



European Network of
Transmission System Operators
for Electricity

ACTIVATION DOCUMENT UML MODEL AND SCHEMA

2021-11-09
APPROVED DOCUMENT
VERSION 1.1

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Table of Contents

Objective	5
Activation_MarketDocument	6
2.1 Activation contextual model	6
2.1.1 Overview of the model	6
2.1.2 IsBasedOn relationships from the European style market profile	7
2.2 Activation assembly model	8
2.2.1 Overview of the model	8
2.2.2 IsBasedOn relationships from the European style market profile	9
2.2.3 Detailed Activation assembly model	9
2.2.3.1 Activation_MarketDocument root class	9
2.2.3.2 Point	10
2.2.3.3 Reason	11
2.2.3.4 Series_Period	11
2.2.3.5 TimeSeries	12
2.2.4 Datatypes	14
2.2.5 Activation_MarketDocument XML schema structure	15
2.2.6 Activation_MarketDocument XML schema	16
List of figures	
Figure 1 - Activation contextual model	6
Figure 2 - Activation assembly model	8
Figure 3 - Activation_MarketDocument schema structure	15
List of tables	
Table 1 - IsBasedOn dependency	7
Table 2 - IsBasedOn dependency	9
Table 3 - Attributes of Activation assembly model::Activation_MarketDocument	9
Table 4 - Association ends of Activation assembly model::Activation_MarketDocument with other classes	10
Table 5 - Attributes of Activation assembly model::Point	10
Table 6 - Association ends of Activation assembly model::Point with other classes	11
Table 7 - Attributes of Activation assembly model::Reason	11
Table 8 - Attributes of Activation assembly model::Series_Period	11
Table 9 - Association ends of Activation assembly model::Series_Period with other classes	11
Table 10 - Attributes of Activation assembly model::TimeSeries	12
Table 11 - Association ends of Activation assembly model::TimeSeries with other classes	12

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Revision History

Version	Release	Date	Comments
0	1	2019-01-14	First draft of the document.
1	0	2019-02-12	Approved by MC.
1	1	2021-11-09	Updates in schema 'iec62325-451-7-activationdocument_v6_2.xsd' <ul style="list-style-type: none">mRID of Document, Series and Timeseries (ID_String type) was enlarged from 35 to 60 characters. Approved by MC.

