STANDING DATA FOR MSATS

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VERSION RELEASE HISTORY

Version	Effective Date	Summary of Changes
4.0	Aug 2009	Update to AEMO Format
4.1	19/04/2012	Updates to NMI Data tables to include Feeder Class, Customer Classification Code & Customer Threshold Code and minor data corrections.
4.2	28/08/2013	Updated wording for Nx suffixes in sections 8, 9 and 12. Updated reference to the CATS procedures for Embedded Networks in section 7. Added new data stream type codes under section 11: Reference Tables. Updated reference to the NEM Metrology Procedures in section 15.
4.3	01 December 2017	Updated to incorporate: • National Electricity Amendment (Expanding competition in metering and related services) Rule 2015. No.12; • National Electricity Amendment (Embedded Networks) Rule 2015 No. 15; and • National Electricity Amendment (Meter Replacement Processes) Rule 2016 No. 2.
4.4	01 December 2017	Final Version
		This version of the guideline is not yet effective. AEMO will provide participants with at least 8 months' notice prior to the effective date.

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TABLES

1. INTRODUCTION

1.1. Purpose and scope

This document details the data requirements for the various data elements comprising the CATS Standing Data stored for each *NMI*, together with relevant examples and definitions.

1.2. Definitions and interpretation

The Retail Electricity Market Procedures – Glossary and Framework:

a) is incorporated into and forms part of this document; and

b) should be read with this document.

1.3. Related documents

Title	Location
Retail Electricity Market Procedures – Glossary and Framework	http://aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Glossary-and-Framework
CATS Procedures	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Market-Settlement-and-Transfer-Solutions
WIGS Procedures	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Market-Settlement-and-Transfer-Solutions
MDM Procedures	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Market-Settlement-and-Transfer-Solutions
MSATS CATS history Model	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Market-Settlement-and-Transfer-Solutions
MSATS guides	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Market-Settlement-and-Transfer-Solutions

2. BACKGROUND

The five MSATS master tables contain the standing data stored for each *NMI*. They are the following:

Table 1 MSATS Master Tables

Table	Summary of Contents
CATS_NMI_DATA	Address, TNI Code, DLF Code, aggregate flag, embedded network names, Jurisdiction, NMI status code, etc
CATS_NMI_PARTICIPANT_RELATIONS	Roles and associated Participants. Separate records are maintained for each Role/Participant relationship.
CATS_NMI_DATA_STREAM	Suffix, ADL Code, Profile Name, Datastream type and datastream status of each MDM Datastream.
CATS_METER_REGISTER	Meter Serial ID, meter type, meter manufacturer, test results, etc
CATS_REGISTER_IDENTIFIER	Meter Serial ID, Network Tariff Code, unit of measure etc

For a *NMI* to be capable of being used in MSATS, it must have the following minimum set of data:

- At least one record on the CATS_NMI_DATA table; and

- At least eight records on the CATS_NMI_PARTICIPANT_RELATIONS table, one for each of the mandatory roles (ROLR, LNSP, LR, RP, FRMP, MDP, MPC and MPB).

It will also normally have:

- At least one record on each of the CATS_METER_REGISTER and CATS_REGISTER_IDENTIFIER (there should be at least one record for each *meter* and register associated with the *NMI*) tables.

NMIs may or may not have:

- Records on the CATS_NMI_DATA_STREAM table. If *metering data* is to be submitted to MDM there must be at least one valid record on this table.

Every time a change is made to any of the data in any of these tables, the old records are made inactive and new records are created, thus ensuring that there is a complete history of all changes.

3. CONVENTIONS USED WITHIN THIS DOCUMENT

The format of the data fields in the 'Browser Format Column'' column of Tables is as defined in section 18.

The following information defines the coded entries in columns used in Tables 3 - 9.

3.1. Column Headed: Standing Data Required

The column indicates the requirement to provide this data to MSATS.

Table 2 Explanation of Standing Data Requirements

Requirement	Description
MANDATORY	Transfer, Validation or processing cannot proceed without this data.
REQUIRED	This data must be provided if this information is available.
OPTIONAL	This data is not required, but will be accepted if delivered.

3.2. NMIs Affected

Data must be provided for every *NMI* in MSATS. The *NMIs* that must be registered in MSATS are:

- Every First Tier NMI and Second Tier NMI in the NEM.
- Sample meters for non-NSLP profile calculations and embedded generating units for NSLP calculations.
- Every wholesale connection point in the NEM, including generation, interconnectors and bulk supply points.

4. CATS_METER_REGISTER

The CATS_Meter_Register table is a NMI master table containing data that is stored at the Meter Register level. Information stored at this level includes the NSRD. It is updated whenever a Change Request containing inbound Meter Register data is completed.

Note: References to 'LNSP' include the ENM for *child connection points*.

Table 3 CATS_METER_REGISTER

Data Element Name	Description	Standing Data Required	Party to Provide
CurrentTransformerLocation	A free text field to indicate the location of the current transformer at the site.	REQUIRED NOT USED for BULK, XBOUNDRY and INTERCON	MPB
CurrentTransformerType	Whether the current transformer at the metering installation is single phase or three phase. This value must correspond to a valid Current Transformer Type value in the Valid Transformer Fields values reference table listed in section 11.	REQUIRED NOT USED for BULK, XBOUNDRY and INTERCON	MPB
CurrentTransformerRatio	The ratio of the current transformer at the metering installation. This value must correspond to a valid Current Transformer Ratio value in the Valid Transformer Fields values reference table listed in section 11.	REQUIRED NOT USED for BULK, XBOUNDRY and INTERCON	MPB
CurrentTransformerAccuracyClass	The accuracy class of the current transformer at the metering installation. This value must correspond to a valid Current Transformer Accuracy Class value in the Valid Transformer Fields values reference table listed in section 11.	REQUIRED NOT USED for BULK, XBOUNDRY and INTERCON	MPB
CurrentTransformerTest	Type of test performed on metering installation with Current Transformer which can be one of the following: • Tested (definition – part of 100% testing) • Sample Tested (definition – tested as part of a sample plan) • Sample (definition – part of an approved sample plan)	REQUIRED NOT USED for BULK, XBOUNDRY and INTERCON	MPB

Data Element Name	Description	Standing Data Required	Party to Provide
CurrentTransformerSampleFamilyID	Sample Family ID for metering installation with Current Transformer, required as part of a family within an approved sample plan	REQUIRED NOT USED for BULK, XBOUNDRY and INTERCON	MPB
CurrentTransformerTestDate	A date that represents actual test date for metering installations with Current Transformer tested or date represents family expiry date for those included in an approved sample plan.	REQUIRED NOT USED for BULK, XBOUNDRY and INTERCON	MPB
GPSCoordinatesLat	GPS coordinates Latitude (to five decimal places) of the *metering installation* (not of the site). Mandatory for: • All meters where the site postcode is a "Designated regional area postcode". • All MRIM meters. • All new installations. Required for any interval meters that are not MRIM. Optional for all other meters.	MANDATORY as per the description REQUIRED as per the description OPTIONAL as per the description	MPB
GPSCoordinatesLong	GPS coordinates Longitude (to five decimal places) of the *metering installation* (not of the site). Mandatory for: • All meters where the site postcode is a "Designated regional area postcode". • All MRIM meters. • All new installations. Required for any interval meters that are not MRIM. Optional for all other meters.	MANDATORY as per the description REQUIRED as per the description OPTIONAL as per the description	MPB
LastTestDate	The date on which the *metering installation* was last tested or inspected by the Metering Provider "B". This date will be used if clause 7.9.4(a) of the NER needs to be applied.	REQUIRED	MPB

Data Element Name	Description	Standing Data Required	Party to Provide
Hazard	Free text or code identifying hazards on the site associated with reading, maintaining or installing the *meter*. If the following are present at the *metering installation*, they should be listed in this field: Asbestos	REQUIRED	MPB
InstallationTypeCode	The Metering Installation Type Code indicates whether the *metering installation* has to be manually read. This value must correspond to a valid MeterInstallCode in the Meter Installation Codes reference table listed in section 11.	MANDATORY	MPB
Location	Free text descriptive material identifying the relationship between the location of the *metering point* and the *connection point*.	REQUIRED	MPB
Manufacturer	Field to identify the manufacturer of the installed *meter*. This field will be an enumerated list of values corresponding to current Meter Manufacturers in the industry with an option of UNKNOWN	MANDATORY	MPB
Model	Field to identify the *meter* manufacturer's designation for the *meter* model. This field will be an enumerated list of values corresponding to current Meter Models in the industry with an option of UNKNOWN	MANDATORY	MPB

Data Element Name	Description	Standing Data Required	Party to Provide
ReadTypeCode	Code to denote the method and frequency of Meter Reading. First Character = Remote (R) or Manual (M); Second Character = Mode T = telephone W = wireless P = powerline I = infra-red G = galvanic V = visual Third Character = Frequency of Scheduled Meter Readings 1 = Twelve times per year 2 = Six times per year 3 = Four times per year D = Daily or weekly Fourth Character = o A – 5 minute o B – 15 minute o C – 30 minute o D - Metering installation de-energised, cannot convert to 5-minute o M - Manually Read Accumulation Meter For example, MV3M = Manual, Visual, Quarterly,Manually Read Accumulation Meter; RWDC = Remote, Wireless, Daily, 30 minutes interval.	REQUIRED	MPB
SerialNumber	The Meter Serial ID uniquely identifies a *meter* for a given *NMI*. Maximum 12 Characters (alpha numeric). Unique for *NMI*. Use dummy for UMCP (Type 7) and logical (meters). Except for UMCP and logical, SerialNumber should be as displayed on the physical device (also known as property number). SerialNumber to be property number if exists, otherwise the *meter* manufacturer's serial number, otherwise dummy number.	MANDATORY	MPB

Data Element Name	Description	Standing Data Required	Party to Provide
Status	A code to denote the status of the *meter*. This value must correspond to a valid ElectricityMeter/Status in the Meter and RegisterID Codes reference table listed in section 11.	MANDATORY	MPB
Use	A code identifying how the *meter* is used. This value must correspond to a valid Meter Use value in the Valid Meter Use Codes reference table listed in section 11.	REQUIRED	MPB
NextScheduledReadDate	Indicates the Scheduled Next Read Date for the *meter* if a manual Meter Reading is required.	MANDATORY for manually read meters and Type 7 metering installations and NOT USED for remotely read meters	MPB initially, then MDP for updates
NMI	*NMI*. This number is unique for each *connection point* within the *NEM*.	MANDATORY	LNSP
TestResult	The result from the test perfomed on the date indicated in the LastTestDate field. This value must correspond to a valid Test Result value in the Valid Test Result Codes reference table listed in section 11.	REQUIRED	MPB
VoltageTransformerLocation	A free text field to indicate the location of the voltage transformer at the site.	REQUIRED NOT USED for BULK, XBOUNDRY and INTERCON	MPB
VoltageTransformerType	Whether the voltage transformer at the metering installation is single phase or three phase. This value must correspond to a valid Voltage Transformer Type value in the Valid Transformer Fields values reference table listed in section 11.	REQUIRED NOT USED for BULK, XBOUNDRY and INTERCON	MPB
VoltageTransformerRatio	The ratio of the voltage transformer at the metering installation. This value must correspond to a valid Voltage Transformer Ratio value in the Valid Transformer Fields values reference table listed in section 11.	REQUIRED NOT USED for BULK, XBOUNDRY and INTERCON	MPB
VoltageTransformerAccuracyClass	The accuracy class of the voltage transformer at the metering installation. This value must correspond to a valid Voltage Transformer Type value in the Valid Transformer Fields values reference table listed in section 11.	REQUIRED NOT USED for BULK, XBOUNDRY and INTERCON	MPB

