



European Network of
Transmission System Operators
for Electricity

**RESOURCE SCHEDULE
CONFIRMATION DOCUMENT
UML MODEL AND SCHEMA**

2019-02-12
APPROVED DOCUMENT
VERSION 1.0

2

Table of Contents

3	1	Objective	6
4	2	ResourceScheduleConfirmation_MarketDocument.....	7
5	2.1	Resource schedule confirmation contextual model	7
6	2.1.1	Overview of the model	7
7	2.1.2	IsBasedOn relationships from the European style market profile	8
8			
9	2.2	Resource schedule confirmation assembly model	9
10	2.2.1	Overview of the model	9
11	2.2.2	IsBasedOn relationships from the European style market profile	10
12			
13	2.2.3	Detailed Resource schedule confirmation assembly model	10
14	2.2.3.1	ResourceScheduleConfirmation_MarketDocument root class	10
15			
16	2.2.3.2	Original_MarketDocument.....	11
17	2.2.3.3	PlannedResource_TimeSeries	12
18	2.2.3.4	Point	13
19	2.2.3.5	Reason	14
20	2.2.3.6	Series_Period	14
21	2.2.3.7	UnavailableReserve_TimeSeries.....	14
22	2.2.4	Datatypes	16
23	2.2.5	ResourceScheduleConfirmation_MarketDocument XML schema structure	17
24			
25	2.2.6	ResourceScheduleConfirmation_MarketDocument XML schema.....	18
26			
27	List of figures		
28	Figure 1 - Resource schedule confirmation contextual model		7
29	Figure 2 - Resource schedule confirmation assembly model		9
30	Figure 3 - ResourceScheduleConfirmation_MarketDocument schema structure		17
31	List of tables		
32	Table 1 - IsBasedOn dependency		8
33	Table 2 - IsBasedOn dependency		10
34	Table 3 - Attributes of Resource schedule confirmation assembly model::ResourceScheduleConfirmation_MarketDocument		10
35			
36	Table 4 - Association ends of Resource schedule confirmation assembly model::ResourceScheduleConfirmation_MarketDocument with other classes		11
37			
38	Table 5 - Attributes of Resource schedule confirmation assembly model::Original_MarketDocument		11
39			
40	Table 6 - Association ends of Resource schedule confirmation assembly model::Original_MarketDocument with other classes		12
41			
42	Table 7 - Attributes of Resource schedule confirmation assembly model::PlannedResource_TimeSeries.....		12
43			
44	Table 8 - Association ends of Resource schedule confirmation assembly model::PlannedResource_TimeSeries with other classes		13
45			
46	Table 9 - Attributes of Resource schedule confirmation assembly model::Point.....		13
47	Table 10 - Association ends of Resource schedule confirmation assembly model::Point with other classes		13
48			

49	Table 11 - Attributes of Resource schedule confirmation assembly model::Reason	14
50	Table 12 - Attributes of Resource schedule confirmation assembly	
51	model::Series_Period.....	14
52	Table 13 - Association ends of Resource schedule confirmation assembly	
53	model::Series_Period with other classes	14
54	Table 14 - Attributes of Resource schedule confirmation assembly	
55	model::UnavailableReserve_TimeSeries	14
56	Table 15 - Association ends of Resource schedule confirmation assembly	
57	model::UnavailableReserve_TimeSeries with other classes	15
58		

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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.

77

78 **1 Objective**

79 The purpose of this document is to provide the contextual and assembly UML models and the
80 schema of the ResourceScheduleConfirmation_MarketDocument.

81 The schema of the ResourceScheduleConfirmation_MarketDocument could be used in various
82 business processes.

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

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

- 87 • Description of the business process;
- 88 • Use case of the business process;
- 89 • Sequence diagrams of the business process;
- 90 • List of the schema (XSD) to be used in the business process and versions of the
91 schema;
- 92 • For each schema, dependency tables providing the necessary information for the
93 generation of the XML instances, i.e. when the optional attributes are to be used, which
94 codes from which ENTSO-E codelist are to be used.

