



European Network of
Transmission System Operators
for Electricity

**REPORTING INFORMATION
DOCUMENT
UML MODEL AND SCHEMA**

2017-01-19
VERSION 1.0

2

Table of Contents

3	1	Objective	5
4	2	ReportingInformation_MarketDocument	6
5	2.1	Reporting information contextual model	6
6	2.1.1	Overview of the model	6
7	2.1.2	IsBasedOn relationships from the European style market profile	6
8			
9	2.2	Reporting information assembly model.....	8
10	2.2.1	Overview of the model	8
11	2.2.2	IsBasedOn relationships from the European style market profile	8
12			
13	2.2.3	Detailed Reporting information assembly model.....	9
14	2.2.3.1	ReportingInformation_MarketDocument root class	9
15	2.2.3.2	Point	10
16	2.2.3.3	Reason	11
17	2.2.3.4	Series_Period	11
18	2.2.3.5	TimeSeries	12
19	2.2.4	Datatypes	13
20	2.2.5	ReportingInformation_MarketDocument XML schema structure	15
21	2.2.6	ReportingInformation_MarketDocument XML schema	17

22 List of figures

23	Figure 1 - Reporting information contextual model	6
24	Figure 2 - Reporting information assembly model	8
25	Figure 3 - ReportingInformation_MarketDocument schema structure 1/3.....	15
26	Figure 4 - ReportingInformation_MarketDocument schema structure 2/3.....	16
27	Figure 5 - ReportingInformation_MarketDocument schema structure 3/3.....	17

28 List of tables

29	Table 1 - IsBasedOn dependency	6
30	Table 2 - IsBasedOn dependency	9
31	Table 3 - Attributes of Reporting information assembly model::ReportingInformation_MarketDocument	9
32		
33	Table 4 - Association ends of Reporting information assembly model::ReportingInformation_MarketDocument with other classes	10
34		
35	Table 5 - Attributes of Reporting information assembly model::Point	11
36	Table 6 - Association ends of Reporting information assembly model::Point with other classes	11
37		
38	Table 7 - Attributes of Reporting information assembly model::Reason	11
39	Table 8 - Attributes of Reporting information assembly model::Series_Period	12
40	Table 9 - Association ends of Reporting information assembly model::Series_Period with other classes	12
41		
42	Table 10 - Attributes of Reporting information assembly model::TimeSeries	12
43	Table 11 - Association ends of Reporting information assembly model::TimeSeries with other classes	13
44		

45

46

Copyright notice:

47 **Copyright © ENTSO-E. All Rights Reserved.**

48 This document and its whole translations may be copied and furnished to others, and derivative
49 works that comment on or otherwise explain it or assist in its implementation may be prepared,
50 copied, published and distributed, in whole or in part, without restriction of any kind, provided
51 that the above copyright notice and this paragraph are included on all such copies and
52 derivative works. However, this document itself may not be modified in any way, except for
53 literal and whole translation into languages other than English and under all circumstances, the
54 copyright notice or references to ENTSO-E may not be removed.

55 This document and the information contained herein is provided on an "as is" basis.

56 **ENTSO-E DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT**
57 **LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT**
58 **INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR**
59 **FITNESS FOR A PARTICULAR PURPOSE.**

60

Maintenance notice:

61 **This document is maintained by the ENTSO-E WG EDI. Comments or remarks are to be**
62 **provided at EDI.Library@entsoe.eu**

63

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.

64

65 **1 Objective**

66 The purpose of this document is to provide the contextual and assembly UML models and the
67 schema of the ReportingInformation_MarketDocument.

68 The schema of the ReportingInformation_MarketDocument could be used in various business
69 processes.

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

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

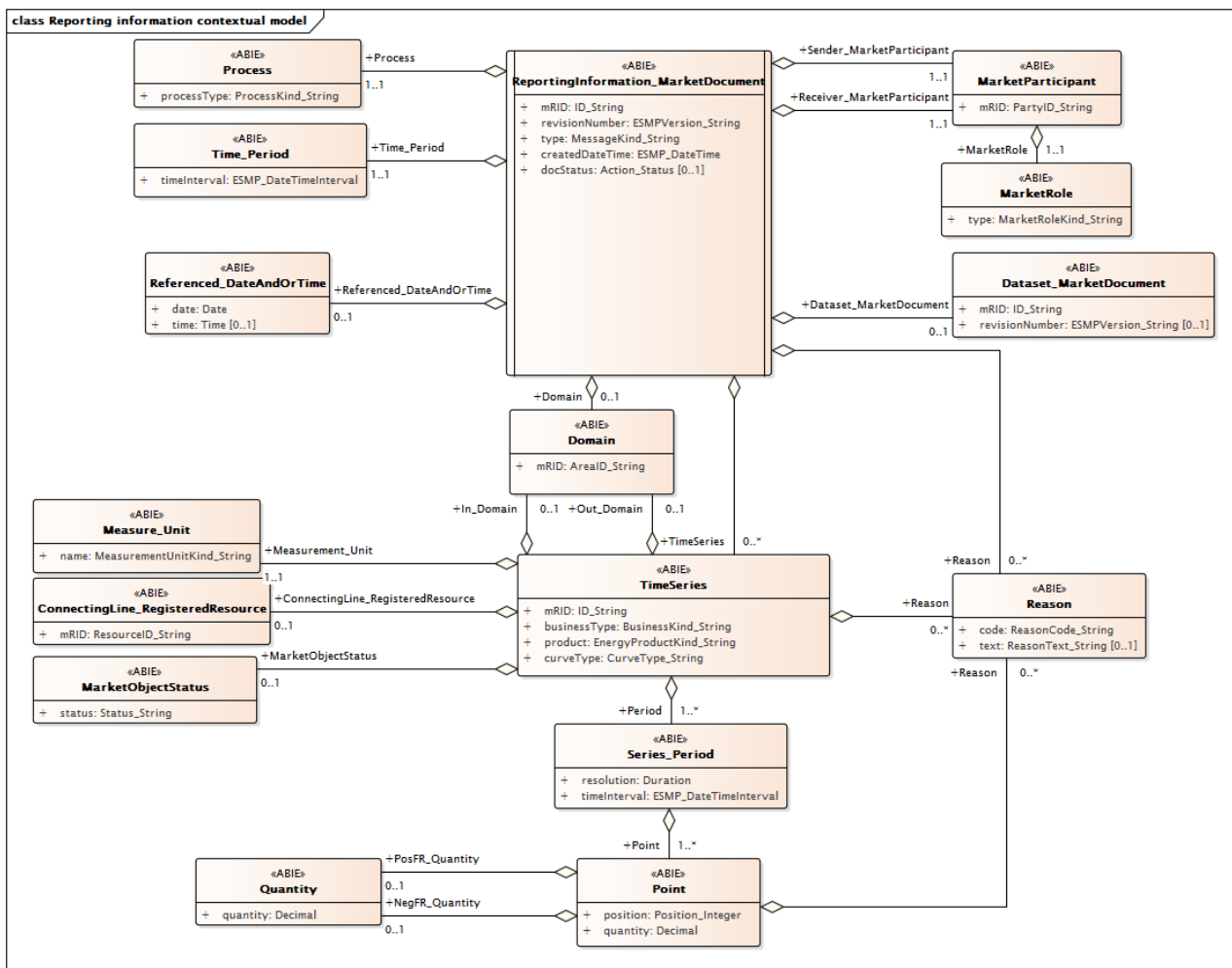
- 74 • Description of the business process;
- 75 • Use case of the business process;
- 76 • Sequence diagrams of the business process;
- 77 • List of the schema (XSD) to be used in the business process and versions of the
78 schema;
- 79 • For each schema, dependency tables providing the necessary information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

