



European Network of
Transmission System Operators
for Electricity

RESERVE ALLOCATION RESULT DOCUMENT UML MODEL AND SCHEMA

2022-06-28
APPROVED DOCUMENT
VERSION 1.4

2

Table of Contents

3	1. Objective	5
4	2. ReserveAllocationResult_MarketDocument.....	6
5	2.1. Reserve allocation result contextual model	6
6	2.1.1. Overview of the model	6
7	2.1.2. IsBasedOn relationships from the European style market	
8	profile	7
9	2.2. Reserve allocation result assembly model.....	8
10	2.2.1. Overview of the model	8
11	2.2.2. IsBasedOn relationships from the European style market	
12	profile	9
13	2.2.3. Detailed Reserve allocation result assembly model.....	9
14	2.2.3.1. ReserveAllocationResult_MarketDocument root class	9
15	2.2.3.2. Point	10
16	2.2.3.3. Reason	11
17	2.2.3.4. Series_Period	11
18	2.2.3.5. TimeSeries	12
19	2.2.4. Datatypes	14
20	2.2.5. ReserveAllocationResult_MarketDocument XML schema	
21	structure	16
22	2.2.6. ReserveAllocationResult_MarketDocument XML schema.....	17

23 List of figures

24	Figure 1 - Reserve allocation result contextual model	6
25	Figure 2 - Reserve allocation result assembly model	8
26	Figure 3 - ReserveAllocationResult_MarketDocument schema structure	16

27 List of tables

28	Table 1 - IsBasedOn dependency	7
29	Table 2 - IsBasedOn dependency	9
30	Table 3 - Attributes of Reserve allocation result assembly	
31	model::ReserveAllocationResult_MarketDocument	9
32	Table 4 - Association ends of Reserve allocation result assembly	
33	model::ReserveAllocationResult_MarketDocument with other classes	10
34	Table 5 - Attributes of Reserve allocation result assembly model::Point	10
35	Table 6 - Association ends of Reserve allocation result assembly model::Point with	
36	other classes	11
37	Table 7 - Attributes of Reserve allocation result assembly model::Reason	11
38	Table 8 - Attributes of Reserve allocation result assembly model::Series_Period	11
39	Table 9 - Association ends of Reserve allocation result assembly model::Series_Period	
40	with other classes	12
41	Table 10 - Attributes of Reserve allocation result assembly model::TimeSeries	12
42	Table 11 - Association ends of Reserve allocation result assembly model::TimeSeries	
43	with other classes	14

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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.
1	3	2022-02-01	Updates in reserve allocation result document XSD v6.3: Quantity_Measure_Unit.name & Price_Measure_Unit.name attributes were renamed to Quantity_Measurement_Unit.name & Price_Measurement_Unit.name to be compliant with the ESMP. Approved by MC.
1	4	2022-06-28	Updates in reserve allocation result document XSD v6.4: bid_Original_MarketDocument.tendering_MarketParticipant.mRID, auction.mRID, marketAgreement.type and marketAgreement.mRID in Timeseries becomes optional. Approved by MC.

63

64 **1. 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.

