



European Network of
Transmission System Operators
for Electricity

**RESERVE ALLOCATION RESULT
DOCUMENT
UML MODEL AND SCHEMA**

2021-09-15
APPROVED DOCUMENT
VERSION 1.2

2

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Revision History

Version	Release	Date	Comments
0	1	2019-01-14	First draft of the document.
1	0	2019-02-12	Approved by MC.
1	1	2021-04-20	Changes in XSD v6.1: Original_MarketDocument.mRID, Original_MarketDocument.revisionNumbe and Bid_TimeSeries association in Reserve Allocation Result document are now optional. Approved by MC.
1	2	2021-09-15	Updates in reserve allocation result document XSD v6.2: An optional curveType attribute was added to Timeseries class. Approved by MC.

63

64 **Objective**

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

67 The schema of the ReserveAllocationResult_MarketDocument could be used in various
68 business processes.

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

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

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

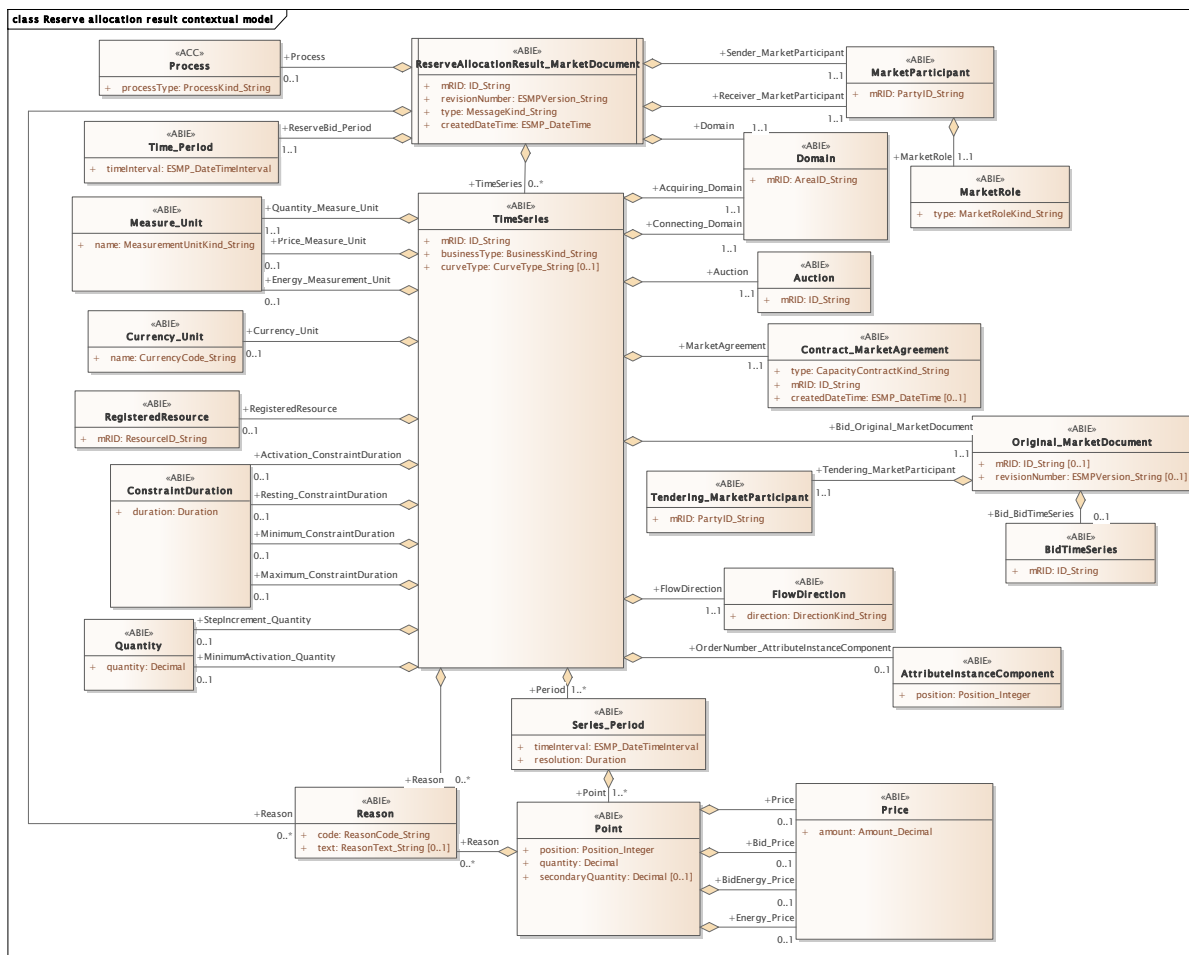
81

82 **ReserveAllocationResult_MarketDocument**

83 **2.1 Reserve allocation result contextual model**

84 **2.1.1 Overview of the model**

85 Figure 1 shows the model.



86

87

Figure 1 - Reserve allocation result contextual model

88

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
AttributeInstanceComponent	TC57CIM::IEC62325::MarketManagement::AttributeInstanceComponent
Auction	TC57CIM::IEC62325::MarketManagement::Auction
BidTimeSeries	TC57CIM::IEC62325::MarketManagement::BidTimeSeries
ConstraintDuration	TC57CIM::IEC62325::MarketManagement::ConstraintDuration
Contract_MarketAgreement	TC57CIM::IEC62325::MarketManagement::MarketAgreement
Currency_Unit	TC57CIM::IEC62325::MarketManagement::Unit
Domain	TC57CIM::IEC62325::MarketManagement::Domain
FlowDirection	TC57CIM::IEC62325::MarketManagement::FlowDirection
MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
MarketRole	TC57CIM::IEC62325::MarketCommon::MarketRole
Measure_Unit	TC57CIM::IEC62325::MarketManagement::Unit
Original_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Point	TC57CIM::IEC62325::MarketManagement::Point
Price	TC57CIM::IEC62325::MarketManagement::Price
Process	TC57CIM::IEC62325::MarketManagement::Process
Quantity	TC57CIM::IEC62325::MarketManagement::Quantity
Reason	TC57CIM::IEC62325::MarketManagement::Reason
RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource
ReserveAllocationResult_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
Tendering_MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
Time_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries

94

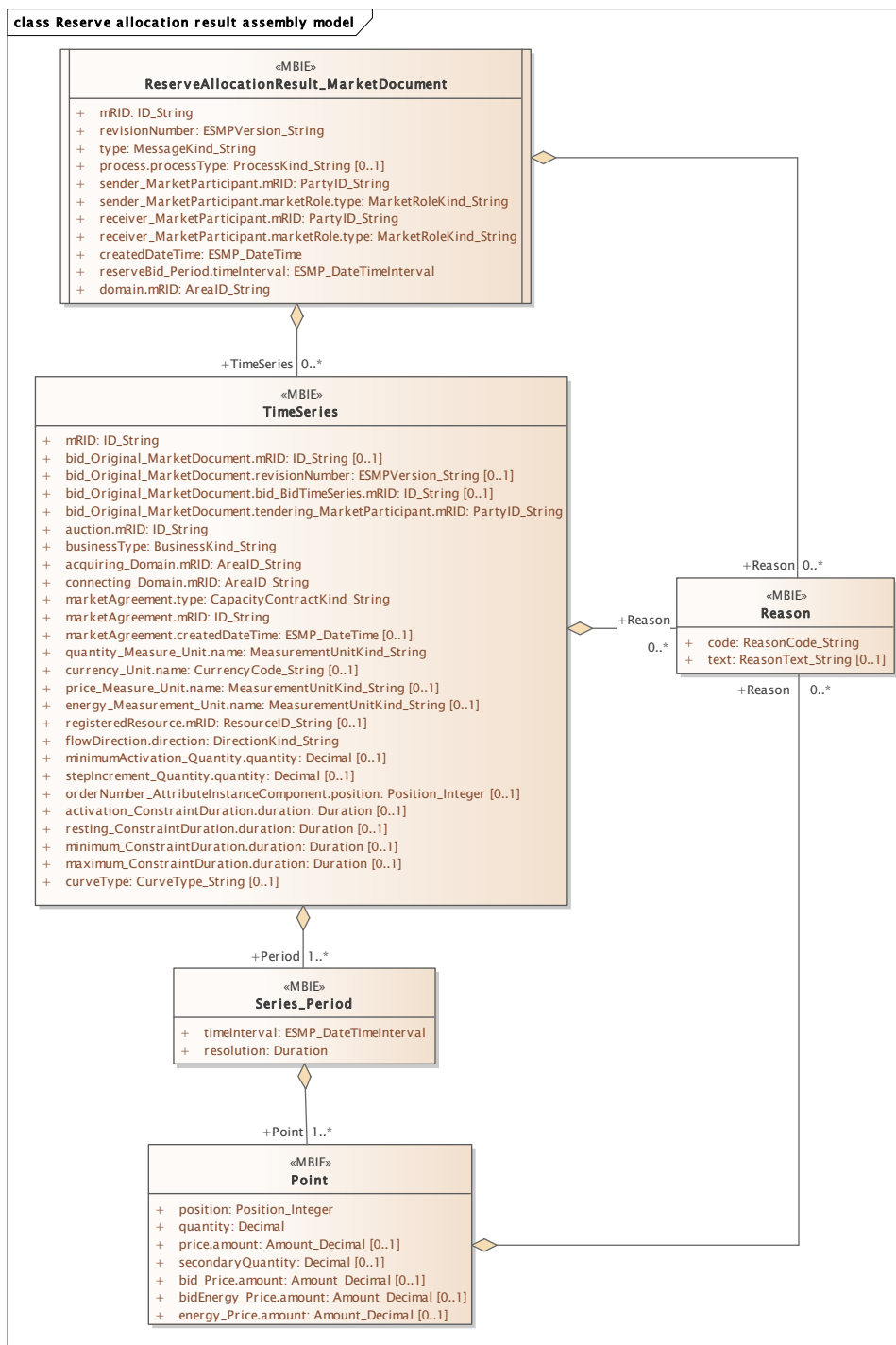
95

96

97 2.2 Reserve allocation result assembly model

98 2.2.1 Overview of the model

99 Figure 2 shows the model.



100

101

Figure 2 - Reserve allocation result assembly model

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
Point	TC57CIM::IEC62325::MarketManagement::Point
Reason	TC57CIM::IEC62325::MarketManagement::Reason
ReserveAllocationResult_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries

106

107 **2.2.3 Detailed Reserve allocation result assembly model**

108 **2.2.3.1 ReserveAllocationResult_MarketDocument root class**

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

111 Table 3 shows all attributes of ReserveAllocationResult_MarketDocument.

112 **Table 3 - Attributes of Reserve allocation result assembly
113 model::ReserveAllocationResult_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.
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.

Order	mult.	Attribute name / Attribute type	Description
10	[1..1]	domain.mRID AreaID_String	The unique identification of the domain. --- The domain covered within the document.

114

115 Table 4 shows all association ends of ReserveAllocationResult_MarketDocument with other
116 classes.

117 **Table 4 - Association ends of Reserve allocation result assembly**
118 **model::ReserveAllocationResult_MarketDocument with other classes**

Order	mult.	Class name / Role	Description
11	[0..*]	TimeSeries TimeSeries	Association Based On: Reserve allocation result contextual model::TimeSeries.TimeSeries[0..*] ----- Reserve allocation result contextual model::ReserveAllocationResult_MarketDocument.[]
12	[0..*]	Reason Reason	Association Based On: Reserve allocation result contextual model::Reason.Reason[0..*] ----- Reserve allocation result contextual model::ReserveAllocationResult_MarketDocument.[]

119

120 2.2.3.2 Point

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

122 Table 5 shows all attributes of Point.

123 **Table 5 - Attributes of Reserve allocation result assembly model::Point**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	position Position_Integer	A sequential value representing the relative position within a given time interval.
1	[1..1]	quantity Decimal	The quantity that has been allocated or resold in the auction. The principal quantity identified for a point.
2	[0..1]	price.amount Amount_Decimal	A number of monetary units specified in a unit of currency. --- The original price expressed in the original bid or resale for each unit of quantity requested.
3	[0..1]	secondaryQuantity Decimal	The quantity that was in the original bid or resale document. The secondary quantity identified for a point.
4	[0..1]	bid_Price.amount Amount_Decimal	A number of monetary units specified in a unit of currency. --- The price expressed for each unit of quantity allocated.
5	[0..1]	bidEnergy_Price.amount Amount_Decimal	A number of monetary units specified in a unit of currency.
6	[0..1]	energy_Price.amount Amount_Decimal	A number of monetary units specified in a unit of currency.

