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| --- |
| Schema ReleaseAseXML Schema Working GroupRelease r40 |

Dec 2020

Draft Release Date: 27/Oct/2020

Final Release Date: 07/12/2020

Version Control

|  |  |  |
| --- | --- | --- |
| Version | Release date | Changes |
| 0.1 | 07 December 2020 | Creation |
| 0.2 | 17 May 2021 | Correct error in section 4.2.1 for version number being one version behind. |
|  |  |  |

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# Introduction

Version r40 of the aseXML schema has been developed from r39 and r39\_p1. 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 following ASWG Change Requests have been included in this schema release:

|  |  |
| --- | --- |
| **CR#** | **Description** |
| 67 | Add the following new JEC values to the existing enumeration list:• AMLB • AMLC• AMLI • AMLM• AMLN• AMLU• DMS• DSDA• DSDB• DSDI• DSDN• DSDU• MRMB• MRMC• MRMI• MRMN • MRMU• PRE• TCI• TCIB• TCII• TCIN• TCIU• TCRFor further information about these new JEC values, please see the Impact and Implementation Report (IIR) consultation papers (IN002/15W and IN026/15) published on AEMO website. Click [here](https://aemo.com.au/consultations/current-and-closed-consultations/in002-15w-in026-15) to view these papers It is also important to note that an abbreviated version of the text to describe the mechanism that is stopping the flow of gas has been chosen. This is because the meter status field is also used CSV consumptionData file and the field length set at 10 characters. Extending the text beyond 10 characters would lead to further IT systems changes and further cost.  |
| 68 | Add the following new meter status values to the existing enumeration list:• Trailer AC• No Reg For further information about these new meter status values, please see the Impact and Implementation Report (IIR) consultation papers (IN009/19W and IN010/20W) published on AEMO website. Click [here](https://aemo.com.au/consultations/current-and-closed-consultations/in00919w-and-in01020w) to view these papers.It is also important to note that an abbreviated version of the text to describe the mechanism that is stopping the flow of gas has been chosen. This is because the meter status field is also used CSV consumptionData file and the field length set at 10 characters. Extending the text beyond 10 characters would lead to further IT systems changes and further cost.  |

These Change Requests are available from the ASWG Link page for members (<https://link.aemo.com.au/aswg/SitePages/Home.aspx>) or the aseXML page on the AEMO website upon publication (<https://www.aemo.com.au/energy-systems/market-it-systems/asexml-standards/asexml-schemas>) for review by all impacted parties.

#

# Impact Summary

This table identifies the files, transactions and versioned types that are changed in this schema, where:

* Modified types - is a full list of types changed in this schema
* 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 to use this schema
* 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 have been changed in some way for this schema.
1. Impacted items

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Modified types** | **Derived types** | **Versioned types affected** | **Transactions potentially affected** | **Schema files affected** |
|  |  |  |  | aseXML\_r40.xsd |
| R40 |  |  |  | Events\_r40.xsd |
| JobEnquiryCode |  | GasServiceOrderType | ServiceOrderRequestServiceOrderResponse | Gas\_r40.xsd |
| GasMeterStatus |  | GasStandingDataGasMultiMeterStandingDataGasServiceOrderNotificationData | NMIStandingDataResponseNMIStandingDataResponseServiceOrderResponse | Gas\_r40.xsd |
|  |  |  |  |  |

# File Change Summary

The following file changes are implemented to create the r40 schema version

## aseXML

Changed aseXML namespace to urn:aseXML:r40

## Changes

|  |  |  |  |
| --- | --- | --- | --- |
| **Chg #** | **Item #** | **Description of change** | **Filename** |
| 1 | 1 | Replace version of schema from r39 to r40Rename file to r40 version. | aseXML\_r40.xsd |
| 2 | 1 | Registration of r40 releaseRename file to r40 version. | Events\_r40.xsd |
| 3 | 1 | Add enumerations to JobEnquiryCode simple type.* AMLB
* AMLC
* AMLI
* AMLM
* AMLN
* AMLU
* DMS
* DSDA
* DSDB
* DSDI
* DSDN
* DSDU
* MRMB
* MRMC
* MRMI
* MRMN
* MRMU
* PRE
* TCI
* TCIB
* TCII
* TCIN
* TCIU
* TCR

Update version for complex types:* GasServiceOrderNotificationData

Rename file to r40 version. | Gas\_r40.xsd |
| 4 | 1 | Add enumerations to GasMeterStatus simple type.* Trailer AC
* No Reg

Update version for complex types:* GasServiceOrderNotificationData
* GasMultiMeterStandingData
* GasStandingData

Rename file to r40 version. | Gas\_r40.xsd |
| 5 |  |  |  |
| 6 |  |  |  |
| 7 |  |  |  |
| 8 |  |  |  |
| 9 |  |  |  |
| 10 |  |  |  |

1. Table 2‑1 Change Log

### Schema change description

#### aseXml\_r40.xsd

New file to replace aseXML\_r39.xsd and include the r40 file versions listed below.

