



European Network of
Transmission System Operators
for Electricity

SCHEDULE DOCUMENT UML MODEL AND SCHEMA

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2

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Revision History

Version	Release	Date	Comments
0	1	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. Document approved by MC

60

61 **1 Objective**

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

64 The schema of the Schedule_MarketDocument could be used in various business processes.

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

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

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

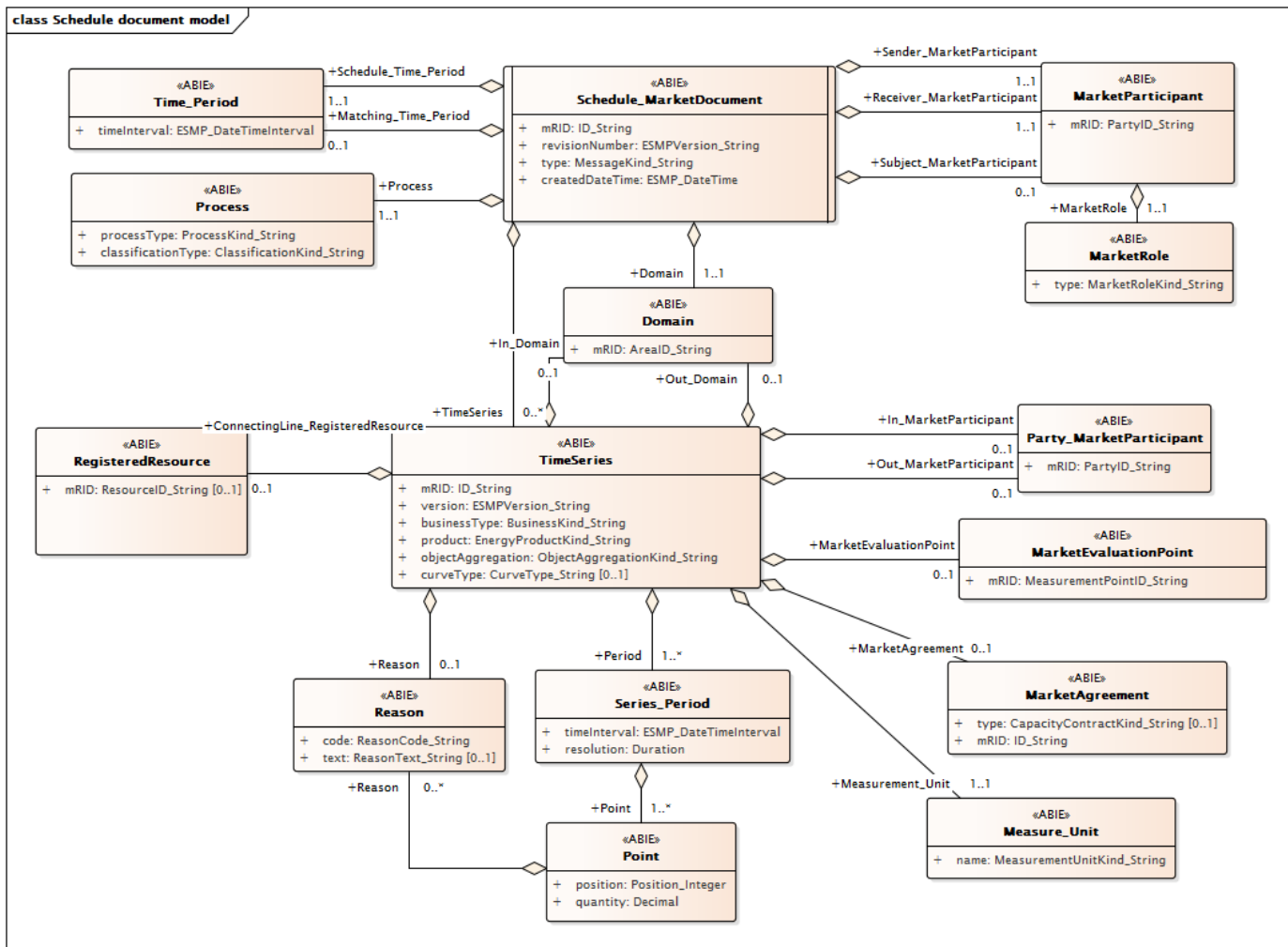
77

78 **2 Schedule_MarketDocument**

79 **2.1 Schedule contextual model**

80 **2.1.1 Overview of the model**

81 Figure 1 shows the model.



82

83

Figure 1 - Schedule contextual model

84 **2.1.2 IsBasedOn relationships from the European style market profile**