124

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

126 **Table 6 - Association ends of Reserve allocation result assembly model::Point with**
127 **other classes**

Order	mult.	Class name / Role	Description
7	[0..*]	Reason Reason	Association Based On: Reserve allocation result contextual model::Reason.Reason[0..*] ----- Reserve allocation result contextual model::Point.[]

128

129 2.2.3.3 Reason

130 The motivation of an act.

131 Table 7 shows all attributes of Reason.

132 **Table 7 - Attributes of Reserve allocation result 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.

133

134 2.2.3.4 Series_Period

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

136 Table 8 shows all attributes of Series_Period.

137 **Table 8 - Attributes of Reserve allocation result 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.

138

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

140 **Table 9 - Association ends of Reserve allocation result assembly model::Series_Period**
141 **with other classes**

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

142

143 **2.2.3.5 TimeSeries**

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

145 For each time series in the document, the identification shall be a unique number assigned by
146 the auction office.

147 Table 10 shows all attributes of TimeSeries.

148 **Table 10 - Attributes of Reserve allocation result assembly model::TimeSeries**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	A unique identification of the time series.
1	[0..1]	bid_Original_MarketDocument.mRID ID_String	The unique identification of the document being exchanged within a business process flow. --- The identification of the document that contains the bids or resales referenced in the BidTimeSeries.
2	[0..1]	bid_Original_MarketDocument.revisionNumber ESMPVersion_String	The identification of the version that distinguishes one evolution of a document from another. --- The identification of the document that contains the bids or resales referenced in the BidTimeSeries.
3	[0..1]	bid_Original_MarketDocument.bid_BidTimeSeries.mRID ID_String	A unique identification of the time series. --- The identification of the document that contains the bids or resales referenced in the BidTimeSeries. --- The identification of the time series that was used in the original bid or resale. This is the unique number that is assigned by the bidder when he made his original bid or resale.
4	[1..1]	bid_Original_MarketDocument.tendering_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of the document that contains the bids or resales referenced in the BidTimeSeries.
5	[1..1]	auction.mRID ID_String	The unique identification of the auction. --- The identification linking the allocation to a set of specifications created by the auction operator.
6	[1..1]	businessType BusinessKind_String	The identification of the nature of the time series.
7	[1..1]	acquiring_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the energy is to be put.

