

SERVICE LEVEL PROCEDURE: SERVICE

Metering Data Provider Services ~~Categories D and C~~ for Metering Installation Types 1, 2, 3, 4, 5, 6 and 7 LEVEL PROCEDURE:

Formatted: Position: Horizontal: 2.05 cm, Relative to: Page,
Vertical: 12.28 cm, Relative to: Page

PREPARED BY: ~~Retail Markets & Metering~~ Retail Markets & Metering

VERSION: 1.24-0

DATE: ~~12 June 2013~~ 15 September 2014 ~~December 2014~~

~~FINAL~~ FINAL ~~DRAFT~~

~~Approved for distribution and use~~ Draft

~~[Violette Mouchailoh]
[Group Manager, Retail Markets & Metering]~~

~~Date~~ 12/06/2012

Version Release History

VERSION	DATE	AUTHOR	PEER REVIEW	APPROVED	COMMENTS
.01	Aug 2012	Jackie Krizmanic	Lee Brown	Lee Brown	Initial draft
.02	Oct 2012	Jackie Krizmanic	Lee Brown	Lee Brown	Draft following revisions by AEMO
.03	Nov 2012	Lee Brown	MSWG	Lee Brown	Further revisions by AEMO following initial review by the MSWG
.04	Dec 2012	Lee Brown	MSWG	Lee Brown	Further revisions by the MSWG
.05	Jan 2013	Lee Brown	Jackie Krizmanic	Lee Brown	Final review of draft including format change in preparation for consultation
.06	Apr 2013	Lee Brown	Jackie Krizmanic	Lee Brown	Updated after comments from 1 st stage consultation and MSWG.
1.0	June 2013	Lee Brown	Jackie Krizmanic	Lee Brown	Updated with comments from 2nd stage consultation and MSWG
1.1	May 2014	Lee Brown	Jackie Krizmanic, David Ripper	Lee Brown	Expanded to include the meter churn data requirements – draft
1.2	Sept 2014	Lee Brown	MSWG	Lee Brown	Including meter churn, comms network approval and other minor amendments

Disclaimer

- (a) **Purpose** – This document has been prepared by the Australian Energy Market Operator Limited (**AEMO**) for the purpose of complying with clause 7.14.1A of the National Electricity Rules (**Rules**).
- (b) **Supplementary Information** – This document might also contain information the publication of which is not required by the *Rules*. Such information is included for information purposes only, does not constitute legal or business advice, and should not be relied on as a substitute for obtaining detailed advice about the *National Electricity Law*, the *Rules*, or any other relevant laws, codes, rules, procedures or policies or any aspect of the *National Electricity Market*, or the electricity industry. While *AEMO* has used due care and skill in the production of this document, neither *AEMO*, nor any of its employees, agents and consultants make any representation or warranty as to the accuracy, reliability, completeness, currency or suitability for particular purposes of the information in this document.
- (c) **Limitation of Liability** – To the extent permitted by law, *AEMO* and its advisers, consultants and other contributors to this document (or their respective associated companies, businesses, partners, directors, officers or employees) shall not be liable for any errors, omissions, defects or misrepresentations in the information contained in this document or for any loss or damage suffered by persons who use or rely on this information (including by reason of negligence, negligent misstatement or otherwise). If any law prohibits the exclusion of such liability, *AEMO*'s liability is limited, at *AEMO*'s option, to the re-supply of the information, provided that this limitation is permitted by law and is fair and reasonable.

© 2014² - All rights reserved.

Contents

1	Introduction	9
2	Purpose	9
3	Legal and Regulatory Framework	10
4	References	10
5	Obligations	12
5.1	Metering data services	12
5.2	Use of sub-contractors	13
5.3	Specific obligations for Metering Data Provider - Category D	13
5.4	Specific obligations for Metering Data Provider - Category C	14
6	Service requirements for Metering Data Providers – Category D	15
6.1	System requirements	15
6.2	Collection process requirements	16
6.3	Specific collection process requirements for metering installations type 1, 2, 3 and 4	16
6.4	Specific collection process requirements for metering installations type 5 and 6	17
6.5	Specific collection and delivery process requirements for AMI rollout	17
6.6	Metering data processing requirements	18
6.7	Specific Metering Data processing requirements for metering installation types 1, 2, 3 and 4	19
6.8	Specific Metering Data processing requirements for Special Sites	20
6.9	Specific Metering Data processing requirements for metering installation type 7	20
6.10	Specific Metering Data estimation requirements for metering installation types 5, 6 and 7	21
6.11	Delivery performance requirements for metering data	21
6.12	Delivery of Metering Data for prudential processing	23
6.13	Interface requirements	24
7	Service requirements for Metering Data Providers - Category C	27
7.1	System requirements	27
7.2	Metering Data Collection and transfer requirements	27
8	Meter churn data management	29
8.1	Meter churn scenarios	29
9	System architecture & administration	35
9.1	Data archival and recovery	35
9.2	Data backup	35
9.3	Disaster recovery	35
9.4	System administration and data management	36
9.5	Non-public telecommunications networks	36
10	Quality control	38
10.1	Scheduled Metering Data audits	38
10.2	Other audits	39
10.3	Corrective action	39



10.4	Non-compliance and de-registration	39
10.5	Review of accreditation	40
11	Administration	41
11.1	Bilateral agreements	41
11.2	Quality systems	41
11.3	Disputes	41
1	Introduction	9
2	Purpose	9
3	Legal and Regulatory Framework	10
4	References	10
5	Obligations	12
5.1	Metering data services	12
5.2	Use of sub-contractors	13
5.3	Specific obligations for Metering Data Provider – Category D	13
5.4	Specific obligations for Metering Data Provider – Category C	14
6	Service requirements for Metering Data Providers – Category D	15
6.1	System requirements	15
6.2	Collection process requirements	16
6.3	Specific collection process requirements for metering installations type 1, 2, 3 and 4	16
6.4	Specific collection process requirements for metering installations type 5 and 6	17
6.5	Specific collection and delivery process requirements for AMI rollout	17
6.6	Metering data processing requirements	18
6.7	Specific Metering Data processing requirements for metering installation types 1, 2, 3 and 4	19
6.8	Specific Metering Data processing requirements for Special Sites	20
6.9	Specific Metering Data processing requirements for metering installation type 7	20
6.10	Specific Metering Data estimation requirements for metering installation types 5, 6 and 7	21
6.11	Delivery performance requirements for metering data	21
6.12	Delivery of Metering Data for prudential processing	23
6.13	Interface requirements	24
7	Service requirements for Metering Data Providers – Category C	27
7.1	System requirements	27
7.2	Metering Data Collection and transfer requirements	27
8	Meter churn data management	29
8.1	Meter churn scenarios	29
9	System architecture & administration	35
9.1	Data archival and recovery	35
9.2	Data backup	35
9.3	Disaster recovery	35
9.4	System administration and data management	36
9.5	Non-public telecommunications networks	36

Formatted: Tab stops: 17 cm, Right

SERVICE LEVEL PROCEDURE:



10	Quality control	38
10.1	Scheduled Metering Data audits	38
10.2	Other audits	39
10.3	Corrective action	39
10.4	Non-compliance and de-registration	39
10.5	Review of accreditation	40
11	Administration	41
11.1	Bilateral agreements	41
11.2	Quality systems	41
11.3	Disputes	41
12	Schedule 1 – Meter data file format specification nem12 & nem13	42
13	Schedule 2 – MDM file format and load process	43

GLOSSARY

- (a) In this [Service Level Procedure document](#), a word or phrase *in this style* has the same meaning as given to that term in the *Rules* or, if they are not specified in the *Rules*, they have the meaning set out opposite those words, phrases, or acronyms in the table below.
- (b) A reference in this Service Level Procedure to a provision in the *Rules* is taken to be a reference to that provision as renumbered from time to time.
- (c) In this Service Level Procedure, words in the singular include the plural and words in the plural include the singular.
- (d) In this Service Level Procedure, diagrams are provided as an overview. If there are ambiguities between a diagram and the text, the text shall take precedence.
- (e) Unless the context otherwise requires, this document will be interpreted in accordance with Schedule 2 of the *National Electricity Law*.

TERM	MEANING
CATS Standing Data	<p>CATS Standing Data means those data items that are held in the following database tables:</p> <ul style="list-style-type: none"> • CATS_NMI_Data_Stream • CATS_NMI_Data • CATS_Meter_Register • CATS_NMI_Participants_Relationships • CATS_Register_Identifier <p><i>NMI Standing Data</i> is a sub-set of CATS Standing Data</p>
collect, collection, collected	A process undertaken by the <i>Metering Data Provider</i> to obtain <i>metering data</i> from a meter or <i>metering installation</i> .
data stream	data stream means a stream of <i>energy data</i> or <i>metering data</i> associated with a <i>metering point</i> , as represented by a <i>NMI</i> . For example, a <i>NMI</i> will have multiple <i>data streams</i> where one or more <i>meters</i> or one or more channels or registers comprise a single <i>meter</i> . Each <i>data stream</i> is identified by a suffix, which is associated with the <i>NMI</i> to which it belongs.
estimate, estimation, estimated	A process undertaken by a <i>Metering Data Provider</i> , for the forward <i>estimation</i> of <i>metering data</i> where the <i>scheduled meter reading cycle</i> does not support the delivery time frames of <i>metering data</i> to AEMO and other <i>Registered Participants</i> .
<u>Meter Churn</u>	<i>Meter Churn</i> occurs where one or more <i>meters</i> are changed or altered at a <i>metering installation</i>
<u>MDFP</u>	<i>Meter data file format</i> , the standard format for delivery of <i>metering data</i> to <i>Service Providers</i> and <i>registered participants</i>
<u>MDM data file</u>	<i>Meter data management data file</i> , the standard format for delivery of <i>metering data</i> to AEMO
<u>Service Providers</u>	<i>Metering Data Providers (MDPs)</i> , <i>Metering Providers (MPBs)</i> and <i>Local Network Service Providers (LNSPs)</i>
substitute, substitution, substituted	A process undertaken by a <i>Metering Data Provider</i> for the <i>substitution</i> of missing (null) or erroneous <i>metering data</i> or where the <i>metering data</i> has failed the <i>validation</i> process.
validate, validation, validated	A process undertaken by the <i>Metering Data Provider</i> to test the veracity and integrity of <i>metering data</i> prior to transfer to AEMO and other <i>Registered Participants</i> .

