



European Network of
Transmission System Operators
for Electricity

RESERVE BID DOCUMENT UML MODEL AND SCHEMA

2022-10-18
AGREED DOCUMENT
VERSION 1.4

2

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45	classes	17
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63 provided at cim@entsoe.eu

64

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.
1	3	2022-02-01	XSD: 7.3 Quantity_Measure_Unit.name & Price_Measure_Unit.name & EnergyPrice_Measure_Unit.name attributes were renamed to Quantity_Measurement_Unit.name & Price_Measurement_Unit.name & EnergyPrice_Measurement_Unit.name to be compliant with the ESMP. Approved by MC.
1	4	2022-10-18	XSD: 7.4 <ul style="list-style-type: none"> New optional mktPSRType.psrType and inclusiveBidsIdentification attributes added at BidTimeSeries. Agreed by CIM EG.

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.

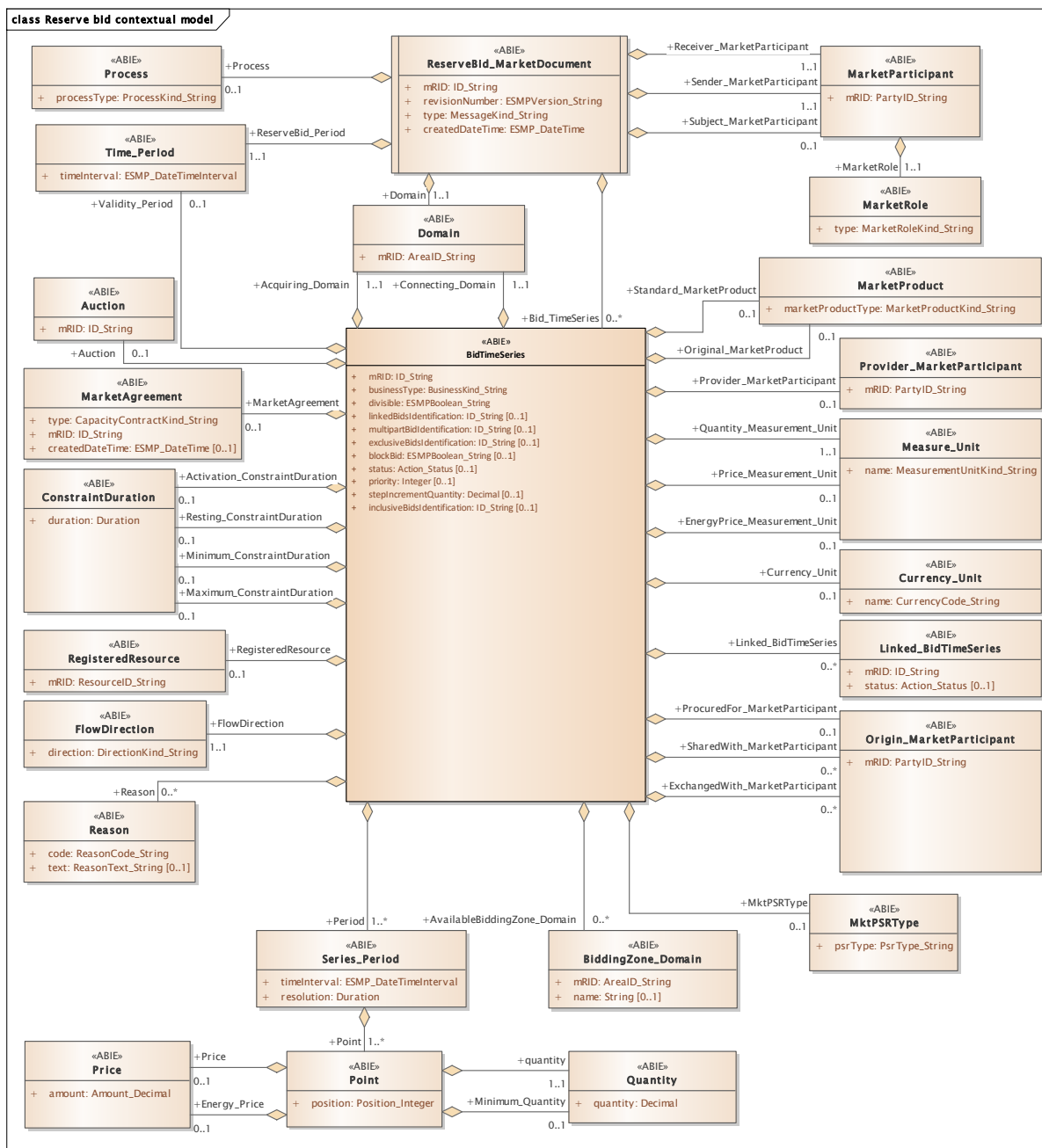
70 It is not the purpose of this document to describe all the use cases, sequence diagrams,
71 business processes, etc. for which this schema is to be used.

