



European Network of  
Transmission System Operators  
for Electricity

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# BID DOCUMENT UML MODEL AND SCHEMA

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2022-02-01  
APPROVED DOCUMENT  
VERSION 1.1

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## Revision History

Version	Release	Date	Comments
0	1	2018-03-12	First drafting of the document.
1	0	2018-05-08	Document approved by MC
1	1	2022-02-01	<p>Updates in bid document XSD v7.1</p> <ul style="list-style-type: none"> <li>Quantity_Measure_Unit.name &amp; Price_Measure_Unit.name attributes were renamed to Quantity_Measurement_Unit.name &amp; Price_Measurement_Unit.name to be compliant with the ESMP.</li> <li>mRID of Document, Series and Timeseries (ID_String type) was enlarged from 35 to 60 characters.</li> </ul> <p>Approved by MC.</p>

55

## 56 **Objective**

57 The purpose of this document is to provide the contextual and assembly UML models and the  
58 schema of the Bid\_MarketDocument.

59 The schema of the Bid\_MarketDocument could be used in various business processes.

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

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

- 64 • Description of the business process;
- 65 • Use case of the business process;
- 66 • Sequence diagrams of the business process;
- 67 • List of the schema (XSD) to be used in the business process and versions of the  
68 schema;
- 69 • For each schema, dependency tables providing the necessary information for the  
70 generation of the XML instances, i.e. when the optional attributes are to be used, which  
71 codes from which ENTSO-E codelist are to be used.

