



European Network of
Transmission System Operators
for Electricity

PUBLICATION DOCUMENT UML MODEL AND SCHEMA

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2

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Revision History

Version	Release	Date	Comments
0	1	2017-01-27	First drafting of the document.
1	0	2017-01-30	Version to be submitted to Market Committee following WG EDI meeting in March 2017.
1	1	2018-05-02	EMFIP 46. Added docStatus attribute with cardinality 0..1 to the document header Approved document by MC

62

63 1 Objective

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

66 The schema of the Publication_MarketDocument could be used in various business processes.

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

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

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

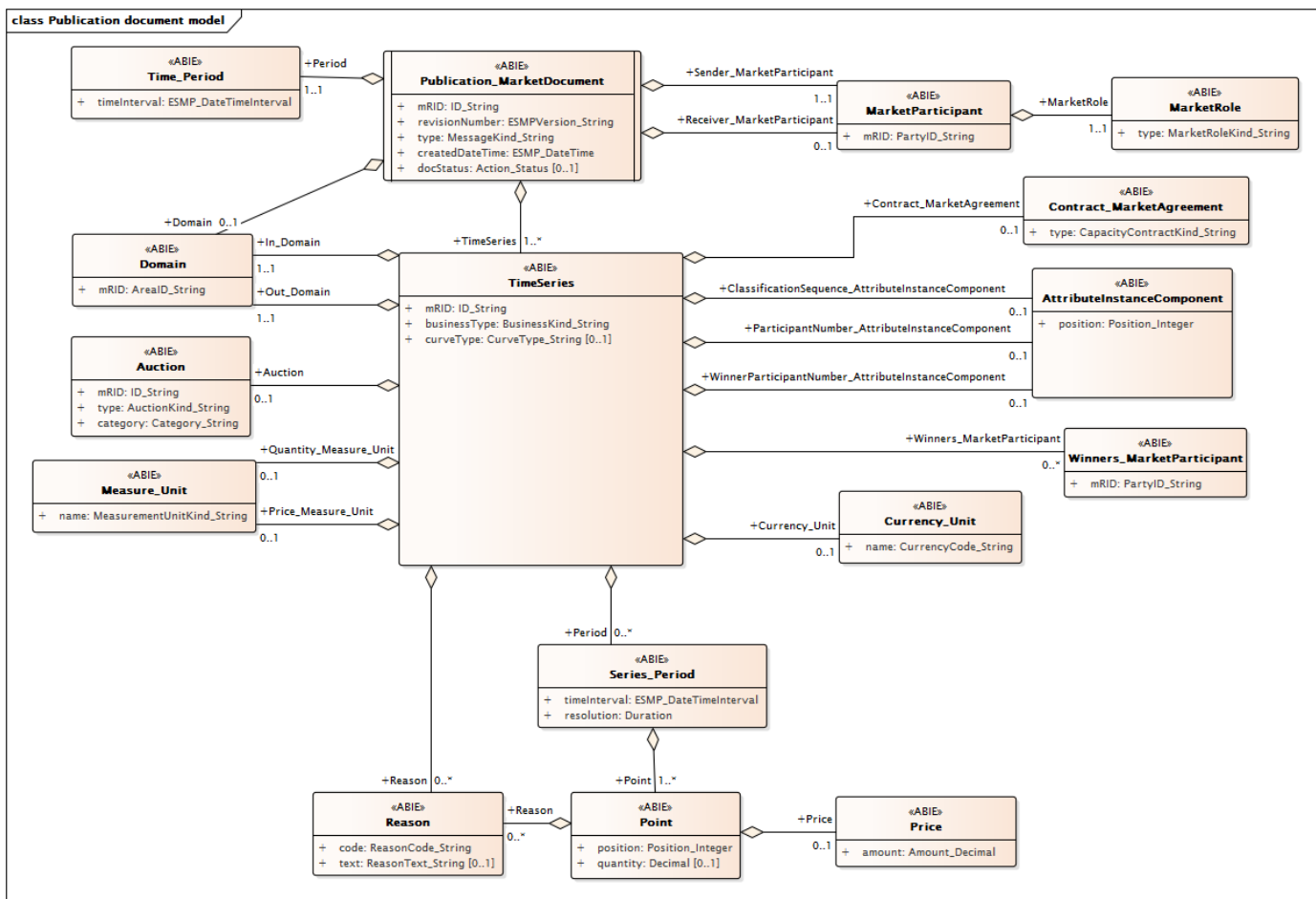
79

80 **2 Publication_MarketDocument**

81 **2.1 Publication contextual model**

82 **2.1.1 Overview of the model**

