



European Network of  
Transmission System Operators  
for Electricity

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# RESERVE BID DOCUMENT UML MODEL AND SCHEMA

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2020-12-15  
APPROVED DOCUMENT  
VERSION 1.2

2

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45	classes .....	17
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## Revision History

Version	Release	Date	Comments
0	0	2016-12-02	First drafting of the document.
1	0	2018-01-10	First drafting of the document. XSD: V7.1: difference with V7.0: Added optional attribute MarketProduct Added optional attribute ValidityPeriod
1	1	2018-03-08	XSD: V7.1 Added two new relations between MarketProduct and BidTimeSeries Version approved by MC
1	2	2020-12-15	XSD: V7.2 Added new class called Linked_BidTimeSeries associated with existing BidTimeSeries with cardinality 0..* New ProcuredFor_MarketParticipant and SharedWith_MarketParticipant attributes are added to BidTimeSeries with cardinality 0..1. Available MBA_Domain changed to AvailableBiddingZone_domain Approved by MC.

65

## 66 1 Objective

67 The purpose of this document is to provide the contextual and assembly UML models and the  
68 schema of the ReserveBid\_MarketDocument.

69 The schema of the ReserveBid\_MarketDocument could be used in various business processes.

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

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

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

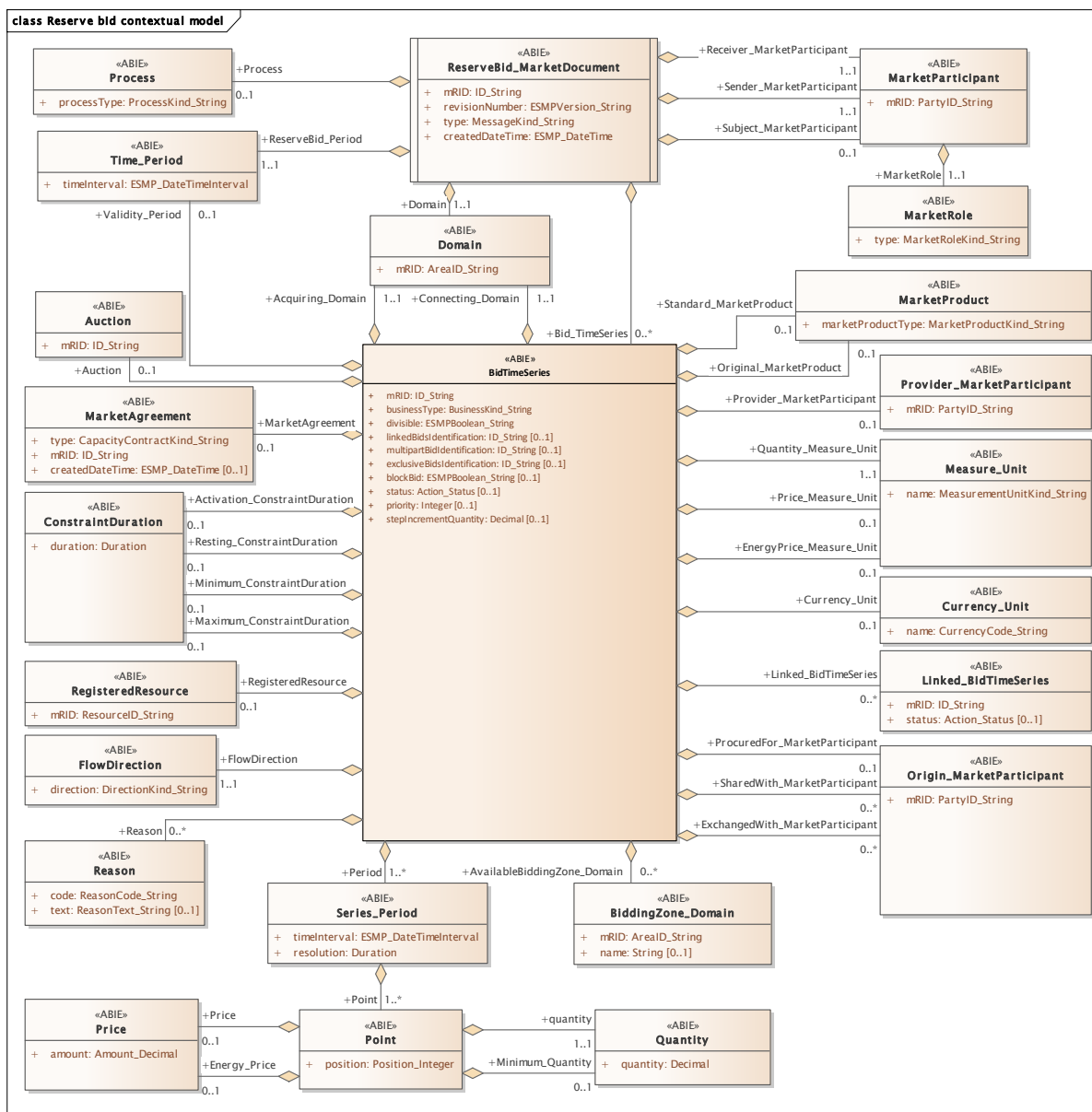
82

83 **2 Reserve bid model**

84 **2.1 Reserve bid contextual model**

85 **2.1.1 Overview of the model**

86 Figure 1 shows the model.



87

88

**Figure 1 - Reserve bid contextual model**

89

90 **2.1.2 IsBasedOn relationships from the European style market profile**