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
- 89

Figure 1 - Reserve bid contextual model

90

91 **2.1.2. IsBasedOn relationships from the European style market profile**

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

94

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
MktPSRType	TC57CIM::IEC62325::MarketManagement::MktPSRType
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

95

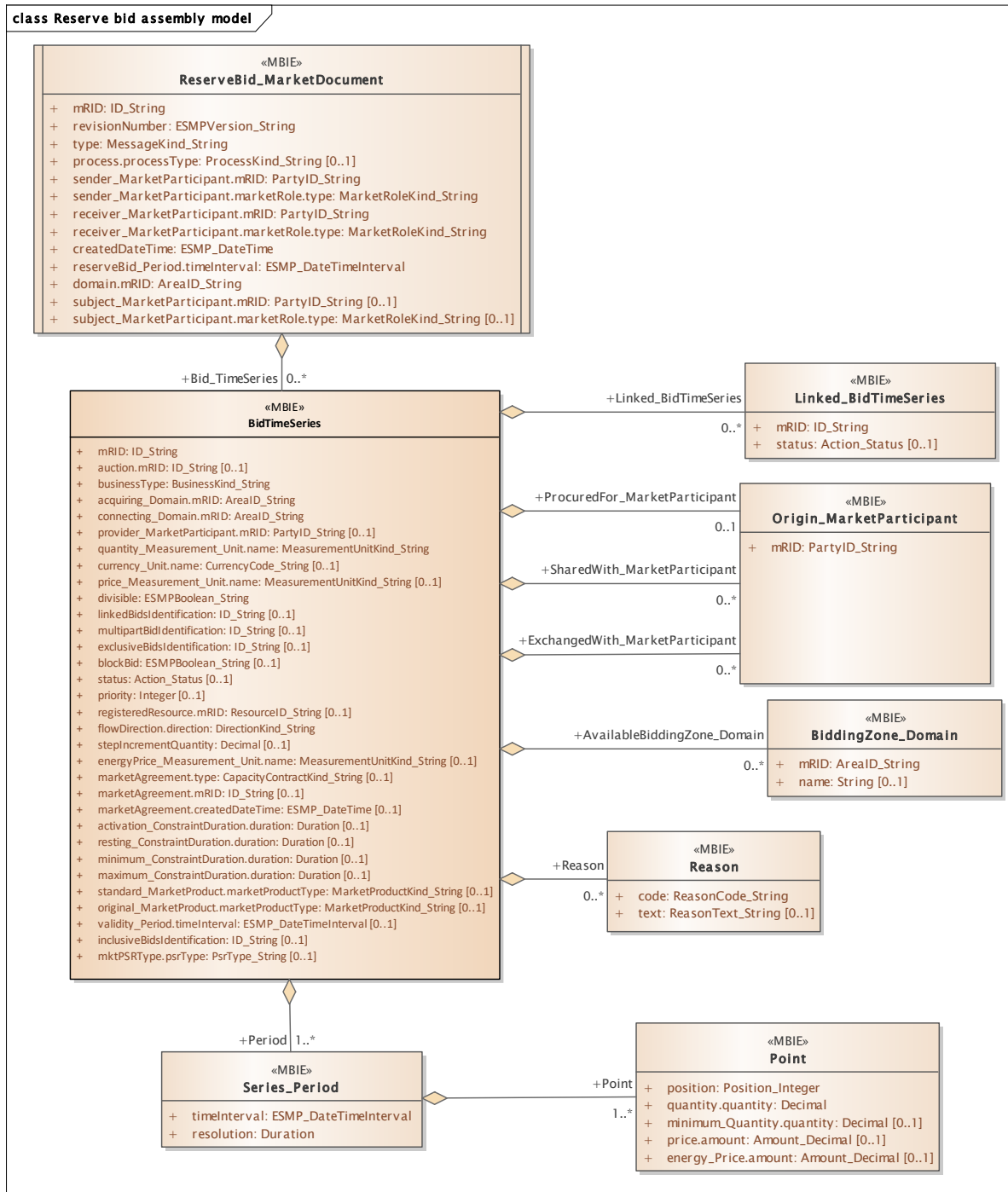
96

97

98 **2.2. Reserve bid assembly model**

99 **2.2.1. Overview of the model**

100 Figure 2 shows the model.



101

102

Figure 2 - Reserve bid assembly model

103 **2.2.2. IsBasedOn relationships from the European style market profile**

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

106 **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

107

108 **2.2.3. Detailed Reserve bid assembly model**

109 **2.2.3.1. ReserveBid_MarketDocument root class**

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

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

114 Table 3 shows all attributes of ReserveBid_MarketDocument.

115 **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.
7	[1..1]	receiver_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- Document recipient.

Order	mult.	Attribute name / Attribute type	Description
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.

116

117 Table 4 shows all association ends of ReserveBid_MarketDocument with other classes.

118 **Table 4 - Association ends of Reserve bid assembly**
119 **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.[]

120

121 2.2.3.2. BiddingZone_Domain

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

124 Table 5 shows all attributes of BiddingZone_Domain.

125 **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.

126

127 **2.2.3.3. BidTimeSeries**

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

129 Table 6 shows all attributes of BidTimeSeries.

130 **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_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.
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_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.).
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_Measurement_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.