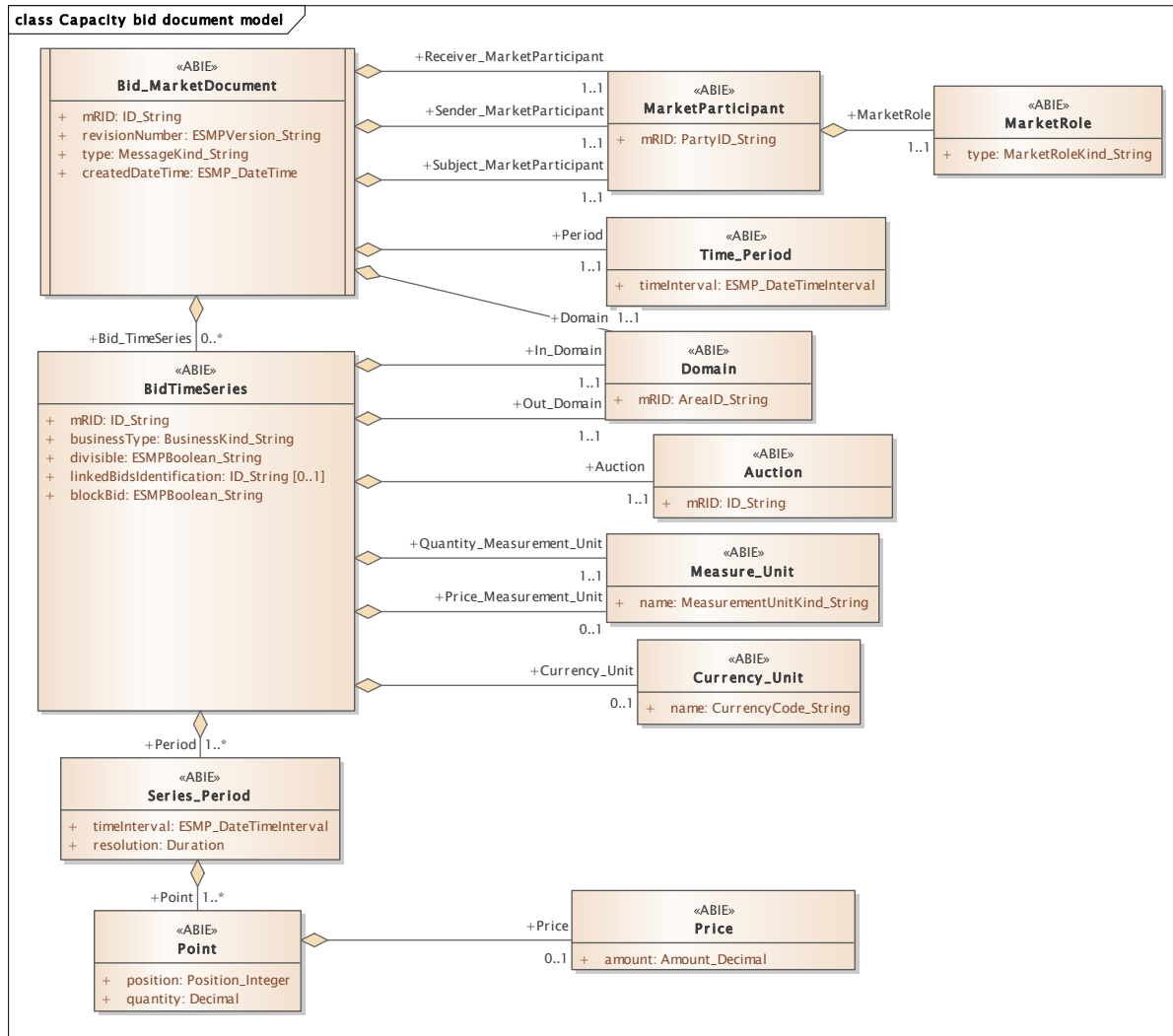
72

73 **Bid Market Document**

74 **2.1 Bid contextual model**

75 **2.1.1 Overview of the model**

76 Figure 1 shows the model.



77

78

**Figure 1 - Bid contextual model**

79

80

81 **2.1.2 IsBasedOn relationships from the European style market profile**

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

84

**Table 1 - IsBasedOn dependency**

Name	Complete IsBasedOn Path
Auction	TC57CIM::IEC62325::MarketManagement::Auction
Bid_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
BidTimeSeries	TC57CIM::IEC62325::MarketManagement::BidTimeSeries
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
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
Time_Period	TC57CIM::IEC62325::MarketManagement::Period