1 Introduction

- (a) This Service Level Procedure is made in accordance with clause 7.14.1A of the *Rules* and details the requirements that the *Metering Data Provider* must comply with for the provision of *metering data services* for all *metering installation types* in accordance with the *Rules*.
- (b) In accordance with clauses 7.1.3, 7.1.4 and 7.14.1A of the *Rules*, AEMO is responsible for preparing, revising and publishing this Service Level Procedure in accordance with *Rules consultation procedure*.
- (c) Where a proposed amendment to this Service Level Procedure is of a minor or administrative nature, AEMO is not required to undertake consultation in accordance with the *Rules consultation procedures* but must comply with the requirements of clause 7.1.4 (e) of the *Rules*.
- (d) If there is any inconsistency between this Procedure and the *Rules* the *Rules* will prevail to the extent of that inconsistency.

2 Purpose

- (a) The purpose of this Service Level Procedure is to detail the obligations, technical requirements, measurement processes and performance requirements that are to be performed, administered and maintained by the *Metering Data Provider*.
- (b) This Service Level Procedure details the:
 - i. obligations of the *Metering Data Provider* in the provision of *metering data services*;
 - ii. obligations of the *Metering Data Provider* to establish and maintain a *metering data services database*;
 - iii. *metering data collection*, processing, storage and delivery requirements for all *metering installation types*;
 - iv. obligations assigned to the *Metering Data Provider* within any procedures authorised under the *Rules*; and
 - v. obligations assigned to the *Metering Data Provider* in support of the *responsible person*.
- (c) This Service Level Procedure consolidates the following service level procedures [and other documents](#) relating to *Metering Data Provider* activities:
 - i. Service Level Procedure: Metering Data Provider Services Category D for Metering Installation Types 1, 2, 3 and 4;
 - ii. Service Level Procedure: Metering Data Provider Services Category D for Metering Installation Types 5, 6 and 7; ~~and~~
 - iii. Service Level Requirement: Metering Data Provider Services Category Type 5C and 6C; ~~and~~
 - iv. [Meter Churn Data Management Procedure](#).

3 Legal and Regulatory Framework

- (a) In accordance with clause 7.4.1A of the *Rules*, the provision of *metering data services* must only be carried out by a *Metering Data Provider*.
- (b) In accordance with clause 7.4.2A (e) of the *Rules*, a *Metering Data Provider* must comply with the provisions of the *Rules* and procedures authorised under the *Rules*.
- (c) In accordance with clause 7.4.2A (a) (2) of the *Rules*, *Metering Data Providers* providing *metering data services* in the National Electricity Market must be accredited by and registered with AEMO. The accreditation requirements are set out in the accreditation procedures and checklists for each category of registration which include requirements as set out in:
 - i. Chapter 7 of the *Rules*; and
 - ii. authorised procedures under the *Rules*.

4 References

In this service level procedure, a reference to:

- (a) '*metrology procedure: Part A*' is a reference to the 'Metrology Procedure: Part A' National Electricity Market.
- (b) '*metrology procedure: Part B*' is a reference to the "Metrology Procedure: Part B. Metering Data Validation, Substitution and Estimation Procedure for Metering Types 1-7".
- (c) 'MSATS Procedures' is a reference to any one or all of the following documents in accordance with the context of the provision:
 - i. 'CATS Procedure' is a reference to the CATS Procedures Principles and Obligations;
 - ii. 'WIGS Procedure' is a reference to the Procedures for the Management of Wholesale, Interconnector, Generator and Sample (WIGS) NMIs;
 - iii. 'Standing Data' is a reference to the static data held within MSATS as detailed in 'Standing Data for MSATS'; and
 - iv. 'MDM Procedures' is a reference to MSATS Procedures: MDM Procedures.
- (d) 'B2B Procedures' is a reference to any one or all of the following documents in accordance with the context of the provision:
 - i. 'Service Order Process'; and
 - ii. 'Meter Data Process'.
- (e) 'NMI Procedure' is a reference to the "National Metering Identifier Procedure".
- (f) 'Data Delivery Calendar' is a reference to the applicable version of the 'AEMO Data Delivery Calendar'.
- ~~(g) 'Meter Churn Data Procedure' is a reference to the 'Meter Churn Data Management Procedure' that Metering Data Providers must comply with.~~

~~(h)~~(g) *'MDFP* is a reference to;

Formatted: Font: Italic

- i. the 'Meter Data File Format Specification' for provision of metering data to *Local Retailers, Market Customers, Network Service Providers* and other *Metering Data Providers*. This document is currently the "Meter Data File Format Specification NEM12 & NEM13" and is
- ii. an alternative version of the Meter Data File Format Specification which may be used for the provision of metering data to a Generator participant. This is currently the NEM01 format as specified in the "Meter Data File Format – NEM01 specification".

~~(h)~~(h) *'MDM data file'* is a reference to the aseXML metering data file to be used for sending metering data to AEMO's MSATS system. The 'MDM File Format and Load Process' Procedure details the process and file format to be complied with by *Metering Data Providers*.

Formatted: Font: Italic

~~(i)~~(i) 'Market Management Systems Access Procedure' is a reference to AEMO's Market Management Systems Access Procedure, Policy 02113.

~~(j)~~(j) 'Special Sites' is a reference to the 'Special and Technology Related sites' supporting document and published 'List of Special and Technology Related Sites' within the NEM.

~~(k)~~(k) 'Service Level Procedure' is a reference to this document.

5 Obligations

5.1 Metering data services

5.1.1 The *Metering Data Provider* must:

- (a) provide compliant *metering data services* in accordance with the *Rules*, procedures under the *Rules* and relevant jurisdictional codes and policies;
- (b) establish, maintain and operate a *metering data services database*;
- (c) ensure that the *metering data services data base* including all distributed systems, personal computers and equipment used for *collection* is synchronised to *Eastern Standard Time* in accordance with the accuracy requirements of clause 7.12 (e) of the *Rules*;
- (d) ensure that all *metering installations* are synchronised to *Eastern Standard Time* through the *collection* process in accordance with the accuracy requirements of clause 7.12 (f) of the *Rules*, for the relevant *metering installation* type;
- (e) maintain the security and confidentiality of any *metering installation* passwords;
- (f) ensure that *metering data* and relevant *CATS Standing Data* is kept confidential and secure in accordance with *Rule* obligations and only provided to persons entitled to have access in accordance with the *Rules*;
- (g) undertake the *collection*, processing and delivery of *metering data* and significant *meter* alarms, through the processes for which the *Metering Data Provider* has been accredited and engaged;
- (h) be accredited by *AEMO* to provide *metering data services*;
- (i) comply with all directions from *AEMO* to fulfil any obligation under this Service Level Procedure and
- (j) make all reasonable endeavours to co-operate in good faith with *AEMO*, all *Registered Participants*, accredited *Metering Providers* and accredited *Metering Data Providers* within the *National Electricity Market*.

5.1.2 The *Metering Data Provider* must maintain compliance with:

- (a) NMI Procedure;
- (b) MSATS & B2B Procedures;
- (c) Metering Data File Format;
- ~~(d)~~ MDM File Format and Load Process Procedure;
- ~~(e)~~(d) [Meter Churn Data Procedure](#); and
- ~~(f)~~(e) [Metrology Procedure Part A & B](#)

5.1.3 In regard to connection points that are part of a *Retailer of Last Resort (RoLR)* event, or where the participating jurisdiction has requested *AEMO* to undertake customer transfers, the *Metering Data Provider* must:

- (a) assist *AEMO* and *Registered Participants* with the management of transfers;
- (b) process and deliver *metering data*; and
- (c) update the *metering register* and relevant *CATS Standing Data* information.

5.2 Use of sub-contractors

- 5.2.1 Where a *Metering Data Provider* engages a sub-contractor to perform any of the obligations specified within the *Rules* or this Service Level Procedure, the *Metering Data Provider* must ensure that auditable processes are in place to certify that all work performed by the sub-contractor is compliant with the *Rules* and this Service Level Procedure.
- 5.2.2 The *Metering Data Provider* is responsible and liable for all acts and omissions of any engaged sub-contractor.
- 5.2.3 In the event a *Metering Data Provider* elects to engage or change a subcontractor for the delivery of any part of the *metering data services* the *Metering Data Provider* must notify AEMO immediately.
- 5.2.4 Subject to AEMO's assessment of the notification:
- the *Meter Data Provider* may be required to undertake an accreditation review to approve the new systems or processes;
 - where practicable the accreditation review will take place as part of the next scheduled *Metering Data Provider* audit; and
 - the scope and timing of the accreditation review will be assessed on a case by case basis between AEMO and the *Metering Data Provider*.

