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| --- |
| Schema Release  AseXML Schema Working Group  Release r45 |

March 2025

Draft Release Date: 01 March 2025

Final Release Date: 21 March 2025

Version Control

|  |  |  |
| --- | --- | --- |
| Version | Release date | Changes |
| 0.1 | 18 March 2025 | Creation |
| 0.2 | 21 March 2025 | Finalised after ASWG approval |
|  |  |  |

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# 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

### Change Description

The proposed changes are listed in the following table.

|  |  |  |  |
| --- | --- | --- | --- |
| **Item#** | **Change Description** | **Change Type** | **GMI #** |
| 1 | **Remove** existing Special Read No Access (element name "ReasonForNoAccess”) enumerations from aseXML Gas\_r4n schema file | Enhancement | IN002-22 |
| 2 | **Remove** existing DistributionTariff (element name ”DistributionTariff”) enumerations from aseXML Gas\_r4n schema file | Enhancement | IN004-22 |
| 3 | **Insert** existing Special Read No Access (element name"ReasonForNoAccess”) enumerations removed from Gas\_r4n schema file into GasEnumerations.xsd (creating Version 2.0) | Enhancement | IN002-22 |
| 4 | **Insert** existing ‘DistributionTariff’ (element name ”DistributionTariff”) enumerations removed from Gas\_r4n schema file into GasEnumerations.xsd (creating Version 2.0) | Enhancement | IN004-22 |
| 5 | **Update** existing Special Read No Access (element name = "ReasonForNoAccess”) enumeration values:   * Change "Locked and No Answer" to ‘Locked Premises’ * Change "Savage Dog" to ‘Dog on Premises’ * Change "Can't Locate Meter"’ to ‘Cannot Locate Meter’ | Enhancement | IN002-22 |
| 6 | **Add** new Special Read No Access (element name = "ReasonForNoAccess”) enumeration values:   * Communications Fault * Extreme Weather Conditions * Hi/Low Failure * Meter Capacity Failure * Meter high / ladder required * Operational System Condition * Quarantined Premises * Remote Read Device Out of Alignment * Remote Read Device Not Registering * Resource Limitations * Unsafe equipment / location * Unable to Locate Premises * Vacant Premises | Enhancement | IN002-22 |
| 7 | **Add** new ‘DistributionTariff’ (element name ”DistributionTariff”) enumeration values:   * Volume High * Volume Boundary | Enhancement | IN004-22 |

1. Proposed Changes

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

This Change Proposal refers to two GRCF Gas Market Initiatives (GMIs) where the GRCF proposes the requested aseXML changes will enable:

* GMI IN002-22: Gas Scheduled Read Est Sub Codes and Special Read No Access Enumerations
  + Market Participants to more efficiently identify field issues related to Scheduled meter reads and Special Read events
  + Consolidation and Standarisation resulting in improved consistent use and leading to improved customer service and quality of information to Retailers
* GMI IN004-22: Proposed Improvements to Network Tariff B2B Notification – NSW/ACT
  + Improve the efficiency of the operation of the gas market via more accurate retailer quotation and billing.
  + Improve price and quality outcomes for consumers by minimising the frustration from bills based on an incorrect distribution tariff which is not readily pre-discoverable before quoting and churn.

These two initiatives have progressed to the formal consultation in ‘Package 1 Gas Retail B2B Changes’. Click [here](https://www.aemo.com.au/consultations/current-and-closed-consultations/package-1-gas-retail-b2b-changes) for further information.

## Supplied Documents

### GRCF Gas Retail GMIs requiring this Change Request

* + GMI IN002-22: Gas Scheduled Read Est Sub Codes and Special Read No Access Enumerations - [Link](https://aemo.com.au/consultations/current-and-closed-consultations/package-1-gas-retail-b2b-changes)
  + GMI IN004-22: Proposed Improvements to Network Tariff B2B Notification – NSW/ACT - [Link](https://aemo.com.au/consultations/current-and-closed-consultations/package-1-gas-retail-b2b-changes)