85

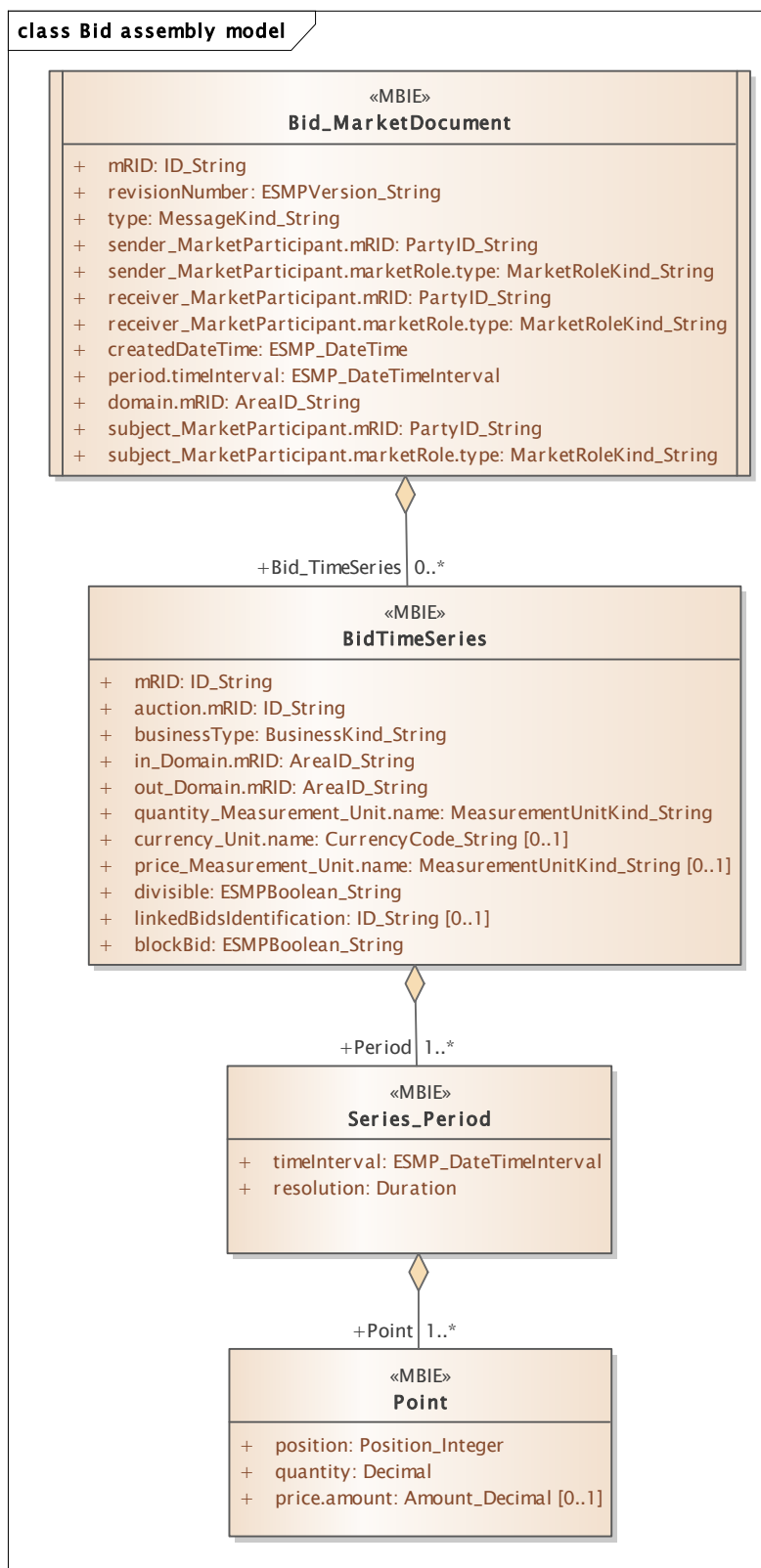
86

87

88 2.2 Bid assembly model

89 2.2.1 Overview of the model

90 Figure 2 shows the model.



91

92

Figure 2 - Bid assembly model



93 **2.2.2 IsBasedOn relationships from the European style market profile**

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

96 **Table 2 - IsBasedOn dependency**

Name	Complete IsBasedOn Path
Bid_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
BidTimeSeries	TC57CIM::IEC62325::MarketManagement::BidTimeSeries
Point	TC57CIM::IEC62325::MarketManagement::Point
Series_Period	TC57CIM::IEC62325::MarketManagement::Period

97

98 **2.2.3 Detailed Bid assembly model**

99 **2.2.3.1 Bid\_MarketDocument root class**

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

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

104 Table 3 shows all attributes of Bid\_MarketDocument.

105 **Table 3 - Attributes of Bid assembly model::Bid\_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	[1..1]	receiver_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- Document recipient.
6	[1..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 covered by the document.
9	[1..1]	domain.mRID AreaID_String	The unique identification of the domain. --- The domain covered within the bid document, i.e. the border for which auction is done.
10	[1..1]	subject_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The party for whom the bid is being submitted.

Order	mult.	Attribute name / Attribute type	Description
11	[1..1]	subject_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- The party for whom the bid is being submitted.

106

107 Table 4 shows all association ends of Bid\_MarketDocument with other classes.

108 **Table 4 - Association ends of Bid assembly model::Bid\_MarketDocument with other**  
109 **classes**

Order	mult.	Class name / Role	Description
12	[0..*]	BidTimeSeries Bid_TimeSeries	The timeseries contains the bids that are submitted to the auction. Association Based On: Bid contextual model::BidTimeSeries.Bid_TimeSeries[0..*] ----- Bid contextual model::Bid_MarketDocument.[]

110

### 111 2.2.3.2 BidTimeSeries

112 The formal specification of specific characteristics related to a bid.

113 Table 5 shows all attributes of BidTimeSeries.

114 **Table 5 - Attributes of Bid assembly model::BidTimeSeries**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	A unique identification of the time series.
1	[1..1]	auction.mRID ID_String	The unique identification of the auction. --- The identification linking the bid to a set of specifications created by the auction operator.
2	[1..1]	businessType BusinessKind_String	The identification of the nature of the time series.
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]	quantity_Measurement_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 time series are expressed, e.g. MAW.
6	[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.
7	[0..1]	price_Measurement_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 (MW, MWh, etc.).
8	[1..1]	divisible ESMPBoolean_String	An indication whether or not each element of the bid may be partially accepted or not.
9	[0..1]	linkedBidsIdentification ID_String	The unique identification used to identify associated bids with each other.
10	[1..1]	blockBid ESMPBoolean_String	The indication that the values in the period are considered as a whole. They cannot be changed or subdivided.

