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European Network of
Transmission System Operators
for Electricity

REPORTING DOCUMENT
UML MODEL AND SCHEMA

2022-02-01
APPROVED DOCUMENT
VERSION 1.1

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VERSION 1.1

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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.
1	1	2022-02-01	Updates in reporting document XSD v2.1: • Quantity_Measure_Unit.name attribute was renamed to Quantity_Measurement_Unit.name to be compliant with the ESMP. • mRID of Document, Series and Timeseries (ID_String type) was enlarged from 35 to 60 characters. Approved by MC.

57

58 **Objective**

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

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

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

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

66 • Description of the business process;

67 • Use case of the business process;

68 • Sequence diagrams of the business process;

69 • List of the schema (XSD) to be used in the business process and versions of the
70   schema;

71 • For each schema, dependency tables providing the necessary information for the
72   generation of the XML instances, i.e. when the optional attributes are to be used, which
73   codes from which ENTSO-E codelist are to be used.

74   **Reporting_MarketDocument**

75   **2.1   Reporting contextual model**

76   **2.1.1   Overview of the model**

77   Figure 1 shows the model.

78
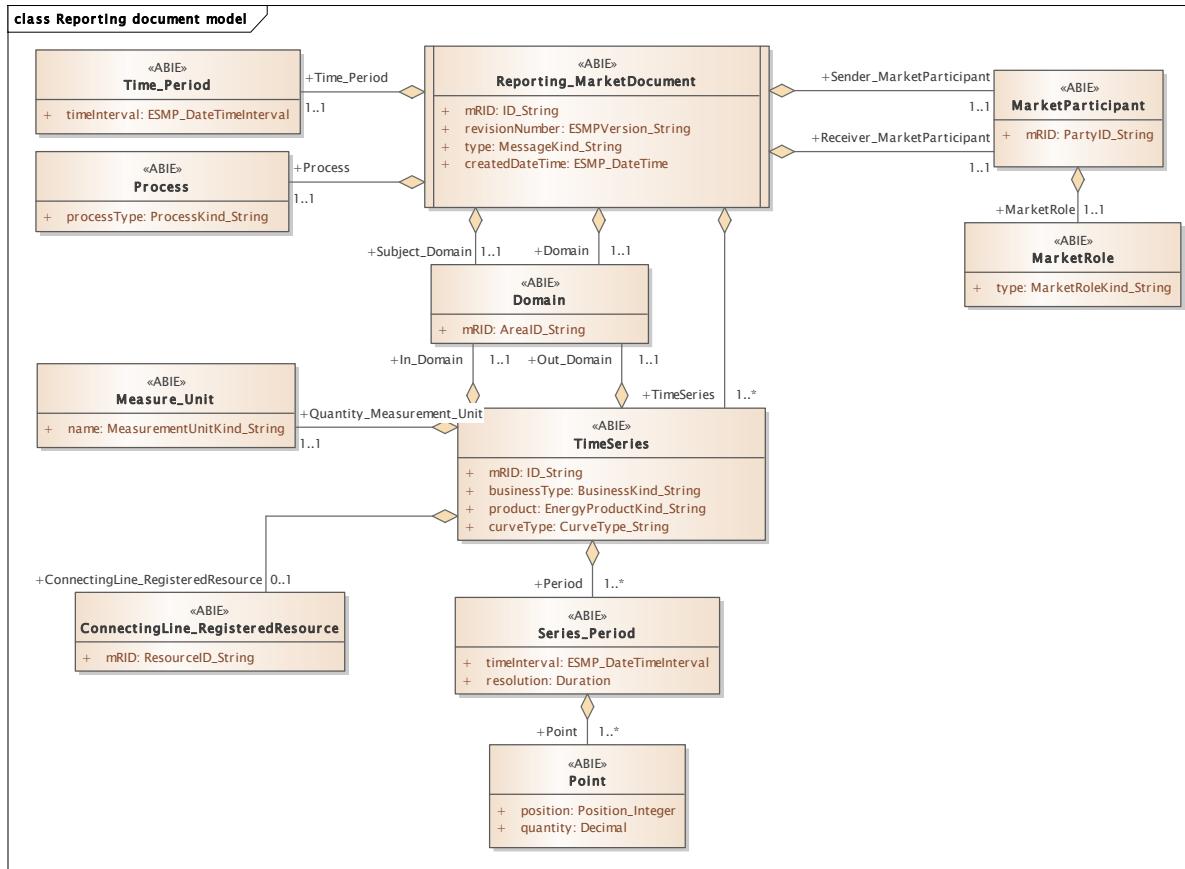
79   **Figure 1 - Reporting contextual model**