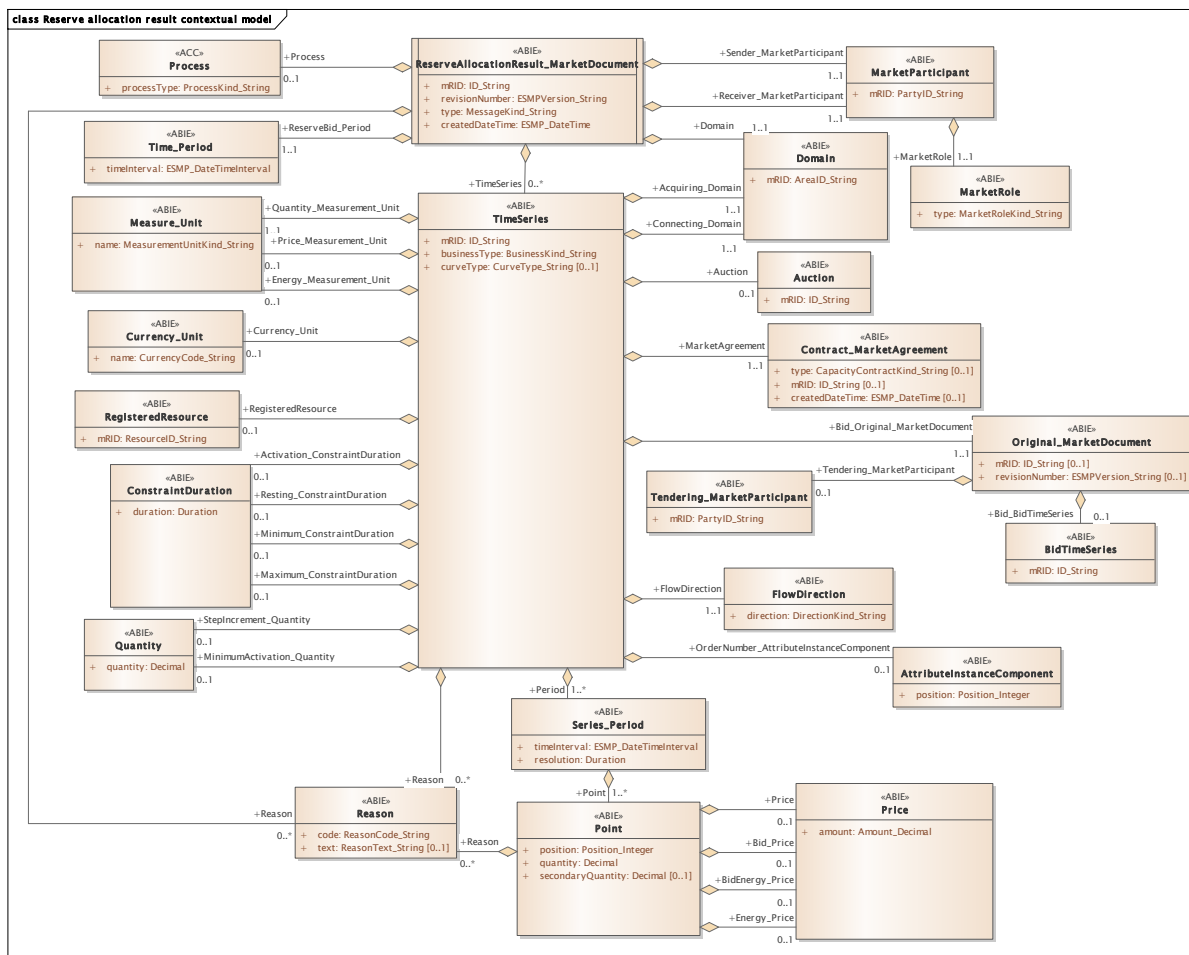
81

82 **2. 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 **2.1.2. IsBasedOn relationships from the European style market profile**

