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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>2018-03-12</td>
<td>First drafting of the document.</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>2018-05-08</td>
<td>Document approved by MC</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>2022-02-01</td>
<td>Updates in bid document XSD v7.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Quantity_Measure_Unit.name &amp; Price_Measure_Unit.name attributes were renamed to Quantity_Measurement_Unit.name &amp; Price_Measurement_Unit.name to be compliant with the ESMP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• mRID of Document, Series and Timeseries (ID_String type) was enlarged from 35 to 60 characters.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Approved by MC.</td>
</tr>
</tbody>
</table>

---

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Objective

The purpose of this document is to provide the contextual and assembly UML models and the schema of the Bid_MarketDocument.

The schema of the Bid_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.
Bid Market Document

2.1 Bid contextual model

2.1.1 Overview of the model

Figure 1 shows the model.

Figure 1 - Bid contextual model
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>Auction</td>
<td>TC57CIM::IEC62325::MarketManagement::Auction</td>
</tr>
<tr>
<td>Bid_MarketDocument</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketDocument</td>
</tr>
<tr>
<td>BidTimeSeries</td>
<td>TC57CIM::IEC62325::MarketManagement::BidTimeSeries</td>
</tr>
<tr>
<td>Currency_Unit</td>
<td>TC57CIM::IEC62325::MarketManagement::Unit</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>Point</td>
<td>TC57CIM::IEC62325::MarketManagement::Point</td>
</tr>
<tr>
<td>Price</td>
<td>TC57CIM::IEC62325::MarketManagement::Price</td>
</tr>
<tr>
<td>Series_Period</td>
<td>TC57CIM::IEC62325::MarketManagement::Period</td>
</tr>
<tr>
<td>Time_Period</td>
<td>TC57CIM::IEC62325::MarketManagement::Period</td>
</tr>
</tbody>
</table>
2.2 **Bid assembly model**

2.2.1 **Overview of the model**

Figure 2 shows the model.

![Bid assembly model diagram]

---

**Figure 2 - Bid assembly model**

– Page 8 of 18 –
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>Bid_MarketDocument</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketDocument</td>
</tr>
<tr>
<td>BidTimeSeries</td>
<td>TC57CIM::IEC62325::MarketManagement::BidTimeSeries</td>
</tr>
<tr>
<td>Point</td>
<td>TC57CIM::IEC62325::MarketManagement::Point</td>
</tr>
<tr>
<td>Series_Period</td>
<td>TC57CIM::IEC62325::MarketManagement::Period</td>
</tr>
</tbody>
</table>

2.2.3  Detailed Bid assembly model

2.2.3.1  Bid_MarketDocument root class

A bid document contains a set of bids (a bid is represented by a time series). There may be several bids submitted by the sender for the same bid period and subject party.

An electronic document containing the information necessary to satisfy the requirements of a given business process.

Table 3 shows all attributes of Bid_MarketDocument.

<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 ID_String</td>
<td>The unique identification of the document being exchanged within a business process flow.</td>
</tr>
<tr>
<td>1</td>
<td>[1..1]</td>
<td>revisionNumber ESMPVersion_String</td>
<td>The identification of the version that distinguishes one evolution of a document from another.</td>
</tr>
<tr>
<td>3</td>
<td>[1..1]</td>
<td>sender_MarketParticipant.mRID PartyID_String</td>
<td>The identification of a party in the energy market. --- Document owner.</td>
</tr>
<tr>
<td>4</td>
<td>[1..1]</td>
<td>sender_MarketParticipant.marketRole.type MarketRoleKind_String</td>
<td>The identification of the role played by a market player. --- Document owner.</td>
</tr>
<tr>
<td>5</td>
<td>[1..1]</td>
<td>receiver_MarketParticipant.mRID PartyID_String</td>
<td>The identification of a party in the energy market. --- Document recipient.</td>
</tr>
<tr>
<td>6</td>
<td>[1..1]</td>
<td>receiver_MarketParticipant.marketRole.type MarketRoleKind_String</td>
<td>The identification of the role played by a market player. --- Document recipient.</td>
</tr>
<tr>
<td>7</td>
<td>[1..1]</td>
<td>createdDateTime ESMP_DateTime</td>
<td>The date and time of the creation of the document.</td>
</tr>
<tr>
<td>8</td>
<td>[1..1]</td>
<td>period.timeInterval ESMP_DateTimeInterval</td>
<td>The start and end date and time for a given interval. --- The beginning and ending date and time of the period covered by the document.</td>
</tr>
<tr>
<td>9</td>
<td>[1..1]</td>
<td>domain.mRID AreaID_String</td>
<td>The unique identification of the domain. --- The domain covered within the bid document, i.e. the border for which auction is done.</td>
</tr>
<tr>
<td>10</td>
<td>[1..1]</td>
<td>subject_MarketParticipant.mRID PartyID_String</td>
<td>The identification of a party in the energy market. --- The party for whom the bid is being submitted.</td>
</tr>
</tbody>
</table>
Table 4 shows all association ends of Bid_MarketDocument with other classes.

