



European Network of
Transmission System Operators
for Electricity

**RESOURCE CAPACITY MARKET
UNIT (RCMU) DOCUMENT
UML MODEL AND SCHEMA**

2020-12-15
APPROVED DOCUMENT
VERSION 1.0

2

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Revision History

Version	Release	Date	Comments
0	1	2020-11-09	First draft of the document.
0	2	2020-11-26	Comments from CIM EG were considered.
1	0	2020-12-15	Approved by MC.

78

79 1 Objective

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

82 The schema of the ResourceCapacityMarketUnit_MarketDocument could be used in various
83 business processes.

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

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

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

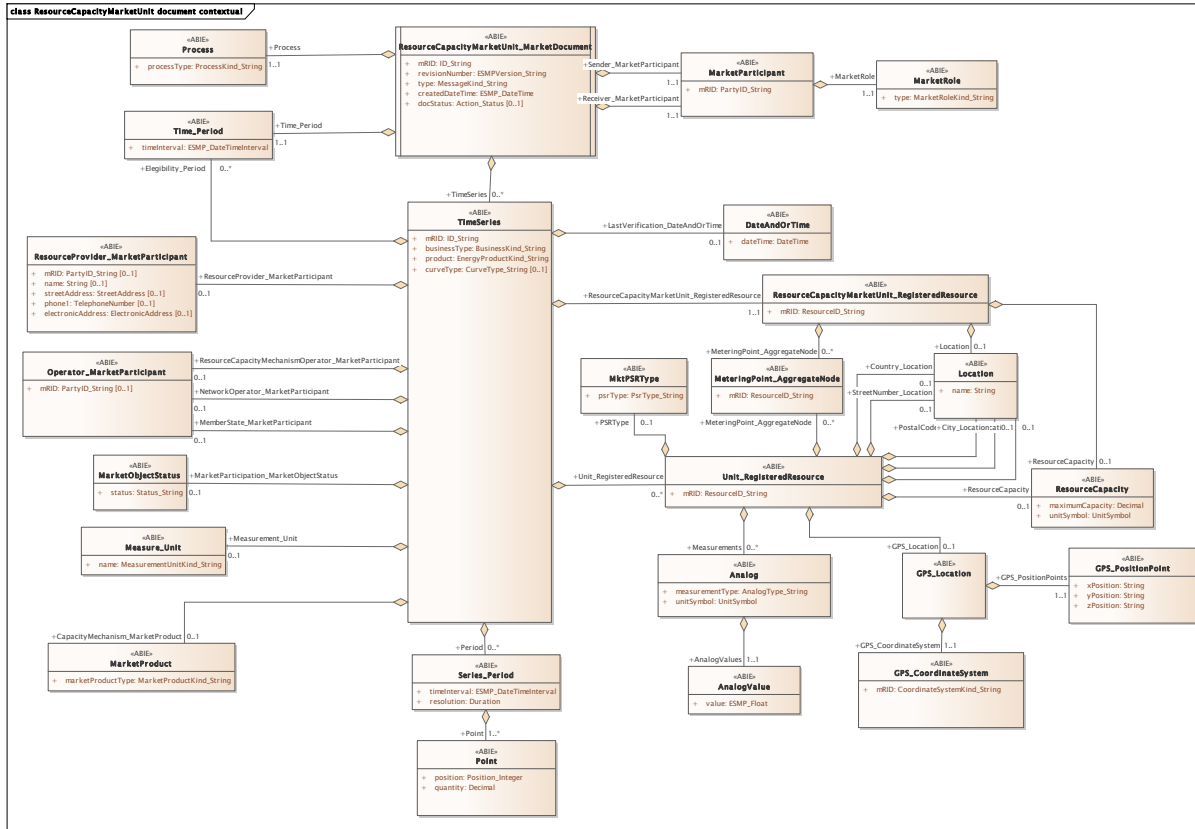
96

97 **2 ResourceCapacityMarketUnit_MarketDocument**

98 **2.1 ResourceCapacityMarketUnit document contextual**

99 **2.1.1 Overview of the model**

100 Figure 1 shows the model.



101

102

Figure 1 - ResourceCapacityMarketUnit document contextual

103

104

105 **2.1.2 IsBasedOn relationships from the European style market profile**

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

108

Table 1 - IsBasedOn dependency

Name	Complete IsBasedOn Path
Analog	TC57CIM::IEC61970::Base::Meas::Analog
AnalogValue	TC57CIM::IEC61970::Base::Meas::AnalogValue
DateAndOrTime	TC57CIM::IEC62325::MarketManagement::DateAndOrTime
GPS_CoordinateSystem	TC57CIM::IEC61968::Common::CoordinateSystem
GPS_Location	TC57CIM::IEC61968::Common::Location
GPS_PositionPoint	TC57CIM::IEC61968::Common::PositionPoint
Location	TC57CIM::IEC61968::Common::Location
MarketObjectStatus	TC57CIM::IEC62325::MarketManagement::MarketObjectStatus
MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
MarketProduct	TC57CIM::IEC62325::MarketCommon::MarketProduct
MarketRole	TC57CIM::IEC62325::MarketCommon::MarketRole
Measure_Unit	TC57CIM::IEC62325::MarketManagement::Unit
MeteringPoint_AggregateNode	TC57CIM::IEC62325::MarketOperations::ReferenceData::AggregateNode
MktPSRType	TC57CIM::IEC62325::MarketManagement::MktPSRType
Operator_MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
Point	TC57CIM::IEC62325::MarketManagement::Point
Process	TC57CIM::IEC62325::MarketManagement::Process
ResourceCapacity	TC57CIM::IEC62325::MarketCommon::ResourceCapacity
ResourceCapacityMarketUnit_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
ResourceCapacityMarketUnit_RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource
ResourceProvider_MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
Time_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries
Unit_RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource

109

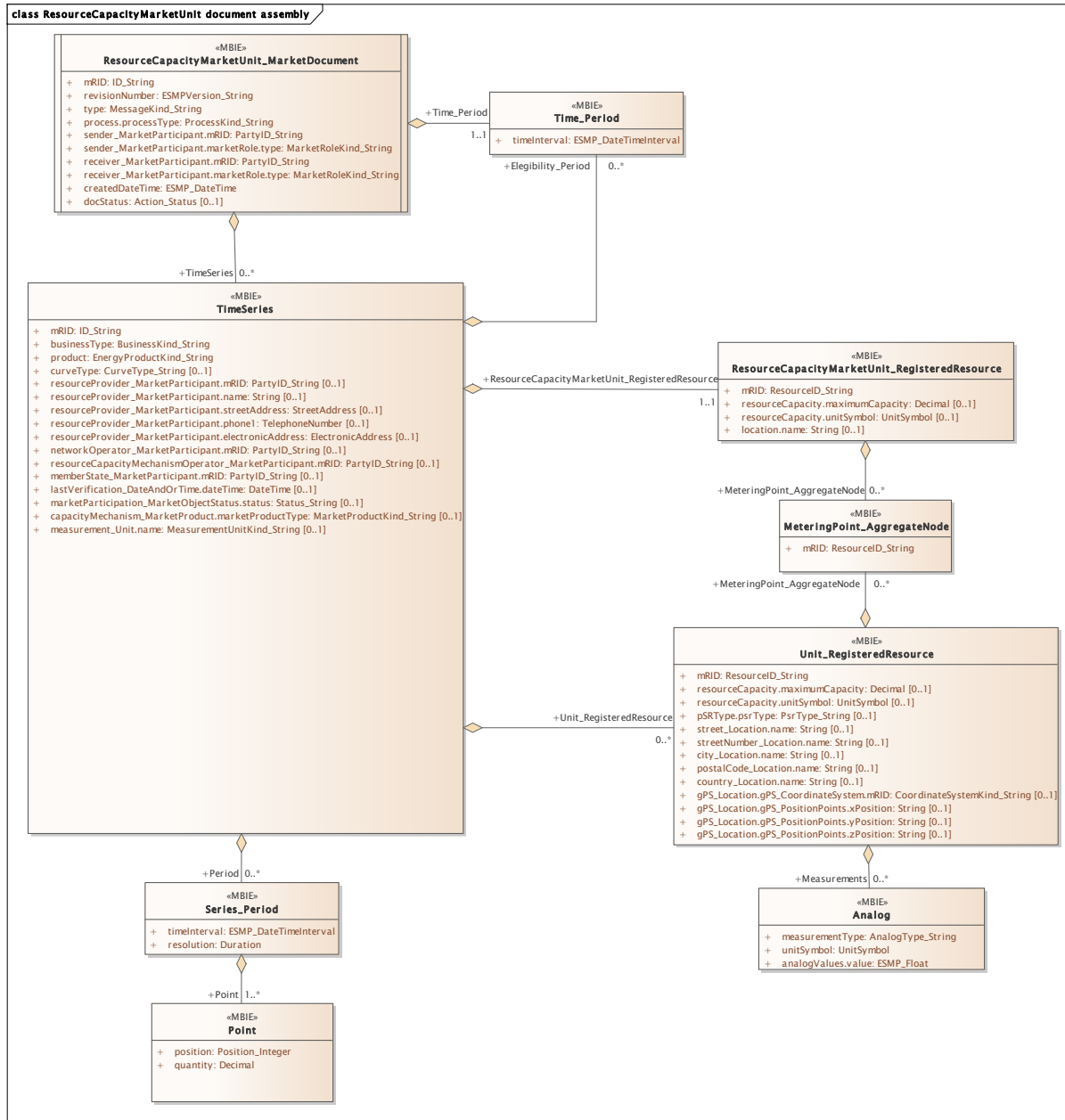
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111

112 **2.2 ResourceCapacityMarketUnit document assembly**

113 **2.2.1 Overview of the model**

114 Figure 2 shows the model.



115

116

Figure 2 - ResourceCapacityMarketUnit document assembly

117

118

119 **2.2.2 IsBasedOn relationships from the European style market profile**

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

122

Table 2 - IsBasedOn dependency

Name	Complete IsBasedOn Path
Analog	TC57CIM::IEC61970::Base::Meas::Analog
MeteringPoint_AggregateNode	TC57CIM::IEC62325::MarketOperations::ReferenceData::AggregateNode
Point	TC57CIM::IEC62325::MarketManagement::Point
ResourceCapacityMarketUnit_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
ResourceCapacityMarketUnit_RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
Time_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries
Unit_RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource

123

124 **2.2.3 Detailed ResourceCapacityMarketUnit document assembly**

125 **2.2.3.1 ResourceCapacityMarketUnit_MarketDocument root class**

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

128 Table 3 shows all attributes of ResourceCapacityMarketUnit_MarketDocument.

129 **Table 3 - Attributes of ResourceCapacityMarketUnit document**
130 **assembly::ResourceCapacityMarketUnit_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	[1..1]	process.processType ProcessKind_String	The identification of the nature of process that the document addresses. --- The Process associated with an electronic document header that is valid for the whole document.
4	[1..1]	sender_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. -- Document owner --- The MarketParticipant associated with an electronic document header.
5	[1..1]	sender_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- The MarketParticipant associated with an electronic document header. --- The role associated with a MarketParticipant.

Order	mult.	Attribute name / Attribute type	Description
6	[1..1]	receiver_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --Document recipient --- The MarketParticipant associated with an electronic document header.
7	[1..1]	receiver_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- The MarketParticipant associated with an electronic document header. --- The role associated with a MarketParticipant.
8	[1..1]	createdDateTime ESMP_DateTime	The date and time of the creation of the document.
10	[0..1]	docStatus Action_Status	The identification of the condition or position of the document with regard to its standing.

131

132 Table 4 shows all association ends of ResourceCapacityMarketUnit_MarketDocument with
133 other classes.

134 **Table 4 - Association ends of ResourceCapacityMarketUnit document**
135 **assembly::ResourceCapacityMarketUnit_MarketDocument with other classes**

Order	mult.	Class name / Role	Description
9	[1..1]	Time_Period Time_Period	The time interval that is associated with an electronic document and which is valid for the whole document. Association Based On: ResourceCapacityMarketUnit document contextual::Time_Period.Time_Period[1..1] ----- ResourceCapacityMarketUnit document contextual::ResourceCapacityMarketUnit_MarketDocument.[]
11	[0..*]	TimeSeries TimeSeries	The time series that is associated with an electronic document. Association Based On: ResourceCapacityMarketUnit document contextual::TimeSeries.TimeSeries[0..*] ----- ResourceCapacityMarketUnit document contextual::ResourceCapacityMarketUnit_MarketDocument.[]

136

137 2.2.3.2 Analog

138 Analog represents an analog Measurement.

139 Table 5 shows all attributes of Analog.

140 **Table 5 - Attributes of ResourceCapacityMarketUnit document assembly::Analog**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	measurementType AnalogType_String	Specifies the type of measurement. For example, this specifies if the measurement represents an indoor temperature, outdoor temperature, bus voltage, line flow, etc.
1	[1..1]	unitSymbol UnitSymbol	The unit of measure of the measured quantity.
2	[1..1]	analogValues.value ESMP_Float	The value to supervise. --- Measurement to which this value is connected.