83 Figure 1 shows the model.



84

85

Figure 1 - Publication contextual model

86 **2.1.2 IsBasedOn relationships from the European style market profile**

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

89 **Table 1 - IsBasedOn dependency**

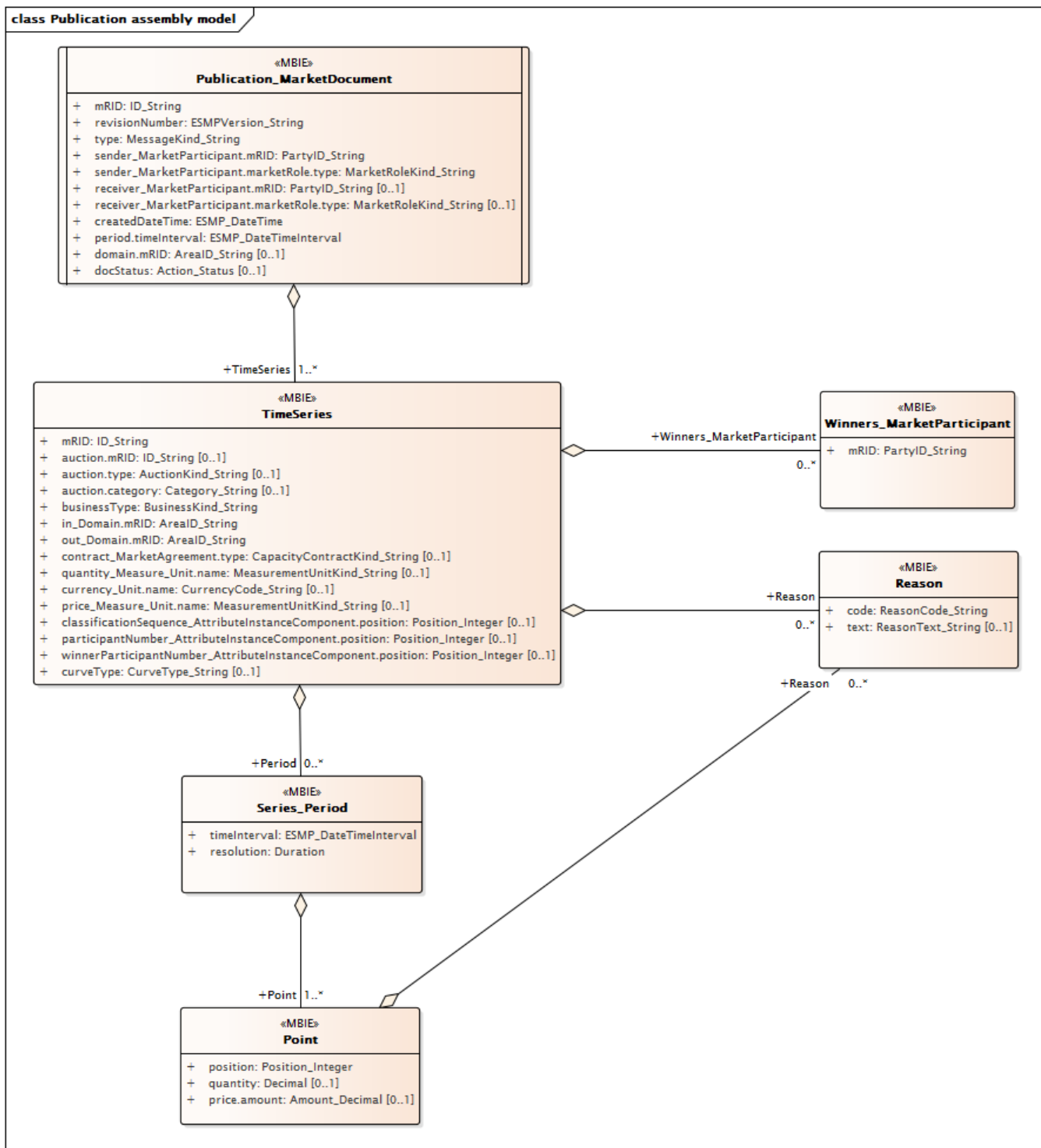
Name	Complete IsBasedOn Path
AttributeInstanceComponent	TC57CIM::IEC62325::MarketManagement::AttributeInstanceComponent
Auction	TC57CIM::IEC62325::MarketManagement::Auction
Contract_MarketAgreement	TC57CIM::IEC62325::MarketManagement::MarketAgreement
Currency_Unit	TC57CIM::IEC62325::MarketManagement::Unit
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
Price	TC57CIM::IEC62325::MarketManagement::Price
Publication_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Reason	TC57CIM::IEC62325::MarketManagement::Reason
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
Time_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries
Winners_MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant

90

91 2.2 Publication assembly model

92 2.2.1 Overview of the model

93 Figure 2 shows the model.



94

95

Figure 2 - Publication assembly model

96 **2.2.2 IsBasedOn relationships from the European style market profile**

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

99 **Table 2 - IsBasedOn dependency**

Name	Complete IsBasedOn Path
Point	TC57CIM::IEC62325::MarketManagement::Point
Publication_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Reason	TC57CIM::IEC62325::MarketManagement::Reason
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries
Winners_MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant

100

101 **2.2.3 Detailed Publication assembly model**

102 **2.2.3.1 Publication_MarketDocument root class**

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

105 A publication document is issued by the transmission capacity allocator at the end of a specific
106 auctioning cycle or by the system operator once the NTC values have been agreed.

107 Table 3 shows all attributes of Publication_MarketDocument.

108 **Table 3 - Attributes of Publication assembly model::Publication_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]	sender_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- Document owner.
4	[1..1]	sender_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- Document owner.
5	[0..1]	receiver_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- Document recipient.
6	[0..1]	receiver_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- Document recipient.
7	[1..1]	createdDateTime ESMP_DateTime	The date and time of the creation of the document.
8	[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 that the publication document is covering.
9	[0..1]	domain.mRID AreaID_String	The unique identification of the domain. --- The domain covered within the publication document

Order	mult.	Attribute name / Attribute type	Description
10	[0..1]	docStatus Action_Status	The identification of the condition or position of the document with regard to its standing.

109

110 Table 4 shows all association ends of Publication_MarketDocument with other classes.

111

112

Table 4 - Association ends of Publication assembly model::Publication_MarketDocument with other classes

Order	mult.	Class name / Role	Description
11	[1..*]	TimeSeries TimeSeries	Association Based On: Publication contextual model::TimeSeries.TimeSeries[1..*] ----- Publication contextual model::Publication_MarketDocument.[]

113

114 2.2.3.2 Point

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

116 Table 5 shows all attributes of Point.

117

Table 5 - Attributes of Publication 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	[0..1]	quantity Decimal	The quantity auctioned for the interval in question. The principal quantity identified for a point.
2	[0..1]	price.amount Amount_Decimal	A number of monetary units specified in a unit of currency. --- The price expressed per currency per unit of price measure. This information defines the price expressed in the unit of measurement of price per unit of quantity in compliance with the pricing scheme based on local market rules. A price may be negative in cases where it is providing the difference between in and out area market prices. The price 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.

118

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

120

Table 6 - Association ends of Publication assembly model::Point with other classes

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

121

122 2.2.3.3 Reason

123 The motivation of an act.

124 Table 7 shows all attributes of Reason.

125

Table 7 - Attributes of Publication 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.

126

127 **2.2.3.4 Series_Period**

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

129 Table 8 shows all attributes of Series_Period.

130

Table 8 - Attributes of Publication 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.

131

132 Table 9 shows all association ends of Series_Period with other classes.

133 **Table 9 - Association ends of Publication assembly model::Series_Period with other**
134 **classes**

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

135

136 **2.2.3.5 TimeSeries**

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

138 Table 10 shows all attributes of TimeSeries.

139

Table 10 - Attributes of Publication assembly model::TimeSeries

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	A unique identification of the time series.
1	[0..1]	auction.mRID ID_String	The unique identification of the auction. --- A unique identification of the set of specifications that clearly defines the allocation process to which the time series is addressed.