60

61 **Objective**

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

64 The schema of the Activation_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:

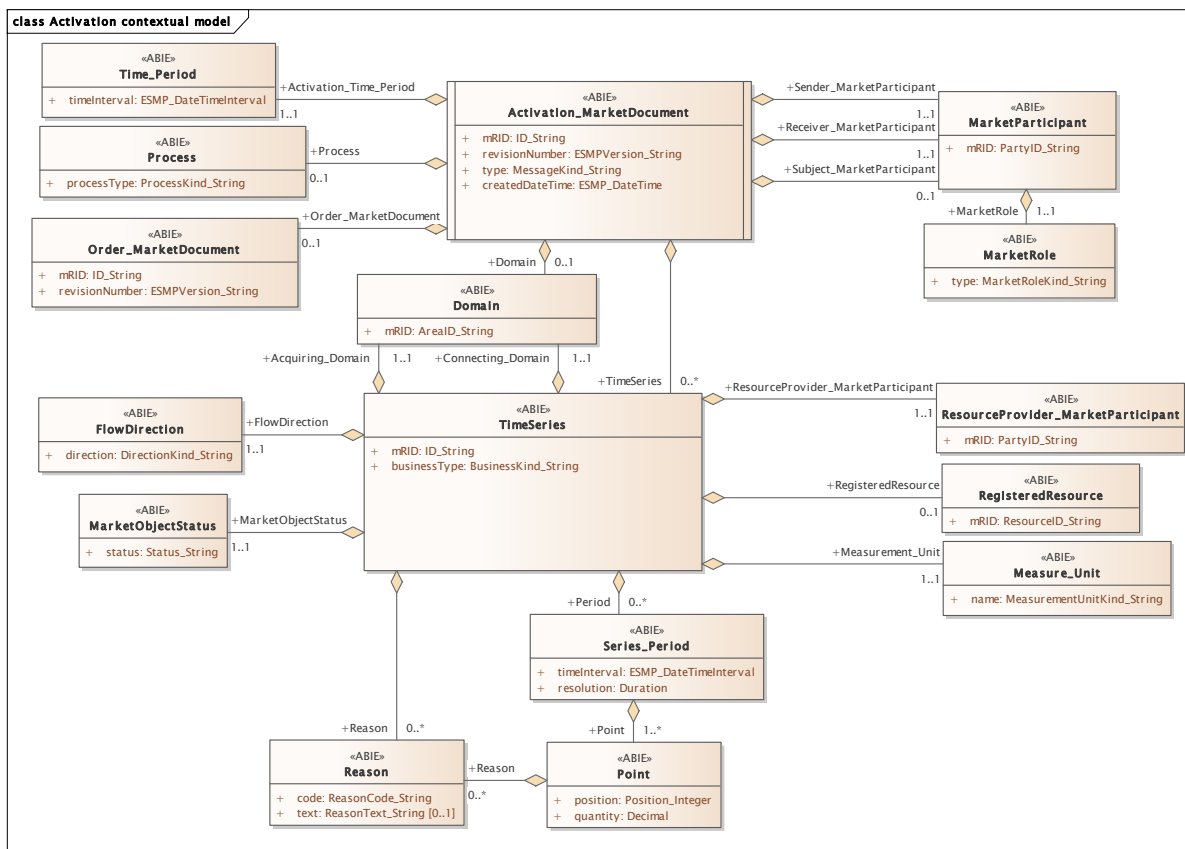
- 69 • Description of the business process;
- 70 • Use case of the business process;
- 71 • Sequence diagrams of the business process;
- 72 • List of the schema (XSD) to be used in the business process and versions of the
73 schema;
- 74 • For each schema, dependency tables providing the necessary information 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 **Activation_MarketDocument**

79 **2.1 Activation contextual model**

80 **2.1.1 Overview of the model**



81
 82 Figure 1 shows the model.

83

84 **Figure 1 - Activation contextual model**

85

86

87 **2.1.2 IsBasedOn relationships from the European style market profile**

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

90

Table 1 - IsBasedOn dependency

Name	Complete IsBasedOn Path
Activation_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Domain	TC57CIM::IEC62325::MarketManagement::Domain
FlowDirection	TC57CIM::IEC62325::MarketManagement::FlowDirection
MarketObjectStatus	TC57CIM::IEC62325::MarketManagement::MarketObjectStatus
MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
MarketRole	TC57CIM::IEC62325::MarketCommon::MarketRole
Measure_Unit	TC57CIM::IEC62325::MarketManagement::Unit
Order_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Point	TC57CIM::IEC62325::MarketManagement::Point
Process	TC57CIM::IEC62325::MarketManagement::Process
Reason	TC57CIM::IEC62325::MarketManagement::Reason
RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource
ResourceProvider_MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
Time_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries

91

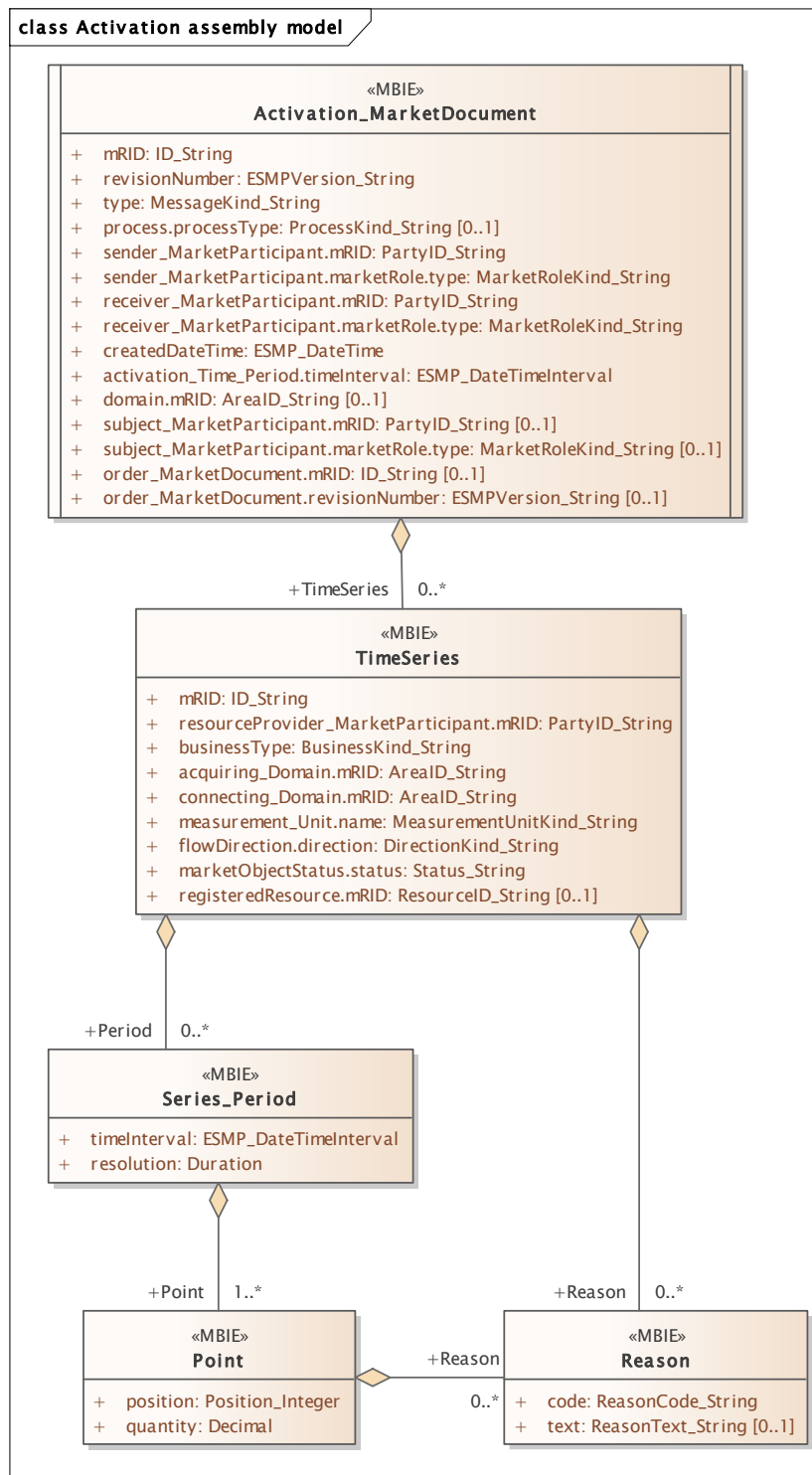
92

93

94 **2.2 Activation assembly model**

95 **2.2.1 Overview of the model**

96 Figure 2 shows the model.



97

98

Figure 2 - Activation assembly model

99

100 **2.2.2 IsBasedOn relationships from the European style market profile**

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

103 **Table 2 - IsBasedOn dependency**

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

104

105 **2.2.3 Detailed Activation assembly model**

106 **2.2.3.1 Activation_MarketDocument root class**

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

109 Table 3 shows all attributes of Activation_MarketDocument.

110 **Table 3 - Attributes of Activation assembly model::Activation_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	[0..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. --- Document owner.
5	[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.
6	[1..1]	receiver_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- Document recipient.
7	[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.
8	[1..1]	createdDateTime ESMP_DateTime	The date and time of the creation of the document.