80

81

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

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88

2.2   Reporting assembly model

2.2.1   Overview of the model

91   Figure 2 shows the model.
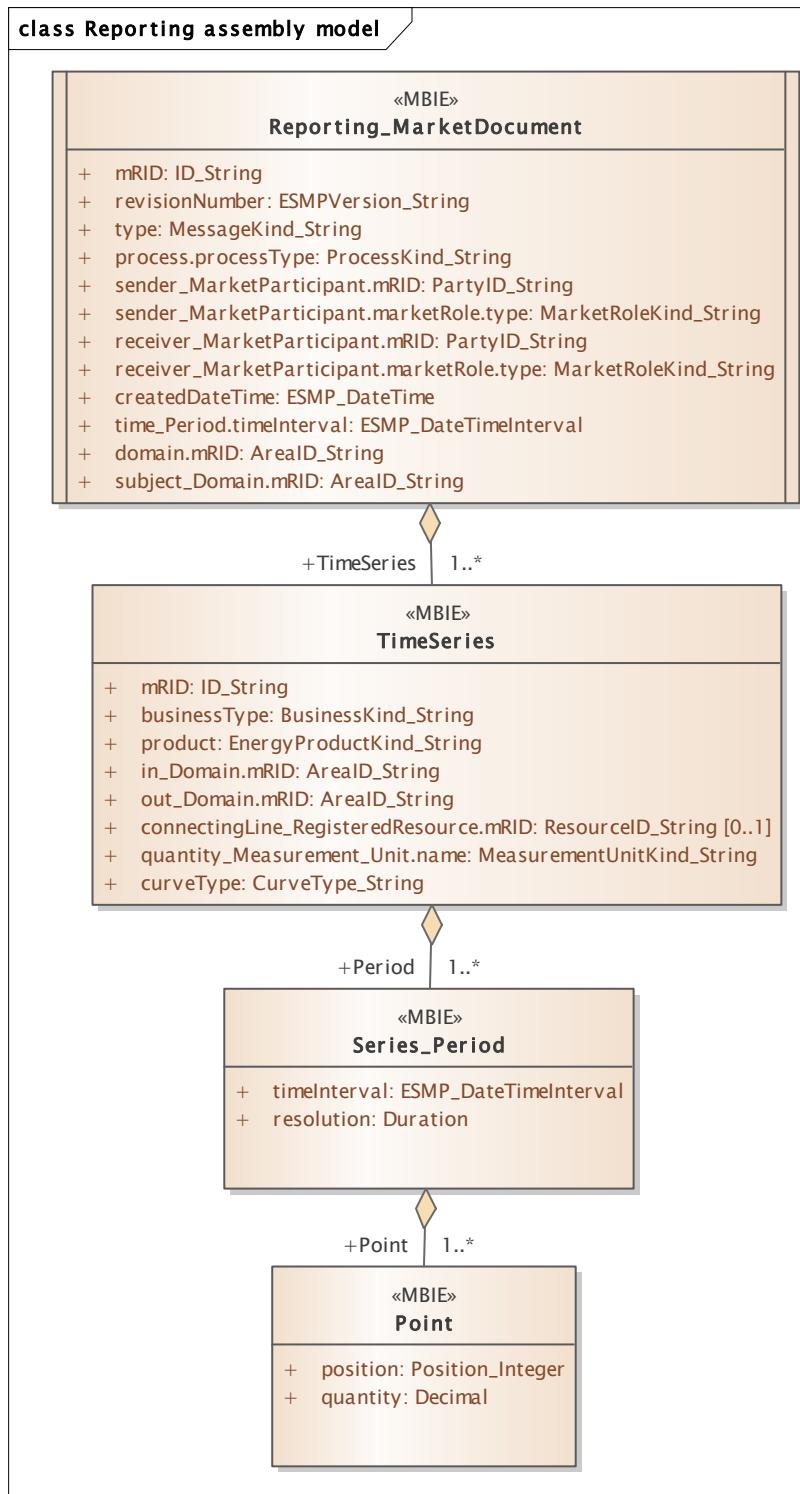
92

93   **Figure 2 - Reporting assembly model**

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94 **2.2.2 IsBasedOn relationships from the European style market profile**

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

97 **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

98

99 **2.2.3 Detailed Reporting assembly model**

100 **2.2.3.1 Reporting_MarketDocument root class**

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

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

105 Table 3 shows all attributes of Reporting_MarketDocument.

106 **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.

