



European Network of
Transmission System Operators
for Electricity

REPORTING DOCUMENT UML MODEL AND SCHEMA

2017-01-19
VERSION 1.0

2

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Revision History

Version	Release	Date	Comments
0	0	2017-01-19	First drafting of the document.
1	0	2017-01-30	Version to be submitted to Market Committee following WG EDI meeting in March 2017.

59

60 1 Objective

61 The purpose of this document is to provide the contextual and assembly UML models and the
62 schema of the Reporting_MarketDocument.

63 The schema of the Reporting_MarketDocument could be used in various business processes.

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

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

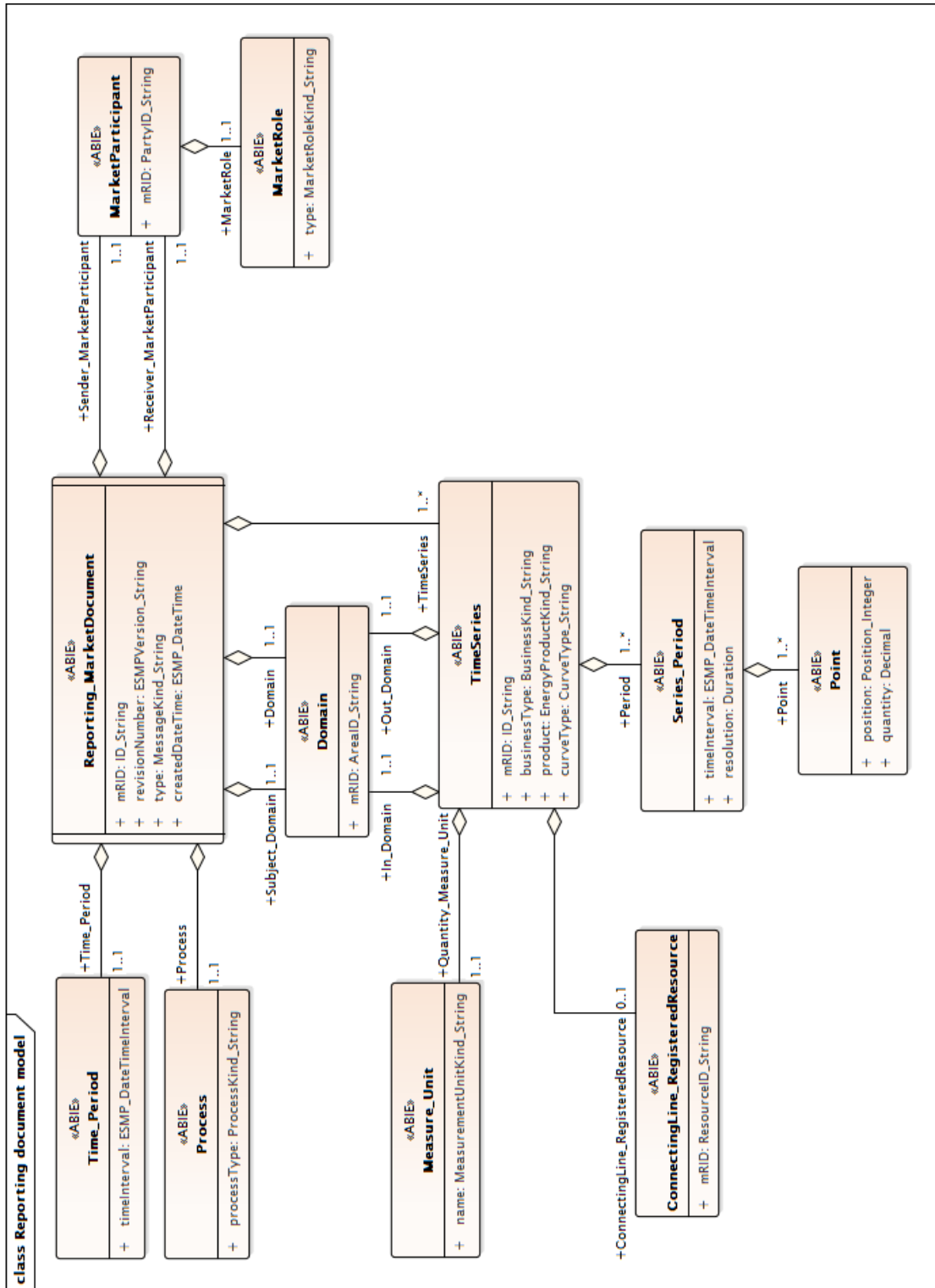
- 68 • Description of the business process;
- 69 • Use case of the business process;
- 70 • Sequence diagrams of the business process;
- 71 • List of the schema (XSD) to be used in the business process and versions of the
72 schema;
- 73 • For each schema, dependency tables providing the necessary information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

