



European Network of  
Transmission System Operators  
for Electricity

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# SHORT MEDIUM TERM ADEQUACY RESULTS DOCUMENT UML MODEL AND SCHEMA

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2022-03-15  
APPROVED DOCUMENT  
VERSION 1.1

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## Table of Contents

3	1	Objective .....	6
4	2	Short medium term adequacy results model .....	7
5	2.1	Short medium term adequacy results contextual .....	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	Short medium term adequacy results assembly .....	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 Short medium term adequacy results assembly .....	10
14	2.2.3.1	ShortMediumTermAdequacyResults_MarketDocument root class .....	10
15			
16	2.2.3.2	Point .....	11
17	2.2.3.3	Reason .....	12
18	2.2.3.4	Series_Period .....	12
19	2.2.3.5	TimeSeries .....	13
20	2.2.4	Datatypes .....	16
21	2.2.5	ShortMediumTermAdequacyResults_MarketDocument XML schema .....	17
22			
23	2.2.6	Short Medium Term Adequacy Prognosis XML schema .....	18
24	<b>List of figures</b>		
25	Figure 1 - Short medium term adequacy results contextual .....		7
26	Figure 2 - Short medium term adequacy results assembly .....		9
27	Figure 3 - ShortMediumTermAdequacyResults_MarketDocument schema structure .....		17
28	<b>List of tables</b>		
29	Table 1 - IsBasedOn dependency .....		8
30	Table 2 - IsBasedOn dependency .....		10
31	Table 3 - Attributes of Short medium term adequacy results assembly::ShortMediumTermAdequacyResults_MarketDocument .....		10
32			
33	Table 4 - Association ends of Short medium term adequacy results assembly::ShortMediumTermAdequacyResults_MarketDocument with other classes .....		11
34			
35	Table 5 - Attributes of Short medium term adequacy results assembly::Point .....		11
36	Table 6 - Association ends of Short medium term adequacy results assembly::Point with other classes .....		12
37			
38	Table 7 - Attributes of Short medium term adequacy results assembly::Reason .....		12
39	Table 8 - Attributes of Short medium term adequacy results assembly::Series_Period .....		12
40	Table 9 - Association ends of Short medium term adequacy results assembly::Series_Period with other classes .....		13
41			
42	Table 10 - Attributes of Short medium term adequacy results assembly::TimeSeries .....		13
43	Table 11 - Association ends of Short medium term adequacy results assembly::TimeSeries with other classes .....		14
44			



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## Revision History

Version	Release	Date	Comments
1	0	2021-04-21	Approved by SOC.
1	1	2022-03-15	Updates in XSD v1.1: mRID of Document, Series and Timeseries (ID_String type) was enlarged from 35 to 60 characters. Approved by MC.

64

## 65 **Objective**

66 The purpose of this document is to provide the contextual and assembly UML models and the  
67 schema of the Short Medium Term Adequacy Results document.