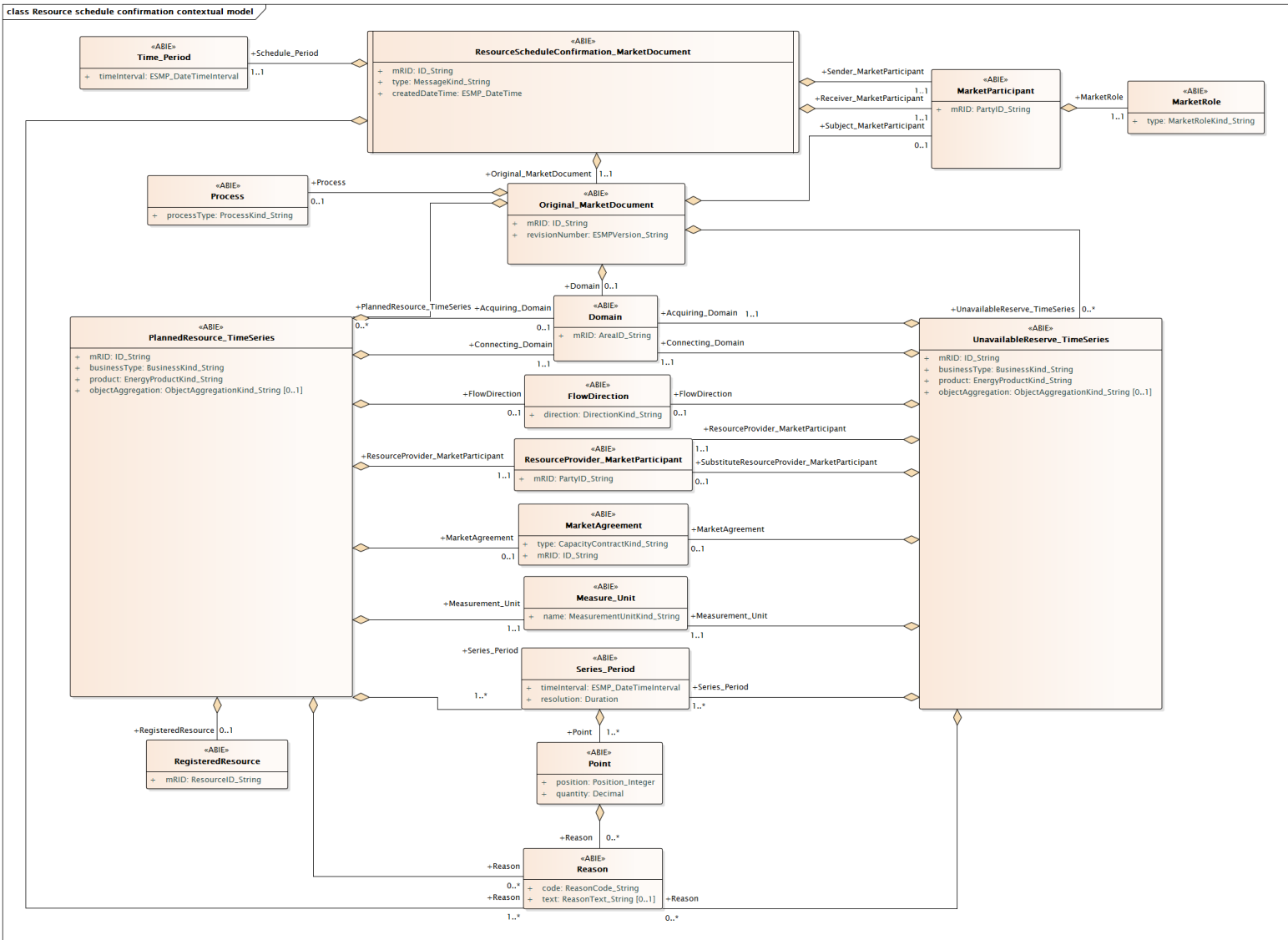
95

96 **2 ResourceScheduleConfirmation_MarketDocument**

97 **2.1 Resource schedule confirmation contextual model**

98 **2.1.1 Overview of the model**

99 Figure 1 shows the model.



100

101

Figure 1 - Resource schedule confirmation contextual model

102

103

104 **2.1.2 IsBasedOn relationships from the European style market profile**

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

107

Table 1 - IsBasedOn dependency

Name	Complete IsBasedOn Path
Domain	TC57CIM::IEC62325::MarketManagement::Domain
FlowDirection	TC57CIM::IEC62325::MarketManagement::FlowDirection
MarketAgreement	TC57CIM::IEC62325::MarketManagement::MarketAgreement
MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
MarketRole	TC57CIM::IEC62325::MarketCommon::MarketRole
Measure_Unit	TC57CIM::IEC62325::MarketManagement::Unit
Original_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
PlannedResource_TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries
Point	TC57CIM::IEC62325::MarketManagement::Point
Process	TC57CIM::IEC62325::MarketManagement::Process
Reason	TC57CIM::IEC62325::MarketManagement::Reason
RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource
ResourceProvider_MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
ResourceScheduleConfirmation_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
Time_Period	TC57CIM::IEC62325::MarketManagement::Period
UnavailableReserve_TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries

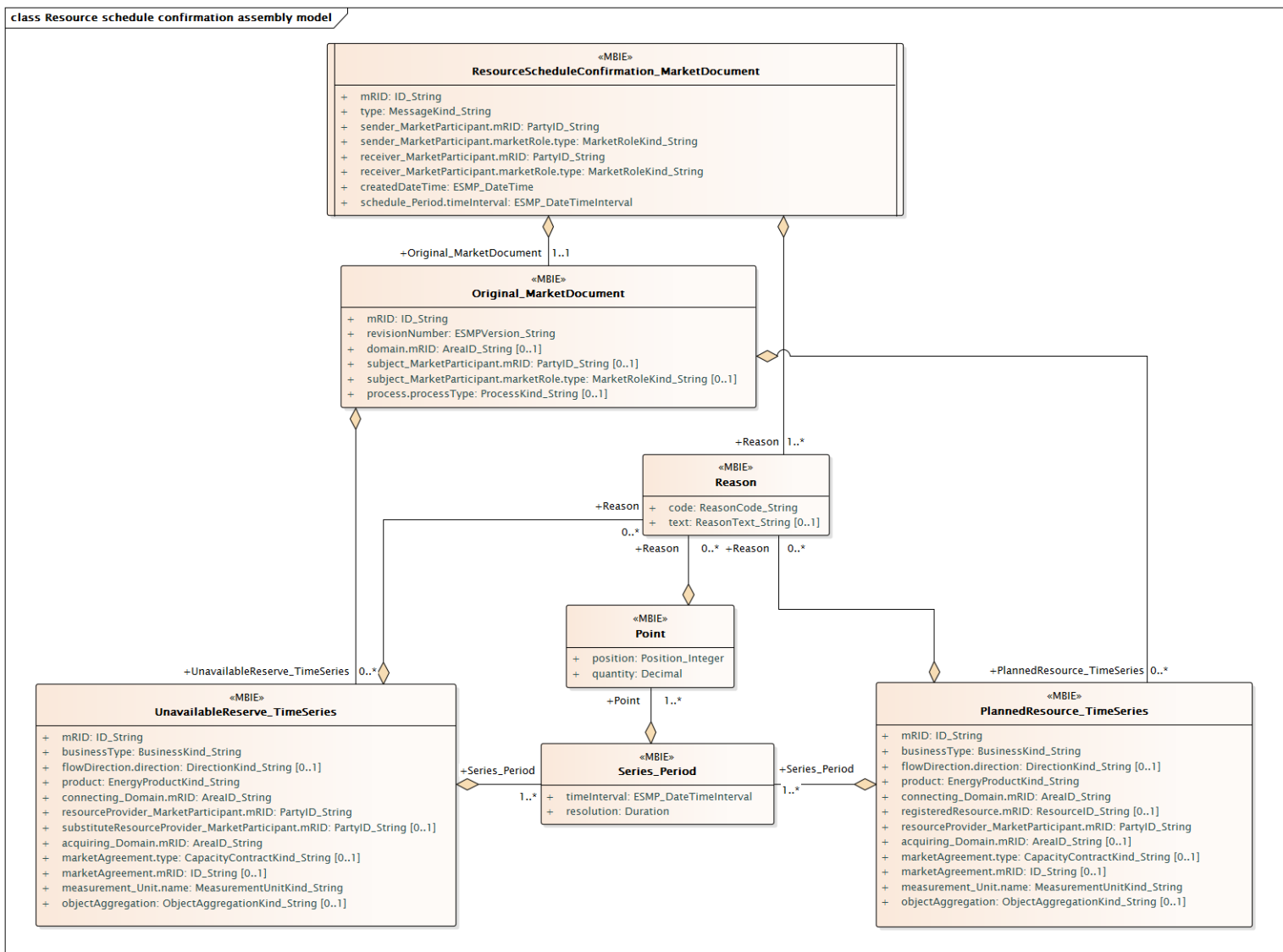
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109

110 2.2 Resource schedule confirmation assembly model

111 2.2.1 Overview of the model

112 Figure 2 shows the model.



113

114 Figure 2 - Resource schedule confirmation assembly model

115

116

117 **2.2.2 IsBasedOn relationships from the European style market profile**

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

120

Table 2 - IsBasedOn dependency

Name	Complete IsBasedOn Path
Original_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
PlannedResource_TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries
Point	TC57CIM::IEC62325::MarketManagement::Point
Reason	TC57CIM::IEC62325::MarketManagement::Reason
ResourceScheduleConfirmation_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
UnavailableReserve_TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries

121

122 **2.2.3 Detailed Resource schedule confirmation assembly model**

123 **2.2.3.1 ResourceScheduleConfirmation_MarketDocument root class**

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

126 Table 3 shows all attributes of ResourceScheduleConfirmation_MarketDocument.

127

**Table 3 - Attributes of Resource schedule confirmation assembly
model::ResourceScheduleConfirmation_MarketDocument**

128

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]	type MessageKind_String	The coded type of a document. The document type describes the principal characteristic of the document.
2	[1..1]	sender_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The document owner.
3	[1..1]	sender_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- The document owner. --- The role associated with a MarketParticipant.
4	[1..1]	receiver_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The document recipient.
5	[1..1]	receiver_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- The document recipient. --- The role associated with a MarketParticipant.
6	[1..1]	createdDateTime ESMP_DateTime	The date and time of the creation of the document.
7	[1..1]	schedule_Period.timeInterval ESMP_DateTimeInterval	The start and end date and time for a given interval.

129

130 Table 4 shows all association ends of ResourceScheduleConfirmation_MarketDocument with
131 other classes.

132
133

**Table 4 - Association ends of Resource schedule confirmation assembly
model::ResourceScheduleConfirmation_MarketDocument with other classes**

Order	mult.	Class name / Role	Description
8	[1..1]	Original_MarketDocument Original_MarketDocument	Association Based On: Resource schedule confirmation contextual model::Original_MarketDocument.Original_MarketDocument[1..1] ----- Resource schedule confirmation contextual model::ResourceScheduleConfirmation_MarketDocument.[]
9	[1..*]	Reason Reason	Association Based On: Resource schedule confirmation contextual model::Reason.Reason[1..*] ----- Resource schedule confirmation contextual model::ResourceScheduleConfirmation_MarketDocument.[]

134

135 2.2.3.2 Original_MarketDocument

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

138 Table 5 shows all attributes of Original_MarketDocument.

139 **Table 5 - Attributes of Resource schedule confirmation assembly**
140 **model::Original_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	[0..1]	domain.mRID AreaID_String	The unique identification of the domain.
3	[0..1]	subject_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The party that is the subject of the documents time series.
4	[0..1]	subject_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- The party that is the subject of the documents time series. --- The role associated with a MarketParticipant.
5	[0..1]	process.processType ProcessKind_String	The identification of the nature of process that the document addresses.