### AEMO Gas Retail Build Packs impacted by this Change Request

|  |  |  |
| --- | --- | --- |
| **Title** | **GMI IN002/22**  **(Sub/Est)** | **GMI IN004/22**  **(Network Tariff)** |
| **Participant Build Pack 1 - Table of transactions** | ü |  |
| **Participant Build Pack 1 - CSV Data Format Specifications** | ü |  |
| **Participant Build Pack 2 – System Interface Definitions** | ü |  |
| **Participant Build Pack 3- B2B System Interface Definitions** | ü |  |
| **Participant Build Pack 5 - NSW-ACT** | ü | ü |
| **FRC B2B System Interface Definitions** | ü |  |

# 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** |
| ReasonForNoAccess |  |  | ServiceOrderResponse | Gas\_r40.xsd  GasEnumerations.xsd |
| DistributionTariff |  | GasMultiMeterMasterStandingDataType  GasMasterStandingData | NMIStandingDataResponse  ServiceOrderResponse  ServiceOrderRequest  NoticeOfMeteringWorks  AccountCreationNotification | Gas\_r40.xsd  GasEnumerations.xsd |

# File Change Summary

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

## aseXML

Changed aseXML namespace to urn:aseXML:r45

## Changes

The following changes have been implemented in this draft:

|  |  |  |  |
| --- | --- | --- | --- |
| **Chg #** | **Item #** | **Description of change** | **Filename** |
| 1 |  | * Replace version of schema from r44 to r45   Rename file to r45 version. | aseXML\_r45.xsd |
| 2 |  | * Registration of r45 release   Rename file to r45 version. | Events\_r45.xsd |
| 3 | 2 | * Added TariffType simple type (relocated from Gas\_r40.xsd file). Included additional values:   + Volume High   + Volume Boundary * Added ReasonForNoAccess simple type (relocated from Gas\_r40.xsd file). Included additional values:   + Communications Fault   + Extreme Weather Conditions   + Hi/Low Failure   + Meter Capacity Failure   + Meter high / ladder required   + Operational System Condition   + Quarantined Premises   + Remote Read Device Out of Alignment   + Remote Read Device Not Registering   + Resource Limitations   + Unsafe equipment / location   + Unable to Locate Premises   + Vacant Premises   Updated existing values:   * Change "Locked and No Answer" to ‘Locked Premises’ * Change "Savage Dog" to ‘Dog on Premises’ * Change "Can't Locate Meter"’ to ‘Cannot Locate Meter’ | GasEnumerations.xsd |
| 4 |  | * Removed TariffType simple type. (Moved to GasEnumerations.xsd file) * Removed ReasonForNoAccess simple type. (Moved to GasEnumerations.xsd file)   Rename file to r45 version | Gas\_r45.xsd |
|  |  |  |  |

1. Change Log

### Schema change description

#### aseXml\_r45.xsd

* New file to replace aseXML\_r44.xsd and include the r45 file versions listed below.

<xsd:schema xmlns="urn:aseXML:r45" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" targetNamespace="urn:aseXML:r45" version="r45" xsi:schemaLocation="urn:aseXML:r45 aseXML\_r45.xsd">

<xsd:include schemaLocation="Gas\_r45.xsd">

#### Events\_r45.xsd

Add new r45 version tag.

<xsd:simpleType name="r45">

<xsd:annotation>

<xsd:documentation>Purpose - Release r45 identifier.</xsd:documentation>

</xsd:annotation>

<xsd:restriction base="ReleaseIdentifier">

<xsd:enumeration value="r45"/>

</xsd:restriction>

</xsd:simpleType>

#### Gas\_r45.xsd

Remove the following enumerated lists to be transferred to GasEnumerations.xsd file.