Data Element Name	Description	Standing Data Required	Party to Provide
VoltageTransformerTest	Type of test performed on metering installation with Voltage Transformer which can be one of the following: • Tested (definition – part of 100% testing) • Sample Tested (definition – tested as part of a sample plan) • Sample (definition – part of an approved sample plan)	REQUIRED NOT USED for BULK, XBOUNDRY and INTERCON	MPB
VoltageTransformerSampleFamilyID	Sample Family ID for metering installation with Voltage Transformer, required as part of a family within an approved sample plan	REQUIRED NOT USED for BULK, XBOUNDRY and INTERCON	MPB
VoltageTransformerTestDate	A date that represents actual test date for metering installation with Voltage Transformer tested or date represents family expiry date for those included in an approved sample plan.	REQUIRED NOT USED for BULK, XBOUNDRY and INTERCON	MPB
FromDate	Start date of the record. This indicates the date on which the parameters of this particular record apply from. The data applies from the beginning of this date (the start of the day, i.e. 00:00).	MANDATORY	Participant sending transaction
ToDate	End date of the record. This indicates the date on which the parameters of this particular record end. The data applies until the end of this date (the end of the day, i.e. 23:59). A default date of 9999-12-31 is recorded if EndDate is not provided.	MANDATORY (Defaults to high date unless supplied)	System generated unless supplied.
RowStatus	Indicates whether the record is active or inactive. Whenever a new record is created, it will be A (Active). A change to the data will make this record redundant and its MaintActFlg is changed to I (Inactive).	MANDATORY	System generated
MaintenanceDate	Date and time the record was updated. A default date of 9999-12-31 is used when the record is created initially. If the record is subsequently updated, its MaintUpdtDt is changed to the date and time the record was updated.	MANDATORY	System generated
CreationDate	Date and time the record was created.	MANDATORY	System generated

5. CATS_DLF_CODES

The CATS_DLF_Codes table contains a list of DLF Codes and their relevant values. The StartDate and DLFCode fields will need to be provided for *settlements* calculations.

Note: References to 'LNSP' include the ENM for child *connection points*.

Table 4 CATS_DLF_CODES

Data Element Name	Description	Standing Data Required	Party to Provide
DistributionLossFactorCode	A four character alpha-numeric code used to identify DLF values. All *NMIs* must be assigned a DLF Code. Refer to AEMO Distribution Loss Factor documents for each financial year..	MANDATORY	AEMO
DistributionLossFactorDescription	Description of the DLF Code and value.	MANDATORY	AEMO
DistributionLossFactor Value	Numeric value up to 5 decimal places, reflecting the value of the DLF Code.	MANDATORY	AEMO
JurisdictionCode	Jurisdiction code to which the *NMI* belongs. This value must correspond to a valid JurisdictionCode in the Jurisdiction Codes reference table in section 11.	MANDATORY	AEMO
RowStatus	Indicates whether the DLF Code is active or inactive. Whenever a new record is created, it will be A (Active). A change to the data will make this record redundant and its MaintActFlg is changed to I (Inactive).	MANDATORY	System generated
FromDate	Start date of the record. This indicates the date on which the parameters of this particular record apply from. The data applies from the beginning of this date (the start of the day, i.e. 00:00).	MANDATORY	AEMO
ToDate	End date of the record. This indicates the date on which the parameters of this particular record end. The data applies until the end of this date (the end of the day, i.e. 23:59). A default date of 9999-12-31 is recorded if EndDate is not provided.	MANDATORY	System generated
MaintenanceDate	Date and time the record was updated. A default date of 9999-12-31 is used when the record is created initially. If the record is subsequently updated, its MaintUpdtDt is changed to the date and time the record was updated.	MANDATORY	System generated
CreationDate	Date and time the record was created.	MANDATORY	System generated

6. CATS_EMB_NET_ID_CODES

The CATS_EMB_NET_ID_CODES table contains embedded network identifier codes, which are used to identify which *embedded network* a *NMI* belongs to, either as a Parent NMI or a Child NMI.

Note: References to 'LNSP' include the ENM for *child connection points*.

Table 5 CATS_EMB_NET_ID_CODES

Data Element Name	Description	Standing Data Required	Party to Provide
EmbeddedNetwork Identifier	Embedded Network Code. Refer to Allocation of Embedded Network Codes for further details.	MANDATORY	AEMO
EmbeddedNetwork Description	Description of embedded network identifier.	MANDATORY	AEMO
SuburbOrPlaceOrLocality	Locality to which the embedded network identifier belongs.	MANDATORY	AEMO
PostCode	Postcode for the locality to which the embedded network identifier belongs.	MANDATORY	AEMO
StateOrTerritory	State or Territory abbreviation in accordance with AS 4590.	MANDATORY	AEMO
RowStatus	Indicates whether the code is active or inactive. Whenever a new record is created, it will be A (Active). A change to the data will make this record redundant and its MaintActFlg is changed to I (Inactive).	MANDATORY	System generated
FromDate	Start date of the record. This indicates the date on which the parameters of this particular record apply from. The data applies from the beginning of this date (the start of the day, i.e. 00:00).	MANDATORY	AEMO
ToDate	End date of the record. This indicates the date on which the parameters of this particular record end. The data applies until the end of this date (the end of the day, i.e. 23:59). A default date of 9999-12-31 is recorded if EndDate is not provided.	MANDATORY	System generated
MaintenanceDate	Date and time the record was updated. A default date of 9999-12-31 is used when the record is created initially. If the record is subsequently updated, its MaintUpdtDt is changed to the date and time the record was updated.	MANDATORY	System generated
CreationDate	Date and time the record was created.	MANDATORY	System generated

7. CATS_NMI_DATA

The CATS_NMI_DATA table records Master NMI Record data information. It is updated whenever a Change Request containing data in the CATS_INBOUND_NMI_DATA table is completed.

Note: References to 'LNSP' include the ENM for *child connection points*.

Table 6 CATS_NMI_DATA

Data Element Name	Description	Standing Data Required	Party to Provide
NMI	*NMI*. All alpha characters are Upper Case	MANDATORY	LNSP
NMI ClassificationCode	Code used to indicate the NMI Classification Code of this *NMI*. This value must correspond to a valid NMIClassCode value in the NMI Class Codes reference table listed in section 11.	MANDATORY	LNSP
MasterData/ StatusCode	Code used to indicate the status of the *NMI*. This value must correspond to a valid MasterData/Status value in the NMI Status Codes reference table listed in section 11.	MANDATORY	LNSP
TransmissionNode Identifier	This value must correspond to a valid code in the CATS_TNI_Codes table.	MANDATORY	LNSP
TransmissionNode Identifier2	TNI Code assigned, by AEMO, to a distribution network into which energy normally flows through a connection point between adjacent distribution networks that has a single NMI. This value must correspond to a valid code in the CATS_TNI_Codes table.	REQUIRED	AEMO
SharedIsolationPointFlag	A flag (Yes, No or Unknown) to indicate whether the *metering installation* has a shared fuse. Valid values are Y, N or U, e.g. "Y" indicates that a shared fuse is present.	MANDATORY	LNSP
MeterMalfunctionExemption Number	The exemption number granted by AEMO when a meter malfunction exemption is granted.	REQUIRED	AEMO
MeterMalfunctionExemption ExpiryDate	The end date of the malfunction exemption.	REQUIRED	AEMO
JurisdictionCode	Jurisdiction code to which the *NMI* belongs. This code defines the jurisdictional rules which apply to the transfer of this *NMI*. This value must correspond to a valid JurisdictionCode value in the Jurisdiction Codes reference table listed in section 11.	MANDATORY	LNSP
DistributionLoss FactorCode	Distribution Loss Factor Code. Must be a valid code in the CATS_DLF_Codes table.	MANDATORY	LNSP
ConnectionConfiguration	Four-character code to denote information about the configuration of the connection point. First Character = Connection Type H = *High voltage* (as defined in the NER)	MANDATORY	LNSP

	L = Low voltage (lower than the threshold defined for *high voltage* in the NER) Second Character = Phases In Use 1 = Single Phase 2 = Two-Phase 3 = Three-Phase Third Character = Presence of CT C = Current Transformer Present N = No Current Transformer Present Fourth Character = Presence of VT V = Voltage Transformer Present N = No Voltage Transformer Present		
ChildEmbedded NetworkIdentifier	The embedded network identifier code is used to identify which embedded network this given *NMI* is the 'child of'. (If on a NMI record this field is not populated, it is assumed the *NMI* is not the child of any other *NMI*.) Must be a valid code within the CATS_Emb_Net_ID_Codes table. This field cannot be used unless the Parent NMI has been created and assigned an embedded network identifier code. Refer section 30.4.a of the CATS Procedure.	REQUIRED	LNSP
ParentEmbedded NetworkIdentifier	The embedded network identifier code is used to identify which *embedded network* this given *NMI* is the 'parent of'. (If on a NMI record this field is not populated, it is assumed the *NMI* is not the parent of any other *NMI*.) Must be a valid code within the CATS_Emb_Net_ID_Codes table.	REQUIRED	LNSP
BuildingOrProperty Name	A free text description of the full name used to identify the physical building or property as part of its location.	REQUIRED	LNSP
LotNumber	The lot reference number allocated to an address prior to street numbering. The word 'LOT' is not required.	REQUIRED	LNSP
FlatOrUnitNumber	Specification of the number of the flat or unit which is a separately identifiable portion within a building/complex.	REQUIRED	LNSP
FlatOrUnitType	Specification of the type of flat or unit which is a separately identifiable portion within a building/complex. This value must correspond to a valid Flat Type Code, reference AS4590.	REQUIRED	LNSP
FloorOrLevelNumber	Floor Number is used to identify the floor or level of a multi-storey building/complex.	REQUIRED	LNSP
FloorOrLevelType	Floor Type is used to identify the floor or level of a multi-storey building/complex. This value must correspond to a valid Floor Type Code in the Floor Type Codes, reference AS4590.	REQUIRED	LNSP
HouseNumber	The numeric reference of a house or property. Specifically the house number.	REQUIRED	LNSP

