



European Network of  
Transmission System Operators  
for Electricity

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# CAPACITY DOCUMENT UML MODEL AND SCHEMA

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2022-05-10  
APPROVED DOCUMENT  
VERSION 1.2

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## Revision History

Version	Release	Date	Comments
0	0	2016-12-05	First drafting of the document based on maintenance request from WG EDI.
1	0	2017-01-10	Version to be submitted to Market Committee following WG EDI meeting in January 2017.
1	1	2021-11-09	Updates in schema 'iec62325.351:tc57wg16:451-3:capacitydocument:8:1.xsd': <ul style="list-style-type: none"> <li>• An optional secondaryQuantity attribute was added into the Point class of Capacity document.</li> <li>• An optional secondary measurement unit was added at Timeseries level.</li> <li>• Measure_Unit was renamed to Measurement_Unit to align the end name with the ESMP one.</li> </ul> Approved by MC.
1	2	2022-05-10	Updates in schema 'iec62325.351:tc57wg16:451-3:capacitydocument:8:2.xsd': <ul style="list-style-type: none"> <li>• Added new optional requesting_MarketParticipant.mRID and requesting_MarketParticipant.marketRole.type at Timeseries.</li> </ul> Approved by MC.

61

## 62 1. Objective

63 The purpose of this document is to provide the contextual and assembly UML models and the  
64 schema of the Capacity\_MarketDocument.

65 The schema of the Capacity\_MarketDocument could be used in various business processes  
66 related to the transmission capacity. This document could be used to exchange information on  
67 net transmission capacity, available transmission capacity, etc.

68 It is not the purpose of this document to describe all the use cases, sequence diagrams,  
69 business processes, etc. for which this schema is to be used.

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

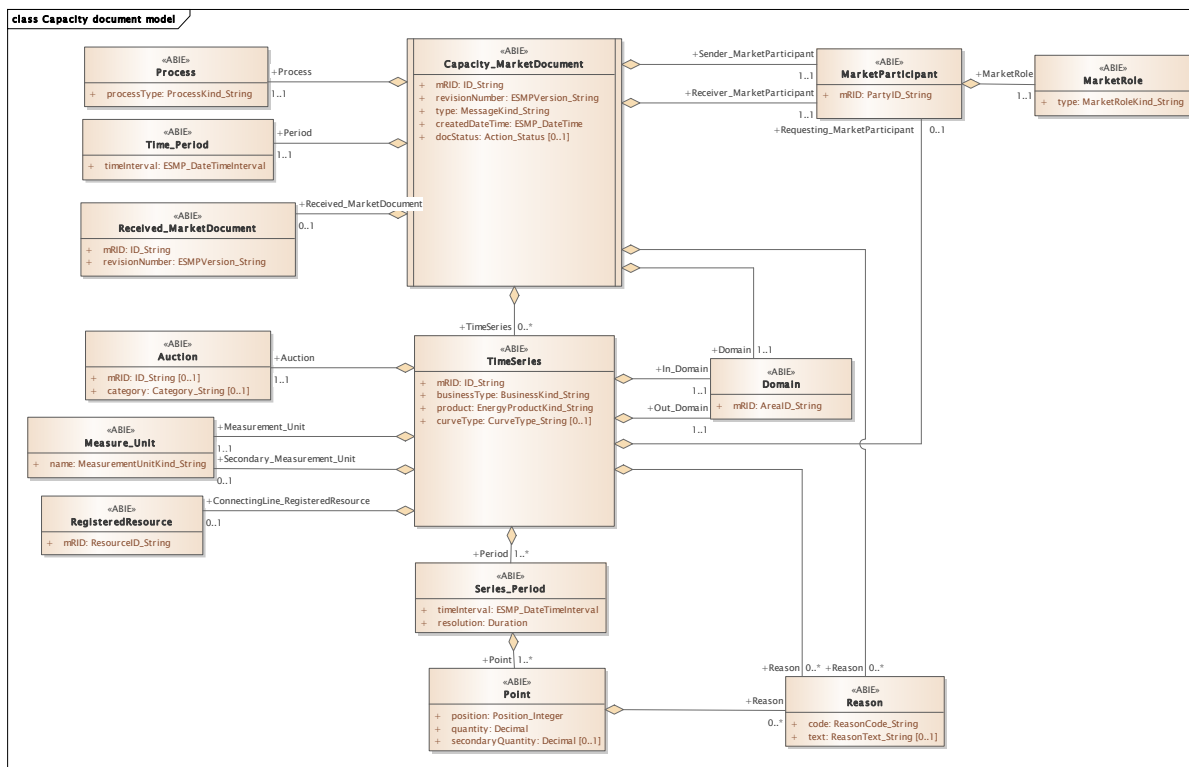
- 72 • Description of the business process;
- 73 • Use case of the business process;
- 74 • Sequence diagrams of the business process;
- 75 • List of the schema (XSD) to be used in the business process and versions of the  
76 schema;
- 77 • For each schema, dependency tables providing the necessary information for the  
78 generation of the XML instances, i.e. when the optional attributes are to be used, which  
79 codes from which ENTSO-E codelist are to be used.