76 **2 Reporting_MarketDocument**

77 **2.1 Reporting contextual model**

78 **2.1.1 Overview of the model**

79 Figure 1 shows the model.



80

81

Figure 1 - Reporting contextual model

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

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

85 **Table 1 - IsBasedOn dependency**

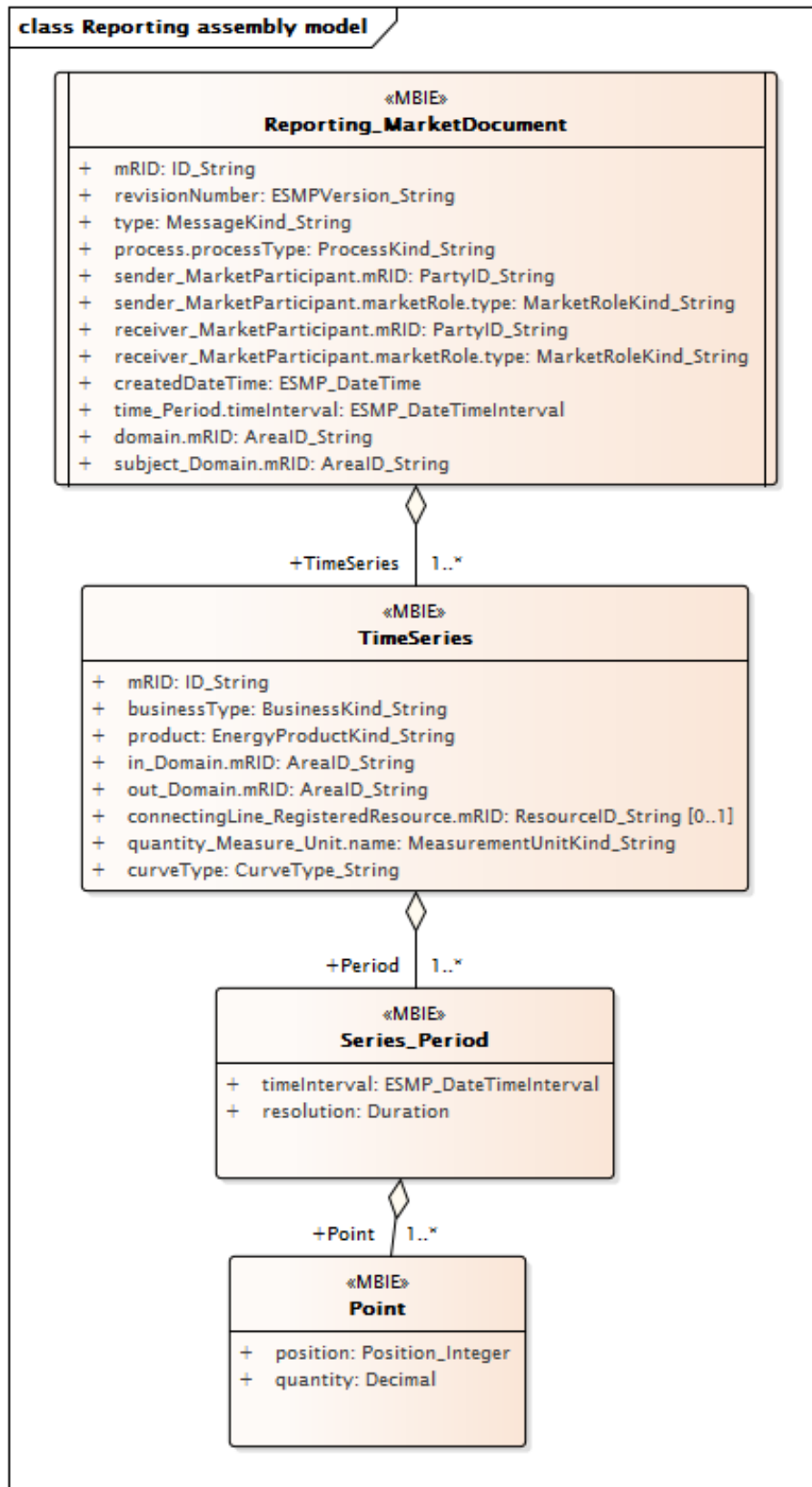
Name	Complete IsBasedOn Path
ConnectingLine_RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource
Domain	TC57CIM::IEC62325::MarketManagement::Domain
MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
MarketRole	TC57CIM::IEC62325::MarketCommon::MarketRole
Measure_Unit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

86

87 **2.2 Reporting assembly model**

88 **2.2.1 Overview of the model**

89 Figure 2 shows the model.



90

91

Figure 2 - Reporting assembly model

92 **2.2.2 IsBasedOn relationships from the European style market profile**

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

95 **Table 2 - IsBasedOn dependency**

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

96

97 **2.2.3 Detailed Reporting assembly model**

98 **2.2.3.1 Reporting_MarketDocument root class**

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

101 The reporting market document is to be used to report aggregated netted external market
102 schedules, aggregated netted external TSO schedules and compensation program schedules.