HouseNumberSuffix	The numeric reference of a house or property. Specifically the single character identifying the house number suffix.	REQUIRED	LNSP
HouseNumberTo	The numeric reference of a house or property for scenarios where the address is similar to 4-10 Smith St. For example, HouseNumber = 4 and HouseNumberTo = 10 where the address is 4-10 Smith St.	REQUIRED	LNSP
StreetName	Records the thoroughfare name. See notes at end of table for more information on Structured Addresses	REQUIRED	LNSP
StreetSuffix	Records street suffixes. This value must correspond to a valid Street Suffix Code, reference AS4590.	REQUIRED	LNSP
StreetType	Records the street type abbreviation. This value must correspond to a valid Street Type Code, reference AS4590.	REQUIRED	LNSP
SuburbOrPlaceOrLocality	The full name of the general locality containing the specific address.	MANDATORY	LNSP
LocationDescriptor	A general field to capture various references to address locations alongside another physical location.	REQUIRED	LNSP
PostCode	The descriptor for a postal delivery area, aligned with locality, suburb or place.	MANDATORY	LNSP
StateOrTerritory	Defined State or Territory abbreviation.	MANDATORY	LNSP
GNAFPID	The Geocoded National Address File (G-NAF) Persistent Identifier (PID) for a given address.	REQUIRED	LNSP/ AEMO
SectionNumber	Section number would to identify a lot of land in NSW and ACT.	REQUIRED for NSW and ACT OPTIONAL in all other jurisidictions	LNSP
DPNumber	A deposited plan (DP) number corresponds to an image that defines the legal boundaries of a plot of land in NSW and ACT	REQUIRED for NSW and ACT OPTIONAL in all other jurisidictions	LNSP
DeliveryPointIdentifier	Delivery point identifier - the numeric descriptor for a postal delivery point which is equal to a physical address. The values are in the range 10000000 – 99999999.	REQUIRED	LNSP/ AEMO
Aggregate	This flag determines whether the energy at this *connection point* is to be treated as consumer *load* or as a *generating unit* (this may include *generator* auxiliary loads). MSATS will initially set this field to "Y" This value must correspond to a valid Aggregate value in the Aggregate Codes reference table listed in section 11.	OPTIONAL	(Defaults to 'Y', AEMO updates to 'N' as required)

FromDate	Start date of the NMI Data record. This indicates the date on which the parameters of this particular NMI data record apply from. The data applies from the beginning of this date (the start of the day, i.e. 00:00).	MANDATORY	LNSP
ToDate	End date of the record. This indicates the date on which the parameters of this particular record end. The data applies until the end of this date (the end of the day, i.e. 23:59). A default date of 9999-12-31 is recorded if EndDate is not provided.	MANDATORY (Defaults to high date unless supplied)	System generated unless supplied.
RowStatus	Indicates whether the record is active or inactive. Whenever a new record is created, it will be A (Active). A change to the data will make this record redundant and its MaintActFlg is changed to I (Inactive).	MANDATORY	System generated
MaintenanceDate	Date and time the record was updated. A default date of 9999-12-31 is used when the record is created initially. If the record is subsequently updated, its MaintUpdtDt is changed to the date and time the record was updated.	MANDATORY	System generated
CreationDate	Date and time the record was created.	MANDATORY	System generated
Feeder Class	A code to provide Participants with information to indicate the appropriate service level timeframes for performing work in relation to Service Order Requests.	Required in QLD where relevant OPTIONAL in all other jurisidictions	LNSP
Customer Classification Code	A code that defines the consumer class as defined in the National Energy Retail Regulations, or in overriding Jurisdictional instruments	MANDATORY	Current FRMP
Customer Classification Threshold Code	A code that defines the consumption threshold as defined in the National Energy Retail Regulations, or in overriding Jurisdictional instruments.	MANDATORY	LNSP

8. CATS_NMI_DATA_STREAM

The CATS_NMI_Data_Stream table is a NMI master table containing data that is stored at the *NMI* Datastream level. Information stored at this level includes suffixes, profile name, average daily load etc. It is updated whenever a Change Request containing inbound Datastream data is completed.

Note: Data is only required for this table if the *NMI* is active in the NEM or is used for profile peel-off in accordance with the Metrology Procedure.

Note: References to 'LNSP' include the ENM for *child connection points*.

Table 7 CATS_NMI_DATA_STREAM

Data Element Name	Description	Standing Data Required	Party to Provide
NMI	*NMI*	MANDATORY	MDP LNSP
ElectricityDataStream/Suffix	Metering Datastream identifier (for MDM). Identifies the Datastream as delivered to AEMO for settlements purposes. The value must be a valid suffix for this *NMI* and is active for this date range. The value must comply with requirements of the NMI Procedure. If the MeterInstallCode is COMMSn, MRIM, MRAM, VICAMI or UMCP, the Suffix value must be in the form Nx where DataStreamType is I or P for an interval Datastream. If the MeterInstallCode is BASIC, the Suffix value must be numeric.	MANDATORY	MDP
ElectricityDataStream/Status	Code used to indicate the status of the suffix. This value must correspond to a valid StreamStatusCode in the Stream Status Codes reference table listed in section 11.	MANDATORY	MDP
AveragedDailyLoad	The *energy* delivered through a *connection point* or *metering point* over an extended period normalised to a "per day" basis (kWh).	MANDATORY	MDP
DataStreamType	Indicates the type of data that the the ElectricityDataStream / Suffix is recording. Profile data *meters* are: 1. For registering sample *meters* used for the calculation of profile shapes where the NMI and Datastream are not used for *settlements*. 2. For providing external profile shapes into MDM (external PPS). This value must correspond to a valid DataStreamType in the Data Stream Type Codes reference table listed in section 11.	MANDATORY	MDP
ProfileName	The Profile Name is a code that identifies the name of the algorithmically derived shape that is used to allocate a Datastream's consumption to TIs. This value must correspond to a valid code in the PROFILE table. For all Interval Meters and sample *meters*, this must be set to 'NOPROF'. For Accumulation Meters, refer to the MDM Profile for valid profile names. • In Victoria and the ACT, ProfileName must be NSLP. • In NSW, QLD and SA, ProfileName must be NSLP or the relevant controlled load profile. This value must correspond to a valid ProfileName value in the Profile Codes reference table listed in section 11.	MANDATORY	MDP

FromDate	Start date of the *NMI* data record. This indicates the date on which the parameters of this particular *NMI* data record apply from. The data applies from the beginning of this date (the start of the day, i.e. 00:00).	MANDATORY	Party sending transaction
ToDate	End date of the record. This indicates the date on which the parameters of this particular record end. The data applies until the end of this date (the end of the day, i.e. 23:59). A default date of 9999-12-31 is recorded if EndDate is not provided.	MANDATORY (Defaults to high date unless supplied)	System generated unless supplied.
RowStatus	Indicates whether the record is active or inactive. Whenever a new record is created, it will be A (Active). A change to the data will make this record redundant and its MaintActFlg is changed to I (Inactive).	MANDATORY	System generated
MaintenanceDate	Date and time the record was updated. A default date of 9999-12-31 is used when the record is created initially. If the record is subsequently updated, its MaintUpdtDt is changed to the date and time the record was updated.	MANDATORY	System generated
CreationDate	Date and time the record was created.	MANDATORY	System generated

9. CATS_REGISTER_IDENTIFIER

The CATS_Register_Identifier table contains data that is stored at the register identifier level. Information stored at this level includes the Network Tariff Code. It is updated whenever a Change Request containing inbound register identifier data is completed.

Note: References to 'LNSP' include the ENM for *child connection points*.

Table 8 CATS_REGISTER_IDENTIFIER

Data Element Name	Description	Standing Data Required	Party to Provide
NMI	*NMI*. This number is unique for each *connection point* within the NEM.	MANDATORY	LNSP
SerialNumber	The Meter Serial ID uniquely identifies a *meter* for a given *NMI*. Maximum 12 Characters (alpha numeric). Unique for *NMI*. Use dummy for UMCP (Type 7) and logical (*meters*). Except for UMCP and logical, MeterSerial should be displayed on physical device also known as property number).	MANDATORY	MPB

	SerialNumber to be property number if exists, otherwise the *meter* manufacturers' serial number, otherwise dummy number.		
RegisterID	The RegisterID is used to identify a data source that is obtained from the *meter*. A single *meter* may provide multiple data sources.	MANDATORY	MPB
NetworkTariffCode	The Network Tariff Code is a free text field required. The text must match the Network Tariff Codes supplied and published by the LNSP. Must be a valid code from the CATS_Network_Tariff_Codes table.	MANDATORY	MPB
NetworkAdditional Information	Free text field.	REQUIRED	MPB
UnitOfMeasure	Code to identify the unit of measure for data held in this register.	MANDATORY	MPB
TimeOfDay	Code to identify the time validity of register contents. As published by each LNSP. This value must correspond to a valid Time of Day value in the Time of Day Codes reference table listed in section 11.	MANDATORY	MPB
Multiplier	Multiplier required to take a register value and turn it into a value representing billable energy	MANDATORY	MPB
DialFormat	Describes the register display format. First number is the number of digits to the left of the decimal place, and the second number is the number of digits to the right of the decimal place.	MANDATORY	MPB
Suffix	Metering Datastream identifier (for MDM). Identifies each Datastream at the measurement element level for the *connection point* identified by the *NMI*. The value must be a valid suffix for this *NMI* and is active for this date range. The value must match the value provided in the MDFF File. The Suffix value must be unique for each *meter*. The value must comply with the NMI Procedure For interval data streams, the suffix will indicate the individual data streams contributing to the Nx Suffix value in the CATS_NMI_DataStream table. For basic data streams the value will be identical to the related Suffix value in the CATS_NMI_DataStream table.	MANDATORY	MPB
ControlledLoad	Indicates whether the *energy* recorded by this register is created under a Controlled Load regime ControlledLoad field will have "No" if register does not relate to a Controlled Load.If the register relates to a Controlled Load, it must correspond to a valid Controlled	MANDATORY	MPB

	Load value in the Controlled Load Codes reference table listed in section 11.		
RegisterDetail/ Status	Lookup code to indicate if register is active. Must ensure that RegisterDetail/Status is not Current (C) when ElectricityMeter/Status is Removed (R). This value must correspond to a valid RegisterDetail/Status from the Meter and RegisterID Codes reference table listed in section 11.	MANDATORY	MPB
ConsumptionType	Actual/Subtractive Indicator. Actual (A) implies volume of energy actually metered between two dates. Cumulative (C) indicates a Meter Reading for a specific date. A second Meter Reading is required to determine the consumption between those two Meter Reading dates. For an Interval Meter, ActCumInd = A. This value must correspond to a valid ConsumptionType from the Consumption Type Codes reference table listed in section 11.	MANDATORY	MPB
FromDate	Start date of the *NMI* data record. This indicates the date on which the parameters of this particular *NMI* data record apply from. The data applies from the beginning of this date (the start of the day, i.e. 00:00).	MANDATORY	Participant sending transaction
ToDate	End date of the record. This indicates the date on which the parameters of this particular record end. The data applies until the end of this date (the end of the day, i.e. 23:59). A default date of 9999-12-31 is recorded if EndDate is not provided.	MANDATORY (Defaults to high date unless supplied)	System generated unless supplied.
RowStatus	Indicates whether the record is active or inactive. Whenever a new record is created, it will be A (Active). A change to the data will make this record redundant and its MaintActFlg is changed to I (Inactive).	MANDATORY	System generated
MaintenanceDate	Date and time the record was updated. A default date of 9999-12-31 is used when the record is created initially. If the record is subsequently updated, its MaintUpdtDt is changed to the date and time the record was updated.	MANDATORY	System generated
CreationDate	Date and time the record was created.	MANDATORY	System generated

10. CATS_NMI_PARTICIPANT_RELATIONS

The CATS_NMI_Participant_Relations table is a NMI master table containing data that stores the Roles that Participants play for each *NMI*. It is updated whenever a Change Request containing inbound Roles is completed. Each Role record, which contains a single Role code and a single Participant ID, has a start date and an end date, as well as information about when it was created and when it became inactive if it is no longer an active record.