Order	mult.	Attribute name / Attribute type	Description
8	[1..1]	connecting_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the energy is coming from.
9	[1..1]	marketAgreement.type CapacityContractKind_String	The specification of the kind of the agreement, e.g. long term, daily contract.
10	[1..1]	marketAgreement.mRID ID_String	The unique identification of the agreement.
11	[0..1]	marketAgreement.createdDateTime ESMP_DateTime	The date and time of the creation of the agreement.
12	[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 that is applied to the quantities in which the time series is expressed, e.g. MAW.
13	[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.
14	[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
15	[0..1]	energy_Measurement_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20).
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]	minimumActivation_Quantity.quantity Decimal	The quantity value. The association role provides the information about what is expressed.
19	[0..1]	stepIncrement_Quantity.quantity Decimal	The quantity value. The association role provides the information about what is expressed.
20	[0..1]	orderNumber_AttributeInstanceComponent.position Position_Integer	A sequential value representing a relative sequence number. --- A specific characteristic associated with a TimeSeries.
21	[0..1]	activation_ConstraintDuration.duration Duration	The duration of the constraint.
22	[0..1]	resting_ConstraintDuration.duration Duration	The duration of the constraint.
23	[0..1]	minimum_ConstraintDuration.duration Duration	The duration of the constraint.

Order	mult.	Attribute name / Attribute type	Description
24	[0..1]	maximum_ConstraintDuration.duration Duration	The duration of the constraint.
25	[0..1]	curveType CurveType_String	The identification of the coded representation of the type of curve being described.

149

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

151 **Table 11 - Association ends of Reserve allocation result assembly model::TimeSeries**
152 **with other classes**

Order	mult.	Class name / Role	Description
26	[1..*]	Series_Period Period	Association Based On: Reserve allocation result contextual model::Series_Period.Period[1..*] ----- Reserve allocation result contextual model::TimeSeries.[]
27	[0..*]	Reason Reason	Association Based On: Reserve allocation result contextual model::Reason.Reason[0..*] ----- Reserve allocation result contextual model::TimeSeries.[]