141

142 Table 6 shows all association ends of Original_MarketDocument with other classes.

143
144

**Table 6 - Association ends of Resource schedule confirmation assembly
model::Original_MarketDocument with other classes**

Order	mult.	Class name / Role	Description
6	[0..*]	PlannedResource_TimeSeries PlannedResource_TimeSeries	Association Based On: Resource schedule confirmation contextual model::PlannedResource_TimeSeries.PlannedResource_TimeSeries[0..*] ----- Resource schedule confirmation contextual model::Original_MarketDocument.[]
7	[0..*]	UnavailableReserve_TimeSeries UnavailableReserve_TimeSeries	Association Based On: Resource schedule confirmation contextual model::UnavailableReserve_TimeSeries.UnavailableReserve_TimeSeries[0..*] ----- Resource schedule confirmation contextual model::Original_MarketDocument.[]

145

146 2.2.3.3 PlannedResource_TimeSeries

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

148 Table 7 shows all attributes of PlannedResource_TimeSeries.

**Table 7 - Attributes of Resource schedule confirmation assembly
model::PlannedResource_TimeSeries**

149
150

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	A unique identification of the time series.
1	[1..1]	businessType BusinessKind_String	The identification of the nature of the time series.
2	[0..1]	flowDirection.direction DirectionKind_String	The coded identification of the direction of energy flow. --- The flow direction associated with a TimeSeries.
3	[1..1]	product EnergyProductKind_String	The identification of the nature of an energy product such as power, energy, reactive power, etc.
4	[1..1]	connecting_Domain.mRID AreaID_String	The unique identification of the domain. --- The domain associated with a TimeSeries.
5	[0..1]	registeredResource.mRID ResourceID_String	The unique identification of a resource.
6	[1..1]	resourceProvider_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of a market participant associated with a TimeSeries.
7	[0..1]	acquiring_Domain.mRID AreaID_String	The unique identification of the domain. --- The domain associated with a TimeSeries.
8	[0..1]	marketAgreement.type CapacityContractKind_String	The specification of the kind of the agreement, e.g. long term, daily contract. --- The identification of an agreement associated with a TimeSeries.
9	[0..1]	marketAgreement.mRID ID_String	The unique identification of the agreement. --- The identification of an agreement associated with a TimeSeries.

Order	mult.	Attribute name / Attribute type	Description
10	[1..1]	measurement_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure associated with the quantities in a TimeSeries.
11	[0..1]	objectAggregation ObjectAggregationKind_String	The identification of the domain that is the common denominator used to aggregate a time series.

151

152 Table 8 shows all association ends of PlannedResource_TimeSeries with other classes.

153 **Table 8 - Association ends of Resource schedule confirmation assembly**
154 **model::PlannedResource_TimeSeries with other classes**

Order	mult.	Class name / Role	Description
12	[1..*]	Series_Period Series_Period	The time interval and resolution for a period associated with a TimeSeries. Association Based On: Resource schedule confirmation contextual model::UnavailableReserve_TimeSeries.[] ----- Resource schedule confirmation contextual model::Series_Period.Series_Period[1..*]
13	[0..*]	Reason Reason	Association Based On: Resource schedule confirmation contextual model::Reason.Reason[0..*] ----- Resource schedule confirmation contextual model::UnavailableReserve_TimeSeries.[]

155

156 2.2.3.4 Point

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

158 Table 9 shows all attributes of Point.

159 **Table 9 - Attributes of Resource schedule confirmation assembly model::Point**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	position Position_Integer	A sequential value representing the relative position within a given time interval.
1	[1..1]	quantity Decimal	The principal quantity identified for a point.

160

161 Table 10 shows all association ends of Point with other classes.

162 **Table 10 - Association ends of Resource schedule confirmation assembly model::Point**
163 **with other classes**

Order	mult.	Class name / Role	Description
2	[0..*]	Reason Reason	The Reason information associated with a Point providing motivation information. Association Based On: Resource schedule confirmation contextual model::Point.[] ----- Resource schedule confirmation contextual model::Reason.Reason[0..*]

164

165 **2.2.3.5 Reason**

166 The motivation of an act.

167 Table 11 shows all attributes of Reason.

168 **Table 11 - Attributes of Resource schedule confirmation 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.

169

170 **2.2.3.6 Series_Period**

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

172 Table 12 shows all attributes of Series_Period.

173 **Table 12 - Attributes of Resource schedule confirmation assembly
174 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.

175

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

177 **Table 13 - Association ends of Resource schedule confirmation assembly
178 model::Series_Period with other classes**

Order	mult.	Class name / Role	Description
2	[1..*]	Point Point	The Point information associated with a given Series_Period.within a TimeSeries. Association Based On: Resource schedule confirmation contextual model::Series_Period.[] ----- Resource schedule confirmation contextual model::Point.Point[1..*]

179

180 **2.2.3.7 UnavailableReserve_TimeSeries**

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

182 Table 14 shows all attributes of UnavailableReserve_TimeSeries.

183 **Table 14 - Attributes of Resource schedule confirmation assembly
184 model::UnavailableReserve_TimeSeries**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	A unique identification of the time series.

Order	mult.	Attribute name / Attribute type	Description
1	[1..1]	businessType BusinessKind_String	The identification of the nature of the time series.
2	[0..1]	flowDirection.direction DirectionKind_String	The coded identification of the direction of energy flow. --- The flow direction associated with a TimeSeries.
3	[1..1]	product EnergyProductKind_String	The identification of the nature of an energy product such as power, energy, reactive power, etc.
4	[1..1]	connecting_Domain.mRID AreaID_String	The unique identification of the domain. --- The domain associated with a TimeSeries.
5	[1..1]	resourceProvider_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of a market participant associated with a TimeSeries.
6	[0..1]	substituteResourceProvider_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of a market participant associated with a TimeSeries.
7	[1..1]	acquiring_Domain.mRID AreaID_String	The unique identification of the domain. --- The domain associated with a TimeSeries.
8	[0..1]	marketAgreement.type CapacityContractKind_String	The specification of the kind of the agreement, e.g. long term, daily contract. --- The identification of an agreement associated with a TimeSeries.
9	[0..1]	marketAgreement.mRID ID_String	The unique identification of the agreement. --- The identification of an agreement associated with a TimeSeries.
10	[1..1]	measurement_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure associated with the quantities in a TimeSeries.
11	[0..1]	objectAggregation ObjectAggregationKind_String	The identification of the domain that is the common denominator used to aggregate a time series.