~~<xsd:simpleType name="DistributionTariff">~~

~~<xsd:annotation>~~

~~<xsd:documentation>Schema - Gas</xsd:documentation>~~

~~</xsd:annotation>~~

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

~~<xsd:enumeration value="Demand"/>~~

~~<xsd:enumeration value="Volume"/>~~

~~<xsd:enumeration value="1A1R"/>~~

~~<xsd:enumeration value="1A2R"/>~~

~~<xsd:enumeration value="1B1R"/>~~

~~<xsd:enumeration value="1B2R"/>~~

~~<xsd:enumeration value="1B3R"/>~~

~~<xsd:enumeration value="1A1N"/>~~

~~<xsd:enumeration value="1A2N"/>~~

~~<xsd:enumeration value="1B1N"/>~~

~~<xsd:enumeration value="1B2N"/>~~

~~<xsd:enumeration value="1B3N"/>~~

~~<xsd:enumeration value="1D1R"/>~~

~~<xsd:enumeration value="1D2R"/>~~

~~<xsd:enumeration value="1D3R"/>~~

~~<xsd:enumeration value="1D1N"/>~~

~~<xsd:enumeration value="1D2N"/>~~

~~<xsd:enumeration value="1D3N"/>~~

~~<xsd:enumeration value="1K1R"/>~~

~~<xsd:enumeration value="1K2R"/>~~

~~<xsd:enumeration value="1K3R"/>~~

~~<xsd:enumeration value="1K1N"/>~~

~~<xsd:enumeration value="1K2N"/>~~

~~<xsd:enumeration value="1K3N"/>~~

~~<xsd:enumeration value="1V1R"/>~~

~~<xsd:enumeration value="1V2R"/>~~

~~<xsd:enumeration value="1V3R"/>~~

~~<xsd:enumeration value="1V1N"/>~~

~~<xsd:enumeration value="1V2N"/>~~

~~<xsd:enumeration value="1V3N"/>~~

~~<xsd:enumeration value="1Demand"/>~~

~~<xsd:enumeration value="2Demand"/>~~

~~<xsd:enumeration value="3Demand"/>~~

~~<xsd:enumeration value="4Demand"/>~~

~~<xsd:enumeration value="5Demand"/>~~

~~<xsd:enumeration value="6Demand"/>~~

~~<xsd:enumeration value="7Demand"/>~~

~~<xsd:enumeration value="8Demand"/>~~

~~<xsd:enumeration value="9Demand"/>~~

~~<xsd:enumeration value="0Demand"/>~~

~~<xsd:enumeration value="Commercial"/>~~

~~<xsd:enumeration value="Negotiated"/>~~

~~<xsd:enumeration value="NegotiatedVolume"/>~~

~~</xsd:restriction>~~

~~</xsd:simpleType>~~

~~<xsd:simpleType name="ReasonForNoAccess">~~

~~<xsd:annotation>~~

~~<xsd:documentation>Schema - Common</xsd:documentation>~~

~~</xsd:annotation>~~

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

~~<xsd:enumeration value="Access Overgrown"/>~~

~~<xsd:enumeration value="Can't Locate Meter"/>~~

~~<xsd:enumeration value="Damaged Meter"/>~~

~~<xsd:enumeration value="Dial Out of Alignment"/>~~

~~<xsd:enumeration value="Dirty Dial"/>~~

~~<xsd:enumeration value="Gate Locked"/>~~

~~<xsd:enumeration value="Key Required"/>~~

~~<xsd:enumeration value="Locked and No Answer"/>~~

~~<xsd:enumeration value="Meter Changed"/>~~

~~<xsd:enumeration value="Meter Obstructed"/>~~

~~<xsd:enumeration value="Meter Removed"/>~~

~~<xsd:enumeration value="Other"/>~~

~~<xsd:enumeration value="Refused Access"/>~~

~~<xsd:enumeration value="Savage Dog"/>~~

~~</xsd:restriction>~~

~~</xsd:simpleType>~~

#### GasEnumerations.xsd

Add the following enumerations lists updated and migrated from Gas\_r45.xsd file. Items in green are updated from previous values. Items in yellow are newly added to the list.