80 **2. Capacity\_MarketDocument**

81 **2.1. Capacity contextual model**

82 **2.1.1. Overview of the model**

83 Figure 1 shows the model.



84

85

**Figure 1 - Capacity contextual model**

86

87 **2.1.2. IsBasedOn relationships from the European style market profile**

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

90

**Table 1 - IsBasedOn dependency**

Name	Complete IsBasedOn Path
Auction	TC57CIM::IEC62325::MarketManagement::Auction
Capacity_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Domain	TC57CIM::IEC62325::MarketManagement::Domain
MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
MarketRole	TC57CIM::IEC62325::MarketCommon::MarketRole
Measure_Unit	TC57CIM::IEC62325::MarketManagement::Unit
Point	TC57CIM::IEC62325::MarketManagement::Point
Process	TC57CIM::IEC62325::MarketManagement::Process
Reason	TC57CIM::IEC62325::MarketManagement::Reason
Received_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
Time_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries

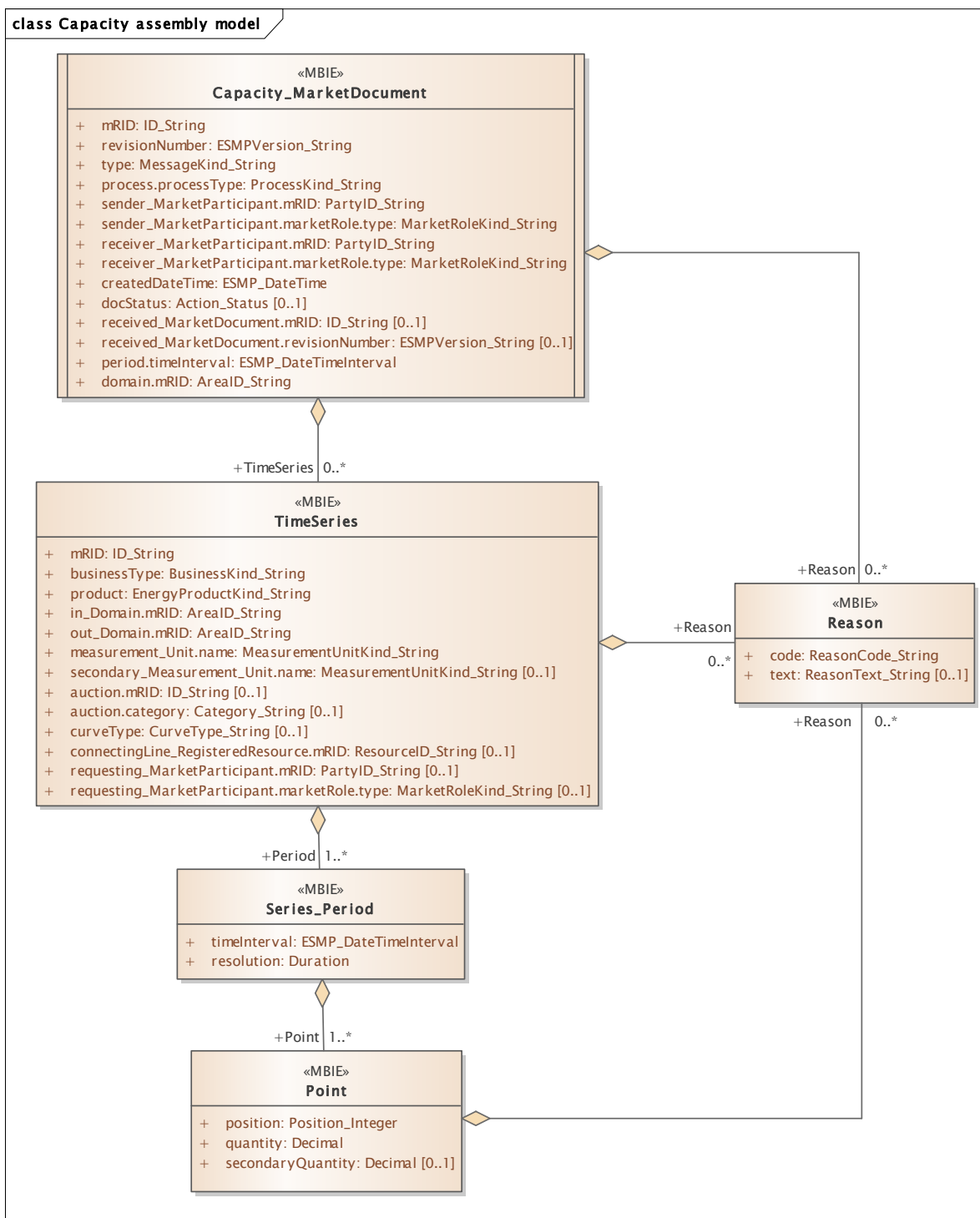
91

92

93 **2.2. Capacity assembly model**

94 **2.2.1. Overview of the model**

95 Figure 2 shows the model.



96

97

**Figure 2 - Capacity assembly model**



98

99 **2.2.2. IsBasedOn relationships from the European style market profile**

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

102 **Table 2 - IsBasedOn dependency**

Name	Complete IsBasedOn Path
Capacity_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Point	TC57CIM::IEC62325::MarketManagement::Point
Reason	TC57CIM::IEC62325::MarketManagement::Reason
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries

103

104 **2.2.3. Detailed Capacity assembly model**

105 **2.2.3.1. Capacity\_MarketDocument root class**

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

108 The Capacity\_MaketDocument enables the exchange of information related to transmission  
109 capacity. These exchanges could be related to capacity determination or capacity allocation.  
110 The values exchanged could be related to NTC, ATC, AAC, released AAC, offered capacity or  
111 general capacity information.

112 Table 3 shows all attributes of Capacity\_MarketDocument.

113 **Table 3 - Attributes of Capacity assembly model::Capacity\_MarketDocument**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	The unique identification of the document being exchanged within a business process flow.
1	[1..1]	revisionNumber ESMPVersion_String	The identification of the version that distinguishes one evolution of a document from another.
2	[1..1]	type MessageKind_String	The coded type of a document. The document type describes the principal characteristic of the document.