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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.

107

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

109   **Table 4 - Association ends of Reporting assembly model::Reporting_MarketDocument**
110   **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..*]

111

112   **2.2.3.2   Point**

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

114   Table 5 shows all attributes of Point.

115   **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.

116

117   **2.2.3.3   Series_Period**

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

119   Table 6 shows all attributes of Series_Period.

120   **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.

121

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

123   **Table 7 - Association ends of Reporting assembly model::Series_Period with other**
124   **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..*]

125

2.2.3.4   TimeSeries

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

128   Table 8 shows all attributes of TimeSeries.

129   **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_Measurement_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.

130

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

132   **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..*]

133

134 **2.2.4   Datatypes**

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

136 • ESMP_DateTimeInterval compound

137 • AreaID_String datatype, codelist CodingSchemeTypeList

138 • BusinessKind_String datatype, codelist BusinessTypeList

139 • CurveType_String datatype, codelist CurveTypeList

140 • EnergyProductKind_String datatype, codelist EnergyProductTypeList

141 • ESMP_DateTime datatype

142 • ESMPVersion_String datatype

143 • ID_String datatype

144 • MarketRoleKind_String datatype, codelist RoleTypeList

145 • MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList

146 • MessageKind_String datatype, codelist MessageTypeList

147 • PartyID_String datatype, codelist CodingSchemeTypeList

148 • Position_Integer datatype

149 • ProcessKind_String datatype, codelist ProcessTypeList

150 • ResourceID_String datatype, codelist CodingSchemeTypeList

151 • YMDHM_DateTime datatype

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152   **2.2.5**   **Reporting_MarketDocument XML schema structure**