103 Table 3 shows all attributes of Reporting_MarketDocument.

104 **Table 3 - Attributes of Reporting assembly model::Reporting_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 dealt with in the document.
4	[1..1]	sender_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The sender of the document.
5	[1..1]	sender_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- The sender of the document. --- The role associated with a MarketParticipant.
6	[1..1]	receiver_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The recipient of the document.
7	[1..1]	receiver_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- The recipient of the document. --- The role associated with a MarketParticipant.
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. --- This information provides the start and end date and time of the period covered by the document.

Order	mult.	Attribute name / Attribute type	Description
10	[1..1]	domain.mRID AreaID_String	The unique identification of the domain. --- The identification of the domain that is covered in the reporting market document. Depending on the reporting context it will correspond to one of the following: - a scheduling area; - a scheduling area border; - a control area; - a control area border; - a control block area; - a control block area border; - a synchronous area.
11	[1..1]	subject_Domain.mRID AreaID_String	The unique identification of the domain. --- The subject domain corresponds to the area being reported by the reporting market document.

105

106 Table 4 shows all association ends of Reporting_MarketDocument with other classes.

107 **Table 4 - Association ends of Reporting assembly model::Reporting_MarketDocument**
108 **with other classes**

Order	mult.	Class name / Role	Description
12	[1..*]	TimeSeries TimeSeries	The time series that is associated with an electronic document. Association Based On: Reporting contextual model::Reporting_MarketDocument.[] ----- Reporting contextual model::TimeSeries.TimeSeries[1..*]

109

110 2.2.3.2 Point

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

112 Table 5 shows all attributes of Point.

113 **Table 5 - Attributes of Reporting 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. The quantity of product scheduled for the position within the timeInterval.

114

115 2.2.3.3 Series_Period

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

117 Table 6 shows all attributes of Series_Period.

118 **Table 6 - Attributes of Reporting assembly model::Series_Period**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	timeInterval ESMP_DateTimeInterval	The start and end time of the period.
1	[1..1]	resolution Duration	The definition of the number of units of time that compose an individual step within a period.

119

120 Table 7 shows all association ends of Series_Period with other classes.

121 **Table 7 - Association ends of Reporting assembly model::Series_Period with other**
122 **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: Reporting contextual model::Series_Period.[] ----- Reporting contextual model::Point.Point[1..*]

123

124 2.2.3.4 TimeSeries

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

126 Table 8 shows all attributes of TimeSeries.

127 **Table 8 - Attributes of Reporting assembly model::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. The businessType identifies the trading nature of an energy product.
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]	in_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the product is being delivered.
4	[1..1]	out_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the product is being extracted.
5	[0..1]	connectingLine_RegisteredResource.mRID ResourceID_String	The unique identification of a resource. --- The identification of the DC link (s) or controllable AC link(s) between areas.
6	[1..1]	quantity_Measure_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure which is applied to the quantity in the Point class.
7	[1..1]	curveType CurveType_String	The identification of the coded representation of the type of curve being described.

128

129 Table 9 shows all association ends of TimeSeries with other classes.

130 **Table 9 - Association ends of Reporting assembly model::TimeSeries with other classes**

Order	mult.	Class name / Role	Description
8	[1..*]	Series_Period Period	The time interval and resolution for a period associated with a TimeSeries. Association Based On: Reporting contextual model::TimeSeries.[] ----- Reporting contextual model::Series_Period.Period[1..*]