3	[1..1]	process.processType ProcessKind_String	The identification of the nature of process that the document addresses.
4	[1..1]	sender_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- Document owner.
5	[1..1]	sender_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- Document owner.
6	[1..1]	receiver_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- Document recipient.
7	[1..1]	receiver_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- Document recipient.
8	[1..1]	createdDateTime ESMP_DateTime	The date and time of the creation of the document.
9	[0..1]	docStatus Action_Status	The identification of the condition or position of the document with regard to its standing.

Order	mult.	Attribute name / Attribute type	Description
10	[0..1]	received_MarketDocument.mRID ID_String	The unique identification of the document being exchanged within a business process flow. --- The identification of the received document. The identification of an electronic document that is related to an electronic document header
11	[0..1]	received_MarketDocument.revisionNumber ESMPVersion_String	The identification of the version that distinguishes one evolution of a document from another. --- The identification of the received document. The identification of an electronic document that is related to an electronic document header
12	[1..1]	period.timeInterval ESMP_DateTimeInterval	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.
13	[1..1]	domain.mRID AreaID_String	The unique identification of the domain. --- The domain covered within the Capacity_MarketDocument.

114

115 Table 4 shows all association ends of Capacity\_MarketDocument with other classes.

116 **Table 4 - Association ends of Capacity assembly model::Capacity\_MarketDocument**  
117 **with other classes**

Order	mult.	Class name / Role	Description
14	[0..*]	TimeSeries TimeSeries	Association Based On: Capacity contextual model::TimeSeries.TimeSeries[0..*] ----- Capacity contextual model::Capacity_MarketDocument.[]
15	[0..*]	Reason Reason	Association Based On: Capacity contextual model::Reason.Reason[0..*] ----- Capacity contextual model::Capacity_MarketDocument.[]

118

### 119 2.2.3.2. Point

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

121 Table 5 shows all attributes of Point.

122 **Table 5 - Attributes of Capacity assembly model::Point**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	position Position_Integer	A sequential value representing the relative position within a given time interval.
1	[1..1]	quantity Decimal	The principal quantity identified for a point.
2	[0..1]	secondaryQuantity Decimal	The secondary quantity identified for a point.