5.3 Specific obligations for Metering Data Provider - Category D

- 5.3.1 The *Metering Data Provider* - Category D must:
- undertake *validation, substitution and estimation of metering data* in accordance with the *metrology procedure: Part B*;
 - provide *metering data services* which relate to the *collection, calculation, processing and delivery of metering data*;
 - manage the relevant *CATS Standing Data* for all *connection points* for the entire period for which they have responsibility in MSATS;
 - manage the registration of *connection point data streams* in accordance with the timeframes specified in the MSATS Procedures;
 - ensure registered details of the *connection point* are fully recorded in the *Metering Data Provider's metering data services database*;
 - ensure *metering* details and parameters within the *metering data services database* are correct such that the *metering data* is accurate;
 - facilitate the timely commissioning and registration of the *metering installation*;
 - ensure that there is no continued *metering data* being recorded for the *connection point* before deactivating the *data stream(s)* in MSATS or discontinuing the *collection process* from the *metering installation*; and
 - establish and maintain a *metering register* in their *metering data services database* in support of AEMO's obligation under clause 7.5.1 of the *Rules* and in accordance with this Service Level Procedure.

5.3.2 The *Metering Data Provider* must ensure that information in the *metering register* is:

- (a) registered in cooperation with the *responsible person*, the *Metering Provider* and, where necessary, any other *Metering Data Provider* or *Metering Provider* associated with the transfer of a *connection point*;
- (b) provided on request to respective persons entitled to have access to the data in accordance with clause 7.7(a) of the *Rules*;
- (c) communicated to other respective *Metering Data Providers* having the right of access as a result of the transfer of a *connection point*; and
- (d) populated with the applicable details listed in the clause S7.5 of the *Rules* with the exception of:
 - i. S7.5.2(b) of the *Rules* sub clauses 5, 6 and 7; and
 - ii. S7.5.2 (c) of the *Rules* for *metering installation* types 5 (including AMI), 6 and 7.

5.3.3 Where the *metering installation* includes the measurement of reactive energy, the *Metering Data Provider* must store this *metering data* with the active *metering data* in the *metering data services database*.

5.3.4 The *Metering Data Provider* must ensure that where there is a change of *Metering Data Provider* role for a wholesale or generator *connection point* the Special Site list is referenced. If the *connection point* TNI is included in the Special Site list, the *Metering Data Provider* must first seek *AEMO* approval, to provide *metering data services* for these sites.

5.4 Specific obligations for Metering Data Provider - Category C

5.4.1 The *Metering Data Provider* - Category C must:

- (a) establish and administer a *metering data collection services* system;
- (b) undertake *validation of metering data* relevant to the *collection* process in accordance with section 7.2 and 7.3 of the *metrology procedure: Part B*; and
- (c) provide *metering data services* which relate to the *collection* and transfer of *metering data* and the management of relevant *CATS Standing Data* for all *connection points* for the entire period for which they have responsibility in MSATS.

6 Service requirements for Metering Data Providers – Category D

6.1 System requirements

6.1.1 The *Metering Data Provider* must maintain and operate a *metering data services database* to facilitate the:

- (a) *collection of metering data*;
- (b) *processing, calculation, validation, substitution and estimation of metering data*;
- (c) *delivery of metering data and metering register data to AEMO, Registered Participants and other Service Providers*;
- (d) *assignment and version control of participant roles for connection points and the ongoing synchronisation with MSATS*;
- (e) *commissioning of each metering installation into the Metering Data Provider's metering data services database*;
- (f) *loading of metering data provided in MDFF files relating to Meter Change*; and
- (g) *storage and archiving of metering data and validated metering data from the metering installation*.

6.1.2 The *Metering Data Provider* must maintain and operate a *metering data services database* that provides a full audit trail and version control capability. This functionality must be applied to:

- (a) *metering data*;
- (b) *relevant CATS Standing Data*;
- (c) *assigned data quality flags*;
- (d) *substitution and estimation types*;
- (e) *significant metering data alarms*¹;
- (f) *metering register information*;
- (g) *the delivery of metering data to Registered Participants, AEMO and other Metering Data Providers*; and
- (h) *the mapping of all metering data streams (including logical metering data streams)*.

6.1.3 The *Metering Data Provider* must maintain, operate and monitor a system that supports the detection of system or process errors. These exception reports must include but not be limited to:

- (a) *missed reads and missing intervals of metering data within the metering data services database*;
- (b) *long term substitutions and estimations*;
- (c) *metering data errors and data overlaps*;
- (d) *validation, relevant CATS Standing Data or metering register errors*;

¹ Significant *metering data* alarms are those listed in *metrology procedure: Part B*.

- (e) failed batch processing, database errors and hardware failures;
- (f) the capture of file syntax errors, failed and rejected *metering data* deliveries;
- (g) status management of *collection* interfaces;
- (h) status management of *B2B e-Hub* and MSATS interfaces; and
- (i) status management of *metering installation malfunctions*.

6.2 Collection process requirements

- 6.2.1 The *Metering Data Provider* must use reasonable endeavours to ensure actual *metering data*, including significant meter and *metering data* alarms, is *collected* for all *connection points* for which they have responsibility for *metering data services* in MSATS.
- 6.2.2 The *Metering Data Provider* must operate a process which:
- (a) records and logs faults and problems associated with the reading function of *meters*. The process must record and log, but is not limited to, any:
 - i. access problems;
 - ii. *metering installation* security problems;
 - iii. *metering installation* faults;
 - iv. read failures; and
 - v. *metering installation* time synchronisations.
 - (b) supports the *responsible person*, the *Metering Provider*, or both in the rectification of any *metering installation malfunctions* or problems associated with the reading function of meters; and
 - (c) provides notification of any *metering installation malfunction*, to the *responsible person* and the *Metering Provider*, in accordance with clause 7.3.7 of the *Rules*, so that repairs can be affected in a timely manner.

6.3 Specific collection process requirements for metering installations type 1, 2, 3 and 4

- 6.3.1 The *Metering Data Provider* must be capable of initiating a remote reading where *metering data* is missing, erroneous or has failed *validation*.
- 6.3.2 The *Metering Data Provider* must operate and maintain a process which:
- (a) initiates an alternate method to *collect metering data* where *remote acquisition* becomes unavailable; and
 - (b) provides a reading event log detailing successful read events for each *metering installation*, or alternatively an exception report of failed meter reads.

6.4 Specific collection process requirements for metering installations type 5 and 6

6.4.1 The *Metering Data Provider* must:

- (a) develop and maintain a reading schedule in accordance with the *metrology procedure: Part A*;
- (b) maintain read routes with particular attention to any specific access requirements and hazard information.;
- (c) use reasonable endeavours to ensure that *metering data* is *collected* at a frequency which is at least once every three months;
- (d) ensure that scheduled reading lists and programmed reading equipment is provisioned, updated and maintained;
- (e) subject to clause 6.5 of this Service Level Procedure, use reasonable endeavours to ensure that the *metering data* is *collected* within two *business days* prior to or two *business days* subsequent to the scheduled reading date;
- (f) ensure that all *metering data collected* and any fault reason codes associated with a reading failure are transferred to the *metering data services database* within one *business day* of the data being *collected* or attempted to be *collected* from the *metering installation*;
- (g) ensure that special read requests are managed in accordance with the B2B Procedures.

6.5 Specific collection and delivery process requirements for AMI rollout

6.5.1 For *Metering Data Providers* undertaking the provision of *metering data services* in relation to an AMI rollout and clause 9.9CB of the *Rules*:

- (a) *metering data* may be remotely *collected* or *substituted* earlier than two *business days* prior to the next scheduled read date.
- (b) *metering data* need not be delivered until 5pm on the second *business day* after the scheduled reading date, despite *metering data* being available in *Metering Data Provider* systems due to more frequent data *collection* or *substitution*.
- (c) the *Metering Data Provider* must maintain and operate a system to undertake data *collection* services. Systems and processes must be in place to enable the:
 - i. commissioning of each *metering installation* into the *Metering Data Provider's* metering database;
 - ii. remote communication with each *metering installation*;
 - iii. *remote acquisition* of *metering data* from the *metering installation* inclusive of any assigned significant *metering data* alarms; and
 - iv. storage of *metering data* from the *metering installation* in the *Metering Data Provider's metering data services database*.
- (d) where *remote acquisition* becomes unavailable, the *Metering Data Provider* must have a process which initiates an alternate method to *collect metering data*.
- (e) the *Metering Data Provider's* system must facilitate:
 - i. the initiation of a remote reading where *metering data* is missing, erroneous or has failed *validation*;

- ii. the provision of a reading event log that details successful read events for each *metering installation*, or alternatively an exception report of failed *meter* reads; and
 - iii. a process for the notification of any *metering installation* faults to the *responsible person* and the *Metering Provider*, in accordance with clause 7.3.7 of the *Rules*, so that repairs can be affected in a timely manner.
- (f) The *Metering Data Provider* must undertake *validation* of all *metering data* in accordance with this Service Level Procedure and the *metrology procedure: Part B* even though the significant *metering data* alarms² and meter register readings may be retrieved from the meter independently from the *metering data*.

