

aseXML SCHEMA CHANGE REQUEST

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DRAFT/FINAL DRAFT

Version Release History

Version	Date	By	Changes
1.0	28/4/2011	Mike Muir	Creation of the MMSWindAvailabilityRequest transaction
1.1	18/05/2011	Nandkumar Gaikwad (Nandu)	Modified the document, based on the document provided by Eddie Graham (AEMO), for addition of a new report request/response for MSATS Limits.
1.2	23/05/2011	Chathruwan Rodrigo	Added NOS related aseXML schema changes.
	27/05/2011	Nandkumar Gaikwad (Nandu)	Modified to reflect the changes made after ASWG feedback from ASWG meeting dated 20-May-2011
	30/05/2011	Nandkumar Gaikwad (Nandu)	Reviewed and changed NOS portion based on discussion with Chathruwan.
1.3	10/062011	Nandkumar Gaikwad (Nandu)	Changed to make the sub-elements of complex type MT Pasa optional by defining 0 min-occurrences for them. Added examples for the same.

Glossary

Abbreviation	Description
MMS	Market Management System is the name given to the system used by AEMO as part of the National Electricity Market
NEM	National Electricity Market

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1 Change Proposal

This Change Proposal consists of three independent changes. A brief background of the three is provided below.

- (1) A request has been received from a participant in the NEM to provide wind availability forecast data by file rather than by the existing web screens. AEMO has taken the view that such new file formats should reflect the industry strategy and follow the aseXML format.
- (2) A new report request and response format is to be introduced in MSATS to inform participants about the current status of their MSATS Limits.
- (3) TNSPs has decided to use different terminology for Certainty level in NOS bookings. This require aseXML schema change to accept TNSP booking requests without rejecting them from B2B. In addition Resubmit reason enumeration has been changed to accommodate “AEMO Request” rather than “NEMMCO Request” as part of the NEMMCO to AEMO name change.

1.1 Description of the proposed change

The proposed changes are listed in the following table.

Item#	Change Description	Change Type ¹
1	New Complex Types MMSMtPasaWindAvailability MMSClusterWindAvailability MMSUpperLimitsWindAvailability MMSBidDetails MMSWindAvailabilityRequest	New
2	New Complex Types CATSMsatsLimitsReportParameters CATSMsatsLimitsReportFormat MsatsLimits MsatsLimit GroupMembers	New
3	In EnumResubmitReasonType change enum value "NEMMCO Request" to "AEMO Request" In EnumCertaintyType, remove enum values "Outage scheduled", "System security assessed" and "Outage confirmed" and introduce "Scheduled", "Resourced" and "Confirmed"	Modify

Table 1-1, Proposed Changes

1.1.1 First change description

Creation of a new MMSWindAvailabilityRequest transaction and associated complex types.

1.1.2 Second change description

Provide a new report request and response format to inform participants about the current status of their MSATS Limits.

1.1.3 Third change description

Accommodate new certainty levels agreed by TNSPs and accommodate NEMMCO to AEMO name change for an enumerated value of EnumResubmitReasonType

1.2 Reason for Change

1. **First Change** : - The NEM requires forecast wind plant production (MW) in a range of future timeframes from 5 minutes to 2 years. In order to get sufficient accuracy two items of forecast plant availability are required from the wind farm owner, the number of turbines available for generation, and the possibility of wind farm upper limit. This data can be supplied to AEMO via a web screen that forces the plant owner to enter the data twice, once into their internal planning system and once into the MMS. To improve the efficiency by entering once and allowing bulk data transfers a file format is needed. This new transaction will allow for entering the forecast data by period (half hour) and by day.