68 The schema of the Short Medium Term Adequacy Results document could be used in various  
69 business processes.

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

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

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

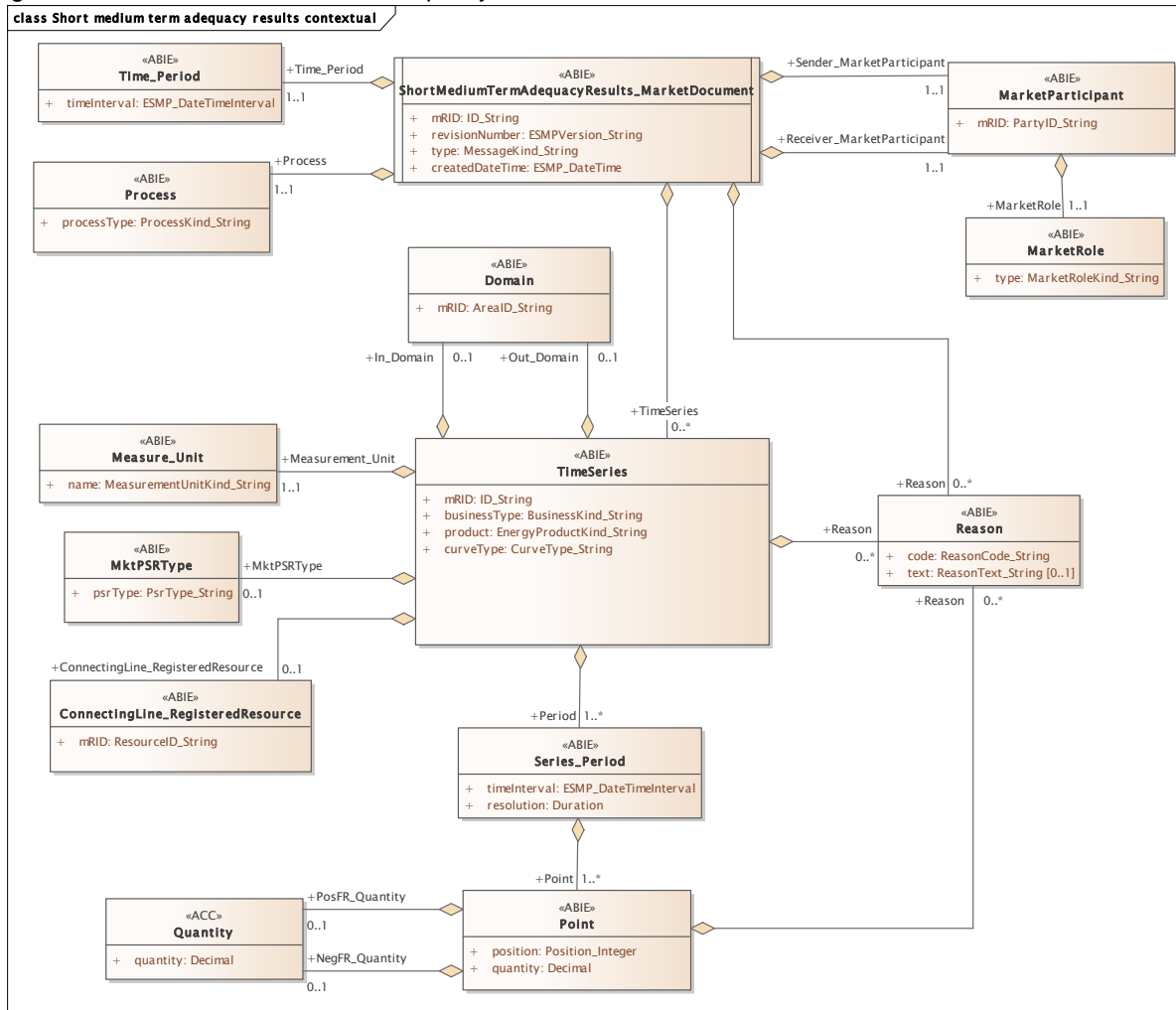
82

83 **Short medium term adequacy results model**

84 **2.1 Short medium term adequacy results contextual**

85 **2.1.1 Overview of the model**

86 Figure 1 - Short medium term adequacy results contextual shows the model.



87

88

**Figure 1 - Short medium term adequacy results contextual**

89

90

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

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

94

**Table 1 - IsBasedOn dependency**

Name	Complete IsBasedOn Path
ConnectingLine_RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource
Domain	TC57CIM::IEC62325::MarketManagement::Domain
MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
MarketRole	TC57CIM::IEC62325::MarketCommon::MarketRole
Measure_Unit	TC57CIM::IEC62325::MarketManagement::Unit
MktPSRType	TC57CIM::IEC62325::MarketManagement::MktPSRType
Point	TC57CIM::IEC62325::MarketManagement::Point
Process	TC57CIM::IEC62325::MarketManagement::Process
Quantity	TC57CIM::IEC62325::MarketManagement::Quantity
Reason	TC57CIM::IEC62325::MarketManagement::Reason
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
ShortMediumTermAdequacyResults_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Time_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries

95

96

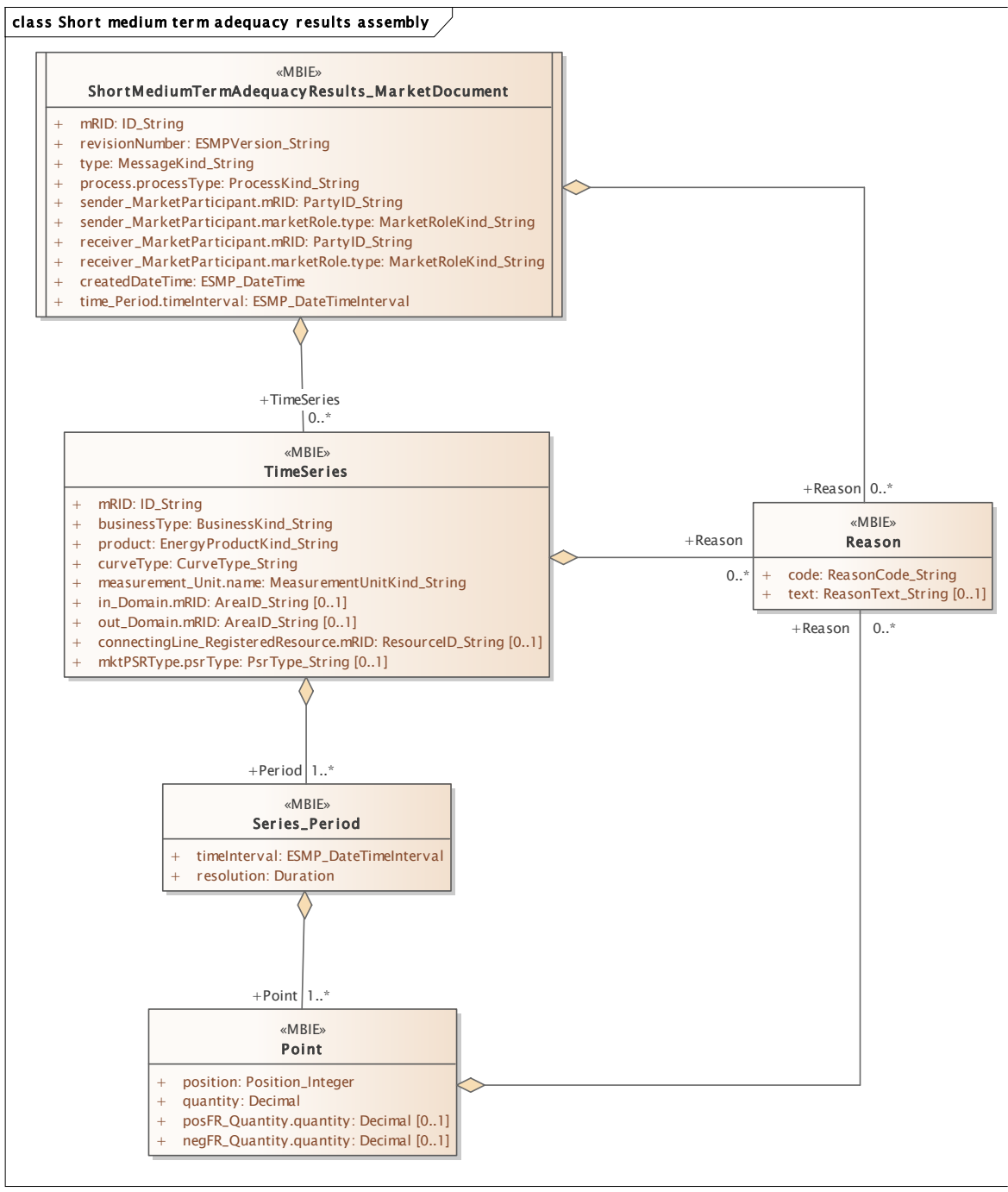


97

98 **2.2 Short medium term adequacy results assembly**

99 **2.2.1 Overview of the model**

100 Figure 2 - Short medium term adequacy results assembly shows the model.



101

102

**Figure 2 - Short medium term adequacy results assembly**

103

104

105 **2.2.2 IsBasedOn relationships from the European style market profile**

106 Table 2 - IsBasedOn dependency shows the traceability dependency of the classes used in this  
107 package towards the upper level.

108

**Table 2 - IsBasedOn dependency**

Name	Complete IsBasedOn Path
Point	TC57CIM::IEC62325::MarketManagement::Point
Reason	TC57CIM::IEC62325::MarketManagement::Reason
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
ShortMediumTermAdequacyResults_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries

109

110 **2.2.3 Detailed Short medium term adequacy results assembly**

111 **2.2.3.1 ShortMediumTermAdequacyResults\_MarketDocument root class**

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

114 Table 3 - Attributes of Short medium term adequacy results  
115 assembly::ShortMediumTermAdequacyResults\_MarketDocument shows all attributes of  
116 ShortMediumTermAdequacyResults\_MarketDocument.

117

**Table 3 - Attributes of Short medium term adequacy results  
assembly::ShortMediumTermAdequacyResults\_MarketDocument**

118

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. --- The document owner.
5	[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.
6	[1..1]	receiver_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The document recipient.
7	[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.

Order	mult.	Attribute name / Attribute type	Description
8	[1..1]	createdDateTime ESMP_DateTime	The date and time of the creation of the document.
9	[1..1]	time_Period.timeInterval ESMP_DateTimeInterval	The start and end date and time for a given interval. --- The time interval that is associated with an electronic document and which is valid for the whole document.

119

120 Table 4 - Association ends of Short medium term adequacy results  
121 assembly::ShortMediumTermAdequacyResults\_MarketDocument with other classes shows all  
122 association ends of ShortMediumTermAdequacyResults\_MarketDocument with other classes.