131

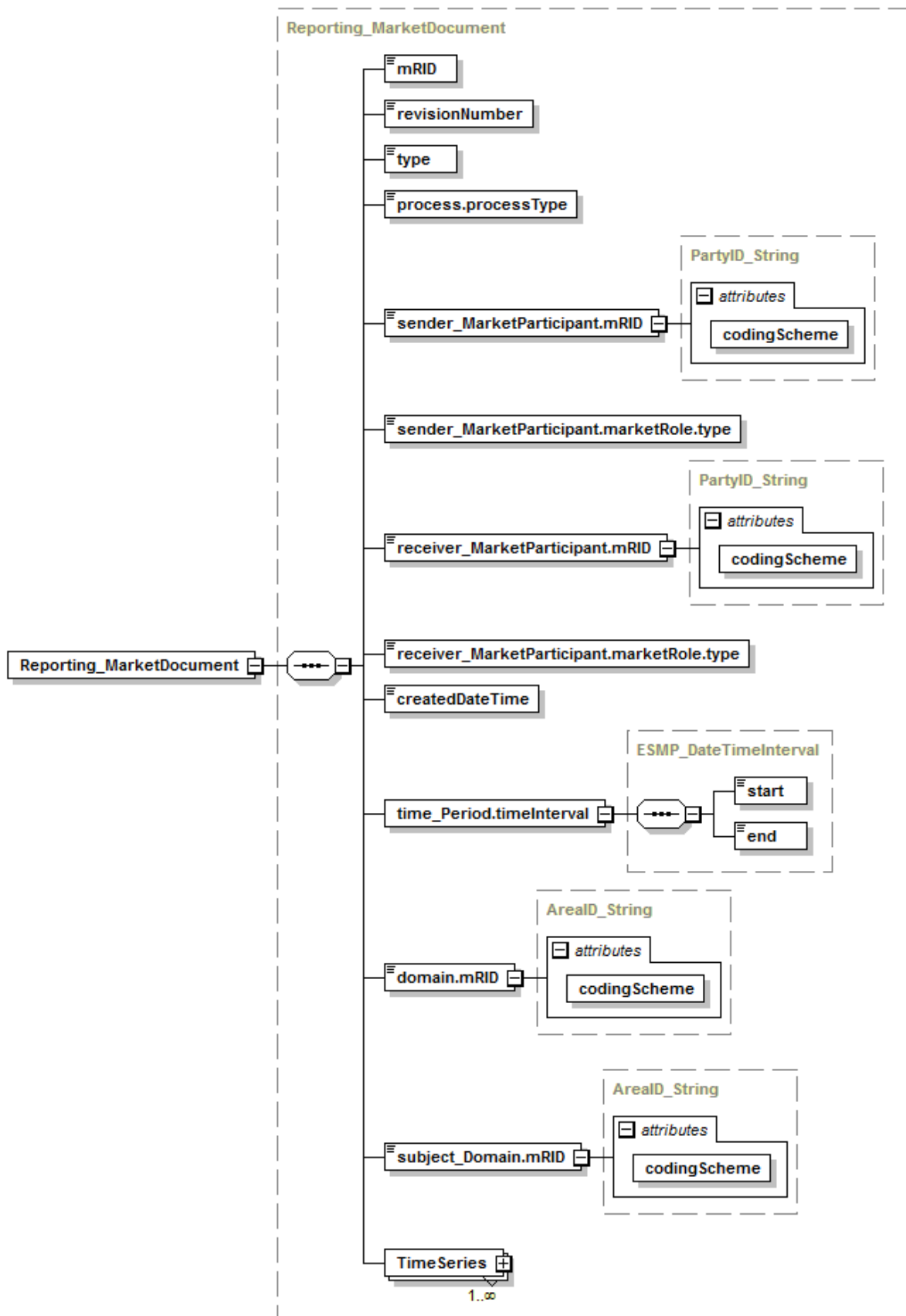
132 **2.2.4 Datatypes**

133 The list of datatypes used for the Reporting assembly model is as follows:

- 134 • ESMP_DateTimeInterval compound
- 135 • AreaID_String datatype, codelist CodingSchemeTypeList
- 136 • BusinessKind_String datatype, codelist BusinessTypeList
- 137 • CurveType_String datatype, codelist CurveTypeList
- 138 • EnergyProductKind_String datatype, codelist EnergyProductTypeList
- 139 • ESMP_DateTime datatype
- 140 • ESMPVersion_String datatype
- 141 • ID_String datatype
- 142 • MarketRoleKind_String datatype, codelist RoleTypeList
- 143 • MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
- 144 • MessageKind_String datatype, codelist MessageTypeList
- 145 • PartyID_String datatype, codelist CodingSchemeTypeList
- 146 • Position_Integer datatype
- 147 • ProcessKind_String datatype, codelist ProcessTypeList
- 148 • ResourceID_String datatype, codelist CodingSchemeTypeList
- 149 • YMDHM_DateTime datatype