¹ Change Type can be one of

- New
- Enhancement, or
- Bug Fix

2. Second Change : - This is to provide

- A new report parameter type “CATSMsatsLimitsReportParameters” whose only element is “ReportName” which is mandatory.
- A new report response format “CATSMsatsLimitsReportFormat” which contains the following elements:
 - “Participant” which is mandatory, cannot be empty and can appear only once.
 - “Group” which is optional, cannot be empty and can appear only once.
 - “GroupMembers” which is optional, cannot be empty and can appear only once.
 - “Cr” which is mandatory, cannot be empty and can appear only once.
 - “CrNotification” which is mandatory, cannot be empty and can appear only once.
 - “NsrNotification” which is mandatory, cannot be empty and can appear only once.
 - “NsrResponse” which is mandatory, cannot be empty and can appear only once.
 - “OutboxFile” which is mandatory, cannot be empty and can appear only once.
 - “Report” which is mandatory, cannot be empty and can appear only once.

3. Third change

- TNSPs has decided to use following values as Certainty,
 - Scheduled
 - Resourced
 - Confirmed
- Instead of the previous values
 - Outage scheduled
 - System security assessed
 - Outage confirmed
- Change resubmit reason type “NEMMCO Request” to “AEMO Request”

1.3 Supplied Documents

1.3.1 Business process definition

1.3.1.1 First Change :- The data flow is from a participant to the MMS. The wind availability data is in the form of an MMSWindAvailabilityRequest which is an aseXML Transaction. This is in the normal aseXML envelop with header and zipped into a file.

The intention is to use the AEMO Participant Batchter to do the message sending and reception via the electricity B2B hub with the participant id of the target being MMS. The acceptance of the wind availability data will be via the normal transaction acknowledgement mechanism. Refer to the aseXML Guidelines for a fuller discussion of the transaction sending and reception mechanism (<http://www.aemo.com.au/asexml/guidelines.html>).

Further details on usage will be provided as part of the MMS release cycle in change notice(s). In particular the nature of event codes, expected performance and sample gateway configuration.

1.3.1.2 Second Change :- Enhancement defect 7285 has been raised in Quality Centre under the MSystems Project for this purpose. This is about letting participants know of limits, relaxed CR limits, approaching limits etc

1.3.1.3 Third Change: - Request from all TNSPs to change the certainty level in NOS to the new standard. Remove name NEMMCO from resubmit reason.

1.3.2 Other

aseXML_r28.zip

1.4 Baseline Schema

The schema used as a basis for this proposal **aseXML_r27.zip**

2 Approval Proposal

2.1 Proposed Change #1²

2.1.1 Draft schema

Please refer to the draft schema mentioned above attached to this change request. The base schema is aseXML_r27 and the files as detailed in the next section have been changed.

2.1.2 Change log

The following changes have been implemented in this draft:

Chg #	Item #	Description of change	Filename
1	1	Added EMMS as a new transaction group. Changed documentation.	Header_r28.xsd
2	1	Added MMSWindAvailabilityRequest to the list of Transactions.	Transactions_r28.xsd
3	1	New file ElectricityMMS_r28.xsd added contains new transaction and specific complex types	ElectricityMMS_r28.xsd
4	1,2,3	Updated schema namespace to urn:aseXML:r28, new include to refer to the file added, and changed the version numbers of modified files.	aseXML_r28.xsd
5	1,2	Add new type r28 for new schema version	Events_r28.xsd
6	2	Added "CATSMsatsLimitsReportParameters" and "CATSMsatsLimitsReportFormat" types	CATSReports_r28
7	3	In EnumResubmitReasonType change enum value "NEMMCO Request" to "AEMO Request" In EnumCertaintyType, remove enum values "Outage scheduled", "System security assessed" and "Outage confirmed" and introduce "Scheduled", "Resourced" and "Confirmed" File renamed from NOSCommon_r18.xsd to NOSCommon_r28.xsd	NOSCommon_r28.xsd
8	3	Changed the version attribute to r28 for impacted versioned type NOSInfoResponse. Made the version attribute optional	NOSAssessment_r28

² This section may be repeated if more than one option is considered

		with default r28.	
9	3	Changed the version attribute to r28 for impacted versioned type NOSBookingSubmission. Made the version attribute optional with default r28.	NOSBooking_r28

Table 2-1 Change Log

2.1.3 Schema change description

2.1.3.1 Schema File Header

- *EMMS - Electricity Market Management System* → annotation added
- `<xsd:enumeration value="EMMS"/>` → added to the TransactionGroup

2.1.3.2 Schema File Transactions

- `<xsd:element name="MMSWindAvailabilityRequest" type="MMSWindAvailabilityRequest"/>` → added to Transaction

2.1.3.3 Schema File ElectricityMMS_r28.xsd

This is a new file containing the definitions for wind availability.