Order	mult.	Attribute name / Attribute type	Description
2	[0..1]	auction.type AuctionKind_String	The kind of the auction (e.g. implicit, explicit, ...). --- A unique identification of the set of specifications that clearly defines the allocation process to which the time series is addressed.
3	[0..1]	auction.category Category_String	The product category of an auction. --- A unique identification of the set of specifications that clearly defines the allocation process to which the time series is addressed.
4	[1..1]	businessType BusinessKind_String	The identification of the nature of the time series.
5	[1..1]	in_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the energy is to be put.
6	[1..1]	out_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the energy is coming from.
7	[0..1]	contract_MarketAgreement.type CapacityContractKind_String	The specification of the kind of the agreement, e.g. long term, daily contract. --- The contract type defines the conditions under which the capacity was allocated and handled, e.g.: daily auction, weekly auction, monthly auction, yearly auction, long term contract, etc. The significance of this type is dependent on the in area and out area specific coded working methods.
8	[0..1]	quantity_Measure_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure in which the quantities in the times eries are expressed., e.g. MAW.
9	[0..1]	currency_Unit.name CurrencyCode_String	The identification of the formal code for a currency (ISO 4217). --- The currency in which the monetary amount is expressed.
10	[0..1]	price_Measure_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure in which the price in the time series is expressed per unit of currency (MW per unit, MWh per unit, etc.).
11	[0..1]	classificationSequence_AttributeInstanceComponent.position Position_Integer	A sequential value representing a relative sequence number. --- The sequence of a time series within a given auction category and contract type. A classification sequence is only provided in the case where there are several auctions in the same category and contract type.

Order	mult.	Attribute name / Attribute type	Description
12	[0..1]	participantNumber_AttributeInstanceComponent.position Position_Integer	A sequential value representing a relative sequence number. --- The number of parties that participated in the auction. It is only provided if the auction rules permit it.
13	[0..1]	winnerParticipantNumber_AttributeInstanceComponent.position Position_Integer	A sequential value representing a relative sequence number. --- The number of parties that had successful bids in the auction. This information is only provided if the auction rules permit it.
14	[0..1]	curveType CurveType_String	The identification of the coded representation of the type of curve being described.

140

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

142 **Table 11 - Association ends of Publication assembly model::TimeSeries with other**
143 **classes**

Order	mult.	Class name / Role	Description
15	[0..*]	Series_Period Period	Association Based On: Publication contextual model::Series_Period.Period[0..*] ----- Publication contextual model::TimeSeries.[]
16	[0..*]	Reason Reason	Association Based On: Publication contextual model::Reason.Reason[0..*] ----- Publication contextual model::TimeSeries.[]
17	[0..*]	Winners_MarketParticipant Winners_MarketParticipant	The identification of the market participants who get something at the auction. Association Based On: Publication contextual model::Winners_MarketParticipant.Winners_MarketParticipant[0..*] ----- Publication contextual model::TimeSeries.[]

144

145 2.2.3.6 Winners_MarketParticipant

146 The identification of the party participating in energy market business processes.

147 Table 12 shows all attributes of Winners_MarketParticipant.

148 **Table 12 - Attributes of Publication assembly model::Winners_MarketParticipant**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID PartyID_String	The identification of a party in the energy market.