6.6 Metering data processing requirements

6.6.1 The *Metering Data Provider* must have a process to:

- (a) confirm and utilise the participant roles for *connection points*;
- (b) support the receipt and actioning of Provide and Verify Meter Data Requests in accordance with the B2B Procedures;
- (c) assign and store the date/time stamp of when the *metering data* was entered into the *Metering Data Provider's metering data services database*;
- (d) ensure that in accordance with *metrology procedure: Part B* and *MDFF* all *metering data* is stored in the *metering data services database* with the correct:
 - i. Quality Flag;
 - ii. *Substitution* or *Estimation* Type Code (where applicable); and
 - iii. *Substitution* or *Estimation* Reason Code (if applicable).
- (e) check the *metering data services database* for missing *metering data* and overlaps; and
- (f) notify AEMO and the *Registered Participants* for the *connection point* whenever any *substitutions* or *estimations* are carried out. This notification is to be achieved by the allocation of the appropriate *substitution* or *estimation* codes to the *metering data* and delivery of that *meter data* within the *MDM data file* or *MDFF* file.

² Significant *metering data* alarms are those listed in *metrology procedures: Part B*

- 6.6.2 Where the *responsible person* or the *Metering Provider* informs the *Metering Data Provider* of a situation that may cause *metering data* to be erroneous, the *Metering Data Provider* must identify and *substitute* any erroneous *metering data*.
- 6.6.3 Where any *Registered Participant* for the *connection point* disputes *metering data*, the *Metering Data Provider* must investigate, and if necessary correct the *metering data* in accordance with the *metrology procedure*: Part B.
- 6.6.4 The *Metering Data Provider* must ~~have operate a process to aggregate metering data to meet in accordance with the Meter Churn Data Procedure~~ requirements of section 8 of this Service Level Procedure regarding *Meter Churn data management*.
- 6.6.5 Where the *meter* assigns alarms to the *metering data*, the *Metering Data Provider's* system must process the alarm along with the *metering data* as part of the *validation* process in accordance with the *metrology procedure*: Part B.
- 6.6.6 The *Metering Data Provider* must use reasonable endeavours to load *metering data* in an alternative format provided by the *Metering Provider* where there is a communications, reading or *metering installation malfunction* that prevents the normal collection of *metering data* from the *metering installation*.
- 6.6.7 The *Metering Data Provider* must have a process to aggregate *interval metering data* for a *connection point* into a 30 minute interval net data stream prior to delivery to AEMO as per MSATS Procedure, [MDM File Format and Load Process MDM Procedures](#) and National Metering Identifier Procedure.

6.7 Specific Metering Data processing requirements for metering installation types 1, 2, 3 and 4

- 6.7.1 The *Metering Data Provider* must have a process to be capable of undertaking simple cumulative or subtractive processes to manage complex metering configurations. Typically the system must support:
- an A+B+C or A-B-C aggregation configuration;
 - metering data validation* capability for standard partial or *check meter connection points* which incorporate a simple comparison of single *data stream* of *metering data* to a single *data stream* of *check metering data* within an acceptable tolerance; and
 - the calculation of the average of the two *validated* data sets for *metering installations* where the *check metering installation* duplicates the *metering installation* and accuracy level. The average of the two *validated* data sets must be delivered to AEMO and *Registered Participants*.

6.8 Specific Metering Data processing requirements for Special Sites

- 6.8.1 Subject to the *Metering Data Provider's* level of accreditation and system capability to manage *interconnectors, transmission connection points, Generator connection points* and cross boundary/border supply points between *distribution or Local Retailer* regions, the *Metering Data Provider's* process must have the ability to:
- (a) perform *transformer* and or line loss compensation algorithms, to compensate for losses between the *metering point* and the *connection point*;
 - (b) perform calculations of *data streams* for the requirements of each Special Site;
 - (c) perform nodal *check metering data validation and substitution*;
 - (d) undertake Supervisory Control and Data Acquisition (SCADA) data *validation and substitution* for *Generator connection points*;
 - (e) manage logical *meters* and nested logical *metering data* calculations;
 - (f) handle threshold test variances to equations such as the use of 'If Then Else' statements; and
 - (g) perform any combination of the above.
- 6.8.2 The *Metering Data Provider* must ensure that any algorithm in support of a logical NMI is accepted by the *responsible person, AEMO* and *financially responsible Market Participant* before being used.

6.9 Specific Metering Data processing requirements for metering installation type 7

- 6.9.1 The *Metering Data Provider* must store inventory tables, load tables and on/off tables, as defined in *metrology procedure: Part B*, in the *metering data services database*.
- 6.9.2 The *Metering Data Provider* must ensure:
- (a) inventory tables are updated with any changes provided by the *Local Network Service Provider* or *responsible person*;
 - (b) on/off tables are correct and compliant with details specified in the *metrology procedure Part B*; and
 - (c) load tables are correct and in agreement with details in the National Electricity Market Load Tables for Unmetered Connection Points, as published by *AEMO*.
- 6.9.3 The *Metering Data Provider* must validate that load tables, inventory tables and on/off tables are complete and correct.
- 6.9.4 The *Metering Data Provider* must ensure the inventory table, load table and on/off table are versioned for *metering data* calculations.
- 6.9.5 The *Metering Data Provider* must ensure that all *calculated metering data* is *validated* and processed into *trading intervals*.

6.10 Specific Metering Data estimation requirements for metering installation types 5, 6 and 7

- 6.10.1 Subject to clause 6.5 of this procedure, the *Metering Data Provider* must have a process for the creation of *estimated metering data*.
- 6.10.2 To meet *meter data* delivery requirements, this process must either:
- (a) create individual blocks of *estimated metering data* on a daily basis; or
 - (b) create a single block of *estimated metering data*
 - i. from the current reading event to a period beyond the newly published next scheduled read date for types 5 and 6; or
 - ii. from the current calculation event to a period beyond the next scheduled calculation event for type 7.

6.11 Delivery performance requirements for metering data

- 6.11.1 The *Metering Data Provider* must ensure only *metering data* which has passed *validation* is delivered to AEMO, *Metering Data Providers* and *Registered Participants*.
- 6.11.2 Subject to clause 6.5 of this procedure, the *Metering Data Provider* must:
- (a) deliver to AEMO, *Metering Data Providers* and *Registered Participants* all actual *metering data* which has passed *validation* within two *business days* of the actual *metering data* being received into the *metering data services database*;
 - (b) *substitute, validate* and deliver to AEMO, *Metering Data Providers* and *Registered Participants* the *substituted metering data* within two *business days* of the actual *metering data* being received into the *metering data services database* and failing *validation*; and
 - (c) *substitute, validate* and deliver to AEMO, *Metering Data Providers* and *Registered Participants* the *substituted metering data* within two *business days* of the receipt of any fault reason codes associated with a reading failure or failed interrogation event, into the *metering data services database*.



6.11.3 The *Metering Data Provider* must *validate* and deliver to AEMO, *Metering Data Providers* and *Registered Participants* all *substituted metering data* within two *business days* of the *metering data* being *substituted*.

6.11.4 For *metering installations* type 5, 6 and 7 the *Metering Data Provider* must *validate* and deliver to AEMO, *Metering Data Providers* and *Registered Participants* all *estimated metering data* within two *business days* of the *metering data* being *estimated*.

6.11.5 [The *Metering Data Provider* must provide *metering data* to the *financially responsible Market Participant* within two *business days* of receiving a completed notification of a change of *financially responsible Market Participant*, including *estimated metering data*, for a type 5, 6 or 7 *metering installation*.](#)

~~6.11.56~~.11.6 The *Metering Data Provider* must ensure that all failed *validations* are reviewed promptly such that:

- (a) where the initial review of the failed *validation* identifies that the actual *metering data* is valid, deliver the actual *metering data* to AEMO, *Metering Data Providers* and *Registered Participants* within two *business days* of the *metering data* being received into the *metering data services database*; and
- (b) where further information is required to *validate* the actual *metering data*, and the receipt of such information identifies that the actual *metering data* is valid, deliver the actual *metering data* to AEMO, *Metering Data Providers* and *Registered Participants* within two *business days* of the *metering data* passing *validation*.

~~6.11.66~~.11.7 The *Metering Data Provider* must deliver *metering data* that has passed *validation* to AEMO for the periods specified in the *Data Delivery Calendar*, for all *connection points* that the *Metering Data Provider* is nominated in MSATS, for the specified weekly periods:

- (a) to a quantity level of at least 98% complete *metering data* for all settlement weeks;
- (b) to a quality level of at least 98% 'actual' or 'final', for periods specified as four monthly and six monthly revision settlement weeks only; and
- (c) by 5pm on the *day* specified in the *Data Delivery Calendar* for the relevant settlement week.

~~6.11.76~~.11.8 The *Meter Data Provider* must ensure that all *metering data* is delivered to AEMO, *Metering Data Providers* and *registered participants* for the full period of any retrospectively created *data streams* within two *business days* of that *data stream* becoming active in MSATS.