82 **2 ReportingInformation_MarketDocument**

83 **2.1 Reporting information contextual model**

84 **2.1.1 Overview of the model**

85 Figure 1 shows the model.



86

87

Figure 1 - Reporting information contextual model

88 **2.1.2 IsBasedOn relationships from the European style market profile**

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

91

Table 1 - IsBasedOn dependency

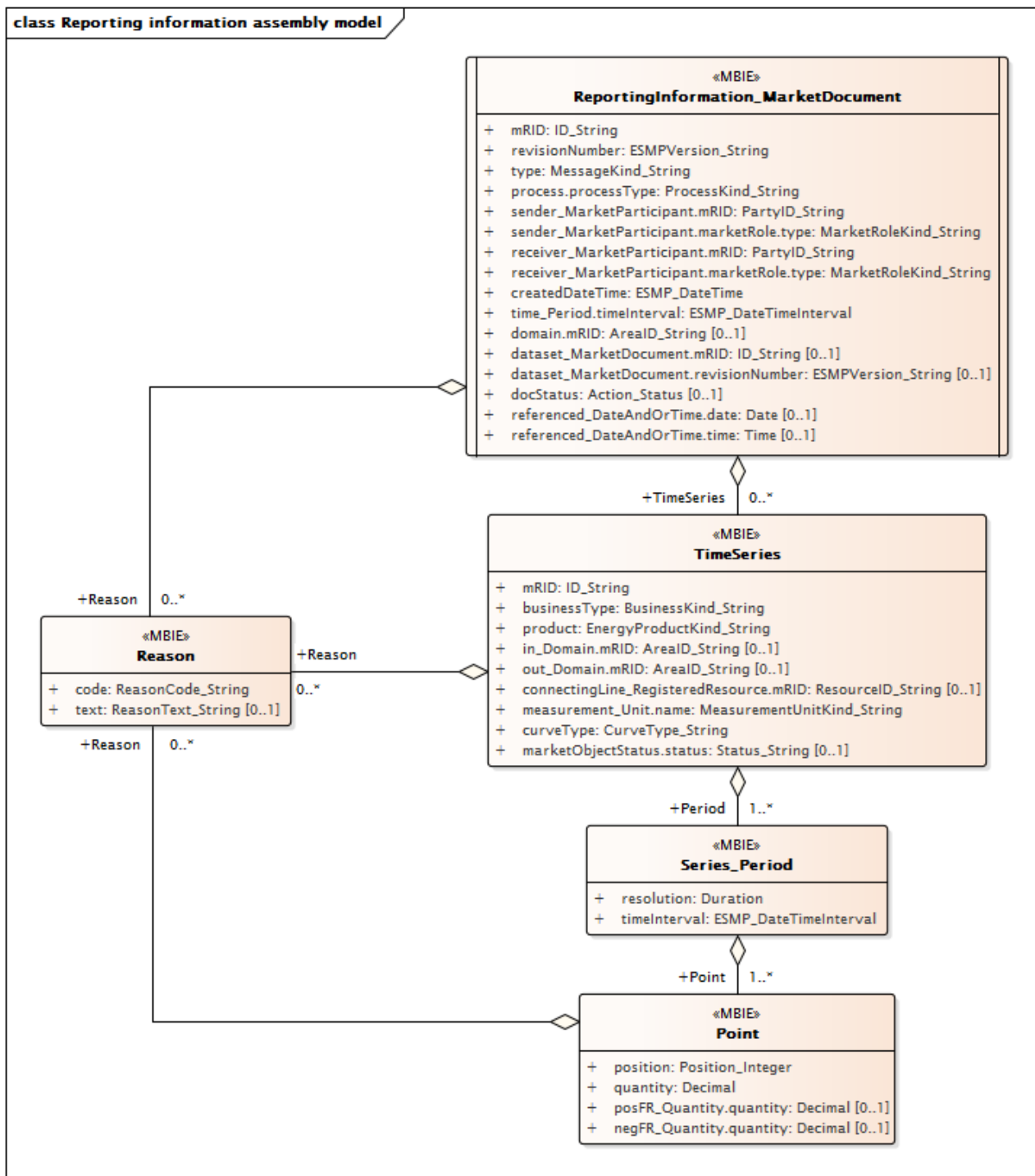
Name	Complete IsBasedOn Path
ConnectingLine_RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource
Dataset_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Domain	TC57CIM::IEC62325::MarketManagement::Domain
MarketObjectStatus	TC57CIM::IEC62325::MarketManagement::MarketObjectStatus
MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
MarketRole	TC57CIM::IEC62325::MarketCommon::MarketRole
Measure_Unit	TC57CIM::IEC62325::MarketManagement::Unit

