BID AVAILABILITY DOCUMENT
UML MODEL AND SCHEMA
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This document is maintained by the ENTSO-E CIM EG. Comments or remarks are to be provided at cim@entso.eu
## Revision History

<table>
<thead>
<tr>
<th>Version</th>
<th>Release</th>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2020-10-15</td>
<td>First draft of the document.</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>2020-12-15</td>
<td>Approved by MC.</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>2022-09-06</td>
<td>Updates in schema 'urn:iec62325.351:tc57wg16:451-n:bidavailabilitydocument:1:1':</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• RequestingParty_MarketParticipant.mRID becomes optional</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Agreed by CIM EG.</td>
</tr>
</tbody>
</table>
Objective

The purpose of this document is to provide the contextual and assembly UML models and the schema of the BidAvailability_MarketDocument. The schema of the BidAvailability_MarketDocument could be used in various business processes. It is not the purpose of this document to describe all the use cases, sequence diagrams, business processes, etc. for which this schema is to be used.

This document shall only be referenced in an implementation guide of a specific business process. The content of the business process implementation guide shall be as follows:

- Description of the business process;
- Use case of the business process;
- Sequence diagrams of the business process;
- List of the schema (XSD) to be used in the business process and versions of the schema;
- For each schema, dependency tables providing the necessary information for the generation of the XML instances, i.e. when the optional attributes are to be used, which codes from which ENTSO-E codelist are to be used.
2.1 Bid availability contextual

2.1.1 Overview of the model

Figure 1 shows the model.

![UML Diagram](image)

**Figure 1 - Bid availability contextual**

2.1.2 IsBasedOn relationships from the European style market profile

Table 1 shows the traceability dependency of the classes used in this package towards the upper level.

<table>
<thead>
<tr>
<th>Name</th>
<th>Complete IsBasedOn Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>BidAvailability_MarketDocument</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketDocument</td>
</tr>
<tr>
<td>BidDocument_MarketDocument</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketDocument</td>
</tr>
<tr>
<td>BidTimeSeries</td>
<td>TC57CIM::IEC62325::MarketManagement::BidTimeSeries</td>
</tr>
<tr>
<td>Domain</td>
<td>TC57CIM::IEC62325::MarketManagement::Domain</td>
</tr>
<tr>
<td>MarketParticipant</td>
<td>TC57CIM::IEC62325::MarketCommon::MarketParticipant</td>
</tr>
<tr>
<td>MarketRole</td>
<td>TC57CIM::IEC62325::MarketCommon::MarketRole</td>
</tr>
<tr>
<td>Measure_Unit</td>
<td>TC57CIM::IEC62325::MarketManagement::Unit</td>
</tr>
<tr>
<td>Process</td>
<td>TC57CIM::IEC62325::MarketManagement::Process</td>
</tr>
<tr>
<td>Quantity</td>
<td>TC57CIM::IEC62325::MarketManagement::Quantity</td>
</tr>
<tr>
<td>Reason</td>
<td>TC57CIM::IEC62325::MarketManagement::Reason</td>
</tr>
<tr>
<td>RegisteredResource</td>
<td>TC57CIM::IEC62325::MarketCommon::RegisteredResource</td>
</tr>
<tr>
<td>RequestingParty_MarketParticipant</td>
<td>TC57CIM::IEC62325::MarketCommon::MarketParticipant</td>
</tr>
<tr>
<td>Time_Period</td>
<td>TC57CIM::IEC62325::MarketManagement::Period</td>
</tr>
</tbody>
</table>
2.2 Bid availability assembly

2.2.1 Overview of the model

Figure 2 shows the model.

![Bid availability assembly UML diagram](image)

2.2.2 IsBasedOn relationships from the European style market profile

Table 2 shows the traceability dependency of the classes used in this package towards the upper level.