Order	mult.	Attribute name / Attribute type	Description
9	[1..1]	activation_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 activation time interval.
10	[0..1]	domain.mRID AreaID_String	The unique identification of the domain. --- The identification of the domain that is covered in the document.
11	[0..1]	subject_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market.
12	[0..1]	subject_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- --- The role associated with a MarketParticipant.
13	[0..1]	order_MarketDocument.mRID ID_String	The unique identification of the document being exchanged within a business process flow.
14	[0..1]	order_MarketDocument.revisionNumber ESMPVersion_String	The identification of the version that distinguishes one evolution of a document from another.

111

112 Table 4 shows all association ends of Activation_MarketDocument with other classes.

113 **Table 4 - Association ends of Activation assembly model::Activation_MarketDocument**
114 **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: Activation contextual model::Activation_MarketDocument.[] ----- Activation contextual model::TimeSeries.TimeSeries[0..*]

115

116 2.2.3.2 Point

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

118 Table 5 shows all attributes of Point.

119 **Table 5 - Attributes of Activation 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.

120

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

122 **Table 6 - Association ends of Activation 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: Activation contextual model::Point.[] ----- Activation contextual model::Reason.Reason[0..*]

123

124 **2.2.3.3 Reason**

125 The motivation of an act.

126 Table 7 shows all attributes of Reason.

127 **Table 7 - Attributes of Activation 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.

128

129 **2.2.3.4 Series_Period**

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

131 Table 8 shows all attributes of Series_Period.

132 **Table 8 - Attributes of Activation 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.

133

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

135 **Table 9 - Association ends of Activation assembly model::Series_Period with other classes**

136

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: Activation contextual model::Series_Period.[] ----- Activation contextual model::Point.Point[1..*]

137

138 **2.2.3.5 TimeSeries**

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

140 Table 10 shows all attributes of TimeSeries.

141 **Table 10 - Attributes of Activation 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]	resourceProvider_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.
2	[1..1]	businessType BusinessKind_String	The identification of the nature of the time series.
3	[1..1]	acquiring_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the product is being delivered.
4	[1..1]	connecting_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the product is being extracted.
5	[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.
6	[1..1]	flowDirection.direction DirectionKind_String	The coded identification of the direction of energy flow.
7	[1..1]	marketObjectStatus.status Status_String	The coded condition or position of an object with regard to its standing.
8	[0..1]	registeredResource.mRID ResourceID_String	The unique identification of a resource. --- The identification of a resource associated with a TimeSeries.

142

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

144 **Table 11 - Association ends of Activation assembly model::TimeSeries with other classes**

145

Order	mult.	Class name / Role	Description
9	[0..*]	Series_Period Period	The time interval and resolution for a period associated with a TimeSeries. Association Based On: Activation contextual model::TimeSeries.[] ----- Activation contextual model::Series_Period.Period[0..*]
10	[0..*]	Reason Reason	Association Based On: Activation contextual model::TimeSeries.[] ----- Activation contextual model::Reason.Reason[0..*]