~~6.11.86~~.11.9 Summary Data Delivery Table:

	Delivery to entitled <i>registered participant</i> (e.g. MDP, LNSP, TNSP, LR, FRMP)	Delivery to AEMO
Data Type	<i>NMI data stream</i> (e.g. E1, B1, 71, 44)	Net <i>NMI data stream</i> (e.g. N1, 71, 44)

	Deliver <i>validated metering data</i> including any <i>estimations</i> and <i>substitutions</i> .	Deliver <i>validated metering data</i> including any <i>estimations</i> and <i>substitutions</i> . Interval <i>metering data</i> must be net aggregated to 30 minutes.
File Format	'MDFP' Meter Data File Format (or Agreed Format).	'MDM data file ' AEMO aseXML data file format.
Delivery Point	To the <i>Registered Participants</i> via B2B e-Hub inbox (or Agreed Method)	To the <i>Metering Data Provider's</i> MSATS inbox

[6.11.96.11.10](#) For *Metering Data Providers* undertaking the provision of *metering data services* in relation to AMI roll out and clause 9.9CB of the *Rules*, *metering data estimation* is not required where *metering data* is delivered to AEMO, *Metering Data Providers* and *Registered Participants* on a daily basis for the previous day.

[6.11.106.11.11](#) The *Metering Data Provider* must notify AEMO and affected participants of any operational delays which impact on normal expected *metering data* delivery.

6.12 Delivery of Metering Data for prudential processing

6.12.1 AEMO must communicate to the *Metering Data Provider* the requirement for prudential *metering data* by 10am *Eastern Standard Time* the day before the data is required.

6.12.2 The *Metering Data Provider* must deliver prudential *metering data* to AEMO for Type 1, 2, 3 and 4 *metering installations* for the days nominated by AEMO, as follows:

- (a) 90% complete set of *validated actual metering data* for *connection points* which relate to wholesale market boundary and *Market Generator connection points* (these relate to *connection points* identified in MSATS as WHOLESAL, GENERATR and INTERCON);
- (b) 80% complete set of *validated actual metering data* for all other *connection points*; and
- (c) the *Metering Data Provider* must deliver *metering data* to AEMO by 8am *Eastern Standard Time* on the day(s) specified.

6.12.3 The *Metering Data Provider* must deliver prudential *metering data* to AEMO for Type 5, 6 and 7 *metering installations* for the days nominated by AEMO, as follows:

- (a) 80% complete data set of *validated metering data* for all *connection points*, consisting of actual, *substituted* or *estimated metering data*; and

- (b) the *Metering Data Provider* must deliver *metering data* to AEMO by 8am Eastern Standard Time on the day(s) specified.

6.13 Interface requirements

6.13.1 The *Metering Data Provider* must comply with AEMO's Market Management Systems Access Procedure.

6.13.2 The *Metering Data Provider* must establish and maintain business interfaces to:

- (a) the MSATS system for the management of *connection point* updates, notifications, objections, reports, relevant *CATS Standing Data*, data requests and delivery of *metering data* to the *metering database*;
- (b) the *B2B e-Hub* for the interface with *Registered Participants*, other *Service Providers* and for the delivery of *metering data* to *Registered Participants* and other *Metering Data Providers*; and
- (c) other technologies such as email, facsimile, phone and internet for the general management of information and alternative delivery of *metering data* to *Registered Participants*.

~~6.13.3 The *Metering Data Provider* must demonstrate that any non-public communications network which is to be used for the remote acquisition of *metering data* is first approved by AEMO and has controls and processes supporting:~~

- ~~(a) data security, integrity and confidentiality;~~
- ~~(b) functional, performance and capacity requirements; and~~
- ~~(c) a contingency strategy for component failure.~~

~~6.13.46.13.3~~ The *Metering Data Provider* must maintain a NEMNet connection for the purposes of communication and file transfer with MSATS.

~~6.13.56.13.4~~ The *Metering Data Provider* will be provided with an inbox and outbox directory on the MSATS file server, which must be used for the transfer of files to and from AEMO via NEMNet and manage the appropriate directories in accordance with the MSATS Procedures.

~~6.13.66.13.5~~ The *Metering Data Provider* must interface with MSATS either via the browser or a batch interface, or both, using the *market aseXML* file format in accordance with the related documentation and schemas.

~~6.13.76.13.6~~ The *Metering Data Provider* must manage any batch file transfers to MSATS in accordance with MDM Procedures.

~~6.13.86.13.7~~ The *Metering Data Provider* must maintain an ongoing active line of communication with the *B2B e-Hub* for the management and response to *B2B e-Hub* Requests and Notifications.

~~6.13.96.13.8~~ The *Metering Data Provider* must ensure:

- (a) all transmitted messages comply with the requirements of the aseXML message format; and



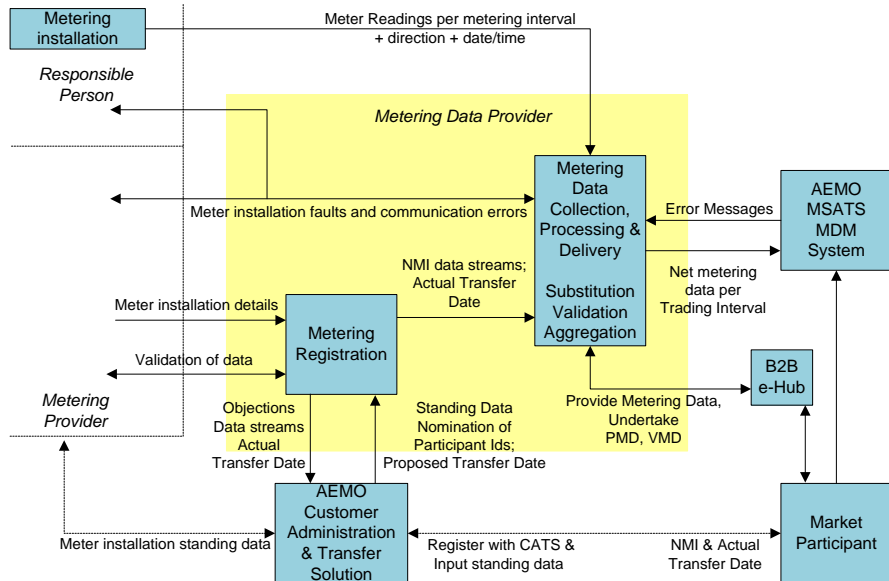
(b) all files transacted through the *B2B e-Hub* interface comply with the requirements of the aseXML message size requirements and B2B Technical Delivery Specifications.

~~6.13.106.13.9~~ 6.13.106.13.9 Voice communications with *AEMO, Registered Participants, Metering Providers* and other *Metering Data Providers* are to be undertaken between 9:00am and 5:00pm on *business days* except under exceptional circumstances.

~~6.13.116.13.10~~ 6.13.116.13.10 The *Metering Data Provider* must work with *AEMO* in the provision of *metering data* and *CATS standing data* files to *AEMO* and *Registered Participants* via alternate means in emergency situations where normal processes cannot be utilised.

6.13.126.13.11 Figure 1 below outlines the key Metering Data Provider interfaces:

Interfaces for MDP's



7 Service requirements for Metering Data Providers - Category C

7.1 System requirements

- 7.1.1 The *Metering Data Provider* must maintain and operate a *metering data collection* services system to facilitate:
- (a) the receipt of reading requests and associated information including read routes, registers, passwords, last read data, scheduled reading date, type of reading required and other information as agreed from time to time with a *Metering Data Provider - Category D*;
 - (b) the management of meter reading schedules;
 - (c) the *collection of metering data* from the *metering installation* inclusive of any *metering data* alarms or events as agreed with a *Metering Data Provider - Category D*;
 - (d) *validation of metering data* relevant to the *collection* process in accordance with section 7.2 and 7.3 of the *metrology procedure: Part B*;
 - (e) the transfer of *metering data* in a format agreed with the relevant *Metering Data Provider - Category D*;
 - (f) the storage and archiving of *collected metering data*;
 - (g) system monitoring and exception reporting; and
 - (h) the prompt notification of a *metering installation malfunction* to the *Metering Data Provider - Category D* so that repairs can be affected in a timely manner.
- 7.1.2 The *Metering Data Provider* must ensure the *metering data collection* services system provides a full audit trail.
- 7.1.3 The *Metering Data Provider* must ensure a process for the recording and logging of faults and problems associated with the reading function of meters is maintained. The process must log any:
- (a) access problems;
 - (b) meter security problems;
 - (c) meter faults;
 - (d) read failures; and
 - (e) other information as agreed with *Metering Data Provider - Category D*.

7.2 Metering Data Collection and transfer requirements

- 7.2.1 The *Metering Data Provider* must:
- (a) use reasonable endeavours to ensure actual *metering data* is *collected* for all *connection points* for which they are responsible;
 - (b) use reasonable endeavours to ensure the *metering data* is *collected* from *metering installations* type 5 and 6 within two *business days* prior to and two *business days* subsequent to the scheduled reading date;

- (c) ensure that all *metering data collected* and any fault reason codes associated with a reading failure or access problems are transferred to the *metering data services database* within one *business day* of the *metering data* being *collected* or attempted to be *collected* from the *metering installation*;
- (d) inform the *Metering Data Provider - Category D* immediately upon identification of an inability to *collect* or transfer *metering data* in accordance with the timeframes specified above;
- (e) ensure that all access issues are communicated to the *Metering Data Provider - Category D*;
- (f) ensure that the *meter* time of all type 5 *metering installations* is synchronised to *Eastern Standard Time* through the *collection* process within the accuracy requirements of the *Rules*;
- (g) ensure for type 5 *metering installations*, the *Metering Data Provider – Category D* is informed, through an agreed method, where the *meter* reading process failed to synchronise the *metering installation* time with *Eastern Standard Time*;
- (h) ensure for time of use type 6 *metering installations*, the *Meter Data Provider – Category D* is informed, through an agreed method, where the meter time is not synchronised to *Eastern Standard Time*; and
- (i) ensure that special read requests are managed in accordance with the B2B Procedures.