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

87 **Table 1 - IsBasedOn dependency**

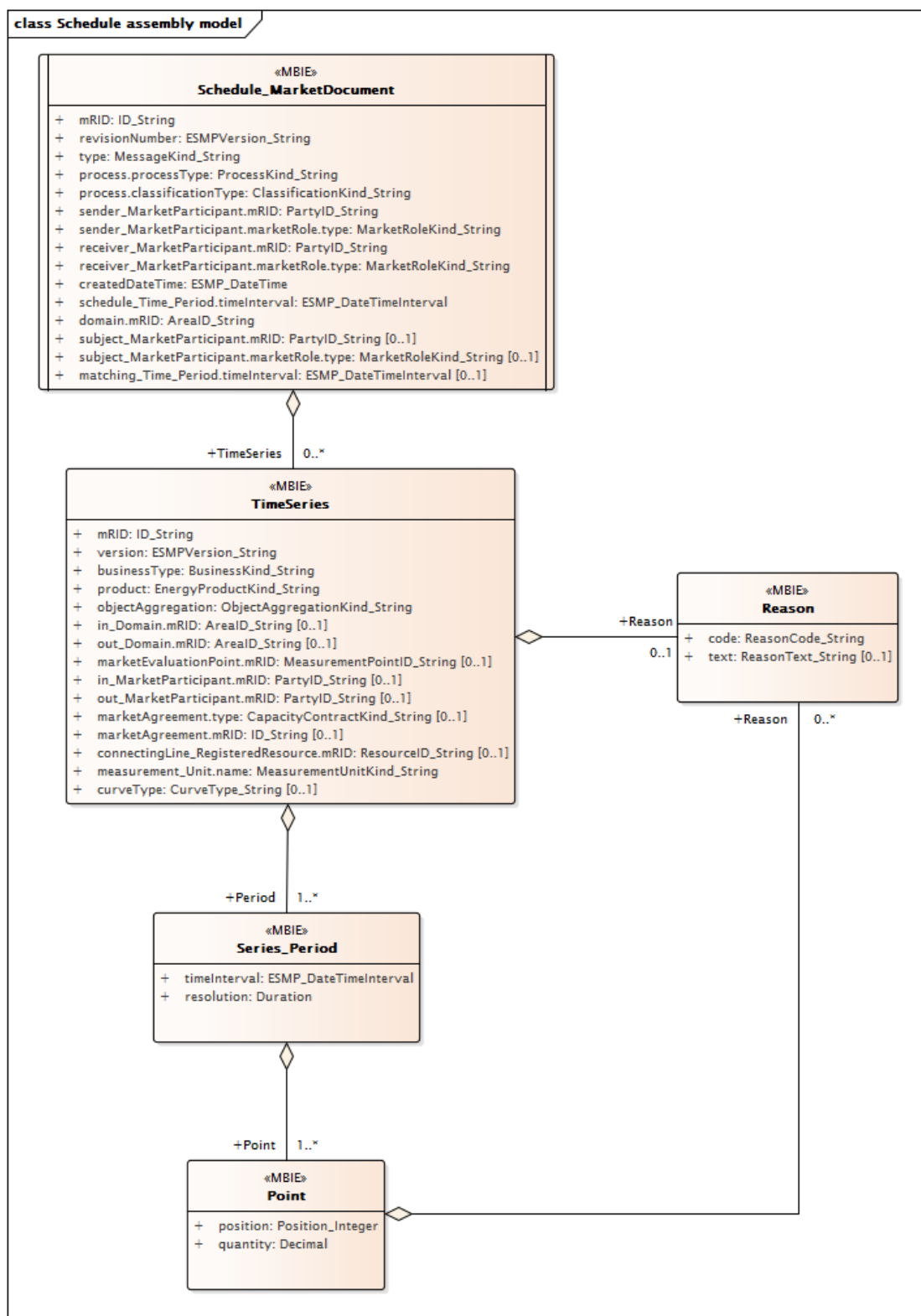
Name	Complete IsBasedOn Path
Domain	TC57CIM::IEC62325::MarketManagement::Domain
MarketAgreement	TC57CIM::IEC62325::MarketManagement::MarketAgreement
MarketEvaluationPoint	TC57CIM::IEC62325::MarketManagement::MarketEvaluationPoint
MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
MarketRole	TC57CIM::IEC62325::MarketCommon::MarketRole
Measure_Unit	TC57CIM::IEC62325::MarketManagement::Unit
Party_MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
Point	TC57CIM::IEC62325::MarketManagement::Point
Process	TC57CIM::IEC62325::MarketManagement::Process
Reason	TC57CIM::IEC62325::MarketManagement::Reason
RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource
Schedule_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
Time_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries

88

89 2.2 Schedule assembly model

90 2.2.1 Overview of the model

91 Figure 2 shows the model.



92

93

Figure 2 - Schedule assembly model

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
Reason	TC57CIM::IEC62325::MarketManagement::Reason
Schedule_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries

98

99 **2.2.3 Detailed Schedule assembly model**

100 **2.2.3.1 Schedule_MarketDocument root class**

101 A schedule document provides the position of a party or a domain related to some market
102 information; it includes a set of time series.

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

105 Table 3 shows all attributes of Schedule_MarketDocument.

106 **Table 3 - Attributes of Schedule assembly model::Schedule_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]	process.classificationType ClassificationKind_String	The classification mechanism used to group a set of objects together within a business process. The grouping may be of a detailed or a summary nature. --- The process dealt with in the document.
5	[1..1]	sender_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- Document owner.
6	[1..1]	sender_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- Document owner. --- The role associated with a MarketParticipant.
7	[1..1]	receiver_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- Document recipient.
8	[1..1]	receiver_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- Document recipient. --- The role associated with a MarketParticipant.
9	[1..1]	createdDateTime ESMP_DateTime	The date and time of the creation of the document.

Order	mult.	Attribute name / Attribute type	Description
10	[1..1]	schedule_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 schedule time interval. All time intervals for the time series in the document shall be within the total time interval for the schedule. The receiver will discard any time intervals outside the schedule period.
11	[1..1]	domain.mRID AreaID_String	The unique identification of the domain. --- The identification of the domain that is covered in the schedule document. It is in general the market balance area that is the subject of the schedule plan.
12	[0..1]	subject_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The party that is the subject of the documents time series.
13	[0..1]	subject_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- The party that is the subject of the documents time series. --- The role associated with a MarketParticipant.
14	[0..1]	matching_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 to be matched. The matching period start date and time shall begin at the start of the schedule time interval or be within the bounds of the schedule time interval. The matching period end date and time shall be the same as that of the schedule time interval. It is this period that is being presented for matching. The period prior to the matching period is generally considered to be historical data and should correspond to the information received in previous transmissions.

107

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

109 **Table 4 - Association ends of Schedule assembly model::Schedule_MarketDocument**
110 **with other classes**

Order	mult.	Class name / Role	Description
15	[0..*]	TimeSeries TimeSeries	The time series that is associated with an electronic document. Association Based On: Schedule contextual model::Schedule_MarketDocument.[] ----- Schedule contextual model::TimeSeries.TimeSeries[0..*]

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 Schedule 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.

116

117 Table 6 shows all association ends of Point with other classes.

118 **Table 6 - Association ends of Schedule assembly model::Point with other classes**

Order	mult.	Class name / Role	Description
2	[0..*]	Reason Reason	At the Point level the reason code is used to identify the nature of a curtailment that has been imposed on the specified quantity. The Reason information associated with a Point providing motivation information. Association Based On: Schedule contextual model::Point.[] ----- Schedule contextual model::Reason.Reason[0..*]

119

120 2.2.3.3 Reason

121 The motivation of an act.

122 Table 7 shows all attributes of Reason.

123 **Table 7 - Attributes of Schedule assembly model::Reason**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	code ReasonCode_String	The motivation of an act in coded form.
1	[0..1]	text ReasonText_String	The textual explanation corresponding to the reason code.

124

125 2.2.3.4 Series_Period

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

127 Table 8 shows all attributes of Series_Period.

128 **Table 8 - Attributes of Schedule 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.