30	[0..1]	inclusiveBidsIdentification ID_String	Unique identification associated with all linked bids. The identification of a set of bids that are linked together signifying that these bids must be accepted together. This identification is defined by the tenderer and must be unique for a given auction.
31	[0..1]	mktPSRType.psrType PsrType_String	The coded type of a power system resource. --- The identification of the type of resource associated with a TimeSeries.

131

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

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

Order	mult.	Class name / Role	Description
32	[1..*]	Series_Period Period	Association Based On: Reserve bid contextual model::Series_Period.Period[1..*] ----- Reserve bid contextual model::BidTimeSeries.[]
33	[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..*]
34	[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.[]
35	[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.[]
36	[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.[]
37	[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.[]
38	[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.[]

135

136 **2.2.3.4. Linked_BidTimeSeries**

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

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

139 Table 8 shows all attributes of Linked_BidTimeSeries.

140 **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", ...

141

142 **2.2.3.5. Origin_MarketParticipant**

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

144 Table 9 shows all attributes of Origin_MarketParticipant.

145 **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.

146

147 **2.2.3.6. Point**

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

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

150 Table 10 shows all attributes of Point.

151

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.
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.

152

153 **2.2.3.7. Reason**

154 The motivation of an act.

155 Table 11 shows all attributes of Reason.

156

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.

157

158 **2.2.3.8. Series_Period**

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

160 Table 12 shows all attributes of Series_Period.

161

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.

162

163 Table 13 shows all association ends of Series_Period with other classes.

164 **Table 13 - Association ends of Reserve bid assembly model::Series_Period with other**
165 **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.[]

