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## 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>
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</tbody>
</table>
1 Objective

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

The schema of the CapacityAuctionSpecification_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 CapacityAuctionSpecification_MarketDocument

2.1 Capacity auction specification contextual model

2.1.1 Overview of the model

Figure 1 shows the model.

Figure 1 - Capacity auction specification 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 1 - IsBasedOn dependency**

<table>
<thead>
<tr>
<th>Name</th>
<th>Complete IsBasedOn Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>AttributeInstanceComponent</td>
<td>TC57CIM::IEC62325::MarketManagement::AttributeInstanceComponent</td>
</tr>
<tr>
<td>Auction</td>
<td>TC57CIM::IEC62325::MarketManagement::Auction</td>
</tr>
<tr>
<td>Auction_TimeSeries</td>
<td>TC57CIM::IEC62325::MarketManagement::TimeSeries</td>
</tr>
<tr>
<td>CapacityAuctionSpecification_MarketDocument</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketDocument</td>
</tr>
<tr>
<td>Contract_MarketAgreement</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketAgreement</td>
</tr>
<tr>
<td>Currency_Unit</td>
<td>TC57CIM::IEC62325::MarketManagement::Unit</td>
</tr>
<tr>
<td>Date_MarketAgreement</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketAgreement</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>Process</td>
<td>TC57CIM::IEC62325::MarketManagement::Process</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>RightsCharacteristics_Auction</td>
<td>TC57CIM::IEC62325::MarketManagement::Auction</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 Capacity auction specification assembly model

2.2.1 Overview of the model

Figure 2 shows the model.
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>AttributeInstanceComponent</td>
<td>TC57CIM::IEC62325::MarketManagement::AttributeInstanceComponent</td>
</tr>
<tr>
<td>Auction_TimeSeries</td>
<td>TC57CIM::IEC62325::MarketManagement::TimeSeries</td>
</tr>
<tr>
<td>CapacityAuctionSpecification_MarketDocument</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketDocument</td>
</tr>
<tr>
<td>Point</td>
<td>TC57CIM::IEC62325::MarketManagement::Point</td>
</tr>
<tr>
<td>Reason</td>
<td>TC57CIM::IEC62325::MarketManagement::Reason</td>
</tr>
<tr>
<td>RightsCharacteristics_Auction</td>
<td>TC57CIM::IEC62325::MarketManagement::Auction</td>
</tr>
<tr>
<td>Series_Period</td>
<td>TC57CIM::IEC62325::MarketManagement::Period</td>
</tr>
</tbody>
</table>

2.2.3 Detailed Capacity auction specification assembly model

2.2.3.1 CapacityAuctionSpecification_MarketDocument root class

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

The CapacityAuctionSpecification_MarketDocument is issued by the Transmission Capacity Allocator to any market participant interested in the reception of such information.

It provides information on the auction that will be carried out and in particular the unique identification of the auction.

Table 3 shows all attributes of CapacityAuctionSpecification_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 ESMVersion_String</td>
<td>The identification of the version that distinguishes one evolution of a document from another.</td>
</tr>
<tr>
<td>2</td>
<td>1..1</td>
<td>type MessageKind_String</td>
<td>The coded type of a document. The document type describes the principal characteristic of the document.</td>
</tr>
<tr>
<td>3</td>
<td>1..1</td>
<td>process.processType ProcessKind_String</td>
<td>The identification of the nature of process that the document addresses.</td>
</tr>
<tr>
<td>4</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>5</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>6</td>
<td>0..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>7</td>
<td>0..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>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>8</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>9</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 that the capacity auctions are covering.</td>
</tr>
<tr>
<td>10</td>
<td>[1..1]</td>
<td>domain.mRID AreaID_String</td>
<td>The unique identification of the domain. --- The domain covered within the Capacity AuctionSpecification document, i.e. the border.</td>
</tr>
</tbody>
</table>

Table 4 shows all association ends of CapacityAuctionSpecification_MarketDocument with other classes.