153   Figure 3 provides the structure of the schema.
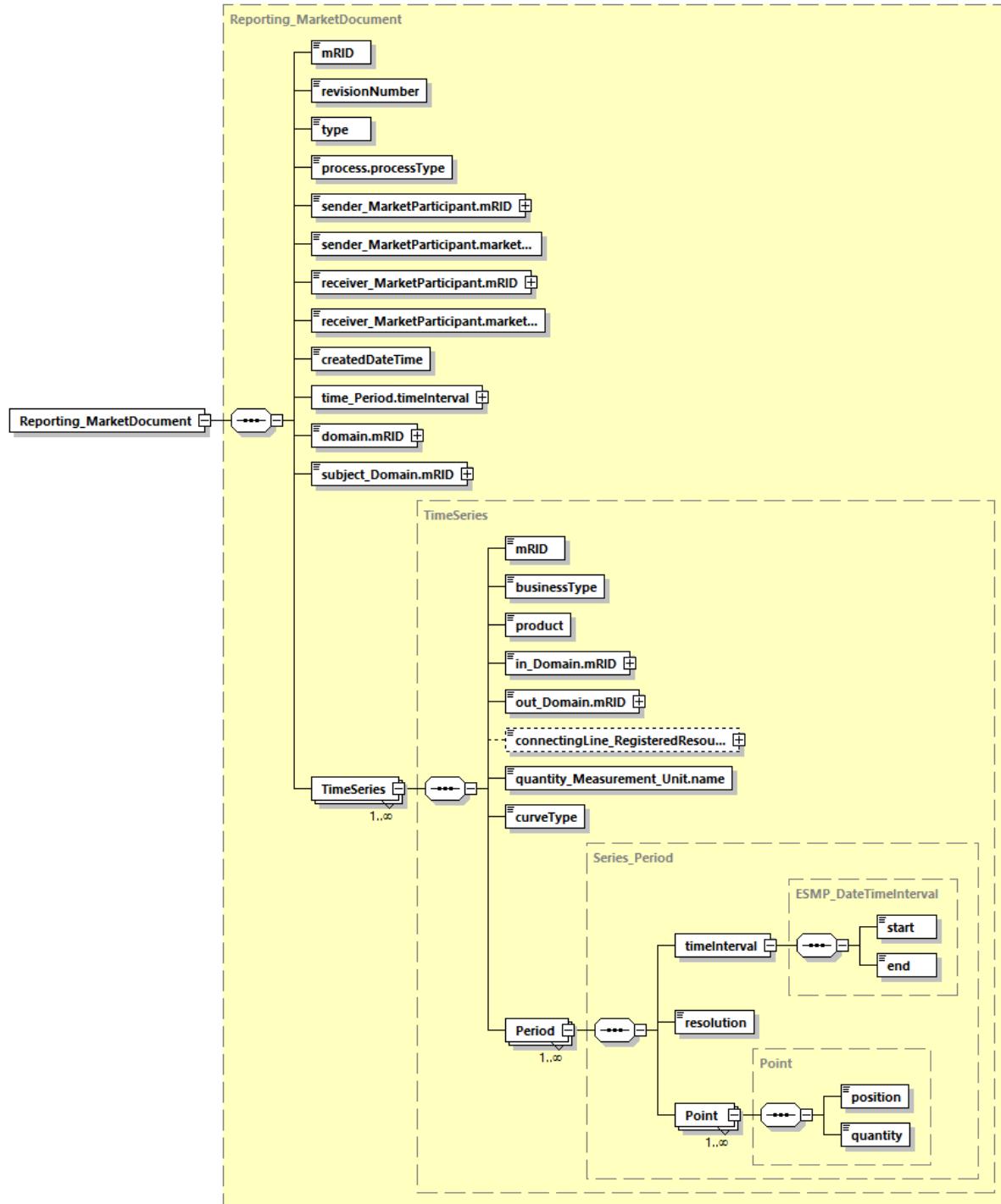
154

Generated by XMLSpy   www.altova.com

155   **Figure 3 - Reporting_MarketDocument schema structure**

156

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158

2.2.6   Reporting_MarketDocument XML schema

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

161 urn:iec62325.351:tc57wg16: 451-n:reportingdocument:2:1

```
162  <?xml version="1.0" encoding="utf-8"?>
163  <xs:schema xmlns:ecl="urn:entsoe.eu:wgedi:codelists"
164  xmlns="urn:iec62325.351:tc57wg16:451-n:reportingdocument:2:1"
165  xmlns:sawsdl="http://www.w3.org/ns/sawsdl"
166  xmlns:cimp="http://www.iec.ch/cimprofile"
167  xmlns:xs="http://www.w3.org/2001/XMLSchema"
168  targetNamespace="urn:iec62325.351:tc57wg16:451-n:reportingdocument:2:1"
169  elementFormDefault="qualified" attributeFormDefault="unqualified">
170          <xs:import namespace="urn:entsoe:wgedi:codelists" schemaLocation="urn-
171  entsoe-eu-wgedi-codelists.xsd"/>
172          <xs:element name="Reporting_MarketDocument"
173  type="Reporting_MarketDocument"/>
174          <xs:simpleType name="Position_Integer"
175  sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
176                  <xs:restriction base="xs:integer">
177                          <xs:maxInclusive value="999999"/>
178                          <xs:minInclusive value="1"/>
179                  </xs:restriction>
180          </xs:simpleType>
181          <xs:complexType name="Point"
182  sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point">
183                  <xs:sequence>
184                          <xs:element name="position" type="Position_Integer"
185  minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
186  schema-cim16#Point.position"/>
187                          <xs:element name="quantity" type="xs:decimal" minOccurs="1"
188  maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
189  cim16#Point.quantity"/>
190                  </xs:sequence>
191          </xs:complexType>
192          <xs:simpleType name="ID_String"
193  sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
194                  <xs:restriction base="xs:string">
195                          <xs:maxLength value="60"/>
196                  </xs:restriction>
197          </xs:simpleType>
198          <xs:simpleType name="ESMPVersion_String"
199  sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
200                  <xs:restriction base="xs:string">
201                          <xs:pattern value="[1-9]([0-9]){0,2}"/>
202                  </xs:restriction>
203          </xs:simpleType>
204          <xs:simpleType name="MessageKind_String"
205  sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
206                  <xs:restriction base="ecl:MessageTypeList"/>
207          </xs:simpleType>
208          <xs:simpleType name="ProcessKind_String"
209  sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
210                  <xs:restriction base="ecl:ProcessTypeList"/>
211          </xs:simpleType>
```