149

150 2.2.4 Datatypes

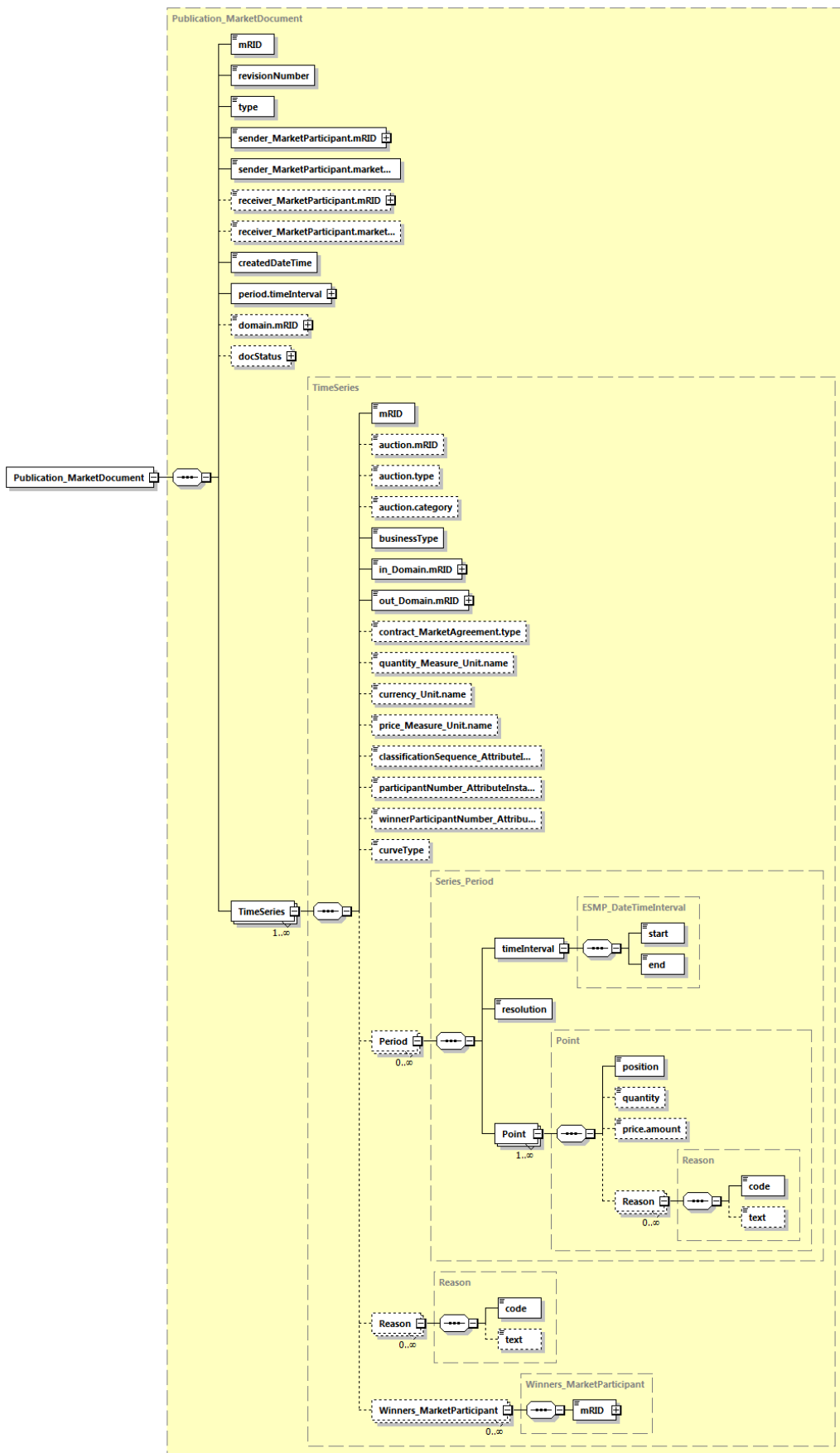
151 The list of datatypes used for the Publication assembly model is as follows:

- 152 • Action_Status compound
- 153 • ESMP_DateTimeInterval compound

- 154 • Amount_Decimal datatype
- 155 • AreaID_String datatype, codelist CodingSchemeTypeList
- 156 • AuctionKind_String datatype, codelist AuctionTypeList
- 157 • BusinessKind_String datatype, codelist BusinessTypeList
- 158 • CapacityContractKind_String datatype, codelist ContractTypeList
- 159 • Category_String datatype, codelist CategoryTypeList
- 160 • CurrencyCode_String datatype, codelist CurrencyTypeList
- 161 • CurveType_String datatype, codelist CurveTypeList
- 162 • ESMP_DateTime datatype
- 163 • ESMPVersion_String datatype
- 164 • ID_String datatype
- 165 • MarketRoleKind_String datatype, codelist RoleTypeList
- 166 • MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
- 167 • MessageKind_String datatype, codelist MessageTypeList
- 168 • PartyID_String datatype, codelist CodingSchemeTypeList
- 169 • Position_Integer datatype
- 170 • ReasonCode_String datatype, codelist ReasonCodeTypeList
- 171 • ReasonText_String datatype
- 172 • Status_String datatype, codelist StatusTypeList
- 173 • YMDHM_DateTime datatype
- 174
- 175