123 **Table 4 - Association ends of Short medium term adequacy results**  
124 **assembly::ShortMediumTermAdequacyResults\_MarketDocument with other classes**

Order	mult.	Class name / Role	Description
10	[0..*]	TimeSeries TimeSeries	The time series that is associated with an electronic document. Association Based On: Short medium term adequacy results contextual::TimeSeries.TimeSeries[0..*] ----- Short medium term adequacy results contextual::ShortMediumTermAdequacyResults_MarketDocument.[]
11	[0..*]	Reason Reason	The Reason associated with the electronic document header providing different motivations for the creation of the document. Association Based On: Short medium term adequacy results contextual::Reason.Reason[0..*] ----- Short medium term adequacy results contextual::ShortMediumTermAdequacyResults_MarketDocument.[]

125

### 126 2.2.3.2 Point

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

128 Table 5 - Attributes of Short medium term adequacy results assembly::Point shows all attributes  
129 of Point.

130 **Table 5 - Attributes of Short medium term adequacy results 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.
2	[0..1]	posFR_Quantity.quantity Decimal	The quantity value. The association role provides the information about what is expressed. --- The Quantity information associated with a given Point.
3	[0..1]	negFR_Quantity.quantity Decimal	The quantity value. The association role provides the information about what is expressed. --- The Quantity information associated with a given Point.

131

132 Table 6 - Association ends of Short medium term adequacy results assembly::Point with other  
133 classes shows all association ends of Point with other classes.

134 **Table 6 - Association ends of Short medium term adequacy results assembly::Point**  
135 **with other classes**

Order	mult.	Class name / Role	Description
4	[0..*]	Reason Reason	The Reason information associated with a Point providing motivation information. Association Based On: Short medium term adequacy results contextual::Reason.Reason[0..*] ----- Short medium term adequacy results contextual::Point.[]

136

### 137 2.2.3.3 Reason

138 The motivation of an act.

139 Table 7 - Attributes of Short medium term adequacy results assembly::Reason shows all  
140 attributes of Reason.

141 **Table 7 - Attributes of Short medium term adequacy results assembly::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.

142

### 143 2.2.3.4 Series\_Period

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

145 Table 8 - Attributes of Short medium term adequacy results assembly::Series\_Period shows all  
146 attributes of Series\_Period.

147 **Table 8 - Attributes of Short medium term adequacy results 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.

148

149 Table 9 - Association ends of Short medium term adequacy results assembly::Series\_Period  
150 with other classes shows all association ends of Series\_Period with other classes.

151  
152

**Table 9 - Association ends of Short medium term adequacy results 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: Short medium term adequacy results contextual::Point.Point[1..*] ----- Short medium term adequacy results contextual::Series_Period.[]

153

154 **2.2.3.5 TimeSeries**

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

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

158 Table 10 - Attributes of Short medium term adequacy results assembly::TimeSeries shows all  
159 attributes of TimeSeries.

160 **Table 10 - Attributes of Short medium term adequacy results assembly::TimeSeries**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	A unique identification of the time series. In the ESMP context, the "model authority" is defined as a party (originator of the exchange) that provides a unique identification in the context of a business exchange such as time series identification, bid identification, ... Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.
1	[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.
3	[1..1]	curveType CurveType_String	The identification of the coded representation of the type of curve being described.
4	[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.

Order	mult.	Attribute name / Attribute type	Description
6	[0..1]	in_Domain.mRID AreaID_String	The unique identification of the domain. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements. --- The domain associated with a TimeSeries.
7	[0..1]	out_Domain.mRID AreaID_String	The unique identification of the domain. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements. --- The domain associated with a TimeSeries.
8	[0..1]	connectingLine_RegisteredResource.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. --- The identification of a resource associated with a TimeSeries.
9	[0..1]	mktPSRType.psrType PsrType_String	The coded type of a power system resource. --- The identification of the type of resource associated with a TimeSeries.

161

162 Table 11 - Association ends of Short medium term adequacy results assembly::TimeSeries with  
163 other classes shows all association ends of TimeSeries with other classes.