146

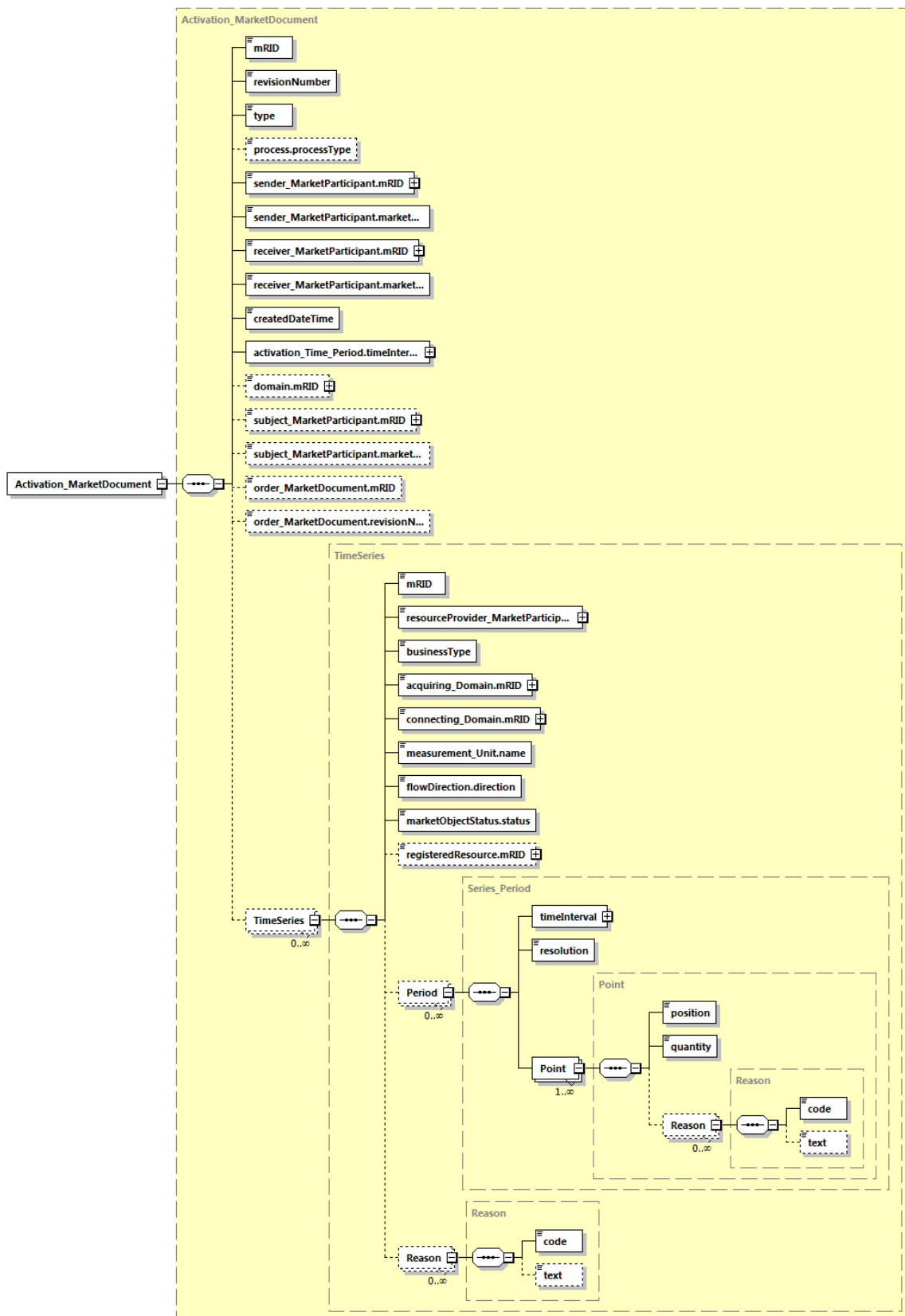
148

149 **2.2.4 Datatypes**

150 The list of datatypes used for the Activation assembly model is as follows:

- 151 • ESMP_DateTimeInterval compound
- 152 • AreaID_String datatype, codelist CodingSchemeTypeList
- 153 • BusinessKind_String datatype, codelist BusinessTypeList
- 154 • DirectionKind_String datatype, codelist DirectionTypeList
- 155 • ESMP_DateTime datatype
- 156 • ESMPVersion_String datatype
- 157 • ID_String datatype
- 158 • MarketRoleKind_String datatype, codelist RoleTypeList
- 159 • MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
- 160 • MessageKind_String datatype, codelist MessageTypeList
- 161 • PartyID_String datatype, codelist CodingSchemeTypeList
- 162 • Position_Integer datatype
- 163 • ProcessKind_String datatype, codelist ProcessTypeList
- 164 • ReasonCode_String datatype, codelist ReasonCodeTypeList
- 165 • ReasonText_String datatype
- 166 • ResourceID_String datatype, codelist CodingSchemeTypeList
- 167 • Status_String datatype, codelist StatusTypeList
- 168 • YMDHM_DateTime datatype
- 169