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```xml
212            <xs:simpleType name="PartyID_String-base"
213    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
214                <xs:restriction base="xs:string">
215                    <xs:maxLength value="16"/>
216                </xs:restriction>
217            </xs:simpleType>
218            <xs:complexType name="PartyID_String"
219    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
220                <xs:simpleContent>
221                    <xs:extension base="PartyID_String-base">
222                        <xs:attribute name="codingScheme"
223    type="ecl:CodingSchemeTypeList" use="required"/>
224                    </xs:extension>
225                </xs:simpleContent>
226            </xs:complexType>
227            <xs:simpleType name="MarketRoleKind_String"
228    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
229                <xs:restriction base="ecl:RoleTypeList"/>
230            </xs:simpleType>
231            <xs:simpleType name="ESMP_DateTime"
232    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
233                <xs:restriction base="xs:dateTime">
234                    <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-
235    9]|[12][0-9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
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237    9])Z)|(((13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][0
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240    5][0-9]:[0-5][0-
241    9])Z)|(([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][0134578
242    9][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[0246
243    8][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
244    9]|2[0-8])T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)"/>
245                </xs:restriction>
246            </xs:simpleType>
247            <xs:simpleType name="AreaID_String-base"
248    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
249                <xs:restriction base="xs:string">
250                    <xs:maxLength value="18"/>
251                </xs:restriction>
252            </xs:simpleType>
253            <xs:complexType name="AreaID_String"
254    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
255                <xs:simpleContent>
256                    <xs:extension base="AreaID_String-base">
257                        <xs:attribute name="codingScheme"
258    type="ecl:CodingSchemeTypeList" use="required"/>
259                    </xs:extension>
260                </xs:simpleContent>
261            </xs:complexType>
262            <xs:simpleType name="YMDHM_DateTime"
263    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
264                <xs:restriction base="xs:string">
265                    <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-
266    9]|[12][0-9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
267    9]|30))T(([01][0-9]|2[0-3]):[0-5][0-
268    9])Z)|(((13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][0
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271    5][0-
```