141

142 **2.2.3.3 MeteringPoint_AggregateNode**

143 An aggregated node can define a typed grouping further defined by the AnodeType
144 enumeration. Types range from System Zone/Regions to Market Energy Regions to Aggregated
145 Loads and Aggregated Generators.

146 Table 6 shows all attributes of MeteringPoint_AggregateNode.

147 **Table 6 - Attributes of ResourceCapacityMarketUnit document**
148 **assembly::MeteringPoint_AggregateNode**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ResourceID_String	The unique identification of an AggregateNode. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is unique within an exchange context. Global uniqueness is easily achieved by using a UUID, as specified in RFC 4122, for the mRID. The use of UUID is strongly recommended. For CIMXML data files in RDF syntax conforming to IEC 61970-552 Edition 1, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.

149

150 **2.2.3.4 Point**

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

152 Table 7 shows all attributes of Point.

153 **Table 7 - Attributes of ResourceCapacityMarketUnit document assembly::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.

154

155 **2.2.3.5 ResourceCapacityMarketUnit_RegisteredResource**

156 A resource that is registered through the market participant registration system. Examples
157 include generating unit, load, and non-physical generator or load.

158 Table 8 shows all attributes of ResourceCapacityMarketUnit_RegisteredResource.

159 **Table 8 - Attributes of ResourceCapacityMarketUnit document**
160 **assembly::ResourceCapacityMarketUnit_RegisteredResource**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ResourceID_String	The unique identification of a resource capacity market unit.
1	[0..1]	resourceCapacity.maximumCapacity Decimal	The maximum capacity.
2	[0..1]	resourceCapacity.unitSymbol UnitSymbol	Unit selection for the capacity values.

Order	mult.	Attribute name / Attribute type	Description
3	[0..1]	location.name String	The name is any free human readable and possibly non unique text naming the object. --- Location of this power system resource.

161

162 Table 9 shows all association ends of ResourceCapacityMarketUnit_RegisteredResource with
163 other classes.

164 **Table 9 - Association ends of ResourceCapacityMarketUnit document**
165 **assembly::ResourceCapacityMarketUnit_RegisteredResource with other classes**

Order	mult.	Class name / Role	Description
4	[0..*]	MeteringPoint_AggregateNode MeteringPoint_AggregateNode	The identification of the aggregate node that is linked to the registered resource. Association Based On: ResourceCapacityMarketUnit document contextual::MeteringPoint_AggregateNode.MeteringPoint_AggregateNode [0..*] ----- ResourceCapacityMarketUnit document contextual::ResourceCapacityMarketUnit_RegisteredResource.[]

166

167 **2.2.3.6 Series_Period**

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

169 Table 10 shows all attributes of Series_Period.

170 **Table 10 - Attributes of ResourceCapacityMarketUnit document**
171 **assembly::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.

172

173 Table 11 shows all association ends of Series_Period with other classes.

174 **Table 11 - Association ends of ResourceCapacityMarketUnit document**
175 **assembly::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: ResourceCapacityMarketUnit document contextual::Point.Point[1..*] ----- ResourceCapacityMarketUnit document contextual::Series_Period.[]

176

177 **2.2.3.7 Time_Period**

178 The identification of a time interval or a duration.

179 Table 12 shows all attributes of Time_Period.

180 **Table 12 - Attributes of ResourceCapacityMarketUnit document assembly::Time_Period**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	timeInterval ESMP_DateTimeInterval	The start and end date and time for a given interval.

181

182 **2.2.3.8 TimeSeries**

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

184 In the ESMP profile, the TimeSeries provides not only time-ordered quantities but also time-
185 ordered information.

186 Table 13 shows all attributes of TimeSeries.

187 **Table 13 - Attributes of ResourceCapacityMarketUnit document assembly::TimeSeries**

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	[1..1]	product EnergyProductKind_String	The identification of the nature of an energy product such as power, energy, reactive power, etc.
4	[0..1]	curveType CurveType_String	The identification of the coded representation of the type of curve being described.
5	[0..1]	resourceProvider_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements. --- The identification of a market participant associated with a TimeSeries.
6	[0..1]	resourceProvider_MarketParticipant.name String	The name is any free human readable and possibly non unique text naming the object. --- The identification of a market participant associated with a TimeSeries.
7	[0..1]	resourceProvider_MarketParticipant.streetAddress StreetAddress	Street address. --- The identification of a market participant associated with a TimeSeries.

Order	mult.	Attribute name / Attribute type	Description
8	[0..1]	resourceProvider_MarketParticipant.phone1 TelephoneNumber	Phone number. --- The identification of a market participant associated with a TimeSeries.
9	[0..1]	resourceProvider_MarketParticipant.electronicAddress ElectronicAddress	Electronic address. --- The identification of a market participant associated with a TimeSeries.
10	[0..1]	networkOperator_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements. --- The identification of a market participant associated with a TimeSeries.
11	[0..1]	resourceCapacityMechanismOperator_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements. --- The identification of a market participant associated with a TimeSeries.

Order	mult.	Attribute name / Attribute type	Description
12	[0..1]	memberState_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements. --- The identification of a market participant associated with a TimeSeries.
13	[0..1]	lastVerification_DateAndOrTime.dateTime DateTime	Date and time as per ISO 8601 YYYY-MM-DDThh:mm:ss.sssZ. --- A date and/or time associated with a TimeSeries.
14	[0..1]	marketParticipation_MarketObjectStatus.status Status_String	The coded condition or position of an object with regard to its standing. --- The status of an object associated with a TimeSeries.
15	[0..1]	capacityMechanism_MarketProduct.marketProductType MarketProductKind_String	The Type of product on a market view
16	[0..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.

188

189 Table 14 shows all association ends of TimeSeries with other classes.

190

Table 14 - Association ends of ResourceCapacityMarketUnit document assembly::TimeSeries with other classes

191

Order	mult.	Class name / Role	Description
3	[1..1]	ResourceCapacityMarketUnit_RegisteredResource ResourceCapacityMarketUnit_RegisteredResource	The identification of a resource associated with a TimeSeries. Association Based On: ResourceCapacityMarketUnit document contextual::ResourceCapacityMarketUnit_RegisteredResource.ResourceCapacityMarketUnit_RegisteredResource[1..1] ----- ResourceCapacityMarketUnit document contextual::TimeSeries.[]
17	[0..*]	Unit_RegisteredResource Unit_RegisteredResource	The identification of a resource associated with a TimeSeries. Association Based On: ResourceCapacityMarketUnit document contextual::Unit_RegisteredResource.Unit_RegisteredResource[0..*] ----- ResourceCapacityMarketUnit document contextual::TimeSeries.[]

Order	mult.	Class name / Role	Description
18	[0..*]	Time_Period Elegibility_Period	The time interval associated with a TimeSeries within an electronic document. Association Based On: ResourceCapacityMarketUnit document contextual::TimeSeries.[] ----- ResourceCapacityMarketUnit document contextual::Time_Period.Elegibility_Period[0..*]
19	[0..*]	Series_Period Period	The time interval and resolution for a period associated with a TimeSeries. Association Based On: ResourceCapacityMarketUnit document contextual::Series_Period.Period[0..*] ----- ResourceCapacityMarketUnit document contextual::TimeSeries.[]

192

193 2.2.3.9 Unit_RegisteredResource

194 A resource that is registered through the market participant registration system. Examples
195 include generating unit, load, and non-physical generator or load.