170 2.2.5 Activation_MarketDocument XML schema structure



171
 172

Generated by XMLSpy www.altova.com

Figure 3 - Activation_MarketDocument schema structure

173 2.2.6 Activation_MarketDocument XML schema

174

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

176 urn:iec62325.351:tc57wg16:451-7:activationdocument:6:2

```

177 <?xml version="1.0" encoding="utf-8"?>
178 <xs:schema xmlns:ecl="urn:entsoe.eu:wgedi:codelists"
179 xmlns="urn:iec62325.351:tc57wg16:451-7:activationdocument:6:2"
180 xmlns:sawsdl="http://www.w3.org/ns/sawsdl"
181 xmlns:cimp="http://www.iec.ch/cimprofile"
182 xmlns:xs="http://www.w3.org/2001/XMLSchema"
183 targetNamespace="urn:iec62325.351:tc57wg16:451-7:activationdocument:6:2"
184 elementFormDefault="qualified" attributeFormDefault="unqualified">
185   <xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-
186 entsoe-eu-wgedi-codelists.xsd"/>
187   <xs:element name="Activation_MarketDocument"
188 type="Activation_MarketDocument"/>
189   <xs:simpleType name="ID_String"
190 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
191     <xs:restriction base="xs:string">
192       <xs:maxLength value="60"/>
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="ecl: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="ecl: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"
220 type="ecl:CodingSchemeTypeList" 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="ecl: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-
232 9]|[12][0-9]|3[01]))|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|12)[0-
233 9]|30))T((([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-
234 9])Z)|(((13579)[26][02468][048]|13579)[01345789](0)[48]|13579)[01345789][2468][0
235 48]|02468)[048][02468][048]|02468)[1235679](0)[48]|02468)[1235679][2468][048]|
236 0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T((([01][0-9]|2[0-3]):[0-
237 5][0-9]:[0-5][0-
238 9])Z)|(((13579)[26][02468][1235679]|13579)[01345789](0)[01235679]|13579)[0134578
239 9][2468][1235679]|02468)[048][02468][1235679]|02468)[1235679](0)[01235679]|0246
240 8)[1235679][2468][1235679]|0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
241 9]|2[0-8])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"
255 type="ecl:CodingSchemeTypeList" 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-
263 9]|[12][0-9]|3[01]))|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|12)[0-
264 9]|30))T((([01][0-9]|2[0-3]):[0-5][0-
265 9])Z)|(((13579)[26][02468][048]|13579)[01345789](0)[48]|13579)[01345789][2468][0
266 48]|02468)[048][02468][048]|02468)[1235679](0)[48]|02468)[1235679][2468][048]|
267 0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T((([01][0-9]|2[0-3]):[0-
268 5][0-
269 9])Z)|(((13579)[26][02468][1235679]|13579)[01345789](0)[01235679]|13579)[0134578
270 9][2468][1235679]|02468)[048][02468][1235679]|02468)[1235679](0)[01235679]|0246
271 8)[1235679][2468][1235679]|0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
272 9]|2[0-8])T((([01][0-9]|2[0-3]):[0-5][0-9])Z)"/>
273         </xs:restriction>
274     </xs:simpleType>
275     <xs:complexType name="ESMP_DateTimeInterval"
276 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
277         <xs:sequence>
278             <xs:element name="start" type="YMDHM_DateTime" minOccurs="1"
279 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
280 cim16#DateTimeInterval.start"/>