Note: References to 'LNSP' include the ENM for *child connection points*.

Table 9 CATS_NMI_PARTICIPANT_RELATIONS

Data Element Name	Description	Standing Data Required	Party to Provide
Party	The Participant ID whose relationship (Role) with the *NMI* is defined in this table.	MANDATORY	LNSP
NMI	*NMI*. This number is unique for each *connection point*.	MANDATORY	LNSP
Role	This defines the relationship (Role) of the Participant with the *NMI* in this table.	MANDATORY	LNSP
FromDate	Start date of the record. This indicates the date on which the parameters of this particular record apply from. The data applies from the beginning of this date (the start of the day, i.e. 00:00).	MANDATORY	Party sending transaction
ToDate	End date of the record. This indicates the date on which the parameters of this particular record end. The data applies until the end of this date (the end of the day, i.e. 23:59). A default date of 9999-12-31 is recorded if EndDate is not provided.	MANDATORY (Defaults to high date unless supplied)	System generated unless supplied.
RowStatus	Indicates whether the record is active or inactive. Whenever a new record is created, it will be A (Active). A change to the data will make this record redundant and its MaintActFlg is changed to I (Inactive).	MANDATORY	System generated
MaintenanceDate	Date and time the record was updated.	MANDATORY	System generated

	A default date of 9999-12-31 is used when the record is created initially. If the record is subsequently updated, its MaintUpdtDt is changed to the date and time the record was updated.		
CreationDate	Date and time the record was created.	MANDATORY	System generated

11. REFERENCE TABLES

Table 10 - Valid Aggregate Codes

Aggregate	Description
Y	Customer load
N	Generator NMI

Table 11 - Valid Consumption Type Codes

Consumptiontype	Description
A	Actual Consumption
C	Cumulative Consumption

Table 12 - Valid Datastream Type Codes

Datastreamtype	Description
I	Interval
C	Basic
P	Profile Data
1	Non-Market Active Import
2	Non-Market Active
3	Non-Market Reactive Import
4	Non-Market Reactive

Table 13 - Valid Profile Codes

ProfileName	Description
NSLP	Net System Load Profile. The profile is calculated by MSATS. NSLP represents the system load after all actual *interval metering data* or specified previously-calculated profiled *metering data* that is not dependent on the NSLP has been subtracted from a known total system load and represents system-wide usage by consumption-type *metering installations*.
CLOADNSWCE	Controlled Load profile: Country Energy. (Now Essential Energy) Profile Names beginning with CLOAD are Controlled Load profiles. Controlled Load profiles are applied to Controlled Load Datastreams in NSW. There is one Controlled Load profile for each LNSP area. The names all begin with CLOADNSW to indicate that they are NSW Profile Names followed by two characters to indicate the LNSP area to which it belongs (e.g. EA = EnergyAustralia).
CLOADNSWEA	Controlled Load profile: EnergyAustralia (Now Ausgrid).
CLOADNSWIE	Controlled Load profile: IntegralEnergy (Now Endeavour Energy)

ProfileName	Description
QLDEGXCL31	Controlled Load profile Energex tariff 31
QLDEGXCL33	Controlled Load profile Energex tariff 33
SACLOAD	South Australian Controlled Load.
NOPROF	Used for interval Datastream types (to indicate that such Datastreams do not need to be profiled to obtain 'readings' for each *settlements* interval because the data is supplied in 30-minute intervals).

Table 14 Valid Transformer Fields values

Transformer Field	Values
Current Transformer Ratio (this field reflects the available and connected ratio)	200 : 5 800 : 5 2000 : 5 4000 : 5 1500 : 5 150 / 300 / 600 : 5 @ 150 : 5 150 / 300 / 600 : 5 @ 300 : 5 150 / 300 / 600 : 5 @ 600 : 5 400 / 800 / 1200 : 5 @ 400 : 5 400 / 800 / 1200 : 5 @ 800 : 5 400 / 800 / 1200 : 5 @ 1200 : 5 1000 / 2000 / 3000 : 5 @ 1000 : 5 1000 / 2000 / 3000 : 5 @ 2000 : 5 1000 / 2000 / 3000 : 5 @ 3000 : 5
Voltage Transformer Ratio (this field reflects the available and connected ratio)	500kV : 110V 330kV : 110V 275kV : 110V 220kV : 110V 132kV : 110V 110kV : 110V 66kV : 110V 33kV : 110V 22kV : 110V 11kV : 110V 6.6kV : 110V
Current Transformer Type	A B C S T U V W COMBINED (IVT + CT)

Transformer Field	Values
Voltage Transformer Type	IVT (Inductive Voltage Transformer) CVT (Capacitive Voltage Transformer) COMBINED (IVT + CT) Three-Phase Three-Limb Three-Phase Five-Limb
Current Transformer Accuracy Class	0.5M 0.5ME 0.5S 0.5SE 1M AM BM A
Voltage Transformer Accuracy Class	0.2M 0.5M 1M A B C D AL BL

Table 15 Valid Meter Use Codes

Meter Use	Description
REVENUE	Revenue meter.
CHECK	Check meter.
STATISTICAL	Statistical meter.
TUOS	TUOS meter.
LOGICAL	Logical meter.
SAMPLE	Sample meter.
AVERAGE	Average meter.
PREPAID	Prepaid meter.
INFORMATION	Information meter.
SOLAR/PV	Solar or PV meter.
UNKNOWN	Unknown meter use code.

Table 16 Valid Time of Day Codes

TimeOfDay	Description
ALLDAY	All day
INTERVAL	Interval time of day
PEAK	Peak time of day

TimeOfDay	Description
BUSINESS	Business time of day
SHOULDER	Shoulder time of day
EVENING	Evening time of day
OFFPEAK	Off peak time of day
CONTROLLED	Controlled time of day

Table 17 Valid Controlled Load Codes

ControlledLoad	Description
No	This register does not record controlled load.
CL1	Controlled load 1
CL2	Controlled load 2
CL3	Controlled load 3

Table 18 Valid Test Result Codes

ControlledLoad	Description
PASS	Test has passed
FAIL	Test has failed

Note: Refer to the MSATS CATS Procedure section 4 for details on the valid codes for the following:

- Jurisdiction Codes
- Metering Installation Type Codes
- NMI Classification Codes
- NMI Status Codes
- Datastream Status Codes

12. USE OF NMI SUFFIX TO POPULATE CATS_REGISTER_IDENTIFIER

For any particular *connection point* there may be multiple energy measurement elements and data recorders with multiple channels. Accurate identification of Datastreams is essential. The NMI Procedure includes the requirements for the use of a suffix to the *NMI* that identifies these Datastreams. The DataStreamSuffix detailed in the NMI Procedure provides identification at the measurement element level for all Datastreams from the *connection point* identified by the *NMI*. The DataStreamSuffix is commonly known as the NMISuffix. The NMISuffix is labelled as 'Suffix' in the Browser and is the ElectricityDataStream/Suffix data element in aseXML.

The NMISuffix was first used in the NMI Procedure to describe, in conjunction with the *NMI*, the data transferred from the MDP to AEMO and Participants for *settlements*. The NMISuffix was further extended to describe Datastreams in MSATS, and numeric suffixes were developed to describe the data from type 6 *metering installations*.

In MSATS, the NMISuffix is used in the CATS_NMI_DATA_STREAM table to describe the data as delivered to AEMO. For *settlements* purposes this data must be 'NET' [Export from *network*, less import to *network*] and will be 'Nx' for an interval Datastream, or numeric for an Accumulation Meter.

In MSATS release 2.0 a new table, CATS_REGISTER_IDENTIFIER, was introduced to link identifiers for the source *meter* register(s) to the Datastream suffix in the CATS_NMI_DATA_STREAM table. The purpose of the table is to enable the alignment of the data held in MSATS and the data being transferred between Participants in the B2B process.

This link is achieved through the RegisterID (which describes the data source at the *metering installation*) and ElectricityDataStream/Suffix (which describes the NMISuffix to which the RegisterID contributes) data elements. This is a many-to-one relationship, i.e. there may be multiple RegisterID values for each ElectricityDataStream/Suffix value in the CATS_REGISTER_IDENTIFIER table.

- The RegisterID identifies the measurement element and type of measurement for an Interval Meter, and identifies the location of a stored energy value in an Accumulation Meter.
- The ElectricityDataStream/Suffix value in the CATS_NMI_DATA_STREAM table identifies the Datastream registered in MSATS. For *settlements* purposes, Interval Meter Datastreams will be the NET suffix (format Nx) and for Accumulation Meter Datastreams the suffix value is numeric. MSATS requires data to be delivered against this suffix (if the Datastream is ACTIVE). MSATS does not validate the values entered in this field.
- The ElectricityDataStream/Suffix value in the CATS_REGISTER_IDENTIFIER table identifies the individual Datastream(s) contributing to the ElectricityDataStream/Suffix value in the CATS_NMI_DATA_STREAM table. For interval Datastreams, the suffix(es) will indicate the individual Datastream(s) contributing to the Nx Suffix value in the CATS_NMI_DATA_STREAM table where the DataStreamType is P or I (Refer section 14for examples). For accumulation Datastreams the value will be numeric and will be identical to the related Suffix value in the CATS_NMI_DATA_STREAM table (refer section 13 for examples).
- The ElectricityDataStream/Suffix values used in the CATS_REGISTER_IDENTIFIER table are used to identify *metering data* contained in MDFF Files (in the NMISuffix field).
- The linkage between the RegisterID and ElectricityDataStream/Suffix exists because the ElectricityDataStream/Suffix data element is populated in the CATS_REGISTER_IDENTIFIER table.
- The RegisterID data element has no standard format; therefore, the MPB must determine the appropriate population of this field, e.g. it may be used to indicate the programming code of the register.

There is an inconsistent understanding across industry of the meaning of the terms 'register' and 'datastream'. Conventionally, to field metering personnel, a 'register' contains a single value, while a 'datastream' represents an array of time separated register values in chronological order.

For Accumulation Meters, the RegisterID refers to the non-volatile storage of the cumulative energy register(s). The RegisterID will have identification with the displays of the *meters*, or identification of internal data stores.

For Accumulation Meters, the ElectricityDataStream/Suffix data element in the CATS_REGISTER_IDENTIFIER table may have a many-to-one relationship with the ElectricityDataStream/Suffix data element in the CATS_NMI_DATA_STREAM table. That is, the same Suffix may occur several times in the CATS_REGISTER_IDENTIFIER table and occur once only in the CATS_NMI_DATA_STREAM table.

For Interval Meters, the definition of the RegisterID field is less obvious. To make this field useful, the RegisterID should be associated with the ElectricityDataStream/Suffix. As Interval Meters may have multiple measurement elements and there may be multiple *meters* for a *NMI*, the MDP must manage Datastreams against a *NMI* to avoid duplication of ElectricityDataStream/Suffixes and provide correct mapping of RegisterIDs.