Name	Complete IsBasedOn Path
Point	TC57CIM::IEC62325::MarketManagement::Point
Process	TC57CIM::IEC62325::MarketManagement::Process
Quantity	TC57CIM::IEC62325::MarketManagement::Quantity
Reason	TC57CIM::IEC62325::MarketManagement::Reason
Referenced_DateAndOrTime	TC57CIM::IEC62325::MarketManagement::DateAndOrTime
ReportingInformation_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
Time_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries

93 **2.2 Reporting information assembly model**

94 **2.2.1 Overview of the model**

95 Figure 2 shows the model.



96

97 **Figure 2 - Reporting information assembly model**

98 **2.2.2 IsBasedOn relationships from the European style market profile**

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

101

Table 2 - IsBasedOn dependency

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

102

103 **2.2.3 Detailed Reporting information assembly model**

104 **2.2.3.1 ReportingInformation_MarketDocument root class**

105 This document provides either:

- 106 • all the information relating to a status request made by an interested party concerning
- 107 aggregated netted external schedules, aggregated netted external market schedules,
- 108 aggregated netted external TSO schedules, compensation program schedules, netted area
- 109 position schedules and netted area AC position schedules.
- 110 • the net position for an area (scheduling area, bidding zone, NEMO trading hub, control
- 111 area, ...).

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

114 Table 3 shows all attributes of ReportingInformation_MarketDocument.

115 **Table 3 - Attributes of Reporting information assembly**
116 **model::ReportingInformation_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 within 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.

Order	mult.	Attribute name / Attribute type	Description
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.
10	[0..1]	domain.mRID AreaID_String	The unique identification of the domain. --- The identification of the domain that is covered in the reporting information market document.
11	[0..1]	dataset_MarketDocument.mRID ID_String	The identification of an individually predefined dataset in a data base system (e. g. Verification Platform). --- The identification of information in the reporting information market document that is related to a predefined dataset. In the CGMA process, the identification of the received document containing errors. Both the mRID and the revisionNumber of the received document are provided.
12	[0..1]	dataset_MarketDocument.revisionNumber ESMPVersion_String	The identification of the version that distinguishes one evolution of a document from another. --- The identification of information in the reporting information market document that is related to a predefined dataset. In the CGMA process, the identification of the received document containing errors. Both the mRID and the revisionNumber of the received document are provided.
13	[0..1]	docStatus Action_Status	The identification of the condition or position of the document with regard to its standing. A document may be intermediate or final.
14	[0..1]	referenced_DateAndOrTime.date Date	The date as "YYYY-MM-DD", which conforms with ISO 8601. --- The reference date and time for which the reporting information market document information is to be provided.
15	[0..1]	referenced_DateAndOrTime.time Time	The time as "hh:mm:ss.sssZ", which conforms with ISO 8601. --- The reference date and time for which the reporting information market document information is to be provided.

117

118 Table 4 shows all association ends of ReportingInformation_MarketDocument with other
119 classes.

120

**Table 4 - Association ends of Reporting information assembly
model::ReportingInformation_MarketDocument with other classes**

121

Order	mult.	Class name / Role	Description
16	[0..*]	TimeSeries TimeSeries	The time series that is associated with an electronic document. Association Based On: Reporting information contextual model::ReportingInformation_MarketDocument.[] ----- Reporting information contextual model::TimeSeries.TimeSeries[0..*]
17	[0..*]	Reason Reason	The Reason associated with the electronic document header providing different motivations for the creation of the document. Association Based On: Reporting information contextual model::ReportingInformation_MarketDocument.[] ----- Reporting information contextual model::Reason.Reason[0..*]

122

123 2.2.3.2 Point

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

125 Table 5 shows all attributes of Point.

126 **Table 5 - Attributes of Reporting information 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 the product scheduled for the position within the time interval.
2	[0..1]	posFR_Quantity.quantity Decimal	The quantity value. The association role provides the information about what is expressed. --- The positive feasibility range to be used for the alignment process of the net position provided in the quantity attribute of the class Point. The Quantity information associated with a given Point.
3	[0..1]	negFR_Quantity.quantity Decimal	The quantity value. The association role provides the information about what is expressed. --- The negative feasibility range to be used for the alignment process of the net position provided in the quantity attribute of the class Point. This value shall be either zero or a negative value. The Quantity information associated with a given Point.

127

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

129 **Table 6 - Association ends of Reporting information assembly model::Point with other**
130 **classes**

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

131

132 2.2.3.3 Reason

133 The motivation of an act.

134 Table 7 shows all attributes of Reason.

135 **Table 7 - Attributes of Reporting information 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.

136

137 2.2.3.4 Series_Period

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

139 Table 8 shows all attributes of Series_Period.

140 **Table 8 - Attributes of Reporting information assembly model::Series_Period**

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

141

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

143 **Table 9 - Association ends of Reporting information assembly model::Series_Period**
144 **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: Reporting information contextual model::Series_Period.[] ----- Reporting information contextual model::Point.Point[1..*]

145

146 2.2.3.5 TimeSeries

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

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

150 Table 10 shows all attributes of TimeSeries.

151 **Table 10 - Attributes of Reporting information 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.
2	[1..1]	product EnergyProductKind_String	The identification of the nature of an energy product such as power, energy, reactive power, etc.
3	[0..1]	in_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the product is being delivered.
4	[0..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]	measurement_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure associated with the quantity in the Point class or in the Quantity class.
7	[1..1]	curveType CurveType_String	The identification of the coded representation of the type of curve being described.