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

93

**Table 1 - IsBasedOn dependency**

Name	Complete IsBasedOn Path
Auction	TC57CIM::IEC62325::MarketManagement::Auction
BiddingZone_Domain	TC57CIM::IEC62325::MarketManagement::Domain
BidTimeSeries	TC57CIM::IEC62325::MarketManagement::BidTimeSeries
ConstraintDuration	TC57CIM::IEC62325::MarketManagement::ConstraintDuration
Currency_Unit	TC57CIM::IEC62325::MarketManagement::Unit
Domain	TC57CIM::IEC62325::MarketManagement::Domain
FlowDirection	TC57CIM::IEC62325::MarketManagement::FlowDirection
Linked_BidTimeSeries	TC57CIM::IEC62325::MarketManagement::BidTimeSeries
MarketAgreement	TC57CIM::IEC62325::MarketManagement::MarketAgreement
MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
MarketProduct	TC57CIM::IEC62325::MarketCommon::MarketProduct
MarketRole	TC57CIM::IEC62325::MarketCommon::MarketRole
Measure_Unit	TC57CIM::IEC62325::MarketManagement::Unit
Origin_MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
Point	TC57CIM::IEC62325::MarketManagement::Point
Price	TC57CIM::IEC62325::MarketManagement::Price
Process	TC57CIM::IEC62325::MarketManagement::Process
Provider_MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
Quantity	TC57CIM::IEC62325::MarketManagement::Quantity
Reason	TC57CIM::IEC62325::MarketManagement::Reason
RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource
ReserveBid_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
Time_Period	TC57CIM::IEC62325::MarketManagement::Period

94

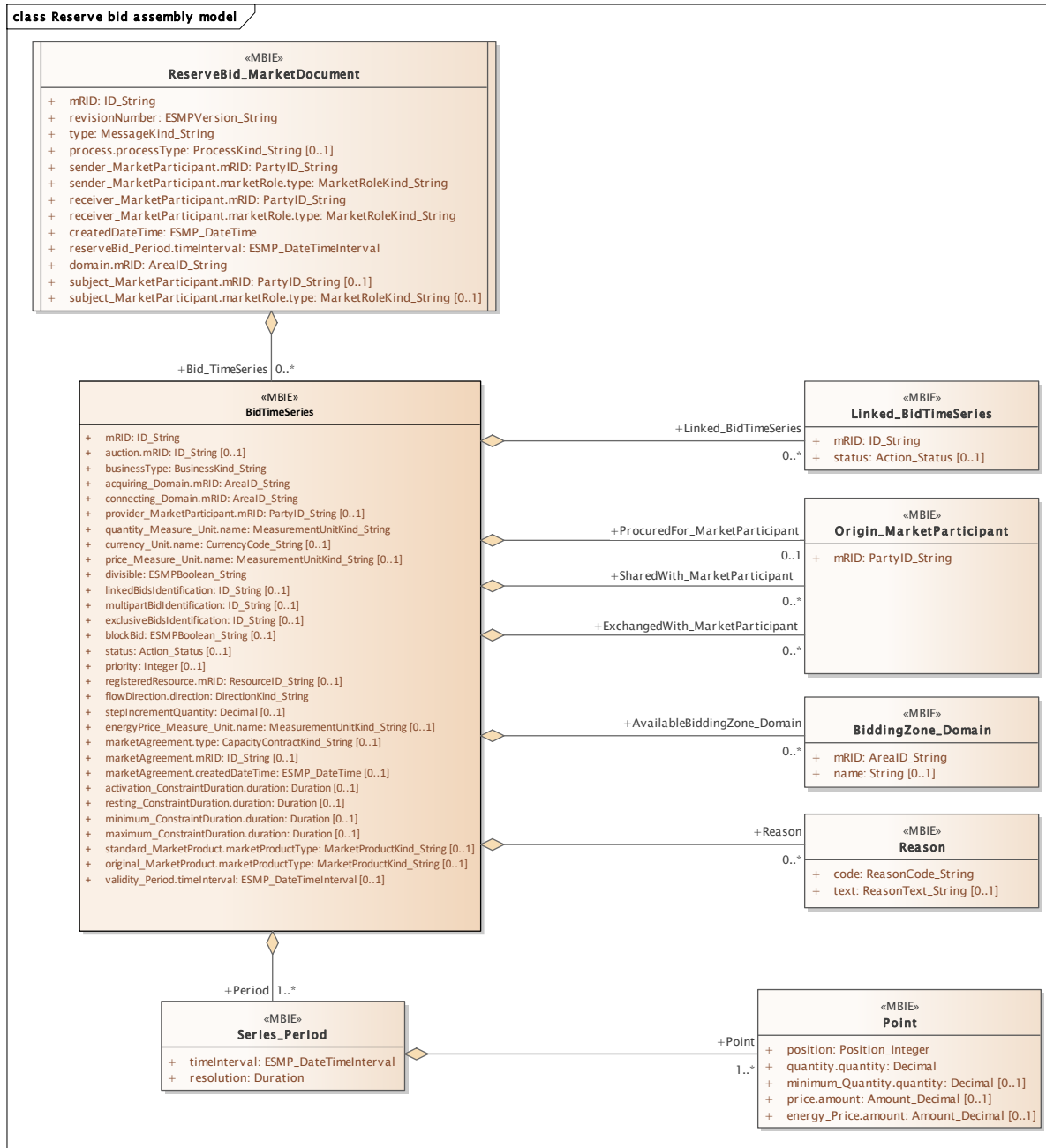


95

96 **2.2 Reserve bid assembly model**

97 **2.2.1 Overview of the model**

98 Figure 2 shows the model.



99

100

Figure 2 - Reserve bid assembly model

101  
102 **2.2.2 IsBasedOn relationships from the European style market profile**  
103 Table 2 shows the traceability dependency of the classes used in this package towards the  
104 upper level.