<xsd:schema xmlns="urn:aseXML:r40" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" targetNamespace="urn:aseXML:r40" version="r40" xsi:schemaLocation="urn:aseXML:r40 aseXML\_r40.xsd">

<xsd:include schemaLocation="Gas\_r40.xsd">

#### Gas\_r40.xsd

Move JobEnquiryCode simple type to the new non versioned enumerations XSD file GasEnumerations.xsd.

Modified version for GasServiceOrderType complex type.

<xsd:attribute name="version" type="r40" use="optional" default="r40"/>

Addition of new enumerated values of ‘Trailer Ac’ and ‘No Reg’ to GasMeterStatus simple type

####  <xsd:simpleType name="GasMeterStatus">

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

####  <xsd:enumeration value="No meter"/>

####  <xsd:enumeration value="Turned on"/>

####  <xsd:enumeration value="Turned off"/>

####  <xsd:enumeration value="Plugged"/>

####  <xsd:enumeration value="Trailer AC"/>

####  <xsd:enumeration value="No Reg"/>

####  </xsd:restriction>

####  </xsd:simpleType>Common\_r39.xsd

Modified version for GasStandingData complex type.

<xsd:attribute name="version" type="r40" use="optional" default="r40"/>

Modified version for GasMultiMeterStandingData complex type.

<xsd:attribute name="version" type="r40" use="optional" default="r40"/>

Modified version for GasServiceOrderNotificationData complex type.

<xsd:attribute name="version" type="r40" use="optional" default="r40"/>

#### GasEnumerations.xsd

Move JobEnquiryCode simple type to this new non versioned enumerations XSD file.

Addition of new enumerated values to JobEnquiryCode simple type.