115

116 Table 6 shows all association ends of BidTimeSeries with other classes.

117 **Table 6 - Association ends of Bid assembly model::BidTimeSeries with other classes**

Order	mult.	Class name / Role	Description
11	[1..*]	Series_Period Period	Association Based On: Bid contextual model::Series_Period.Period[1..*] ----- Bid contextual model::BidTimeSeries.[]

118

### 119 2.2.3.3 Point

120 The quantity that is bid for the interval in question.

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

122 Table 7 shows all attributes of Point.

123 **Table 7 - Attributes of Bid 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]	price.amount Amount_Decimal	A number of monetary units specified in a unit of currency. --- The price expressed for each unit of quantity. The price amount is mandatory in the case of capacity auctions and shall not be provided in the case of rule based allocations depending on local market rules (for example "first come first serve").

124

### 125 2.2.3.4 Series\_Period

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

127 Table 8 shows all attributes of Series\_Period.

128 **Table 8 - Attributes of Bid 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.

129

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

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

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

132

133 **2.2.4 Datatypes**

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

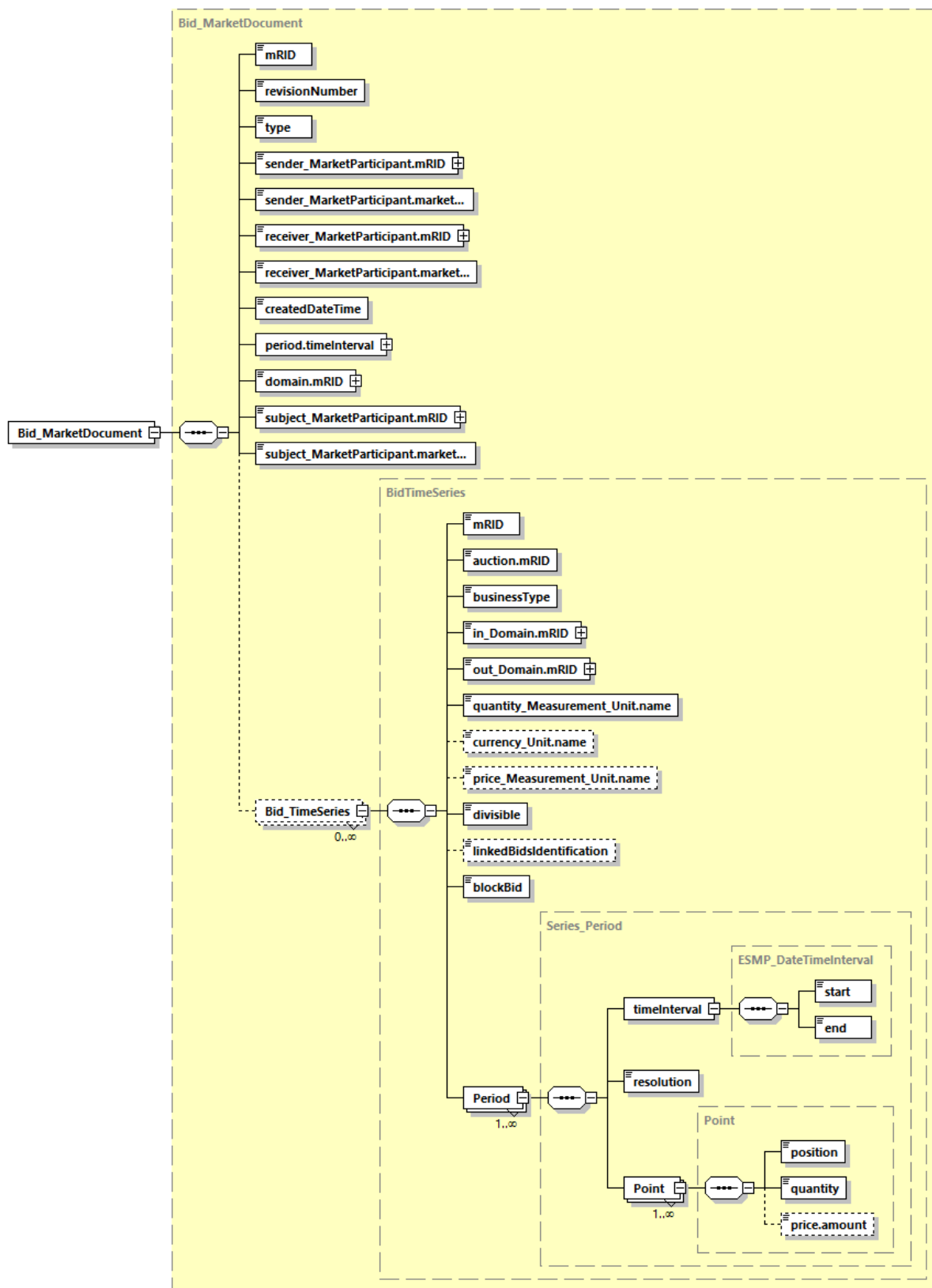
- 135 • ESMP\_DateTimeInterval compound
- 136 • Amount\_Decimal datatype
- 137 • ArealD\_String datatype, codelist CodingSchemeTypeList
- 138 • BusinessKind\_String datatype, codelist BusinessTypeList
- 139 • CurrencyCode\_String datatype, codelist CurrencyTypeList
- 140 • ESMP\_DateTime datatype
- 141 • ESMPBoolean\_String datatype, codelist IndicatorTypeList
- 142 • ESMPVersion\_String datatype
- 143 • ID\_String datatype
- 144 • MarketRoleKind\_String datatype, codelist RoleTypeList
- 145 • MeasurementUnitKind\_String datatype, codelist UnitOfMeasureTypeList
- 146 • MessageKind\_String datatype, codelist MessageTypeList
- 147 • PartyID\_String datatype, codelist CodingSchemeTypeList
- 148 • Position\_Integer datatype
- 149 • YMDHM\_DateTime datatype

