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| Schema Release  AseXML Schema Working Group  Release r44 |

December 2023

Draft Release Date: 08 November 2023

Final Release Date: 18 December 2023

Version Control

|  |  |  |
| --- | --- | --- |
| Version | Release date | Changes |
| 0.1 | 12 December 2023 | Creation |
| 0.2 | 15 December 2023 | Finalised after ASWG approval |
|  |  |  |

Contents

[1. Introduction 4](#_Toc90982645)

[2. Change Requests 4](#_Toc90982646)

[2.2 Reason for Change 5](#_Toc90982647)

[2.3 Supplied Documents 5](#_Toc90982648)

[3. Impact Summary 5](#_Toc90982649)

[4. File Change Summary 7](#_Toc90982650)

[4.1 aseXML 7](#_Toc90982651)

[4.2 Changes 7](#_Toc90982652)

[5. Schema Manifest 31](#_Toc90982653)

[6. Schema Test 32](#_Toc90982654)

[6.1 Test 32](#_Toc90982655)

[7. ASWG Endorsement 34](#_Toc90982656)

[8. AEMO Approval 34](#_Toc90982657)

Tables

[Table 1 Proposed Changes 5](#_Toc72162154)

[Table 2 Impacted items 12](#_Toc72162155)

[Table 3 Change Log 15](#_Toc72162156)

[Table 4 Schema Files 26](#_Toc72162157)

Figures

**No table of contents entries found.**

# Introduction

Version r44 of the aseXML schema has been developed from r43. This schema release is presented to aseXML Subscribers and Industry Participants for review and to AEMO for approval, in accordance with the ASWG Terms of Reference.

# Change Requests

The proposed changes are listed in the following table.

|  |  |  |
| --- | --- | --- |
| **Item#** | **Change Description** | **Change Type[[1]](#footnote-1)** |
| 1 | Update the MeterMalfunctionExemptionExpiryDate element to enable the field to be nillable within the ElectricityNMIMasterGroup | Bug Fix |
| 2 | * Update the MeterMalfunctionExemptionNumber element size from 8 to 15 within the MeterMalfunctionExemptionNumber simpleType | Bug Fix |
| 3 | * Correction of RM51 Report Name to reflect report request and output | Bug Fix |
| 4 | * Removal of unsupported RM Report details CR64a and approved during the 5MS project | Enhancement |

1. Proposed Changes

### Change Description

Changes are required to fix issues discovered during unit testing of Meter Exemptions and other related area.

**Schema changes required for MSDR are as follows:**

* **Update allowed length of MeterMalfunctionExemptionNumber from 8 to 15.**
* **Add nillable=”true” attribute for MeterMalfunctionExemptionExpiryDate in ElectricityNMIMasterGroup**
* **Correction of RM51 report name from RegulatedSAPSGenerationReconcilation to RegulatedSAPSGeneratorReconcilation**
* **Removal of unused reports as approved in change request CR64a, report codes include: RM7, RM8, RM10, RM12, RM14, RM15, RM18 and RM19**

## Reason for Change

With the introduction of metering malfunction exemption registration into MSATS the exemption number and expiry date are recorded against the NMI Standing date.

The exemption number is a 15 digit value that needs to be recorded in the NMI Standing Data table.

When the malfunction is resolved the exemption number and expiry date need to be removed. Therefore, the MeterMalfunctionExemptionExpiryDate needs to be a nillable element within the ElectricityNMIMasterGroup.

Correction of RM51 report name error (opportunity to correct schema details)

Removal of unsupported RM reports (opportunity to clean up schema)

## Supplied Documents

Not applicable.

### Business process document

Fixes for issues found during testing and correcting the schema.

### Other

Not applicable.