150 **2.2.5 Reporting_MarketDocument XML schema structure**

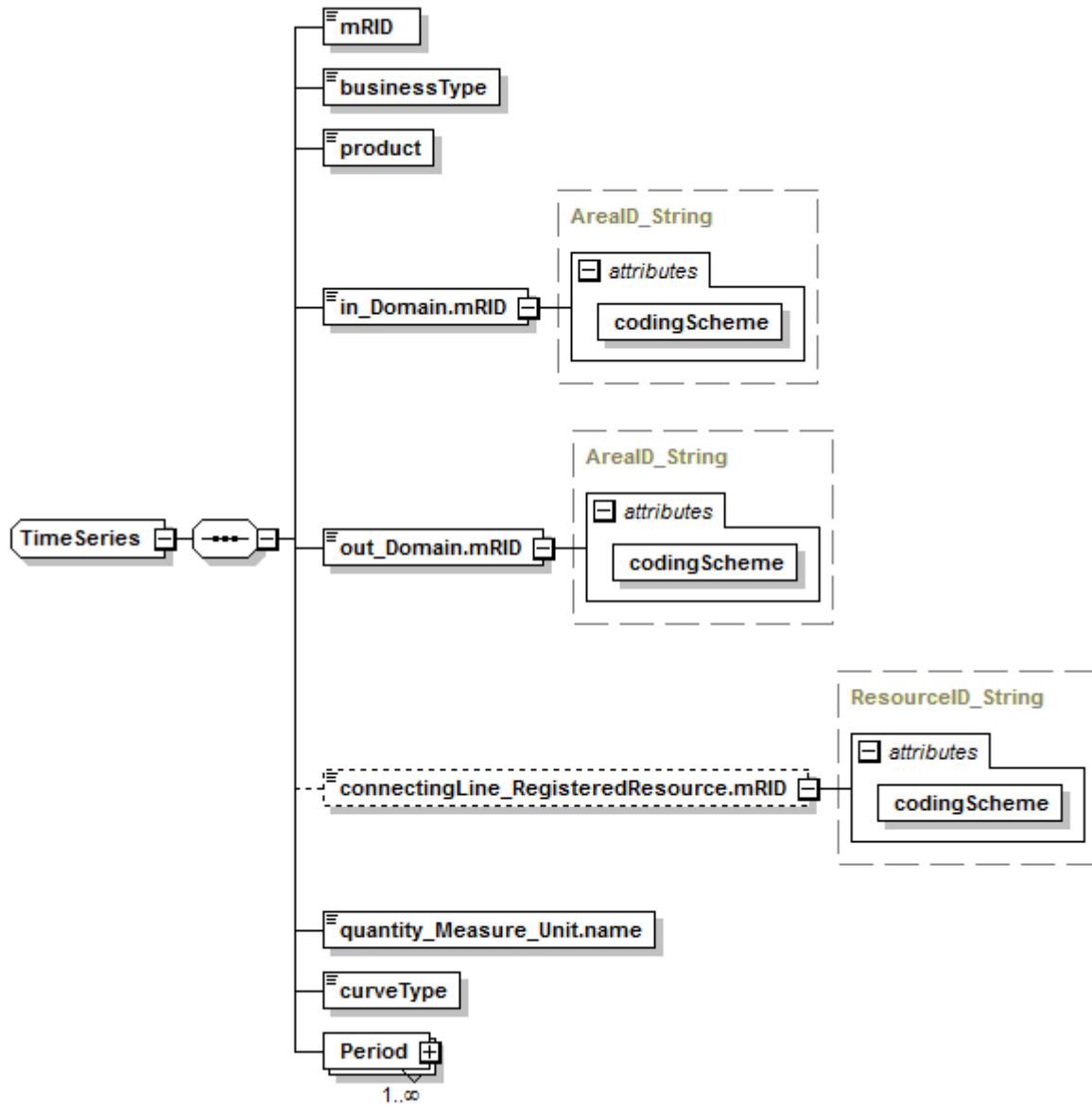
151 Figure 3 to Figure 5 provide the structure of the schema.



152

153

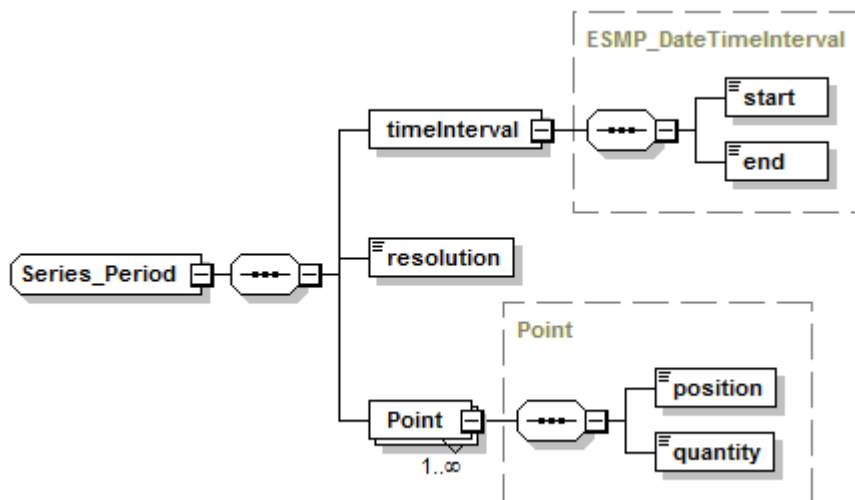
Figure 3 - Reporting_MarketDocument schema structure 1/3