```
272   9])Z)|(([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][0134578
273   9][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[0246
274   8][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
275   9]|2[0-8])T(([01][0-9]|2[0-3]):[0-5][0-9])Z)"/>
276                    </xs:restriction>
277           </xs:simpleType>
278           <xs:complexType name="ESMP_DateTimeInterval"
279   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
280                    <xs:sequence>
281                        <xs:element name="start" type="YMDHM_DateTime" minOccurs="1"
282   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
283   cim16#DateTimeInterval.start"/>
284                        <xs:element name="end" type="YMDHM_DateTime" minOccurs="1"
285   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
286   cim16#DateTimeInterval.end"/>
287                    </xs:sequence>
288           </xs:complexType>
289           <xs:complexType name="Reporting_MarketDocument"
290   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
291                    <xs:sequence>
292                        <xs:element name="mRID" type="ID_String" minOccurs="1"
293   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
294   cim16#IdentifiedObject.mRID"/>
295                        <xs:element name="revisionNumber" type="ESMPVersion_String"
296   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
297   schema-cim16#Document.revisionNumber"/>
298                        <xs:element name="type" type="MessageKind_String" minOccurs="1"
299   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
300   cim16#Document.type"/>
301                        <xs:element name="process.processType"
302   type="ProcessKind_String" minOccurs="1" maxOccurs="1"
303   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
304   cim16#Process.processType"/>
305                        <xs:element name="sender_MarketParticipant.mRID"
306   type="PartyID_String" minOccurs="1" maxOccurs="1"
307   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
308   cim16#IdentifiedObject.mRID"/>
309                        <xs:element name="sender_MarketParticipant.marketRole.type"
310   type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
311   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
312                        <xs:element name="receiver_MarketParticipant.mRID"
313   type="PartyID_String" minOccurs="1" maxOccurs="1"
314   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
315   cim16#IdentifiedObject.mRID"/>
316                        <xs:element name="receiver_MarketParticipant.marketRole.type"
317   type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
318   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
319                        <xs:element name="createdDateTime" type="ESMP_DateTime"
320   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
321   schema-cim16#Document.createdDateTime"/>
322                        <xs:element name="time_Period.timeInterval"
323   type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1"
324   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
325   cim16#Period.timeInterval"/>
326                        <xs:element name="domain.mRID" type="AreaID_String"
327   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
328   schema-cim16#IdentifiedObject.mRID"/>
329                        <xs:element name="subject_Domain.mRID" type="AreaID_String"
330   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
331   schema-cim16#IdentifiedObject.mRID"/>
```

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```
332          <xs:element name="TimeSeries" type="TimeSeries" minOccurs="1"
333   maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
334   cim16#MarketDocument.TimeSeries"/>
335              </xs:sequence>
336          </xs:complexType>
337          <xs:complexType name="Series_Period"
338   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">
339              <xs:sequence>
340                  <xs:element name="timeInterval" type="ESMP_DateTimeInterval"
341   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
342   schema-cim16#Period.timeInterval"/>
343                  <xs:element name="resolution" type="xs:duration" minOccurs="1"
344   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
345   cim16#Period.resolution"/>
346                  <xs:element name="Point" type="Point" minOccurs="1"
347   maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
348   cim16#Period.Point"/>
349              </xs:sequence>
350          </xs:complexType>
351          <xs:simpleType name="BusinessKind_String"
352   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
353              <xs:restriction base="ecl:BusinessTypeList"/>
354          </xs:simpleType>
355          <xs:simpleType name="EnergyProductKind_String"
356   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
357              <xs:restriction base="ecl:EnergyProductTypeList"/>
358          </xs:simpleType>
359          <xs:simpleType name="ResourceID_String-base"
360   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
361              <xs:restriction base="xs:string">
362                  <xs:maxLength value="60"/>
363              </xs:restriction>
364          </xs:simpleType>
365          <xs:complexType name="ResourceID_String"
366   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
367              <xs:simpleContent>
368                  <xs:extension base="ResourceID_String-base">
369                      <xs:attribute name="codingScheme"
370   type="ecl:CodingSchemeTypeList" use="required"/>
371                  </xs:extension>
372              </xs:simpleContent>
373          </xs:complexType>
374          <xs:simpleType name="MeasurementUnitKind_String"
375   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
376              <xs:restriction base="ecl:UnitOfMeasureTypeList"/>
377          </xs:simpleType>
378          <xs:simpleType name="CurveType_String"
379   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
380              <xs:restriction base="ecl:CurveTypeList"/>
381          </xs:simpleType>
382          <xs:complexType name="TimeSeries"
383   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries">
384              <xs:sequence>
385                  <xs:element name="mRID" type="ID_String" minOccurs="1"
386   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
387   cim16#IdentifiedObject.mRID"/>
388                  <xs:element name="businessType" type="BusinessKind_String"
389   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
390   schema-cim16#TimeSeries.businessType"/>
```

```
391              <xs:element name="product" type="EnergyProductKind_String"
392    minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
393    schema-cim16#TimeSeries.product"/>
394              <xs:element name="in_Domain.mRID" type="AreaID_String"
395    minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
396    schema-cim16#IdentifiedObject.mRID"/>
397              <xs:element name="out_Domain.mRID" type="AreaID_String"
398    minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
399    schema-cim16#IdentifiedObject.mRID"/>
400              <xs:element name="connectingLine_RegisteredResource.mRID"
401    type="ResourceID_String" minOccurs="0" maxOccurs="1"
402    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
403    cim16#IdentifiedObject.mRID"/>
404              <xs:element name="quantity_Measurement_Unit.name"
405    type="MeasurementUnitKind_String" minOccurs="1" maxOccurs="1"
406    sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
407              <xs:element name="curveType" type="CurveType_String"
408    minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
409    schema-cim16#TimeSeries.curveType"/>
410              <xs:element name="Period" type="Series_Period" minOccurs="1"
411    maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
412    cim16#TimeSeries.Period"/>
413            </xs:sequence>
414        </xs:complexType>
415    </xs:schema>
416
```