# Impact Summary

This table identifies the files, transactions and versioned types that are potentially impacted as the result of these changes, where:

* Modified types - is a full list of types changed by this Change Request
* Derived types – is a list of any types that are derived from a modified type, and are therefore also modified by default
* Versioned types affected – is a list of all versioned types that will need to have the version attribute updated as a result of this Change Request
* Transactions potentially affected – is a list of all transactions that contain a modified type, either directly or via a type substitution
* Schema files affected – is a list of schema files that will be changed in some way as a result of this Change Request.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Modified types** | **Derived types** | **Versioned types affected** | **Transactions potentially affected** | **Schema files affected** |
|  |  |  |  | aseXML\_r44.xsd |
| R44 |  |  |  | Events\_r44.xsd |
| ElectricityNMIMasterGroup | ElectricityCATSChangeRequestNMIMasterRow  ElectricityNMIMasterRowBDT  ElectricityNMIMasterRow | ElectricityStandingData | NMIStandingDataResponse  ReportResponse  CATSChangeRequest | ElectricityMasterStandingData\_r44.xsd |
| MDMTSettlementCaseDetailsReportParameters |  |  |  | MDMTReports\_r44.xsd |

# File Change Summary

The following file changes are implemented to create the r43 schema version

## aseXML

Changed aseXML namespace to urn:aseXML:r43

## Changes

The following changes have been implemented in this draft:

|  |  |  |  |
| --- | --- | --- | --- |
| **Chg #** | **Item #** | **Description of change** | **Filename** |
| 1 |  | * Replace version of schema from r43 to r44 * Rename file to r44 version. | aseXML\_r44.xsd |
| 2 |  | * Registration of r44 release * Rename file to r44 version. | Events\_r44.xsd |
| 3 | 2 | * Increase length of MeterMalfunctionExemptionNumber from 8 to 15 * Rename file to r44 version | Electricity\_r44.xsd |
| 4 | 1 | * Add nillable=”true” attribute to existing element MeterMalfunctionExemptionExpiryDate in ElectricityNMIMasterGroup * Rename file to r44 version | ElectricityMasterStandingData\_r44.xsd |
| 5 | 3,4 | * Remove following elements: * MDMTMDPDataDeliveryReportParameters - RM7 * MDMTDatePPSBMPGeneratedReportParameters -RM8 * MDMTMSPLoadAggregationErrorReportParameters - RM10 * MDMTWholesaleMaxValueReportParameters - RM12 * MDMTDataVersionComparisonReportParameters - RM14 * MDMTMultipleVersionsReportParameters - RM15 * MDMTElectricityIntervalDataReportParameters - RM18 * Cleanup of deprecated report RM19 AggregatedActualvsEstimate element from documentation comments * Update ReportName for RM51 in documentation element from RegulatedSAPSGenerationReconcilation to RegulatedSAPSGeneratorReconcilation in MDMTSettlementCaseDetailsReportParameters. * Rename file to r44 version | MDMTReports\_r44.xsd |

1. Change Log

### Schema change description

#### aseXml\_r44.xsd

* New file to replace aseXML\_r44.xsd and include the r44 file versions listed below.

<xsd:schema xmlns="urn:aseXML:r44" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" targetNamespace="urn:aseXML:r44" version="r44" xsi:schemaLocation="urn:aseXML:r44 aseXML\_r44.xsd">

<xsd:include schemaLocation="Electricity\_r44.xsd">

<xsd:include schemaLocation="ElectricityMasterStandingData\_r44.xsd"/>

<xsd:include schemaLocation="Events\_r44.xsd">

<xsd:include schemaLocation="MDMTReports\_r44.xsd">

#### Electricity\_r44.xsd

* Increase data length of existing element ‘MeterMalfunctionExemptionNumber from 8 to 15 characters
* Rename file to r44 version.