2.1.3.3.1 Complex types

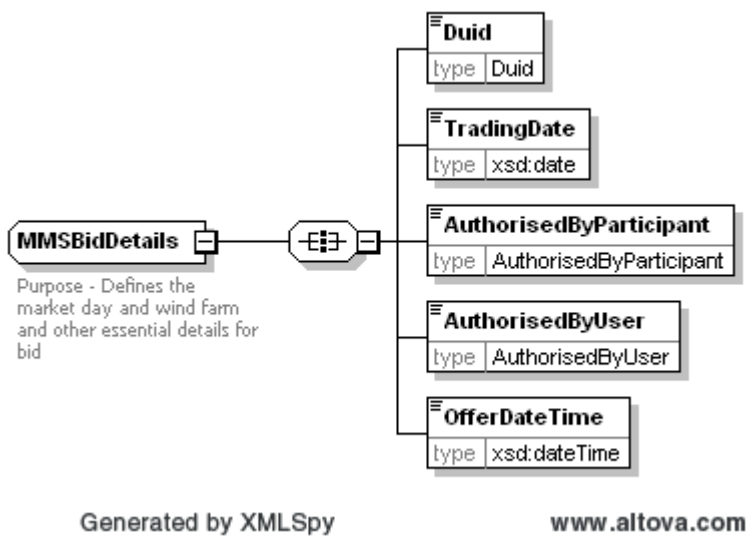


Figure 2-1 MMSBidDetails

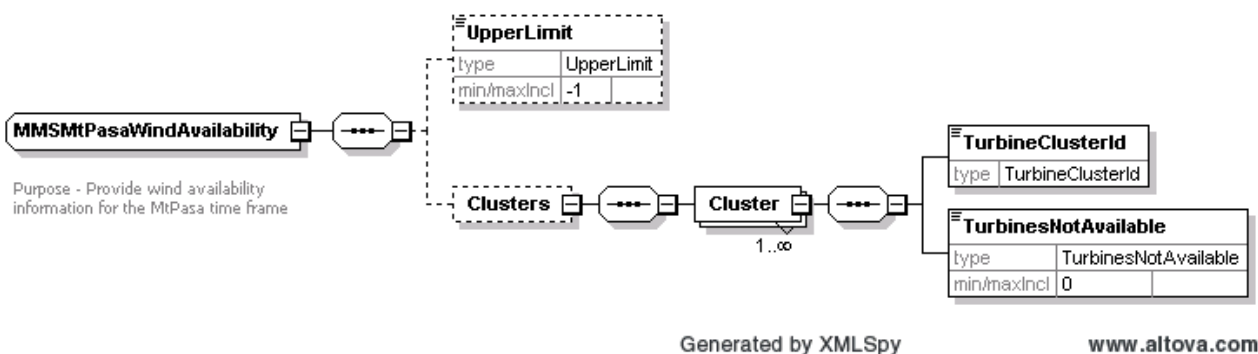


Figure 2-2 MMSClusterWindAvailability

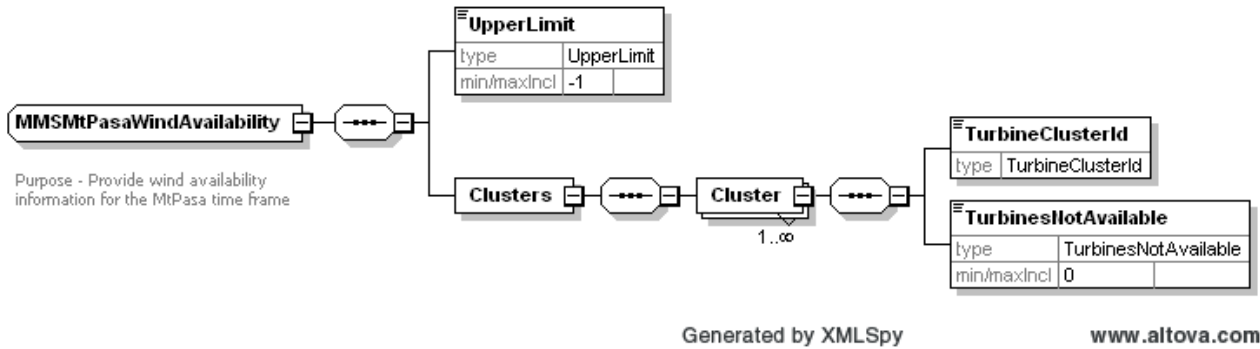


Figure 2-3 MMSMtPasa WindAvailability

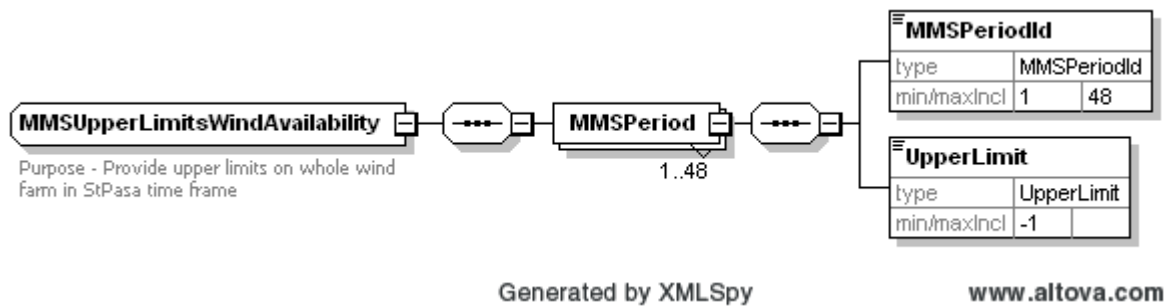


Figure 2-4 MMSUpperLimitsWindAvailability

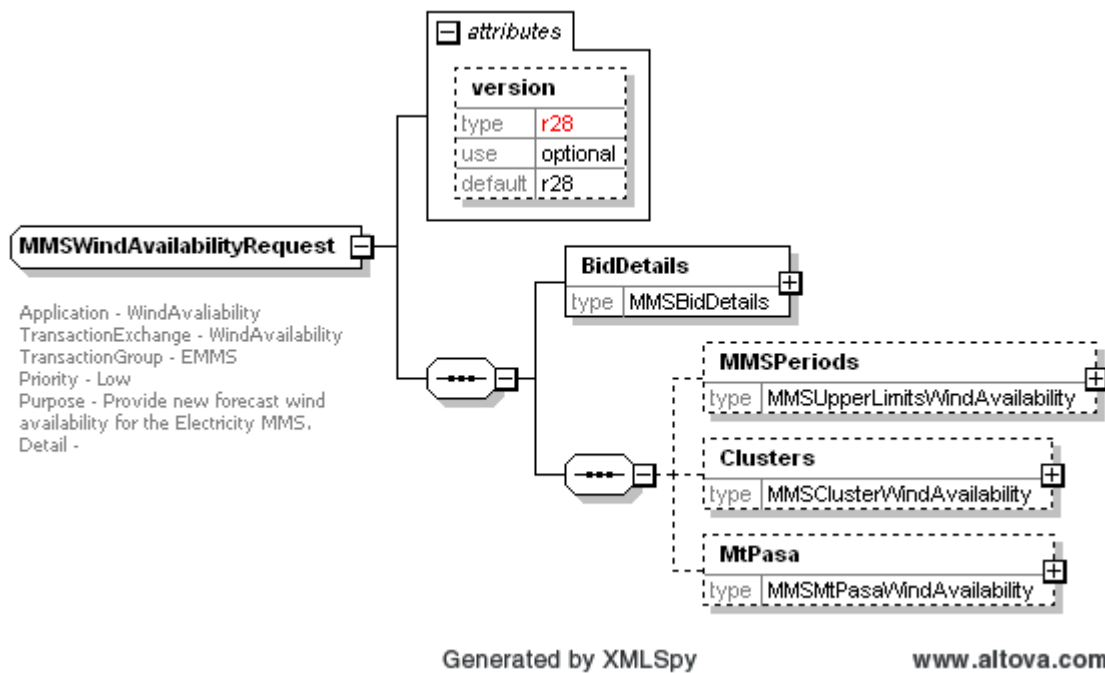


Figure 2-5 MMSWindAvailabilityRequest

2.1.3.4 Schema File aseXml

- `<xsd:include schemaLocation="Header_r28.xsd">` added the reference to the new schema
- `<xsd:include schemaLocation="ElectricityMMS_r28.xsd">`
`<xsd:annotation>`
`<xsd:documentation>`