185

186 Table 15 shows all association ends of UnavailableReserve_TimeSeries with other classes.

187 **Table 15 - Association ends of Resource schedule confirmation assembly**
188 **model::UnavailableReserve_TimeSeries with other classes**

Order	mult.	Class name / Role	Description
12	[1..*]	Series_Period Series_Period	The time interval and resolution for a period associated with a TimeSeries. Association Based On: Resource schedule confirmation contextual model::UnavailableReserve_TimeSeries.[] ----- Resource schedule confirmation contextual model::Series_Period.Series_Period[1..*]
13	[0..*]	Reason Reason	Association Based On: Resource schedule confirmation contextual model::Reason.Reason[0..*] ----- Resource schedule confirmation contextual model::UnavailableReserve_TimeSeries.[]

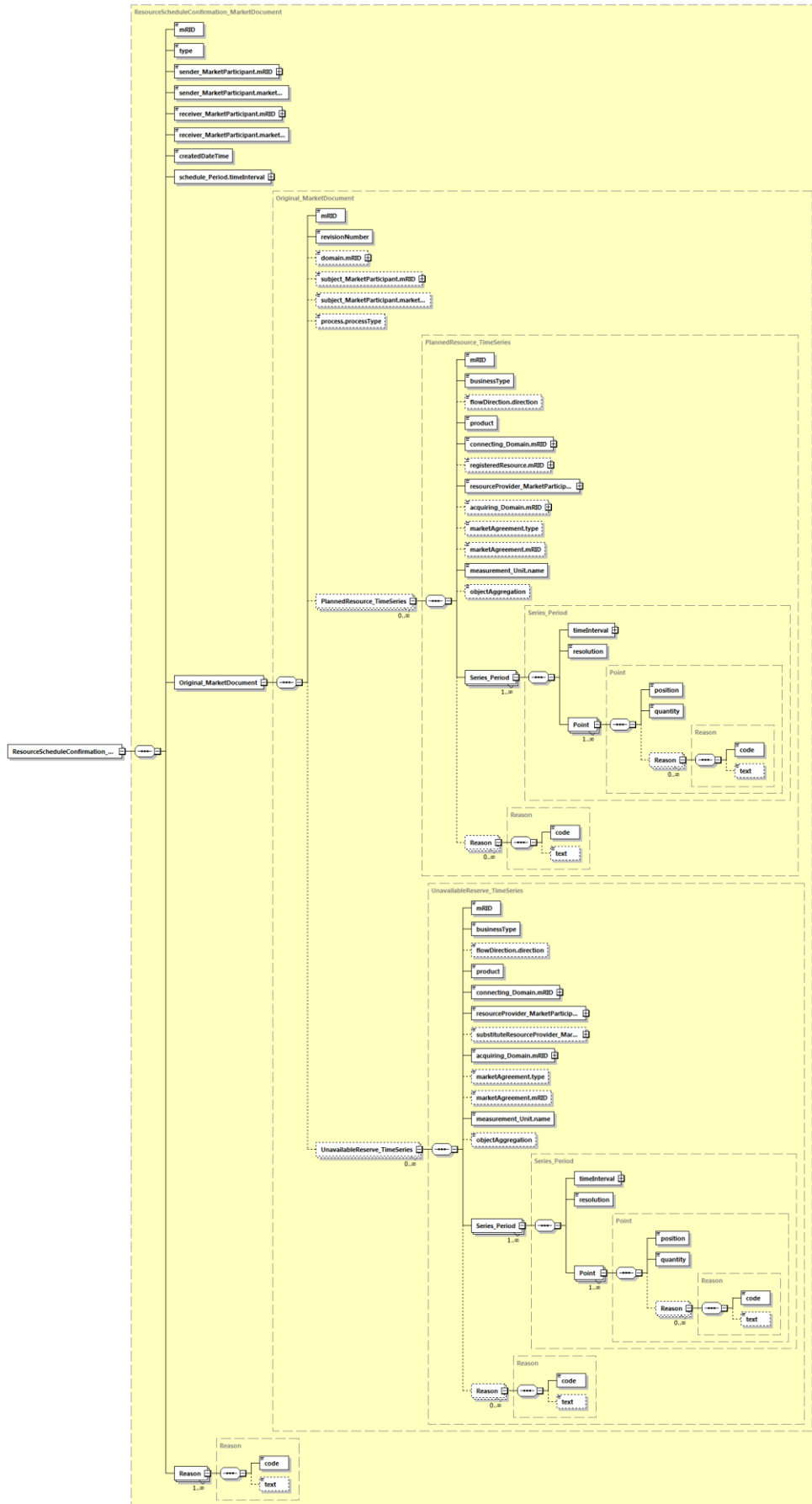
189

190 **2.2.4 Datatypes**

191 The list of datatypes used for the Resource schedule confirmation assembly model is as follows:

- 192 • ESMP_DateTimeInterval compound
- 193 • ArealID_String datatype, codelist CodingSchemeTypeList
- 194 • BusinessKind_String datatype, codelist BusinessTypeList
- 195 • CapacityContractKind_String datatype, codelist ContractTypeList
- 196 • DirectionKind_String datatype, codelist DirectionTypeList
- 197 • EnergyProductKind_String datatype, codelist EnergyProductTypeList
- 198 • ESMP_DateTime datatype
- 199 • ESMPVersion_String datatype
- 200 • ID_String datatype
- 201 • MarketRoleKind_String datatype, codelist RoleTypeList
- 202 • MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
- 203 • MessageKind_String datatype, codelist MessageTypeList
- 204 • ObjectAggregationKind_String datatype, codelist ObjectAggregationTypeList
- 205 • PartyID_String datatype, codelist CodingSchemeTypeList
- 206 • Position_Integer datatype
- 207 • ProcessKind_String datatype, codelist ProcessTypeList
- 208 • ReasonCode_String datatype, codelist ReasonCodeTypeList
- 209 • ReasonText_String datatype
- 210 • ResourceID_String datatype, codelist CodingSchemeTypeList
- 211 • YMDHM_DateTime datatype
- 212

213 2.2.5 ResourceScheduleConfirmation_MarketDocument XML schema structure



214
 215

Figure 3 - ResourceScheduleConfirmation_MarketDocument schema structure
 – Page 17 of 22 –

216 **2.2.6 ResourceScheduleConfirmation_MarketDocument XML schema**

217

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

219 urn:iec62325.351:tc57wg16:451-7:resourcescheduleconfirmationdocument:6:0

```

220 <?xml version="1.0" encoding="utf-8"?>
221 <xs:schema xmlns:cl="urn:entsoe.eu:wgedi:codelists" xmlns:sawsdl="http://www.w3.org/ns/sawsdl"
222 xmlns="urn:iec62325.351:tc57wg16:451-7:resourcescheduleconfirmationdocument:6:0"
223 xmlns:cimp="http://www.iec.ch/cimprofile" xmlns:xs="http://www.w3.org/2001/XMLSchema"