176 2.2.5 Publication_MarketDocument XML schema structure

177



178
179

Generated by XMLSpy www.altova.com

Figure 3 - Publication_MarketDocument schema structure
– Page 15 of 19 –

180 2.2.6 Publication_MarketDocument XML schema

181

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

183 urn:iec62325.351:tc57wg16:451-3:publicationdocument:7:1

```

184 <?xml version="1.0" encoding="utf-8"?>
185 <xs:schema xmlns:ecl="urn:entsoe.eu:wgedi:codelists" xmlns:sawsdl="http://www.w3.org/ns/sawsdl"
186 xmlns="urn:iec62325.351:tc57wg16:451-3:publicationdocument:7:1"
187 xmlns:cimp="http://www.iec.ch/cimprofile" xmlns:xs="http://www.w3.org/2001/XMLSchema"
188 targetNamespace="urn:iec62325.351:tc57wg16:451-3:publicationdocument:7:1"
189 elementFormDefault="qualified" attributeFormDefault="unqualified">
190   <xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-entsoe-eu-wgedi-
191 codelists.xsd"/>
192   <xs:element name="Publication_MarketDocument" type="Publication_MarketDocument"/>
193   <xs:simpleType name="Position_Integer" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
194 schema-cim16#Integer">
195     <xs:restriction base="xs:integer">
196       <xs:maxInclusive value="999999"/>
197       <xs:minInclusive value="1"/>
198     </xs:restriction>
199   </xs:simpleType>
200   <xs:simpleType name="Amount_Decimal" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
201 cim16#Decimal">
202     <xs:restriction base="xs:decimal">
203       <xs:totalDigits value="17"/>
204     </xs:restriction>
205   </xs:simpleType>
206   <xs:complexType name="Point" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
207 cim16#Point">
208     <xs:sequence>
209       <xs:element name="position" type="Position_Integer" minOccurs="1"
210 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.position"/>
211       <xs:element name="quantity" type="xs:decimal" minOccurs="0" maxOccurs="1"
212 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.quantity"/>
213       <xs:element name="price.amount" type="Amount_Decimal" minOccurs="0"
214 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Price.amount"/>
215       <xs:element name="Reason" type="Reason" minOccurs="0" maxOccurs="unbounded"
216 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.Reason"/>
217     </xs:sequence>
218   </xs:complexType>
219   <xs:simpleType name="ID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
220 cim16#String">
221     <xs:restriction base="xs:string">
222       <xs:maxLength value="35"/>
223     </xs:restriction>
224   </xs:simpleType>
225   <xs:simpleType name="ESMPVersion_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
226 schema-cim16#String">
227     <xs:restriction base="xs:string">
228       <xs:pattern value="[1-9]([0-9]){0,2}"/>
229     </xs:restriction>
230   </xs:simpleType>
231   <xs:simpleType name="MessageKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
232 schema-cim16#String">
233     <xs:restriction base="ecl:MessageTypeList"/>
234   </xs:simpleType>
235   <xs:simpleType name="PartyID_String-base" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
236 schema-cim16#String">
237     <xs:restriction base="xs:string">
238       <xs:maxLength value="16"/>
239     </xs:restriction>
240   </xs:simpleType>
241   <xs:complexType name="PartyID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
242 schema-cim16#String">
243     <xs:simpleContent>
244       <xs:extension base="PartyID_String-base">
245         <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList"
246 use="required"/>
247       </xs:extension>
248     </xs:simpleContent>
249   </xs:complexType>