Purpose - Include data types for Electricity MMS transactions
`</xsd:documentation>`
`</xsd:annotation>`
`</xsd:include>` → added reference to new ElectricityMMS file

2.1.3.5 Schema File Events

- ```

<xsd:simpleType name="r28">
 <xsd:annotation>
 <xsd:documentation>Purpose - Release r28 identifier. This release contains
 extensions for Electricity Market Management Systems</xsd:documentation>
 </xsd:annotation>
 <xsd:restriction base="ReleaseIdentifier">
 <xsd:enumeration value="r28"/>
 </xsd:restriction>
</xsd:simpleType>

```
- added reference to new schema version

### 2.1.3.6 Schema File CATSReports\_r28.xsd

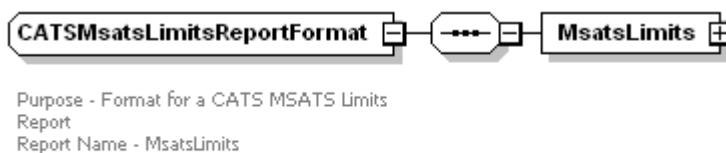
- Add new complex type “CATSMsatsLimitsReportParameters” derived from “BaseReportParameters” with optional attribute “version” of type “r28”.



Generated by XMLSpy

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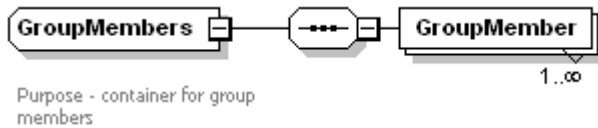
- Add new complex type “CATSMsatsLimitsReportFormat” derived from “BaseReportFormat” with mandatory element “MsatsLimits” of type “MsatsLimits”.



Generated by XMLSpy

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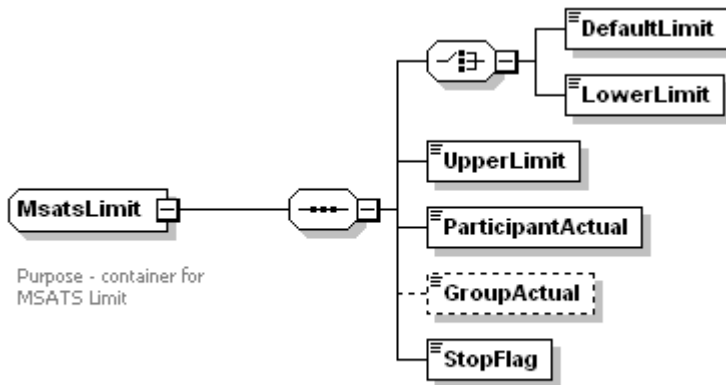
- Add new complex type “GroupMembers” with mandatory element “GroupMember” of type “PartyIdentifier” which can appear more than once.