<xsd:simpleType name="MeterMalfunctionExemptionNumber">

<xsd:annotation>

<xsd:documentation>

Purpose - Identify the Meter Malfunction Exemption Number - MeterMalfunctionExemptionNumber

Details - The exemption number granted by AEMO when a meter malfunction exemption is granted

</xsd:documentation>

</xsd:annotation>

<xsd:restriction base="xsd:string">

<xsd:maxLength value="15"/>

</xsd:restriction>

</xsd:simpleType>

#### ElectricityMasterStandingData\_r44.xsd

* Add nillable=”true” attribute to existing ‘MeterMalfunctionExemptionExpiryDate‘to ElectricityNMIMasterGroup and ElectricityNMIMasterGroup
* Rename file to r44 version

<xsd:group name="ElectricityNMIMasterGroup">

<xsd:annotation>

<xsd:documentation>

Purpose - Common NMI Master elements across Standing Data and Change Requests

</xsd:documentation>

</xsd:annotation>

<xsd:sequence>

<xsd:element name="JurisdictionCode" type="JurisdictionCode" nillable="true" minOccurs="0"/>

<xsd:element name="NMIClassificationCode" type="NMIClassificationCode" nillable="true" minOccurs="0"/>

<xsd:element name="TransmissionNodeIdentifier" type="TransmissionNodeIdentifier" nillable="true" minOccurs="0"/>

<xsd:element name="DistributionLossFactorCode" type="DistributionLossFactorCode" nillable="true" minOccurs="0"/>

<xsd:element name="ParentEmbeddedNetworkIdentifier" type="EmbeddedNetworkIdentifier" nillable="true" minOccurs="0"/>

<xsd:element name="ChildEmbeddedNetworkIdentifier" type="EmbeddedNetworkIdentifier" nillable="true" minOccurs="0"/>

<xsd:element name="Address" type="AustralianPartialAddress" nillable="true" minOccurs="0"/>

<xsd:element name="Aggregate" type="YesNo" nillable="true" minOccurs="0"/>

<xsd:element name="Status" type="NMIStatusCode" nillable="true" minOccurs="0"/>

<xsd:element name="FlatOrUnitType" type="AustralianFlatOrUnitType" nillable="true" minOccurs="0"/>

<xsd:element name="FlatOrUnitNumber" type="AustralianFlatOrUnitNumber" nillable="true" minOccurs="0"/>

<xsd:element name="FloorOrLevelType" type="AustralianFloorOrLevelType" nillable="true" minOccurs="0"/>

<xsd:element name="FloorOrLevelNumber" type="AustralianFloorOrLevelNumber" nillable="true" minOccurs="0"/>

<xsd:element name="BuildingOrPropertyName" type="AustralianBuildingOrPropertyName" nillable="true" minOccurs="0"/>

<xsd:element name="BuildingOrPropertyName2" type="AustralianBuildingOrPropertyName" nillable="true" minOccurs="0"/>

<xsd:element name="LocationDescriptor" type="AustralianLocationDescriptor" nillable="true" minOccurs="0"/>

<xsd:element name="HouseNumber" type="AustralianHouseNumber" nillable="true" minOccurs="0"/>

<xsd:element name="HouseNumberSuffix" type="AustralianHouseNumberSuffix" nillable="true" minOccurs="0"/>

<xsd:element name="HouseNumberTo" type="AustralianHouseNumber" nillable="true" minOccurs="0"/>

<xsd:element name="HouseNumberToSuffix" type="AustralianHouseNumberSuffix" nillable="true" minOccurs="0"/>

<xsd:element name="HouseNumber2" type="AustralianHouseNumber" nillable="true" minOccurs="0"/>

<xsd:element name="HouseNumber2Suffix" type="AustralianHouseNumberSuffix" nillable="true" minOccurs="0"/>

<xsd:element name="LotNumber" type="AustralianLotNumber" nillable="true" minOccurs="0"/>

<xsd:element name="SectionNumber" type="SectionNumber" nillable="true" minOccurs="0"/>

<xsd:element name="DPNumber" type="DepositedPlanNumber" nillable="true" minOccurs="0"/>

<xsd:element name="StreetName" type="AustralianStreetName" nillable="true" minOccurs="0"/>

<xsd:element name="StreetType" type="AustralianStreetType" nillable="true" minOccurs="0"/>