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

92

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

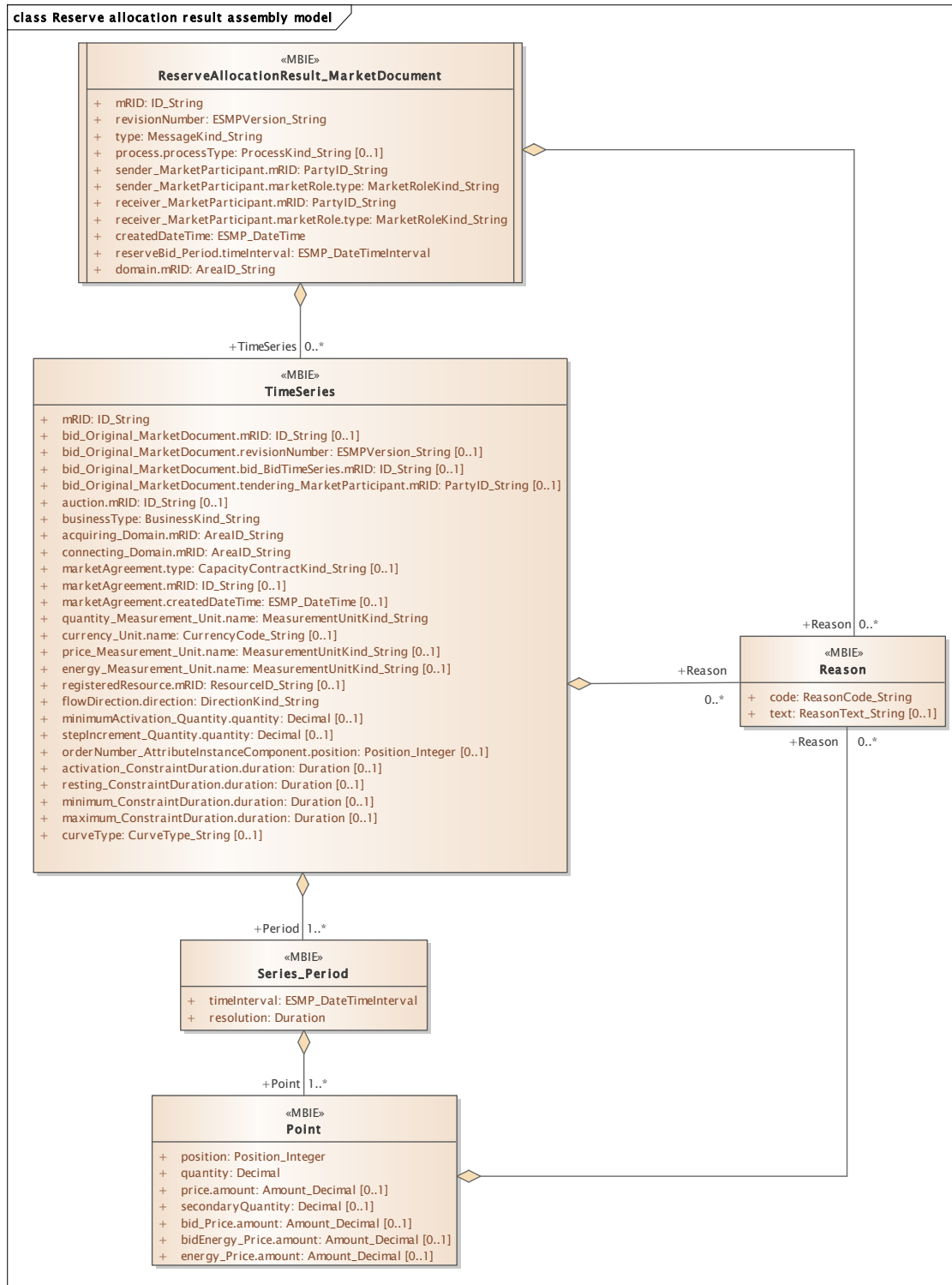
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94

95 **2.2. Reserve allocation result assembly model**

96 **2.2.1. Overview of the model**

97 Figure 2 shows the model.



98

99

Figure 2 - Reserve allocation result assembly model

100 **2.2.2. IsBasedOn relationships from the European style market profile**

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

103 **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

104

105 **2.2.3. Detailed Reserve allocation result assembly model**

106 **2.2.3.1. ReserveAllocationResult_MarketDocument root class**

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

109 Table 3 shows all attributes of ReserveAllocationResult_MarketDocument.

110 **Table 3 - Attributes of Reserve allocation result assembly**
111 **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.

112

113 Table 4 shows all association ends of ReserveAllocationResult_MarketDocument with other
114 classes.

115 **Table 4 - Association ends of Reserve allocation result assembly**
116 **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.[]

117

118 2.2.3.2. Point

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

120 Table 5 shows all attributes of Point.

121 **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.

122

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

124 **Table 6 - Association ends of Reserve allocation result assembly model::Point with**
125 **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.[]

126

127 2.2.3.3. Reason

128 The motivation of an act.

129 Table 7 shows all attributes of Reason.

130 **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.

131

132 2.2.3.4. Series_Period

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

134 Table 8 shows all attributes of Series_Period.

135 **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.

136

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

138 **Table 9 - Association ends of Reserve allocation result assembly model::Series_Period**
139 **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.[]

140

141 **2.2.3.5. TimeSeries**

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

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

145 Table 10 shows all attributes of TimeSeries.

146 **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	[0..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.