<table>
<thead>
<tr>
<th>Name</th>
<th>Complete IsBasedOn Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>BidAvailability_MarketDocument</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketDocument</td>
</tr>
<tr>
<td>BidTimeSeries</td>
<td>TC57CIM::IEC62325::MarketManagement::BidTimeSeries</td>
</tr>
<tr>
<td>Order</td>
<td>mult.</td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>0</td>
<td>[1..1]</td>
</tr>
<tr>
<td>1</td>
<td>[1..1]</td>
</tr>
<tr>
<td>3</td>
<td>[1..1]</td>
</tr>
<tr>
<td>4</td>
<td>[1..1]</td>
</tr>
<tr>
<td>5</td>
<td>[1..1]</td>
</tr>
<tr>
<td>6</td>
<td>[1..1]</td>
</tr>
<tr>
<td>7</td>
<td>[1..1]</td>
</tr>
<tr>
<td>8</td>
<td>[1..1]</td>
</tr>
<tr>
<td>9</td>
<td>[0..1]</td>
</tr>
<tr>
<td>10</td>
<td>[1..1]</td>
</tr>
</tbody>
</table>
### Table 4 - Association ends of Bid availability
assembly::BidAvailability_MarketDocument with other classes

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Class name / Role</th>
<th>Description</th>
</tr>
</thead>
</table>

### 2.2.3.2 BidTimeSeries

The formal specification of specific characteristics related to a bid.

Table 5 shows all attributes of BidTimeSeries.

### Table 5 - Attributes of Bid availability assembly::BidTimeSeries

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Attribute name / Attribute type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>[1..1]</td>
<td>mRID IDString</td>
<td>A unique identification of the time series. In the ESMP context, the &quot;model authority&quot; is defined as a party (originator of the exchange) that provides a unique identification in the context of a business exchange such as time series identification, bid identification, ... Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.</td>
</tr>
<tr>
<td>1</td>
<td>[1..1]</td>
<td>bidDocument_MarketDocument.mRID IDString</td>
<td>The unique identification of the document being exchanged within a business process flow. In the ESMP context, the &quot;model authority&quot; is defined as a party (originator of the exchange) that provides an identification in the context of a business exchange such as document identification, ... Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements. --- The identification of an electronic document associated with a TimeSeries.</td>
</tr>
<tr>
<td>Order</td>
<td>mult.</td>
<td>Attribute name / Attribute type</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
<td>---------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>3</td>
<td>[0..1]</td>
<td>requestingParty_MarketParticipant.mRID PartyID_String</td>
<td>The identification of a party in the energy market. In the ESMP context, the “model authority” is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements. --- The identification of a market participant associated with a TimeSeries.</td>
</tr>
<tr>
<td>4</td>
<td>[0..1]</td>
<td>requestingParty_MarketParticipant.name String</td>
<td>The name is any free human readable and possibly non unique text naming the object. --- The identification of a market participant associated with a TimeSeries.</td>
</tr>
<tr>
<td>5</td>
<td>[1..1]</td>
<td>requestingParty_MarketParticipant.marketRole.type MarketRoleKind_String</td>
<td>The identification of the role played by a market player. --- The identification of a market participant associated with a TimeSeries. --- The role associated with a MarketParticipant.</td>
</tr>
<tr>
<td>6</td>
<td>[1..1]</td>
<td>businessType BusinessKind_String</td>
<td>The identification of the nature of the time series.</td>
</tr>
<tr>
<td>7</td>
<td>[1..1]</td>
<td>domain.mRID AreaID_String</td>
<td>The unique identification of the domain. In the ESMP context, the “model authority” is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements. --- The domain associated with a TimeSeries.</td>
</tr>
<tr>
<td>8</td>
<td>[0..1]</td>
<td>operationalLimit_Quantity.quantity Decimal</td>
<td>The quantity value. The association role provides the information about what is expressed. --- The quantity information associated to a TimeSeries.</td>
</tr>
<tr>
<td>9</td>
<td>[0..1]</td>
<td>limit_Measurement_Unit.name MeasurementUnitKind_String</td>
<td>The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure associated with the quantities in a TimeSeries.</td>
</tr>
</tbody>
</table>