Order	mult.	Attribute name / Attribute type	Description
8	[0..1]	marketObjectStatus.status Status_String	The coded condition or position of an object with regard to its standing. --- The status of an object associated with a TimeSeries. For CGMA process, it provides the status of the timeseries, e.g. input timeseries, output timeseries, substituted timeseries.

152

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

154 **Table 11 - Association ends of Reporting information assembly model::TimeSeries with**
155 **other classes**

Order	mult.	Class name / Role	Description
9	[1..*]	Series_Period Period	The time interval and resolution for a period associated with a TimeSeries. Association Based On: Reporting information contextual model::TimeSeries.[] ----- Reporting information contextual model::Series_Period.Period[1..*]
10	[0..*]	Reason Reason	The reason information associated with a TimeSeries providing motivation information. Association Based On: Reporting information contextual model::TimeSeries.[] ----- Reporting information contextual model::Reason.Reason[0..*]

156

157 2.2.4 Datatypes

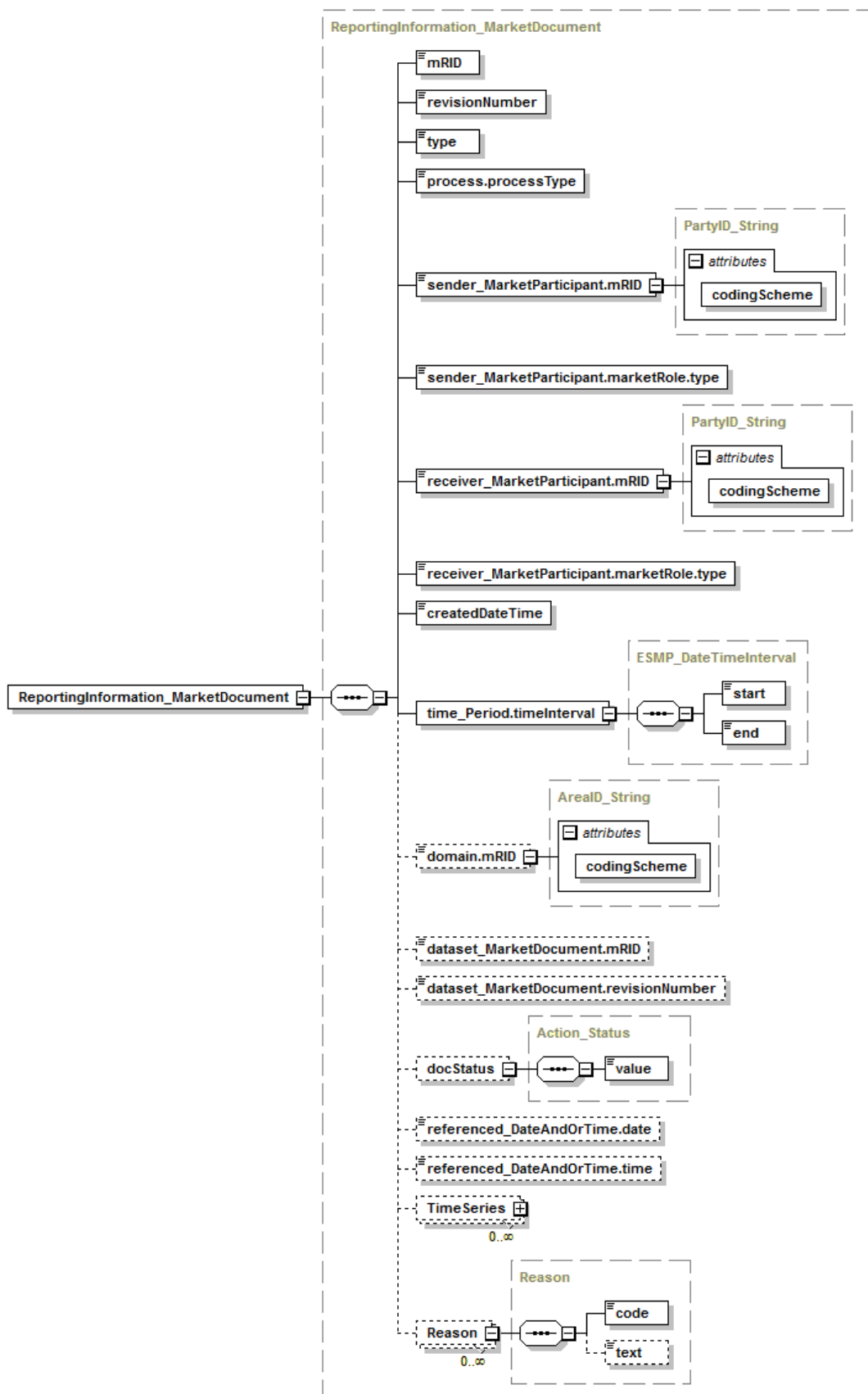
158 The list of datatypes used for the Reporting information assembly model is as follows:

- 159 • Action_Status compound
- 160 • ESMP_DateTimeInterval compound
- 161 • AreaID_String datatype, codelist CodingSchemeTypeList
- 162 • BusinessKind_String datatype, codelist BusinessTypeList
- 163 • CurveType_String datatype, codelist CurveTypeList
- 164 • EnergyProductKind_String datatype, codelist EnergyProductTypeList
- 165 • ESMP_DateTime datatype
- 166 • ESMPVersion_String datatype
- 167 • ID_String datatype
- 168 • MarketRoleKind_String datatype, codelist RoleTypeList
- 169 • MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
- 170 • MessageKind_String datatype, codelist MessageTypeList
- 171 • PartyID_String datatype, codelist CodingSchemeTypeList
- 172 • Position_Integer datatype
- 173 • ProcessKind_String datatype, codelist ProcessTypeList
- 174 • ReasonCode_String datatype, codelist ReasonCodeTypeList
- 175 • ReasonText_String datatype
- 176 • ResourceID_String datatype, codelist CodingSchemeTypeList
- 177 • Status_String datatype, codelist StatusTypeList