7.2.2 Where the *meter* assigns alarms and/or events to the data channel and/or the *metering data* concerned, the *Metering Data Provider* system must process and provide the alarm along with the *metering data* to support the *metering data validation* process in accordance with the *metrology procedure*: Part B and as agreed with *Metering Data Provider - Category D*.

8 Meter churn data management

8.1 Meter churn scenarios

8.1.1 Meter Churn occurs when components of a metering installation are changed or altered resulting in a change to the nature of metering data produced by the metering installation. Meter Churn can also occur when components of a metering installation are changed and there is also a change of Metering Service Provider(s).

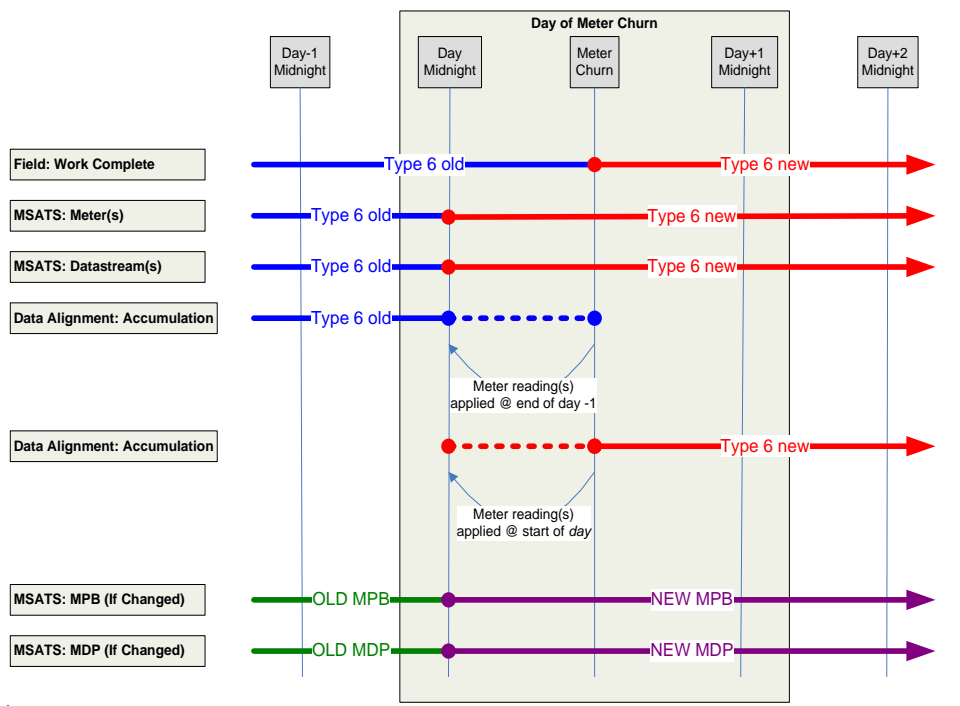
8.1.2 Sections 8.1.3, 8.1.4, 8.1.5 and 8.1.6 detail the requirements that the Metering Data Provider must comply with for the management of metering data and the construction of the MDM data file associated with Meter Churn events when a metering installation is changed from:

- (a) a type 6 metering installation to a new type 6 metering installation (Scenario 1);
- (b) a type 6 metering installation to a type 1, 2, 3, 4, or 5 metering installation (Scenario 2);
- (c) a type 1, 2, 3, 4, or 5 metering installation to a type 6 metering installation (Scenario 3); or
- (d) a type 1, 2, 3, 4, or 5 metering installation to a new type 1, 2, 3, 4, or 5 metering installation (Scenario 4).

8.1.3 For Meter Churn from a type 6 metering installation to a new type 6 metering installation (scenario 1):

- (a) The Metering Data Provider must have a process to ensure that:
 - i. the final accumulation reading(s) from the removed type 6 metering installation is applied at the end of the day prior to the Meter Churn;
 - ii. the start reading(s) for a new type 6 metering installation is applied at the start of the day of the Meter Churn; and
 - iii. estimated metering data is provided for any data streams made active as a result of the Meter Churn.
- (b) Figure 2 below provides an overview of this scenario:

Scenario 1 – type 6 replaced with a new type 6



Field Code Changed

8.1.4 For Meter Churn from a type 6 metering installation to new type 1, 2, 3, 4, or 5 metering installation (scenario 2):

(a) The Metering Data Provider must have a process to ensure that:

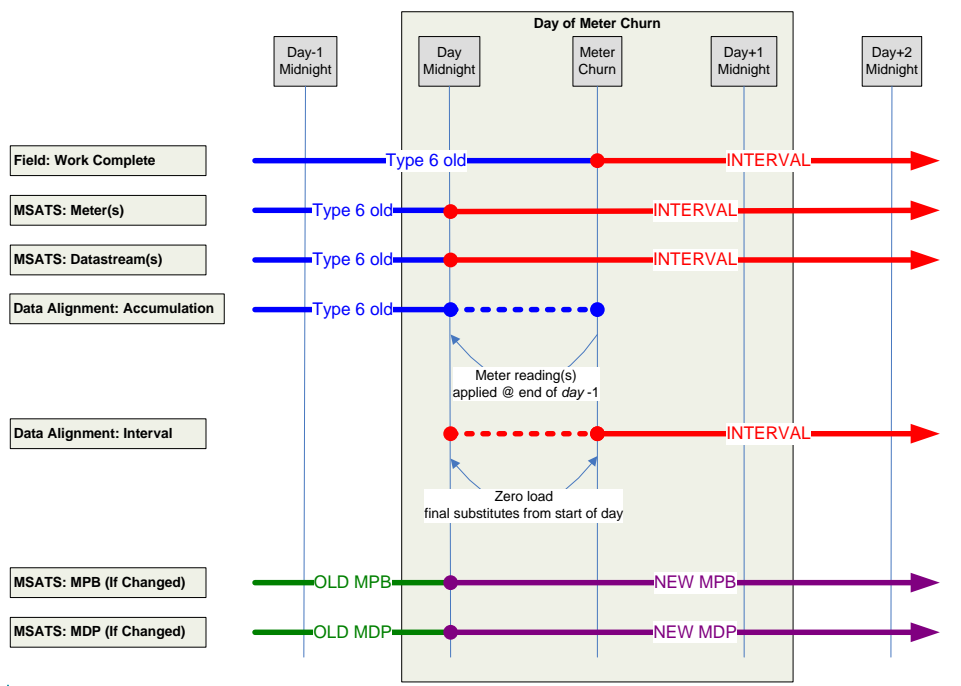
- i. the final accumulation reading(s) from the removed type 6 metering installation is applied at the end of the day prior to the Meter Churn; and
- ii. the start reading(s) for the new type 1, 2, 3, 4, or 5 metering installation at the start of the day on the day of the Meter Churn; and
- iii. estimated metering data is provided for any data streams made active as a result of the Meter Churn, for a new type 5 metering installation;

(b) The Metering Data Provider related to the new metering installation must have a process to ensure that the metering data for the period of the Meter Churn day

between the start of the *day* and the commissioning of the new *metering installation* is provided as zeroes with a quality flag of F.

(c) Figure 3 below provides an overview of this scenario:

Scenario 2 – type 6 replaced with a new interval meter



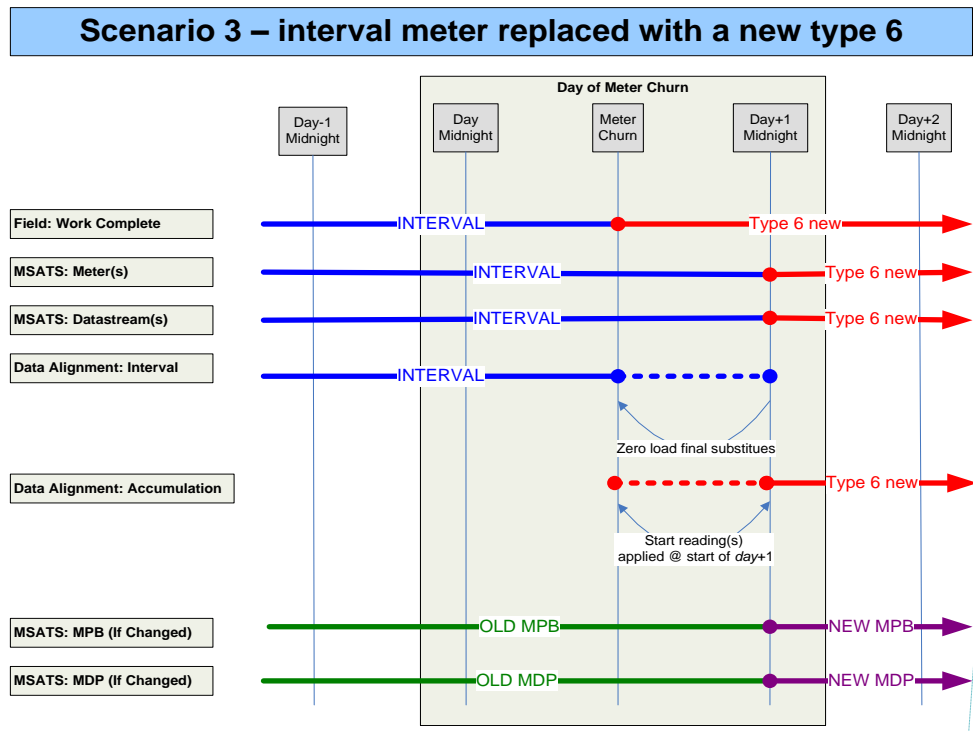
Field Code Changed

8.1.5 For Meter Churn from a type 1, 2, 3, 4, or 5 metering installation to new type 6 metering installation (scenario 3):

(a) For jurisdictions where reversion from a type 1, 2, 3, 4 or 5 metering installation to a type 6 metering installation is permitted, the Metering Data Provider must have a process to ensure that:

- i. the final reading(s) from the removed type 1, 2, 3, 4, or 5 metering installation is applied at the end of the day of the Meter Churn;
- ii. the metering data for the period of the Meter Churn day between commissioning of the new metering installation and the end of the day of the Meter Churn is provided as zeroes with a quality flag of F; and
- iii. the start reading(s) reading for the new type 6 metering installation is applied at the start of the day following the day of the Meter Churn.

