European Network of
Transmission System Operators
for Electricity

REPORTING INFORMATION DOCUMENT
UML MODEL AND SCHEMA

2022-11-29
AGREED DOCUMENT
VERSION 1.3

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Revision History

Version	Release	Date	Comments
0	0	2017-01-19	First drafting of the document.
1	0	2017-01-30	Version to be submitted to Market Committee following WG EDI meeting in March 2017.
1	1	2018-11-08	XSD version 2.1: Order of the series_period class attributes now is in line with current EDI practice. Approved by MC.
1	2	2022-03-15	Updates in XSD v2.2: mRID of Document, Series and Timeseries (ID_String type) was enlarged from 35 to 60 characters. Approved by MC.
1	3	2022-11-29	Updates in XSD v2.3: Added an optional energyMarket.timeframe attribute at RIMD_MarketDocument and Timeseries. Agreed by CIM EG.

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1. Objective

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

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

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

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

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

2. ReportingInformation_MarketDocument

2.1. Reporting information contextual model

2.1.1. Overview of the model

Figure 1 shows the model.

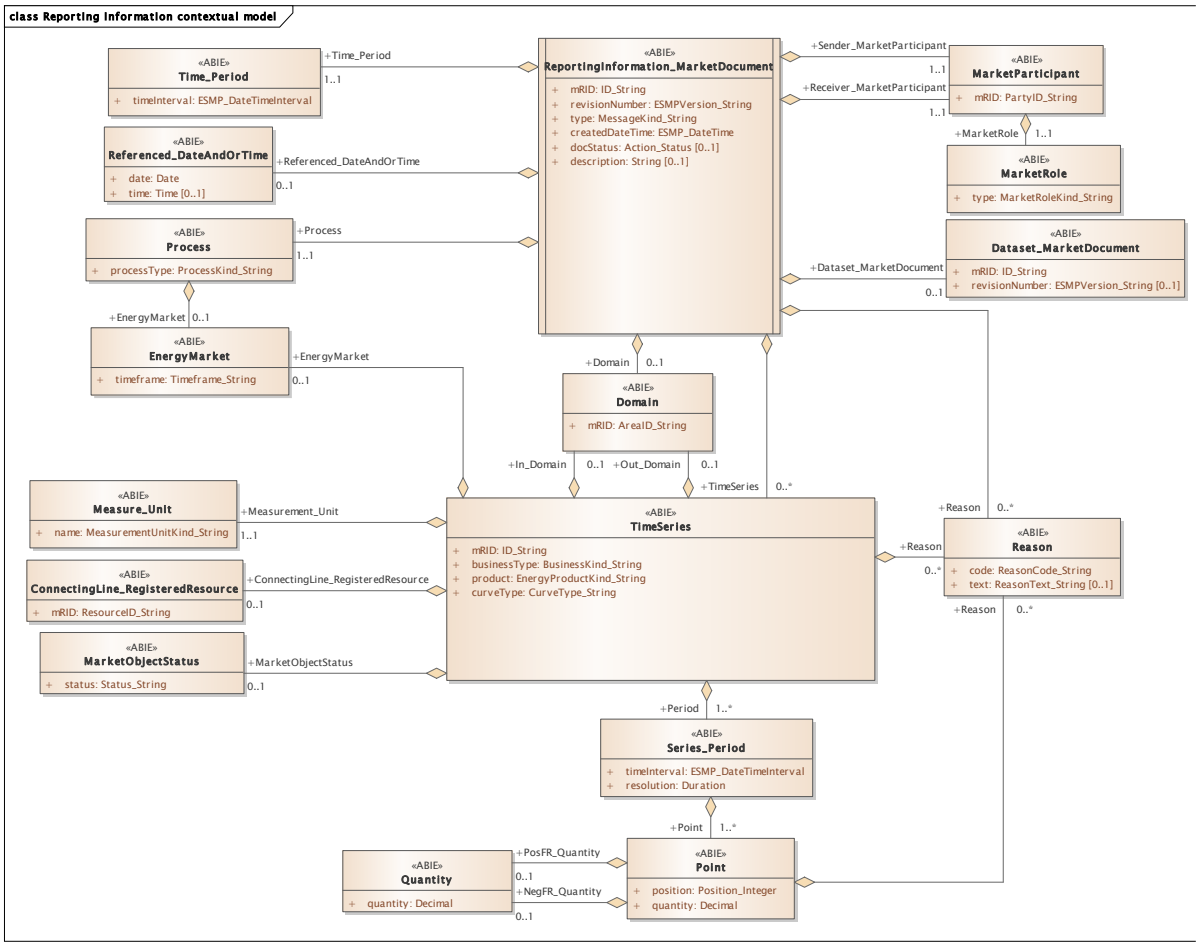

Figure 1 - Reporting information contextual model

2.1.2. IsBasedOn relationships from the European style market profile

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

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
EnergyMarket	TC57CIM::IEC62325::MarketCommon::EnergyMarket
MarketObjectStatus	TC57CIM::IEC62325::MarketManagement::MarketObjectStatus
MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
MarketRole	TC57CIM::IEC62325::MarketCommon::MarketRole
Measure_Unit	TC57CIM::IEC62325::MarketManagement::Unit
Point	TC57CIM::IEC62325::MarketManagement::Point
Process	TC57CIM::IEC62325::MarketManagement::Process
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

2.2. Reporting information assembly model

2.2.1. Overview of the model

Figure 2 shows the model.

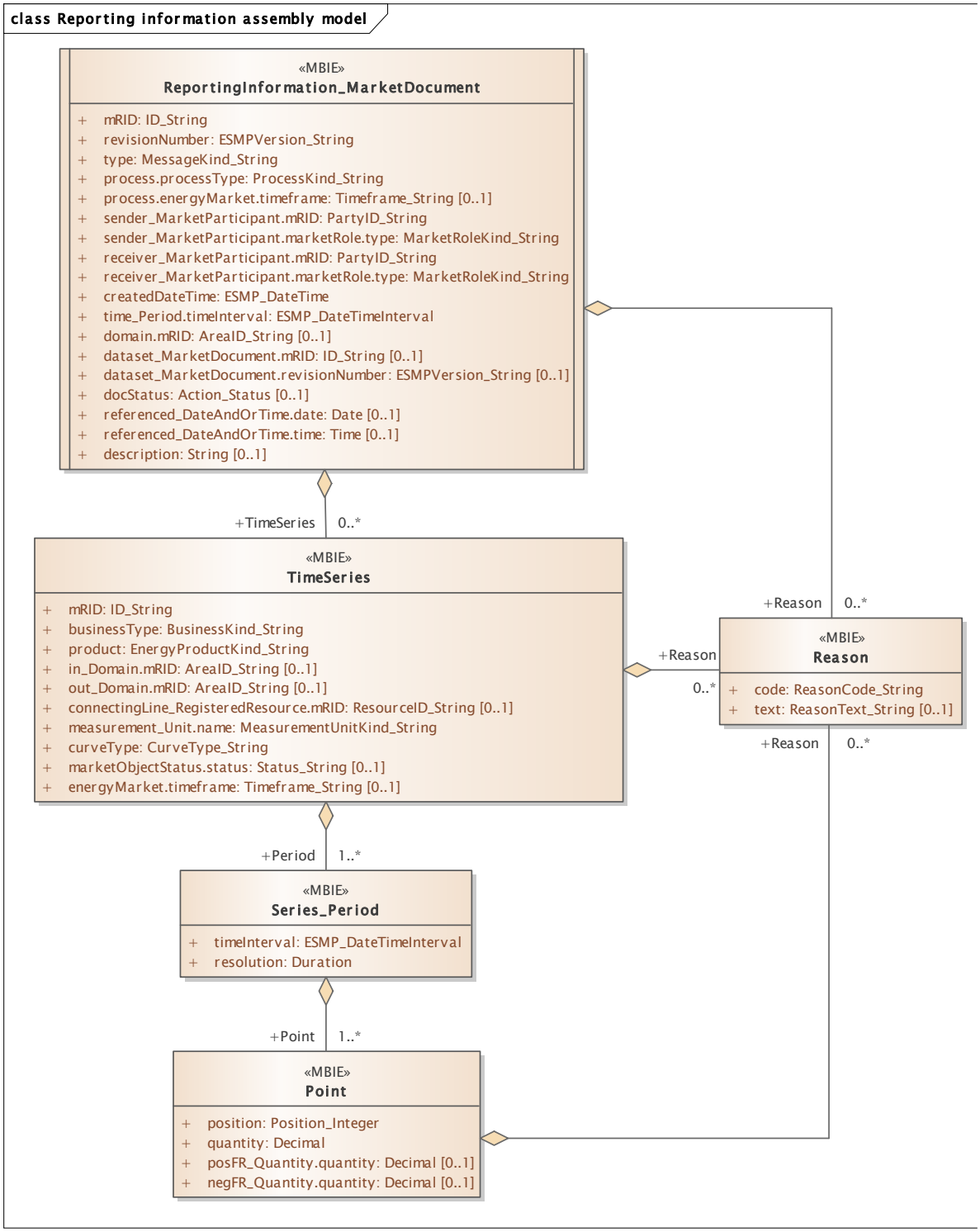

Figure 2 - Reporting information assembly model

2.2.2. IsBasedOn relationships from the European style market profile

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

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

2.2.3. Detailed Reporting information assembly model

2.2.3.1. ReportingInformation_MarketDocument root class

This document provides either:

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

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

Table 3 shows all attributes of ReportingInformation_MarketDocument.

Table 3 - Attributes of Reporting information assembly 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	[0..1]	process.energyMarket.timeframe Timeframe_String	A specified period of time in which something occurs or is planned to take place. --- The timeframe the document is addressed to.
5	[1..1]	sender_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The sender of the document.
6	[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.

Order	mult.	Attribute name / Attribute type	Description
7	[1..1]	receiver_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The recipient of the document.
8	[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.
9	[1..1]	createdDateTime ESMP_DateTime	The date and time of the creation of the document.
10	[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.
11	[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.
12	[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.
13	[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.
14	[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.
15	[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.
16	[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.
19	[0..1]	description String	The description is a free human readable text describing or naming the object. It may be non unique and may not correlate to a naming hierarchy.

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

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

Order	mult.	Class name / Role	Description
17	[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..*]

Order	mult.	Class name / Role	Description
18	[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..*]

126

127 **2.2.3.2. Point**

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

129 Table 5 shows all attributes of Point.

130 **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 alignement 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 alignement 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.

131

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

133 **Table 6 - Association ends of Reporting information assembly model::Point with other**
134 **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..*]

135

136 **2.2.3.3. Reason**

137 The motivation of an act.

138 Table 7 shows all attributes of Reason.

139 **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.

140

141 ### 2.2.3.4. Series_Period

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

143 Table 8 shows all attributes of Series_Period.

144 **Table 8 - Attributes of Reporting information 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.

145

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

147 **Table 9 - Association ends of Reporting information assembly model::Series_Period**
148 **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..*]

149

150 ### 2.2.3.5. TimeSeries

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

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

154 Table 10 shows all attributes of TimeSeries.

155 **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.

Order	mult.	Attribute name / Attribute type	Description
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.
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.
9	[0..1]	energyMarket.timeframe Timeframe_String	A specified period of time in which something occurs or is planned to take place.

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

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

Order	mult.	Class name / Role	Description
10	[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..*]
11	[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..*]

2.2.4. Datatypes

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

- Action_Status compound
- ESMP_DateTimeInterval compound
- AreaID_String datatype, codelist CodingSchemeTypeList
- BusinessKind_String datatype, codelist BusinessTypeList
- CurveType_String datatype, codelist CurveTypeList
- EnergyProductKind_String datatype, codelist EnergyProductTypeList
- ESMP_DateTime datatype
- ESMPVersion_String datatype

- ID_String datatype
- MarketRoleKind_String datatype, codelist RoleTypeList
- MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
- MessageKind_String datatype, codelist MessageTypeList
- PartyID_String datatype, codelist CodingSchemeTypeList
- Position_Integer datatype
- ProcessKind_String datatype, codelist ProcessTypeList
- ReasonCode_String datatype, codelist ReasonCodeTypeList
- ReasonText_String datatype
- ResourceID_String datatype, codelist CodingSchemeTypeList
- Status_String datatype, codelist StatusTypeList
- Timeframe_String datatype, codelist TimeframeTypeList
- YMDHM_DateTime datatype