105 **Table 2 - IsBasedOn dependency**

Name	Complete IsBasedOn Path
BiddingZone_Domain	TC57CIM::IEC62325::MarketManagement::Domain
BidTimeSeries	TC57CIM::IEC62325::MarketManagement::BidTimeSeries
Linked_BidTimeSeries	TC57CIM::IEC62325::MarketManagement::BidTimeSeries
Origin_MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
Point	TC57CIM::IEC62325::MarketManagement::Point
Reason	TC57CIM::IEC62325::MarketManagement::Reason
ReserveBid_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Series_Period	TC57CIM::IEC62325::MarketManagement::Period

106  
107 **2.2.3 Detailed Reserve bid assembly model**  
108 **2.2.3.1 ReserveBid\_MarketDocument root class**  
109 A bid document contains a set of bids (a bid is represented by a time series). There may be  
110 several bids submitted by the sender for the same bid period and subject party.  
111 An electronic document containing the information necessary to satisfy the requirements of a  
112 given business process.  
113 Table 3 shows all attributes of ReserveBid\_MarketDocument.

114 **Table 3 - Attributes of Reserve bid assembly model::ReserveBid\_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	[0..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.

Order	mult.	Attribute name / Attribute type	Description
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	[1..1]	reserveBid_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.
10	[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.
11	[0..1]	subject_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The party for whom the bid is being submitted.
12	[0..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.

115

116 Table 4 shows all association ends of ReserveBid\_MarketDocument with other classes.

117 **Table 4 - Association ends of Reserve bid assembly**  
118 **model::ReserveBid\_MarketDocument with other classes**

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

119

### 120 2.2.3.2 BiddingZone\_Domain

121 A domain covering a number of related objects, such as market balance area, grid area, borders  
122 etc.

123 Table 5 shows all attributes of BiddingZone\_Domain.

124 **Table 5 - Attributes of Reserve bid assembly model::BiddingZone\_Domain**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID AreaID_String	The unique identification of the domain. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.
1	[0..1]	name String	The name is any free human readable and possibly non unique text naming the object.

125

126 **2.2.3.3 BidTimeSeries**

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

128 Table 6 shows all attributes of BidTimeSeries.

129 **Table 6 - Attributes of Reserve 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	[0..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]	acquiring_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the energy is to be put.
4	[1..1]	connecting_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the energy is coming from.
5	[0..1]	provider_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of a market participant associated with a TimeSeries, i.e. the provider offering the reserve.
6	[1..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 time series are expressed, e.g. MAW.
7	[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.
8	[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 (MW, MWh, etc.).
9	[1..1]	divisible ESMPBoolean_String	An indication whether or not each element of the bid may be partially accepted or not.
10	[0..1]	linkedBidsIdentification ID_String	The unique identification used to identify associated bids with each other.
11	[0..1]	multipartBidIdentification ID_String	The unique identification associated with a hierarchy of linked tenders. The identification within the set of linked tenders signifies that all tenders within the set with an inferior offer price must be accepted. This identification is defined by the tenderer and must be unique.
12	[0..1]	exclusiveBidsIdentification ID_String	Unique identification associated with all linked tenders. The identification of a set of tenders that are linked together signifying that only one can be accepted. This identification is defined by the tenderer and must be unique for a given auction. The exclusive bids identification is only provided if a tender is associated with the current tender. Both tenders must be cross linked to be valid.

Order	mult.	Attribute name / Attribute type	Description
13	[0..1]	blockBid ESMPBoolean_String	The indication that the values in the period are considered as a whole. They cannot be changed or subdivided.
14	[0..1]	status Action_Status	The information about the status of the bid, such as "shared", "restricted", ...
15	[0..1]	priority Integer	The numeric local priority given to a bid. Lower numeric values will have higher priority.
16	[0..1]	registeredResource.mRID ResourceID_String	The unique identification of a resource. --- The identification of a resource associated with a TimeSeries.
17	[1..1]	flowDirection.direction DirectionKind_String	The coded identification of the direction of energy flow.
18	[0..1]	stepIncrementQuantity Decimal	The minimum increment that can be applied for an increase in an activation request.
19	[0..1]	energyPrice_Measure_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20).
20	[0..1]	marketAgreement.type CapacityContractKind_String	The specification of the kind of the agreement, e.g. long term, daily contract.
21	[0..1]	marketAgreement.mRID ID_String	The unique identification of the agreement.
22	[0..1]	marketAgreement.createdDateTime ESMP_DateTime	The date and time of the creation of the agreement.
23	[0..1]	activation_ConstraintDuration.duration Duration	The duration of the constraint. --- The delay before the regulation becomes effective after the activation.
24	[0..1]	resting_ConstraintDuration.duration Duration	The duration of the constraint. --- The delay to be respected between the end of activation and the start of the next activation.
25	[0..1]	minimum_ConstraintDuration.duration Duration	The duration of the constraint. --- The minimum duration that a regulation has to be up once the bid is activated.
26	[0..1]	maximum_ConstraintDuration.duration Duration	The duration of the constraint. --- The maximum duration that a regulation has to be up once the bid is activated.
27	[0..1]	standard_MarketProduct.marketProductType MarketProductKind_String	The Type of product on a market view
28	[0..1]	original_MarketProduct.marketProductType MarketProductKind_String	The Type of product on a market view
29	[0..1]	validity_Period.timeInterval ESMP_DateTimeInterval	The start and end date and time for a given interval. --- The period when the Bid can be activated.