166

167 2.2.4. Datatypes

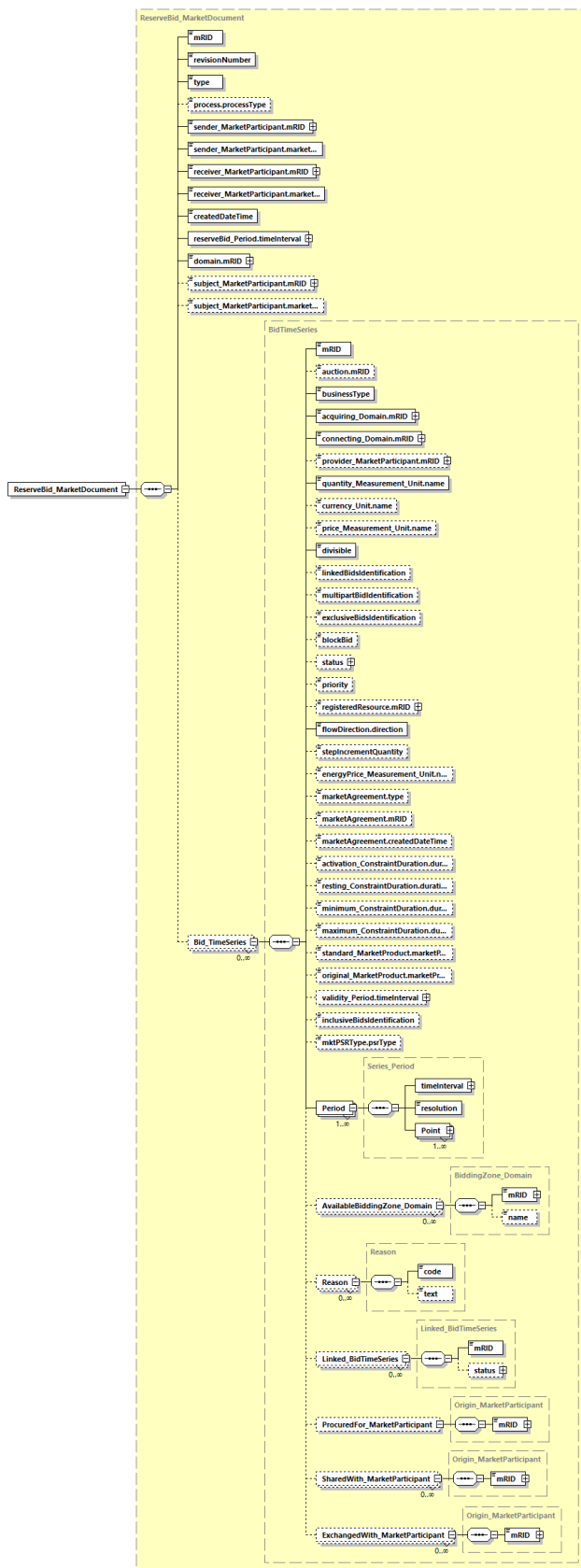
168 The list of datatypes used for the Reserve bid assembly model is as follows:

- 169 • Action_Status compound
- 170 • ESMP_DateTimeInterval compound
- 171 • Amount_Decimal datatype
- 172 • AreaID_String datatype, codelist CodingSchemeTypeList
- 173 • BusinessKind_String datatype, codelist BusinessTypeList
- 174 • CapacityContractKind_String datatype, codelist ContractTypeList
- 175 • CurrencyCode_String datatype, codelist CurrencyTypeList
- 176 • DirectionKind_String datatype, codelist DirectionTypeList
- 177 • ESMP_DateTime datatype
- 178 • ESMPBoolean_String datatype, codelist IndicatorTypeList
- 179 • ESMPVersion_String datatype
- 180 • ID_String datatype
- 181 • MarketProductKind_String datatype, codelist MarketProductTypeList
- 182 • MarketRoleKind_String datatype, codelist RoleTypeList
- 183 • MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
- 184 • MessageKind_String datatype, codelist MessageTypeList
- 185 • PartyID_String datatype, codelist CodingSchemeTypeList
- 186 • Position_Integer datatype
- 187 • ProcessKind_String datatype, codelist ProcessTypeList
- 188 • PsrType_String datatype, codelist AssetTypeList
- 189 • ReasonCode_String datatype, codelist ReasonCodeTypeList
- 190 • ReasonText_String datatype
- 191 • ResourceID_String datatype, codelist CodingSchemeTypeList
- 192 • Status_String datatype, codelist StatusTypeList
- 193 • YMDHM_DateTime datatype