```

```

281         <xs:element name="end" type="YMDHM_DateTime" minOccurs="1"
282 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
283 cim16#DateTimeInterval.end"/>
284     </xs:sequence>
285 </xs:complexType>
286 <xs:complexType name="Activation_MarketDocument"
287 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
288     <xs:sequence>
289         <xs:element name="mRID" type="ID_String" minOccurs="1"
290 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
291 cim16#IdentifiedObject.mRID"/>
292         <xs:element name="revisionNumber" type="ESMPVersion_String"
293 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
294 schema-cim16#Document.revisionNumber"/>
295         <xs:element name="type" type="MessageKind_String" minOccurs="1"
296 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
297 cim16#Document.type"/>
298         <xs:element name="process.processType"
299 type="ProcessKind_String" minOccurs="0" maxOccurs="1"
300 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
301 cim16#Process.processType"/>
302         <xs:element name="sender_MarketParticipant.mRID"
303 type="PartyID_String" minOccurs="1" maxOccurs="1"
304 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
305 cim16#IdentifiedObject.mRID"/>
306         <xs:element name="sender_MarketParticipant.marketRole.type"
307 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
308 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
309         <xs:element name="receiver_MarketParticipant.mRID"
310 type="PartyID_String" minOccurs="1" maxOccurs="1"
311 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
312 cim16#IdentifiedObject.mRID"/>
313         <xs:element name="receiver_MarketParticipant.marketRole.type"
314 type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
315 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
316         <xs:element name="createdDateTime" type="ESMP_DateTime"
317 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
318 schema-cim16#Document.createdDateTime"/>
319         <xs:element name="activation_Time_Period.timeInterval"
320 type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1"
321 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
322 cim16#Period.timeInterval"/>
323         <xs:element name="domain.mRID" type="AreaID_String"
324 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
325 schema-cim16#IdentifiedObject.mRID"/>
326         <xs:element name="subject_MarketParticipant.mRID"
327 type="PartyID_String" minOccurs="0" maxOccurs="1"
328 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
329 cim16#IdentifiedObject.mRID"/>
330         <xs:element name="subject_MarketParticipant.marketRole.type"
331 type="MarketRoleKind_String" minOccurs="0" maxOccurs="1"
332 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
333         <xs:element name="order_MarketDocument.mRID" type="ID_String"
334 minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
335 schema-cim16#IdentifiedObject.mRID"/>

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336         <xs:element name="order_MarketDocument.revisionNumber"
337 type="ESMPVersion_String" minOccurs="0" maxOccurs="1"
338 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
339 cim16#Document.revisionNumber"/>
340         <xs:element name="TimeSeries" type="TimeSeries" minOccurs="0"
341 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
342 cim16#MarketDocument.TimeSeries"/>
343     </xs:sequence>
344 </xs:complexType>
345 <xs:simpleType name="Position_Integer"
346 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
347     <xs:restriction base="xs:integer">
348         <xs:maxInclusive value="999999"/>
349         <xs:minInclusive value="1"/>
350     </xs:restriction>
351 </xs:simpleType>
352 <xs:complexType name="Point"
353 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point">
354     <xs:sequence>
355         <xs:element name="position" type="Position_Integer"
356 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
357 schema-cim16#Point.position"/>
358         <xs:element name="quantity" type="xs:decimal" minOccurs="1"
359 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
360 cim16#Point.quantity"/>
361         <xs:element name="Reason" type="Reason" minOccurs="0"
362 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
363 cim16#Point.Reason"/>
364     </xs:sequence>
365 </xs:complexType>
366 <xs:simpleType name="ReasonCode_String"
367 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
368     <xs:restriction base="ecl:ReasonCodeTypeList"/>
369 </xs:simpleType>
370 <xs:simpleType name="ReasonText_String"
371 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
372     <xs:restriction base="xs:string">
373         <xs:maxLength value="512"/>
374     </xs:restriction>
375 </xs:simpleType>
376 <xs:complexType name="Reason"