123

124 Table 6 shows all association ends of Point with other classes.

125 **Table 6 - Association ends of Capacity assembly model::Point with other classes**

Order	mult.	Class name / Role	Description
3	[0..*]	Reason Reason	Association Based On: Capacity contextual model::Reason.Reason[0..*] ----- Capacity contextual model::Point.[]

126

127 **2.2.3.3. Reason**

128 The motivation of an act.

129 Table 7 shows all attributes of Reason.

130 **Table 7 - Attributes of Capacity assembly model::Reason**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	code ReasonCode_String	The motivation of an act in coded form.
1	[0..1]	text ReasonText_String	The textual explanation corresponding to the reason code.

131

132 **2.2.3.4. Series\_Period**

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

134 Table 8 shows all attributes of Series\_Period.

135 **Table 8 - Attributes of Capacity assembly model::Series\_Period**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	timeInterval ESMP_DateTimeInterval	The start and end time of the period.
1	[1..1]	resolution Duration	The definition of the number of units of time that compose an individual step within a period.

136

137 Table 9 shows all association ends of Series\_Period with other classes.

138 **Table 9 - Association ends of Capacity assembly model::Series\_Period with other classes**

139

Order	mult.	Class name / Role	Description
2	[1..*]	Point Point	Association Based On: Capacity contextual model::Point.Point[1..*] ----- Capacity contextual model::Series_Period.[]

140

141 **2.2.3.5. TimeSeries**

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

143 Table 10 shows all attributes of TimeSeries.

144

**Table 10 - Attributes of Capacity assembly model::TimeSeries**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	A unique identification of the time series.
1	[1..1]	businessType BusinessKind_String	The identification of the nature of the time series.
2	[1..1]	product EnergyProductKind_String	The identification of the nature of an energy product such as power, energy, reactive power, etc.
3	[1..1]	in_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the energy is to be put.
4	[1..1]	out_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the energy is coming from.
5	[1..1]	measurement_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure that is applied to the quantities in which the time series is expressed, e.g. MAW.
6	[0..1]	secondary_Measurement_Unit.name MeasurementUnitKind_String	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.
7	[0..1]	auction.mRID ID_String	The unique identification of the auction. --- The identification of a set of specifications created by the auction operator.
8	[0..1]	auction.category Category_String	The product category of an auction. --- The identification of a set of specifications created by the auction operator.
9	[0..1]	curveType CurveType_String	The identification of the coded representation of the type of curve being described.
10	[0..1]	connectingLine_RegisteredResource.mRID ResourceID_String	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.
11	[0..1]	requesting_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of a market participant associated with a TimeSeries.
12	[0..1]	requesting_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- The identification of a market participant associated with a TimeSeries.

145

146 Table 11 shows all association ends of TimeSeries with other classes.

147 **Table 11 - Association ends of Capacity assembly model::TimeSeries with other classes**

Order	mult.	Class name / Role	Description
13	[1..*]	Series_Period Period	Association Based On: Capacity contextual model::Series_Period.Period[1..*] ----- Capacity contextual model::TimeSeries.[]

Order	mult.	Class name / Role	Description
14	[0..*]	Reason Reason	The reason information associated with a TimeSeries providing motivation information. Association Based On: Capacity contextual model::Reason.Reason[0..*] ----- Capacity contextual model::TimeSeries.[]