129

130 Table 9 shows all association ends of Series_Period with other classes.

131 **Table 9 - Association ends of Schedule assembly model::Series_Period with other classes**

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

133

134 **2.2.3.5 TimeSeries**

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

136 Table 10 shows all attributes of TimeSeries.

137 **Table 10 - Attributes of Schedule 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]	version ESMPVersion_String	The identification of the version of the time series.
2	[1..1]	businessType BusinessKind_String	The identification of the nature of the time series.
3	[1..1]	product EnergyProductKind_String	The identification of the nature of an energy product such as power, energy, reactive power, etc.
4	[1..1]	objectAggregation ObjectAggregationKind_String	The identification of the object (party, domain, etc.) that is the common denominator used to aggregate a time series.
5	[0..1]	in_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the product is being delivered.
6	[0..1]	out_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the product is being extracted.
7	[0..1]	marketEvaluationPoint.mRID MeasurementPointID_String	A unique identification of the measurement point. --- The identification of the location where one or more products are metered. This may be one physical location or the combination of several points together. The identification of a measurement point associated with a TimeSeries.
8	[0..1]	in_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of the party putting the product into the in area.
9	[0..1]	out_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of the party taking the product out of the out area.
10	[0..1]	marketAgreement.type CapacityContractKind_String	The specification of the kind of the agreement, e.g. long term, daily contract. --- The identification of an agreement associated with a time series.
11	[0..1]	marketAgreement.mRID ID_String	The unique identification of the agreement. --- The identification of an agreement associated with a time series.
12	[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.

Order	mult.	Attribute name / Attribute type	Description
13	[1..1]	measurement_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measurement used for the quantities expressed within the time series.
14	[0..1]	curveType CurveType_String	The identification of the coded representation of the type of curve being described.

138

139 Table 11 shows all association ends of TimeSeries with other classes.

140 **Table 11 - Association ends of Schedule assembly model::TimeSeries with other**
141 **classes**

Order	mult.	Class name / Role	Description
15	[1..*]	Series_Period Period	The time interval and resolution for a period associated with a TimeSeries. Association Based On: Schedule contextual model::TimeSeries.[] ----- Schedule contextual model::Series_Period.Period[1..*]
16	[0..1]	Reason Reason	At the TimeSeries level the reason code is used to enable processing of the reason text which, depending on market conditions, should be provided in intra day trading. In this context only one reason code has been defined (A48, modification reason). No other codes are permitted. Association Based On: Schedule contextual model::TimeSeries.[] ----- Schedule contextual model::Reason.Reason[0..1]