2.2.5. ReportingInformation_MarketDocument XML schema structure

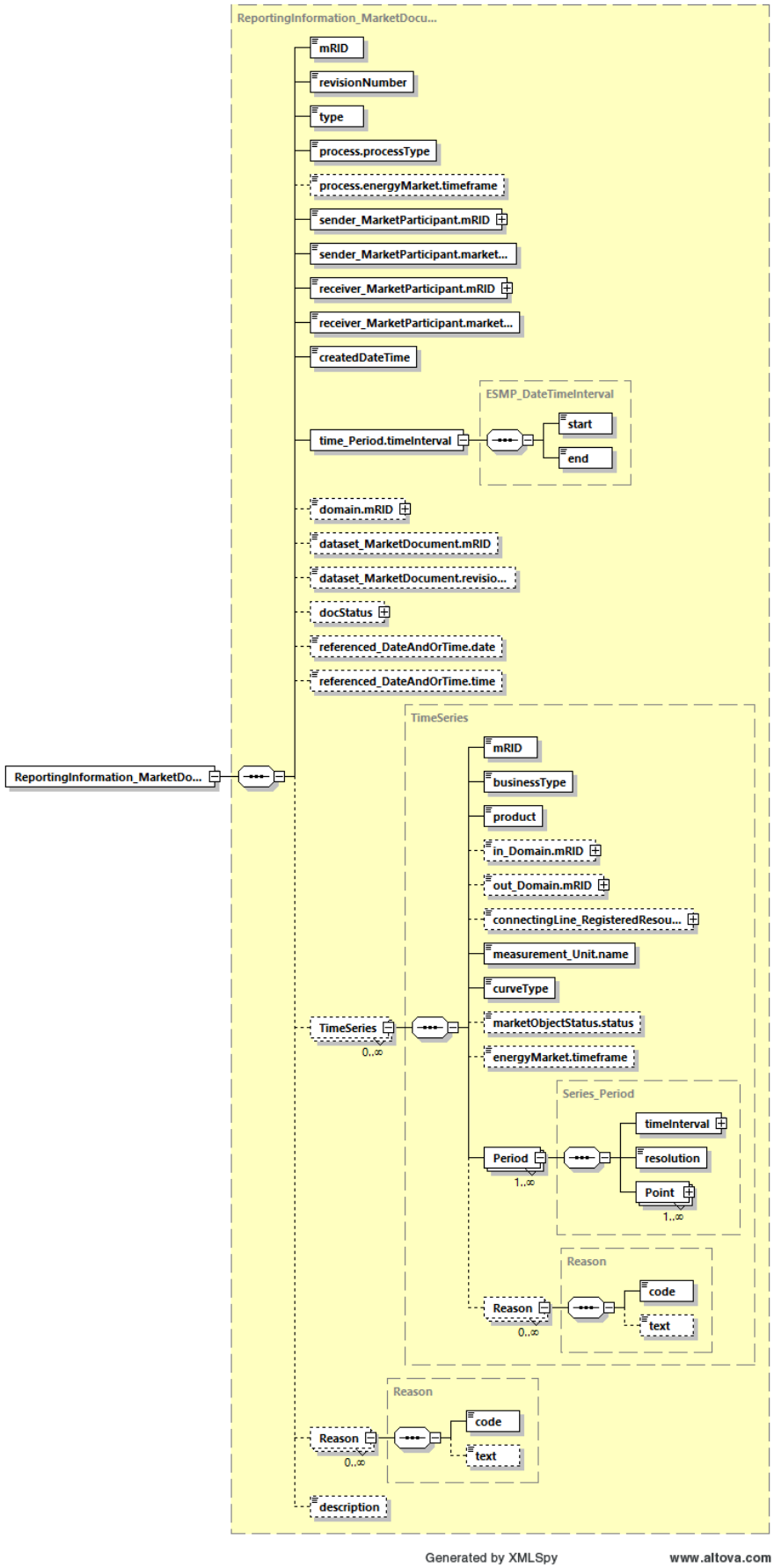

Figure 3 – ReportingInformation_MarketDocument schema structure

2.2.6. ReportingInformation_MarketDocument XML schema

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

urn:iec62325.351:tc57wg16:451-n:reportinginformationdocument:2:3

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:ecl="urn:entsoe.eu:wgedi:codelists"
xmlns="urn:iec62325.351:tc57wg16:451-n:reportinginformationdocument:2:3"
xmlns:sawsdl="http://www.w3.org/ns/sawsdl"
xmlns:cimp="http://www.iec.ch/cimprofile"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="urn:iec62325.351:tc57wg16:451-n:reportinginformationdocument:2:3"
elementFormDefault="qualified" attributeFormDefault="unqualified">
	<xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-
entsoe-eu-wgedi-codelists.xsd"/>
	<xs:element name="ReportingInformation_MarketDocument"
type="ReportingInformation_MarketDocument"/>
	<xs:simpleType name="Position_Integer"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
		<xs:restriction base="xs:integer">
			<xs:maxInclusive value="999999"/>
			<xs:minInclusive value="1"/>
		</xs:restriction>
	</xs:simpleType>
	<xs:complexType name="Point"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point">
		<xs:sequence>
			<xs:element name="position" type="Position_Integer"
minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#Point.position"/>
			<xs:element name="quantity" type="xs:decimal" minOccurs="1"
maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Point.quantity"/>
			<xs:element name="posFR_Quantity.quantity" type="xs:decimal"
minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#Quantity.quantity"/>
			<xs:element name="negFR_Quantity.quantity" type="xs:decimal"
minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#Quantity.quantity"/>
			<xs:element name="Reason" type="Reason" minOccurs="0"
maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Point.Reason"/>
		</xs:sequence>
	</xs:complexType>
	<xs:simpleType name="ReasonCode_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
		<xs:restriction base="ecl:ReasonCodeTypeList"/>
	</xs:simpleType>
	<xs:simpleType name="ReasonText_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
		<xs:restriction base="xs:string">
			<xs:maxLength value="512"/>
		</xs:restriction>
	</xs:simpleType>
	<xs:complexType name="Reason"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason">
		<xs:sequence>
			<xs:element name="code" type="ReasonCode_String" minOccurs="1"
maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Reason.code"/>
```