196 Table 15 shows all attributes of Unit_RegisteredResource.

197 **Table 15 - Attributes of ResourceCapacityMarketUnit document**
198 **assembly::Unit_RegisteredResource**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ResourceID_String	The unique identification of a resource. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.
1	[0..1]	resourceCapacity.maximumCapacity Decimal	The maximum capacity.
2	[0..1]	resourceCapacity.unitSymbol UnitSymbol	Unit selection for the capacity values.
3	[0..1]	pSRType.psrType PsrType_String	The coded type of a power system resource. --- The identification of the type of resource associated with this RegisteredResource.
4	[0..1]	street_Location.name String	The name is any free human readable and possibly non unique text naming the object. --- Location of this power system resource.
5	[0..1]	streetNumber_Location.name String	The name is any free human readable and possibly non unique text naming the object. --- Location of this power system resource.
6	[0..1]	city_Location.name String	The name is any free human readable and possibly non unique text naming the object. --- Location of this power system resource.
7	[0..1]	postalCode_Location.name String	The name is any free human readable and possibly non unique text naming the object. --- Location of this power system resource.

Order	mult.	Attribute name / Attribute type	Description
8	[0..1]	country_Location.name String	The name is any free human readable and possibly non unique text naming the object. --- Location of this power system resource.
9	[0..1]	gPS_Location.gPS_CoordinateSystem.mRID CoordinateSystemKind_String	The identification of a type of coordinate system. Master resource identifier issued by a model authority. The mRID is unique within an exchange context. Global uniqueness is easily achieved by using a UUID, as specified in RFC 4122, for the mRID. The use of UUID is strongly recommended. For CIMXML data files in RDF syntax conforming to IEC 61970-552 Edition 1, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements. --- Location of this power system resource. --- Coordinate system used to describe position points of this location.
10	[0..1]	gPS_Location.gPS_PositionPoints.xPosition String	X axis position. --- Location of this power system resource. --- Sequence of position points describing this location, expressed in coordinate system 'Location.CoordinateSystem'.
11	[0..1]	gPS_Location.gPS_PositionPoints.yPosition String	Y axis position. --- Location of this power system resource. --- Sequence of position points describing this location, expressed in coordinate system 'Location.CoordinateSystem'.
12	[0..1]	gPS_Location.gPS_PositionPoints.zPosition String	(if applicable) Z axis position. --- Location of this power system resource. --- Sequence of position points describing this location, expressed in coordinate system 'Location.CoordinateSystem'.

199

200 Table 16 shows all association ends of Unit_RegisteredResource with other classes.

201

Table 16 - Association ends of ResourceCapacityMarketUnit document assembly::Unit_RegisteredResource with other classes

202

Order	mult.	Class name / Role	Description
13	[0..*]	Analog Measurements	The power system resource that contains the measurement. Association Based On: ResourceCapacityMarketUnit document contextual::Analog.Measurements[0..*] ----- ResourceCapacityMarketUnit document contextual::Unit_RegisteredResource.[]
14	[0..*]	MeteringPoint_AggregateNode MeteringPoint_AggregateNode	The identification of the aggregate node that is linked to the registered resource. Association Based On: ResourceCapacityMarketUnit document contextual::MeteringPoint_AggregateNode.MeteringPoint_AggregateNode [0..*] ----- ResourceCapacityMarketUnit document contextual::Unit_RegisteredResource.[]