130

131 Table 7 shows all association ends of BidTimeSeries with other classes.

132 **Table 7 - Association ends of Reserve bid assembly model::BidTimeSeries with other**  
133 **classes**

Order	mult	Class name / Role	Description
30	[1..*]	Series_Period Period	Association Based On: Reserve bid contextual model::Series_Period.Period[1..*] ----- Reserve bid contextual model::BidTimeSeries.[]
31	[0..*]	BiddingZone_Domain AvailableBiddingZone_Domain	The domain associated with a TimeSeries. Association Based On: Reserve bid contextual model::BidTimeSeries.[] ----- Reserve bid contextual model::BiddingZone_Domain.AvailableBiddingZone_Domain[0..*]
32	[0..*]	Reason Reason	The reason information associated with a TimeSeries providing motivation information. Association Based On: Reserve bid contextual model::Reason.Reason[0..*] ----- Reserve bid contextual model::BidTimeSeries.[]
33	[0..*]	Linked_BidTimeSeries Linked_BidTimeSeries	The Reserve Bid to which the current Reserve Bid is linked Association Based On: Reserve bid contextual model::Linked_BidTimeSeries.Linked_BidTimeSeries[0..*] ----- Reserve bid contextual model::BidTimeSeries.[]
34	[0..1]	Origin_MarketParticipant ProcuredFor_MarketParticipant	The identification of a market participant associated with a TimeSeries. The balancing capacity from which the bid originates has been purchased on behalf of this Market Participant Association Based On: Reserve bid contextual model::Origin_MarketParticipant.ProcuredFor_MarketParticipant[0..1] ----- Reserve bid contextual model::BidTimeSeries.[]
35	[0..*]	Origin_MarketParticipant SharedWith_MarketParticipant	The identification of a market participant associated with a TimeSeries. The balancing capacity from which the bid originates is shared with this market participant Association Based On: Reserve bid contextual model::Origin_MarketParticipant.SharedWith_MarketParticipant[0..*] ----- Reserve bid contextual model::BidTimeSeries.[]
36	[0..*]	Origin_MarketParticipant ExchangedWith_MarketParticipant	The identification of a market participant associated with a TimeSeries. The balancing capacity from which the bid originates is exchanged with this market participant Association Based On: Reserve bid contextual model::Origin_MarketParticipant.ExchangedWith_MarketParticipant[0..*] ----- Reserve bid contextual model::BidTimeSeries.[]

134

135 **2.2.3.4 Linked\_BidTimeSeries**

136 The Reserve Bid to which the Reserve Bid is linked.

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

138 Table 8 shows all attributes of Linked\_BidTimeSeries.

139 **Table 8 - Attributes of Reserve bid assembly model::Linked\_BidTimeSeries**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	A unique identification of the time series. In the ESMP context, the "model authority" is defined as a party (originator of the exchange) that provides a unique identification in the context of a business exchange such as time series identification, bid identification, ... Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.
1	[0..1]	status Action_Status	The information about the status of the bid, such as "shared", "restricted", ...

140

### 141 2.2.3.5 Origin\_MarketParticipant

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

143 Table 9 shows all attributes of Origin\_MarketParticipant.

144 **Table 9 - Attributes of Reserve bid assembly model::Origin\_MarketParticipant**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID PartyID_String	The identification of a party in the energy market. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.

145

### 146 2.2.3.6 Point

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

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

149 Table 10 shows all attributes of Point.

150 **Table 10 - Attributes of Reserve 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.

Order	mult.	Attribute name / Attribute type	Description
1	[1..1]	quantity.quantity Decimal	The quantity value. The association role provides the information about what is expressed. --- Either the maximum quantity (when there is a minimum quantity) or the quantity that can be activated at a given time position. The Quantity information associated with a given Point.
2	[0..1]	minimum_Quantity.quantity Decimal	The quantity value. The association role provides the information about what is expressed. --- The minimum quantity of energy that can be activated at a given time position. The Quantity information associated with a given Point.
3	[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").
4	[0..1]	energy_Price.amount Amount_Decimal	A number of monetary units specified in a unit of currency.

151

### 152 2.2.3.7 Reason

153 The motivation of an act.

154 Table 11 shows all attributes of Reason.

155

**Table 11 - Attributes of Reserve bid 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.

156

### 157 2.2.3.8 Series\_Period

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

159 Table 12 shows all attributes of Series\_Period.

160

**Table 12 - Attributes of Reserve 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.

161

162 Table 13 shows all association ends of Series\_Period with other classes.



163 **Table 13 - Association ends of Reserve bid assembly model::Series\_Period with other**  
164 **classes**