### Table 4 - Association ends of Capacity auction specification assembly model::CapacityAuctionSpecification_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 AttributeInstanceComponent

A class used to provide information about an attribute.

Table 5 shows all attributes of AttributeInstanceComponent.

### Table 5 - Attributes of Capacity auction specification assembly model::AttributeInstanceComponent

<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 Position_Integer</td>
<td>The position provides the identification of each line within the textual description of an auction. A sequential value representing a relative sequence number.</td>
</tr>
<tr>
<td>1</td>
<td>[1..1]</td>
<td>attribute String</td>
<td>This provides the textual content of a line within a description (textual description of the auction and its market rules to clarify information that is not formally defined). The identification of an attribute for a given request component.</td>
</tr>
</tbody>
</table>

#### 2.2.3.3 Auction_TimeSeries

A set of time-ordered quantities being exchanged in relation to a product.

The Auction_TimeSeries provide the necessary information about what is auctionned as transmission capacity.

Table 6 shows all attributes of Auction_TimeSeries.
<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 identification attributed by the auction office that uniquely identifies the auction. A unique identification of the time series.</td>
</tr>
<tr>
<td>1</td>
<td>[1..1]</td>
<td>businessType</td>
<td>BusinessKind_String</td>
</tr>
<tr>
<td>2</td>
<td>[1..1]</td>
<td>auction.category</td>
<td>Category_String</td>
</tr>
<tr>
<td>3</td>
<td>[1..1]</td>
<td>auction.type</td>
<td>AuctionKind_String</td>
</tr>
<tr>
<td>4</td>
<td>[1..1]</td>
<td>auction.allocationMode</td>
<td>AllocationMode_String</td>
</tr>
<tr>
<td>5</td>
<td>[1..1]</td>
<td>auction.paymentTerms</td>
<td>PaymentTerms_String</td>
</tr>
<tr>
<td>6</td>
<td>[0..1]</td>
<td>auction.cancelled</td>
<td>ESMPBoolean_String</td>
</tr>
<tr>
<td>7</td>
<td>[1..1]</td>
<td>bidding_Period.timeInterval</td>
<td>ESMP_DateTimeInterval</td>
</tr>
<tr>
<td>8</td>
<td>[1..1]</td>
<td>in_Domain.mRID</td>
<td>AreaID_String</td>
</tr>
<tr>
<td>9</td>
<td>[1..1]</td>
<td>out_Domain.mRID</td>
<td>AreaID_String</td>
</tr>
<tr>
<td>10</td>
<td>[1..1]</td>
<td>marketAgreement.type</td>
<td>CapacityContractKind_String</td>
</tr>
<tr>
<td>11</td>
<td>[1..1]</td>
<td>delivery_Period.timeInterval</td>
<td>ESMP_DateTimeInterval</td>
</tr>
<tr>
<td>12</td>
<td>[1..1]</td>
<td>quantity_Measure_Unit.name</td>
<td>MeasurementUnitKind_String</td>
</tr>
<tr>
<td>13</td>
<td>[1..1]</td>
<td>price_Measure_Unit.name</td>
<td>MeasurementUnitKind_String</td>
</tr>
<tr>
<td>14</td>
<td>[1..1]</td>
<td>currency_Unit.name</td>
<td>CurrencyCode_String</td>
</tr>
<tr>
<td>15</td>
<td>[1..1]</td>
<td>notification_MarketAgreement.createdDateTime</td>
<td>ESMP_DateTime</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>16</td>
<td>[1..1]</td>
<td>contestation_MarketAgreement.createdDateTime</td>
<td>The date and time related to conditions of the agreement. The date and time of the creation of the agreement. The period in which contestations may be provided starts with the notification date time and ends with the contestation date and time. If there is no possibility of contestation both dates and times must be the same.</td>
</tr>
<tr>
<td>17</td>
<td>[1..1]</td>
<td>publication_MarketAgreement.createdDateTime</td>
<td>The date and time related to conditions of the agreement. The date and time of the creation of the agreement. The date and time that the final auction results will be published to the market after the contestation period.</td>
</tr>
<tr>
<td>18</td>
<td>[0..1]</td>
<td>resale_MarketAgreement.createdDateTime</td>
<td>The date and time related to conditions of the agreement. The date and time of the creation of the agreement. The date and time where the resale of capacity rights acquired in previous auctions for this auction will no longer be acceptable.</td>
</tr>
<tr>
<td>19</td>
<td>[1..1]</td>
<td>curveType</td>
<td>The identification of the coded representation of the type of curve being described.</td>
</tr>
<tr>
<td>20</td>
<td>[0..1]</td>
<td>connectingLine_RegisteredResource.mRID</td>
<td>The unique identification of a resource. The identification of a resource associated with a TimeSeries. The identification of a set of lines that connect two areas; the transmission capacity rights are related to this set of lines.</td>
</tr>
</tbody>
</table>