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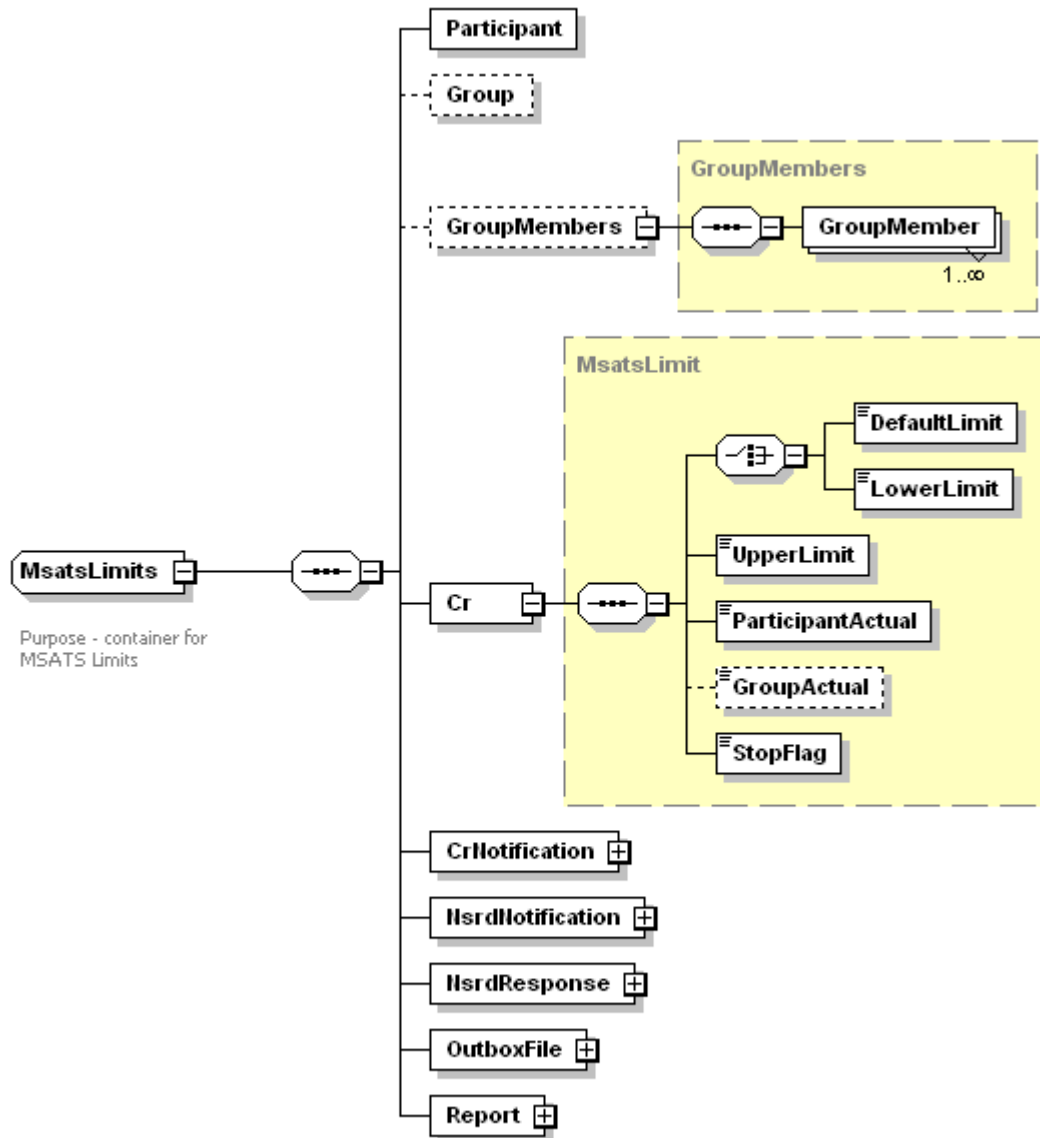
- Add new complex type “MsatsLimit” with
  - Choice of
    - Mandatory element “DefaultLimit” of type “xsd:integer” which can appear only once.
    - Mandatory element “LowerLimit” of type “xsd:integer” which can appear only once.
  - Mandatory element “UpperLimit” of type “xsd:integer” which can appear only once.
  - Mandatory element “ParticipantActual” of type “xsd:integer” which can appear only once.
  - Optional element “GroupActual” of type “xsd:integer” which can appear only once.
  - Mandatory element “StopFlag” of type “xsd:string” which can appear only once.