```



```

250     <xs:simpleType name="MarketRoleKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
251 schema-cim16#String">
252         <xs:restriction base="ecl:RoleTypeList"/>
253     </xs:simpleType>
254     <xs:simpleType name="ESMP_DateTime" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
255 cim16#DateTime">
256         <xs:restriction base="xs:dateTime">
257             <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-9]|[12][0-
258 9]|3[01])|([0-9]{4})[\-](0[469])|(11))[\-](0[1-9]|[12][0-9]|30))T((0[1][0-9]|2[0-3]):[0-5][0-9]:[0-
259 5][0-
260 9])Z|(((13579)[26][02468][048]|13579][01345789](0)[48]|13579][01345789][2468][048]|02468][048][0246
261 8][048]|02468][1235679](0)[48]|02468][1235679][2468][048]|0[0-9][0-9][13579][26])[\-](02)[\-](0[1-
262 9]|1[0-9]|2[0-9])T((0[1][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-
263 9])Z|(((13579)[26][02468][1235679]|13579][01345789](0)[01235679]|13579][01345789][2468][1235679]|02
264 468][048][02468][1235679]|02468][1235679](0)[01235679]|02468][1235679][2468][1235679]|0[0-9][0-
265 9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-9]|2[0-8])T((0[1][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z"/>
266     </xs:restriction>
267 </xs:simpleType>
268     <xs:simpleType name="AreaID_String-base" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
269 schema-cim16#String">
270         <xs:restriction base="xs:string">
271             <xs:maxLength value="18"/>
272         </xs:restriction>
273     </xs:simpleType>
274     <xs:complexType name="AreaID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
275 cim16#String">
276         <xs:simpleContent>
277             <xs:extension base="AreaID_String-base">
278                 <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList"
279 use="required"/>
280             </xs:extension>
281         </xs:simpleContent>
282     </xs:complexType>
283     <xs:simpleType name="Status_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
284 cim16#String">
285         <xs:restriction base="ecl:StatusTypeList"/>
286     </xs:simpleType>
287     <xs:complexType name="Action_Status" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
288 cim16#Status">
289         <xs:sequence>
290             <xs:element name="value" type="Status_String" minOccurs="1" maxOccurs="1"
291 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Status.value"/>
292         </xs:sequence>
293     </xs:complexType>
294     <xs:simpleType name="YMDHM_DateTime" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
295 cim16#DateTime">
296         <xs:restriction base="xs:string">
297             <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-9]|[12][0-
298 9]|3[01])|([0-9]{4})[\-](0[469])|(11))[\-](0[1-9]|[12][0-9]|30))T((0[1][0-9]|2[0-3]):[0-5][0-
299 9])Z|(((13579)[26][02468][048]|13579][01345789](0)[48]|13579][01345789][2468][048]|02468][048][0246
300 8][048]|02468][1235679](0)[48]|02468][1235679][2468][048]|0[0-9][0-9][13579][26])[\-](02)[\-](0[1-
301 9]|1[0-9]|2[0-9])T((0[1][0-9]|2[0-3]):[0-5][0-
302 9])Z|(((13579)[26][02468][1235679]|13579][01345789](0)[01235679]|13579][01345789][2468][1235679]|02
303 468][048][02468][1235679]|02468][1235679](0)[01235679]|02468][1235679][2468][1235679]|0[0-9][0-
304 9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-9]|2[0-8])T((0[1][0-9]|2[0-3]):[0-5][0-9])Z"/>
305     </xs:restriction>
306 </xs:simpleType>
307     <xs:complexType name="ESMP_DateTimeInterval"
308 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
309         <xs:sequence>
310             <xs:element name="start" type="YMDHM_DateTime" minOccurs="1" maxOccurs="1"
311 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval.start"/>
312             <xs:element name="end" type="YMDHM_DateTime" minOccurs="1" maxOccurs="1"
313 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval.end"/>
314         </xs:sequence>
315     </xs:complexType>
316     <xs:complexType name="Publication_MarketDocument"
317 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
318         <xs:sequence>
319             <xs:element name="mRID" type="ID_String" minOccurs="1" maxOccurs="1"
320 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
321             <xs:element name="revisionNumber" type="ESMPVersion_String" minOccurs="1"
322 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
323 cim16#Document.revisionNumber"/>
    
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324         <xs:element name="type" type="MessageKind_String" minOccurs="1" maxOccurs="1"
325 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.type"/>
326         <xs:element name="sender_MarketParticipant.mRID" type="PartyID_String"
327 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
328 cim16#IdentifiedObject.mRID"/>
329         <xs:element name="sender_MarketParticipant.marketRole.type"
330 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
331 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
332         <xs:element name="receiver_MarketParticipant.mRID" type="PartyID_String"
333 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
334 cim16#IdentifiedObject.mRID"/>
335         <xs:element name="receiver_MarketParticipant.marketRole.type"
336 type="MarketRoleKind_String" minOccurs="0" maxOccurs="1"
337 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
338         <xs:element name="createdDateTime" type="ESMP_DateTime" minOccurs="1"
339 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
340 cim16#Document.createdDateTime"/>
341         <xs:element name="period.timeInterval" type="ESMP_DateTimeInterval"
342 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
343 cim16#Period.timeInterval"/>
344         <xs:element name="domain.mRID" type="AreaID_String" minOccurs="0"
345 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
346         <xs:element name="docStatus" type="Action_Status" minOccurs="0" maxOccurs="1"
347 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.docStatus"/>
348         <xs:element name="TimeSeries" type="TimeSeries" minOccurs="1"
349 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
350 cim16#MarketDocument.TimeSeries"/>
351     </xs:sequence>
352 </xs:complexType>
353 <xs:simpleType name="ReasonCode_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
354 schema-cim16#String">
355     <xs:restriction base="ecl:ReasonCodeTypeList"/>
356 </xs:simpleType>