- 178 • YMDHM_DateTime datatype

179 **2.2.5 ReportingInformation_MarketDocument XML schema structure**

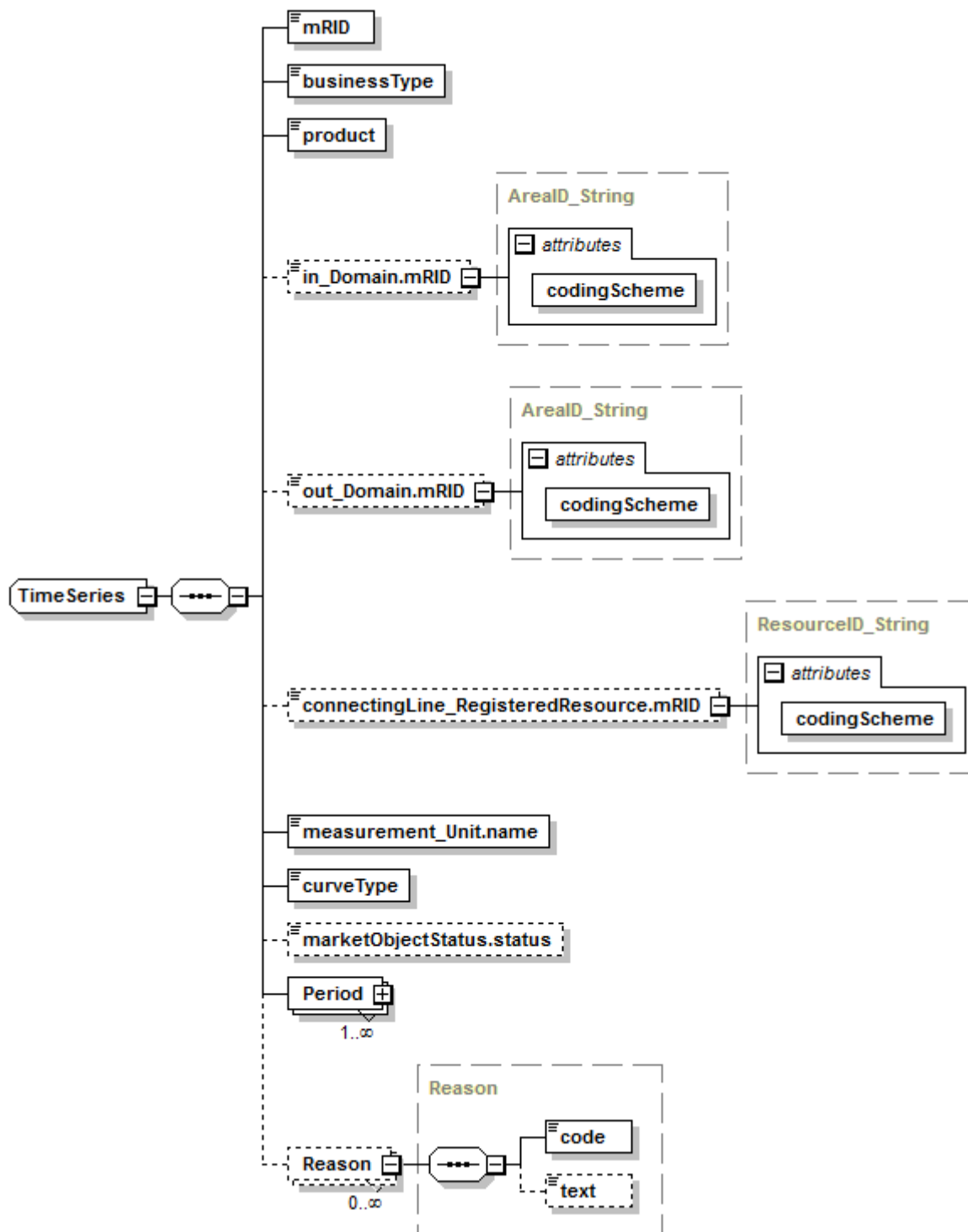
180 Figure 3 to Figure 5 provide the structure of the schema.



181

182

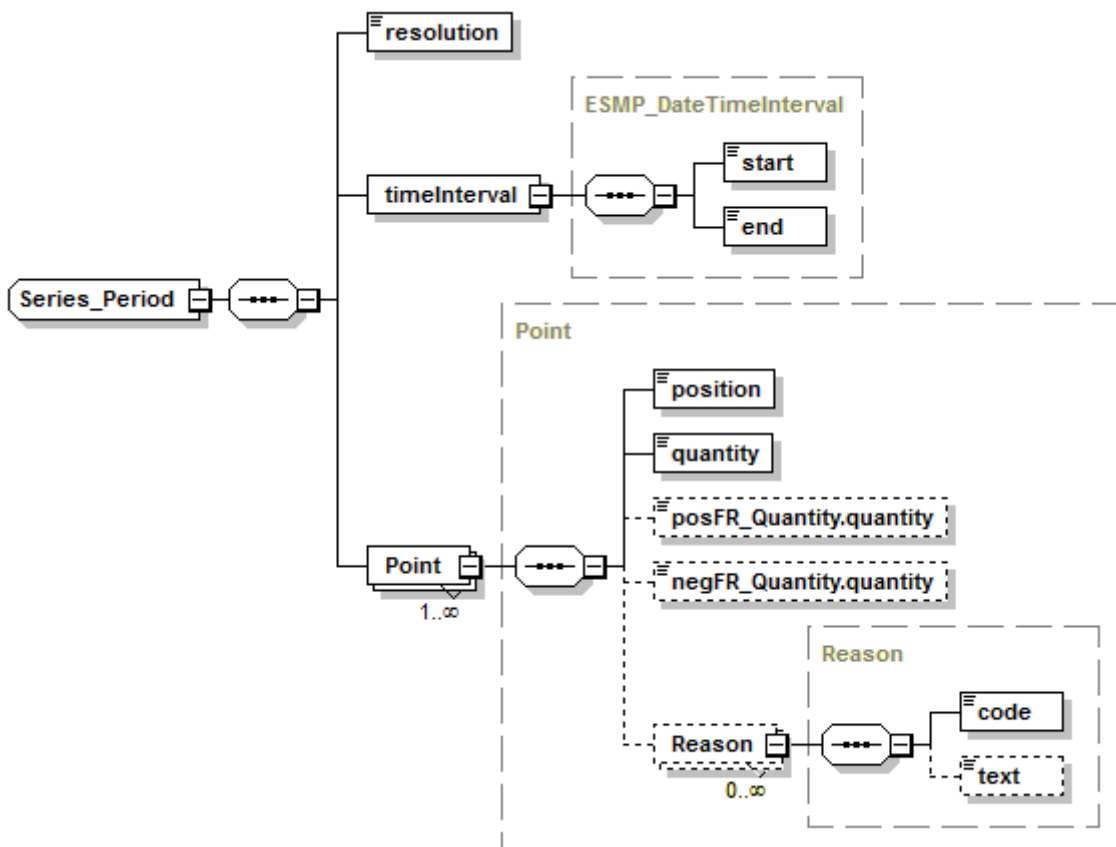
Figure 3 - ReportingInformation_MarketDocument schema structure 1/3