150

151

152 2.2.5 Bid\_MarketDocument XML schema structure

153



154

155

Generated by XMLSpy [www.altova.com](http://www.altova.com)

Figure 3 – Bid\_MarketDocument schema structure

156 **2.2.6 Bid\_MarketDocument XML schema**

157

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

159 urn:iec62325.351:tc57wg16:451-3:biddocument:7:0

```

160 <?xml version="1.0" encoding="utf-8"?>
161 <xs:schema xmlns:ecl="urn:entsoe.eu:wgedi:codelists"
162 xmlns="urn:iec62325.351:tc57wg16:451-3:biddocument:7:1"
163 xmlns:sawsdl="http://www.w3.org/ns/sawsdl"
164 xmlns:cimp="http://www.iec.ch/cimprofile"
165 xmlns:xs="http://www.w3.org/2001/XMLSchema"
166 targetNamespace="urn:iec62325.351:tc57wg16:451-3:biddocument:7:1"
167 elementFormDefault="qualified" attributeFormDefault="unqualified">
168   <xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-
169 entsoe-eu-wgedi-codelists.xsd"/>
170   <xs:element name="Bid_MarketDocument" type="Bid_MarketDocument"/>
171   <xs:simpleType name="ID_String"
172 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
173     <xs:restriction base="xs:string">
174       <xs:maxLength value="60"/>
175     </xs:restriction>
176   </xs:simpleType>
177   <xs:simpleType name="ESMPVersion_String"
178 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
179     <xs:restriction base="xs:string">
180       <xs:pattern value="[1-9]([0-9]){0,2}"/>
181     </xs:restriction>
182   </xs:simpleType>
183   <xs:simpleType name="MessageKind_String"
184 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
185     <xs:restriction base="ecl:MessageTypeList"/>
186   </xs:simpleType>
187   <xs:simpleType name="PartyID_String-base"
188 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
189     <xs:restriction base="xs:string">
190       <xs:maxLength value="16"/>
191     </xs:restriction>
192   </xs:simpleType>
193   <xs:complexType name="PartyID_String"
194 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
195     <xs:simpleContent>
196       <xs:extension base="PartyID_String-base">
197         <xs:attribute name="codingScheme"
198 type="ecl:CodingSchemeTypeList" use="required"/>
199       </xs:extension>
200     </xs:simpleContent>
201   </xs:complexType>
202   <xs:simpleType name="MarketRoleKind_String"
203 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
204     <xs:restriction base="ecl:RoleTypeList"/>
205   </xs:simpleType>
206   <xs:simpleType name="ESMP_DateTime"
207 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
208     <xs:restriction base="xs:dateTime">
209       <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-
210 9]|12)[0-9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|12)[0-
211 9]|30))T((([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-
212 9])Z)|(((13579)[26][02468][048]|13579)[01345789](0)[48]|13579)[01345789][2468][0