Order	mult.	Attribute name / Attribute type	Description
5	[0..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.
8	[1..1]	connecting_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the energy is coming from.
9	[0..1]	marketAgreement.type CapacityContractKind_String	The specification of the kind of the agreement, e.g. long term, daily contract.
10	[0..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_Measurement_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_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
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.

Order	mult.	Attribute name / Attribute type	Description
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.
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.

147

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

149 **Table 11 - Association ends of Reserve allocation result assembly model::TimeSeries**
150 **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.[]

151

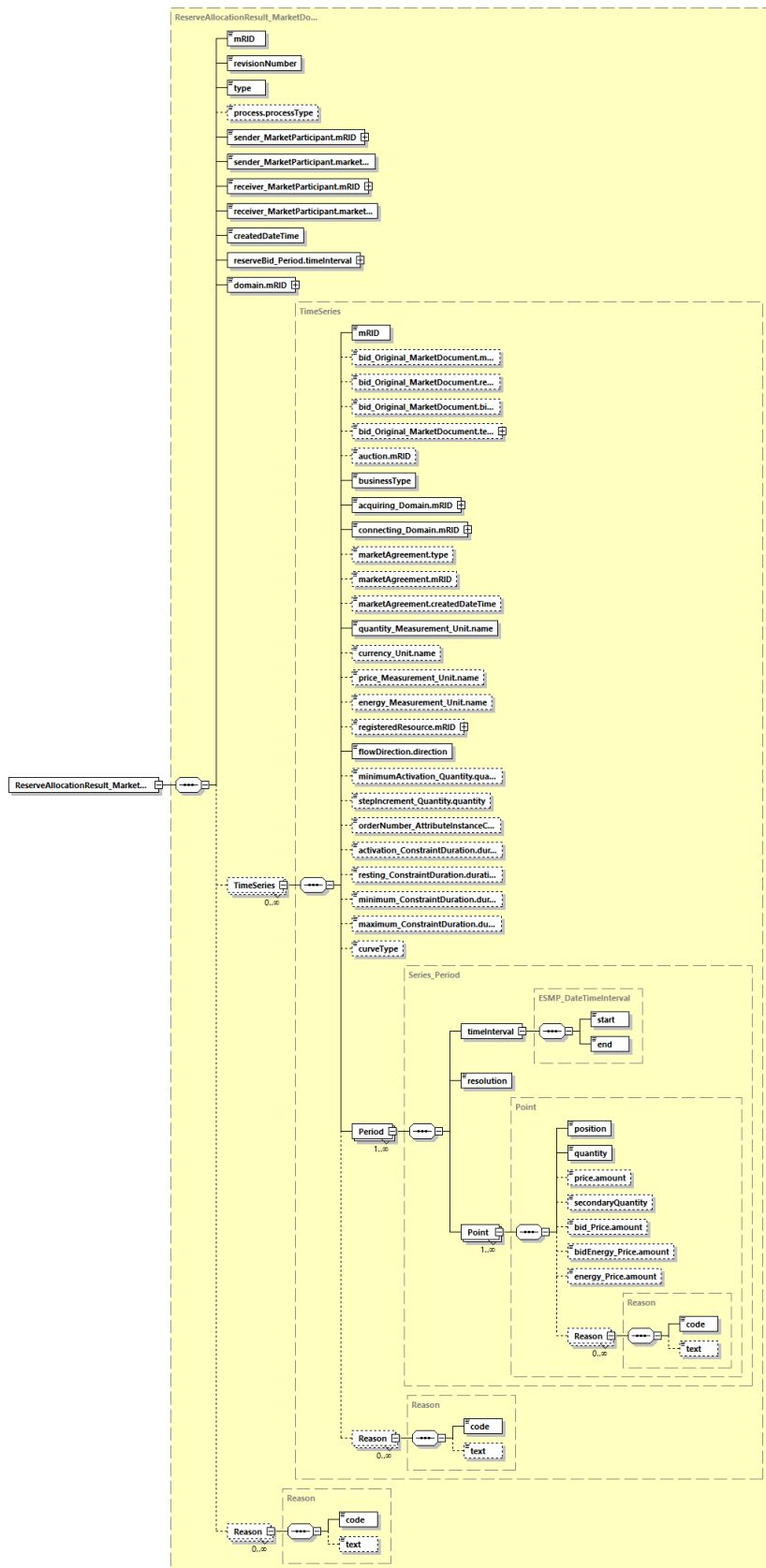
152 2.2.4. Datatypes

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

- 154 • ESMP_DateTimeInterval compound
- 155 • Amount_Decimal datatype
- 156 • AreaID_String datatype, codelist CodingSchemeTypeList
- 157 • BusinessKind_String datatype, codelist BusinessTypeList
- 158 • CapacityContractKind_String datatype, codelist ContractTypeList
- 159 • CurrencyCode_String datatype, codelist CurrencyTypeList
- 160 • CurveType_String datatype, codelist CurveTypeList
- 161 • DirectionKind_String datatype, codelist DirectionTypeList
- 162 • ESMP_DateTime datatype
- 163 • ESMPVersion_String datatype
- 164 • ID_String datatype
- 165 • MarketRoleKind_String datatype, codelist RoleTypeList
- 166 • MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
- 167 • MessageKind_String datatype, codelist MessageTypeList

- 168 • PartyID_String datatype, codelist CodingSchemeTypeList
- 169 • Position_Integer datatype
- 170 • ProcessKind_String datatype, codelist ProcessTypeList
- 171 • ReasonCode_String datatype, codelist ReasonCodeTypeList
- 172 • ReasonText_String datatype
- 173 • ResourceID_String datatype, codelist CodingSchemeTypeList
- 174 • YMDHM_DateTime datatype
- 175

176 2.2.5. ReserveAllocationResult_MarketDocument XML schema structure



177
178

Figure 3 - ReserveAllocationResult_MarketDocument schema structure

179 2.2.6. ReserveAllocationResult_MarketDocument XML schema

180