13. ASSIGNMENT OF DATA – ACCUMULATION METERS

This section details examples of the assignment of data for various basic *metering installations*. For Accumulation Meters, the Suffix values in CATS_REGISTER_IDENTIFIER and CATS_NMI_DATA_STREAM tables are always numeric.

13.1. Single Meter, no controlled load

A Accumulation Meter with a single register measuring a Non-Controlled Load will have a single Datastream suffix 11 for the *NMI*.

Table 19 Example CATS_NMI_DATA_STREAM

Data Element:	NMI	Suffix	ElectricityDataStream/Status
Value	0123456789	11	A

The CATS_REGISTER_IDENTIFIER table indicates that the *meter* has only one register. The Suffix in the CATS_REGISTER_IDENTIFIER '11' denotes that data from RegisterID 01 contributes to the Datastream identified by Suffix 11 in CATS_NMI_DATA_STREAM

Table 20 Example CATS_REGISTER_IDENTIFIER

Data Element:	Serial Number	RegisterID	UnitOfMeasure	TimeOfDay	Suffix	Controlled Load
Value	ABCD1111	01	KWH	ALLDAY	11	No

The Suffix in CATS_NMI_DATA_STREAM will be recorded as '11' by the MDP and the Suffix in CATS_REGISTER_IDENTIFIER must then be '11'.

13.2. Twp Single Element Meters, no controlled load

The *NMI* has two Accumulation Meters, each *meter* with single register. The data from the two *meters* will be submitted to MSATS as two Datastreams.

Table 21 Example CATS_NMI_DATA_STREAM

Data Element:	NMI	Suffix	ElectricityDataStream/Status
Values	0123456789	11	A
	0123456789	12	A

Table 22 Example CATS_REGISTER_IDENTIFIER

Data Element:	Serial Number	RegisterID	UnitOfMeasure	TimeOfDay	Suffix	Controlled Load
Values	ABCD1111	01	KWH	ALLDAY	11	No
	XYZA1112	01	KWH	ALLDAY	12	No

13.3. Two Single Element Meters, one with controlled load

A *NMI* has two Accumulation Meters, each *meter* has a single register, and one *meter* is measuring a Controlled Load. The data from the two *meters* is submitted to MSATS as two Datastreams.

Table 23 Example CATS_NMI_DATA_STREAM

Data Element:	NMI	Suffix	ElectricityDataStream/Status
Value	0123456789	11	A
	0123456789	42	A

Table 24 Example CATS_REGISTER_IDENTIFIER

Data Element:	Serial Number	RegisterID	UnitOfMeasure	TimeOfDay	Suffix	Controlled Load
Values	ABCD1111	01	KWH	TOTAL	11	No
	XYZA1112	01	KWH	CL1	42	HWLoad

13.4. One Meter with Two Registers, one measuring a controlled load

NMI has one Accumulation Meter with two registers. The second register is measuring a Controlled Load.

Table 25 Example CATS_NMI_DATA_STREAM

Data Element:	NMI	Suffix	ElectricityDataStream/Status
Value	0123456789	11	A
	0123456789	42	A

Table 26 Example CATS_REGISTER_IDENTIFIER

Data Element:	Serial Number	RegisterID	UnitOfMeasure	TimeOfDay	Suffix	Controlled Load
Value	ABCD1111	01	KWH	PEAK	11	No
	ABCD1111	02	KWH	CL1	41	HWLoad

13.5. Single Multi-function Meter

Accumulation Meter has 4 registers, one register being a Controlled Load.

Table 27 Example CATS_NMI_DATA_STREAM

Data Element:	NMI	Suffix	ElectricityDataStream/Status
Values	0123456789	11	A
	0123456789	21	I
	0123456789	31	A
	0123456789	41	A

Each register is separately identified in CATS_NMI_Data_Stream. However, register 2 on *meter* 1 is inactive in MSATS, and therefore data is not accepted by MSATS for this Suffix.

Table 28 Example CATS_REGISTER_IDENTIFIER

Data Element:	Serial Number	RegisterID	UnitOfMeasure	TimeOfDay	Suffix	Controlled Load
Values	ABCD1111	01	KWH	ALLDAY	11	No
	ABCD1111	02	KWH	NOTUSED	21	No
	ABCD1111	03	KWH	OFFPEAK	31	No
	ABCD1111	04	KWH	CL1	41	HWLoad

Note: The *meter* may have register identification and therefore these numbers can be used in the table as RegisterID.

13.6. Two meters, three registers. One register measures a controlled load

Table 29 Example CATS_NMI_DATA_STREAM

Data Element:	NMI	Suffix	ElectricityDataStream/Status
Values	0123456789	11	A
	0123456789	21	A
	0123456789	42	A

Table 30 Example CATS_REGISTER_IDENTIFIER

Data Element:	Serial Number	RegisterID	UnitOfMeasure	TimeOfDay	Suffix	Controlled Load
Values	ABCD1111	01	KWH	PEAK	11	No
	ABCD1111	02	KWH	OFFPAK	21	No
	XYZA1112	01	KWH	CL1	42	HWLoad

14. ASSIGNMENT OF DATA – INTERVAL METERS

This section details examples of the assignment of data for various Interval Meters.

14.1. One meter

Table 31 Example CATS_NMI_DATA_STREAM

Data Element:	NMI	Suffix	ElectricityDataStream/Status
Value	0123456789	N1	A

The CATS_Register_Identifier table indicates that the *meter* has only one register. The Suffix in the CATS_REGISTER_IDENTIFIER [E1] denotes that data from RegisterID 01 contributes to the Datastream identified by Suffix N1 in the CATS_NMI_DATA_STREAM table.

Table 32 Example CATS_REGISTER_IDENTIFIER

Data Element:	Serial Number	RegisterID	UnitOfMeasure	TimeOfDay	Suffix
Value	ABCD1111	01	KWH	ALLDAY	E1

E1 indicates that it is a single element measuring export.

14.2. Import/Export meter

Interval Meter has a two registers, registering import and export *energy*. A single Datastream suffix N1 is defined for the *NMI* indicating a netting-off of export less import Datastreams for this *connection point*.

Table 33 Example CATS_NMI_DATA_STREAM

Data Element:	NMI	Suffix	ElectricityDataStream/Status
Value	0123456789	N1	A

The CATS_REGISTER_IDENTIFIER table indicates that the *meter* has two registers, one for IMPORT and one for EXPORT.

Table 34 Example CATS_REGISTER_IDENTIFIER

Data Element:	Serial Number	RegisterID	UnitOfMeasure	TimeOfDay	Suffix
Values	ABCD1111	E1	KWH	ALLDAY	E1
	ABCD1111	B1	KWH	ALLDAY	B1

Only one RegisterID with the Suffix 'E1' permitted per *meter* in CATS_REGISTER_IDENTIFIER.

Only one RegisterID with the Suffix 'B1' permitted per *meter* in CATS_REGISTER_IDENTIFIER.

The energy volumes for the Suffix 'N1' in CATS_NMI_DATA_STREAM are calculated by N1 = E1 – B1.

The Suffixes in the CATS_REGISTER_IDENTIFIER denote that data from RegisterIDs 'E1' and 'B1' contribute to the Datastream identified by Suffix 'N1' in CATS_NMI_DATA_STREAM. That is, the Datastreams 'E1' and 'B1' supplied by the MDP to the FRMP for this meter have contributed to the Datastream N1 in MSATS.

14.3. One meter: multiple registers

Interval Meter has a single measurement element registering import and export *energy*, reactive and *voltage*. A single Datastream Suffix 'N1' is defined for the *NMI* indicating netting-off of all *energy* Datastreams for this *connection point*.

Table 35 Example CATS_NMI_DATA_STREAM

Data Element:	NMI	Suffix	ElectricityDataStream/Status
Value	0123456789	N1	A

The CATS_Register_Identifier table indicates that the *meter* has five registers: two for IMPORT of *energy* and reactive; two for EXPORT of *energy* and reactive; and one for *voltage* monitoring.The Suffixes in the CATS_REGISTER_IDENTIFIER 'N1' denote that data from RegisterID 'E1' and 'B1' contribute to the Datastream identified by suffix N1 in CATS_NMI_DATA_STREAM.

Table 36 Example CATS_REGISTER_IDENTIFIER

Data Element:	Serial Number	RegisterID	UnitOfMeasure	TimeOfDay	Suffix
Values	ABCD1111	E1	KWH	ALLDAY	E1

Data Element:	Serial Number	RegisterID	UnitOfMeasure	TimeOfDay	Suffix
	ABCD1111	B1	KWH	ALLDAY	B1
	ABCD1111	Q1	KVARH	ALLDAY	Q1
	ABCD1111	K1	KVARH	ALLDAY	K1
	ABCD1111	V1	VOLTS	ALLDAY	V1

The energy volumes for the Suffix 'N1' is calculated by NET (E1 – B1).

14.4. One meter: Twin Measurement Elements

Certain multifunction *meters* have the capability for initial installation as an Accumulation Meter, but can be re-programmed to provide *interval metering data*.

The NER do not permit the use of two different types of *metering installation* on the one *NMI*, and therefore these two *metering* functions MUST NOT be active simultaneously in MSATS. The MDP and RP will be held accountable for a breach of this requirement.

The CATS_REGISTER_IDENTIFIER can be used to record the *meter* capability.

If this *meter* were configured as an Accumulation Meter in MSATS, the configuration might be as shown in the Tables 32 & 33.

Table 37 Example CATS_NMI_DATA_STREAM

Data Element:	NMI	Suffix	ElectricityDataStream/Status
Values	0123456789	N1	I
	0123456789	N2	I
	0123456789	11	A
	0123456789	21	A
	0123456789	31	A
	0123456789	41	A

Table 38 Example CATS_REGISTER_IDENTIFIER

Data Element:	Serial Number	RegisterID	UnitOfMeasure	TimeOfDay	Suffix
Values	AB888888	E1	KWH	ALLDAY	null
	AB888888	E2	KWH	ALLDAY	null
	AB888888	25	KWH	PEAK	11
	AB888888	26	KWH	SHOULDER	21
	AB888888	35	KWH	OFFPEAK	31
	AB888888	36	KWH	CL1	41

The CATS_REGISTER_IDENTIFIER table values for this *meter* when it is operated as an Interval Meter are shown below. The RegisterID for the Accumulation Meter registers in this type of *meter* are user defined. The Interval Meter suffixes must be added to the *NMI* and made active, and the basic Suffixes made inactive at the same date.

Table 39 Example CATS_NMI_DATA_STREAM

Data Element:	NMI	Suffix	ElectricityDataStream/Status
Values	0123456789	N1	A
	0123456789	N2	A
	0123456789	11	I
	0123456789	21	I
	0123456789	31	I
	0123456789	41	I

Table 40 Example CATS_REGISTER_IDENTIFIER

Data Element:	Serial Number	RegisterID	UnitOfMeasure	TimeOfDay	Suffix
Values	AB888888	E1	KWH	ALLDAY	E1
	AB888888	E2	KWH	ALLDAY	E2
	AB888888	25	KWH	PEAK	null
	AB888888	26	KWH	OFFPEAK	null
	AB888888	35	KWH	PEAK	null
	AB888888	36	KWH	OFFPEAK	null

If a second *meter* of the same configuration were established on this *NMI* 'E3' and 'E4' would be required for the Datastreams to provide MDPs and *retailers* with unambiguous identification of Datastreams.