```
246                     <xs:element name="text" type="ReasonText_String" minOccurs="0"
247   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
248   cim16#Reason.text"/>
249               </xs:sequence>
250         </xs:complexType>
251         <xs:simpleType name="ID_String"
252   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
253               <xs:restriction base="xs:string">
254                     <xs:maxLength value="60"/>
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="ecl: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="ecl:ProcessTypeList"/>
270         </xs:simpleType>
271         <xs:simpleType name="Timeframe_String"
272   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
273               <xs:restriction base="ecl:TimeframeTypeList"/>
274         </xs:simpleType>
275         <xs:simpleType name="PartyID_String-base"
276   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
277               <xs:restriction base="xs:string">
278                     <xs:maxLength value="16"/>
279               </xs:restriction>
280         </xs:simpleType>
281         <xs:complexType name="PartyID_String"
282   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
283               <xs:simpleContent>
284                     <xs:extension base="PartyID_String-base">
285                           <xs:attribute name="codingScheme"
286   type="ecl:CodingSchemeTypeList" use="required"/>
287                     </xs:extension>
288               </xs:simpleContent>
289         </xs:complexType>
290         <xs:simpleType name="MarketRoleKind_String"
291   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
292               <xs:restriction base="ecl:RoleTypeList"/>
293         </xs:simpleType>
294         <xs:simpleType name="ESMP_DateTime"
295   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
296               <xs:restriction base="xs:dateTime">
297                     <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-
298   9]|[12][0-9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
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            </xs:restriction>
      </xs:simpleType>
      <xs:simpleType name="AreaID_String-base"
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                  <xs:maxLength value="18"/>
            </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="AreaID_String"
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                  <xs:extension base="AreaID_String-base">
                        <xs:attribute name="codingScheme"
type="ecl:CodingSchemeTypeList" use="required"/>
                  </xs:extension>
            </xs:simpleContent>
      </xs:complexType>
      <xs:simpleType name="Status_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
            <xs:restriction base="ecl:StatusTypeList"/>
      </xs:simpleType>
      <xs:complexType name="Action_Status"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Status">
            <xs:sequence>
                  <xs:element name="value" type="Status_String" minOccurs="1"
maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Status.value"/>
            </xs:sequence>
      </xs:complexType>
      <xs:simpleType name="YMDHM_DateTime"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
            <xs:restriction base="xs:string">
                  <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-
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8][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
9]|2[0-8])T(([01][0-9]|2[0-3]):[0-5][0-9])Z)"/>
            </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="ESMP_DateTimeInterval"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
            <xs:sequence>
                  <xs:element name="start" type="YMDHM_DateTime" minOccurs="1"
maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#DateTimeInterval.start"/>
                  <xs:element name="end" type="YMDHM_DateTime" minOccurs="1"
maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#DateTimeInterval.end"/>
            </xs:sequence>
      </xs:complexType>
      <xs:complexType name="ReportingInformation_MarketDocument"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
```

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366                 <xs:sequence>
367                       <xs:element name="mRID" type="ID_String" minOccurs="1"
368   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
369   cim16#IdentifiedObject.mRID"/>
370                       <xs:element name="revisionNumber" type="ESMPVersion_String"
371   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
372   schema-cim16#Document.revisionNumber"/>
373                       <xs:element name="type" type="MessageKind_String" minOccurs="1"
374   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
375   cim16#Document.type"/>
376                       <xs:element name="process.processType"
377   type="ProcessKind_String" minOccurs="1" maxOccurs="1"
378   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
379   cim16#Process.processType"/>
380                       <xs:element name="process.energyMarket.timeframe"
381   type="Timeframe_String" minOccurs="0" maxOccurs="1"
382   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
383   cim16#EnergyMarket.timeframe"/>
384                       <xs:element name="sender_MarketParticipant.mRID"
385   type="PartyID_String" minOccurs="1" maxOccurs="1"
386   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