148

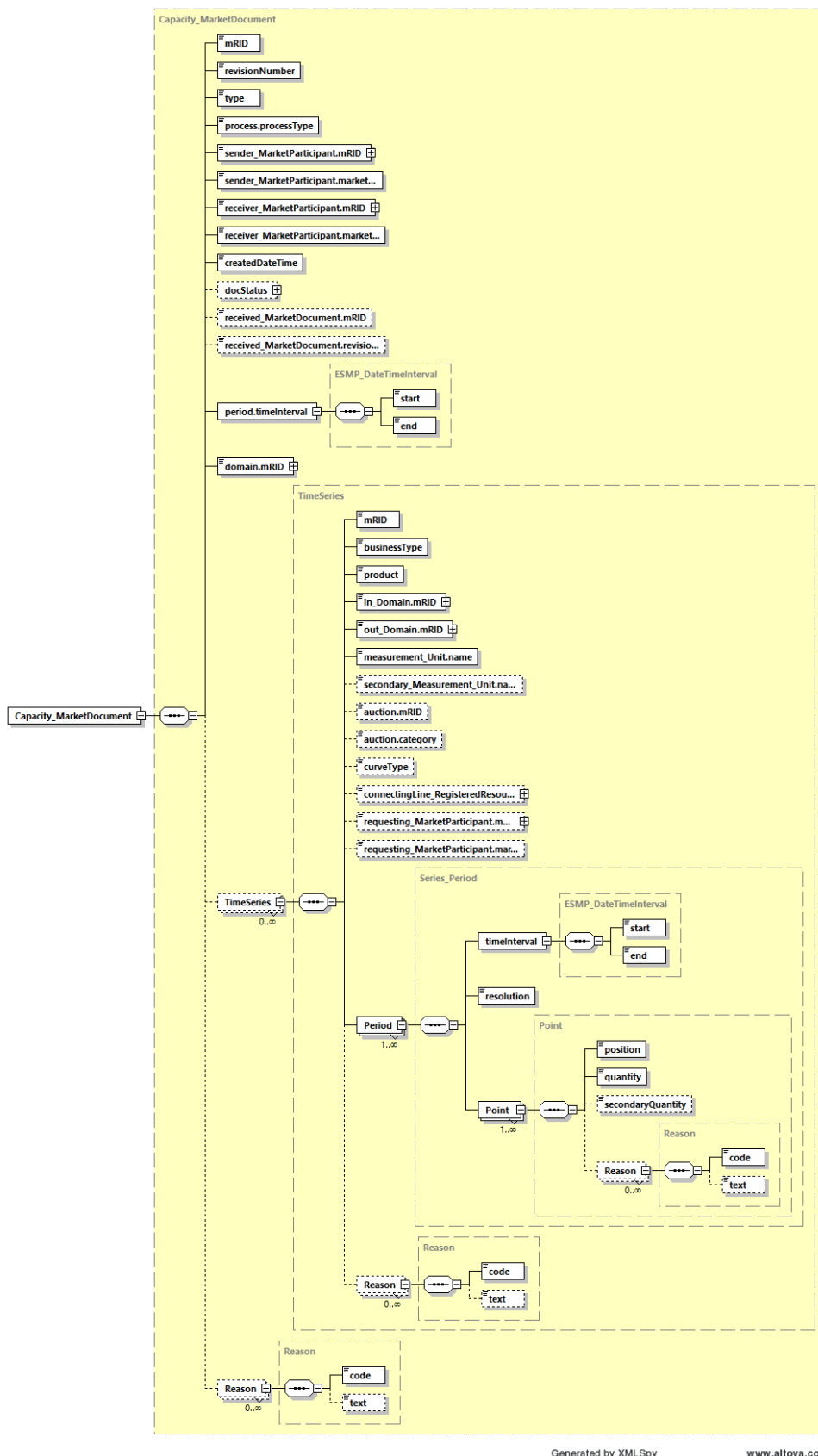
#### 149 **2.2.4. Datatypes**

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

- 151 • Action\_Status compound
- 152 • ESMP\_DateTimeInterval compound
- 153 • AreaID\_String datatype, codelist CodingSchemeTypeList
- 154 • BusinessKind\_String datatype, codelist BusinessTypeList
- 155 • Category\_String datatype, codelist CategoryTypeList
- 156 • CurveType\_String datatype, codelist CurveTypeList
- 157 • EnergyProductKind\_String datatype, codelist EnergyProductTypeList
- 158 • ESMP\_DateTime datatype
- 159 • ESMPVersion\_String datatype
- 160 • ID\_String datatype
- 161 • MarketRoleKind\_String datatype, codelist RoleTypeList
- 162 • MeasurementUnitKind\_String datatype, codelist UnitOfMeasureTypeList
- 163 • MessageKind\_String datatype, codelist MessageTypeList
- 164 • PartyID\_String datatype, codelist CodingSchemeTypeList
- 165 • Position\_Integer datatype
- 166 • ProcessKind\_String datatype, codelist ProcessTypeList
- 167 • ReasonCode\_String datatype, codelist ReasonCodeTypeList
- 168 • ReasonText\_String datatype
- 169 • ResourceID\_String datatype, codelist CodingSchemeTypeList
- 170 • Status\_String datatype, codelist StatusTypeList
- 171 • YMDHM\_DateTime datatype

172

- 173 **2.3. Capacity\_MarketDocument XML schema**
- 174 **2.3.1. Capacity\_MarketDocument XML schema structure**
- 175 Figure 3 provides the structure of the schema.