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

182 urn:iec62325.351:tc57wg16:451-7:reserveallocationresultdocument:6:4

```
183 <?xml version="1.0" encoding="utf-8"?>
184 <xs:schema xmlns:ec1="urn:entsoe.eu:wgedi:codelists"
185 xmlns="urn:iec62325.351:tc57wg16:451-7:reserveallocationresultdocument:6:4"
186 xmlns:sawsdl="http://www.w3.org/ns/sawsdl"
187 xmlns:cimp="http://www.iec.ch/cimprofile"
188 xmlns:xs="http://www.w3.org/2001/XMLSchema"
189 targetNamespace="urn:iec62325.351:tc57wg16:451-
190 7:reserveallocationresultdocument:6:4" elementFormDefault="qualified"
191 attributeFormDefault="unqualified">
192   <xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-
193 entsoe-eu-wgedi-codelists.xsd"/>
194   <xs:element name="ReserveAllocationResult_MarketDocument"
195 type="ReserveAllocationResult_MarketDocument"/>
196   <xs:simpleType name="Position_Integer"
197 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
198     <xs:restriction base="xs:integer">
199       <xs:maxInclusive value="999999"/>
200       <xs:minInclusive value="1"/>
201     </xs:restriction>
202   </xs:simpleType>
203   <xs:simpleType name="Amount_Decimal"
204 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Decimal">
205     <xs:restriction base="xs:decimal">
206       <xs:totalDigits value="17"/>
207     </xs:restriction>
208   </xs:simpleType>
209   <xs:complexType name="Point"
210 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point">
211     <xs:sequence>
212       <xs:element name="position" type="Position_Integer"
213 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
214 schema-cim16#Point.position"/>
215       <xs:element name="quantity" type="xs:decimal" minOccurs="1"
216 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
217 cim16#Point.quantity"/>
218       <xs:element name="price.amount" type="Amount_Decimal"
219 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
220 schema-cim16#Price.amount"/>
221       <xs:element name="secondaryQuantity" type="xs:decimal"
222 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
223 schema-cim16#Point.secondaryQuantity"/>
224       <xs:element name="bid_Price.amount" type="Amount_Decimal"
225 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
226 schema-cim16#Price.amount"/>
227       <xs:element name="bidEnergy_Price.amount" type="Amount_Decimal"
228 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
229 schema-cim16#Price.amount"/>
```