224 targetNamespace="urn:iec62325.351:tc57wg16:451-7:resourcescheduleconfirmationdocument:6:0"
225 elementFormDefault="qualified" attributeFormDefault="unqualified">
226   <xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-entsoe-eu-wgedi-
227 codelists.xsd"/>
228   <xs:element name="ResourceScheduleConfirmation_MarketDocument"
229 type="ResourceScheduleConfirmation_MarketDocument"/>
230   <xs:simpleType name="ID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
231 cim16#String">
232     <xs:restriction base="xs:string">
233       <xs:maxLength value="35"/>
234     </xs:restriction>
235   </xs:simpleType>
236   <xs:simpleType name="ESMPVersion_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
237 schema-cim16#String">
238     <xs:restriction base="xs:string">
239       <xs:pattern value="[1-9]([0-9]){0,2}"/>
240     </xs:restriction>
241   </xs:simpleType>
242   <xs:simpleType name="AreaID_String-base" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
243 schema-cim16#String">
244     <xs:restriction base="xs:string">
245       <xs:maxLength value="18"/>
246     </xs:restriction>
247   </xs:simpleType>
248   <xs:complexType name="AreaID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
249 cim16#String">
250     <xs:simpleContent>
251       <xs:extension base="AreaID_String-base">
252         <xs:attribute name="codingScheme" type="cl:CodingSchemeTypeList"
253 use="required"/>
254       </xs:extension>
255     </xs:simpleContent>
256   </xs:complexType>
257   <xs:simpleType name="PartyID_String-base" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
258 schema-cim16#String">
259     <xs:restriction base="xs:string">
260       <xs:maxLength value="16"/>
261     </xs:restriction>
262   </xs:simpleType>
263   <xs:complexType name="PartyID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
264 schema-cim16#String">
265     <xs:simpleContent>
266       <xs:extension base="PartyID_String-base">
267         <xs:attribute name="codingScheme" type="cl:CodingSchemeTypeList"
268 use="required"/>
269       </xs:extension>
270     </xs:simpleContent>
271   </xs:complexType>
272   <xs:simpleType name="MarketRoleKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
273 schema-cim16#String">
274     <xs:restriction base="cl:RoleTypeList"/>
275   </xs:simpleType>
276   <xs:simpleType name="ProcessKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
277 schema-cim16#String">
278     <xs:restriction base="cl:ProcessTypeList"/>
279   </xs:simpleType>
280   <xs:complexType name="Original_MarketDocument"
281 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
282     <xs:sequence>
283       <xs:element name="mRID" type="ID_String" minOccurs="1" maxOccurs="1"
284 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>