176

177

**Figure 3 - Capacity\_MarketDocument schema structure**  
 – Page 14 of 20 –

### 178 2.3.2. Capacity\_MarketDocument XML schema

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

180 urn:iec62325.351:tc57wg16:451-3:capacitydocument:8:2

```

181 <?xml version="1.0" encoding="utf-8"?>
182 <xs:schema xmlns:ecl="urn:entsoe.eu:wgedi:codelists"
183 xmlns="urn:iec62325.351:tc57wg16:451-3:capacitydocument:8:2"
184 xmlns:sawsdl="http://www.w3.org/ns/sawsdl"
185 xmlns:cimp="http://www.iec.ch/cimprofile"
186 xmlns:xs="http://www.w3.org/2001/XMLSchema"
187 targetNamespace="urn:iec62325.351:tc57wg16:451-3:capacitydocument:8:2"
188 elementFormDefault="qualified" attributeFormDefault="unqualified">
189   <xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-
190 entsoe-eu-wgedi-codelists.xsd"/>
191   <xs:element name="Capacity_MarketDocument" type="Capacity_MarketDocument"/>
192   <xs:simpleType name="ID_String"
193 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
194     <xs:restriction base="xs:string">
195       <xs:maxLength value="60"/>
196     </xs:restriction>
197   </xs:simpleType>
198   <xs:simpleType name="ESMPVersion_String"
199 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
200     <xs:restriction base="xs:string">
201       <xs:pattern value="[1-9]([0-9]){0,2}"/>
202     </xs:restriction>
203   </xs:simpleType>
204   <xs:simpleType name="MessageKind_String"
205 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
206     <xs:restriction base="ecl:MessageTypeList"/>
207   </xs:simpleType>
208   <xs:simpleType name="ProcessKind_String"
209 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
210     <xs:restriction base="ecl:ProcessTypeList"/>
211   </xs:simpleType>
212   <xs:simpleType name="PartyID_String-base"
213 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
214     <xs:restriction base="xs:string">
215       <xs:maxLength value="16"/>
216     </xs:restriction>
217   </xs:simpleType>
218   <xs:complexType name="PartyID_String"
219 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
220     <xs:simpleContent>
221       <xs:extension base="PartyID_String-base">
222         <xs:attribute name="codingScheme"
223 type="ecl:CodingSchemeTypeList" use="required"/>
224       </xs:extension>
225     </xs:simpleContent>
226   </xs:complexType>
227   <xs:simpleType name="MarketRoleKind_String"
228 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
229     <xs:restriction base="ecl:RoleTypeList"/>
230   </xs:simpleType>
231   <xs:simpleType name="ESMP_DateTime"
232 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
233     <xs:restriction base="xs:dateTime">
234       <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-
235 9]|[12][0-9]|3[01]))|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
```



```

236 9)|30))T((([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-
237 9)Z)|((([13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][0
238 48]|[02468][048][02468][048]|[02468][1235679](0)[48]|[02468][1235679][2468][048]|[
239 0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T((([01][0-9]|2[0-3]):[0-
240 5][0-9]:[0-5][0-
241 9)Z)|((([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][0134578
242 9][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[0246
243 8][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
244 9]|2[0-8])T((([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)"/>
245     </xs:restriction>
246   </xs:simpleType>
247   <xs:simpleType name="AreaID_String-base"
248 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
249     <xs:restriction base="xs:string">
250       <xs:maxLength value="18"/>
251     </xs:restriction>
252   </xs:simpleType>
253   <xs:complexType name="AreaID_String"
254 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
255     <xs:simpleContent>
256       <xs:extension base="AreaID_String-base">
257         <xs:attribute name="codingScheme"
258 type="ecl:CodingSchemeTypeList" use="required"/>
259       </xs:extension>
260     </xs:simpleContent>
261   </xs:complexType>
262   <xs:simpleType name="Status_String"
263 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
264     <xs:restriction base="ecl:StatusTypeList"/>
265   </xs:simpleType>
266   <xs:complexType name="Action_Status"
267 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Status">
268     <xs:sequence>
269       <xs:element name="value" type="Status_String" minOccurs="1"
270 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
271 cim16#Status.value"/>
272     </xs:sequence>
273   </xs:complexType>
274   <xs:simpleType name="YMDHM_DateTime"
275 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
276     <xs:restriction base="xs:string">
277       <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-
278 9]|12)[0-9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|12)[0-
279 9]|30))T((([01][0-9]|2[0-3]):[0-5][0-
280 9)Z)|((([13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][0
281 48]|[02468][048][02468][048]|[02468][1235679](0)[48]|[02468][1235679][2468][048]|[
282 0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T((([01][0-9]|2[0-3]):[0-
283 5][0-
284 9)Z)|((([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][0134578
285 9][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[0246
286 8][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
287 9]|2[0-8])T((([01][0-9]|2[0-3]):[0-5][0-9])Z)"/>
288     </xs:restriction>
289   </xs:simpleType>
290   <xs:complexType name="ESMP_DateTimeInterval"
291 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
292     <xs:sequence>
293       <xs:element name="start" type="YMDHM_DateTime" minOccurs="1"
294 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
295 cim16#DateTimeInterval.start"/>