203

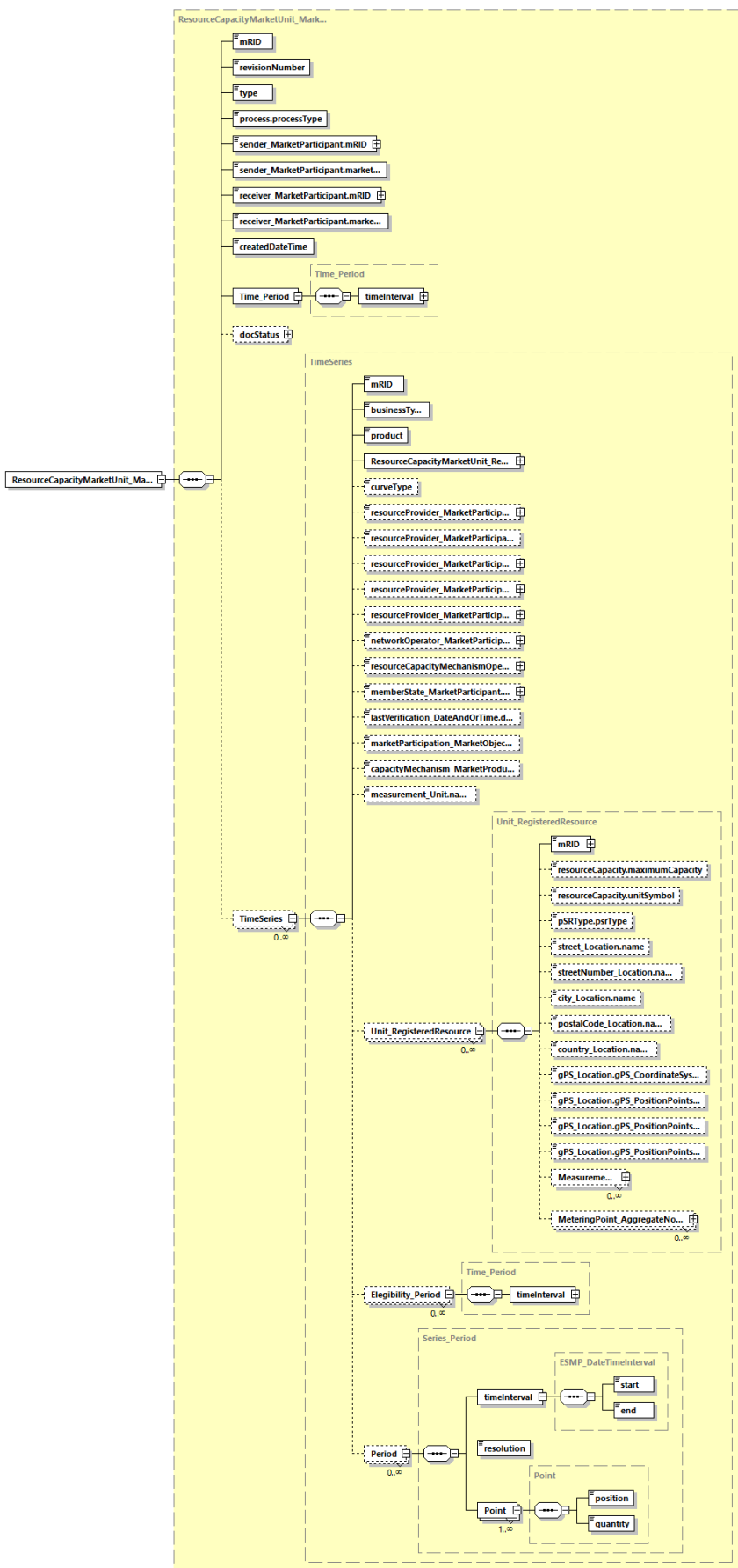
204 2.2.4 Datatypes

205 The list of datatypes used for the ResourceCapacityMarketUnit document assembly is as
206 follows:

- 207 • Action_Status compound

- 208 • ElectronicAddress compound
- 209 • ESMP_DateTimeInterval compound
- 210 • StreetAddress compound
- 211 • StreetDetail compound
- 212 • TelephoneNumber compound
- 213 • TownDetail compound
- 214 • AnalogType_String datatype, codelist AnalogTypeList
- 215 • BusinessKind_String datatype, codelist BusinessTypeList
- 216 • Characters10_String datatype
- 217 • Characters15_String datatype
- 218 • Characters2_String datatype
- 219 • Characters35_String datatype
- 220 • Characters70_String datatype
- 221 • CoordinateSystemKind_String datatype, codelist CoordinateSystemTypeList
- 222 • CurveType_String datatype, codelist CurveTypeList
- 223 • EnergyProductKind_String datatype, codelist EnergyProductTypeList
- 224 • ESMP_DateTime datatype
- 225 • ESMP_Float datatype
- 226 • ESMPVersion_String datatype
- 227 • ID_String datatype
- 228 • MarketProductKind_String datatype, codelist MarketProductTypeList
- 229 • MarketRoleKind_String datatype, codelist RoleTypeList
- 230 • MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
- 231 • MessageKind_String datatype, codelist MessageTypeList
- 232 • PartyID_String datatype, codelist CodingSchemeTypeList
- 233 • Position_Integer datatype
- 234 • ProcessKind_String datatype, codelist ProcessTypeList
- 235 • PsrType_String datatype, codelist AssetTypeList
- 236 • ResourceID_String datatype, codelist CodingSchemeTypeList
- 237 • Status_String datatype, codelist StatusTypeList
- 238 • UnitSymbol datatype, codelist UnitSymbol
- 239 • YMDHM_DateTime datatype
- 240

241 2.2.5 ResourceCapacityMarketUnit_MarketDocument XML schema structure



242
 243

Generated by XMLSpy www.altova.com

Figure 3 – ResourceCapacityMarketUnit_MarketDocument schema structure

244 2.2.6 ResourceCapacityMarketUnit_MarketDocument XML schema

245

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

247 urn:iec62325.351:tc57wg16:451-n:resourcecapacitymarketunitdocument:1:0

```
248 <?xml version="1.0" encoding="utf-8"?>
249 <xs:schema xmlns:ecl="urn:entsoe.eu:wgedi:codelists"
250 xmlns="urn:iec62325.351:tc57wg16:451-n:resourcecapacitymarketunitdocument:1:0"
251 xmlns:sawsdl="http://www.w3.org/ns/sawsdl"
252 xmlns:cimp="http://www.iec.ch/cimprofile"
253 xmlns:xs="http://www.w3.org/2001/XMLSchema"
254 targetNamespace="urn:iec62325.351:tc57wg16:451-
255 n:resourcecapacitymarketunitdocument:1:0" elementFormDefault="qualified"
256 attributeFormDefault="unqualified">
257   <xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-
258 entsoe-eu-wgedi-codelists.xsd"/>
259   <xs:element name="ResourceCapacityMarketUnit_MarketDocument"
260 type="ResourceCapacityMarketUnit_MarketDocument"/>
261   <xs:simpleType name="AnalogType_String"
262 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
263     <xs:restriction base="ecl:AnalogTypeList"/>
264   </xs:simpleType>
265   <xs:simpleType name="UnitSymbol"
266 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#UnitSymbol">
267     <xs:restriction base="ecl:UnitSymbol"/>
268   </xs:simpleType>
269   <xs:simpleType name="ESMP_Float"
270 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Float">
271     <xs:restriction base="xs:float">
272       <xs:pattern value="([0-9]*\.[0-9]*)"/>
273     </xs:restriction>
274   </xs:simpleType>
275   <xs:complexType name="Analog"
276 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Analog">
277     <xs:sequence>
278       <xs:element name="measurementType" type="AnalogType_String"
279 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
280 schema-cim16#Measurement.measurementType"/>
281       <xs:element name="unitSymbol" type="UnitSymbol" minOccurs="1"
282 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
283 cim16#Measurement.unitSymbol"/>
284       <xs:element name="analogValues.value" type="ESMP_Float"
285 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
286 schema-cim16#AnalogValue.value"/>
287     </xs:sequence>
288   </xs:complexType>
289   <xs:simpleType name="ResourceID_String-base"
290 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
291     <xs:restriction base="xs:string">
292       <xs:maxLength value="60"/>
293     </xs:restriction>
294   </xs:simpleType>
295   <xs:complexType name="ResourceID_String"
296 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
297     <xs:simpleContent>
298       <xs:extension base="ResourceID_String-base">
299         <xs:attribute name="codingScheme"
300 type="ecl:CodingSchemeTypeList" use="required"/>