142

143 2.2.4 Datatypes

144 The list of datatypes used for the Schedule assembly model is as follows:

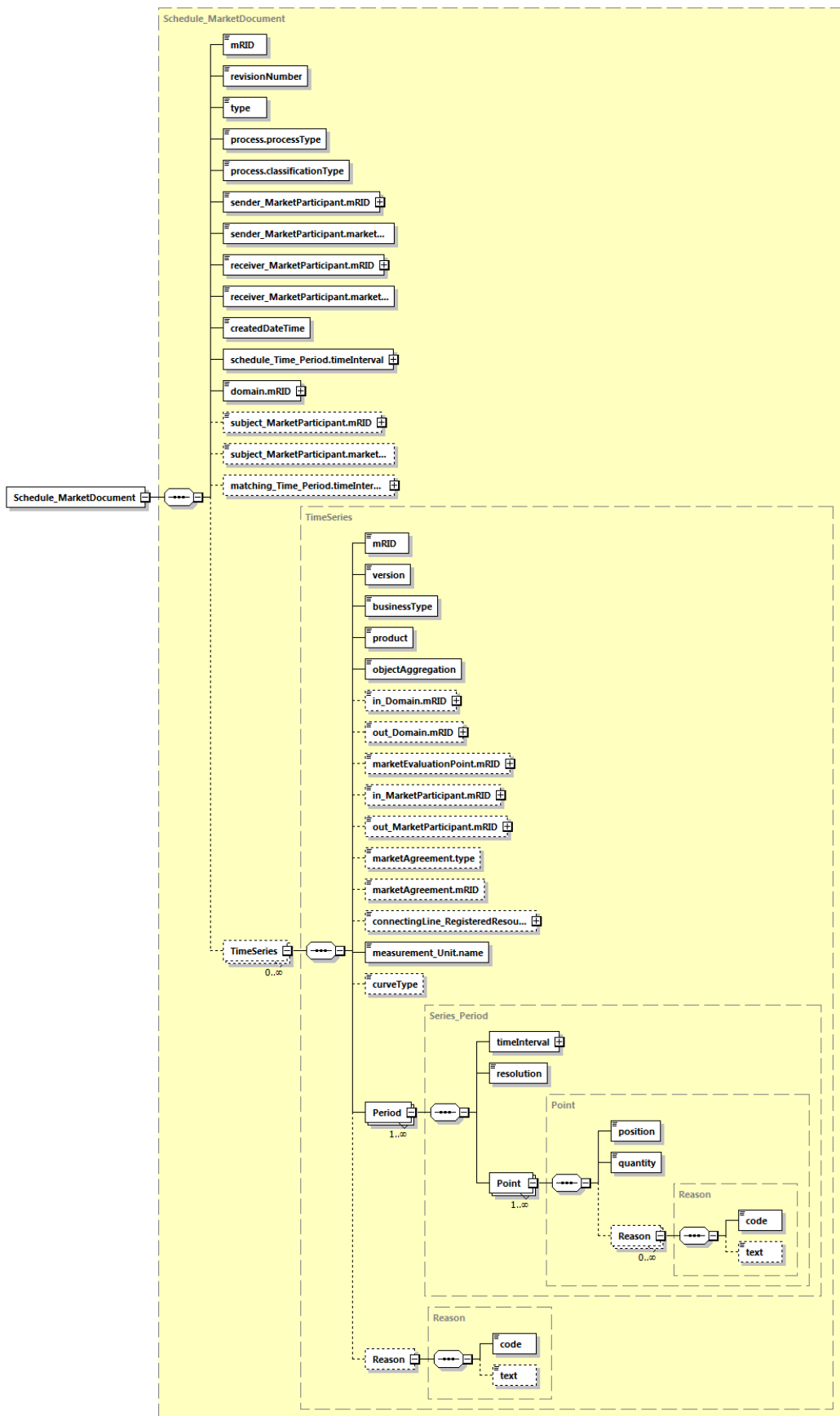
- 145 • ESMP_DateTimeInterval compound
- 146 • AreaID_String datatype, codelist CodingSchemeTypeList
- 147 • BusinessKind_String datatype, codelist BusinessTypeList
- 148 • CapacityContractKind_String datatype, codelist ContractTypeList
- 149 • ClassificationKind_String datatype, codelist ClassificationTypeList
- 150 • CurveType_String datatype, codelist CurveTypeList
- 151 • EnergyProductKind_String datatype, codelist EnergyProductTypeList
- 152 • ESMP_DateTime datatype
- 153 • ESMPVersion_String datatype
- 154 • ID_String datatype
- 155 • MarketRoleKind_String datatype, codelist RoleTypeList
- 156 • MeasurementPointID_String datatype, codelist CodingSchemeTypeList
- 157 • MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
- 158 • MessageKind_String datatype, codelist MessageTypeList
- 159 • ObjectAggregationKind_String datatype, codelist ObjectAggregationTypeList
- 160 • PartyID_String datatype, codelist CodingSchemeTypeList
- 161 • Position_Integer datatype
- 162 • ProcessKind_String datatype, codelist ProcessTypeList
- 163 • ReasonCode_String datatype, codelist ReasonCodeTypeList
- 164 • ReasonText_String datatype
- 165 • ResourceID_String datatype, codelist CodingSchemeTypeList
- 166 • YMDHM_DateTime datatype