```

```

285         <xs:element name="revisionNumber" type="ESMPVersion_String" minOccurs="1"
286 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
287 cim16#Document.revisionNumber"/>
288         <xs:element name="domain.mRID" type="AreaID_String" minOccurs="0"
289 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
290         <xs:element name="subject_MarketParticipant.mRID" type="PartyID_String"
291 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
292 cim16#IdentifiedObject.mRID"/>
293         <xs:element name="subject_MarketParticipant.marketRole.type"
294 type="MarketRoleKind_String" minOccurs="0" maxOccurs="1"
295 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
296         <xs:element name="process.processType" type="ProcessKind_String" minOccurs="0"
297 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Process.processType"/>
298         <xs:element name="PlannedResource_TimeSeries"
299 type="PlannedResource_TimeSeries" minOccurs="0" maxOccurs="unbounded"
300 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
301 cim16#MarketDocument.PlannedResource_TimeSeries"/>
302         <xs:element name="UnavailableReserve_TimeSeries"
303 type="UnavailableReserve_TimeSeries" minOccurs="0" maxOccurs="unbounded"
304 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
305 cim16#MarketDocument.UnavailableReserve_TimeSeries"/>
306     </xs:sequence>
307 </xs:complexType>
308     <xs:simpleType name="BusinessKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
309 schema-cim16#String">
310         <xs:restriction base="cl:BusinessTypeList"/>
311     </xs:simpleType>
312     <xs:simpleType name="DirectionKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
313 schema-cim16#String">
314         <xs:restriction base="cl:DirectionTypeList"/>
315     </xs:simpleType>
316     <xs:simpleType name="EnergyProductKind_String"
317 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
318         <xs:restriction base="cl:EnergyProductTypeList"/>
319     </xs:simpleType>
320     <xs:simpleType name="ResourceID_String-base"
321 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
322         <xs:restriction base="xs:string">
323             <xs:maxLength value="18"/>
324         </xs:restriction>
325     </xs:simpleType>
326     <xs:complexType name="ResourceID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
327 schema-cim16#String">
328         <xs:simpleContent>
329             <xs:extension base="ResourceID_String-base">
330                 <xs:attribute name="codingScheme" type="cl:CodingSchemeTypeList"
331 use="required"/>
332             </xs:extension>
333         </xs:simpleContent>
334     </xs:complexType>
335     <xs:simpleType name="CapacityContractKind_String"
336 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
337         <xs:restriction base="cl:ContractTypeList"/>
338     </xs:simpleType>
339     <xs:simpleType name="MeasurementUnitKind_String"
340 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
341         <xs:restriction base="cl:UnitOfMeasureTypeList"/>
342     </xs:simpleType>
343     <xs:simpleType name="ObjectAggregationKind_String"
344 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
345         <xs:restriction base="cl:ObjectAggregationTypeList"/>
346     </xs:simpleType>
347     <xs:complexType name="PlannedResource_TimeSeries"
348 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries">
349         <xs:sequence>
350             <xs:element name="mRID" type="ID_String" minOccurs="1" maxOccurs="1"
351 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
352             <xs:element name="businessType" type="BusinessKind_String" minOccurs="1"
353 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
354 cim16#TimeSeries.businessType"/>
355             <xs:element name="flowDirection.direction" type="DirectionKind_String"
356 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
357 cim16#FlowDirection.direction"/>
358             <xs:element name="product" type="EnergyProductKind_String" minOccurs="1"
359 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.product"/>

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360         <xs:element name="connecting_Domain.mRID" type="AreaID_String" minOccurs="1"
361 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
362         <xs:element name="registeredResource.mRID" type="ResourceID_String"
363 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
364 cim16#IdentifiedObject.mRID"/>
365         <xs:element name="resourceProvider_MarketParticipant.mRID"
366 type="PartyID_String" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
367 schema-cim16#IdentifiedObject.mRID"/>
368         <xs:element name="acquiring_Domain.mRID" type="AreaID_String" minOccurs="0"
369 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
370         <xs:element name="marketAgreement.type" type="CapacityContractKind_String"
371 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
372 cim16#Document.type"/>
373         <xs:element name="marketAgreement.mRID" type="ID_String" minOccurs="0"
374 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
375         <xs:element name="measurement_Unit.name" type="MeasurementUnitKind_String"
376 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
377 cim16#Unit.name"/>
378         <xs:element name="objectAggregation" type="ObjectAggregationKind_String"
379 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
380 cim16#TimeSeries.objectAggregation"/>
381         <xs:element name="Series_Period" type="Series_Period" minOccurs="1"
382 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
383 cim16#TimeSeries.Series_Period"/>
384         <xs:element name="Reason" type="Reason" minOccurs="0" maxOccurs="unbounded"
385 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.Reason"/>
386     </xs:sequence>
387 </xs:complexType>
388 <xs:simpleType name="Position_Integer" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
389 schema-cim16#Integer">
390     <xs:restriction base="xs:integer">
391         <xs:maxInclusive value="999999"/>
392         <xs:minInclusive value="1"/>
393     </xs:restriction>
394 </xs:simpleType>
395 <xs:complexType name="Point" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
396 cim16#Point">
397     <xs:sequence>
398         <xs:element name="position" type="Position_Integer" minOccurs="1"
399 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.position"/>
400         <xs:element name="quantity" type="xs:decimal" minOccurs="1" maxOccurs="1"
401 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.quantity"/>
402         <xs:element name="Reason" type="Reason" minOccurs="0" maxOccurs="unbounded"
403 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.Reason"/>
404     </xs:sequence>
405 </xs:complexType>
406 <xs:simpleType name="ReasonCode_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
407 schema-cim16#String">
408     <xs:restriction base="cl:ReasonCodeTypeList"/>
409 </xs:simpleType>
410 <xs:simpleType name="ReasonText_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
411 schema-cim16#String">
412     <xs:restriction base="xs:string">