```

```
301         </xs:extension>
302     </xs:simpleContent>
303 </xs:complexType>
304 <xs:complexType name="MeteringPoint_AggregateNode"
305 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#AggregateNode">
306     <xs:sequence>
307         <xs:element name="mRID" type="ResourceID_String" minOccurs="1"
308 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
309 cim16#IdentifiedObject.mRID"/>
310     </xs:sequence>
311 </xs:complexType>
312 <xs:simpleType name="Position_Integer"
313 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
314     <xs:restriction base="xs:integer">
315         <xs:maxInclusive value="999999"/>
316         <xs:minInclusive value="1"/>
317     </xs:restriction>
318 </xs:simpleType>
319 <xs:complexType name="Point"
320 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point">
321     <xs:sequence>
322         <xs:element name="position" type="Position_Integer"
323 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
324 schema-cim16#Point.position"/>
325         <xs:element name="quantity" type="xs:decimal" minOccurs="1"
326 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
327 cim16#Point.quantity"/>
328     </xs:sequence>
329 </xs:complexType>
330 <xs:simpleType name="ID_String"
331 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
332     <xs:restriction base="xs:string">
333         <xs:maxLength value="60"/>
334     </xs:restriction>
335 </xs:simpleType>
336 <xs:simpleType name="ESMPVersion_String"
337 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
338     <xs:restriction base="xs:string">
339         <xs:pattern value="[1-9]([0-9]){0,2}"/>
340     </xs:restriction>
341 </xs:simpleType>
342 <xs:simpleType name="MessageKind_String"
343 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
344     <xs:restriction base="ecl:MessageTypeList"/>
345 </xs:simpleType>
346 <xs:simpleType name="ProcessKind_String"
347 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
348     <xs:restriction base="ecl:ProcessTypeList"/>
349 </xs:simpleType>
350 <xs:simpleType name="PartyID_String-base"
351 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
352     <xs:restriction base="xs:string">
353         <xs:maxLength value="16"/>
354     </xs:restriction>
355 </xs:simpleType>
356 <xs:complexType name="PartyID_String"
357 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
358     <xs:simpleContent>
359         <xs:extension base="PartyID_String-base">
```

```

360         <xs:attribute name="codingScheme"
361 type="ecl:CodingSchemeTypeList" use="required"/>
362     </xs:extension>
363 </xs:simpleContent>
364 </xs:complexType>
365 <xs:simpleType name="MarketRoleKind_String"
366 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
367     <xs:restriction base="ecl:RoleTypeList"/>
368 </xs:simpleType>
369 <xs:simpleType name="ESMP_DateTime"
370 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
371     <xs:restriction base="xs:dateTime">
372         <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-
373 9]|[12][0-9]|3[01]))|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
374 9]|30))T((([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-
375 9])Z)|(((13579)[26][02468][048]|13579[01345789](0)[48]|13579[01345789][2468][0
376 48]|02468[048][02468][048]|02468[1235679](0)[48]|02468[1235679][2468][048]|[
377 0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T((([01][0-9]|2[0-3]):[0-
378 5][0-9]:[0-5][0-
379 9])Z)|(((13579)[26][02468][1235679]|13579[01345789](0)[01235679]|13579[0134578
380 9][2468][1235679]|02468[048][02468][1235679]|02468[1235679](0)[01235679]|0246
381 8[1235679][2468][1235679]|0-9[0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
382 9]|2[0-8])T((([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)"/>
383     </xs:restriction>
384 </xs:simpleType>
385 <xs:simpleType name="Status_String"
386 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
387     <xs:restriction base="ecl:StatusTypeList"/>
388 </xs:simpleType>
389 <xs:complexType name="Action_Status"
390 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Status">
391     <xs:sequence>
392         <xs:element name="value" type="Status_String" minOccurs="1"
393 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
394 cim16#Status.value"/>
395     </xs:sequence>
396 </xs:complexType>
397 <xs:complexType name="ResourceCapacityMarketUnit_MarketDocument"
398 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
399     <xs:sequence>
400         <xs:element name="mRID" type="ID_String" minOccurs="1"
401 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
402 cim16#IdentifiedObject.mRID"/>
403         <xs:element name="revisionNumber" type="ESMPVersion_String"
404 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
405 schema-cim16#Document.revisionNumber"/>
406         <xs:element name="type" type="MessageKind_String" minOccurs="1"
407 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
408 cim16#Document.type"/>
409         <xs:element name="process.processType"
410 type="ProcessKind_String" minOccurs="1" maxOccurs="1"
411 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
412 cim16#Process.processType"/>
413         <xs:element name="sender_MarketParticipant.mRID"
414 type="PartyID_String" minOccurs="1" maxOccurs="1"
415 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
416 cim16#IdentifiedObject.mRID"/>
417         <xs:element name="sender_MarketParticipant.marketRole.type"
418 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
419 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>

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```
420         <xs:element name="receiver_MarketParticipant.mRID"  
421 type="PartyID_String" minOccurs="1" maxOccurs="1"  
422 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
423 cim16#IdentifiedObject.mRID"/>  
424         <xs:element name="receiver_MarketParticipant.marketRole.type"  
425 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"  
426 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>  
427         <xs:element name="createdDateTime" type="ESMP_DateTime"  
428 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-  
429 schema-cim16#Document.createdDateTime"/>  
430         <xs:element name="Time_Period" type="Time_Period" minOccurs="1"  
431 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
432 cim16#MarketDocument.Time_Period"/>  
433         <xs:element name="docStatus" type="Action_Status" minOccurs="0"  
434 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
435 cim16#Document.docStatus"/>  
436         <xs:element name="TimeSeries" type="TimeSeries" minOccurs="0"  
437 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
438 cim16#MarketDocument.TimeSeries"/>  
439     </xs:sequence>  
440 </xs:complexType>  
441 <xs:complexType name="ResourceCapacityMarketUnit_RegisteredResource"  
442 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
443 cim16#RegisteredResource">  
444     <xs:sequence>  
445         <xs:element name="mRID" type="ResourceID_String" minOccurs="1"  
446 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
447 cim16#IdentifiedObject.mRID"/>  
448         <xs:element name="resourceCapacity.maximumCapacity"  
449 type="xs:decimal" minOccurs="0" maxOccurs="1"  
450 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
451 cim16#ResourceCapacity.maximumCapacity"/>  
452         <xs:element name="resourceCapacity.unitSymbol"  
453 type="UnitSymbol" minOccurs="0" maxOccurs="1"  
454 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
455 cim16#ResourceCapacity.unitSymbol"/>  
456         <xs:element name="location.name" type="xs:string" minOccurs="0"  
457 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
458 cim16#IdentifiedObject.name"/>  
459         <xs:element name="MeteringPoint_AggregateNode"  
460 type="MeteringPoint_AggregateNode" minOccurs="0" maxOccurs="unbounded"  
461 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
462 cim16#RegisteredResource.MeteringPoint_AggregateNode"/>  
463     </xs:sequence>  
464 </xs:complexType>  
465 <xs:simpleType name="YMDHM_DateTime"  
466 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">  
467     <xs:restriction base="xs:string">  
468         <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-  
469 9]|[12][0-9]|3[01]))|([0-9]{4})[\-](((0[469])|(11))[\-](0[1-9]|[12][0-  
470 9]|30))T|([01][0-9]|2[0-3]):[0-5][0-  
471 9]Z)|((([13579][26]|[02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][0  
472 48]|[02468][048][02468][048]|[02468][1235679](0)[48]|[02468][1235679][2468][048]|[  
473 0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T|([01][0-9]|2[0-3]):[0-  
474 5][0-  
475 9]Z)|((([13579][26]|[02468][1235679]|[13579][01345789](0)[01235679]|[13579][0134578  
476 9][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[0246  
477 8][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-  
478 9]|2[0-8])T|([01][0-9]|2[0-3]):[0-5][0-9]Z)"/>  
479     </xs:restriction>
```



```
480     </xs:simpleType>
481     <xs:complexType name="ESMP_DateTimeInterval"
482 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
483         <xs:sequence>
484             <xs:element name="start" type="YMDHM_DateTime" minOccurs="1"
485 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
486 cim16#DateTimeInterval.start"/>
487             <xs:element name="end" type="YMDHM_DateTime" minOccurs="1"
488 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
489 cim16#DateTimeInterval.end"/>
490         </xs:sequence>
491     </xs:complexType>
492     <xs:complexType name="Series_Period"
493 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">
494         <xs:sequence>
495             <xs:element name="timeInterval" type="ESMP_DateTimeInterval"
496 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
497 schema-cim16#Period.timeInterval"/>
498             <xs:element name="resolution" type="xs:duration" minOccurs="1"
499 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
500 cim16#Period.resolution"/>
501             <xs:element name="Point" type="Point" minOccurs="1"
502 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
503 cim16#Period.Point"/>
504         </xs:sequence>
505     </xs:complexType>
506     <xs:complexType name="Time_Period"