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

165

166 **2.2.4 Datatypes**

167 The list of datatypes used for the Reserve bid assembly model is as follows:

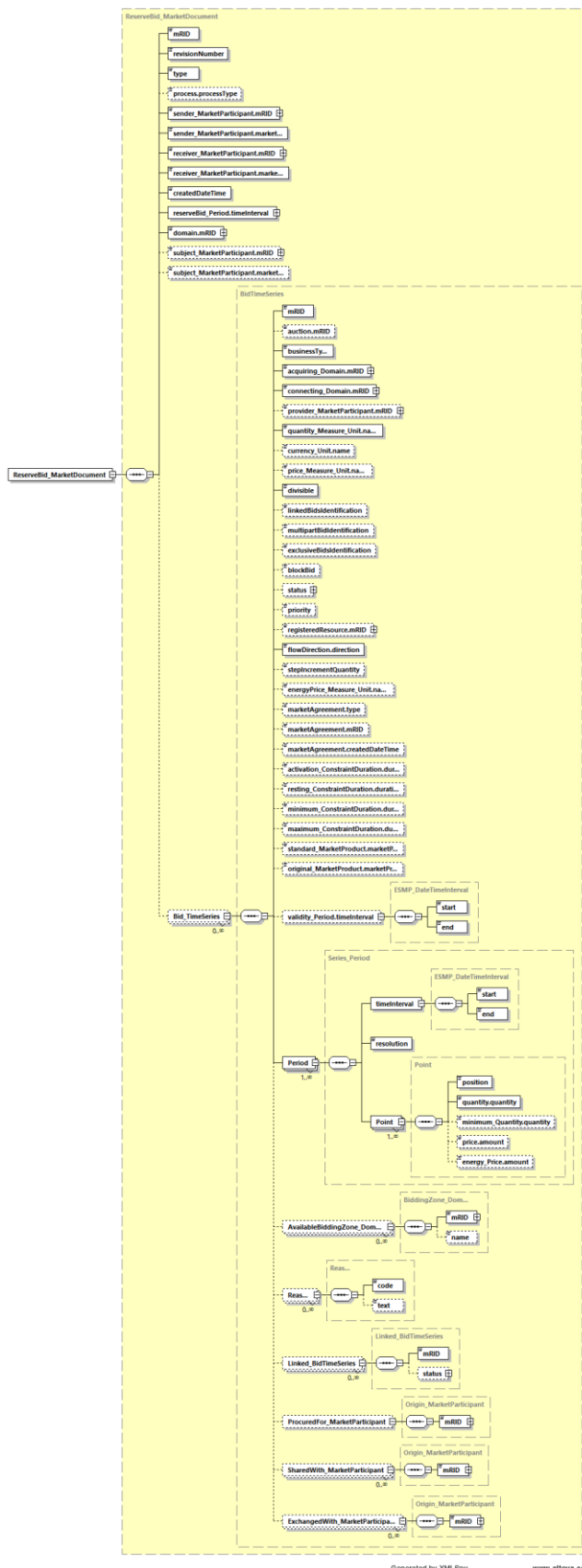
- 168 • Action\_Status compound
- 169 • ESMP\_DateTimeInterval compound
- 170 • Amount\_Decimal datatype
- 171 • AreaID\_String datatype, codelist CodingSchemeTypeList
- 172 • BusinessKind\_String datatype, codelist BusinessTypeList
- 173 • CapacityContractKind\_String datatype, codelist ContractTypeList
- 174 • CurrencyCode\_String datatype, codelist CurrencyTypeList
- 175 • DirectionKind\_String datatype, codelist DirectionTypeList
- 176 • ESMP\_DateTime datatype
- 177 • ESMPBoolean\_String datatype, codelist IndicatorTypeList
- 178 • ESMPVersion\_String datatype
- 179 • ID\_String datatype
- 180 • MarketProductKind\_String datatype, codelist MarketProductTypeList
- 181 • MarketRoleKind\_String datatype, codelist RoleTypeList
- 182 • MeasurementUnitKind\_String datatype, codelist UnitOfMeasureTypeList
- 183 • MessageKind\_String datatype, codelist MessageTypeList
- 184 • PartyID\_String datatype, codelist CodingSchemeTypeList
- 185 • Position\_Integer datatype
- 186 • ProcessKind\_String datatype, codelist ProcessTypeList
- 187 • ReasonCode\_String datatype, codelist ReasonCodeTypeList
- 188 • ReasonText\_String datatype
- 189 • ResourceID\_String datatype, codelist CodingSchemeTypeList
- 190 • Status\_String datatype, codelist StatusTypeList
- 191 • YMDHM\_DateTime datatype