167

168

169 2.2.5 Schedule_MarketDocument XML schema structure

170



171
 172

Figure 3 - Schedule_MarketDocument schema structure

173 2.2.6 Schedule_MarketDocument XML schema

174

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

176 urn:iec62325.351:tc57wg16:451-2:scheduledocument:5:1

```

177 <?xml version="1.0" encoding="utf-8"?>
178 <xs:schema xmlns:ecl="urn:entsoe.eu:wgedi:codelists" xmlns:sawsdl="http://www.w3.org/ns/sawsdl"
179 xmlns="urn:iec62325.351:tc57wg16:451-2:scheduledocument:5:1" xmlns:cimp="http://www.iec.ch/cimprofile"
180 xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="urn:iec62325.351:tc57wg16:451-
181 2:scheduledocument:5:1" elementFormDefault="qualified" attributeFormDefault="unqualified">
182   <xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-entsoe-eu-wgedi-
183 codelists.xsd"/>
184   <xs:element name="Schedule_MarketDocument" type="Schedule_MarketDocument"/>
185   <xs:simpleType name="Position_Integer" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
186 schema-cim16#Integer">
187     <xs:restriction base="xs:integer">
188       <xs:maxInclusive value="999999"/>
189       <xs:minInclusive value="1"/>
190     </xs:restriction>
191   </xs:simpleType>
192   <xs:complexType name="Point" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
193 cim16#Point">
194     <xs:sequence>
195       <xs:element name="position" type="Position_Integer" minOccurs="1"
196 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.position"/>
197       <xs:element name="quantity" type="xs:decimal" minOccurs="1" maxOccurs="1"
198 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.quantity"/>
199       <xs:element name="Reason" type="Reason" minOccurs="0" maxOccurs="unbounded"
200 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.Reason"/>
201     </xs:sequence>
202   </xs:complexType>
203   <xs:simpleType name="ReasonCode_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
204 schema-cim16#String">
205     <xs:restriction base="ecl:ReasonCodeTypeList"/>
206   </xs:simpleType>
207   <xs:simpleType name="ReasonText_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
208 schema-cim16#String">
209     <xs:restriction base="xs:string">
210       <xs:maxLength value="512"/>
211     </xs:restriction>
212   </xs:simpleType>
213   <xs:complexType name="Reason" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
214 cim16#Reason">
215     <xs:sequence>
216       <xs:element name="code" type="ReasonCode_String" minOccurs="1" maxOccurs="1"
217 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason.code"/>
218       <xs:element name="text" type="ReasonText_String" minOccurs="0" maxOccurs="1"
219 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason.text"/>
220     </xs:sequence>
221   </xs:complexType>
222   <xs:simpleType name="ID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
223 cim16#String">
224     <xs:restriction base="xs:string">
225       <xs:maxLength value="35"/>
226     </xs:restriction>
227   </xs:simpleType>
228   <xs:simpleType name="ESMPVersion_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
229 schema-cim16#String">
230     <xs:restriction base="xs:string">
231       <xs:pattern value="[1-9]([0-9]){0,2}"/>
232     </xs:restriction>
233   </xs:simpleType>
234   <xs:simpleType name="MessageKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
235 schema-cim16#String">
236     <xs:restriction base="ecl:MessageTypeList"/>
237   </xs:simpleType>
238   <xs:simpleType name="ProcessKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
239 schema-cim16#String">
240     <xs:restriction base="ecl:ProcessTypeList"/>
241   </xs:simpleType>
242   <xs:simpleType name="ClassificationKind_String"
243 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">