164 **Table 11 - Association ends of Short medium term adequacy results**  
165 **assembly::TimeSeries with other classes**

Order	mult.	Class name / Role	Description
10	[1..*]	Series_Period Period	The time interval and resolution for a period associated with a TimeSeries. Association Based On: Short medium term adequacy results contextual::Series_Period.Period[1..*] ----- Short medium term adequacy results contextual::TimeSeries.[]

Order	mult.	Class name / Role	Description
11	[0..*]	Reason Reason	The reason information associated with a TimeSeries providing motivation information. Association Based On: Short medium term adequacy results contextual::Reason.Reason[0..*] ----- Short medium term adequacy results contextual::TimeSeries.[]

166

167

168

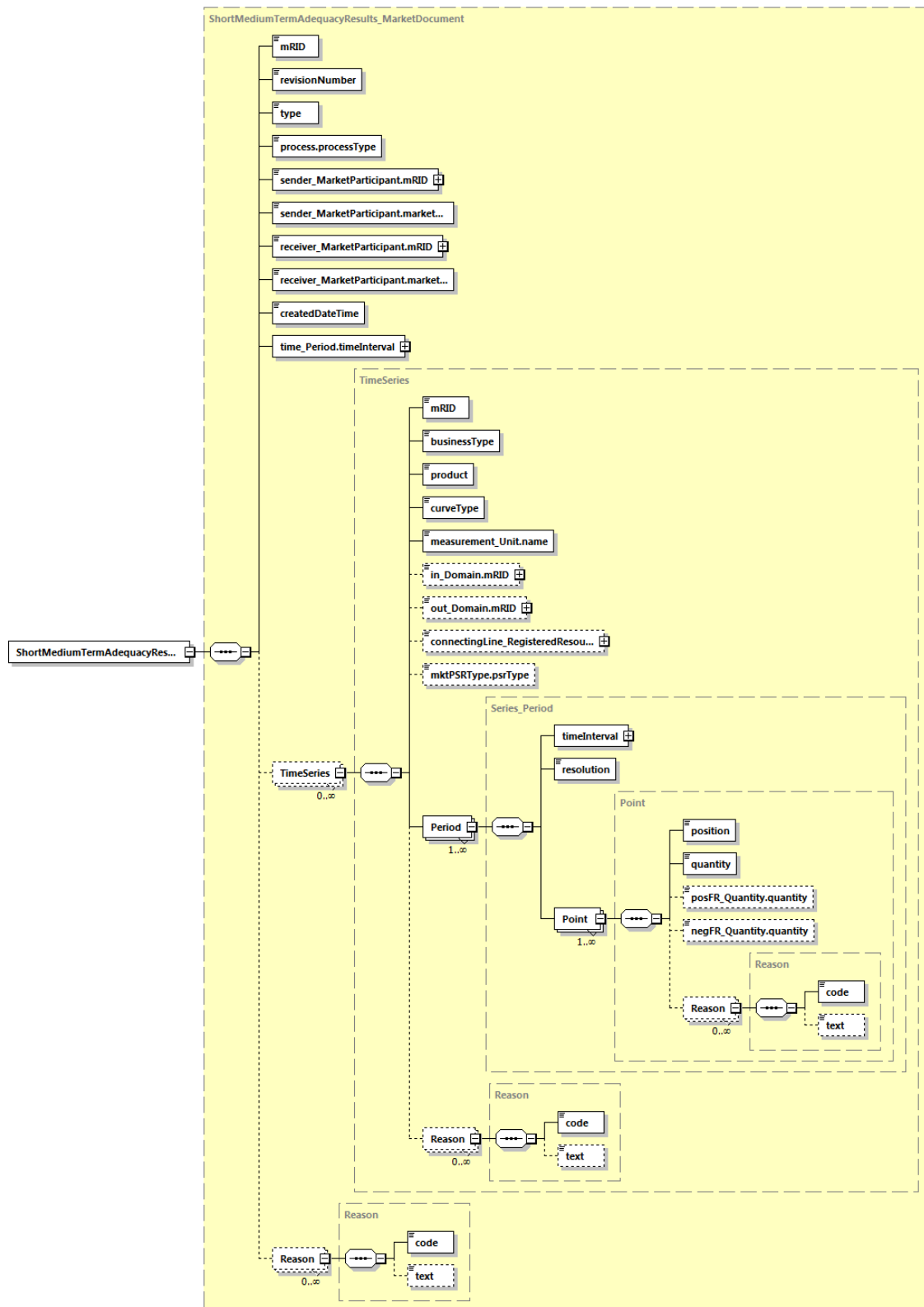
#### 169 **2.2.4 Datatypes**

170 The list of datatypes used for the Short medium term adequacy results assembly is as follows:

- 171 • ESMP\_DateTimeInterval compound
- 172 • AreaID\_String datatype, codelist CodingSchemeTypeList
- 173 • BusinessKind\_String datatype, codelist BusinessTypeList
- 174 • CurveType\_String datatype, codelist CurveTypeList
- 175 • EnergyProductKind\_String datatype, codelist EnergyProductTypeList
- 176 • ESMP\_DateTime datatype
- 177 • ESMPVersion\_String datatype
- 178 • ID\_String datatype
- 179 • MarketRoleKind\_String datatype, codelist RoleTypeList
- 180 • MeasurementUnitKind\_String datatype, codelist UnitOfMeasureTypeList
- 181 • MessageKind\_String datatype, codelist MessageTypeList
- 182 • PartyID\_String datatype, codelist CodingSchemeTypeList
- 183 • Position\_Integer datatype
- 184 • ProcessKind\_String datatype, codelist ProcessTypeList
- 185 • PsrType\_String datatype, codelist AssetTypeList
- 186 • ReasonCode\_String datatype, codelist ReasonCodeTypeList
- 187 • ReasonText\_String datatype
- 188 • ResourceID\_String datatype, codelist CodingSchemeTypeList
- 189 • YMDHM\_DateTime datatype
- 190