**Table 4 - Association ends of Bid assembly model::Bid_MarketDocument 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>12</td>
<td>[0..*]</td>
<td>BidTimeSeries</td>
<td>The timeseries contains the bids that are submitted to the auction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bid_TimeSeries</td>
<td>Association Based On:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bid contextual model::BidTimeSeries.Bid_TimeSeries[0..*]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-----</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bid contextual model::Bid_MarketDocument[]</td>
</tr>
</tbody>
</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 assembly model::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 ID_String</td>
<td>A unique identification of the time series.</td>
</tr>
<tr>
<td>1</td>
<td>[1..1]</td>
<td>auction.mRID ID_String</td>
<td>The unique identification of the auction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>--- The identification linking the bid to a set of specifications created by the auction operator.</td>
</tr>
<tr>
<td>2</td>
<td>[1..1]</td>
<td>businessType BusinessKind_String</td>
<td>The identification of the nature of the time series.</td>
</tr>
<tr>
<td>3</td>
<td>[1..1]</td>
<td>in_Domain.mRID AreaID_String</td>
<td>The unique identification of the domain.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>--- The area where the energy is to be put.</td>
</tr>
<tr>
<td>4</td>
<td>[1..1]</td>
<td>out_Domain.mRID AreaID_String</td>
<td>The unique identification of the domain.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>--- The area where the energy is coming from.</td>
</tr>
<tr>
<td>5</td>
<td>[1..1]</td>
<td>quantity_Measurement_Unit.name MeasurementUnitKind_String</td>
<td>The identification of the formal code for a measurement unit (UN/ECE Recommendation 20).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>--- The unit of measure in which the quantities in the time series are expressed, e.g. MAW.</td>
</tr>
<tr>
<td>6</td>
<td>[0..1]</td>
<td>currency_Unit.name CurrencyCode_String</td>
<td>The identification of the formal code for a currency (ISO 4217).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>--- The currency in which the monetary amount is expressed.</td>
</tr>
<tr>
<td>7</td>
<td>[0..1]</td>
<td>price_Measurement_Unit.name MeasurementUnitKind_String</td>
<td>The identification of the formal code for a measurement unit (UN/ECE Recommendation 20).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>--- The unit of measure in which the price in the time series is expressed (MW, MWh, etc.).</td>
</tr>
<tr>
<td>8</td>
<td>[1..1]</td>
<td>divisible ESMPBoolean_String</td>
<td>An indication whether or not each element of the bid may be partially accepted or not.</td>
</tr>
<tr>
<td>9</td>
<td>[0..1]</td>
<td>linkedBidsIdentification ID_String</td>
<td>The unique identification used to identify associated bids with each other.</td>
</tr>
<tr>
<td>10</td>
<td>[1..1]</td>
<td>blockBid ESMPBoolean_String</td>
<td>The indication that the values in the period are considered as a whole. They cannot be changed or subdivided.</td>
</tr>
</tbody>
</table>
Table 6 shows all association ends of BidTimeSeries with other classes.