```



```

244         <xs:restriction base="ecl:ClassificationTypeList"/>
245     </xs:simpleType>
246     <xs:simpleType name="PartyID_String-base" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
247 schema-cim16#String">
248         <xs:restriction base="xs:string">
249             <xs:maxLength value="16"/>
250         </xs:restriction>
251     </xs:simpleType>
252     <xs:complexType name="PartyID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
253 schema-cim16#String">
254         <xs:simpleContent>
255             <xs:extension base="PartyID_String-base">
256                 <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList"
257 use="required"/>
258             </xs:extension>
259         </xs:simpleContent>
260     </xs:complexType>
261     <xs:simpleType name="MarketRoleKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
262 schema-cim16#String">
263         <xs:restriction base="ecl:RoleTypeList"/>
264     </xs:simpleType>
265     <xs:simpleType name="ESMP_DateTime" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
266 cim16#DateTime">
267         <xs:restriction base="xs:dateTime">
268             <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-9]|[12][0-
269 9]|3[01])|([0-9]{4})[\-](0[469]|(11))[\-](0[1-9]|[12][0-9]|30))T((01[0-9]|2[0-3]):[0-5][0-9]:[0-
270 5][0-
271 9])Z|(((13579)[26][02468][048]|13579][01345789](0)[48]|13579][01345789][2468][048]|02468][048][0246
272 8][048]|02468][1235679](0)[48]|02468][1235679][2468][048]|0[0-9][0-9][13579][26])[\-](02)[\-](0[1-
273 9]|1[0-9]|2[0-9])T((01[0-9]|2[0-3]):[0-5][0-9]:[0-5][0-
274 9])Z|(((13579)[26][02468][1235679]|13579][01345789](0)[01235679]|13579][01345789][2468][1235679]|02
275 468][048][02468][1235679]|02468][1235679](0)[01235679]|02468][1235679][2468][1235679]|0[0-9][0-
276 9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-9]|2[0-8])T((01[0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z"/>
277         </xs:restriction>
278     </xs:simpleType>
279     <xs:simpleType name="AreaID_String-base" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
280 schema-cim16#String">
281         <xs:restriction base="xs:string">
282             <xs:maxLength value="18"/>
283         </xs:restriction>
284     </xs:simpleType>
285     <xs:complexType name="AreaID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
286 cim16#String">
287         <xs:simpleContent>
288             <xs:extension base="AreaID_String-base">
289                 <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList"
290 use="required"/>
291             </xs:extension>
292         </xs:simpleContent>
293     </xs:complexType>
294     <xs:simpleType name="YMDHM_DateTime" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
295 cim16#DateTime">
296         <xs:restriction base="xs:string">
297             <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02]))[\-](0[1-9]|[12][0-
298 9]|3[01])|([0-9]{4})[\-](0[469]|(11))[\-](0[1-9]|[12][0-9]|30))T((01[0-9]|2[0-3]):[0-5][0-
299 9])Z|(((13579)[26][02468][048]|13579][01345789](0)[48]|13579][01345789][2468][048]|02468][048][0246
300 8][048]|02468][1235679](0)[48]|02468][1235679][2468][048]|0[0-9][0-9][13579][26])[\-](02)[\-](0[1-
301 9]|1[0-9]|2[0-9])T((01[0-9]|2[0-3]):[0-5][0-
302 9])Z|(((13579)[26][02468][1235679]|13579][01345789](0)[01235679]|13579][01345789][2468][1235679]|02
303 468][048][02468][1235679]|02468][1235679](0)[01235679]|02468][1235679][2468][1235679]|0[0-9][0-
304 9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-9]|2[0-8])T((01[0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z"/>
305         </xs:restriction>
306     </xs:simpleType>
307     <xs:complexType name="ESMP_DateTimeInterval"
308 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
309         <xs:sequence>
310             <xs:element name="start" type="YMDHM_DateTime" minOccurs="1" maxOccurs="1"
311 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval.start"/>
312             <xs:element name="end" type="YMDHM_DateTime" minOccurs="1" maxOccurs="1"
313 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval.end"/>
314         </xs:sequence>
315     </xs:complexType>
316     <xs:complexType name="Schedule_MarketDocument"
317 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
318         <xs:sequence>
    
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319         <xs:element name="mRID" type="ID_String" minOccurs="1" maxOccurs="1"
320 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
321         <xs:element name="revisionNumber" type="ESMPVersion_String" minOccurs="1"
322 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
323 cim16#Document.revisionNumber"/>
324         <xs:element name="type" type="MessageKind_String" minOccurs="1" maxOccurs="1"
325 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.type"/>
326         <xs:element name="process.processType" type="ProcessKind_String" minOccurs="1"
327 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Process.processType"/>
328         <xs:element name="process.classificationType" type="ClassificationKind_String"
329 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
330 cim16#Process.classificationType"/>
331         <xs:element name="sender_MarketParticipant.mRID" type="PartyID_String"
332 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
333 cim16#IdentifiedObject.mRID"/>
334         <xs:element name="sender_MarketParticipant.marketRole.type"
335 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
336 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
337         <xs:element name="receiver_MarketParticipant.mRID" type="PartyID_String"
338 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
339 cim16#IdentifiedObject.mRID"/>
340         <xs:element name="receiver_MarketParticipant.marketRole.type"
341 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
342 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
343         <xs:element name="createdDateTime" type="ESMP_DateTime" minOccurs="1"
344 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
345 cim16#Document.createdDateTime"/>
346         <xs:element name="schedule_Time_Period.timeInterval"
347 type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1"
348 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.timeInterval"/>
349         <xs:element name="domain.mRID" type="AreaID_String" minOccurs="1"
350 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
351         <xs:element name="subject_MarketParticipant.mRID" type="PartyID_String"
352 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
353 cim16#IdentifiedObject.mRID"/>