183

184

Figure 4 - ReportingInformation_MarketDocument schema structure 2/3



185

186

Figure 5 - ReportingInformation_MarketDocument schema structure 3/3

187 **2.2.6 ReportingInformation_MarketDocument XML schema**

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

189 urn:iec62325.351:tc57wg16: 451-n:reportinginformationdocument:2:0

```

190 <?xml version="1.0" encoding="utf-8"?>
191 <xs:schema xmlns:cl="urn:entsoe.eu:wgedi:codelists"
192 xmlns:sawsdl="http://www.w3.org/ns/sawsdl" xmlns="urn:iec62325.351:tc57wg16:451-
193 n:reportinginformationdocument:2:0" xmlns:cimp="http://www.iec.ch/cimprofile"
194 attributeFormDefault="unqualified" elementFormDefault="qualified"
195 targetNamespace="urn:iec62325.351:tc57wg16:451-n:reportinginformationdocument:2:0"
196 xmlns:xs="http://www.w3.org/2001/XMLSchema">
197 <xs:import schemaLocation="urn-entsoe-eu-wgedi-codelists.xsd"
198 namespace="urn:entsoe.eu:wgedi:codelists" />
199 <xs:element name="ReportingInformation_MarketDocument"
200 type="ReportingInformation_MarketDocument" />
201 <xs:simpleType name="Position_Integer"
202 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
203 <xs:restriction base="xs:integer">
204 <xs:maxInclusive value="999999" />
205 <xs:minInclusive value="1" />
206 </xs:restriction>
207 </xs:simpleType>
208 <xs:complexType name="Point" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
209 schema-cim16#Point">
210 <xs:sequence>
211 <xs:element minOccurs="1" maxOccurs="1" name="position" type="Position_Integer"
212 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.position">
213 </xs:element>
214 <xs:element minOccurs="1" maxOccurs="1" name="quantity" type="xs:decimal"
215 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.quantity">
216 </xs:element>

```

```

217     <xs:element minOccurs="0" maxOccurs="1" name="posFR_Quantity.quantity"
218 type="xs:decimal" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
219 cim16#Quantity.quantity">
220     </xs:element>
221     <xs:element minOccurs="0" maxOccurs="1" name="negFR_Quantity.quantity"
222 type="xs:decimal" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
223 cim16#Quantity.quantity">
224     </xs:element>
225     <xs:element minOccurs="0" maxOccurs="unbounded" name="Reason" type="Reason"
226 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.Reason">
227     </xs:element>
228   </xs:sequence>
229 </xs:complexType>
230 <xs:simpleType name="ReasonCode_String"
231 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
232   <xs:restriction base="cl:ReasonCodeTypeList" />
233 </xs:simpleType>
234 <xs:simpleType name="ReasonText_String"
235 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
236   <xs:restriction base="xs:string">
237     <xs:maxLength value="512" />
238   </xs:restriction>
239 </xs:simpleType>
240 <xs:complexType name="Reason" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
241 schema-cim16#Reason">
242   <xs:sequence>
243     <xs:element minOccurs="1" maxOccurs="1" name="code" type="ReasonCode_String"
244 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason.code">
245     </xs:element>
246     <xs:element minOccurs="0" maxOccurs="1" name="text" type="ReasonText_String"
247 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason.text">
248     </xs:element>
249   </xs:sequence>
250 </xs:complexType>
251 <xs:simpleType name="ID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
252 schema-cim16#String">
253   <xs:restriction base="xs:string">
254     <xs:maxLength value="35" />
255   </xs:restriction>
256 </xs:simpleType>
257 <xs:simpleType name="ESMPVersion_String"
258 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
259   <xs:restriction base="xs:string">
260     <xs:pattern value="[1-9] ([0-9]) {0,2}" />
261   </xs:restriction>
262 </xs:simpleType>
263 <xs:simpleType name="MessageKind_String"
264 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
265   <xs:restriction base="cl:MessageTypeList" />
266 </xs:simpleType>
267 <xs:simpleType name="ProcessKind_String"
268 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
269   <xs:restriction base="cl:ProcessTypeList" />
270 </xs:simpleType>
271 <xs:simpleType name="PartyID_String-base"
272 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
273   <xs:restriction base="xs:string">
274     <xs:maxLength value="16" />
275   </xs:restriction>
276 </xs:simpleType>
277 <xs:complexType name="PartyID_String"
278 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
279   <xs:simpleContent>
280     <xs:extension base="PartyID_String-base">
281       <xs:attribute name="codingScheme" type="cl:CodingSchemeTypeList"
282 use="required" />
283     </xs:extension>
284   </xs:simpleContent>
285 </xs:complexType>