<xsd:simpleType name="DistributionTariff">

<xsd:annotation>

<xsd:documentation>Schema - Gas</xsd:documentation>

</xsd:annotation>

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

<xsd:enumeration value="Demand"/>

<xsd:enumeration value="Volume"/>

<xsd:enumeration value="1A1R"/>

<xsd:enumeration value="1A2R"/>

<xsd:enumeration value="1B1R"/>

<xsd:enumeration value="1B2R"/>

<xsd:enumeration value="1B3R"/>

<xsd:enumeration value="1A1N"/>

<xsd:enumeration value="1A2N"/>

<xsd:enumeration value="1B1N"/>

<xsd:enumeration value="1B2N"/>

<xsd:enumeration value="1B3N"/>

<xsd:enumeration value="1D1R"/>

<xsd:enumeration value="1D2R"/>

<xsd:enumeration value="1D3R"/>

<xsd:enumeration value="1D1N"/>

<xsd:enumeration value="1D2N"/>

<xsd:enumeration value="1D3N"/>

<xsd:enumeration value="1K1R"/>

<xsd:enumeration value="1K2R"/>

<xsd:enumeration value="1K3R"/>

<xsd:enumeration value="1K1N"/>

<xsd:enumeration value="1K2N"/>

<xsd:enumeration value="1K3N"/>

<xsd:enumeration value="1V1R"/>

<xsd:enumeration value="1V2R"/>

<xsd:enumeration value="1V3R"/>

<xsd:enumeration value="1V1N"/>

<xsd:enumeration value="1V2N"/>

<xsd:enumeration value="1V3N"/>

<xsd:enumeration value="1Demand"/>

<xsd:enumeration value="2Demand"/>

<xsd:enumeration value="3Demand"/>

<xsd:enumeration value="4Demand"/>

<xsd:enumeration value="5Demand"/>

<xsd:enumeration value="6Demand"/>

<xsd:enumeration value="7Demand"/>

<xsd:enumeration value="8Demand"/>

<xsd:enumeration value="9Demand"/>

<xsd:enumeration value="0Demand"/>

<xsd:enumeration value="Commercial"/>

<xsd:enumeration value="Negotiated"/>

<xsd:enumeration value="NegotiatedVolume"/>

<xsd:enumeration value="Volume High"/>

<xsd:enumeration value="Volume Boundary"/>

</xsd:restriction>

</xsd:simpleType>

<xsd:simpleType name="ReasonForNoAccess">

<xsd:annotation>

<xsd:documentation>Schema - Common</xsd:documentation>

</xsd:annotation>

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

<xsd:enumeration value="Access Overgrown"/>

<xsd:enumeration value="Cannot Locate Meter"/>

<xsd:enumeration value="Damaged Meter"/>

<xsd:enumeration value="Dial Out of Alignment"/>

<xsd:enumeration value="Dirty Dial"/>

<xsd:enumeration value="Gate Locked"/>

<xsd:enumeration value="Key Required"/>

<xsd:enumeration value="Locked Premises"/>

<xsd:enumeration value="Meter Changed"/>

<xsd:enumeration value="Meter Obstructed"/>

<xsd:enumeration value="Meter Removed"/>

<xsd:enumeration value="Other"/>

<xsd:enumeration value="Refused Access"/>

<xsd:enumeration value="Dog on Premises"/>

<xsd:enumeration value="Communications Fault"/>

<xsd:enumeration value="Extreme Weather Conditions"/>

<xsd:enumeration value="Hi/Low Failure"/>

<xsd:enumeration value="Meter Capacity Failure"/>

<xsd:enumeration value="Meter high / ladder required"/>

<xsd:enumeration value="Operational System Condition"/>

<xsd:enumeration value="Quarantined Premises"/>

<xsd:enumeration value="Remote Read Device Out of Alignment"/>

<xsd:enumeration value="Remote Read Device Not Registering"/>

<xsd:enumeration value="Resource Limitations"/>

<xsd:enumeration value="Unsafe equipment / location"/>

<xsd:enumeration value="Unable to Locate Premises"/>

<xsd:enumeration value="Vacant Premises"/>

</xsd:restriction>

</xsd:simpleType>

# 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\_r45.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\_r45.xsd | \* |
| Faults\_r33.xsd |  |
| GasEnumerations.xsd | \* |
| GasMarketWholesale\_r34.xsd |  |
| Gas\_r45.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

### 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\_r44.zip
   * nem\_wholesale\_samples\_r44.zip
   * nemb2b\_samples\_44.zip
   * sawa\_samples\_r44.zip
   * vicgas\_samples\_r44.zip
2. Obtain a copy of new R45 test suite XML files.
3. Unzip all test XML files a folder
4. Replace “xmlns:ase="urn:aseXML:r44” with “xmlns:ase="urn:aseXML:r45”
5. Replace “xsi:schemaLocation="urn:aseXML:r44 <http://www.nemmco.com.au/aseXML/schemas/r43/aseXMLr44.xsd>” with “xsi:schemaLocation="urn:aseXML:r45 S:/aseXML\_r45.xsd” where S: is a mapped local folder holding the r45 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: 21/03/2025

|  |  |  |
| --- | --- | --- |
| **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 | 21 Mar 2025 | Wayne Lee |