191 2.2.5 ShortMediumTermAdequacyResults\_MarketDocument XML schema



192

Generated by XMLSpy

www.altova.com

193

Figure 3 - ShortMediumTermAdequacyResults\_MarketDocument schema structure

## 194 2.2.6 Short Medium Term Adequacy Prognosis XML schema

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

196 urn:iec62325.351:tc57wg16:451-n:smtaresultsdocument:1:1

```
197
198 <?xml version="1.0" encoding="utf-8"?>
199 <xs:schema xmlns:ecl="urn:entsoe.eu:wgedi:codelists"
200 xmlns="urn:iec62325.351:tc57wg16:451-n:smtaresultsdocument:1:1"
201 xmlns:sawsdl="http://www.w3.org/ns/sawsdl"
202 xmlns:cimp="http://www.iec.ch/cimprofile"
203 xmlns:xs="http://www.w3.org/2001/XMLSchema"
204 targetNamespace="urn:iec62325.351:tc57wg16:451-n:smtaresultsdocument:1:1"
205 elementFormDefault="qualified" attributeFormDefault="unqualified">
206   <xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-
207 entsoe-eu-wgedi-codelists.xsd"/>
208   <xs:element name="ShortMediumTermAdequacyResults_MarketDocument"
209 type="ShortMediumTermAdequacyResults_MarketDocument"/>
210   <xs:simpleType name="Position_Integer"
211 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
212     <xs:restriction base="xs:integer">
213       <xs:maxInclusive value="999999"/>
214       <xs:minInclusive value="1"/>
215     </xs:restriction>
216   </xs:simpleType>
217   <xs:complexType name="Point"
218 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point">
219     <xs:sequence>
220       <xs:element name="position" type="Position_Integer"
221 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
222 schema-cim16#Point.position"/>
223       <xs:element name="quantity" type="xs:decimal" minOccurs="1"
224 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
225 cim16#Point.quantity"/>
226       <xs:element name="posFR_Quantity.quantity" type="xs:decimal"
227 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
228 schema-cim16#Quantity.quantity"/>
229       <xs:element name="negFR_Quantity.quantity" type="xs:decimal"
230 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
231 schema-cim16#Quantity.quantity"/>
232       <xs:element name="Reason" type="Reason" minOccurs="0"
233 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
234 cim16#Point.Reason"/>
235     </xs:sequence>
236   </xs:complexType>
237   <xs:simpleType name="ReasonCode_String"
238 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
239     <xs:restriction base="ecl:ReasonCodeTypeList"/>
240   </xs:simpleType>
241   <xs:simpleType name="ReasonText_String"
242 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
243     <xs:restriction base="xs:string">
244       <xs:maxLength value="512"/>
245     </xs:restriction>
246   </xs:simpleType>
247   <xs:complexType name="Reason"
248 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason">
```

```
249         <xs:sequence>
250             <xs:element name="code" type="ReasonCode_String" minOccurs="1"
251 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
252 cim16#Reason.code"/>
253             <xs:element name="text" type="ReasonText_String" minOccurs="0"
254 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
255 cim16#Reason.text"/>
256         </xs:sequence>
257     </xs:complexType>
258     <xs:simpleType name="YMDHM_DateTime"
259 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
260         <xs:restriction base="xs:string">
261             <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-
262 9]|[12][0-9]|3[01]))|((0[0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
263 9]|30))T((0[1][0-9]|2[0-3]):[0-5][0-
264 9])Z)|(((13579)[26][02468][048]|13579[01345789](0)[48]|13579[01345789][2468][0
265 48]|02468[048][02468][048]|02468[1235679](0)[48]|02468[1235679][2468][048]|
266 0-9[0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T((0[1][0-9]|2[0-3]):[0-
267 5][0-
268 9])Z)|(((13579)[26][02468][1235679]|13579[01345789](0)[01235679]|13579[0134578
269 9][2468][1235679]|02468[048][02468][1235679]|02468[1235679](0)[01235679]|0246
270 8[1235679][2468][1235679]|0-9[0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
271 9]|2[0-8])T((0[1][0-9]|2[0-3]):[0-5][0-9])Z"/>
272         </xs:restriction>