```

```

286     <xs:simpleType name="MarketRoleKind_String"
287 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
288     <xs:restriction base="cl:RoleTypeList" />
289     </xs:simpleType>
290     <xs:simpleType name="ESMP_DateTime"
291 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
292     <xs:restriction base="xs:dateTime">
293     <xs:pattern value="((([0-9]{4}) [\-] (0[13578]|1[02]) [\-] (0[1-9]| [12][0-
294 9]|3[01])| ([0-9]{4}) [\-] ((0[469])|(11)) [\-] (0[1-9]| [12][0-9]|30))T(([01][0-9]|2[0-
295 3]):[0-5][0-9]:[0-5][0-
296 9])Z)| ((([13579][26][02468][048]| [13579][01345789](0)[48]| [13579][01345789][2468][048]
297 |[02468][048][02468][048]| [02468][1235679](0)[48]| [02468][1235679][2468][048]| [0-
298 9][0-9][13579][26]) [\-] (02) [\-] (0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-5][0-
299 9]:[0-5][0-
300 9])Z)| ((([13579][26][02468][1235679]| [13579][01345789](0)[01235679]| [13579][01345789][
301 2468][1235679]| [02468][048][02468][1235679]| [02468][1235679](0)[01235679]| [02468][123
302 5679][2468][1235679]| [0-9][0-9][13579][01345789]) [\-] (02) [\-] (0[1-9]|1[0-9]|2[0-
303 8])T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)" />
304     </xs:restriction>
305     </xs:simpleType>
306     <xs:simpleType name="AreaID_String-base"
307 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
308     <xs:restriction base="xs:string">
309     <xs:maxLength value="18" />
310     </xs:restriction>
311     </xs:simpleType>
312     <xs:complexType name="AreaID_String"
313 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
314     <xs:simpleContent>
315     <xs:extension base="AreaID_String-base">
316     <xs:attribute name="codingScheme" type="cl:CodingSchemeTypeList"
317 use="required" />
318     </xs:extension>
319     </xs:simpleContent>
320     </xs:complexType>
321     <xs:simpleType name="Status_String"
322 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
323     <xs:restriction base="cl:StatusTypeList" />
324     </xs:simpleType>
325     <xs:complexType name="Action_Status"
326 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Status">
327     <xs:sequence>
328     <xs:element minOccurs="1" maxOccurs="1" name="value" type="Status_String"
329 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Status.value">
330     </xs:element>
331     </xs:sequence>
332     </xs:complexType>
333     <xs:simpleType name="YMDHM_DateTime"
334 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
335     <xs:restriction base="xs:string">
336     <xs:pattern value="((([0-9]{4}) [\-] (0[13578]|1[02]) [\-] (0[1-9]| [12][0-
337 9]|3[01])| ([0-9]{4}) [\-] ((0[469])|(11)) [\-] (0[1-9]| [12][0-9]|30))T(([01][0-9]|2[0-
338 3]):[0-5][0-
339 9])Z)| ((([13579][26][02468][048]| [13579][01345789](0)[48]| [13579][01345789][2468][048]
340 |[02468][048][02468][048]| [02468][1235679](0)[48]| [02468][1235679][2468][048]| [0-
341 9][0-9][13579][26]) [\-] (02) [\-] (0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-5][0-
342 9])Z)| ((([13579][26][02468][1235679]| [13579][01345789](0)[01235679]| [13579][01345789][
343 2468][1235679]| [02468][048][02468][1235679]| [02468][1235679](0)[01235679]| [02468][123
344 5679][2468][1235679]| [0-9][0-9][13579][01345789]) [\-] (02) [\-] (0[1-9]|1[0-9]|2[0-
345 8])T(([01][0-9]|2[0-3]):[0-5][0-9])Z)" />
346     </xs:restriction>
347     </xs:simpleType>
348     <xs:complexType name="ESMP_DateTimeInterval"
349 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
350     <xs:sequence>
351     <xs:element minOccurs="1" maxOccurs="1" name="start" type="YMDHM_DateTime"
352 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
353 cim16#DateTimeInterval.start">
354     </xs:element>

```

```

355         <xs:element minOccurs="1" maxOccurs="1" name="end" type="YMDHM_DateTime"
356 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
357 cim16#DateTimeInterval.end">
358         </xs:element>
359     </xs:sequence>
360 </xs:complexType>
361 <xs:complexType name="ReportingInformation_MarketDocument"
362 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
363     <xs:sequence>
364         <xs:element minOccurs="1" maxOccurs="1" name="mRID" type="ID_String"
365 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
366 cim16#IdentifiedObject.mRID">
367         </xs:element>
368         <xs:element minOccurs="1" maxOccurs="1" name="revisionNumber"
369 type="ESMPVersion_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
370 cim16#Document.revisionNumber">
371         </xs:element>
372         <xs:element minOccurs="1" maxOccurs="1" name="type" type="MessageKind_String"
373 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.type">
374         </xs:element>
375         <xs:element minOccurs="1" maxOccurs="1" name="process.processType"
376 type="ProcessKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
377 cim16#Process.processType">
378         </xs:element>
379         <xs:element minOccurs="1" maxOccurs="1" name="sender_MarketParticipant.mRID"
380 type="PartyID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
381 cim16#IdentifiedObject.mRID">
382         </xs:element>
383         <xs:element minOccurs="1" maxOccurs="1"
384 name="sender_MarketParticipant.marketRole.type" type="MarketRoleKind_String"
385 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type">
386         </xs:element>
387         <xs:element minOccurs="1" maxOccurs="1" name="receiver_MarketParticipant.mRID"
388 type="PartyID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
389 cim16#IdentifiedObject.mRID">
390         </xs:element>
391         <xs:element minOccurs="1" maxOccurs="1"
392 name="receiver_MarketParticipant.marketRole.type" type="MarketRoleKind_String"
393 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type">
394         </xs:element>
395         <xs:element minOccurs="1" maxOccurs="1" name="createdDateTime"
396 type="ESMP_DateTime" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
397 cim16#Document.createdDateTime">
398         </xs:element>
399         <xs:element minOccurs="1" maxOccurs="1" name="time_Period.timeInterval"
400 type="ESMP_DateTimeInterval" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
401 schema-cim16#Period.timeInterval">
402         </xs:element>
403         <xs:element minOccurs="0" maxOccurs="1" name="domain.mRID" type="AreaID_String"
404 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
405 cim16#IdentifiedObject.mRID">
406         </xs:element>
407         <xs:element minOccurs="0" maxOccurs="1" name="dataset_MarketDocument.mRID"
408 type="ID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
409 cim16#IdentifiedObject.mRID">
410         </xs:element>
411         <xs:element minOccurs="0" maxOccurs="1"
412 name="dataset_MarketDocument.revisionNumber" type="ESMPVersion_String"
413 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
414 cim16#Document.revisionNumber">
415         </xs:element>
416         <xs:element minOccurs="0" maxOccurs="1" name="docStatus" type="Action_Status"
417 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.docStatus">
418         </xs:element>
419         <xs:element minOccurs="0" maxOccurs="1" name="referenced_DateAndOrTime.date"
420 type="xs:date" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
421 cim16#DateAndOrTime.date">
422         </xs:element>