####  <xsd:simpleType name="JobEnquiryCode">

####  <xsd:annotation>

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

####  </xsd:annotation>

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

####  <xsd:enumeration value="AML"/>

####  <xsd:enumeration value="CSL"/>

####  <xsd:enumeration value="CLT"/>

####  <xsd:enumeration value="DFC"/>

####  <xsd:enumeration value="DSD"/>

####  <xsd:enumeration value="EBD"/>

####  <xsd:enumeration value="EBS"/>

####  <xsd:enumeration value="ECO"/>

####  <xsd:enumeration value="EFB"/>

####  <xsd:enumeration value="EMG"/>

####  <xsd:enumeration value="EMT"/>

####  <xsd:enumeration value="EOT"/>

####  <xsd:enumeration value="ESE"/>

####  <xsd:enumeration value="EST"/>

####  <xsd:enumeration value="EXP"/>

####  <xsd:enumeration value="FAP"/>

####  <xsd:enumeration value="FAT"/>

####  <xsd:enumeration value="FHS"/>

####  <xsd:enumeration value="FMN"/>

####  <xsd:enumeration value="FMT"/>

####  <xsd:enumeration value="FSV"/>

####  <xsd:enumeration value="MAP"/>

####  <xsd:enumeration value="MBO"/>

####  <xsd:enumeration value="MCH"/>

####  <xsd:enumeration value="MDM"/>

####  <xsd:enumeration value="MDO"/>

####  <xsd:enumeration value="MFX"/>

####  <xsd:enumeration value="MFXA"/>

####  <xsd:enumeration value="MHA"/>

####  <xsd:enumeration value="MRC"/>

####  <xsd:enumeration value="MRF"/>

####  <xsd:enumeration value="MRG"/>

####  <xsd:enumeration value="MRM"/>

####  <xsd:enumeration value="MRR"/>

####  <xsd:enumeration value="MRT"/>

####  <xsd:enumeration value="MST"/>

####  <xsd:enumeration value="MTE"/>

####  <xsd:enumeration value="MTJ"/>

####  <xsd:enumeration value="MTN"/>

####  <xsd:enumeration value="OTH"/>

####  <xsd:enumeration value="RML"/>

####  <xsd:enumeration value="RSD"/>

####  <xsd:enumeration value="RSR"/>

####  <xsd:enumeration value="SBS"/>

####  <xsd:enumeration value="SCR"/>

####  <xsd:enumeration value="SDR"/>

####  <xsd:enumeration value="SNG"/>

####  <xsd:enumeration value="SPN"/>

####  <xsd:enumeration value="UEF"/>

####  <xsd:enumeration value="UMS"/>

####  <xsd:enumeration value="USR"/>

####  <xsd:enumeration value="AMLB"/>

####  <xsd:enumeration value="AMLC"/>

####  <xsd:enumeration value="AMLI"/>

####  <xsd:enumeration value="AMLM"/>

####  <xsd:enumeration value="AMLN"/>

####  <xsd:enumeration value="AMLU"/>

####  <xsd:enumeration value="DMS"/>

####  <xsd:enumeration value="DSDA"/>

####  <xsd:enumeration value="DSDB"/>

####  <xsd:enumeration value="DSDI"/>

####  <xsd:enumeration value="DSDN"/>

####  <xsd:enumeration value="DSDU"/>

####  <xsd:enumeration value="MRMB"/>

####  <xsd:enumeration value="MRMC"/>

####  <xsd:enumeration value="MRMI"/>

####  <xsd:enumeration value="MRMN"/>

####  <xsd:enumeration value="MRMU"/>

####  <xsd:enumeration value="PRE"/>

####  <xsd:enumeration value="TCI"/>

####  <xsd:enumeration value="TCIB"/>

####  <xsd:enumeration value="TCII"/>

####  <xsd:enumeration value="TCIN"/>

####  <xsd:enumeration value="TCIU"/>

####  <xsd:enumeration value="TCR"/>

####  </xsd:restriction>

####  </xsd:simpleType>

#### Events\_r40.xsd

Define new simple type “r40”

 <xsd:simpleType name="r40">

 <xsd:annotation>

 <xsd:documentation>Purpose - Release r40 identifier.</xsd:documentation>

 </xsd:annotation>

 <xsd:restriction base="ReleaseIdentifier">

 <xsd:enumeration value="r40"/>

 </xsd:restriction>

# 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\_r40.xsd | \* |
| BAR\_r31.xsd |  |
| BulkDataTool\_r33.xsd |  |
| CATSReports\_r39.xsd |  |
| CATSTableReplication\_r35.xsd |  |
| ClientInformation\_r36.xsd |  |
| Common\_r39.xsd |  |
| CustomerDetails\_r38.xsd |  |
| CustomerTransfer\_r29.xsd |  |
| ElectricityEnumerations.xsd |  |
| ElectricityHighSpeedMonitoring\_r2 |  |
| ElectricityMasterStandingData\_r39.xsd |  |
| ElectricityMMS\_r33.xsd |  |
| Electricity\_r36.xsd |  |
| Enumerations.xsd |  |
| Events\_r40.xsd | \* |
| Faults\_r33.xsd |  |
| GasMarketWholesale\_r34.xsd |  |
| Gas\_r40.xsd | \* |
| GasEnumerations.xsd | \* |
| Header\_r37.xsd |  |
| HighSpeedMonitoring\_r33.xsd |  |
| HubManagement\_r37.xsd |  |
| MarketWholesale\_r20.xsd |  |
| MDMTReports\_r39\_p1.xsd |  |
| MeterDataManagement\_r36.xsd |  |
| NetworkBilling\_r34.xsd |  |
| NMIDataAccess\_r39.xsd |  |
| NOSAssessment\_r38.xsd |  |
| NOSBooking\_r38.xsd |  |
| NOSCommon\_r38.xsd |  |
| NOSEquipment\_r33.xsd |  |
| OneWayNotification\_r36.xsd |  |
| P2P\_r36.xsd |  |
| Reports\_r39.xsd |  |
| ServiceOrder\_r36.xsd |  |
| TableReplication\_r33.xsd |  |
| Transactions\_r38.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 (r39\_p1 - r40)

### 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\_r39.zip
	* nem\_wholesale\_samples\_r39.zip
	* nemb2b\_samples\_r39.zip
	* sawa\_samples\_r39.zip
	* vicgas\_samples\_r39.zip
2. Obtain a copy of the new R40 test suite XML files
3. Unzip all test XML files a folder
4. Replace “xmlns:ase="urn:aseXML:r39” with “xmlns:ase="urn:aseXML:r40”
5. Replace “xsi:schemaLocation="urn:aseXML:r39 <http://www.nemmco.com.au/aseXML/schemas/r39/aseXMLr39.xsd>” with “xsi:schemaLocation="urn:aseXML:r40 S:/aseXML\_r40.xsd”
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 r40, 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: 29/05/2020

|  |  |  |
| --- | --- | --- |
| **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 |  |  |