194

195

196 2.2.5. ReserveBid_MarketDocument XML schema structure



197
 198

Figure 3 - ReserveBid_MarketDocument XML schema structure

199 2.2.6. ReserveBid_MarketDocument XML schema

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

201 urn:iec62325.351:tc57wg16:451-7:reservebiddocument:7:4

```

202
203 <?xml version="1.0" encoding="utf-8"?>
204 <xs:schema xmlns:ecl="urn:entsoe.eu:wgedi:codelists"
205 xmlns="urn:iec62325.351:tc57wg16:451-7:reservebiddocument:7:4"
206 xmlns:sawsdl="http://www.w3.org/ns/sawsdl"
207 xmlns:cimp="http://www.iec.ch/cimprofile"
208 xmlns:xs="http://www.w3.org/2001/XMLSchema"
209 targetNamespace="urn:iec62325.351:tc57wg16:451-7:reservebiddocument:7:4"
210 elementFormDefault="qualified" attributeFormDefault="unqualified">
211   <xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-
212 entsoe-eu-wgedi-codelists.xsd"/>
213   <xs:element name="ReserveBid_MarketDocument"
214 type="ReserveBid_MarketDocument"/>
215   <xs:simpleType name="AreaID_String-base"
216 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
217     <xs:restriction base="xs:string">
218       <xs:maxLength value="18"/>
219     </xs:restriction>
220   </xs:simpleType>
221   <xs:complexType name="AreaID_String"
222 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
223     <xs:simpleContent>
224       <xs:extension base="AreaID_String-base">
225         <xs:attribute name="codingScheme"
226 type="ecl:CodingSchemeTypeList" use="required"/>
227       </xs:extension>
228     </xs:simpleContent>
229   </xs:complexType>
230   <xs:complexType name="BiddingZone_Domain"
231 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Domain">
232     <xs:sequence>
233       <xs:element name="mRID" type="AreaID_String" minOccurs="1"
234 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
235 cim16#IdentifiedObject.mRID"/>
236       <xs:element name="name" type="xs:string" minOccurs="0"
237 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
238 cim16#IdentifiedObject.name"/>
239     </xs:sequence>
240   </xs:complexType>
241   <xs:simpleType name="ID_String"
242 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
243     <xs:restriction base="xs:string">
244       <xs:maxLength value="60"/>
245     </xs:restriction>
246   </xs:simpleType>
247   <xs:simpleType name="BusinessKind_String"
248 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
249     <xs:restriction base="ecl:BusinessTypeList"/>
250   </xs:simpleType>
251   <xs:simpleType name="PartyID_String-base"
252 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
253     <xs:restriction base="xs:string">

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254         <xs:maxLength value="16"/>
255     </xs:restriction>
256 </xs:simpleType>
257 <xs:complexType name="PartyID_String"
258 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
259     <xs:simpleContent>
260         <xs:extension base="PartyID_String-base"
261             <xs:attribute name="codingScheme"
262 type="ecl:CodingSchemeTypeList" use="required"/>
263         </xs:extension>
264     </xs:simpleContent>
265 </xs:complexType>
266 <xs:simpleType name="MeasurementUnitKind_String"
267 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
268     <xs:restriction base="ecl:UnitOfMeasureTypeList"/>
269 </xs:simpleType>
270 <xs:simpleType name="CurrencyCode_String"
271 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
272     <xs:restriction base="ecl:CurrencyTypeList"/>
273 </xs:simpleType>
274 <xs:simpleType name="ESMPBoolean_String"
275 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
276     <xs:restriction base="ecl:IndicatorTypeList"/>
277 </xs:simpleType>
278 <xs:simpleType name="ResourceID_String-base"
279 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
280     <xs:restriction base="xs:string">
281         <xs:maxLength value="60"/>
282     </xs:restriction>
283 </xs:simpleType>
284 <xs:complexType name="ResourceID_String"
285 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
286     <xs:simpleContent>
287         <xs:extension base="ResourceID_String-base"
288             <xs:attribute name="codingScheme"
289 type="ecl:CodingSchemeTypeList" use="required"/>
290         </xs:extension>
291     </xs:simpleContent>
292 </xs:complexType>
293 <xs:simpleType name="DirectionKind_String"
294 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
295     <xs:restriction base="ecl:DirectionTypeList"/>
296 </xs:simpleType>
297 <xs:simpleType name="CapacityContractKind_String"
298 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
299     <xs:restriction base="ecl:ContractTypeList"/>