192

193

194

195 2.2.5 ReserveBid\_MarketDocument XML schema structure



196  
197

Figure 3 - ReserveBid\_MarketDocument XML schema structure

## 198 2.2.6 ReserveBid\_MarketDocument XML schema

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

200 urn:iec62325.351:tc57wg16:451-7:reservebiddocument:7:2

```

201
202 <?xml version="1.0" encoding="utf-8"?>
203 <xs:schema xmlns:ecl="urn:entsoe.eu:wgedi:codelists"
204 xmlns="urn:iec62325.351:tc57wg16:451-7:reservebiddocument:7:2"
205 xmlns:sawsdl="http://www.w3.org/ns/sawsdl"
206 xmlns:cimp="http://www.iec.ch/cimprofile"
207 xmlns:xs="http://www.w3.org/2001/XMLSchema"
208 targetNamespace="urn:iec62325.351:tc57wg16:451-7:reservebiddocument:7:2"
209 elementFormDefault="qualified" attributeFormDefault="unqualified">
210   <xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-
211 entsoe-eu-wgedi-codelists.xsd"/>
212   <xs:element name="ReserveBid_MarketDocument"
213 type="ReserveBid_MarketDocument"/>
214   <xs:simpleType name="AreaID_String-base"
215 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
216     <xs:restriction base="xs:string">
217       <xs:maxLength value="18"/>
218     </xs:restriction>
219   </xs:simpleType>
220   <xs:complexType name="AreaID_String"
221 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
222     <xs:simpleContent>
223       <xs:extension base="AreaID_String-base">
224         <xs:attribute name="codingScheme"
225 type="ecl:CodingSchemeTypeList" use="required"/>
226       </xs:extension>
227     </xs:simpleContent>
228   </xs:complexType>
229   <xs:complexType name="BiddingZone_Domain"
230 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Domain">
231     <xs:sequence>
232       <xs:element name="mRID" type="AreaID_String" minOccurs="1"
233 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
234 cim16#IdentifiedObject.mRID"/>
235       <xs:element name="name" type="xs:string" minOccurs="0"
236 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
237 cim16#IdentifiedObject.name"/>
238     </xs:sequence>
239   </xs:complexType>
240   <xs:simpleType name="ID_String"
241 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
242     <xs:restriction base="xs:string">
243       <xs:maxLength value="60"/>
244     </xs:restriction>
245   </xs:simpleType>
246   <xs:simpleType name="BusinessKind_String"
247 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
248     <xs:restriction base="ecl:BusinessTypeList"/>
249   </xs:simpleType>
250   <xs:simpleType name="PartyID_String-base"
251 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
252     <xs:restriction base="xs:string">

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253         <xs:maxLength value="16"/>
254     </xs:restriction>
255 </xs:simpleType>
256 <xs:complexType name="PartyID_String"
257 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
258     <xs:simpleContent>
259         <xs:extension base="PartyID_String-base">
260             <xs:attribute name="codingScheme"
261 type="ecl:CodingSchemeTypeList" use="required"/>
262         </xs:extension>
263     </xs:simpleContent>
264 </xs:complexType>
265 <xs:simpleType name="MeasurementUnitKind_String"
266 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
267     <xs:restriction base="ecl:UnitOfMeasureTypeList"/>
268 </xs:simpleType>
269 <xs:simpleType name="CurrencyCode_String"
270 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
271     <xs:restriction base="ecl:CurrencyTypeList"/>
272 </xs:simpleType>
273 <xs:simpleType name="ESMPBoolean_String"
274 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
275     <xs:restriction base="ecl:IndicatorTypeList"/>
276 </xs:simpleType>
277 <xs:simpleType name="ResourceID_String-base"
278 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
279     <xs:restriction base="xs:string">
280         <xs:maxLength value="60"/>
281     </xs:restriction>
282 </xs:simpleType>
283 <xs:complexType name="ResourceID_String"
284 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
285     <xs:simpleContent>
286         <xs:extension base="ResourceID_String-base">
287             <xs:attribute name="codingScheme"
288 type="ecl:CodingSchemeTypeList" use="required"/>
289         </xs:extension>
290     </xs:simpleContent>
291 </xs:complexType>
292 <xs:simpleType name="DirectionKind_String"
293 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
294     <xs:restriction base="ecl:DirectionTypeList"/>
295 </xs:simpleType>
296 <xs:simpleType name="CapacityContractKind_String"
297 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
298     <xs:restriction base="ecl:ContractTypeList"/>
299 </xs:simpleType>
300 <xs:simpleType name="ESMP_DateTime"
301 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
302     <xs:restriction base="xs:dateTime">
303         <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-
304 9]|[12][0-9]|3[01]))|((0[0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
305 9]|30))T((0[1][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-
306 9])Z)|(((13579)[26][02468][048]|13579[01345789](0)[48]|13579[01345789][2468][0
307 48]|02468[048][02468][048]|02468[1235679](0)[48]|02468[1235679][2468][048][[
308 0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T((0[1][0-9]|2[0-3]):[0-

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309 5][0-9]:[0-5][0-
310 9)]Z)|((([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][0134578
311 9][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[0246
312 8][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
313 9]|2[0-8])T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)"/>
314     </xs:restriction>
315   </xs:simpleType>
316   <xs:simpleType name="MarketProductKind_String"
317 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
318     <xs:restriction base="ecl:MarketProductTypeList"/>
319   </xs:simpleType>
320   <xs:simpleType name="Status_String"
321 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
322     <xs:restriction base="ecl:StatusTypeList"/>
323   </xs:simpleType>
324   <xs:complexType name="Action_Status"
325 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Status">
326     <xs:sequence>
327       <xs:element name="value" type="Status_String" minOccurs="1"
328 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
329 cim16#Status.value"/>
330     </xs:sequence>
331   </xs:complexType>
332   <xs:simpleType name="YMDHM_DateTime"
333 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
334     <xs:restriction base="xs:string">
335       <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-
336 9]|12)[0-9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|12)[0-
337 9]|30)T(([01][0-9]|2[0-3]):[0-5][0-
338 9])Z)|((([13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][0
339 48]|[02468][048][02468][048]|[02468][1235679](0)[48]|[02468][1235679][2468][048]|[
340 0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-
341 5][0-
342 9])Z)|((([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][0134578
343 9][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[0246
344 8][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
345 9]|2[0-8])T(([01][0-9]|2[0-3]):[0-5][0-9])Z)"/>
346     </xs:restriction>
347   </xs:simpleType>
348   <xs:complexType name="ESMP_DateTimeInterval"
349 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
350     <xs:sequence>
351       <xs:element name="start" type="YMDHM_DateTime" minOccurs="1"
352 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
353 cim16#DateTimeInterval.start"/>
354       <xs:element name="end" type="YMDHM_DateTime" minOccurs="1"
355 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
356 cim16#DateTimeInterval.end"/>
357     </xs:sequence>