153

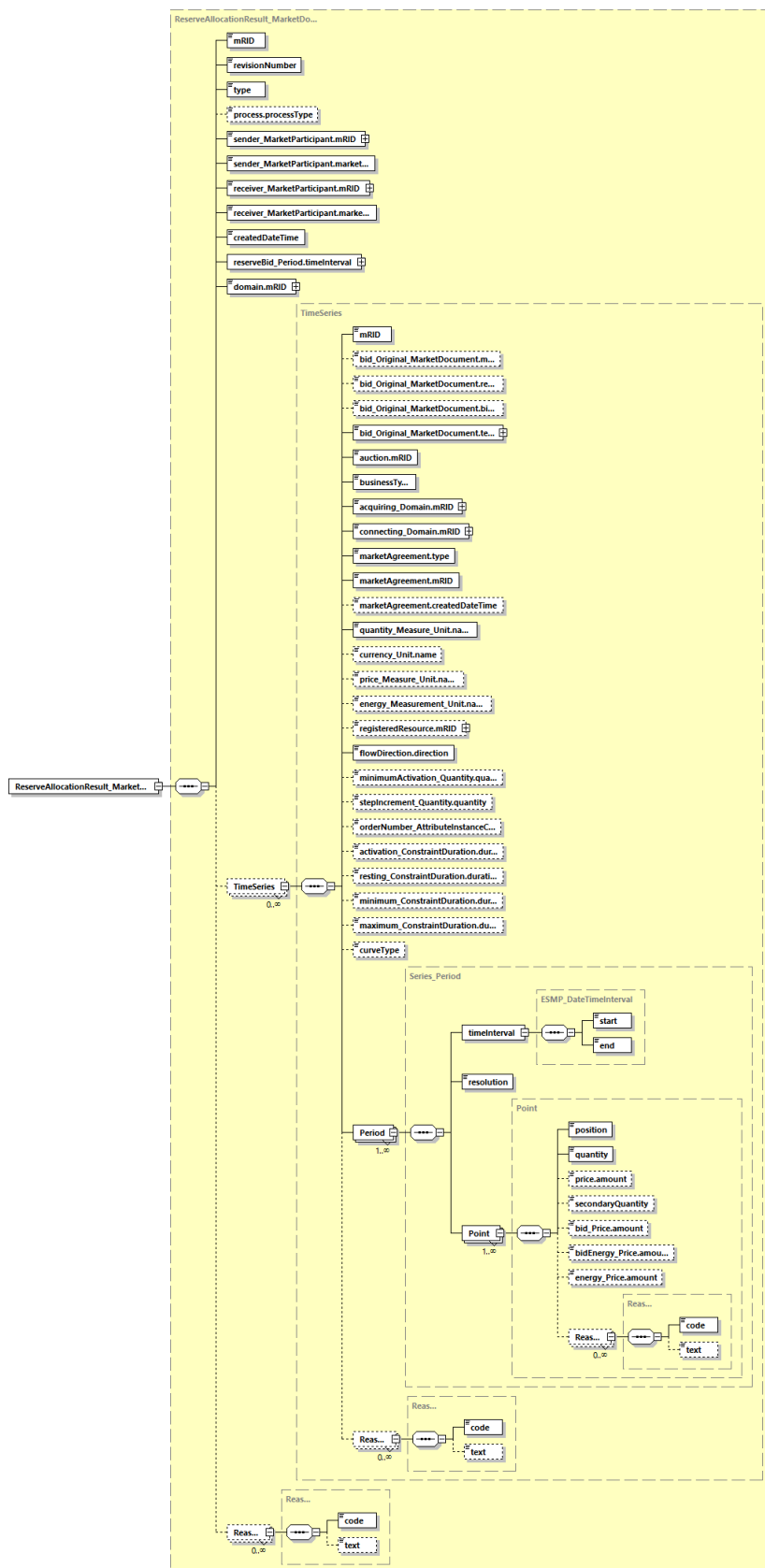
154 2.2.4 Datatypes

155 The list of datatypes used for the Reserve allocation result assembly model is as follows:

- 156 • ESMP_DateTimeInterval compound
- 157 • Amount_Decimal datatype
- 158 • AreaID_String datatype, codelist CodingSchemeTypeList
- 159 • BusinessKind_String datatype, codelist BusinessTypeList
- 160 • CapacityContractKind_String datatype, codelist ContractTypeList
- 161 • CurrencyCode_String datatype, codelist CurrencyTypeList
- 162 • CurveType_String datatype, codelist CurveTypeList
- 163 • DirectionKind_String datatype, codelist DirectionTypeList
- 164 • ESMP_DateTime datatype
- 165 • ESMPVersion_String datatype
- 166 • ID_String datatype
- 167 • MarketRoleKind_String datatype, codelist RoleTypeList
- 168 • MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
- 169 • MessageKind_String datatype, codelist MessageTypeList
- 170 • PartyID_String datatype, codelist CodingSchemeTypeList
- 171 • Position_Integer datatype
- 172 • ProcessKind_String datatype, codelist ProcessTypeList
- 173 • ReasonCode_String datatype, codelist ReasonCodeTypeList

- 174 • ReasonText_String datatype
- 175 • ResourceID_String datatype, codelist CodingSchemeTypeList
- 176 • YMDHM_DateTime datatype
- 177