273     </xs:simpleType>
274     <xs:complexType name="ESMP_DateTimeInterval"
275 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
276         <xs:sequence>
277             <xs:element name="start" type="YMDHM_DateTime" minOccurs="1"
278 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
279 cim16#DateTimeInterval.start"/>
280             <xs:element name="end" type="YMDHM_DateTime" minOccurs="1"
281 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
282 cim16#DateTimeInterval.end"/>
283         </xs:sequence>
284     </xs:complexType>
285     <xs:complexType name="Series_Period"
286 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">
287         <xs:sequence>
288             <xs:element name="timeInterval" type="ESMP_DateTimeInterval"
289 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
290 schema-cim16#Period.timeInterval"/>
291             <xs:element name="resolution" type="xs:duration" minOccurs="1"
292 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
293 cim16#Period.resolution"/>
294             <xs:element name="Point" type="Point" minOccurs="1"
295 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
296 cim16#Period.Point"/>
297         </xs:sequence>
298     </xs:complexType>
299     <xs:simpleType name="ID_String"
300 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
301         <xs:restriction base="xs:string">
302             <xs:maxLength value="60"/>
303         </xs:restriction>
304     </xs:simpleType>
```

```
305     <xs:simpleType name="ESMPVersion_String"
306 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
307     <xs:restriction base="xs:string">
308         <xs:pattern value="[1-9]([0-9]){0,2}"/>
309     </xs:restriction>
310 </xs:simpleType>
311 <xs:simpleType name="MessageKind_String"
312 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
313     <xs:restriction base="ecl:MessageTypeList"/>
314 </xs:simpleType>
315 <xs:simpleType name="ProcessKind_String"
316 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
317     <xs:restriction base="ecl:ProcessTypeList"/>
318 </xs:simpleType>
319 <xs:simpleType name="PartyID_String-base"
320 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
321     <xs:restriction base="xs:string">
322         <xs:maxLength value="16"/>
323     </xs:restriction>
324 </xs:simpleType>
325 <xs:complexType name="PartyID_String"
326 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
327     <xs:simpleContent>
328         <xs:extension base="PartyID_String-base">
329             <xs:attribute name="codingScheme"
330 type="ecl:CodingSchemeTypeList" use="required"/>
331         </xs:extension>
332     </xs:simpleContent>
333 </xs:complexType>
334 <xs:simpleType name="MarketRoleKind_String"
335 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
336     <xs:restriction base="ecl:RoleTypeList"/>
337 </xs:simpleType>
338 <xs:simpleType name="ESMP_DateTime"
339 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
340     <xs:restriction base="xs:dateTime">
341         <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-
342 9]|12)[0-9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|12)[0-
343 9]|30))T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-
344 9])Z)|(([13579][26][02468][048]|13579][01345789](0)[48]|13579][01345789][2468][0
345 48]|02468][048][02468][048]|02468][1235679](0)[48]|02468][1235679][2468][048]|
346 0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-
347 5][0-9]:[0-5][0-
348 9])Z)|(([13579][26][02468][1235679]|13579][01345789](0)[01235679]|13579][0134578
349 9][2468][1235679]|02468][048][02468][1235679]|02468][1235679](0)[01235679]|0246
350 8][1235679][2468][1235679]|0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
351 9]|2[0-8])T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)"/>
352     </xs:restriction>
353 </xs:simpleType>
354 <xs:complexType name="ShortMediumTermAdequacyResults_MarketDocument"
355 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
356     <xs:sequence>
357         <xs:element name="mRID" type="ID_String" minOccurs="1"
358 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
359 cim16#IdentifiedObject.mRID"/>
```