<xsd:element name="StreetSuffix" type="AustralianStreetSuffix" nillable="true" minOccurs="0"/>

<xsd:element name="AddressLine1" type="AustralianAddressLine" nillable="true" minOccurs="0"/>

<xsd:element name="AddressLine2" type="AustralianAddressLine" nillable="true" minOccurs="0"/>

<xsd:element name="AddressLine3" type="AustralianAddressLine" nillable="true" minOccurs="0"/>

<xsd:element name="SuburbOrPlaceOrLocality" type="AustralianSuburbOrPlaceOrLocality" nillable="true" minOccurs="0"/>

<xsd:element name="StateOrTerritory" type="AustralianStateOrTerritory" nillable="true" minOccurs="0"/>

<xsd:element name="PostCode" type="AustralianPostCode" nillable="true" minOccurs="0"/>

<xsd:element name="DeliveryPointIdentifier" type="AustralianDeliveryPointIdentifier" nillable="true" minOccurs="0"/>

<xsd:element name="GNAFPID" type="GeocodedNationalAddressFilePersistentIdentifier" nillable="true" minOccurs="0"/>

<xsd:element name="DistanceFromSubstation" type="DistanceFromSubstation" nillable="true" minOccurs="0"/>

<xsd:element name="VoltageType" type="VoltageType" nillable="true" minOccurs="0"/>

<xsd:element name="PoleNumber" type="PoleNumber" nillable="true" minOccurs="0"/>

<xsd:element name="AccessDetails" type="AccessDetail" nillable="true" minOccurs="0"/>

<xsd:element name="FeederClass" type="FeederClass" nillable="true" minOccurs="0"/>

<xsd:element name="CustomerClassificationCode" type="EMSDCustomerClassificationCode" nillable="true" minOccurs="0"/>

<xsd:element name="CustomerThresholdCode" type="EMSDCustomerThresholdCode" nillable="true" minOccurs="0"/>

<xsd:element name="TransmissionNodeIdentifier2" type="TransmissionNodeIdentifier" nillable="true" minOccurs="0"/>

<xsd:element name="SharedIsolationPointFlag" type="SharedIsolationPointFlag" nillable="true" minOccurs="0"/>

<xsd:element name="MeterMalfunctionExemptionNumber" type="MeterMalfunctionExemptionNumber" nillable="true" minOccurs="0"/>

<xsd:element name="MeterMalfunctionExemptionExpiryDate" type="xsd:date" nillable="true" minOccurs="0"/>

<xsd:element name="ConnectionConfiguration" type="ConnectionConfiguration" nillable="true" minOccurs="0"/>

<xsd:element name="LastConsumerChangeDate" type="xsd:date" nillable="true" minOccurs="0"/>

<!-- can be skipped and have the nil value-->

</xsd:sequence>

</xsd:group>

#### Events\_r44.xsd

* New file to replace Events\_r43.xsd and include the r44 release identifier as below:

<xsd:simpleType name="r44">

<xsd:annotation>

<xsd:documentation>Purpose - Release r44 identifier.</xsd:documentation>

</xsd:annotation>

<xsd:restriction base="ReleaseIdentifier">

<xsd:enumeration value="r44"/>

</xsd:restriction>

</xsd:simpleType>

#### MDMTReports\_r44.xsd

* Remove following elements:
  + MDMTMDPDataDeliveryReportParameters - RM7
  + MDMTDatePPSBMPGeneratedReportParameters -RM8
  + MDMTMSPLoadAggregationErrorReportParameters - RM10
  + MDMTWholesaleMaxValueReportParameters - RM12
  + MDMTDataVersionComparisonReportParameters - RM14
  + MDMTMultipleVersionsReportParameters - RM15
  + MDMTElectricityIntervalDataReportParameters - RM18
  + AggregatedActualvsEstimate - RM19
* Update ReportName for RM51 in documentation element from RegulatedSAPSGenerationReconcilation to RegulatedSAPSGeneratorReconcilation in MDMTSettlementCaseDetailsReportParameters.
* Rename file to r44 version