354         <xs:element name="subject_MarketParticipant.marketRole.type"
355 type="MarketRoleKind_String" minOccurs="0" maxOccurs="1"
356 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
357         <xs:element name="matching_Time_Period.timeInterval"
358 type="ESMP_DateTimeInterval" minOccurs="0" maxOccurs="1"
359 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.timeInterval"/>
360         <xs:element name="TimeSeries" type="TimeSeries" minOccurs="0"
361 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
362 cim16#MarketDocument.TimeSeries"/>
363     </xs:sequence>
364 </xs:complexType>
365 <xs:complexType name="Series_Period" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
366 cim16#Period">
367     <xs:sequence>
368         <xs:element name="timeInterval" type="ESMP_DateTimeInterval" minOccurs="1"
369 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.timeInterval"/>
370         <xs:element name="resolution" type="xs:duration" minOccurs="1" maxOccurs="1"
371 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.resolution"/>
372         <xs:element name="Point" type="Point" minOccurs="1" maxOccurs="unbounded"
373 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.Point"/>
374     </xs:sequence>
375 </xs:complexType>
376 <xs:simpleType name="BusinessKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
377 schema-cim16#String">
378     <xs:restriction base="ecl:BusinessTypeList"/>
379 </xs:simpleType>
380 <xs:simpleType name="EnergyProductKind_String"
381 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
382     <xs:restriction base="ecl:EnergyProductTypeList"/>
383 </xs:simpleType>
384 <xs:simpleType name="ObjectAggregationKind_String"
385 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
386     <xs:restriction base="ecl:ObjectAggregationTypeList"/>
387 </xs:simpleType>
388 <xs:simpleType name="MeasurementPointID_String-base"
389 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
390     <xs:restriction base="xs:string">
391         <xs:maxLength value="35"/>
392     </xs:restriction>
393 </xs:simpleType>

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394     <xs:complexType name="MeasurementPointID_String"
395 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
396     <xs:simpleContent>
397         <xs:extension base="MeasurementPointID_String-base">
398             <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList"
399 use="required" />
400         </xs:extension>
401     </xs:simpleContent>
402 </xs:complexType>
403 <xs:simpleType name="CapacityContractKind_String"
404 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
405     <xs:restriction base="ecl:ContractTypeList"/>
406 </xs:simpleType>
407 <xs:simpleType name="ResourceID_String-base"
408 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
409     <xs:restriction base="xs:string">
410         <xs:maxLength value="60"/>
411     </xs:restriction>
412 </xs:simpleType>
413 <xs:complexType name="ResourceID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
414 schema-cim16#String">
415     <xs:simpleContent>
416         <xs:extension base="ResourceID_String-base">
417             <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList"
418 use="required" />
419         </xs:extension>
420     </xs:simpleContent>
421 </xs:complexType>
422 <xs:simpleType name="MeasurementUnitKind_String"
423 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
424     <xs:restriction base="ecl:UnitOfMeasureTypeList"/>
425 </xs:simpleType>
426 <xs:simpleType name="CurveType_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
427 schema-cim16#String">
428     <xs:restriction base="ecl:CurveTypeList"/>
429 </xs:simpleType>
430 <xs:complexType name="TimeSeries" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
431 cim16#TimeSeries">
432     <xs:sequence>
433         <xs:element name="mRID" type="ID_String" minOccurs="1" maxOccurs="1"
434 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
435         <xs:element name="version" type="ESMPVersion_String" minOccurs="1"
436 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.version"/>
437         <xs:element name="businessType" type="BusinessKind_String" minOccurs="1"
438 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
439 cim16#TimeSeries.businessType"/>
440         <xs:element name="product" type="EnergyProductKind_String" minOccurs="1"
441 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.product"/>
442         <xs:element name="objectAggregation" type="ObjectAggregationKind_String"
443 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
444 cim16#TimeSeries.objectAggregation"/>
445         <xs:element name="in_Domain.mRID" type="AreaID_String" minOccurs="0"
446 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
447         <xs:element name="out_Domain.mRID" type="AreaID_String" minOccurs="0"
448 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
449         <xs:element name="marketEvaluationPoint.mRID" type="MeasurementPointID_String"
450 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
451 cim16#IdentifiedObject.mRID"/>
452         <xs:element name="in_MarketParticipant.mRID" type="PartyID_String"
453 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
454 cim16#IdentifiedObject.mRID"/>
455         <xs:element name="out_MarketParticipant.mRID" type="PartyID_String"
456 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
457 cim16#IdentifiedObject.mRID"/>
458         <xs:element name="marketAgreement.type" type="CapacityContractKind_String"
459 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
460 cim16#Document.type"/>
461         <xs:element name="marketAgreement.mRID" type="ID_String" minOccurs="0"
462 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
463         <xs:element name="connectingLine_RegisteredResource.mRID"
464 type="ResourceID_String" minOccurs="0" maxOccurs="1"
465 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
466         <xs:element name="measurement_Unit.name" type="MeasurementUnitKind_String"
467 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
468 cim16#Unit.name"/>

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469         <xs:element name="curveType" type="CurveType_String" minOccurs="0"
470 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.curveType"/>
471         <xs:element name="Period" type="Series_Period" minOccurs="1"
472 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
473 cim16#TimeSeries.Period"/>
474         <xs:element name="Reason" type="Reason" minOccurs="0" maxOccurs="1"
475 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.Reason"/>
476     </xs:sequence>
477 </xs:complexType>
478 </xs:schema>
```