15. ASSIGNMENTS OF DATA – SAMPLE METERS

The application of profiles in accordance with the Metrology Procedure requires *interval metering data* from Sites that have Accumulation Metering. However, the NER do not permit different metering installation types on the one *NMI*, and in any case, the Participants associated with the *interval metering data* are different to those associated with the Accumulation Meter. Therefore, for these *connection points*, two different *NMIs* are used.

There are *meters* that can combine the required Accumulation Metering and Interval Metering functions. An example is shown below.

15.1. Multifunction Sample Meter

In this case, a single *meter* is registered within MSATS for two purposes against two *NMIs*. This is a special case, and should not be used other than for this non-standard purpose. The *meter* has two circuits, with Accumulation Metering for *energy* trading and Interval Metering for the sample profile.

In this example, NMI 9801234567 is associated with the sample *meter installation* and NMI 9876543210 with the End User installation.

Table 41 Example CATS_NMI_DATA_STREAM

Data Element:	NMI	Suffix	ElectricityDataStream/Status	DataStreamType
Values	9801234567	N1	A	P

Data Element:	NMI	Suffix	ElectricityDataStream/Status	DataStreamType
	9876543210	11	I	C
	9876543210	12	I	C
	9876543210	41	A	C

Table 42 Example CATS_REGISTER_IDENTIFIER

Data Element:	NMI	MeterSerial	RegisterID	UnitOfMeasure	TimeOfDay	Suffix
Values	9801234567	AB888888	E1	KWH	ALLDAY	E1
	9876543210	AB888888	11	KWH	PEAK	null
	9876543210	AB888888	12	KWH	OFFPEAK	null
	9876543210	AB888888	41	KWH	CL1	41

Note: Suffix '11/12' have a Status of 'I' for 1st Tier and 'A' for 2nd Tier.

First tier *metering data* is not required for AEMO to settle the *market*.

Controlled Load data for first tier and second tier is required by AEMO to settle the *market*.

In this example, once the End User's Site becomes a Tier 2 Site, all three basic Datastreams need to become active (StreamStatusCode = A).

16. CROSS REFERENCE OF BROWSER AND ASEXML DATA ELEMENTS

The tables below list the names that are used in the MSATS browser for each of the MSATS tables detailed in sections 4 to 10. The table also provides the aseXML data element names and the respective formats used in each context.

In some cases, such as date fields, the format of the field is shown differently in the Browser to that used in the related aseXML transactions. Also, aseXML uses full words throughout, rather than the coded values used in the Browser.

Refer section 17 for examples of the typical data element values as shown in the Browser. Section 18 provides definitions of the Browser formats shown in this section.

Table 43 CATS_Meter_Register

Browser Field Name	aseXML Data Element Name	aseXML Path	Browser Format	aseXML Data Type
Current Transformer Location	CurrentTransformerLocation	ElectricityMeter/CurrentTransformerLocation	VARCHAR(20)	xsd:string maxLen = 20
Current Transformer Type	CurrentTransformerType	ElectricityMeter/CurrentTransformerType	VARCHAR(20)	xsd:string with enumerations
Current Transformer Ratio	CurrentTransformerRatio	ElectricityMeter/CurrentTransformerRatio	VARCHAR(20)	xsd:string with enumerations
Current Transformer Accuracy Class	CurrentTransformerAccuracyClass	ElectricityMeter/CurrentTransformerAccuracyClass	VARCHAR(20)	xsd:string with enumerations

Current Transformer Test	CurrentTransformerTest	ElectricityMeter/CurrentTransformerTest	VARCHAR2(20)	xsd:string with enumerations
Current Transformer Sample Family ID	CurrentTransformerSampleFamilyID	ElectricityMeter/CurrentTransformerSampleFamilyID	VARCHAR2(20)	xsd:string maxLen = 20
Current Transformer Test Date	CurrentTransformerTestDate	ElectricityMeter/CurrentTransformerTestDate	dd-mm-yyyy	xsd:date
GPS Coordinates - Latitude	GPSCoordinatesLat	ElectricityMeter/GPSCoordinatesLat	NUMBER(6,5)	xsd:decimal minIncl = 0 maxIncl = 2 totdig = 6 fracdig = 5
GPS Coordinates - Longitude	GPSCoordinatesLong	ElectricityMeter/GPSCoordinatesLong	NUMBER(6,5)	xsd:decimal minIncl = 0 maxIncl = 2 totdig = 6 fracdig = 5
Last Test Date	LastTestDate	ElectricityMeter/LastTestDate	dd-mmm-yyyy	xsd:date
Meter Hazard	Hazard	ElectricityMeter/Hazard	VARCHAR2(100)	xsd:string maxLen = 100
Meter Installation Type Code	InstallationTypeCode	ElectricityMeter/InstallationType Code	VARCHAR2(8)	xsd:string maxLen = 8
Meter Location	Location	ElectricityMeter/Location	VARCHAR2(200) See AddlSiteInfo (above)	xsd:string maxLen = 200
Meter Manufacturer	Manufacturer	ElectricityMeter/Manufacturer	VARCHAR2(15)	xsd:string maxLen = 15
Meter Model	Model	ElectricityMeter/Model	VARCHAR2(12)	xsd:string maxLen = 12
Meter Read Type	ReadTypeCode	ElectricityMeter/ReadTypeCode	VARCHAR(4)	xsd:string maxLen = 4
Meter Serial ID Meter ID (Different on two screens)	SerialNumber	ElectricityMeter/SerialNumber	VARCHAR2(12)	xsd:string maxLen = 12
Status Code	Status	ElectricityMeter/Status	CHAR(1)	xsd:string with enumeration
Meter Use	Use	ElectricityMeter/Use	VARCHAR2(10)	xsd:string with enumeration
Next Scheduled Read Date	NextScheduled ReadDate	ElectricityMeter/NextScheduled ReadDate	dd-mmm-yyyy	xsd:date
NMI	NMI	NMI	CHAR(10)	xsd:string maxLen = 10

Test Result	TestResult	ElectricityMeter/TestResult	VARCHAR2(20)	xsd:string with enumerations
Voltage Transformer Location	VoltageTransformerLocation	ElectricityMeter/VoltageTransformerLocation	VARCHAR(20)	xsd:string maxLen = 20
Voltage Transformer Type	VoltageTransformerType	ElectricityMeter/VoltageTransformerType	VARCHAR(20)	xsd:string with enumerations
Voltage Transformer Ratio	VoltageTransformerRatio	ElectricityMeter/VoltageTransformerRatio	VARCHAR(20)	xsd:string with enumerations
Voltage Transformer Accuracy Class	VoltageTransformerAccuracyClass	ElectricityMeter/VoltageTransformerAccuracyClass	VARCHAR(20)	xsd:string with enumerations
Voltage Transformer Test	VoltageTransformerTest	ElectricityMeter/CurrentTransformerTest	VARCHAR2(20)	xsd:string with enumerations
Voltage Transformer Sample Family ID	VoltageTransformerSampleFamilyID	ElectricityMeter/VoltageTransformerSampleFamilyID	VARCHAR2(20)	xsd:string maxLen = 20
Voltage Transformer Test Date	VoltageTransformerTestDate	ElectricityMeter/VoltageTransformerTestDate	dd-mmm-yyyy	xsd:date
Start Date	FromDate	FromDate	dd-mmm-yyyy	xsd:dateTime
End Date	ToDate	ToDate	dd-mmm-yyyy	xsd:dateTime
Updated On	MaintenanceDate	MaintenanceDate	dd-mmm-yyyy (summary screen) dd-mmm-yyyy hh:mm:ss (detail screen)	xsd:dateTime
Created On	CreationDate	CreationDate	dd-mmm-yyyy (summary screen) dd-mmm-yyyy hh:mm:ss (detail screen)	xsd:dateTime
Activity Status	RowStatus	RowStatus	CHAR(1)	xsd:string with enumeration

Table 44 CATS_DLF_Codes

Browser Field Name	aseXML Data Element Name	aseXML Path	Browser Format	aseXML Data Type
DLF Code	DistributionLossFactorCode	DistributionLossFactorCode	VARCHAR2(4)	xsd:string maxLen = 4
Description	DistributionLossFactorDescription	DistributionLossFactorDescription	VARCHAR2(50	xsd:string maxLen = 50
DLF Value	DistributionLossFactorValue	DistributionLossFactorValue	NUMBER(6,5)	xsd:decimal minIncl = 0 maxIncl = 2 totdig = 6 fracdig = 5

Jurisdiction	JurisdictionCode	ElectricityStandingData /MasterData/JurisdictionCode	VARCHAR2(3)	xsd:string maxLen = 3
Activity Status	RowStatus	RowStatus	CHAR(1)	xsd:string with enumeration
Start Date	FromDate	FromDate	dd-mmm-yyyy	xsd:dateTime
End Date	ToDate	ToDate	dd-mmm-yyyy	xsd:dateTime
Updated On	MaintenanceDate	MaintenanceDate	dd-mmm-yyyy (summary screen) dd-mmm-yyyy hh:mm:ss (detail screen)	xsd:dateTime
	CreationDate	CreationDate	dd-mmm-yyyy (summary screen) dd-mmm-yyyy hh:mm:ss (detail screen)	xsd:dateTime

Table 45 CATS_Emb_Net_ID_Codes

Browser Field Name	aseXML Data Element Name	aseXML Path	Browser Format	aseXML Data Type
Code	EmbeddedNetworkIdentifier	EmbeddedNetworkIdentifier	VARCHAR2(10)	xsd:string maxLen = 10
Description	EmbeddedNetworkDescription	EmbeddedNetworkDescription	VARCHAR2(50)	xsd:string maxLen = 50
Locality/Suburb	SuburbOrPlaceOrLocality	ElectrictyStandingData /MasterData/Address/ AustralianAddress/SuburbOrPlaceOrLocality	VARCHAR2(46)	xsd:string maxLen = 46
Postcode	PostCode	ElectrictyStandingData /MasterData/Address/ AustralianAddress/PostCode	VARCHAR2(4)	xsd:string pattern: [\p{N}]{4}
State	StateOrTerritory	ElectrictyStandingData /MasterData/Address/ AustralianAddress/StateOrTerritory	VARCHAR2(3)	xsd:string with enumerations
Activity Status	RowStatus	RowStatus	CHAR(1)	xsd:string with enumeration
Start Date	FromDate	FromDate	dd-mmm-yyyy	xsd:dateTime
End Date	ToDate	ToDate	dd-mmm-yyyy	xsd:dateTime
Updated On	MaintenanceDate	MaintenanceDate	dd-mmm-yyyy (summary screen) dd-mmm-yyyy hh:mm:ss (detail screen)	xsd:dateTime

	CreationDate	CreationDate	dd-mmm-yyyy (summary screen) dd-mmm-yyyy hh:mm:ss (detail screen)	xsd:dateTime