### Table 6 - Association ends of Bid assembly model::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>11</td>
<td>[1..*]</td>
<td>Series_Period</td>
<td>Association Based On:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Period</td>
<td>Bid contextual model::Series_Period.Period[1..*]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bid contextual model::BidTimeSeries[]</td>
</tr>
</tbody>
</table>

2.2.3.3 **Point**

The quantity that is bid for the interval in question.

The identification of the values being addressed within a specific interval of time.

Table 7 shows all attributes of Point.

### Table 7 - Attributes of Bid assembly model::Point

<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>position</td>
<td>A sequential value representing the relative position within a given time interval.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Position_Integer</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>[1..1]</td>
<td>quantity</td>
<td>The principal quantity identified for a point.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Decimal</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>[0..1]</td>
<td>price.amount</td>
<td>A number of monetary units specified in a unit of currency.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amount_Decimal</td>
<td>--- The price expressed for each unit of quantity. The price amount is mandatory in the case of capacity auctions and shall not be provided in the case of rule based allocations depending on local market rules (for example &quot;first come first serve&quot;).</td>
</tr>
</tbody>
</table>

2.2.3.4 **Series_Period**

The identification of the period of time corresponding to a given time interval and resolution.

Table 8 shows all attributes of Series_Period.

### Table 8 - Attributes of Bid assembly model::Series_Period

<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>timeInterval</td>
<td>The start and end time of the period.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ESMP_DateTimeInterval</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>[1..1]</td>
<td>resolution</td>
<td>The definition of the number of units of time that compose an individual step within a period.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Duration</td>
<td></td>
</tr>
</tbody>
</table>
Table 9 - Association ends of Bid assembly model::Series_Period with other classes

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Class name / Role</th>
<th>Description</th>
</tr>
</thead>
</table>
| 2 | [1..*] | Point Point | Association Based On: Bid contextual model::Point.Point[1..*] \ 
Bid contextual model::Series_Period[] |

2.2.4 Datatypes

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

- ESMP_DateTimeInterval compound
- Amount_Decimal datatype
- AreaID_String datatype, codelist CodingSchemeTypeList
- BusinessKind_String datatype, codelist BusinessTypeList
- CurrencyCode_String datatype, codelist CurrencyTypeList
- ESMP_DateTime datatype
- ESMPBoolean_String datatype, codelist IndicatorTypeList
- ESMPVersion_String datatype
- ID_String datatype
- MarketRoleKind_String datatype, codelist RoleTypeList
- MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
- MessageKind_String datatype, codelist MessageTypeList
- PartyID_String datatype, codelist CodingSchemeTypeList
- Position_Integer datatype
- YMDHM_DateTime datatype
2.2.5 Bid_MarketDocument XML schema structure

Figure 3 – Bid_MarketDocument schema structure
2.2.6 Bid_MarketDocument XML schema

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

urn:iec62325.351:tc57wg16:451-3:biddocument:7.0

<?xml version="1.0" encoding="utf-8"?>

<x:schema xmlns:xs="urn:entsoe-eu-wgedi-codelists"
 xmlns:sawsdl="http://www.w3.org/2001/XMLSchema"
 targetNamespace="urn:iec62325.351:tc57wg16:451-3:biddocument:7:1"
 elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:import
 namespace="urn:entsoe-eu-wgedi-codelists.xsd" />
  <xs:element name="Bid_MarketDocument" type="Bid_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="PartyID_String">
    <xs:restriction base="xs:string">
      <xs:maxLength value="16"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="PartyID_String">
    <xs:complexContent>
      <xs:extension base="PartyID_String"/>
      <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList" use="required"/>
    </xs:complexContent>
  </xs:complexType>
  <xs:complexType name="MarketRoleKind_String">
    <xs:complexContent>
      <xs:extension base="ecl:RoleTypeList"/>
    </xs:complexContent>
  </xs:complexType>
  <xs:complexType name="ESMP_DateTime">
    <xs:simpleContent>
      <xs:extension base="ecl:DateTime">
        <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList" use="required"/>
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>
</xs:schema>
<xs:complexType name="maxOccurs">
  <xs:sequence>
    <xs:element name="maxOccurs" type="xs:integer" minOccurs="1" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>