178 2.2.5 ReserveAllocationResult_MarketDocument XML schema structure



179
180

Figure 3 - ReserveAllocationResult_MarketDocument schema structure

181 2.2.6 ReserveAllocationResult_MarketDocument XML schema

182

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

184 urn:iec62325.351:tc57wg16:451-7:reserveallocationresultdocument:6:2

```
185 <?xml version="1.0" encoding="utf-8"?>
186 <xs:schema xmlns:ec1="urn:entsoe.eu:wgedi:codelists"
187 xmlns="urn:iec62325.351:tc57wg16:451-7:reserveallocationresultdocument:6:2"
188 xmlns:sawsdl="http://www.w3.org/ns/sawsdl"
189 xmlns:cimp="http://www.iec.ch/cimprofile"
190 xmlns:xs="http://www.w3.org/2001/XMLSchema"
191 targetNamespace="urn:iec62325.351:tc57wg16:451-
192 7:reserveallocationresultdocument:6:2" elementFormDefault="qualified"
193 attributeFormDefault="unqualified">
194   <xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-
195 entsoe-eu-wgedi-codelists.xsd"/>
196   <xs:element name="ReserveAllocationResult_MarketDocument"
197 type="ReserveAllocationResult_MarketDocument"/>
198   <xs:simpleType name="Position_Integer"
199 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
200     <xs:restriction base="xs:integer">
201       <xs:maxInclusive value="999999"/>
202       <xs:minInclusive value="1"/>
203     </xs:restriction>
204   </xs:simpleType>
205   <xs:simpleType name="Amount_Decimal"
206 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Decimal">
207     <xs:restriction base="xs:decimal">
208       <xs:totalDigits value="17"/>
209     </xs:restriction>
210   </xs:simpleType>
211   <xs:complexType name="Point"
212 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point">
213     <xs:sequence>
214       <xs:element name="position" type="Position_Integer"
215 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
216 schema-cim16#Point.position"/>
217       <xs:element name="quantity" type="xs:decimal" minOccurs="1"
218 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
219 cim16#Point.quantity"/>
220       <xs:element name="price.amount" type="Amount_Decimal"
221 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
222 schema-cim16#Price.amount"/>
223       <xs:element name="secondaryQuantity" type="xs:decimal"
224 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
225 schema-cim16#Point.secondaryQuantity"/>
226       <xs:element name="bid_Price.amount" type="Amount_Decimal"
227 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
228 schema-cim16#Price.amount"/>
229       <xs:element name="bidEnergy_Price.amount" type="Amount_Decimal"
230 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
231 schema-cim16#Price.amount"/>
```

```
232         <xs:element name="energy_Price.amount" type="Amount_Decimal"
233 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
234 schema-cim16#Price.amount"/>
235         <xs:element name="Reason" type="Reason" minOccurs="0"
236 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
237 cim16#Point.Reason"/>
238     </xs:sequence>
239 </xs:complexType>
240 <xs:simpleType name="ReasonCode_String"
241 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
242     <xs:restriction base="ecl:ReasonCodeTypeList"/>
243 </xs:simpleType>
244 <xs:simpleType name="ReasonText_String"
245 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
246     <xs:restriction base="xs:string">
247         <xs:maxLength value="512"/>
248     </xs:restriction>
249 </xs:simpleType>
250 <xs:complexType name="Reason"
251 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason">
252     <xs:sequence>
253         <xs:element name="code" type="ReasonCode_String" minOccurs="1"
254 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
255 cim16#Reason.code"/>
256         <xs:element name="text" type="ReasonText_String" minOccurs="0"
257 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
258 cim16#Reason.text"/>
259     </xs:sequence>
260 </xs:complexType>
261 <xs:simpleType name="ID_String"
262 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
263     <xs:restriction base="xs:string">
264         <xs:maxLength value="60"/>
265     </xs:restriction>
266 </xs:simpleType>
267 <xs:simpleType name="ESMPVersion_String"
268 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
269     <xs:restriction base="xs:string">
270         <xs:pattern value="[1-9]([0-9]){0,2}"/>
271     </xs:restriction>
272 </xs:simpleType>
273 <xs:simpleType name="MessageKind_String"
274 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
275     <xs:restriction base="ecl:MessageTypeList"/>
276 </xs:simpleType>
277 <xs:simpleType name="ProcessKind_String"
278 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
279     <xs:restriction base="ecl:ProcessTypeList"/>
280 </xs:simpleType>
281 <xs:simpleType name="PartyID_String-base"
282 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
283     <xs:restriction base="xs:string">
284         <xs:maxLength value="16"/>
285     </xs:restriction>
286 </xs:simpleType>
```

```