(b) Figure 4 below provides an overview of this scenario:



Field Code Changed

8.1.6 For Meter Churn from a type 1, 2, 3, 4, or 5 metering installation to new type 1, 2, 3, 4, or 5 metering installation (scenario 4):

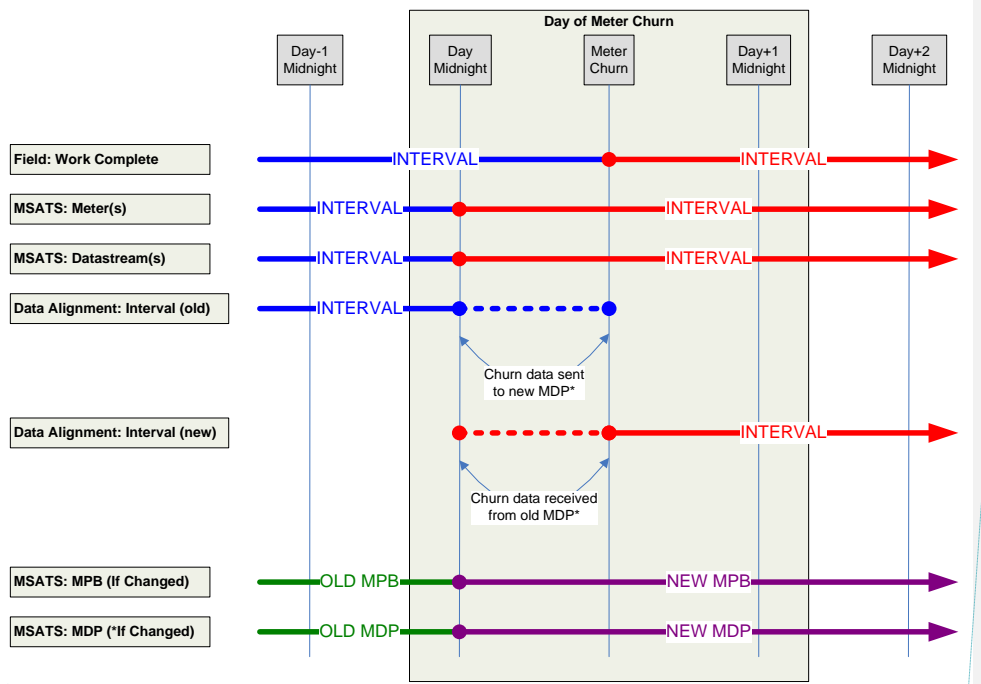
(a) The Metering Data Provider must have a process to ensure that:

- i. the final reading(s) from the removed type 1, 2, 3, 4, or 5 metering installation is applied up to the commissioning of the new metering installation on the day of the Meter Churn;
- ii. the start reading(s) for the new type 1, 2, 3, 4, or 5 metering installation is applied from the commissioning of the new metering installation on the day of the Meter Churn;
- iii. the Metering Data Provider, related to the new metering installation, must obtain metering data for the period of the Meter Churn day between the start of the Meter Churn day and the commissioning of the new metering installation from the Metering Data Provider related to the old metering

- installation and combine it with the *metering data* for the period of the *Meter Churn day* between the commissioning of the new *metering installation* up to the end of the *Meter Churn day*. The *Metering Data Provider* related to the new *metering installation* must deliver *metering data* for the whole day of *Meter Churn*.
- iv. where *Meter Churn* results in a change to the recording of *metering data* from 15 minute to 30 minute intervals, the 15 minute intervals of *metering data* from the start of the *Meter Churn day* until the commissioning of the new *metering installation* are to be aggregated to form 30 minute *interval metering data*;
 - v. where *Meter Churn* results in a change to the recording of *metering data* from 30 minute to 15 minute intervals, the 15 minute intervals of *metering data* from the commissioning of the new *metering installation* to the end of the *Meter Churn day* are to be aggregated to form 30 minute *interval metering data*;
 - vi. *estimated metering data* is provided for any data streams made active as a result of the *Meter Churn*, for a new type 5 *metering installation*;
 - vii. where *Meter Churn* results in a data stream(s) being made active, the *Metering Data Provider* related to the new *metering installation* must provide *metering data* from the start of the day to the commissioning of the new *metering installation* by providing zeroes with a quality flag of F; and
 - viii. where *Meter Churn* results in a data stream(s) being made inactive, the *Metering Data Provider* related to the new *metering installation* must provide *metering data* from the commissioning of the new *metering installation* to the end of the day by providing zeroes with a quality flag of F.
- (b) Where the *Metering Data Provider* is changing as a result of the *Meter Churn*, the *Metering Data Provider* must have a process to ensure that:
- i. for the removal of type 1, 2, 3, or 4 *metering equipment*, the old *Metering Data Provider* must provide the new *Metering Data Provider* with the final *metering data* from the removed *metering equipment* in accordance with section 6 of this Procedure;
 - ii. for the removal of type 5 *metering equipment*, the old *Metering Data Provider* must provide the new *Metering Data Provider* with the final *metering data* from the removed *metering equipment* within 25 *business days* of receiving the *meter change notification* from the *Metering Provider*;
 - iii. where *metering data* is not available for the whole day of *Meter Churn*, *metering data* is substituted, in accordance with the *metrology procedure: Part B*, for the day of *Meter Churn* until actual *metering data* becomes available. This ensures continuity of *metering data* for the day of *Meter Churn*;
 - iv. the *Metering Data Provider* role change in MSATS is effective on the day of *Meter Churn*.
- (c) Where the *Metering Data Provider* is changing as a result of the *Meter Churn* and there is a delay in the change of the *Metering Data Provider* role in MSATS:
- i. the old *Metering Data Provider* must provide substituted *metering data* in accordance with the *metrology procedure: Part B* with a quality flag of 'S' and a reason code of 37 (meter under churn) in the MDFF until the new *Metering Data Provider* becomes the *Metering Data Provider* in MSATS; and
 - ii. the new *Metering Data Provider*, when it becomes the *Metering Data Provider* in MSATS, must provide actual *metering data* for the period of substitution in (c)(i) above.

(d) Figure 5 below provides an overview of this scenario:

Scenario 4 – Interval meter replaced with a new interval meter



Field Code Changed

8.9 System architecture & administration

8.19.1 Data archival and recovery

8.1.19.1.1 The *Metering Data Provider* must ensure that their *metering register* information and *metering data* is accessible, online and archived in accordance with clause 7.11.3 of the *Rules*.

8.1.29.1.2 The *Metering Data Provider* must have retrieval mechanisms that allow the archived *metering data* to be recovered, re-evaluated and delivered in agreed timeframes to *AEMO* and *Registered Participants*.

8.29.2 Data backup

8.2.29.2.1 All *metering data* and *metering register* information must be backed-up at a minimum on a daily basis and held in a secure environment.

8.39.3 Disaster recovery

8.3.19.3.1 The *Metering Data Provider* must ensure that a Disaster Recovery Plan is established and in place to ensure that in the event of a system failure, the system can be returned to normal operational service within two *business days*.

8.3.29.3.2 The *Metering Data Provider* must ensure that the Disaster Recovery Plan is:

- (a) up to date with all documentation showing revisions; and
- (b) witnessed and dated at least annually by the *Metering Data Provider* as being current for the systems and processes in place.

8.3.39.3.3 Where the *Metering Data Provider* adopts a Disaster Recovery Plan that has a complete 'fail-over' system approach, the Disaster Recovery Plan must be subjected to a test annually that facilitates a full 'fail-over' to the recovery system.

8.3.49.3.4 Where the *Metering Data Provider* adopts a Disaster Recovery Plan that has a segmented system approach, the Disaster Recovery Plan must:

- (a) detail the interfaces and relationships between system segments;
- (b) be established for each individual system segment;
- (c) be tested annually with evidence retained to show disaster recovery for each individual system segment; and
- (d) have, for each individual system segment, a procedure that clearly details the process to establish a return to full operation.

8.3.59.3.5 Expected evidence to support Disaster Recovery Plan testing should include, but not be limited to:

- (a) a Test Plan of the fail-over;
- (b) results of the fail-over including timing;
- (c) system logs indicating fail-over and recovery; and
- (d) logs or notations evidencing resumption of *Metering Data Provider* operations.