<xs:complexType name="cim16#DateTimeInterval">
  <xs:complexContent>
    <xs:extension base="cim16#DateTimeInterval">
      <xs:sequence>
        <xs:element name="start" type="cim16#DateTime"/>
        <xs:element name="end" type="cim16#DateTime"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="type" type="MessageKind_String" minOccurs="1" maxOccurs="1"/>
<xs:element name="sender_MarketParticipant.mRID" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
<xs:element name="sender_MarketParticipant.marketRole.type" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRoleKind_String" minOccurs="1" maxOccurs="1"/>
<xs:element name="receiver_MarketParticipant.mRID" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
<xs:element name="receiver_MarketParticipant.marketRole.type" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRoleKind_String" minOccurs="1" maxOccurs="1"/>
<xs:element name="createdDateTime" type="ESMP_DateTime" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.createdDateTime" minOccurs="1" maxOccurs="1"/>
<xs:element name="period.timeInterval" type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.timeInterval" minOccurs="1" maxOccurs="1"/>
<xs:element name="domain.mRID" type="AreaID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID" minOccurs="1" maxOccurs="1"/>
<xs:element name="subject_MarketParticipant.mRID" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID" minOccurs="1" maxOccurs="1"/>
<xs:element name="subject_MarketParticipant.marketRole.type" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRoleKind_String" minOccurs="1" maxOccurs="1"/>
</xs:complexType>
</xs:simpleType>
</xs:schema>

<xs:element name="mRID" type="ID_String" minOccurs="1" maxOccurs="1"/>
<sawsdl:modelReference href="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>

<xs:element name="auction.mRID" type="ID_String" minOccurs="1" maxOccurs="1"/>
<sawsdl:modelReference href="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>

<xs:element name="businessType" type="BusinessKind_String" minOccurs="1" maxOccurs="1"/>

<xs:element name="in_Domain.mRID" type="AreaID_String" minOccurs="1" maxOccurs="1"/>
<sawsdl:modelReference href="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>

<xs:element name="out_Domain.mRID" type="AreaID_String" minOccurs="1" maxOccurs="1"/>
<sawsdl:modelReference href="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>

<xs:element name="currency_Unit.name" type="CurrencyCode_String" minOccurs="0" maxOccurs="1"/>
<sawsdl:modelReference href="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>

<xs:element name="price_Measurement_Unit.name" type="MeasurementUnitKind_String" minOccurs="1" maxOccurs="1"/>
<sawsdl:modelReference href="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>

<xs:element name="ESMPBoolean_String" type="ESMPBoolean_String" minOccurs="0" maxOccurs="1"/>

<xs:element name="linkedBidsIdentification" type="ID_String" minOccurs="0" maxOccurs="1"/>

<xs:element name="blockBid" type="ESMPBoolean_String" minOccurs="1" maxOccurs="1"/>

<xs:element name="Period" type="Series_Period" minOccurs="1" maxOccurs="unbounded"/>

</xs:complexType>

<xs:simpleType name="Position_Integer">
<sawsdl:modelReference href="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
<xs:restriction base="xs:integer">
  <xs:maxInclusive value="999999"/>
  <xs:minInclusive value="1"/>
</xs:restriction>
</xs:simpleType>

<xs:simpleType name="Amount_Decimal">
<sawsdl:modelReference href="http://iec.ch/TC57/2013/CIM-schema-cim16#Decimal">
<xs:restriction base="xs:decimal">
  <xs:totalDigits value="17"/>
</xs:restriction>
</xs:simpleType>

<xs:simpleType name="Point">
<sawsdl:modelReference href="http://iec.ch/TC57/2013/CIM-schema-cim16#Point">
<xs:sequence>
  <xs:element name="position" type="Position_Integer"/>
  <xs:element name="quantity" type="xs:decimal" minOccurs="1" maxOccurs="1"/>
</xs:sequence>
</xs:simpleType>
<xs:element name="price.amount" type="Amount_Decimal"
minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Price.amount"/>
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