```

```

213 48]|[02468][048][02468][048]|[02468][1235679](0)[48]|[02468][1235679][2468][048]||
214 0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T((01)[0-9]|2[0-3]):[0-
215 5][0-9]:[0-5][0-
216 9])Z)|((13579)[26][02468][1235679]|13579)[01345789](0)[01235679]|13579)[0134578
217 9][2468][1235679]|02468][048][02468][1235679]|02468][1235679](0)[01235679]|0246
218 8][1235679][2468][1235679]|0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
219 9]|2[0-8])T((01)[0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)"/>
220     </xs:restriction>
221   </xs:simpleType>
222   <xs:simpleType name="AreaID_String-base"
223 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
224     <xs:restriction base="xs:string">
225       <xs:maxLength value="18"/>
226     </xs:restriction>
227   </xs:simpleType>
228   <xs:complexType name="AreaID_String"
229 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
230     <xs:simpleContent>
231       <xs:extension base="AreaID_String-base">
232         <xs:attribute name="codingScheme"
233 type="ecl:CodingSchemeTypeList" use="required"/>
234       </xs:extension>
235     </xs:simpleContent>
236   </xs:complexType>
237   <xs:simpleType name="YMDHM_DateTime"
238 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
239     <xs:restriction base="xs:string">
240       <xs:pattern value="(((0-9){4})[\-](0[13578]|1[02])[\-](0[1-
241 9]|12)[0-9]|3[01])|((0-9){4})[\-]((0[469])|(11))[\-](0[1-9]|12)[0-
242 9]|30))T((01)[0-9]|2[0-3]):[0-5][0-
243 9])Z)|((13579)[26][02468][048]|13579)[01345789](0)[48]|13579)[01345789][2468][0
244 48]|02468][048][02468][048]|02468][1235679](0)[48]|02468][1235679][2468][048]||
245 0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T((01)[0-9]|2[0-3]):[0-
246 5][0-
247 9])Z)|((13579)[26][02468][1235679]|13579)[01345789](0)[01235679]|13579)[0134578
248 9][2468][1235679]|02468][048][02468][1235679]|02468][1235679](0)[01235679]|0246
249 8][1235679][2468][1235679]|0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
250 9]|2[0-8])T((01)[0-9]|2[0-3]):[0-5][0-9])Z)"/>
251     </xs:restriction>
252   </xs:simpleType>
253   <xs:complexType name="ESMP_DateTimeInterval"
254 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
255     <xs:sequence>
256       <xs:element name="start" type="YMDHM_DateTime" minOccurs="1"
257 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
258 cim16#DateTimeInterval.start"/>
259       <xs:element name="end" type="YMDHM_DateTime" minOccurs="1"
260 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
261 cim16#DateTimeInterval.end"/>
262     </xs:sequence>
263   </xs:complexType>
264   <xs:complexType name="Bid_MarketDocument"
265 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
266     <xs:sequence>
267       <xs:element name="mRID" type="ID_String" minOccurs="1"
268 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
269 cim16#IdentifiedObject.mRID"/>
270       <xs:element name="revisionNumber" type="ESMPVersion_String"
271 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
272 schema-cim16#Document.revisionNumber"/>

```

```

273         <xs:element name="type" type="MessageKind_String" minOccurs="1"
274 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
275 cim16#Document.type"/>
276         <xs:element name="sender_MarketParticipant.mRID"
277 type="PartyID_String" minOccurs="1" maxOccurs="1"
278 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
279 cim16#IdentifiedObject.mRID"/>
280         <xs:element name="sender_MarketParticipant.marketRole.type"
281 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
282 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
283         <xs:element name="receiver_MarketParticipant.mRID"
284 type="PartyID_String" minOccurs="1" maxOccurs="1"
285 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
286 cim16#IdentifiedObject.mRID"/>
287         <xs:element name="receiver_MarketParticipant.marketRole.type"
288 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
289 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
290         <xs:element name="createdDateTime" type="ESMP_DateTime"
291 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
292 schema-cim16#Document.createdDateTime"/>
293         <xs:element name="period.timeInterval"
294 type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1"
295 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
296 cim16#Period.timeInterval"/>
297         <xs:element name="domain.mRID" type="AreaID_String"
298 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
299 schema-cim16#IdentifiedObject.mRID"/>
300         <xs:element name="subject_MarketParticipant.mRID"
301 type="PartyID_String" minOccurs="1" maxOccurs="1"
302 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
303 cim16#IdentifiedObject.mRID"/>
304         <xs:element name="subject_MarketParticipant.marketRole.type"
305 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
306 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
307         <xs:element name="Bid_TimeSeries" type="BidTimeSeries"
308 minOccurs="0" maxOccurs="unbounded"
309 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
310 cim16#MarketDocument.Bid_TimeSeries"/>
311     </xs:sequence>
312 </xs:complexType>
313 <xs:simpleType name="BusinessKind_String"
314 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
315     <xs:restriction base="ecl:BusinessTypeList"/>
316 </xs:simpleType>
317 <xs:simpleType name="MeasurementUnitKind_String"
318 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
319     <xs:restriction base="ecl:UnitOfMeasureTypeList"/>
320 </xs:simpleType>
321 <xs:simpleType name="CurrencyCode_String"
322 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
323     <xs:restriction base="ecl:CurrencyTypeList"/>
324 </xs:simpleType>
325 <xs:simpleType name="ESMPBoolean_String"
326 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
327     <xs:restriction base="ecl:IndicatorTypeList"/>
328 </xs:simpleType>
329 <xs:complexType name="BidTimeSeries"
330 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#BidTimeSeries">
331     <xs:sequence>