8.3.69.3.6 In the event a system failure does occur, the *Metering Data Provider* must ensure that:

- (a) the *Metering Data Provider's metering data services database* is restored to operational service within two *business days*; and
- (b) all processing and delivery backlogs of *metering data* to AEMO and *Registered Participants* is completed within the same two *business days* in 8.3.6(a) above.

8.3.79.3.7 The *Metering Data Provider* must at its earliest opportunity notify AEMO of any failure where the *Metering Data Provider* has a requirement to implement its established Disaster Recovery Plan.

8.49.4 System administration and data management

8.4.19.4.1 The *metering data services database* must be operated and administered to facilitate:

- (a) controlled access to systems and data using unique identification and passwords for each user;
- (b) the restriction of access to the underlying database tables to nominated System Administrators;
- (c) the restriction of *Registered Participant* access to *metering data* and relevant *CATS Standing Data* provided via reports, based on the relationships defined in the *metering register* and in accordance with clause 7.7 of the *Rules*; and
- (d) a minimum of 95% system availability (i.e. hardware and systems downtime do not exceed a maximum of 438 hours per annum).

8.4.29.4.2 The *Metering Data Provider* must maintain full audit trails and version control of *metering register* information, *metering data* and relevant *CATS Standing Data* for a minimum of seven years so that any data output produced by the system can be re-produced from source data.

9.5 Non-public telecommunications networks

9.5.1 The use of a non-public *telecommunications network* for the collection of *metering data* by a *Metering Data Provider* is subject to approval by AEMO.

9.5.2 The *Metering Data Provider* must provide, to the reasonable satisfaction of AEMO, information demonstrating that the use of the non-public *telecommunications network* enables the *Metering Data Provider* to meet the requirements of the *Rules, metrology procedure: Part A, metrology procedure: Part B* and this Service level procedure, which must include, but not be limited to:

- (a) obtaining and maintaining compliance with the relevant recognised technical standards and licensing authority requirements;
- (b) obtaining and maintaining appropriate software licences to operate the non-public *telecommunications network*;
- (c) the implementation and nature of security controls for the ongoing operation and management of the non-public *telecommunications network*;
- (d) available bandwidth that supports the collection and management of *metering data*;

(e) disaster recovery provisions related to:

- i. non-public *telecommunications network* redundancy;
- ii. alternative *metering data collection* arrangements during failure of all or part of the non-public *telecommunications network*; and
- iii. time synchronisation of *metering installations* operated through the non-public *telecommunications network*.

(f) processes for the commissioning of *metering installations* and provision for commissioning failure management;

(g) installation and maintenance of the non-public *telecommunications network*, including:

- i. compliance with relevant safety standards and work practices;
- ii. **compliance with telecommunications technical standards;** and
- iii. training and skill requirements of installation and maintenance personnel.

910 Quality control

9.4.10.1 Scheduled Metering Data audits

9.4.10.1.1 The *Metering Data Provider* must undertake all services in a manner that is auditable, and must support scheduled reviews of their *metering data service database*, processes, procedures and systems.

9.4.10.1.2 AEMO will undertake periodic certification reviews, to a negative assurance level of the *Metering Data Provider's metering data service database*, processes, procedures and systems to assess the *Metering Data Provider's* compliance with the *Rules*, Procedures under the *Rules* and this Service Level Procedure.

9.4.10.1.3 All scheduled reviews will be through a centralised review process established by AEMO and will be undertaken at the *Metering Data Provider's* own costs.

9.4.10.1.4 Where a review is conducted under this Service Level Procedure, the *Metering Data Provider* must, at its own cost, provide all reasonable assistance including making databases, equipment and premises available for inspection, making personnel available for questioning, and providing copies of any data or information as requested.

9.4.10.1.5 Scheduled reviews of the *Metering Data Provider's* system will be as follows:

- (a) the first audit to be nominally within six months after accreditation;
- (b) subsequent audits will be nominally six monthly; or
- (c) at AEMO's discretion, at twelve month intervals based on previous satisfactory audit reviews of the *Metering Data Provider*.

9.4.10.1.6 AEMO must provide the *Metering Data Provider* a minimum of:

- (a) 30 *business days'* notification prior to a scheduled review; and
- (b) 15 *business days'* notification for the provision of any specific data requests as part of the audit.

9.210.2 Other audits

9.2.410.2.1 Audits may be undertaken at any time by AEMO in accordance with *Rules* requirements and may be carried out following a request from a *Registered Participant*.

9.2.210.2.2 Where an audit of a *metering installation* is conducted by AEMO under clause 7.6.3 (d) of the *Rules*, and *metering data* must be obtained from the *Metering Data Provider* in support of this audit, the *Metering Data Provider* must provide the *metering data* within two *business days* of AEMO's request.

9.2.310.2.3 The *Metering Data Provider* must assist AEMO with reasonable requests for the provisioning of *metering data* and relevant *CATS Standing Data* information relating to *connection points* that are part of the market audit process of AEMO, *responsible persons*, *Metering Providers* and *Metering Data Providers*.

9.310.3 Corrective action

9.3.410.3.1 The *Metering Data Provider* must take corrective action on any reported instances of non-compliance identified by AEMO or through the *Metering Data Provider* audit process.

9.3.210.3.2 Where the *Metering Data Provider* becomes aware that incorrect *metering data* has been delivered to AEMO and *Registered Participants*, the *Metering Data Provider* must provide corrected *metering data* to all affected parties within one *business day* as required by clause 7.11.3 (e) of the *Rules*.

9.3.310.3.3 AEMO may request corrective action where errors or omissions are found within AEMO's *settlements* process and such requests are to be actioned as a priority by the *Metering Data Provider*.

9.3.410.3.4 Where the *Metering Data Provider* cannot deliver the corrected *metering data* in the timeframe specified above, the *Metering Data Provider* must advise AEMO and agree on an alternate delivery time.

9.410.4 Non-compliance and de-registration

9.4.410.4.1 The 'Service Provider Compliance Assessment and Deregistration Procedure' (established under clause 7.4.3 (a) of the *Rules*) shall be used by AEMO in any assessment of a non-conformance or breach by a *Metering Data Provider* to remain compliant with the *Rules*, any procedure authorised under the *Rules* or this Service Level Procedure.

9.4.210.4.2 Subject to the assessed breach level as defined within the 'Service Provider Compliance Assessment and Deregistration Procedure', actions that may be taken by AEMO in the event that the *Metering Data Provider* has failed to take corrective action, includes:

- (a) loss of accreditation of the *Metering Data Provider*;
- (b) deregistration from categories of accreditation;

- (c) suspension from operation in the *National Electricity Market*;
- (d) other applied limitation or level of restriction; or
- (e) any combination of the above.

9.510.5 Review of accreditation

9.5.10.5.1 Circumstances where *AEMO* may require a *Metering Data Provider* to review its accreditation and subsequently apply for re-accreditation include:

- (a) where a *Metering Data Provider* has been de-registered and seeks re-registration;
- (b) where a *Metering Data Provider* has been suspended from providing services under certain categories and seeks to have the suspension lifted;
- (c) subsequent to changes to *Rules* requirements, Procedures under the *Rules*, or service level procedures. This is likely to apply in instances where *Rules* changes have been made or new versions of the *Metrology Procedure* have been issued which require significant functional system, process or procedural changes to be made by *Metering Data Providers*;
- (d) significant changes or upgrades to a *Metering Data Provider's* existing systems, [telecommunications](#) ~~or~~ [network](#) or a system platform change to any part of the *metering data service database*. The *Metering Data Provider* must apply and be re-accredited prior to implementing the changes into their production environment and accepting or transmitting any market transactions, in accordance with the Metering Service Provider Accreditation Procedure;
- (e) organisational mergers and acquisitions; and
- (f) under circumstances relating to clause 5.2 of this procedure

4011 Administration

40.111.1 Bilateral agreements

40.1.111.1.1 A *Registered Participant* may request the *Metering Data Provider* to:

- (a) provide *metering data* in an alternate format; and/or
- (b) deliver *metering data* by an alternate method; and/or
- (c) deliver *metering data* in an alternate time frame; and/or
- (d) provide any other *metering data services*.

40.1.211.1.2 Pursuant to clause [11.1.140.1.4](#) of this procedure, there is no mandated requirement for a *Metering Data Provider* to implement system changes and processes to facilitate bilateral agreements.

40.1.311.1.3 Any acceptance by the *Metering Data Provider* to deliver *metering data* to a *Registered Participant* in accordance with clause [11.1.140.1.4](#) of this procedure must not impact on *metering data* delivery to AEMO or any other *Registered Participant* for the *connection point(s)* concerned.

40.1.411.1.4 Any bilateral agreement established between the *Registered Participant* and the *Metering Data Provider* must be supported in writing for [service level procedure](#) audit compliance purposes.

40.211.2 Quality systems

40.2.411.2.1 The *Metering Data Provider* must operate and retain a quality system that meets clause S7.6.3 of the *Rules* to the satisfaction of AEMO, which is at least equal to a quality accreditation to the ISO9001 or ISO9002 standards.

40.311.3 Disputes

40.3.411.3.1 If a dispute arises between the *Metering Data Provider* and AEMO, a *Registered Participant*, a *Metering Provider* or any other *Metering Data Provider*, in relation to the provision of *metering data services* or this [service level procedure](#) [Service Level Procedure](#), then the Dispute Resolution process as detailed clause 8.2 of the *Rules* shall apply.