Table 7 shows all association ends of Auction_TimeSeries with other classes.

**Table 7 - Association ends of Capacity auction specification assembly**

<table>
<thead>
<tr>
<th>Order</th>
<th>mul.</th>
<th>Class name / Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>[0..*]</td>
<td>Series_Period.Period</td>
<td>Association Based On: Capacity auction specification contextual model::Series_Period.Period[0..*]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>----- Capacity auction specification contextual model::Auction_TimeSeries.[]</td>
</tr>
<tr>
<td>22</td>
<td>[0..*]</td>
<td>AttributeInstanceComponent.AuctionDescription_AttributeInstanceComponent</td>
<td>It provides the textual description of the auction and its market rules to clarify information that is not formally defined. Association Based On: Capacity auction specification contextual model::AttributeInstanceComponent.AuctionDescription_AttributeInstanceComponent[0..*]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>----- Capacity auction specification contextual model::Auction_TimeSeries.[]</td>
</tr>
<tr>
<td>23</td>
<td>[0..*]</td>
<td>RightsCharacteristics_Auction.RightsCharacteristics_Auction</td>
<td>The definition of the type of the rights that are to be auctioned. Association Based On: Capacity auction specification contextual model::RightsCharacteristics_Auction.RightsCharacteristics_Auction[0..*]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>----- Capacity auction specification contextual model::Auction_TimeSeries.[]</td>
</tr>
</tbody>
</table>
2.2.3.4 Point

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

Table 8 shows all attributes of Point.

Table 8 - Attributes of Capacity auction specification assembly model::Point

<table>
<thead>
<tr>
<th>Order</th>
<th>Attribute name / Attribute type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>position</td>
<td>A sequential value representing the relative position within a given time interval.</td>
</tr>
<tr>
<td>1</td>
<td>quantity</td>
<td>The quantity to be auctioned for the interval in question. The principal quantity identified for a point.</td>
</tr>
</tbody>
</table>

2.2.3.5 Reason

The motivation of an act.

Table 9 shows all attributes of Reason.

Table 9 - Attributes of Capacity auction specification assembly model::Reason

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

2.2.3.6 RightsCharacteristics_Auction

The identification of a formal specification of an energy product that is offered for sale.

Table 10 shows all attributes of RightsCharacteristics_Auction.

Table 10 - Attributes of Capacity auction specification assembly model::RightsCharacteristics_Auction

<table>
<thead>
<tr>
<th>Order</th>
<th>Attribute name / Attribute type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>rights</td>
<td>The rights of use that is accorded to what is acquired in an auction.</td>
</tr>
</tbody>
</table>
2.2.3.7 Series_Period

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

Table 11 shows all attributes of 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/ESMP_DateTimeInterval</td>
<td>The start and end time of the period.</td>
</tr>
<tr>
<td>1</td>
<td>[1..1]</td>
<td>resolution/Duration</td>
<td>The definition of the number of units of time that compose an individual step within a period.</td>
</tr>
</tbody>
</table>