387   cim16#IdentifiedObject.mRID"/>
388                       <xs:element name="sender_MarketParticipant.marketRole.type"
389   type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
390   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
391                       <xs:element name="receiver_MarketParticipant.mRID"
392   type="PartyID_String" minOccurs="1" maxOccurs="1"
393   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
394   cim16#IdentifiedObject.mRID"/>
395                       <xs:element name="receiver_MarketParticipant.marketRole.type"
396   type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
397   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
398                       <xs:element name="createdDateTime" type="ESMP_DateTime"
399   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
400   schema-cim16#Document.createdDateTime"/>
401                       <xs:element name="time_Period.timeInterval"
402   type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1"
403   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
404   cim16#Period.timeInterval"/>
405                       <xs:element name="domain.mRID" type="AreaID_String"
406   minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
407   schema-cim16#IdentifiedObject.mRID"/>
408                       <xs:element name="dataset_MarketDocument.mRID" type="ID_String"
409   minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
410   schema-cim16#IdentifiedObject.mRID"/>
411                       <xs:element name="dataset_MarketDocument.revisionNumber"
412   type="ESMPVersion_String" minOccurs="0" maxOccurs="1"
413   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
414   cim16#Document.revisionNumber"/>
415                       <xs:element name="docStatus" type="Action_Status" minOccurs="0"
416   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
417   cim16#Document.docStatus"/>
418                       <xs:element name="referenced_DateAndOrTime.date" type="xs:date"
419   minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
420   schema-cim16#DateAndOrTime.date"/>
421                       <xs:element name="referenced_DateAndOrTime.time" type="xs:time"
422   minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
423   schema-cim16#DateAndOrTime.time"/>
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424                     <xs:element name="TimeSeries" type="TimeSeries" minOccurs="0"
425   maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
426   cim16#MarketDocument.TimeSeries"/>
427                     <xs:element name="Reason" type="Reason" minOccurs="0"
428   maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
429   cim16#MarketDocument.Reason"/>
430                     <xs:element name="description" type="xs:string" minOccurs="0"
431   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
432   cim16#IdentifiedObject.description"/>
433               </xs:sequence>
434         </xs:complexType>
435         <xs:complexType name="Series_Period"
436   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">
437               <xs:sequence>
438                     <xs:element name="timeInterval" type="ESMP_DateTimeInterval"
439   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
440   schema-cim16#Period.timeInterval"/>
441                     <xs:element name="resolution" type="xs:duration" minOccurs="1"
442   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
443   cim16#Period.resolution"/>
444                     <xs:element name="Point" type="Point" minOccurs="1"
445   maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
446   cim16#Period.Point"/>
447               </xs:sequence>
448         </xs:complexType>
449         <xs:simpleType name="BusinessKind_String"
450   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
451               <xs:restriction base="ecl:BusinessTypeList"/>
452         </xs:simpleType>
453         <xs:simpleType name="EnergyProductKind_String"
454   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
455               <xs:restriction base="ecl:EnergyProductTypeList"/>
456         </xs:simpleType>
457         <xs:simpleType name="ResourceID_String-base"
458   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
459               <xs:restriction base="xs:string">
460                     <xs:maxLength value="60"/>
461               </xs:restriction>
462         </xs:simpleType>
463         <xs:complexType name="ResourceID_String"
464   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
465               <xs:simpleContent>
466                     <xs:extension base="ResourceID_String-base">
467                           <xs:attribute name="codingScheme"
468   type="ecl:CodingSchemeTypeList" use="required"/>
469                     </xs:extension>
470               </xs:simpleContent>
471         </xs:complexType>
472         <xs:simpleType name="MeasurementUnitKind_String"
473   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
474               <xs:restriction base="ecl:UnitOfMeasureTypeList"/>
475         </xs:simpleType>
476         <xs:simpleType name="CurveType_String"
477   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
478               <xs:restriction base="ecl:CurveTypeList"/>
479         </xs:simpleType>
480         <xs:complexType name="TimeSeries"
481   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries">
482               <xs:sequence>
```

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