Table 6 shows all association ends of BidTimeSeries with other classes.
### Table 6 - Association ends of Bid availability assembly::BidTimeSeries with other classes

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Class name / Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>[0..*]</td>
<td>RegisteredResource</td>
<td>The identification of a resource associated with a TimeSeries.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RegisteredResource</td>
<td>Association Based On:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bid availability contextual::RegisteredResource.RegisteredResource[0..*]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bid availability contextual::BidTimeSeries.[]</td>
</tr>
<tr>
<td>11</td>
<td>[0..*]</td>
<td>Reason</td>
<td>Reason information associated with a TimeSeries providing motivation information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reason</td>
<td>Association Based On:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bid availability contextual::Reason.Reason[0..*]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bid availability contextual::BidTimeSeries.[]</td>
</tr>
</tbody>
</table>

### 2.2.3.3 Reason

The motivation of an act.

Table 7 shows all attributes of Reason.

### Table 7 - Attributes of Bid availability assembly::Reason

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Attribute name / Attribute type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>[1..1]</td>
<td>code ReasonCode_String</td>
<td>The motivation of an act in coded form.</td>
</tr>
<tr>
<td>1</td>
<td>[0..1]</td>
<td>text ReasonText_String</td>
<td>The textual explanation corresponding to the reason code.</td>
</tr>
</tbody>
</table>

### 2.2.3.4 RegisteredResource

A resource that is registered through the market participant registration system. Examples include generating unit, load, and non-physical generator or load.

Table 8 shows all attributes of RegisteredResource.

### Table 8 - Attributes of Bid availability assembly::RegisteredResource

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Attribute name / Attribute type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>[1..1]</td>
<td>mRID ResourceID_String</td>
<td>The unique identification of a resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>In the ESMP context, the &quot;model authority&quot; is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.</td>
</tr>
</tbody>
</table>

### 2.2.4 Datatypes

The list of datatypes used for the Bid availability assembly is as follows:

- Action_Status compound
- ESMP_DateTimeInterval compound
130  •  AreaID_String datatype, codelist CodingSchemeTypeList
131  •  BusinessKind_String datatype, codelist BusinessTypeList
132  •  ESMP_DateTime datatype
133  •  ESMPVersion_String datatype
134  •  ID_String datatype
135  •  MarketRoleKind_String datatype, codelist RoleTypeList
136  •  MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
137  •  MessageKind_String datatype, codelist MessageTypeList
138  •  PartyID_String datatype, codelist CodingSchemeTypeList
139  •  ProcessKind_String datatype, codelist ProcessTypeList
140  •  ReasonCode_String datatype, codelist ReasonCodeTypeList
141  •  ReasonText_String datatype
142  •  ResourceID_String datatype, codelist CodingSchemeTypeList
143  •  Status_String datatype, codelist StatusTypeList
144  •  YMDHM_DateTime datatype
2.2.5 BidAvailability_MarketDocument XML schema structure

Figure 3 – BidAvailability_MarketDocument schema structure
2.2.6 BidAvailability_MarketDocument XML schema

The schema to be used to validate XML instances is to be identified by:

urn:iec62325.351:tc57wg16:451-n:bidavailabilitydocument:1:1

<?xml version="1.0" encoding="utf-8"?>
<x:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:cim16="http://iec.ch/TC57/2013/CIM"
  xmlns:sawsdl="http://www.iec.ch/sawsdlprofile"
  targetNamespace="urn:iec62325.351:tc57wg16:451-n:bidavailabilitydocument:1:1"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-entsoe-eu-wgedi-codelists.xsd"/>
  <xs:element name="BidAvailability_MarketDocument" type="BidAvailability_MarketDocument"/>
  <xs:simpleType name="ID_String">
    <xs:restriction base="xs:string">
      <xs:maxLength value="60"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="ESMPVersion_String">
    <xs:restriction base="xs:string">
      <xs:pattern value="[1-9]\[[0-9]\]{0,2}"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="MessageKind_String">
    <xs:restriction base="ecl:MessageTypeList"/>
  </xs:simpleType>
  <xs:simpleType name="ProcessKind_String">
    <xs:restriction base="ecl:ProcessTypeList"/>
  </xs:simpleType>
  <xs:simpleType name="PartyID_String">
    <xs:restriction base="xs:string">
      <xs:maxLength value="16"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="PartyID_String-base">
    <xs:extension base="PartyID_String" type="ecl:CodingSchemeTypeList" use="required"/>
  </xs:simpleType>
  <xs:simpleType name="MarketRoleKind_String">
    <xs:restriction base="ecl:RoleTypeList"/>
  </xs:simpleType>
  <xs:simpleType name="ESMP_DateTime">
  </xs:simpleType>
</xs:schema>
...
<xs:simpleType name="BusinessKind_String">
<xs:simpleContent>
<xs:extension base="ecl:BusinessTypeList"/>
</xs:simpleContent>
</xs:simpleType>

<xs:simpleType name="AreaID_String">
<xs:simpleContent>
<xs:extension base="ecl:AreaIDTypeList"/>
</xs:simpleContent>
</xs:simpleType>

<xs:simpleType name="MessageKind_String">
<xs:simpleContent>
<xs:extension base="ecl:MessageKindTypeList"/>
</xs:simpleContent>
</xs:simpleType>

<xs:simpleType name="CodingSchemeTypeList">
<xs:simpleContent>
<xs:extension base="ecl:CodingSchemeTypeList" use="required"/>
</xs:simpleContent>
</xs:simpleType>
325  <xs:simpleType name="MeasurementUnitKind_String"
326     sawsd1:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
327         <xs:restriction base="ecl:UnitOfMeasureTypeList"/>
328     </xs:simpleType>
329  </xs:complexType> name="BidTimeSeries"
330     sawsd1:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#BidTimeSeries">
331         <xs:element name="mRID" type="ID_String" minOccurs="1"
332             maxOccurs="1" sawsd1:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
333     </xs:element>
334     <xs:element name="bidDocument_MarketDocument.mRID" type="ID_String" minOccurs="1" maxOccurs="1"
335         sawsd1:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
336     </xs:element> name="bidDocument_MarketDocument.revisionNumber"
337     sawsd1:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.revisionNumber">
338         <xs:element name="requestingParty_MarketParticipant.mRID" type="PartyID_String"
339             minOccurs="0" maxOccurs="1" sawsd1:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
340     </xs:element> name="requestingParty_MarketParticipant.name"
341     sawsd1:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.name"/>
342     <xs:element name="requestingParty_MarketParticipant.marketRole.type"
343         type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
344         sawsd1:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
345     </xs:element> name="businessType" type="BusinessKind_String"
346         minOccurs="1" maxOccurs="1" sawsd1:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
347     </xs:element> name="domain.mRID" type="AreaID_String"
348         minOccurs="1" maxOccurs="1" sawsd1:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
349     </xs:element> name="operationalLimit_Quantity.quantity"
350         type="xs:decimal" minOccurs="0" maxOccurs="1" sawsd1:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Quantity.quantity"/>
351     </xs:element> name="limit_Measurement_Unit.name"
352         type="MeasurementUnitKind_String" minOccurs="0" maxOccurs="1"
353         sawsd1:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
354     </xs:element> name="RegisteredResource" type="RegisteredResource"
355         minOccurs="0" maxOccurs="unbounded"
357     </xs:element> name="Reason" type="Reason" minOccurs="0"
359     </xs:complexType> name="ReasonCode_String"
360     sawsd1:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
361         <xs:restriction base="ecl:ReasonCodeTypeList"/>
362     </xs:simpleType>
363  </xs:complexType> name="ReasonText_String"
364     sawsd1:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
365         <xs:restriction base="xs:string">
366             <xs:maxLength value="512"/>
367         </xs:restriction>
368     </xs:simpleType>