Table 46 CATS_NMI_Data

Browser Field Name	aseXML Data Element Name	aseXML Path	Browser Format	aseXML Data Type
NMI	NMI	NMI	CHAR(10)	xsd:string maxLen = 10
NMI Classification Code	NMIClassificationCode	ElectricityStandingData /MasterData/ NMIClassificationCode	VARCHAR2(8)	xsd:string maxLen = 8
Status Code	Status	ElectricityStandingData /MasterData/Status	CHAR(1)	xsd:string maxLen = 1
TNI Code	TransmissionNodeIdentifier	ElectricityStandingData /MasterData/TransmissionNodeIdentifier	VARCHAR2(4)	xsd:string maxLen = 4
TNI Code 2	TransmissionNodeIdentifier2	ElectricityStandingData /MasterData/TransmissionNodeIdentifier2	VARCHAR2(4)	xsd:string maxLen = 4
Shared Point Isolation Flag	SharedPointIsolationFlag	ElectricityMeter/ SharedPointIsolationFlag	CHAR(10)	xsd:string with enumeration
Meter Malfunction Exemption Number	MeterMalfunctionExemptionNumber	ElectricityMeter/MeterMalfunctionExemptionNumber	VARCHAR2(8)	xsd:string maxLen = 8
Meter Malfunction Exemption Expiry Date	MeterMalfunctionExemptionExpiry Date	ElectricityMeter/MeterMalfunctionExemptionExpiryDate	dd-mmm-yyyy	xsd:date
Jurisdiction Code	JurisdictionCode	JurisdictionCode	VARCHAR2(3)	xsd:string maxLen = 3
DLF Code	DistributionLossFactorCode	ElectricityStandingData /MasterData/DistributionLossFactorCode	VARCHAR2(4)	xsd:string maxLen = 4
Connection Configuration	ConnectionConfiguration	ElectricityMeter/ConnectionConfiguration	VARCHAR2(4)	xsd:string
Embedded Network ID (Child)	ChildEmbeddedNetworkIdentifier	ElectricityStandingData /MasterData/ChildEmbeddedNetworkIdentifier	VARCHAR2(10)	xsd:string maxLen = 10
Embedded Network (Parent)	ParentEmbeddedNetworkIdentifier	ElectricityStandingData /MasterData/ParentEmbeddedNetworkIdentifier	VARCHAR2(10)	xsd:string maxLen = 10

Building / Property Name	BuildingOrPropertyName	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/BuildingOrPropertyName	VARCHAR2(30)	xsd:string maxLen = 30 x 2
Lot Number	LotNumber	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/Lot/LotNumber	VARCHAR2(6)	xsd:string pattern: [\p{L}\p{N}\p{P}\s]{1,6}
Flat/Unit Number	FlatOrUnitNumber	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/FlatOrUnit/FlatOrUnitNumber	VARCHAR2(7)	xsd:string pattern: [\p{L}\p{N}\p{P}\s]{1,7}
Flat/Unit Type	FlatOrUnitType	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/FlatOrUnit/FlatOrUnitType	VARCHAR2(4)	xsd:string with enumerations
Floor/Level Number	FloorOrLevelNumber	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/FloorOrLevel/FloorOrLevelNumber	VARCHAR2(5)	xsd:string [\p{L}\p{N}\p{P}\s]{1,5}
Floor/Level Type	FloorOrLevelType	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/FloorOrLevel/FloorOrLevelType	VARCHAR2(2)	xsd:string with enumerations
House Number	HouseNumber	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/House/HouseNumber	NUMBER(5)	xsd:nonNegativeInteger maxIncl = 99999
House Number Suffix	HouseNumberSuffix	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/House/HouseNumberSuffix	VARCHAR2(1)	xsd:string pattern: [\p{L}\p{N}]{1}
House Number To	HouseNumberTo	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/House/HouseNumberTo	NUMBER(5)	xsd:nonNegativeInteger maxIncl = 99999
Street Name	StreetName	ElectricityStandingData/MasterData/Address/AustralianAddress/	VARCHAR2(30)	xsd:string pattern: [\p{L}\p{N}\s\-']{1,30}

		StructuredAddress/Street/StreetName		
Street Name Suffix	StreetSuffix	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/Street/StreetSuffix	VARCHAR2(2)	xsd:string with enumerations
Street Type	StreetType	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/Street/StreetType	VARCHAR2(4)	xsd:string with enumerations
Suburb/Locality	SuburbOrPlaceOrLocality	ElectricityStandingData/MasterData/Address/AustralianAddress/SuburbOrPlaceOrLocality	VARCHAR2(46)	xsd:string maxLen = 46
Location Descriptor	LocationDescriptor	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/LocationDescriptor	VARCHAR2(200)	xsd:string pattern: [\p{L}\p{N}\p{P}\s]{1,200
Postcode	PostCode	ElectricityStandingData/MasterData/Address/AustralianAddress/PostCode	VARCHAR2(4)	xsd:string pattern: [\p{N}]{4}
State	StateOrTerritory	ElectricityStandingData/MasterData/Address/AustralianAddress/StateOrTerritory	VARCHAR2(3)	xsd:string with enumerations
DPID	DeliveryPointIdentifier	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/DeliveryPointIdentifier	NUMBER(8)	xsd:nonNegativeInteger minIncl = 10000000 maxIncl = 99999999
GNAF PID	GNAFPID	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/GNAFPID	VARCHAR2(20)	xsd:string maxLen = 20
Section Number	SectionNumber	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/SectionNumber	VARCHAR2(20)	xsd:string maxLen = 20
DP Number	DPNumber	ElectricityStandingData/MasterData/Address/AustralianAddress/StructuredAddress/DPNumber	VARCHAR2(20)	xsd:string maxLen = 20

Aggregate Flag	Aggregate	ElectricityStandingData/MasterData/Aggregate	CHAR(1)	xsd:string with enumeration
Start Date	FromDate	FromDate	dd-mmm-yyyy	xsd:dateTime
End Date	ToDate	ToDate	dd-mmm-yyyy	xsd:dateTime
Updated On	MaintenanceDate	MaintenanceDate	dd-mmm-yyyy (summary screen) dd-mmm-yyyy hh:mm:ss (detail screen)	xsd:dateTime
Created On	CreationDate	CreationDate	dd-mmm-yyyy (summary screen) dd-mmm-yyyy hh:mm:ss (detail screen)	xsd:dateTime
Activity Status	RowStatus	RowStatus	CHAR(1)	xsd:string with enumeration
Feeder Class	Feeder Class	ElectricityStandingData/MasterData/FeederClass	VARCHAR2(15)	xsd:string maxLen = 15
Customer Classification Code	CustomerClassificationCode	ElectricityStandingData/MasterData/CustomerClassificationCode	VARCHAR2(20)	xsd:string maxLen = 20
Customer Classification Threshold Code	CustomerThresholdCode	ElectricityStandingData/MasterData/CustomerThresholdCode	VARCHAR2(20)	xsd:string maxLen = 20
NMI	NMI	NMI	CHAR(10)	xsd:string maxLen = 10
Suffix	Suffix	ElectricityDataStream/Suffix	VARCHAR2(2)	xsd:string maxLen = 2
Status Code	Status	ElectricityDataStream/Status	CHAR(1)	xsd:string maxLen = 1
Average Daily Load	AveragedDailyLoad	ElectricityDataStream/AveragedDailyLoad	NUMBER(10)	xsd:integer
Type	DataStreamType	ElectricityDataStream/DataStreamType	CHAR(1)	xsd:string with enumeration
Profile Name	ProfileName	ElectricityDataStream/ProfileName	VARCHAR2(10)	xsd:string maxLen = 10
Start Date	FromDate	FromDate	dd-mmm-yyyy	xsd:dateTime
End Date	ToDate	ToDate	dd-mmm-yyyy	xsd:dateTime
Updated On	MaintenanceDate	MaintenanceDate	dd-mmm-yyyy (summary screen) dd-mmm-yyyy hh:mm:ss (detail screen)	xsd:dateTime

Created On	CreationDate	CreationDate	dd-mmm-yyyy (summary screen) dd-mmm-yyyy hh:mm:ss (detail screen)	xsd:dateTime
Activity Status	RowStatus	RowStatus	CHAR(1)	xsd:string with enumeration

Table 47 CATS_Register_Identifier

Browser Field Name	aseXML Data Element Name	aseXML Path	Browser Format	aseXML Data Type
NMI	NMI	NMI	CHAR(10)	xsd:string maxLen = 10
Meter Serial ID Meter ID (Different on two screens)	SerialNumber	SerialNumber	VARCHAR2(12)	xsd:string maxLen = 12
Register ID	RegisterID	ElectricityMeterRegisterDetail/RegisterID	VARCHAR2(10)	xsd:string maxLen = 10
Network Tariff Code	NetworkTariffCode	ElectricityMeterRegisterDetail/NetworkTariffCode	VARCHAR2(10)	xsd:string maxLen = 10
Network Tariff Additional Information	NetworkAdditional Information	ElectricityMeterRegisterDetail/ NetworkAdditionalInformation	VARCHAR2(4000)	xsd:string
Unit of Measure	UnitOfMeasure	ElectricityMeterRegisterDetail/ UnitOfMeasure	VARCHAR2(5)	xsd:string maxLen = 5
Time of Day	TimeOfDay	ElectricityMeterRegisterDetail/ TimeOfDay	VARCHAR2(10)	xsd:string with enumeration
Multiplier	Multiplier	ElectricityMeterRegisterDetail/Multiplier	Number(13,5)	xsd:decimal
Dial Format	DialFormat	ElectricityMeterRegisterDetail/DialFormat	Number(4,2)	xsd:decimal minIncl = 0 maxIncl = 99.99 totdig = 4 fracdig = 2
Suffix	Suffix	ElectricityMeterRegisterDetail/Suffix	VARCHAR2(2)	xsd:string maxLen = 2
Controlled Load	ControlledLoad	ElectricityMeterRegisterDetail/ControlledLoad	VARCHAR2(100)	xsd:string with enumeration
Status Code	Status	ElectricityMeterRegisterDetail/ Status	CHAR(1)	xsd:string with enumeration

Actual/Cumulative Indicator	ConsumptionType	ElectricityMeterRegisterDetail/ConsumptionType	CHAR(1)	xsd:string with enumeration
Start Date	FromDate	FromDate	dd-mmm-yyyy	xsd:dateTime
End Date	ToDate	ToDate	dd-mmm-yyyy	xsd:dateTime
Updated On	MaintenanceDate	MaintenanceDate	dd-mmm-yyyy (summary screen) dd-mmm-yyyy hh:mm:ss (detail screen)	xsd:dateTime
Created On	CreationDate	CreationDate	dd-mmm-yyyy (summary screen) dd-mmm-yyyy hh:mm:ss (detail screen)	xsd:dateTime
Activity Status	RowStatus	RowStatus	CHAR(1)	xsd:string with enumeration

Table 48 CATS_NMI_Participant_Relations

Browser Field Name	aseXML Data Element Name	aseXML Path	Browser Format	aseXML Data Type
Participant ID	Party	Party	VARCHAR2(10)	xsd:string
NMI	NMI	NMI	CHAR(10)	xsd:string maxLen = 10
Role	Role	Role	VARCHAR2(4)	xsd:string maxLen = 4
Start Date	FromDate	FromDate	dd-mmm-yyyy	xsd:dateTime
End Date	ToDate	ToDate	dd-mmm-yyyy	xsd:dateTime
Updated On	MaintenanceDate	MaintenanceDate	dd-mmm-yyyy (summary screen) dd-mmm-yyyy hh:mm:ss (detail screen)	xsd:dateTime
Created On	CreationDate	CreationDate	dd-mmm-yyyy (summary screen) dd-mmm-yyyy hh:mm:ss (detail screen)	xsd:dateTime
Activity Status	RowStatus	RowStatus	CHAR(1)	xsd:string with enumeration

17. EXAMPLES OF TYPICAL FIELD VALUES

This section provides examples of typical sets of data element values associated with different types of *connection points*.