Table 12 shows all association ends of Series_Period 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>2</td>
<td>[1..*]</td>
<td>Point/Point</td>
<td>Association Based On: Capacity auction specification contextual model::Point.Point[1..*]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>..... Capacity auction specification contextual model::Series_Period.[]</td>
</tr>
</tbody>
</table>

2.2.4 Datatypes

The list of datatypes used for the Capacity auction specification assembly model is as follows:

- ESMP_DateTimeInterval compound
- AllocationMode_String datatype, codelist AllocationModeTypeList
- AreaID_String datatype, codelist CodingSchemeTypeList
- AuctionKind_String datatype, codelist AuctionTypeList
- BusinessKind_String datatype, codelist BusinessTypeList
- CapacityContractKind_String datatype, codelist ContractTypeList
- Category_String datatype, codelist CategoryTypeList
- CurrencyCode_String datatype, codelist CurrencyTypeList
- CurveType_String datatype, codelist CurveTypeList
- 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
- PaymentTerms_String datatype, codelist PaymentTermsTypeList
- Position_Integer datatype
- ProcessKind_String datatype, codelist ProcessTypeList
- ReasonCode_String datatype, codelist ReasonCodeTypeList
- ReasonText_String datatype
- ResourceID_String datatype, codelist CodingSchemeTypeList
- RightsKind_String datatype, codelist RightsTypeList
- YMDHM_DateTime datatype
2.2.5 CapacityAuctionSpecification_MarketDocument XML schema structure

Figure 3 - CapacityAuctionSpecification_MarketDocument schema structure
2.2.6 CapacityAuctionSpecification_MarketDocument XML schema

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

urn:iec62325.351:tc57wg16:451-3:capacitiespecificationdocument:7:1

```xml
<xs:schema
    xmlns:cim16=http://iec.ch/TC57/2013/CIM-schema-cim16
    targetNamespace=http://www.iec.ch/cimprofile
    elementFormDefault="qualified"
    attributeFormDefault="unqualified"
    xmlns:sawsdl=http://www.w3.org/1999/02/04/xpath-xquery
    version="1.0" encoding="utf-8">
  <xs:element
    name="CapacityAuctionSpecification_MarketDocument"
    type="CapacityAuctionSpecification_MarketDocument"/>
  <xs:simpleType
    name="Position_Integer"
    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#AttributeInstanceComponent">
    <xs:restriction base="xs:integer">
      <xs:minInclusive value="1"/>
      <xs:maxInclusive value="999999"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:element
    name="AttributeInstanceComponent"
    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#AttributeInstanceComponent">
    <xs:sequence>
      <xs:element
        name="Position" type="Position_Integer" minOccurs="1"/>
      <xs:element
        name="attribute" type="xs:string" minOccurs="1" maxOccurs="1"/>
    </xs:sequence>
  </xs:simpleType>
  <xs:element
    name="ID_String"
    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
    <xs:restriction base="xs:string">
      <xs:length value="35"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:element
    name="BusinessKind_String"
    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
    <xs:restriction base="ecl:BusinessTypelist"/>
  </xs:simpleType>
  <xs:element
    name="Category_String"
    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
    <xs:restriction base="ecl:CategoryTypelist"/>
  </xs:simpleType>
  <xs:element
    name="AuctionKind_String"
    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
    <xs:restriction base="ecl:AuctionTypelist"/>
  </xs:simpleType>
  <xs:element
    name="AllocationMode_String"
    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
    <xs:restriction base="ecl:AllocationModeTypelist"/>
  </xs:simpleType>
  <xs:element
    name="PaymentTerms_String"
    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
    <xs:restriction base="ecl:PaymentTermsTypelist"/>
  </xs:simpleType>
  <xs:element
    name="ESMPBoolean_String"
    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
    <xs:restriction base="ecl:IndicatorTypelist"/>
  </xs:simpleType>
  <xs:simpleType
    name="AreaID_String"
    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
    <xs:restriction base="xs:string">
      <xs:maxLength value="18"/>
    </xs:restriction>
  </xs:simpleType>
</xs:schema>
```
<xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList" use="required" />
</xs:extension>
</xs:simpleContent>
</xs:complexType>