287     <xs:complexType name="PartyID_String"
288 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
289     <xs:simpleContent>
290     <xs:extension base="PartyID_String-base">
291     <xs:attribute name="codingScheme"
292 type="ecl:CodingSchemeTypeList" use="required"/>
293     </xs:extension>
294     </xs:simpleContent>
295     </xs:complexType>
296     <xs:simpleType name="MarketRoleKind_String"
297 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
298     <xs:restriction base="ecl:RoleTypeList"/>
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]))|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
305 9]|30))T((([01][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((([01][0-9]|2[0-3]):[0-
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="AreaID_String-base"
317 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
318     <xs:restriction base="xs:string">
319     <xs:maxLength value="18"/>
320     </xs:restriction>
321     </xs:simpleType>
322     <xs:complexType name="AreaID_String"
323 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
324     <xs:simpleContent>
325     <xs:extension base="AreaID_String-base">
326     <xs:attribute name="codingScheme"
327 type="ecl:CodingSchemeTypeList" use="required"/>
328     </xs:extension>
329     </xs:simpleContent>
330     </xs:complexType>
331     <xs:simpleType name="YMDHM_DateTime"
332 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
333     <xs:restriction base="xs:string">
334     <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-
335 9]|[12][0-9]|3[01]))|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
336 9]|30))T((([01][0-9]|2[0-3]):[0-5][0-
337 9])Z)|(((13579)[26][02468][048]|13579[01345789](0)[48]|13579[01345789][2468][0
338 48]|02468[048][02468][048]|02468[1235679](0)[48]|02468[1235679][2468][048]|
339 0-9[0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T((([01][0-9]|2[0-3]):[0-
340 5][0-
341 9])Z)|(((13579)[26][02468][1235679]|13579[01345789](0)[01235679]|13579[0134578
342 9][2468][1235679]|02468[048][02468][1235679]|02468[1235679](0)[01235679]|0246
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343 8][1235679][2468][1235679][0-9][0-9][13579][01345789][\-\-](02)[\-\-](0[1-9]|1[0-
344 9]|2[0-8])T(([01][0-9]|2[0-3]):[0-5][0-9])Z"/>
345     </xs:restriction>
346   </xs:simpleType>
347   <xs:complexType name="ESMP_DateTimeInterval"
348 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
349     <xs:sequence>
350       <xs:element name="start" type="YMDHM_DateTime" minOccurs="1"
351 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
352 cim16#DateTimeInterval.start"/>
353       <xs:element name="end" type="YMDHM_DateTime" minOccurs="1"
354 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
355 cim16#DateTimeInterval.end"/>
356     </xs:sequence>
357   </xs:complexType>
358   <xs:complexType name="ReserveAllocationResult_MarketDocument"
359 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
360     <xs:sequence>
361       <xs:element name="mRID" type="ID_String" minOccurs="1"
362 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
363 cim16#IdentifiedObject.mRID"/>
364       <xs:element name="revisionNumber" type="ESMPVersion_String"
365 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
366 schema-cim16#Document.revisionNumber"/>
367       <xs:element name="type" type="MessageKind_String" minOccurs="1"
368 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
369 cim16#Document.type"/>
370       <xs:element name="process.processType"
371 type="ProcessKind_String" minOccurs="0" maxOccurs="1"
372 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
373 cim16#Process.processType"/>
374       <xs:element name="sender_MarketParticipant.mRID"
375 type="PartyID_String" minOccurs="1" maxOccurs="1"
376 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
377 cim16#IdentifiedObject.mRID"/>
378       <xs:element name="sender_MarketParticipant.marketRole.type"
379 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
380 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
381       <xs:element name="receiver_MarketParticipant.mRID"
382 type="PartyID_String" minOccurs="1" maxOccurs="1"
383 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
384 cim16#IdentifiedObject.mRID"/>
385       <xs:element name="receiver_MarketParticipant.marketRole.type"
386 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
387 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
388       <xs:element name="createdDateTime" type="ESMP_DateTime"
389 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
390 schema-cim16#Document.createdDateTime"/>
391       <xs:element name="reserveBid_Period.timeInterval"
392 type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1"
393 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
394 cim16#Period.timeInterval"/>
395       <xs:element name="domain.mRID" type="AreaID_String"
396 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
397 schema-cim16#IdentifiedObject.mRID"/>
```