```



```

296         <xs:element name="end" type="YMDHM_DateTime" minOccurs="1"
297 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
298 cim16#DateTimeInterval.end"/>
299     </xs:sequence>
300 </xs:complexType>
301 <xs:complexType name="Capacity_MarketDocument"
302 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
303     <xs:sequence>
304         <xs:element name="mRID" type="ID_String" minOccurs="1"
305 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
306 cim16#IdentifiedObject.mRID"/>
307         <xs:element name="revisionNumber" type="ESMPVersion_String"
308 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
309 schema-cim16#Document.revisionNumber"/>
310         <xs:element name="type" type="MessageKind_String" minOccurs="1"
311 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
312 cim16#Document.type"/>
313         <xs:element name="process.processType"
314 type="ProcessKind_String" minOccurs="1" maxOccurs="1"
315 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
316 cim16#Process.processType"/>
317         <xs:element name="sender_MarketParticipant.mRID"
318 type="PartyID_String" minOccurs="1" maxOccurs="1"
319 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
320 cim16#IdentifiedObject.mRID"/>
321         <xs:element name="sender_MarketParticipant.marketRole.type"
322 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
323 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
324         <xs:element name="receiver_MarketParticipant.mRID"
325 type="PartyID_String" minOccurs="1" maxOccurs="1"
326 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
327 cim16#IdentifiedObject.mRID"/>
328         <xs:element name="receiver_MarketParticipant.marketRole.type"
329 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
330 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
331         <xs:element name="createdDateTime" type="ESMP_DateTime"
332 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
333 schema-cim16#Document.createdDateTime"/>
334         <xs:element name="docStatus" type="Action_Status" minOccurs="0"
335 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
336 cim16#Document.docStatus"/>
337         <xs:element name="received_MarketDocument.mRID"
338 type="ID_String" minOccurs="0" maxOccurs="1"
339 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
340 cim16#IdentifiedObject.mRID"/>
341         <xs:element name="received_MarketDocument.revisionNumber"
342 type="ESMPVersion_String" minOccurs="0" maxOccurs="1"
343 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
344 cim16#Document.revisionNumber"/>
345         <xs:element name="period.timeInterval"
346 type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1"
347 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
348 cim16#Period.timeInterval"/>
349         <xs:element name="domain.mRID" type="AreaID_String"
350 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
351 schema-cim16#IdentifiedObject.mRID"/>
352         <xs:element name="TimeSeries" type="TimeSeries" minOccurs="0"
353 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
354 cim16#MarketDocument.TimeSeries"/>

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355         <xs:element name="Reason" type="Reason" minOccurs="0"
356 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
357 cim16#MarketDocument.Reason"/>
358     </xs:sequence>
359 </xs:complexType>
360 <xs:simpleType name="Position_Integer"
361 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
362     <xs:restriction base="xs:integer">
363         <xs:maxInclusive value="999999"/>
364         <xs:minInclusive value="1"/>
365     </xs:restriction>
366 </xs:simpleType>
367 <xs:complexType name="Point"
368 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point">
369     <xs:sequence>
370         <xs:element name="position" type="Position_Integer"
371 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
372 schema-cim16#Point.position"/>
373         <xs:element name="quantity" type="xs:decimal" minOccurs="1"
374 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
375 cim16#Point.quantity"/>
376         <xs:element name="secondaryQuantity" type="xs:decimal"
377 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
378 schema-cim16#Point.secondaryQuantity"/>
379         <xs:element name="Reason" type="Reason" minOccurs="0"
380 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
381 cim16#Point.Reason"/>
382     </xs:sequence>
383 </xs:complexType>
384 <xs:simpleType name="ReasonCode_String"
385 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
386     <xs:restriction base="ecl:ReasonCodeTypeList"/>
387 </xs:simpleType>
388 <xs:simpleType name="ReasonText_String"
389 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
390     <xs:restriction base="xs:string">
391         <xs:maxLength value="512"/>
392     </xs:restriction>
393 </xs:simpleType>
394 <xs:complexType name="Reason"
395 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason">
396     <xs:sequence>
397         <xs:element name="code" type="ReasonCode_String" minOccurs="1"
398 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
399 cim16#Reason.code"/>
400         <xs:element name="text" type="ReasonText_String" minOccurs="0"