<sawsdl:modelReference>http://iec.ch/TC57/2013/CIM-schema-cim16#CurveType_String</sawsdl:modelReference>
<sawsdl:restriction base="ecl:CurveTypeList" />
</xs:simpleType>
</xs:simpleContent>
</xs:complexType>

<sawsdl:modelReference>http://iec.ch/TC57/2013/CIM-schema-cim16#YMDHM_DateTime</sawsdl:modelReference>
<sawsdl:restriction base="ecl:YMDHMDateTime" />
</xs:simpleType>
</xs:simpleContent>
</xs:complexType>

<sawsdl:modelReference>http://iec.ch/TC57/2013/CIM-schema-cim16#ESMP_DateTime</sawsdl:modelReference>
<sawsdl:restriction base="ecl:YMDHMDateTime" />
</xs:simpleType>
</xs:simpleContent>
</xs:complexType>

<sawsdl:restriction base="ecl:ResourceID" />
</xs:simpleType>
</xs:simpleContent>
</xs:complexType>

<sawsdl:restriction base="ecl:CapacityContractKind" />
</xs:simpleType>
</xs:simpleContent>
</xs:complexType>

<sawsdl:modelReference>http://iec.ch/TC57/2013/CIM-schema-cim16#MeasurementUnitKind_String</sawsdl:modelReference>
<sawsdl:restriction base="ecl:MeasurementUnitKind" />
</xs:simpleType>
</xs:simpleContent>
</xs:complexType>

<sawsdl:restriction base="ecl:CurrencyCode" />
</xs:simpleType>
</xs:simpleContent>
</xs:complexType>

<sawsdl:modelReference>http://iec.ch/TC57/2013/CIM-schema-cim16#AESLP_DateTime</sawsdl:modelReference>
<sawsdl:restriction base="ecl:YMDHMDateTime" />
</xs:simpleType>
</xs:simpleContent>
</xs:complexType>

<sawsdl:restriction base="ecl:TransmissionSystemOperatorKind" />
</xs:simpleType>
</xs:simpleContent>
</xs:complexType>

<sawsdl:restriction base="ecl:TransmissionSystemOperatorKind" />
</xs:simpleType>
</xs:simpleContent>
</xs:complexType>

<sawsdl:complexType name="AuctionTimeSeries">
  <xs:sequence>
    <xs:element name="start" type="ecl:YMDHM_DateTime" minOccurs="1" maxOccurs="1"/>
  </xs:sequence>
</xs:complexType>

<sawsdl:complexType name="ResourceID">
  <xs:simpleContent>
    <xs:extension base="ecl:ResourceID">
      <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList" use="required" />
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>
...
<xs:simpleType name="ReasonCode_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="ecl:ReasonCodeTypeList"/>
</xs:simpleType>

<xs:simpleType name="ReasonText_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="xs:string">
    <xs:maxLength value="512"/>
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="Reason" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason">
  <xs:sequence>
    <xs:element name="code" type="ReasonCode_String" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason.code"/>
    <xs:element name="text" type="ReasonText_String" minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason.text"/>
  </xs:sequence>
</xs:complexType>

<xs:complexType name="RightsKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="ecl:RightsTypeList"/>
</xs:complexType>

<xs:complexType name="RightsCharacteristics_Auction" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Auction">
  <xs:sequence>
    <xs:element name="rights" type="RightsKind_String" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Auction.rights"/>
  </xs:sequence>
</xs:complexType>

<xs:complexType name="Series_Period" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">
  <xs:sequence>
    <xs:element name="timeInterval" type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.timeInterval"/>
    <xs:element name="resolution" type="xs:duration" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.resolution"/>
    <xs:element name="Point" type="Point" minOccurs="1" maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.Point"/>
  </xs:sequence>
</xs:complexType>