```

```
423     <xs:element minOccurs="0" maxOccurs="1" name="referenced_DateAndOrTime.time"  
424 type="xs:time" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
425 cim16#DateAndOrTime.time">  
426     </xs:element>  
427     <xs:element minOccurs="0" maxOccurs="unbounded" name="TimeSeries"  
428 type="TimeSeries" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
429 cim16#MarketDocument.TimeSeries">  
430     </xs:element>  
431     <xs:element minOccurs="0" maxOccurs="unbounded" name="Reason" type="Reason"  
432 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
433 cim16#MarketDocument.Reason">  
434     </xs:element>  
435 </xs:sequence>  
436 </xs:complexType>  
437 <xs:complexType name="Series_Period"  
438 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">  
439     <xs:sequence>  
440     <xs:element minOccurs="1" maxOccurs="1" name="resolution" type="xs:duration"  
441 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.resolution">  
442     </xs:element>  
443     <xs:element minOccurs="1" maxOccurs="1" name="timeInterval"  
444 type="ESMP_DateTimeInterval" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-  
445 schema-cim16#Period.timeInterval">  
446     </xs:element>  
447     <xs:element minOccurs="1" maxOccurs="unbounded" name="Point" type="Point"  
448 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.Point">  
449     </xs:element>  
450 </xs:sequence>  
451 </xs:complexType>  
452 <xs:simpleType name="BusinessKind_String"  
453 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">  
454     <xs:restriction base="cl:BusinessTypeList" />  
455 </xs:simpleType>  
456 <xs:simpleType name="EnergyProductKind_String"  
457 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">  
458     <xs:restriction base="cl:EnergyProductTypeList" />  
459 </xs:simpleType>  
460 <xs:simpleType name="ResourceID_String-base"  
461 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">  
462     <xs:restriction base="xs:string">  
463         <xs:maxLength value="60" />  
464     </xs:restriction>  
465 </xs:simpleType>  
466 <xs:complexType name="ResourceID_String"  
467 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">  
468     <xs:simpleContent>  
469         <xs:extension base="ResourceID_String-base">  
470             <xs:attribute name="codingScheme" type="cl:CodingSchemeTypeList"  
471 use="required" />  
472         </xs:extension>  
473     </xs:simpleContent>  
474 </xs:complexType>  
475 <xs:simpleType name="MeasurementUnitKind_String"  
476 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">  
477     <xs:restriction base="cl:UnitOfMeasureTypeList" />  
478 </xs:simpleType>  
479 <xs:simpleType name="CurveType_String"  
480 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">  
481     <xs:restriction base="cl:CurveTypeList" />  
482 </xs:simpleType>  
483 <xs:complexType name="TimeSeries"  
484 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries">  
485     <xs:sequence>  
486     <xs:element minOccurs="1" maxOccurs="1" name="mRID" type="ID_String"  
487 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-  
488 cim16#IdentifiedObject.mRID">  
489     </xs:element>
```

```
490     <xs:element minOccurs="1" maxOccurs="1" name="businessType"
491 type="BusinessKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
492 cim16#TimeSeries.businessType">
493     </xs:element>
494     <xs:element minOccurs="1" maxOccurs="1" name="product"
495 type="EnergyProductKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
496 schema-cim16#TimeSeries.product">
497     </xs:element>
498     <xs:element minOccurs="0" maxOccurs="1" name="in_Domain.mRID"
499 type="AreaID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
500 cim16#IdentifiedObject.mRID">
501     </xs:element>
502     <xs:element minOccurs="0" maxOccurs="1" name="out_Domain.mRID"
503 type="AreaID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
504 cim16#IdentifiedObject.mRID">
505     </xs:element>
506     <xs:element minOccurs="0" maxOccurs="1"
507 name="connectingLine_RegisteredResource.mRID" type="ResourceID_String"
508 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
509 cim16#IdentifiedObject.mRID">
510     </xs:element>
511     <xs:element minOccurs="1" maxOccurs="1" name="measurement_Unit.name"
512 type="MeasurementUnitKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
513 schema-cim16#Unit.name">
514     </xs:element>
515     <xs:element minOccurs="1" maxOccurs="1" name="curveType"
516 type="CurveType_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
517 cim16#TimeSeries.curveType">
518     </xs:element>
519     <xs:element minOccurs="0" maxOccurs="1" name="marketObjectStatus.status"
520 type="Status_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
521 cim16#MarketObjectStatus.status">
522     </xs:element>
523     <xs:element minOccurs="1" maxOccurs="unbounded" name="Period"
524 type="Series_Period" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
525 cim16#TimeSeries.Period">
526     </xs:element>
527     <xs:element minOccurs="0" maxOccurs="unbounded" name="Reason" type="Reason"
528 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.Reason">
529     </xs:element>
530 </xs:sequence>
531 </xs:complexType>
532 </xs:schema>
```