154

155

Figure 4 - Reporting_MarketDocument schema structure 2/3



156

157

Figure 5 - Reporting_MarketDocument schema structure 3/3

158 2.2.6 Reporting_MarketDocument XML schema

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

160 urn:iec62325.351:tc57wg16:451-n:reportingdocument:2:0

```

161 <?xml version="1.0" encoding="utf-8"?>
162 <xs:schema xmlns:cl="urn:entsoe.eu:wgedi:codelists"
163 xmlns:sawsdl="http://www.w3.org/ns/sawsdl" xmlns="urn:iec62325.351:tc57wg16:451-
164 n:reportingdocument:2:0" xmlns:cimp="http://www.iec.ch/cimprofile"
165 attributeFormDefault="unqualified" elementFormDefault="qualified"
166 targetNamespace="urn:iec62325.351:tc57wg16:451-n:reportingdocument:2:0"
167 xmlns:xs="http://www.w3.org/2001/XMLSchema">
168   <xs:import schemaLocation="urn-entsoe-eu-wgedi-codelists.xsd"
169 namespace="urn:entsoe.eu:wgedi:codelists" />
170   <xs:element name="Reporting_MarketDocument" type="Reporting_MarketDocument" />
171   <xs:simpleType name="Position_Integer"
172 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
173     <xs:restriction base="xs:integer">
174       <xs:maxInclusive value="999999" />
175       <xs:minInclusive value="1" />
176     </xs:restriction>
177   </xs:simpleType>
178   <xs:complexType name="Point" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
179 schema-cim16#Point">
180     <xs:sequence>
181       <xs:element minOccurs="1" maxOccurs="1" name="position" type="Position_Integer"
182 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.position">
183         </xs:element>
184       <xs:element minOccurs="1" maxOccurs="1" name="quantity" type="xs:decimal"
185 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.quantity">
186         </xs:element>
187     </xs:sequence>
188   </xs:complexType>
189   <xs:simpleType name="ID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
190 schema-cim16#String">
191     <xs:restriction base="xs:string">
192       <xs:maxLength value="35" />
193     </xs:restriction>
194   </xs:simpleType>
195   <xs:simpleType name="ESMPVersion_String"
196 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
197     <xs:restriction base="xs:string">
198       <xs:pattern value="[1-9]([0-9]){0,2}" />
199     </xs:restriction>
200   </xs:simpleType>
201   <xs:simpleType name="MessageKind_String"
202 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
203     <xs:restriction base="cl:MessageTypeList" />
204   </xs:simpleType>
205   <xs:simpleType name="ProcessKind_String"
206 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
207     <xs:restriction base="cl:ProcessTypeList" />
208   </xs:simpleType>
209   <xs:simpleType name="PartyID_String-base"
210 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
211     <xs:restriction base="xs:string">
212       <xs:maxLength value="16" />
213     </xs:restriction>
214   </xs:simpleType>
215   <xs:complexType name="PartyID_String"
216 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
217     <xs:simpleContent>
218       <xs:extension base="PartyID_String-base">
219         <xs:attribute name="codingScheme" type="cl:CodingSchemeTypeList"
220 use="required" />
221       </xs:extension>
222     </xs:simpleContent>
223   </xs:complexType>