507 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">
508         <xs:sequence>
509             <xs:element name="timeInterval" type="ESMP_DateTimeInterval"
510 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
511 schema-cim16#Period.timeInterval"/>
512         </xs:sequence>
513     </xs:complexType>
514     <xs:simpleType name="BusinessKind_String"
515 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
516         <xs:restriction base="ecl:BusinessTypeList"/>
517     </xs:simpleType>
518     <xs:simpleType name="EnergyProductKind_String"
519 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
520         <xs:restriction base="ecl:EnergyProductTypeList"/>
521     </xs:simpleType>
522     <xs:simpleType name="CurveType_String"
523 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
524         <xs:restriction base="ecl:CurveTypeList"/>
525     </xs:simpleType>
526     <xs:simpleType name="MarketProductKind_String"
527 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
528         <xs:restriction base="ecl:MarketProductTypeList"/>
529     </xs:simpleType>
530     <xs:simpleType name="MeasurementUnitKind_String"
531 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
532         <xs:restriction base="ecl:UnitOfMeasureTypeList"/>
533     </xs:simpleType>
534     <xs:simpleType name="Characters70_String"
535 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
536         <xs:restriction base="xs:string">
537             <xs:maxLength value="70"/>
538         </xs:restriction>
539     </xs:simpleType>
```

```
540     <xs:complexType name="ElectronicAddress"
541 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
542 cim16#ElectronicAddress">
543     <xs:sequence>
544         <xs:element name="email1" type="Characters70_String"
545 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
546 schema-cim16#ElectronicAddress.email1"/>
547     </xs:sequence>
548 </xs:complexType>
549 <xs:simpleType name="Characters15_String"
550 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
551     <xs:restriction base="xs:string">
552         <xs:maxLength value="15"/>
553     </xs:restriction>
554 </xs:simpleType>
555 <xs:complexType name="TelephoneNumber"
556 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TelephoneNumber">
557     <xs:sequence>
558         <xs:element name="ituPhone" type="Characters15_String"
559 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
560 schema-cim16#TelephoneNumber.ituPhone"/>
561     </xs:sequence>
562 </xs:complexType>
563 <xs:complexType name="StreetDetail"
564 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#StreetDetail">
565     <xs:sequence>
566         <xs:element name="addressGeneral" type="Characters70_String"
567 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
568 schema-cim16#StreetDetail.addressGeneral"/>
569         <xs:element name="addressGeneral2" type="Characters70_String"
570 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
571 schema-cim16#StreetDetail.addressGeneral2"/>
572         <xs:element name="addressGeneral3" type="Characters70_String"
573 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
574 schema-cim16#StreetDetail.addressGeneral3"/>
575         <xs:element name="floorIdentification" type="xs:string"
576 minOccurs="1" maxOccurs="1"/>
577     </xs:sequence>
578 </xs:complexType>
579 <xs:simpleType name="Characters10_String"
580 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
581     <xs:restriction base="xs:string">
582         <xs:maxLength value="10"/>
583     </xs:restriction>
584 </xs:simpleType>
585 <xs:simpleType name="Characters35_String"
586 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
587     <xs:restriction base="xs:string">
588         <xs:maxLength value="35"/>
589     </xs:restriction>
590 </xs:simpleType>
591 <xs:simpleType name="Characters2_String"
592 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
593     <xs:restriction base="xs:string">
594         <xs:length value="2"/>
595         <xs:pattern value="[A-Z]*"/>
596     </xs:restriction>
597 </xs:simpleType>
598 <xs:complexType name="TownDetail"
599 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TownDetail">
```

```
600         <xs:sequence>
601             <xs:element name="name" type="Characters35_String"
602 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
603 schema-cim16#TownDetail.name"/>
604             <xs:element name="country" type="Characters2_String"
605 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
606 schema-cim16#TownDetail.country"/>
607         </xs:sequence>
608     </xs:complexType>
609     <xs:complexType name="StreetAddress"
610 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#StreetAddress">
611         <xs:sequence>
612             <xs:element name="streetDetail" type="StreetDetail"
613 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
614 schema-cim16#StreetAddress.streetDetail"/>
615             <xs:element name="postalCode" type="Characters10_String"
616 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
617 schema-cim16#StreetAddress.postalCode"/>
618             <xs:element name="townDetail" type="TownDetail" minOccurs="1"
619 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
620 cim16#StreetAddress.townDetail"/>
621             <xs:element name="language" type="xs:string" minOccurs="0"
622 maxOccurs="1"/>
623         </xs:sequence>
624     </xs:complexType>
625     <xs:complexType name="TimeSeries"
626 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries">
627         <xs:sequence>
628             <xs:element name="mRID" type="ID_String" minOccurs="1"
629 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
630 cim16#IdentifiedObject.mRID"/>
631             <xs:element name="businessType" type="BusinessKind_String"
632 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
633 schema-cim16#TimeSeries.businessType"/>
634             <xs:element name="product" type="EnergyProductKind_String"
635 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
636 schema-cim16#TimeSeries.product"/>
637             <xs:element
638 name="ResourceCapacityMarketUnit_RegisteredResource"
639 type="ResourceCapacityMarketUnit_RegisteredResource" minOccurs="1" maxOccurs="1"
640 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
641 cim16#TimeSeries.ResourceCapacityMarketUnit_RegisteredResource"/>
642             <xs:element name="curveType" type="CurveType_String"
643 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
644 schema-cim16#TimeSeries.curveType"/>
645             <xs:element name="resourceProvider_MarketParticipant.mRID"
646 type="PartyID_String" minOccurs="0" maxOccurs="1"
647 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
648 cim16#IdentifiedObject.mRID"/>
649             <xs:element name="resourceProvider_MarketParticipant.name"
650 type="xs:string" minOccurs="0" maxOccurs="1"
651 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
652 cim16#IdentifiedObject.name"/>
653             <xs:element
654 name="resourceProvider_MarketParticipant.streetAddress" type="StreetAddress"
655 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
656 schema-cim16#Organisation.streetAddress"/>
657             <xs:element name="resourceProvider_MarketParticipant.phone1"
658 type="TelephoneNumber" minOccurs="0" maxOccurs="1"/>
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659 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
660 cim16#Organisation.phone1"/>
661 <xs:element
662 name="resourceProvider_MarketParticipant.electronicAddress"
663 type="ElectronicAddress" minOccurs="0" maxOccurs="1"
664 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
665 cim16#Organisation.electronicAddress"/>
666 <xs:element name="networkOperator_MarketParticipant.mRID"
667 type="PartyID_String" minOccurs="0" maxOccurs="1"
668 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
669 cim16#IdentifiedObject.mRID"/>
670 <xs:element
671 name="resourceCapacityMechanismOperator_MarketParticipant.mRID"
672 type="PartyID_String" minOccurs="0" maxOccurs="1"
673 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
674 cim16#IdentifiedObject.mRID"/>
675 <xs:element name="memberState_MarketParticipant.mRID"
676 type="PartyID_String" minOccurs="0" maxOccurs="1"
677 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
678 cim16#IdentifiedObject.mRID"/>
679 <xs:element name="lastVerification_DateAndOrTime.dateTime"
680 type="xs:dateTime" minOccurs="0" maxOccurs="1"
681 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
682 cim16#DateAndOrTime.dateTime"/>
683 <xs:element
684 name="marketParticipation_MarketObjectStatus.status" type="Status_String"
685 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
686 schema-cim16#MarketObjectStatus.status"/>
687 <xs:element
688 name="capacityMechanism_MarketProduct.marketProductType"
689 type="MarketProductKind_String" minOccurs="0" maxOccurs="1"
690 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
691 cim16#MarketProduct.marketProductType"/>
692 <xs:element name="measurement_Unit.name"
693 type="MeasurementUnitKind_String" minOccurs="0" maxOccurs="1"
694 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
695 <xs:element name="Unit_RegisteredResource"
696 type="Unit_RegisteredResource" minOccurs="0" maxOccurs="unbounded"
697 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
698 cim16#TimeSeries.Unit_RegisteredResource"/>
699 <xs:element name="Elegibility_Period" type="Time_Period"
700 minOccurs="0" maxOccurs="unbounded"
701 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
702 cim16#TimeSeries.Elegibility_Period"/>
703 <xs:element name="Period" type="Series_Period" minOccurs="0"
704 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
705 cim16#TimeSeries.Period"/>
706 </xs:sequence>
707 </xs:complexType>
708 <xs:simpleType name="PsrType_String"
709 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
710 <xs:restriction base="ecl:AssetTypeList"/>
711 </xs:simpleType>
712 <xs:simpleType name="CoordinateSystemKind_String"
713 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
714 <xs:restriction base="ecl:CoordinateSystemTypeList"/>
715 </xs:simpleType>
716 <xs:complexType name="Unit_RegisteredResource"
717 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
718 cim16#RegisteredResource">
```