The data shown in each example is as shown in the Browser. This reverses the sequence of the day-month-year communicated via aseXML transactions.

Table 49 CATS_Meter_Register

Data Element Name (as it appears in XML documents)	Browser Field Name(as it appears in MSATS Browser)	Basic Example	Interval Example	Data Element Name
CurrentTransformerLocation	Current Transformer Location		BEHIND DOOR	CurrentTransformerLocation
CurrentTransformerType	Current Transformer Type		A	CurrentTransformerType
CurrentTransformerRatio	Current Transformer Ratio		200 : 5	CurrentTransformerRatio
CurrentTransformerAccuracyClass	Current Transformer Accuracy Class		0.5ME	CurrentTransformerAccuracyClass
CurrentTransformerTest	Current Transformer Test		Tested	VARCHAR2(20)
CurrentTransformerSampleFamilyID	Current Transformer Sample Family ID		201000298	VARCHAR2(20)
CurrentTransformerTestDate	Current Transformer Test Date		01-01-2020	dd-mm-yyyy
GPSCoordinates - Latitude	GPSCoordinatesLat	-37.81812	-37.81812	GPSCoordinatesLat
GPSCoordinates - Longitude	GPSCoordinatesLong	144.95673	144.95673	GPSCoordinatesLong
LastTestDate	Last Test Date	07-05-2004	07-03-2004	LastTestDate
Hazard	Meter Hazard		Asbestos	Hazard
InstallationTypeCode	Meter Installation Type Code	BASIC	COMMS4	InstallationTypeCode
Location	Meter Location	ON SUB POLE	BEHIND DOOR	Location
Manufacturer	Meter Manufacturer	EMAIL	EDMI	Manufacturer
Model	Meter Model	Q3	Q4	Model
ReadTypeCode	Meter Read Type	MV3	RTDA	ReadTypeCode
SerialNumber	Meter Serial ID, Meter ID (Different on two screens)	525811	201000299	SerialNumber
Status	Status Code	C	C	Status
Use	Meter Use	REVENUE	REVENUE	Use

Data Element Name (as it appears in XML documents)	Browser Field Name(as it appears in MSATS Browser)	Basic Example	Interval Example	Data Element Name
NextScheduledReadDate	Next Scheduled Read Date	04-10-2006		NextScheduledReadDate
NMI	NMI	1122334455	1122334455	NMI
TestResult	Test Result	Pass	Pass	TestResult
VoltageTransformerLocation	Voltage Transformer Location		BEHIND DOOR	VoltageTransformerLocation
VoltageTransformerType	Voltage Transformer Type		IVT (Inductive Voltage Transformer)	VoltageTransformerType
VoltageTransformerRatio	Voltage Transformer Ratio		500kV : 110V	VoltageTransformerRatio
VoltageTransformerAccuracyClass	Voltage Transformer Accuracy Class		0.5M	VoltageTransformerAccuracyClass
VoltageTransformerTest	Voltage Transformer Test		Tested	VARCHAR2(20)
VoltageTransformerSampleFamilyID	Voltage Transformer Sample Family ID		201000298	VARCHAR2(20)
VoltageTransformerTestDate	Voltage Transformer Test Date		01-01-2020	dd-mm-yyyy
FromDate	Start Date	14-03-1990	16-03-2002	FromDate
ToDate	End Date	31-12-9999	18-07-2006	ToDate
MaintenanceDate	Updated On	31-12-999 00:00:00	31-12-999 00:00:00	MaintenanceDate
CreationDate	Created On	19-03-1990 00:01:00	18-03-2002 00:01:00	CreationDate

Table 50 CATS_DLF_Codes

Data Element Name	Browser Field Name	Basic & Interval Example
DistributionLossFactorCode	DLF Code	NHV1
DistributionLossFactorDescription	Description	UMPLP - High Voltage
DistributionLossFactorValue	[The actual DLF value]	1.11111
JurisdictionCode	Jurisdiction Code	SA
RowStatus	Activity Status	A
FromDate	Start Date	01-07-1999
ToDate	End Date	30-06-2000
MaintenanceDate	Updated On	31-05-2000 00:30:27
CreationDate		01-06-1999 00:23:32

Table 51 CATS_Emb_Net_ID_Codes

Data Element Name	Browser Field Name	Basic & Basic Example
EmbeddedNetworkIdentifier	Code	SE01008111
EmbeddedNetworkDescription	Description	Kingston-On-Murray Caravan Park
SuburbOrPlaceOrLocality	Suburb / Locality	Kingston-On-Murray
PostCode	Postcode	5331
StateOrTerritory	State	SA
RowStatus	Activity Status	A
FromDate	Start Date	5/04/2003
ToDate	End Date	31/12/9999
MaintenanceDate	Updated On	31/12/9999
	CreationDate	1/04/2003 13:23

Table 52 CATS_NMI_Data

Data Element Name	Browser Field Name	Basic Example	Interval Example
NMI	NMI	122334451	1122334455
NMIClassificationCode	NMI Classification Code	SMALL	LARGE
MasterData/Status	Status Code	A	G
TransmissionNodeIdentifier	TNI Code	NRGE	SBER
TransmissionNodeIdentifier 2	TNI Code 2	NRGE	SBER
Shared Isolation Point Flag	Shared Isolation Point Flag	N	Y
Meter Malfunction Exemption Number	Meter Malfunction Exemption Number	ERF 0001	ERF 0001
Meter Malfunction Exemption Expiry Date	Meter Malfunction Exemption Expiry Date	07-05-2020	07-05-2020
JurisdictionCode	Jurisdiction Code	NSW	SA

ConnectionConfiguration	Connection Configuration	L1NN	H3CV
DistributionLossFactorCode	DLF Code	NRGE	NLV2
ChildEmbeddedNetworkIdentifier	Embedded Network ID (Child)	NS01008111	SE01008111
ParentEmbeddedNetworkIdentifier	Embedded Network (Parent)	NS01008111	SE01008111
BuildingOrPropertyName	Building / Property Name	BP	SHELL
LotNumber	Lot Number	22	23
FlatOrUnitNumber	Flat/Unit Number	1	2
FlatOrUnitType	Flat/Unit Type	U	U
FloorOrLevelNumber	Flat/Unit Number	1	1
FloorOrLevelType	Floor/Level Type	FL	FL
HouseNumber	House Number	6	10
HouseNumberSuffix	House Number Suffix	A	B
HouseNumberTo	House Number To	4	5
StreetName	Street Name	BORIS	DORIS
StreetSuffix	Street Name Suffix	N	W
StreetType	Street Type	DR	ST
SuburbOrPlaceOrLocality	Suburb/Locality	ORANGE	LOXTON
LocationDescriptor	Location Descriptor	CNR FRED ST	SHELL SERVICE STATION
PostCode	Postcode	2211	5333
StateOrTerritory	State	NSW	SA
DeliveryPointIdentifier	DPID	01234567	12345678
GNAFPID	GNAF PID	GDA2020	GDA2020
SectionNumber	Section Number	Section 23K	Section 23K
DPNumber	DP Number	DP 825310	DP 825310
Aggregate	Aggregate Flag	Y	Y
FromDate	Start Date	01-06-2004	01-06-2001
ToDate	End Date	31-12-9999	01-01-2003
MaintenanceDate	Updated On	31-12-9999 00:00:00	05-01-2003 00:01:00
CreationDate	Created On	04-01-2004 09:31:00	01-06-2001 00:01:00
RowStatus	Activity Status	A	A
FeederClass	Feeder Class	ERGUD	ERGUD
CustomerClassificationCode	Customer Classification	RESIDENTIAL	BUSINESS
CustomerThresholdCode	Customer Threshold	LOW	HIGH

Table 53 CATS_NMI_Data_Stream

Data Element Name	Browser Field Name	Basic Example	Interval Example
NMI	NMI	1100445566	2211335544
ElectricityDataStream/Suffix	Suffix	31	N1
ElectricityDataStream/Status	Status Code	A	A
ElectricityDataStream/ AveragedDailyLoad	Average Daily Load	5	800
ElectricityDataStream/ DataStreamType	Type	C	I
ElectricityDataStream/ ProfileName	Profile Name	NSLP	NOPROF
FromDate	Start Date	31-12-2001	01-06-2005
ToDate	End Date	31-12-9999	31-12-9999
MaintenanceDate	Updated On	02-01-2004 13:27:58	31-12-9999
CreationDate	Created On	19-01-2002 17:15:23	05-06-2005 15:12:20
RowStatus	Activity Status	I	A

Table 54 CATS_Register_Identifier

Data Element Name	Browser Field Name	Basic Example	Interval Example
NMI	NMI	1100445566	2211335544
SerialNumber	Meter Serial ID Meter ID (Different on two screens)	000012345	112258
RegisterID	Register ID	1	E1
NetworkTariffCode	Network Tariff Code	BLNB2CO	MB2RI
NetworkAdditionalInformation	Network Tariff Additional Information	General Supply Non TOU Eligible	LV TOU Demand Eligible
UnitOfMeasure	Unit of Measure	KWH	KWH
TimeOfDay	Time of Day	ALLDAY	ALLDAY
Multiplier	Multiplier	1.00000	120.00000
DialFormat	Dial Format	5.00	5.10
Suffix	Suffix	11	E1
ControlledLoad	Controlled Load	HWLoad	No
Status	Status Code	C	C
ConsumptionType	Actual/Cumulative Indicator	C	A
FromDate	Start Date	01-08-2004	01-06-2005
ToDate	End Date	31-12-9999	31-12-9999
MaintenanceDate	Updated On	31-12-9999	31-12-9999

CreationDate	Created On	01-11-2005 22:30:30	05-06-2005 09:09:09
RowStatus	Activity Status	A	A

18. DATA TYPE CONVENTIONS

The Browser formats used in section 16 are as defined in the following table.

The value of "x" must be positive and cannot be zero.

For explanation of the aseXML data types shown in section 16 refer

http://www.w3.org/TR/xmlschema-0/#simpleTypesTable

Table: Browser Formats

	Format	Definition
1	CHAR(x)	Indicates a field that can only contain alphanumeric characters and must contain exactly "x" characters. Note that leading and trailing "spaces" are considered significant (i.e. form part of the "x" characters for the field).
2	VARCHAR2(x)	Indicates a character field containing up to "x" characters.
3	NUMBER(x)	Indicates a positive integer (zero or above) up to "x" significant digits long; any leading zeroes are not significant and hence "050" is equivalent to "50".
4	NUMBER(x.y)	Indicates a positive number with up to "x" significant characters to the left of the decimal point and "y" decimal places after the decimal point (trailing zeros are optional). In other words, the maximum length of the field as a whole is "x"+"y"+1 characters (the +1 reserving space for the decimal point).