<xsd:complexType name="MDMTSettlementCaseDetailsReportParameters">

<xsd:annotation>

<xsd:documentation>

Purpose - Parameter definition for SAPS Reconciliation

Report Name - RegulatedSAPSGeneratorReconcilation

MSATS Reports - RM51

</xsd:documentation>

</xsd:annotation>

<xsd:complexContent>

<xsd:extension base="BaseReportParameters">

<xsd:sequence>

<xsd:element name="SettlementCase" type="MDMSettlementCaseIdentifier"/>

<xsd:element name="ProfileArea" type="ProfileDescription" minOccurs="0"/>

<xsd:element name="TransmissionNodeIdentifier" type="TransmissionNodeIdentifier" minOccurs="0"/>

<xsd:element name="NMI" type="NMIBase" minOccurs="0"/>

</xsd:sequence>

</xsd:extension>

</xsd:complexContent>

</xsd:complexType>

# Schema Manifest

The table below shows the schema files included in this release. Files that have been added, removed or modified for this release are marked.

1. Schema Files

|  |  |
| --- | --- |
| File | Modified |
| Acknowledgements\_r15.xsd |  |
| aseXML\_r44.xsd | \* |
| BAR\_r31.xsd |  |
| BulkDataTool\_r33.xsd |  |
| CATSReports\_r39.xsd |  |
| CATSTableReplication\_r43.xsd |  |
| ClientInformation\_r42.xsd |  |
| Common\_r43.xsd |  |
| CustomerDetails\_r41.xsd |  |
| CustomerTransfer\_r29.xsd |  |
| ElectricityEnumerations.xsd |  |
| ElectricityHighSpeedMonitoring\_r26.xsd |  |
| ElectricityMasterStandingData\_r44.xsd | \* |
| ElectricityMMS\_r33.xsd |  |
| Electricity\_r44.xsd | \* |
| Enumerations.xsd |  |
| Events\_r44.xsd | \* |
| Faults\_r33.xsd |  |
| GasEnumerations.xsd |  |
| GasMarketWholesale\_r34.xsd |  |
| Gas\_r40.xsd |  |
| Header\_r37.xsd |  |
| HighSpeedMonitoring\_r33.xsd |  |
| HubManagement\_r37.xsd |  |
| MarketWholesale\_r20.xsd |  |
| MDMTReports\_r44.xsd | \* |
| MeterDataManagement\_r36.xsd |  |
| NetworkBilling\_r34.xsd |  |
| NMIDataAccess\_r39.xsd |  |
| NOSAssessment\_r38.xsd |  |
| NOSBooking\_r38.xsd |  |
| NOSCommon\_r38.xsd |  |
| NOSEquipment\_r33.xsd |  |
| OneWayNotification\_r43.xsd |  |
| P2P\_r36.xsd |  |
| Reports\_r39.xsd |  |
| ServiceOrder\_r41.xsd |  |
| TableReplication\_r33.xsd |  |
| Transactions\_r43.xsd |  |

# Schema Test

## Test

The ASWG ensures that all recommended parsers on relevant platforms can successfully validate the proposed schema.

### Test Platforms

Supplied samples have been tested using the following parsers:

* XMLSpy
* MSXML6
* Xerces 2.9.1
* Xerces 2.2.1
* Schema comparison (r43 - r44)

### Test Cases

* NOTE: Sample filenames have been modified, where they contained a space in the name, as these failed Xerces validation