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398         <xs:element name="TimeSeries" type="TimeSeries" minOccurs="0"  
399 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
400 cim16#MarketDocument.TimeSeries"/>  
401         <xs:element name="Reason" type="Reason" minOccurs="0"  
402 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
403 cim16#MarketDocument.Reason"/>  
404     </xs:sequence>  
405 </xs:complexType>  
406 <xs:complexType name="Series_Period"  
407 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">  
408     <xs:sequence>  
409         <xs:element name="timeInterval" type="ESMP_DateTimeInterval"  
410 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-  
411 schema-cim16#Period.timeInterval"/>  
412         <xs:element name="resolution" type="xs:duration" minOccurs="1"  
413 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
414 cim16#Period.resolution"/>  
415         <xs:element name="Point" type="Point" minOccurs="1"  
416 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
417 cim16#Period.Point"/>  
418     </xs:sequence>  
419 </xs:complexType>  
420 <xs:simpleType name="BusinessKind_String"  
421 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">  
422     <xs:restriction base="ecl:BusinessTypeList"/>  
423 </xs:simpleType>  
424 <xs:simpleType name="CapacityContractKind_String"  
425 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">  
426     <xs:restriction base="ecl:ContractTypeList"/>  
427 </xs:simpleType>  
428 <xs:simpleType name="MeasurementUnitKind_String"  
429 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">  
430     <xs:restriction base="ecl:UnitOfMeasureTypeList"/>  
431 </xs:simpleType>  
432 <xs:simpleType name="CurrencyCode_String"  
433 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">  
434     <xs:restriction base="ecl:CurrencyTypeList"/>  
435 </xs:simpleType>  
436 <xs:simpleType name="ResourceID_String-base"  
437 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">  
438     <xs:restriction base="xs:string">  
439         <xs:maxLength value="60"/>  
440     </xs:restriction>  
441 </xs:simpleType>  
442 <xs:complexType name="ResourceID_String"  
443 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">  
444     <xs:simpleContent>  
445         <xs:extension base="ResourceID_String-base">  
446             <xs:attribute name="codingScheme"  
447 type="ecl:CodingSchemeTypeList" use="required"/>  
448         </xs:extension>  
449     </xs:simpleContent>  
450 </xs:complexType>  
451 <xs:simpleType name="DirectionKind_String"  
452 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">  
453     <xs:restriction base="ecl:DirectionTypeList"/>
```

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454     </xs:simpleType>
455     <xs:simpleType name="CurveType_String"
456 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
457       <xs:restriction base="ecl:CurveTypeList"/>
458     </xs:simpleType>
459     <xs:complexType name="TimeSeries"
460 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries">
461       <xs:sequence>
462         <xs:element name="mRID" type="ID_String" minOccurs="1"
463 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
464 cim16#IdentifiedObject.mRID"/>
465         <xs:element name="bid_Original_MarketDocument.mRID"
466 type="ID_String" minOccurs="0" maxOccurs="1"
467 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
468 cim16#IdentifiedObject.mRID"/>
469         <xs:element name="bid_Original_MarketDocument.revisionNumber"
470 type="ESMPVersion_String" minOccurs="0" maxOccurs="1"
471 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
472 cim16#Document.revisionNumber"/>
473         <xs:element
474 name="bid_Original_MarketDocument.bid_BidTimeSeries.mRID" type="ID_String"
475 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
476 schema-cim16#IdentifiedObject.mRID"/>
477         <xs:element
478 name="bid_Original_MarketDocument.tendering_MarketParticipant.mRID"
479 type="PartyID_String" minOccurs="1" maxOccurs="1"
480 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
481 cim16#IdentifiedObject.mRID"/>
482         <xs:element name="auction.mRID" type="ID_String" minOccurs="1"
483 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
484 cim16#IdentifiedObject.mRID"/>
485         <xs:element name="businessType" type="BusinessKind_String"
486 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
487 schema-cim16#TimeSeries.businessType"/>
488         <xs:element name="acquiring_Domain.mRID" type="AreaID_String"
489 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
490 schema-cim16#IdentifiedObject.mRID"/>
491         <xs:element name="connecting_Domain.mRID" type="AreaID_String"
492 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
493 schema-cim16#IdentifiedObject.mRID"/>
494         <xs:element name="marketAgreement.type"
495 type="CapacityContractKind_String" minOccurs="1" maxOccurs="1"
496 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.type"/>
497         <xs:element name="marketAgreement.mRID" type="ID_String"
498 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
499 schema-cim16#IdentifiedObject.mRID"/>
500         <xs:element name="marketAgreement.createdDateTime"
501 type="ESMP_DateTime" minOccurs="0" maxOccurs="1"
502 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
503 cim16#Document.createdDateTime"/>
504         <xs:element name="quantity_Measure_Unit.name"
505 type="MeasurementUnitKind_String" minOccurs="1" maxOccurs="1"
506 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
507         <xs:element name="currency_Unit.name"
508 type="CurrencyCode_String" minOccurs="0" maxOccurs="1"
509 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
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510         <xs:element name="price_Measure_Unit.name"
511 type="MeasurementUnitKind_String" minOccurs="0" maxOccurs="1"
512 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
513         <xs:element name="energy_Measurement_Unit.name"
514 type="MeasurementUnitKind_String" minOccurs="0" maxOccurs="1"
515 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
516         <xs:element name="registeredResource.mRID"
517 type="ResourceID_String" minOccurs="0" maxOccurs="1"
518 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
519 cim16#IdentifiedObject.mRID"/>
520         <xs:element name="flowDirection.direction"
521 type="DirectionKind_String" minOccurs="1" maxOccurs="1"
522 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
523 cim16#FlowDirection.direction"/>
524         <xs:element name="minimumActivation_Quantity.quantity"
525 type="xs:decimal" minOccurs="0" maxOccurs="1"
526 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
527 cim16#Quantity.quantity"/>
528         <xs:element name="stepIncrement_Quantity.quantity"
529 type="xs:decimal" minOccurs="0" maxOccurs="1"
530 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
531 cim16#Quantity.quantity"/>
532         <xs:element
533 name="orderNumber_AttributeInstanceComponent.position" type="Position_Integer"
534 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
535 schema-cim16#AttributeInstanceComponent.position"/>
536         <xs:element name="activation_ConstraintDuration.duration"
537 type="xs:duration" minOccurs="0" maxOccurs="1"
538 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
539 cim16#ConstraintDuration.duration"/>
540         <xs:element name="resting_ConstraintDuration.duration"
541 type="xs:duration" minOccurs="0" maxOccurs="1"
542 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
543 cim16#ConstraintDuration.duration"/>
544         <xs:element name="minimum_ConstraintDuration.duration"
545 type="xs:duration" minOccurs="0" maxOccurs="1"
546 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
547 cim16#ConstraintDuration.duration"/>
548         <xs:element name="maximum_ConstraintDuration.duration"
549 type="xs:duration" minOccurs="0" maxOccurs="1"
550 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
551 cim16#ConstraintDuration.duration"/>
552         <xs:element name="curveType" type="CurveType_String"
553 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
554 schema-cim16#TimeSeries.curveType"/>
555         <xs:element name="Period" type="Series_Period" minOccurs="1"
556 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
557 cim16#TimeSeries.Period"/>
558         <xs:element name="Reason" type="Reason" minOccurs="0"
559 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
560 cim16#TimeSeries.Reason"/>
561     </xs:sequence>
562 </xs:complexType>
563 </xs:schema>
564
```