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- Add new complex type “MsatsLimits” with
  - Mandatory element “Participant” of type “PartyIdentifier” which can appear only once.
  - Optional element “Group” of type “PartyIdentifier” which can appear only once.
  - Optional element “GroupMembers” of type “GroupMembers” which can appear only once.
  - Mandatory element “Cr” of type “MsatsLimit” which can appear only once.
  - Mandatory element “CrNotification” of type “MsatsLimit” which can appear only once.
  - Mandatory element “NsrNotification” of type “MsatsLimit” which can appear only once.
  - Mandatory element “NsrResponse” of type “MsatsLimit” which can appear only once.
  - Mandatory element “OutboxFile” of type “MsatsLimit” which can appear only once.
  - Mandatory element “Report” of type “MsatsLimit” which can appear only once.



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### 2.1.3.7 Schema file NOSCommon\_r28.xsd

```
<xsd:simpleType name="EnumResubmitReasonType">
```

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

```
 <xsd:enumeration value="AEMO Request"/> → Changed "NEMMCO
```

Request to "AEMO Request"

```
 </xsd:restriction>
```

```
</xsd:simpleType>
```

```
<xsd:simpleType name="EnumCertaintyType">
```

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

```
 <xsd:enumeration value="Scheduled"/> → Changed "Outage scheduled" to
```

"Scheduled"

```
 <xsd:enumeration value="Resourced"/> → Changed "System security
```

assessed" to "Resourced"

```
 <xsd:enumeration value="Confirmed"/> → Changes "Outage confirmed" to
```

"Confirmed"

```
</xsd:restriction>
</xsd:simpleType>
```

## 2.1.4 Impact Summary

The change for Wind Availability is an addition of a completely new TransactionGroup and a Transaction, and there being no changes to existing simple/complex types/transactions, the change as such will have no impact on existing types and transactions.

The change for MSATS Limits is an addition of a completely new report request and there being no changes to existing simple/complex types/transactions, the change as such will have no impact on existing types and transactions.

The changes to the Certainty levels require changes to the TNSP software (Transend, Transgrid and Powerlink need to accommodate the change. Transgrid and Powerlink system are still under development)

| Modified types         | Derived types                           | Versioned types affected                | Transactions potentially affected       | Schema files affected                                                                                                   |
|------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
|                        |                                         |                                         |                                         | Header_r28.xsd<br>Transactions_r28.xsd<br>ElectricityMMS_r28.xsd<br>aseXML_r28.xsd<br>Events_r28.xsd<br>CATSReports_r28 |
| EnumCertaintyType      | BookingType                             | NOSInfoResponse<br>NOSBookingSubmission | NOSInfoResponse<br>NOSBookingSubmission | NOSCommon_r28.xsd<br>NOSBooking_r28.xsd<br>NOSAssessment_r28.xsd                                                        |
| EnumResubmitReasonType | BookingType<br>NOSOutageType<br>Outages | NOSInfoResponse<br>NOSBookingSubmission | NOSInfoResponse<br>NOSBookingSubmission | NOSCommon_r28.xsd<br>NOSBooking_r28.xsd<br>NOSAssessment_r28.xsd                                                        |

## 2.1.5 Developer Test

### 2.1.5.1 Test Platforms

The new schema has been tested using the following platforms as advised by ASWG:

- XMLSpy 2011
- MSXML4 SP1
- Xerces 1.4.4 and 2.2.1

### 2.1.5.2 Test Cases

emmsh\_63bigbigbig.xml → contains many transactions

emmsh\_63817bad.xml → is schema valid but application invalid

emmsh\_6381723682176876.xml → valid transaction

[emmsh\\_63818\\_1.xml](#) → Valid transaction without upper limit sub-element of MT Pasa

[emmsh\\_63818\\_2.xml](#) → Valid transaction without clusters sub-element of MT Pasa

MsatsLimits\_ReportRequest.xml → contains an example of a request for MSATS Limits

MsatsLimits\_ReportResponse\_group.xml → contains an example of a response to a participant who is part of a group for Limits purpose.

MsatsLimits\_ReportResponse\_nogroup.xml → contains an example of a response to a participant who is not part of a group for Limits purpose.

outghtransgpd\_invalid\_certainty.xml → contains an example of an outage request with invalid certainty

outghtransgpd\_invalid\_resubmit\_reason.xml → contains an example of a resubmission with invalid resubmit reason

outghtransgpd\_valid\_certainty.xml → contains an example of an outage with valid certainty

outghtransgpd\_valid\_resubmit\_reason.xml → contains an example of a resubmission with valid resubmit reason

## 3 Proposal Assessment

### 3.1 Test

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

#### 3.1.1 Test Platforms

Supplied samples have been tested using the following parsers:

- MSXML 4.0 SP1
- Xerces 1.4.1
- Xerces 2.2.1

- XMLSpy 2004

### 3.1.2 Test Cases

As per section 2.1.5.2

### 3.1.3 Test Results

<All OK... or note issues>

## 3.2 Conformance Report

The ASWG completes the conformance report validating each proposed new schema file against the published aseXML guidelines.

| Schema Filename        | Impacted by Item # | Conformance Details                   |
|------------------------|--------------------|---------------------------------------|
| aseXML_r28.xsd         | 1,2 and 3          | <Conforms... or note non-conformance> |
| ElectricityMMS_r28.xsd | 1                  |                                       |
| Events_r28.xsd         | 1 and 2            |                                       |
| Transactions_r28.xsd   | 1                  |                                       |
| Header_r28.xsd         | 1                  |                                       |
| CATSReports_r28.xsd    | 2                  |                                       |
| NOSCommon_r28.xsd      | 3                  |                                       |
| NOSBooking_r28.xsd     | 3                  |                                       |
| NOSAssessment_r28.xsd  | 3                  |                                       |

Table 3-1, Change Proposal Conformance Details

## 4 Issue Register

This section describes any issues that have arisen and any modifications that are made to the original proposal during the Change Process

### 4.1 Status of Issues

| Issue# | Item# | Description and Discussion | Status <sup>3</sup> | Resolution |
|--------|-------|----------------------------|---------------------|------------|
| 1      | 1     |                            |                     |            |

Table 4-1, Issues list

## 5 Resolution

The ASWG votes for endorsement of the options identified in section 2, and the voting results are forwarded to AEMO for approval. When 75% of those ASWG members who voted endorse a specific option, this represents an ASWG Recommendation for that option. AEMO will not reject an ASWG Recommendation without first consulting with the ASWG.

<sup>3</sup> Either 'Open' or 'Closed'

## 5.1 ASWG Endorsement

The results of the ASWG vote are as follows:

Date of Vote: 1??/07??/2011????

| Option                 | # Votes   | % Vote     |
|------------------------|-----------|------------|
| Option 1 (section 2.1) | <u>2</u>  | <u>100</u> |
| Option 2 (section 2.2) |           |            |
| Option # (section 2.#) |           |            |
| Abstained              |           |            |
| Total Members Present  | <u>3*</u> |            |

Table 5-1, ASWG Vote Results

\*Includes chairperson who does voted except to break a tie.