```

```

224     <xs:simpleType name="MarketRoleKind_String"
225 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
226     <xs:restriction base="cl:RoleTypeList" />
227     </xs:simpleType>
228     <xs:simpleType name="ESMP_DateTime"
229 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
230     <xs:restriction base="xs:dateTime">
231     <xs:pattern value="((([0-9]{4}) [\-] (0[13578]|1[02]) [\-] (0[1-9]| [12][0-
232 9]|3[01]) | ([0-9]{4}) [\-] ((0[469]) | (11)) [\-] (0[1-9]| [12][0-9]|30)) T(( [01][0-9]|2[0-
233 3]):[0-5][0-9]:[0-5][0-
234 9]) Z) | ((([13579] [26] [02468] [048] | [13579] [01345789] (0) [48] | [13579] [01345789] [2468] [048]
235 | [02468] [048] [02468] [048] | [02468] [1235679] (0) [48] | [02468] [1235679] [2468] [048] | [0-
236 9][0-9] [13579] [26]) [\-] (02) [\-] (0[1-9]|1[0-9]|2[0-9]) T(( [01][0-9]|2[0-3]):[0-5][0-
237 9]:[0-5][0-
238 9]) Z) | ((([13579] [26] [02468] [1235679] | [13579] [01345789] (0) [01235679] | [13579] [01345789] [
239 2468] [1235679] | [02468] [048] [02468] [1235679] | [02468] [1235679] (0) [01235679] | [02468] [123
240 5679] [2468] [1235679] | [0-9][0-9] [13579] [01345789]) [\-] (02) [\-] (0[1-9]|1[0-9]|2[0-
241 8]) T(( [01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9]) Z)" />
242     </xs:restriction>
243     </xs:simpleType>
244     <xs:simpleType name="AreaID_String-base"
245 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
246     <xs:restriction base="xs:string">
247     <xs:maxLength value="18" />
248     </xs:restriction>
249     </xs:simpleType>
250     <xs:complexType name="AreaID_String"
251 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
252     <xs:simpleContent>
253     <xs:extension base="AreaID_String-base">
254     <xs:attribute name="codingScheme" type="cl:CodingSchemeTypeList"
255 use="required" />
256     </xs:extension>
257     </xs:simpleContent>
258     </xs:complexType>
259     <xs:simpleType name="YMDHM_DateTime"
260 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
261     <xs:restriction base="xs:string">
262     <xs:pattern value="((([0-9]{4}) [\-] (0[13578]|1[02]) [\-] (0[1-9]| [12][0-
263 9]|3[01]) | ([0-9]{4}) [\-] ((0[469]) | (11)) [\-] (0[1-9]| [12][0-9]|30)) T(( [01][0-9]|2[0-
264 3]):[0-5][0-
265 9]) Z) | ((([13579] [26] [02468] [048] | [13579] [01345789] (0) [48] | [13579] [01345789] [2468] [048]
266 | [02468] [048] [02468] [048] | [02468] [1235679] (0) [48] | [02468] [1235679] [2468] [048] | [0-
267 9][0-9] [13579] [26]) [\-] (02) [\-] (0[1-9]|1[0-9]|2[0-9]) T(( [01][0-9]|2[0-3]):[0-5][0-
268 9]) Z) | ((([13579] [26] [02468] [1235679] | [13579] [01345789] (0) [01235679] | [13579] [01345789] [
269 2468] [1235679] | [02468] [048] [02468] [1235679] | [02468] [1235679] (0) [01235679] | [02468] [123
270 5679] [2468] [1235679] | [0-9][0-9] [13579] [01345789]) [\-] (02) [\-] (0[1-9]|1[0-9]|2[0-
271 8]) T(( [01][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 minOccurs="1" maxOccurs="1" name="start" type="YMDHM_DateTime"
278 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
279 cim16#DateTimeInterval.start">
280     </xs:element>
281     <xs:element minOccurs="1" maxOccurs="1" name="end" type="YMDHM_DateTime"
282 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
283 cim16#DateTimeInterval.end">
284     </xs:element>
285     </xs:sequence>
286     </xs:complexType>
287     <xs:complexType name="Reporting_MarketDocument"
288 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
289     <xs:sequence>
290     <xs:element minOccurs="1" maxOccurs="1" name="mRID" type="ID_String"
291 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
292 cim16#IdentifiedObject.mRID">