377 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason">
378     <xs:sequence>
379         <xs:element name="code" type="ReasonCode_String" minOccurs="1"
380 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
381 cim16#Reason.code"/>
382         <xs:element name="text" type="ReasonText_String" minOccurs="0"
383 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
384 cim16#Reason.text"/>
385     </xs:sequence>
386 </xs:complexType>
387 <xs:complexType name="Series_Period"
388 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">
389     <xs:sequence>

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390         <xs:element name="timeInterval" type="ESMP_DateTimeInterval"
391 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
392 schema-cim16#Period.timeInterval"/>
393         <xs:element name="resolution" type="xs:duration" minOccurs="1"
394 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
395 cim16#Period.resolution"/>
396         <xs:element name="Point" type="Point" minOccurs="1"
397 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
398 cim16#Period.Point"/>
399     </xs:sequence>
400 </xs:complexType>
401 <xs:simpleType name="BusinessKind_String"
402 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
403     <xs:restriction base="ecl:BusinessTypeList"/>
404 </xs:simpleType>
405 <xs:simpleType name="MeasurementUnitKind_String"
406 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
407     <xs:restriction base="ecl:UnitOfMeasureTypeList"/>
408 </xs:simpleType>
409 <xs:simpleType name="DirectionKind_String"
410 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
411     <xs:restriction base="ecl:DirectionTypeList"/>
412 </xs:simpleType>
413 <xs:simpleType name="Status_String"
414 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
415     <xs:restriction base="ecl:StatusTypeList"/>
416 </xs:simpleType>
417 <xs:simpleType name="ResourceID_String-base"
418 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
419     <xs:restriction base="xs:string">
420         <xs:maxLength value="60"/>
421     </xs:restriction>
422 </xs:simpleType>
423 <xs:complexType name="ResourceID_String"
424 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
425     <xs:simpleContent>
426         <xs:extension base="ResourceID_String-base">
427             <xs:attribute name="codingScheme"
428 type="ecl:CodingSchemeTypeList" use="required"/>
429         </xs:extension>
430     </xs:simpleContent>
431 </xs:complexType>
432 <xs:complexType name="TimeSeries"
433 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries">
434     <xs:sequence>
435         <xs:element name="mRID" type="ID_String" minOccurs="1"
436 maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
437 cim16#IdentifiedObject.mRID"/>
438         <xs:element name="resourceProvider_MarketParticipant.mRID"
439 type="PartyID_String" minOccurs="1" maxOccurs="1"
440 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
441 cim16#IdentifiedObject.mRID"/>
442         <xs:element name="businessType" type="BusinessKind_String"
443 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
444 schema-cim16#TimeSeries.businessType"/>

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445         <xs:element name="acquiring_Domain.mRID" type="AreaID_String"
446 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
447 schema-cim16#IdentifiedObject.mRID"/>
448         <xs:element name="connecting_Domain.mRID" type="AreaID_String"
449 minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
450 schema-cim16#IdentifiedObject.mRID"/>
451         <xs:element name="measurement_Unit.name"
452 type="MeasurementUnitKind_String" minOccurs="1" maxOccurs="1"
453 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
454         <xs:element name="flowDirection.direction"
455 type="DirectionKind_String" minOccurs="1" maxOccurs="1"
456 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
457 cim16#FlowDirection.direction"/>
458         <xs:element name="marketObjectStatus.status"
459 type="Status_String" minOccurs="1" maxOccurs="1"
460 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
461 cim16#MarketObjectStatus.status"/>
462         <xs:element name="registeredResource.mRID"
463 type="ResourceID_String" minOccurs="0" maxOccurs="1"
464 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
465 cim16#IdentifiedObject.mRID"/>
466         <xs:element name="Period" type="Series_Period" minOccurs="0"
467 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
468 cim16#TimeSeries.Period"/>
469         <xs:element name="Reason" type="Reason" minOccurs="0"
470 maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
471 cim16#TimeSeries.Reason"/>
472     </xs:sequence>
473 </xs:complexType>
474 </xs:schema>
475

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