413         <xs:maxLength value="512"/>
414     </xs:restriction>
415 </xs:simpleType>
416 <xs:complexType name="Reason" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
417 cim16#Reason">
418     <xs:sequence>
419         <xs:element name="code" type="ReasonCode_String" minOccurs="1" maxOccurs="1"
420 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason.code"/>
421         <xs:element name="text" type="ReasonText_String" minOccurs="0" maxOccurs="1"
422 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason.text"/>
423     </xs:sequence>
424 </xs:complexType>
425 <xs:simpleType name="MessageKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
426 schema-cim16#String">
427     <xs:restriction base="cl:MessageTypeList"/>
428 </xs:simpleType>
429 <xs:simpleType name="ESMP_DateTime" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
430 cim16#DateTime">
431     <xs:restriction base="xs:dateTime">
432         <xs:pattern value="(((([0-9]{4})[-\ ](0[13578]|1[02]))[-\ ](0[1-9]|12)[0-
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441 </xs:restriction>
442 </xs:simpleType>
443 <xs:simpleType name="YMDHM_DateTime" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
444 cim16#DateTime">
445 <xs:restriction base="xs:string">
446 <xs:pattern value="(((0-9){4})[\-](0[13578]|1[02]))[\-](0[1-9]|12)[0-
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453 9][13579)[01345789])[\-](02)[\-](0[1-9]|1[0-9]|2[0-8])T((01)[0-9]|2[0-3]):[0-5][0-9])Z"/>
454 </xs:restriction>
455 </xs:simpleType>
456 <xs:complexType name="ESMP_DateTimeInterval"
457 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
458 <xs:sequence>
459 <xs:element name="start" type="YMDHM_DateTime" minOccurs="1" maxOccurs="1"
460 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval.start"/>
461 <xs:element name="end" type="YMDHM_DateTime" minOccurs="1" maxOccurs="1"
462 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval.end"/>
463 </xs:sequence>
464 </xs:complexType>
465 <xs:complexType name="ResourceScheduleConfirmation_MarketDocument"
466 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
467 <xs:sequence>
468 <xs:element name="mRID" type="ID_String" minOccurs="1" maxOccurs="1"
469 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
470 <xs:element name="type" type="MessageKind_String" minOccurs="1" maxOccurs="1"
471 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.type"/>
472 <xs:element name="sender_MarketParticipant.mRID" type="PartyID_String"
473 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
474 cim16#IdentifiedObject.mRID"/>
475 <xs:element name="sender_MarketParticipant.marketRole.type"
476 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
477 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
478 <xs:element name="receiver_MarketParticipant.mRID" type="PartyID_String"
479 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
480 cim16#IdentifiedObject.mRID"/>
481 <xs:element name="receiver_MarketParticipant.marketRole.type"
482 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
483 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
484 <xs:element name="createdDateTime" type="ESMP_DateTime" minOccurs="1"
485 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
486 cim16#Document.createdDateTime"/>
487 <xs:element name="schedule_Period.timeInterval" type="ESMP_DateTimeInterval"
488 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
489 cim16#Period.timeInterval"/>
490 <xs:element name="Original_MarketDocument" type="Original_MarketDocument"
491 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
492 cim16#MarketDocument.Original_MarketDocument"/>
493 <xs:element name="Reason" type="Reason" minOccurs="1" maxOccurs="unbounded"
494 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument.Reason"/>
495 </xs:sequence>
496 </xs:complexType>
497 <xs:complexType name="Series_Period" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
498 cim16#Period">
499 <xs:sequence>
500 <xs:element name="timeInterval" type="ESMP_DateTimeInterval" minOccurs="1"
501 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.timeInterval"/>
502 <xs:element name="resolution" type="xs:duration" minOccurs="1" maxOccurs="1"
503 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.resolution"/>
504 <xs:element name="Point" type="Point" minOccurs="1" maxOccurs="unbounded"
505 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.Point"/>
506 </xs:sequence>
507 </xs:complexType>
508 <xs:complexType name="UnavailableReserve_TimeSeries"
509 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries">
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510         <xs:sequence>
511             <xs:element name="mRID" type="ID_String" minOccurs="1" maxOccurs="1"
512 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
513             <xs:element name="businessType" type="BusinessKind_String" minOccurs="1"
514 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
515 cim16#TimeSeries.businessType"/>
516             <xs:element name="flowDirection.direction" type="DirectionKind_String"
517 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
518 cim16#FlowDirection.direction"/>
519             <xs:element name="product" type="EnergyProductKind_String" minOccurs="1"
520 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.product"/>
521             <xs:element name="connecting_Domain.mRID" type="AreaID_String" minOccurs="1"
522 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
523             <xs:element name="resourceProvider_MarketParticipant.mRID"
524 type="PartyID_String" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
525 schema-cim16#IdentifiedObject.mRID"/>
526             <xs:element name="substituteResourceProvider_MarketParticipant.mRID"
527 type="PartyID_String" minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
528 schema-cim16#IdentifiedObject.mRID"/>
529             <xs:element name="acquiring_Domain.mRID" type="AreaID_String" minOccurs="1"
530 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
531             <xs:element name="marketAgreement.type" type="CapacityContractKind_String"
532 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
533 cim16#Document.type"/>
534             <xs:element name="marketAgreement.mRID" type="ID_String" minOccurs="0"
535 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
536             <xs:element name="measurement_Unit.name" type="MeasurementUnitKind_String"
537 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
538 cim16#Unit.name"/>
539             <xs:element name="objectAggregation" type="ObjectAggregationKind_String"
540 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
541 cim16#TimeSeries.objectAggregation"/>
542             <xs:element name="Series_Period" type="Series_Period" minOccurs="1"
543 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
544 cim16#TimeSeries.Series_Period"/>
545             <xs:element name="Reason" type="Reason" minOccurs="0" maxOccurs="unbounded"
546 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.Reason"/>
547         </xs:sequence>
548     </xs:complexType>
549 </xs:schema>
```