *Severity* is 'Error' as the Recipient will not send a MeterDataNotification to the Initiator with the available MDFF data. Refer Clauses 2.2.3 & 2.2.4
Participant is not entitled to requested data for date range requested	No	Error		Yes	Yes	Yes	1933	General market principle.
Insufficient information provided to action Request.	Yes	Error			Yes		1958	The Initiator has not clearly defined the reading, the period and the description of the problem.
NSRD not past yet (ie allowed timeframe to provide reading has not expired yet).	No	Error			Yes		1948	
Query has been investigated and no change made to the MDFF Data.	Yes	Error			Yes		1959	
StartReadDate is before the MDP SLP on-line storage requirement.	No	Information		Yes	Yes		1960	2.5.1d
Requested data is no longer on-line	No	Error		Yes	Yes		1946	2.5.1 d
No data found	No	Error		Yes	Yes		1931	

Business Event	Explanation Required	Severity	MeterData Notification	ProvideMeter DataRequest	VerifyMeter DataRequest	RemoteService Request	Event Code	Relevant Procedure Clause or Reference Notes
New request with previously used *RequestID*.	Yes	Error		Yes	Yes	Yes	1913	
NMI abolished.	No	Error		Yes	Yes	Yes	1961	
No active meters.	No	Error		Yes	Yes	Yes	1962	
Recipient is not the MDP for the whole period.	No	Information		Yes			1963	
Recipient is not the MDP for the whole period.	No	Error			Yes		1963	
Recipient is not responsible for the supplied NMI.	Yes	Error		Yes	Yes	Yes	1923	The Recipient is not responsible for the *NMI*.
Format problem found in MDFF	Yes	Error	Yes				1925	An error occurred while loading the MDFF. *Status* indicates the data that has been rejected (Table 11)
Required timeframe for updating MSATS has not passed	No	Error			Yes		1968	Used where the Initiator has not waited the required time for MSATS to be updated.
Invalid Request	Yes	Error			Yes		1969	Used where the Request does not make sense to the Recipient.
Recipient did not initiate request	Yes	Error	Yes				206	Standard aseXML Code. The *RequestID* in the MeterDataNotification is not one provided by the Recipient.
Accept	No	Information	Yes	Yes	Yes	Yes	0	Standard aseXML Code
Data missing. Details provided in *Explanation*	Yes	Error	Yes	Yes	Yes	Yes	201	Standard aseXML Code Used where data with a usage of Required in the Procedure is missing.
Invalid data. Details provided in *Explanation*	Yes	Error	Yes	Yes	Yes	Yes	202	Standard aseXML Code Covers situations where the data in a field or combination of fields is invalid.
Request matches an existing Request. The *TransactionID* of the related Request is provided in *Explanation*.	Yes	Error			Yes		1965	

No further data available.	No	Information		Yes			1966	Used where the Recipient provides all the data it has but this does not satisfy a ProvideMeterDataRequest. Used in a *BusinessAcceptance/Rejection* with a *Status* of 'Partial'.
No Contract for service	No	Error				Yes	2007	Used where the Recipient does not have a contract with the Initiator to provide the service requested.
Service Not Provided	No	Error				Yes	2006	Used where the Recipient does not provide the service requested.
No Comms	No	Error				Yes	2009	Used where communications were not available at the time of the request.