```



```

293         </xs:element>
294         <xs:element minOccurs="1" maxOccurs="1" name="revisionNumber"
295 type="ESMPVersion_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
296 cim16#Document.revisionNumber">
297         </xs:element>
298         <xs:element minOccurs="1" maxOccurs="1" name="type" type="MessageKind_String"
299 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.type">
300         </xs:element>
301         <xs:element minOccurs="1" maxOccurs="1" name="process.processType"
302 type="ProcessKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
303 cim16#Process.processType">
304         </xs:element>
305         <xs:element minOccurs="1" maxOccurs="1" name="sender_MarketParticipant.mRID"
306 type="PartyID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
307 cim16#IdentifiedObject.mRID">
308         </xs:element>
309         <xs:element minOccurs="1" maxOccurs="1"
310 name="sender_MarketParticipant.marketRole.type" type="MarketRoleKind_String"
311 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type">
312         </xs:element>
313         <xs:element minOccurs="1" maxOccurs="1" name="receiver_MarketParticipant.mRID"
314 type="PartyID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
315 cim16#IdentifiedObject.mRID">
316         </xs:element>
317         <xs:element minOccurs="1" maxOccurs="1"
318 name="receiver_MarketParticipant.marketRole.type" type="MarketRoleKind_String"
319 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type">
320         </xs:element>
321         <xs:element minOccurs="1" maxOccurs="1" name="createdDateTime"
322 type="ESMP_DateTime" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
323 cim16#Document.createdDateTime">
324         </xs:element>
325         <xs:element minOccurs="1" maxOccurs="1" name="time_Period.timeInterval"
326 type="ESMP_DateTimeInterval" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
327 schema-cim16#Period.timeInterval">
328         </xs:element>
329         <xs:element minOccurs="1" maxOccurs="1" name="domain.mRID" type="AreaID_String"
330 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
331 cim16#IdentifiedObject.mRID">
332         </xs:element>
333         <xs:element minOccurs="1" maxOccurs="1" name="subject_Domain.mRID"
334 type="AreaID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
335 cim16#IdentifiedObject.mRID">
336         </xs:element>
337         <xs:element minOccurs="1" maxOccurs="unbounded" name="TimeSeries"
338 type="TimeSeries" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
339 cim16#MarketDocument.TimeSeries">
340         </xs:element>
341         </xs:sequence>
342         </xs:complexType>
343         <xs:complexType name="Series_Period"
344 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">
345         <xs:sequence>
346         <xs:element minOccurs="1" maxOccurs="1" name="timeInterval"
347 type="ESMP_DateTimeInterval" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
348 schema-cim16#Period.timeInterval">
349         </xs:element>
350         <xs:element minOccurs="1" maxOccurs="1" name="resolution" type="xs:duration"
351 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.resolution">
352         </xs:element>
353         <xs:element minOccurs="1" maxOccurs="unbounded" name="Point" type="Point"
354 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.Point">
355         </xs:element>
356         </xs:sequence>
357         </xs:complexType>
358         <xs:simpleType name="BusinessKind_String"
359 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
360         <xs:restriction base="cl:BusinessTypeList" />
361         </xs:simpleType>

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362     <xs:simpleType name="EnergyProductKind_String"
363 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
364     <xs:restriction base="cl:EnergyProductTypeList" />
365     </xs:simpleType>
366     <xs:simpleType name="ResourceID_String-base"
367 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
368     <xs:restriction base="xs:string">
369     <xs:maxLength value="60" />
370     </xs:restriction>
371     </xs:simpleType>
372     <xs:complexType name="ResourceID_String"
373 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
374     <xs:simpleContent>
375     <xs:extension base="ResourceID_String-base">
376     <xs:attribute name="codingScheme" type="cl:CodingSchemeTypeList"
377 use="required" />
378     </xs:extension>
379     </xs:simpleContent>
380     </xs:complexType>
381     <xs:simpleType name="MeasurementUnitKind_String"
382 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
383     <xs:restriction base="cl:UnitOfMeasureTypeList" />
384     </xs:simpleType>
385     <xs:simpleType name="CurveType_String"
386 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
387     <xs:restriction base="cl:CurveTypeList" />
388     </xs:simpleType>
389     <xs:complexType name="TimeSeries"
390 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries">
391     <xs:sequence>
392     <xs:element minOccurs="1" maxOccurs="1" name="mRID" type="ID_String"
393 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
394 cim16#IdentifiedObject.mRID">
395     </xs:element>
396     <xs:element minOccurs="1" maxOccurs="1" name="businessType"
397 type="BusinessKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
398 cim16#TimeSeries.businessType">
399     </xs:element>
400     <xs:element minOccurs="1" maxOccurs="1" name="product"
401 type="EnergyProductKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
402 schema-cim16#TimeSeries.product">
403     </xs:element>
404     <xs:element minOccurs="1" maxOccurs="1" name="in_Domain.mRID"
405 type="AreaID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
406 cim16#IdentifiedObject.mRID">
407     </xs:element>
408     <xs:element minOccurs="1" maxOccurs="1" name="out_Domain.mRID"
409 type="AreaID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
410 cim16#IdentifiedObject.mRID">
411     </xs:element>
412     <xs:element minOccurs="0" maxOccurs="1"
413 name="connectingLine_RegisteredResource.mRID" type="ResourceID_String"
414 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
415 cim16#IdentifiedObject.mRID">
416     </xs:element>
417     <xs:element minOccurs="1" maxOccurs="1" name="quantity_Measure_Unit.name"
418 type="MeasurementUnitKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
419 schema-cim16#Unit.name">
420     </xs:element>
421     <xs:element minOccurs="1" maxOccurs="1" name="curveType"
422 type="CurveType_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
423 cim16#TimeSeries.curveType">
424     </xs:element>
425     <xs:element minOccurs="1" maxOccurs="unbounded" name="Period"
426 type="Series_Period" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
427 cim16#TimeSeries.Period">
428     </xs:element>
429     </xs:sequence>
430     </xs:complexType>

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431 </xs: schema>