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

```
285     <xs:complexType name="PartyID_String"
286 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
287     <xs:simpleContent>
288         <xs:extension base="PartyID_String-base">
289             <xs:attribute name="codingScheme"
290 type="ecl:CodingSchemeTypeList" use="required"/>
291         </xs:extension>
292     </xs:simpleContent>
293 </xs:complexType>
294 <xs:simpleType name="MarketRoleKind_String"
295 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
296     <xs:restriction base="ecl:RoleTypeList"/>
297 </xs:simpleType>
298 <xs:simpleType name="ESMP_DateTime"
299 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
300     <xs:restriction base="xs:dateTime">
301         <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-
302 9]|[12][0-9]|3[01]))|((0[0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
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304 9])Z)|(((13579)[26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][0
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310 8][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
311 9]|2[0-8])T((0[1][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)"/>
312     </xs:restriction>
313 </xs:simpleType>
314 <xs:simpleType name="AreaID_String-base"
315 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
316     <xs:restriction base="xs:string">
317         <xs:maxLength value="18"/>
318     </xs:restriction>
319 </xs:simpleType>
320 <xs:complexType name="AreaID_String"
321 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
322     <xs:simpleContent>
323         <xs:extension base="AreaID_String-base">
324             <xs:attribute name="codingScheme"
325 type="ecl:CodingSchemeTypeList" use="required"/>
326         </xs:extension>
327     </xs:simpleContent>
328 </xs:complexType>
329 <xs:simpleType name="YMDHM_DateTime"
330 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
331     <xs:restriction base="xs:string">
332         <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-
333 9]|[12][0-9]|3[01]))|((0[0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
334 9]|30))T((0[1][0-9]|2[0-3]):[0-5][0-
335 9])Z)|(((13579)[26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][0
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338 5][0-
339 9])Z)|(((13579)[26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][0134578
340 9][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[0246
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342 9]|2[0-8])T((([01][0-9]|2[0-3]):[0-5][0-9])Z)"/>
343     </xs:restriction>
344   </xs:simpleType>
345   <xs:complexType name="ESMP_DateTimeInterval"
346 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
347     <xs:sequence>
348       <xs:element name="start" type="YMDHM_DateTime" minOccurs="1"
349 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
350 cim16#DateTimeInterval.start"/>
351       <xs:element name="end" type="YMDHM_DateTime" minOccurs="1"
352 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
353 cim16#DateTimeInterval.end"/>
354     </xs:sequence>
355   </xs:complexType>
356   <xs:complexType name="ReserveAllocationResult_MarketDocument"
357 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
358     <xs:sequence>
359       <xs:element name="mRID" type="ID_String" minOccurs="1"
360 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
361 cim16#IdentifiedObject.mRID"/>
362       <xs:element name="revisionNumber" type="ESMPVersion_String"
363 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
364 schema-cim16#Document.revisionNumber"/>
365       <xs:element name="type" type="MessageKind_String" minOccurs="1"
366 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
367 cim16#Document.type"/>
368       <xs:element name="process.processType"
369 type="ProcessKind_String" minOccurs="0" maxOccurs="1"
370 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
371 cim16#Process.processType"/>
372       <xs:element name="sender_MarketParticipant.mRID"
373 type="PartyID_String" minOccurs="1" maxOccurs="1"
374 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
375 cim16#IdentifiedObject.mRID"/>
376       <xs:element name="sender_MarketParticipant.marketRole.type"
377 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
378 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
379       <xs:element name="receiver_MarketParticipant.mRID"
380 type="PartyID_String" minOccurs="1" maxOccurs="1"
381 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
382 cim16#IdentifiedObject.mRID"/>
383       <xs:element name="receiver_MarketParticipant.marketRole.type"
384 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
385 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
386       <xs:element name="createdDateTime" type="ESMP_DateTime"
387 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
388 schema-cim16#Document.createdDateTime"/>
389       <xs:element name="reserveBid_Period.timeInterval"
390 type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1"
391 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
392 cim16#Period.timeInterval"/>
393       <xs:element name="domain.mRID" type="AreaID_String"
394 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
395 schema-cim16#IdentifiedObject.mRID"/>
```

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

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