358   </xs:complexType>
359   <xs:complexType name="BidTimeSeries"
360 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#BidTimeSeries">
361     <xs:sequence>
362       <xs:element name="mRID" type="ID_String" minOccurs="1"
363 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
364 cim16#IdentifiedObject.mRID"/>

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365         <xs:element name="auction.mRID" type="ID_String" minOccurs="0"
366 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
367 cim16#IdentifiedObject.mRID"/>
368         <xs:element name="businessType" type="BusinessKind_String"
369 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
370 schema-cim16#TimeSeries.businessType"/>
371         <xs:element name="acquiring_Domain.mRID" type="AreaID_String"
372 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
373 schema-cim16#IdentifiedObject.mRID"/>
374         <xs:element name="connecting_Domain.mRID" type="AreaID_String"
375 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
376 schema-cim16#IdentifiedObject.mRID"/>
377         <xs:element name="provider_MarketParticipant.mRID"
378 type="PartyID_String" minOccurs="0" maxOccurs="1"
379 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
380 cim16#IdentifiedObject.mRID"/>
381         <xs:element name="quantity_Measure_Unit.name"
382 type="MeasurementUnitKind_String" minOccurs="1" maxOccurs="1"
383 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
384         <xs:element name="currency_Unit.name"
385 type="CurrencyCode_String" minOccurs="0" maxOccurs="1"
386 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
387         <xs:element name="price_Measure_Unit.name"
388 type="MeasurementUnitKind_String" minOccurs="0" maxOccurs="1"
389 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
390         <xs:element name="divisible" type="ESMPBoolean_String"
391 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
392 schema-cim16#BidTimeSeries.divisible"/>
393         <xs:element name="linkedBidsIdentification" type="ID_String"
394 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
395 schema-cim16#BidTimeSeries.linkedBidsIdentification"/>
396         <xs:element name="multipartBidIdentification" type="ID_String"
397 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
398 schema-cim16#BidTimeSeries.multipartBidIdentification"/>
399         <xs:element name="exclusiveBidsIdentification" type="ID_String"
400 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
401 schema-cim16#BidTimeSeries.exclusiveBidsIdentification"/>
402         <xs:element name="blockBid" type="ESMPBoolean_String"
403 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
404 schema-cim16#BidTimeSeries.blockBid"/>
405         <xs:element name="status" type="Action_Status" minOccurs="0"
406 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
407 cim16#BidTimeSeries.status"/>
408         <xs:element name="priority" type="xs:integer" minOccurs="0"
409 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
410 cim16#BidTimeSeries.priority"/>
411         <xs:element name="registeredResource.mRID"
412 type="ResourceID_String" minOccurs="0" maxOccurs="1"
413 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
414 cim16#IdentifiedObject.mRID"/>
415         <xs:element name="flowDirection.direction"
416 type="DirectionKind_String" minOccurs="1" maxOccurs="1"
417 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
418 cim16#FlowDirection.direction"/>

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419         <xs:element name="stepIncrementQuantity" type="xs:decimal"
420 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
421 schema-cim16#BidTimeSeries.stepIncrementQuantity"/>
422         <xs:element name="energyPrice_Measure_Unit.name"
423 type="MeasurementUnitKind_String" minOccurs="0" maxOccurs="1"
424 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
425         <xs:element name="marketAgreement.type"
426 type="CapacityContractKind_String" minOccurs="0" maxOccurs="1"
427 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.type"/>
428         <xs:element name="marketAgreement.mRID" type="ID_String"
429 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
430 schema-cim16#IdentifiedObject.mRID"/>
431         <xs:element name="marketAgreement.createdDateTime"
432 type="ESMP_DateTime" minOccurs="0" maxOccurs="1"
433 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
434 cim16#Document.createdDateTime"/>
435         <xs:element name="activation_ConstraintDuration.duration"
436 type="xs:duration" minOccurs="0" maxOccurs="1"
437 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
438 cim16#ConstraintDuration.duration"/>
439         <xs:element name="resting_ConstraintDuration.duration"
440 type="xs:duration" minOccurs="0" maxOccurs="1"
441 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
442 cim16#ConstraintDuration.duration"/>
443         <xs:element name="minimum_ConstraintDuration.duration"
444 type="xs:duration" minOccurs="0" maxOccurs="1"
445 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
446 cim16#ConstraintDuration.duration"/>
447         <xs:element name="maximum_ConstraintDuration.duration"
448 type="xs:duration" minOccurs="0" maxOccurs="1"
449 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
450 cim16#ConstraintDuration.duration"/>
451         <xs:element name="standard_MarketProduct.marketProductType"
452 type="MarketProductKind_String" minOccurs="0" maxOccurs="1"
453 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
454 cim16#MarketProduct.marketProductType"/>
455         <xs:element name="original_MarketProduct.marketProductType"
456 type="MarketProductKind_String" minOccurs="0" maxOccurs="1"
457 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
458 cim16#MarketProduct.marketProductType"/>
459         <xs:element name="validity_Period.timeInterval"
460 type="ESMP_DateTimeInterval" minOccurs="0" maxOccurs="1"
461 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
462 cim16#Period.timeInterval"/>
463         <xs:element name="Period" type="Series_Period" minOccurs="1"
464 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
465 cim16#BidTimeSeries.Period"/>
466         <xs:element name="AvailableBiddingZone_Domain"
467 type="BiddingZone_Domain" minOccurs="0" maxOccurs="unbounded"
468 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
469 cim16#BidTimeSeries.AvailableBiddingZone_Domain"/>
470         <xs:element name="Reason" type="Reason" minOccurs="0"
471 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
472 cim16#BidTimeSeries.Reason"/>
473         <xs:element name="Linked_BidTimeSeries"
474 type="Linked_BidTimeSeries" minOccurs="0" maxOccurs="unbounded"

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475 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
476 cim16#BidTimeSeries.Linked_BidTimeSeries"/>
477     <xs:element name="ProcuredFor_MarketParticipant"
478 type="Origin_MarketParticipant" minOccurs="0" maxOccurs="1"
479 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
480 cim16#BidTimeSeries.ProcuredFor_MarketParticipant"/>
481     <xs:element name="SharedWith_MarketParticipant"
482 type="Origin_MarketParticipant" minOccurs="0" maxOccurs="unbounded"
483 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
484 cim16#BidTimeSeries.SharedWith_MarketParticipant"/>
485     <xs:element name="ExchangedWith_MarketParticipant"
486 type="Origin_MarketParticipant" minOccurs="0" maxOccurs="unbounded"
487 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
488 cim16#BidTimeSeries.ExchangedWith_MarketParticipant"/>
489     </xs:sequence>
490 </xs:complexType>
491 <xs:complexType name="Linked_BidTimeSeries"