401 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
402 cim16#Reason.text"/>
403     </xs:sequence>
404 </xs:complexType>
405 <xs:complexType name="Series_Period"
406 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">
407     <xs:sequence>
408         <xs:element name="timeInterval" type="ESMP_DateTimeInterval"
409 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
410 schema-cim16#Period.timeInterval"/>
411         <xs:element name="resolution" type="xs:duration" minOccurs="1"
412 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
413 cim16#Period.resolution"/>

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414         <xs:element name="Point" type="Point" minOccurs="1"
415 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
416 cim16#Period.Point"/>
417     </xs:sequence>
418 </xs:complexType>
419 <xs:simpleType name="BusinessKind_String"
420 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
421     <xs:restriction base="ecl:BusinessTypeList"/>
422 </xs:simpleType>
423 <xs:simpleType name="EnergyProductKind_String"
424 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
425     <xs:restriction base="ecl:EnergyProductTypeList"/>
426 </xs:simpleType>
427 <xs:simpleType name="MeasurementUnitKind_String"
428 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
429     <xs:restriction base="ecl:UnitOfMeasureTypeList"/>
430 </xs:simpleType>
431 <xs:simpleType name="Category_String"
432 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
433     <xs:restriction base="ecl:CategoryTypeList"/>
434 </xs:simpleType>
435 <xs:simpleType name="CurveType_String"
436 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
437     <xs:restriction base="ecl:CurveTypeList"/>
438 </xs:simpleType>
439 <xs:simpleType name="ResourceID_String-base"
440 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
441     <xs:restriction base="xs:string">
442         <xs:maxLength value="60"/>
443     </xs:restriction>
444 </xs:simpleType>
445 <xs:complexType name="ResourceID_String"
446 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
447     <xs:simpleContent>
448         <xs:extension base="ResourceID_String-base">
449             <xs:attribute name="codingScheme"
450 type="ecl:CodingSchemeTypeList" use="required"/>
451         </xs:extension>
452     </xs:simpleContent>
453 </xs:complexType>
454 <xs:complexType name="TimeSeries"
455 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries">
456     <xs:sequence>
457         <xs:element name="mRID" type="ID_String" minOccurs="1"
458 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
459 cim16#IdentifiedObject.mRID"/>
460         <xs:element name="businessType" type="BusinessKind_String"
461 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
462 schema-cim16#TimeSeries.businessType"/>
463         <xs:element name="product" type="EnergyProductKind_String"
464 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
465 schema-cim16#TimeSeries.product"/>
466         <xs:element name="in_Domain.mRID" type="AreaID_String"
467 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
468 schema-cim16#IdentifiedObject.mRID"/>
469         <xs:element name="out_Domain.mRID" type="AreaID_String"
470 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
471 schema-cim16#IdentifiedObject.mRID"/>
    
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472         <xs:element name="measurement_Unit.name"
473 type="MeasurementUnitKind_String" minOccurs="1" maxOccurs="1"
474 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
475         <xs:element name="secondary_Measurement_Unit.name"
476 type="MeasurementUnitKind_String" minOccurs="0" maxOccurs="1"
477 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
478         <xs:element name="auction.mRID" type="ID_String" minOccurs="0"
479 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
480 cim16#IdentifiedObject.mRID"/>
481         <xs:element name="auction.category" type="Category_String"
482 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
483 schema-cim16#Auction.category"/>
484         <xs:element name="curveType" type="CurveType_String"
485 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
486 schema-cim16#TimeSeries.curveType"/>
487         <xs:element name="connectingLine_RegisteredResource.mRID"
488 type="ResourceID_String" minOccurs="0" maxOccurs="1"
489 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
490 cim16#IdentifiedObject.mRID"/>
491         <xs:element name="requesting_MarketParticipant.mRID"
492 type="PartyID_String" minOccurs="0" maxOccurs="1"
493 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
494 cim16#IdentifiedObject.mRID"/>
495         <xs:element name="requesting_MarketParticipant.marketRole.type"
496 type="MarketRoleKind_String" minOccurs="0" maxOccurs="1"
497 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
498         <xs:element name="Period" type="Series_Period" minOccurs="1"
499 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
500 cim16#TimeSeries.Period"/>
501         <xs:element name="Reason" type="Reason" minOccurs="0"
502 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
503 cim16#TimeSeries.Reason"/>
504     </xs:sequence>
505 </xs:complexType>
506 </xs:schema>
507

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