### Test Process

1. Obtain a copy of the 5 existing regression test suite XML files
   * nem\_samples\_r43.zip
   * nem\_wholesale\_samples\_r43.zip
   * nemb2b\_samples\_43.zip
   * sawa\_samples\_r43.zip
   * vicgas\_samples\_r43.zip
2. Obtain a copy of new R44 test suite XML files.
3. Unzip all test XML files a folder
4. Replace “xmlns:ase="urn:aseXML:r43” with “xmlns:ase="urn:aseXML:r44”
5. Replace “xsi:schemaLocation="urn:aseXML:r43 <http://www.nemmco.com.au/aseXML/schemas/r43/aseXMLr43.xsd>” with “xsi:schemaLocation="urn:aseXML:r44 S:/aseXML\_r44.xsd” where S: is a mapped local folder holding the r44 schema files.
6. Check every single test XML file individually to detect variances in the above xsi:schemaLocation approach, e.g. hardcoded “O:/<filename>” instances and other occurrences not picked up by the standard search/replace above need to be manually fixed. It would be good if a single search/replace could be used for this step, and the test XML files had consistent headers.
7. Run the test process using the 4 supported XML Toolkits.
8. Check output log for any successful parse results, as well as expected or unexpected errors.

### Test Results

All OK on all Test Platforms, see section 6.1.1

* All valid test files passed with no parse error.

### Character Classification

Pattern restriction is enforced by regular expressions in some places in aseXML schema. That makes knowing the precise set of classification of characters important. It is particularly important in the testing process. In some quick tests using simple Pattern class in JAVA – not fully fledged JAVA parsers – some differences vis-à-vis XML Spy were reported. These tests were performed to validate the data stored in database against aseXML type definitions. Some characters that were treated differently between JAVA Pattern class and XML Spy were $ + |. XML Spy accepted them as punctuation characters but JAVA Pattern class rejected. Note, these three characters are only a few examples of difference, not an exhaustive list. As explained below, further investigations revealed that XML Spy is correct as per the XML standard.

The XML standards depend upon Unicode specifications for the purpose of this classification. The complete list of classification of Unicode characters in various classes can be found at <http://www.unicode.org/>.

To download the classification for any particular version of classification, start from directory listing at <http://www.unicode.org/Public> and traverse down the tree of the concerned version to download the zip (usually named ucd.zip) which contains all the documents for that version. The zip for version 6.2.0 resides at <http://www.unicode.org/Public/6.2.0/ucd/>. The document in this zip, usually named UnicodeData.txt, contains entire classification of all Unicode characters, having a line per Unicode character, with semi-colon delimited fields in each line. Explanation of fields can be found in the documentation in the zip (UCD.html). To view this UnicodeData.txt document conveniently, start Excel and open the document. While opening the document Excel will ask for information about the file contents. In response specify the document to be semicolon delimited with each column of the document being text. The column C of the Excel spreadsheet specifies the character classification. Note, while opening the file in Excel if each column is not specified to be text then Excel may format some information incorrectly.

The classification of the extended ASCII characters for version 6.2.0 of Unicode is provided here in an Excel spreadsheet :



The classifications starting with L signify letters, starting with N signify digits, starting with P signify punctuations, starting with S signify symbols and those starting with C signify control characters. Note, the spread sheet does not contain all the fields (columns) from the UnicodeData.txt file.

# ASWG Endorsement

With a quorum established the ASWG voted to endorse schema r43, with the included aseXML Change Requests. The voting results are forwarded to AEMO for approval. When 75% of those ASWG members vote to endorse a schema it represents an ASWG recommendation for that schema. AEMO will not reject an ASWG recommendation without first consulting with the ASWG.

The results of the ASWG vote for the final schema to be released are as follows:

Date of Vote: 14/05/2021

|  |  |  |
| --- | --- | --- |
| **Option** | **# Votes** | **% Vote** |
| For | 4 | 100% |
| Against | 0 | 0% |
| Abstained | 0 | 0% |
| Total Members Present | 4 | 100% |

# AEMO Approval

The schema approval and approval date are identified below

|  |  |  |
| --- | --- | --- |
| **Status** | **Date** | **Authorised by** |
| **Approved** – The schema has been approved by AEMO and is formally released for use | 15 Dec 2023 | Wayne Lee |

1. Change Type can be one of

   New

   Enhancement, or

   Bug Fix [↑](#footnote-ref-1)