300 </xs:simpleType>
301 <xs:simpleType name="ESMP_DateTime"
302 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
303     <xs:restriction base="xs:dateTime">
304         <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-
305 9]|[12][0-9]|3[01]))|((0[0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
306 9]|30))T((0[1][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-
307 9])Z)|(((13579)[26][02468][048]|13579[01345789](0)[48]|13579[01345789][2468][0
308 48]|02468[048][02468][048]|02468[1235679](0)[48]|02468[1235679][2468][048][[
309 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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310 5][0-9]:[0-5][0-
311 9])Z)|((([13579][26][02468][1235679]|([13579][01345789](0)[01235679]|([13579][0134578
312 9][2468][1235679]|([02468][048][02468][1235679]|([02468][1235679](0)[01235679]|([0246
313 8][1235679][2468][1235679]|([0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
314 9]|2[0-8]))T((([01][0-9]|2[0-3])):[0-5][0-9]:[0-5][0-9])Z)"/>
315     </xs:restriction>
316   </xs:simpleType>
317   <xs:simpleType name="MarketProductKind_String"
318 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
319     <xs:restriction base="ecl:MarketProductTypeList"/>
320   </xs:simpleType>
321   <xs:simpleType name="PsrType_String"
322 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
323     <xs:restriction base="ecl:AssetTypeList"/>
324   </xs:simpleType>
325   <xs:simpleType name="Status_String"
326 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
327     <xs:restriction base="ecl:StatusTypeList"/>
328   </xs:simpleType>
329   <xs:complexType name="Action_Status"
330 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Status">
331     <xs:sequence>
332       <xs:element name="value" type="Status_String" minOccurs="1"
333 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
334 cim16#Status.value"/>
335     </xs:sequence>
336   </xs:complexType>
337   <xs:simpleType name="YMDHM_DateTime"
338 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
339     <xs:restriction base="xs:string">
340       <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-
341 9]|12)[0-9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|12)[0-
342 9]|30))T((([01][0-9]|2[0-3])):[0-5][0-
343 9])Z)|((([13579][26][02468][048]|([13579][01345789](0)[48]|([13579][01345789][2468][0
344 48]|([02468][048][02468][048]|([02468][1235679](0)[48]|([02468][1235679][2468][048]|([
345 0-9][0-9][13579][26]))[\-](02)[\-](0[1-9]|1[0-9]|2[0-9]))T((([01][0-9]|2[0-3])):[0-
346 5][0-
347 9])Z)|((([13579][26][02468][1235679]|([13579][01345789](0)[01235679]|([13579][0134578
348 9][2468][1235679]|([02468][048][02468][1235679]|([02468][1235679](0)[01235679]|([0246
349 8][1235679][2468][1235679]|([0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
350 9]|2[0-8]))T((([01][0-9]|2[0-3])):[0-5][0-9])Z)"/>
351     </xs:restriction>
352   </xs:simpleType>
353   <xs:complexType name="ESMP_DateTimeInterval"
354 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
355     <xs:sequence>
356       <xs:element name="start" type="YMDHM_DateTime" minOccurs="1"
357 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
358 cim16#DateTimeInterval.start"/>
359       <xs:element name="end" type="YMDHM_DateTime" minOccurs="1"
360 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
361 cim16#DateTimeInterval.end"/>
362     </xs:sequence>
363   </xs:complexType>
364   <xs:complexType name="BidTimeSeries"
365 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#BidTimeSeries">

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

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

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

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

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

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645         </xs:sequence>
646     </xs:complexType>
647     <xs:complexType name="Series_Period"
648 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">
649         <xs:sequence>
650             <xs:element name="timeInterval" type="ESMP_DateTimeInterval"
651 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
652 schema-cim16#Period.timeInterval"/>
653             <xs:element name="resolution" type="xs:duration" minOccurs="1"
654 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
655 cim16#Period.resolution"/>
656             <xs:element name="Point" type="Point" minOccurs="1"
657 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
658 cim16#Period.Point"/>
659         </xs:sequence>
660     </xs:complexType>
661 </xs:schema>
662
```