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360         <xs:element name="revisionNumber" type="ESMPVersion_String"
361 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
362 schema-cim16#Document.revisionNumber"/>
363         <xs:element name="type" type="MessageKind_String" minOccurs="1"
364 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
365 cim16#Document.type"/>
366         <xs:element name="process.processType"
367 type="ProcessKind_String" minOccurs="1" maxOccurs="1"
368 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
369 cim16#Process.processType"/>
370         <xs:element name="sender_MarketParticipant.mRID"
371 type="PartyID_String" minOccurs="1" maxOccurs="1"
372 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
373 cim16#IdentifiedObject.mRID"/>
374         <xs:element name="sender_MarketParticipant.marketRole.type"
375 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
376 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
377         <xs:element name="receiver_MarketParticipant.mRID"
378 type="PartyID_String" minOccurs="1" maxOccurs="1"
379 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
380 cim16#IdentifiedObject.mRID"/>
381         <xs:element name="receiver_MarketParticipant.marketRole.type"
382 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
383 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
384         <xs:element name="createdDateTime" type="ESMP_DateTime"
385 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
386 schema-cim16#Document.createdDateTime"/>
387         <xs:element name="time_Period.timeInterval"
388 type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1"
389 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
390 cim16#Period.timeInterval"/>
391         <xs:element name="TimeSeries" type="TimeSeries" minOccurs="0"
392 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
393 cim16#MarketDocument.TimeSeries"/>
394         <xs:element name="Reason" type="Reason" minOccurs="0"
395 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
396 cim16#MarketDocument.Reason"/>
397     </xs:sequence>
398 </xs:complexType>
399 <xs:simpleType name="BusinessKind_String"
400 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
401     <xs:restriction base="ecl:BusinessTypeList"/>
402 </xs:simpleType>
403 <xs:simpleType name="EnergyProductKind_String"
404 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
405     <xs:restriction base="ecl:EnergyProductTypeList"/>
406 </xs:simpleType>
407 <xs:simpleType name="CurveType_String"
408 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
409     <xs:restriction base="ecl:CurveTypeList"/>
410 </xs:simpleType>
411 <xs:simpleType name="MeasurementUnitKind_String"
412 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
413     <xs:restriction base="ecl:UnitOfMeasureTypeList"/>
414 </xs:simpleType>
```

```
415     <xs:simpleType name="AreaID_String-base"
416 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
417     <xs:restriction base="xs:string">
418     <xs:maxLength value="18"/>
419     </xs:restriction>
420 </xs:simpleType>
421 <xs:complexType name="AreaID_String"
422 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
423 <xs:simpleContent>
424 <xs:extension base="AreaID_String-base">
425 <xs:attribute name="codingScheme"
426 type="ecl:CodingSchemeTypeList" use="required"/>
427 </xs:extension>
428 </xs:simpleContent>
429 </xs:complexType>
430 <xs:simpleType name="ResourceID_String-base"
431 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
432 <xs:restriction base="xs:string">
433 <xs:maxLength value="60"/>
434 </xs:restriction>
435 </xs:simpleType>
436 <xs:complexType name="ResourceID_String"
437 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
438 <xs:simpleContent>
439 <xs:extension base="ResourceID_String-base">
440 <xs:attribute name="codingScheme"
441 type="ecl:CodingSchemeTypeList" use="required"/>
442 </xs:extension>
443 </xs:simpleContent>
444 </xs:complexType>
445 <xs:simpleType name="PsrType_String"
446 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
447 <xs:restriction base="ecl:AssetTypeList"/>
448 </xs:simpleType>
449 <xs:complexType name="TimeSeries"
450 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries">
451 <xs:sequence>
452 <xs:element name="mRID" type="ID_String" minOccurs="1"
453 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
454 cim16#IdentifiedObject.mRID"/>
455 <xs:element name="businessType" type="BusinessKind_String"
456 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
457 schema-cim16#TimeSeries.businessType"/>
458 <xs:element name="product" type="EnergyProductKind_String"
459 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
460 schema-cim16#TimeSeries.product"/>
461 <xs:element name="curveType" type="CurveType_String"
462 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
463 schema-cim16#TimeSeries.curveType"/>
464 <xs:element name="measurement_Unit.name"
465 type="MeasurementUnitKind_String" minOccurs="1" maxOccurs="1"
466 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
467 <xs:element name="in_Domain.mRID" type="AreaID_String"
468 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
469 schema-cim16#IdentifiedObject.mRID"/>
```

```
470         <xs:element name="out_Domain.mRID" type="AreaID_String"
471 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
472 schema-cim16#IdentifiedObject.mRID"/>
473         <xs:element name="connectingLine_RegisteredResource.mRID"
474 type="ResourceID_String" minOccurs="0" maxOccurs="1"
475 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
476 cim16#IdentifiedObject.mRID"/>
477         <xs:element name="mktPSRType.psrType" type="PsrType_String"
478 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
479 schema-cim16#MktPSRType.psrType"/>
480         <xs:element name="Period" type="Series_Period" minOccurs="1"
481 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
482 cim16#TimeSeries.Period"/>
483         <xs:element name="Reason" type="Reason" minOccurs="0"
484 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
485 cim16#TimeSeries.Reason"/>
486     </xs:sequence>
487 </xs:complexType>
488 </xs:schema>
489
```