357 <xs:simpleType name="ReasonText_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
358 schema-cim16#String">
359     <xs:restriction base="xs:string">
360         <xs:maxLength value="512"/>
361     </xs:restriction>
362 </xs:simpleType>
363 <xs:complexType name="Reason" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
364 cim16#Reason">
365     <xs:sequence>
366         <xs:element name="code" type="ReasonCode_String" minOccurs="1" maxOccurs="1"
367 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason.code"/>
368         <xs:element name="text" type="ReasonText_String" minOccurs="0" maxOccurs="1"
369 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason.text"/>
370     </xs:sequence>
371 </xs:complexType>
372 <xs:complexType name="Series_Period" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
373 cim16#Period">
374     <xs:sequence>
375         <xs:element name="timeInterval" type="ESMP_DateTimeInterval" minOccurs="1"
376 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.timeInterval"/>
377         <xs:element name="resolution" type="xs:duration" minOccurs="1" maxOccurs="1"
378 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.resolution"/>
379         <xs:element name="Point" type="Point" minOccurs="1" maxOccurs="unbounded"
380 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.Point"/>
381     </xs:sequence>
382 </xs:complexType>
383 <xs:simpleType name="AuctionKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
384 schema-cim16#String">
385     <xs:restriction base="ecl:AuctionTypeList"/>
386 </xs:simpleType>
387 <xs:simpleType name="Category_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
388 schema-cim16#String">
389     <xs:restriction base="ecl:CategoryTypeList"/>
390 </xs:simpleType>
391 <xs:simpleType name="BusinessKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
392 schema-cim16#String">
393     <xs:restriction base="ecl:BusinessTypeList"/>
394 </xs:simpleType>
395 <xs:simpleType name="CapacityContractKind_String"
396 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
397     <xs:restriction base="ecl:ContractTypeList"/>
398 </xs:simpleType>

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399     <xs:simpleType name="MeasurementUnitKind_String"
400 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
401     <xs:restriction base="ecl:UnitOfMeasureTypeList"/>
402     </xs:simpleType>
403     <xs:simpleType name="CurrencyCode_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
404 schema-cim16#String">
405     <xs:restriction base="ecl:CurrencyTypeList"/>
406     </xs:simpleType>
407     <xs:simpleType name="CurveType_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
408 schema-cim16#String">
409     <xs:restriction base="ecl:CurveTypeList"/>
410     </xs:simpleType>
411     <xs:complexType name="TimeSeries" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
412 cim16#TimeSeries">
413     <xs:sequence>
414     <xs:element name="mRID" type="ID_String" minOccurs="1" maxOccurs="1"
415 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
416     <xs:element name="auction.mRID" type="ID_String" minOccurs="0" maxOccurs="1"
417 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
418     <xs:element name="auction.type" type="AuctionKind_String" minOccurs="0"
419 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Auction.type"/>
420     <xs:element name="auction.category" type="Category_String" minOccurs="0"
421 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Auction.category"/>
422     <xs:element name="businessType" type="BusinessKind_String" minOccurs="1"
423 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
424 cim16#TimeSeries.businessType"/>
425     <xs:element name="in_Domain.mRID" type="AreaID_String" minOccurs="1"
426 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
427     <xs:element name="out_Domain.mRID" type="AreaID_String" minOccurs="1"
428 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
429     <xs:element name="contract_MarketAgreement.type"
430 type="CapacityContractKind_String" minOccurs="0" maxOccurs="1"
431 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.type"/>
432     <xs:element name="quantity_Measure_Unit.name"
433 type="MeasurementUnitKind_String" minOccurs="0" maxOccurs="1"
434 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
435     <xs:element name="currency_Unit.name" type="CurrencyCode_String" minOccurs="0"
436 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
437     <xs:element name="price_Measure_Unit.name" type="MeasurementUnitKind_String"
438 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
439 cim16#Unit.name"/>
440     <xs:element name="classificationSequence_AttributeInstanceComponent.position"
441 type="Position_Integer" minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
442 schema-cim16#AttributeInstanceComponent.position"/>
443     <xs:element name="participantNumber_AttributeInstanceComponent.position"
444 type="Position_Integer" minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
445 schema-cim16#AttributeInstanceComponent.position"/>
446     <xs:element name="winnerParticipantNumber_AttributeInstanceComponent.position"
447 type="Position_Integer" minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
448 schema-cim16#AttributeInstanceComponent.position"/>
449     <xs:element name="curveType" type="CurveType_String" minOccurs="0"
450 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.curveType"/>
451     <xs:element name="Period" type="Series_Period" minOccurs="0"
452 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
453 cim16#TimeSeries.Period"/>
454     <xs:element name="Reason" type="Reason" minOccurs="0" maxOccurs="unbounded"
455 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.Reason"/>
456     <xs:element name="Winners_MarketParticipant" type="Winners_MarketParticipant"
457 minOccurs="0" maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
458 cim16#TimeSeries.Winners_MarketParticipant"/>
459     </xs:sequence>
460     </xs:complexType>
461     <xs:complexType name="Winners_MarketParticipant"
462 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketParticipant">
463     <xs:sequence>
464     <xs:element name="mRID" type="PartyID_String" minOccurs="1" maxOccurs="1"
465 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
466     </xs:sequence>
467     </xs:complexType>
468 </xs:schema>

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