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719         <xs:sequence>
720             <xs:element name="mRID" type="ResourceID_String" minOccurs="1"
721 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
722 cim16#IdentifiedObject.mRID"/>
723             <xs:element name="resourceCapacity.maximumCapacity"
724 type="xs:decimal" minOccurs="0" maxOccurs="1"
725 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
726 cim16#ResourceCapacity.maximumCapacity"/>
727             <xs:element name="resourceCapacity.unitSymbol"
728 type="UnitSymbol" minOccurs="0" maxOccurs="1"
729 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
730 cim16#ResourceCapacity.unitSymbol"/>
731             <xs:element name="pSRType.psrType" type="PsrType_String"
732 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
733 schema-cim16#MktPSRType.psrType"/>
734             <xs:element name="street_Location.name" type="xs:string"
735 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
736 schema-cim16#IdentifiedObject.name"/>
737             <xs:element name="streetNumber_Location.name" type="xs:string"
738 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
739 schema-cim16#IdentifiedObject.name"/>
740             <xs:element name="city_Location.name" type="xs:string"
741 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
742 schema-cim16#IdentifiedObject.name"/>
743             <xs:element name="postalCode_Location.name" type="xs:string"
744 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
745 schema-cim16#IdentifiedObject.name"/>
746             <xs:element name="country_Location.name" type="xs:string"
747 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
748 schema-cim16#IdentifiedObject.name"/>
749             <xs:element name="gPS_Location.gPS_CoordinateSystem.mRID"
750 type="CoordinateSystemKind_String" minOccurs="0" maxOccurs="1"
751 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
752 cim16#IdentifiedObject.mRID"/>
753             <xs:element name="gPS_Location.gPS_PositionPoints.xPosition"
754 type="xs:string" minOccurs="0" maxOccurs="1"
755 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
756 cim16#PositionPoint.xPosition"/>
757             <xs:element name="gPS_Location.gPS_PositionPoints.yPosition"
758 type="xs:string" minOccurs="0" maxOccurs="1"
759 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
760 cim16#PositionPoint.yPosition"/>
761             <xs:element name="gPS_Location.gPS_PositionPoints.zPosition"
762 type="xs:string" minOccurs="0" maxOccurs="1"
763 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
764 cim16#PositionPoint.zPosition"/>
765             <xs:element name="Measurements" type="Analog" minOccurs="0"
766 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
767 cim16#RegisteredResource.Measurements"/>
768             <xs:element name="MeteringPoint_AggregateNode"
769 type="MeteringPoint_AggregateNode" minOccurs="0" maxOccurs="unbounded"
770 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
771 cim16#RegisteredResource.MeteringPoint_AggregateNode"/>
772         </xs:sequence>
773     </xs:complexType>
774 </xs:schema>
775
```