492 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#BidTimeSeries">
493     <xs:sequence>
494         <xs:element name="mRID" type="ID_String" minOccurs="1"
495 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
496 cim16#IdentifiedObject.mRID"/>
497         <xs:element name="status" type="Action_Status" minOccurs="0"
498 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
499 cim16#BidTimeSeries.status"/>
500     </xs:sequence>
501 </xs:complexType>
502 <xs:complexType name="Origin_MarketParticipant"
503 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
504 cim16#MarketParticipant">
505     <xs:sequence>
506         <xs:element name="mRID" type="PartyID_String" minOccurs="1"
507 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
508 cim16#IdentifiedObject.mRID"/>
509     </xs:sequence>
510 </xs:complexType>
511 <xs:simpleType name="Position_Integer"
512 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
513     <xs:restriction base="xs:integer">
514         <xs:maxInclusive value="999999"/>
515         <xs:minInclusive value="1"/>
516     </xs:restriction>
517 </xs:simpleType>
518 <xs:simpleType name="Amount_Decimal"
519 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Decimal">
520     <xs:restriction base="xs:decimal">
521         <xs:totalDigits value="17"/>
522     </xs:restriction>
523 </xs:simpleType>
524 <xs:complexType name="Point"
525 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point">
526     <xs:sequence>
527         <xs:element name="position" type="Position_Integer"
528 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
529 schema-cim16#Point.position"/>

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530         <xs:element name="quantity.quantity" type="xs:decimal"
531 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
532 schema-cim16#Quantity.quantity"/>
533         <xs:element name="minimum_Quantity.quantity" type="xs:decimal"
534 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
535 schema-cim16#Quantity.quantity"/>
536         <xs:element name="price.amount" type="Amount_Decimal"
537 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
538 schema-cim16#Price.amount"/>
539         <xs:element name="energy_Price.amount" type="Amount_Decimal"
540 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
541 schema-cim16#Price.amount"/>
542     </xs:sequence>
543 </xs:complexType>
544 <xs:simpleType name="ReasonCode_String"
545 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
546     <xs:restriction base="ecl:ReasonCodeTypeList"/>
547 </xs:simpleType>
548 <xs:simpleType name="ReasonText_String"
549 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
550     <xs:restriction base="xs:string">
551         <xs:maxLength value="512"/>
552     </xs:restriction>
553 </xs:simpleType>
554 <xs:complexType name="Reason"
555 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason">
556     <xs:sequence>
557         <xs:element name="code" type="ReasonCode_String" minOccurs="1"
558 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
559 cim16#Reason.code"/>
560         <xs:element name="text" type="ReasonText_String" minOccurs="0"
561 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
562 cim16#Reason.text"/>
563     </xs:sequence>
564 </xs:complexType>
565 <xs:simpleType name="ESMPVersion_String"
566 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
567     <xs:restriction base="xs:string">
568         <xs:pattern value="[1-9]([0-9]){0,2}"/>
569     </xs:restriction>
570 </xs:simpleType>
571 <xs:simpleType name="MessageKind_String"
572 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
573     <xs:restriction base="ecl:MessageTypeList"/>
574 </xs:simpleType>
575 <xs:simpleType name="ProcessKind_String"
576 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
577     <xs:restriction base="ecl:ProcessTypeList"/>
578 </xs:simpleType>
579 <xs:simpleType name="MarketRoleKind_String"
580 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
581     <xs:restriction base="ecl:RoleTypeList"/>
582 </xs:simpleType>
583 <xs:complexType name="ReserveBid_MarketDocument"
584 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
585     <xs:sequence>

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586         <xs:element name="mRID" type="ID_String" minOccurs="1"
587 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
588 cim16#IdentifiedObject.mRID"/>
589         <xs:element name="revisionNumber" type="ESMPVersion_String"
590 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
591 schema-cim16#Document.revisionNumber"/>
592         <xs:element name="type" type="MessageKind_String" minOccurs="1"
593 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
594 cim16#Document.type"/>
595         <xs:element name="process.processType"
596 type="ProcessKind_String" minOccurs="0" maxOccurs="1"
597 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
598 cim16#Process.processType"/>
599         <xs:element name="sender_MarketParticipant.mRID"
600 type="PartyID_String" minOccurs="1" maxOccurs="1"
601 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
602 cim16#IdentifiedObject.mRID"/>
603         <xs:element name="sender_MarketParticipant.marketRole.type"
604 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
605 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
606         <xs:element name="receiver_MarketParticipant.mRID"
607 type="PartyID_String" minOccurs="1" maxOccurs="1"
608 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
609 cim16#IdentifiedObject.mRID"/>
610         <xs:element name="receiver_MarketParticipant.marketRole.type"
611 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
612 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
613         <xs:element name="createdDateTime" type="ESMP_DateTime"
614 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
615 schema-cim16#Document.createdDateTime"/>
616         <xs:element name="reserveBid_Period.timeInterval"
617 type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1"
618 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
619 cim16#Period.timeInterval"/>
620         <xs:element name="domain.mRID" type="AreaID_String"
621 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
622 schema-cim16#IdentifiedObject.mRID"/>
623         <xs:element name="subject_MarketParticipant.mRID"
624 type="PartyID_String" minOccurs="0" maxOccurs="1"
625 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
626 cim16#IdentifiedObject.mRID"/>
627         <xs:element name="subject_MarketParticipant.marketRole.type"
628 type="MarketRoleKind_String" minOccurs="0" maxOccurs="1"
629 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
630         <xs:element name="Bid_TimeSeries" type="BidTimeSeries"
631 minOccurs="0" maxOccurs="unbounded"
632 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
633 cim16#MarketDocument.Bid_TimeSeries"/>
634     </xs:sequence>
635 </xs:complexType>
636 <xs:complexType name="Series_Period"
637 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">
638     <xs:sequence>
639         <xs:element name="timeInterval" type="ESMP_DateTimeInterval"
640 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
641 schema-cim16#Period.timeInterval"/>

```

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642         <xs:element name="resolution" type="xs:duration" minOccurs="1"  
643 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
644 cim16#Period.resolution"/>  
645         <xs:element name="Point" type="Point" minOccurs="1"  
646 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
647 cim16#Period.Point"/>  
648     </xs:sequence>  
649 </xs:complexType>  
650 </xs:schema>  
651
```