```



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332         <xs:element name="mRID" type="ID_String" minOccurs="1"
333 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
334 cim16#IdentifiedObject.mRID"/>
335         <xs:element name="auction.mRID" type="ID_String" minOccurs="1"
336 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
337 cim16#IdentifiedObject.mRID"/>
338         <xs:element name="businessType" type="BusinessKind_String"
339 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
340 schema-cim16#TimeSeries.businessType"/>
341         <xs:element name="in_Domain.mRID" type="AreaID_String"
342 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
343 schema-cim16#IdentifiedObject.mRID"/>
344         <xs:element name="out_Domain.mRID" type="AreaID_String"
345 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
346 schema-cim16#IdentifiedObject.mRID"/>
347         <xs:element name="quantity_Measurement_Unit.name"
348 type="MeasurementUnitKind_String" minOccurs="1" maxOccurs="1"
349 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
350         <xs:element name="currency_Unit.name"
351 type="CurrencyCode_String" minOccurs="0" maxOccurs="1"
352 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
353         <xs:element name="price_Measurement_Unit.name"
354 type="MeasurementUnitKind_String" minOccurs="0" maxOccurs="1"
355 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
356         <xs:element name="divisible" type="ESMPBoolean_String"
357 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
358 schema-cim16#BidTimeSeries.divisible"/>
359         <xs:element name="linkedBidsIdentification" type="ID_String"
360 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
361 schema-cim16#BidTimeSeries.linkedBidsIdentification"/>
362         <xs:element name="blockBid" type="ESMPBoolean_String"
363 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
364 schema-cim16#BidTimeSeries.blockBid"/>
365         <xs:element name="Period" type="Series_Period" minOccurs="1"
366 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
367 cim16#BidTimeSeries.Period"/>
368     </xs:sequence>
369 </xs:complexType>
370 <xs:simpleType name="Position_Integer"
371 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
372     <xs:restriction base="xs:integer">
373         <xs:maxInclusive value="999999"/>
374         <xs:minInclusive value="1"/>
375     </xs:restriction>
376 </xs:simpleType>
377 <xs:simpleType name="Amount_Decimal"
378 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Decimal">
379     <xs:restriction base="xs:decimal">
380         <xs:totalDigits value="17"/>
381     </xs:restriction>
382 </xs:simpleType>
383 <xs:complexType name="Point"
384 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point">
385     <xs:sequence>
386         <xs:element name="position" type="Position_Integer"
387 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
388 schema-cim16#Point.position"/>
389         <xs:element name="quantity" type="xs:decimal" minOccurs="1"
390 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
391 cim16#Point.quantity"/>

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392         <xs:element name="price.amount" type="Amount_Decimal"
393 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
394 schema-cim16#Price.amount"/>
395     </xs:sequence>
396 </xs:complexType>
397 <xs:complexType name="Series_Period"
398 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">
399     <xs:sequence>
400         <xs:element name="timeInterval" type="ESMP_DateTimeInterval"
401 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
402 schema-cim16#Period.timeInterval"/>
403         <xs:element name="resolution" type="xs:duration" minOccurs="1"
404 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
405 cim16#Period.resolution"/>
406         <xs:element name="Point" type="Point" minOccurs="1"
407 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
408 cim16#Period.Point"/>
409     </xs:sequence>
410 </xs:complexType>
411 </xs:schema>
412
```