European Network of
Transmission System Operators
for Electricity

ALLOCATION RESULT DOCUMENT UML MODEL AND SCHEMA

2022-02-01
APPROVED DOCUMENT
VERSION 1.2

Table of Contents

1 Objective 5
2 AllocationResult_MarketDocument 6
2.1 Allocation result 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 Allocation result assembly model 8
2.2.1 Overview of the model 8
2.2.2 IsBasedOn relationships from the European style market profile 10
2.2.3 Detailed Allocation result assembly model 10
2.2.3.1 AllocationResult_MarketDocument root class 10
2.2.3.2 Point 11
2.2.3.3 Reason 12
2.2.3.4 Series_Period 12
2.2.3.5 TimeSeries 13
2.2.4 Datatypes 15
2.2.5 AllocationResult_MarketDocument XML schema structure 16
2.2.6 AllocationResult_MarketDocument XML schema 17

List of figures

Figure 1 - Allocation result contextual model 6
Figure 2 - Allocation result assembly model 9
Figure 3 - AllocationResult_MarketDocument schema structure 16

List of tables

Table 1 - IsBasedOn dependency 7
Table 2 - IsBasedOn dependency 10
Table 3 - Attributes of Allocation result assembly model::AllocationResult_MarketDocument 10
Table 4 - Association ends of Allocation result assembly model::AllocationResult_MarketDocument with other classes 11
Table 5 - Attributes of Allocation result assembly model::Point 12
Table 6 - Association ends of Allocation result assembly model::Point with other classes 12
Table 7 - Attributes of Allocation result assembly model::Reason 12
Table 8 - Attributes of Allocation result assembly model::Series_Period 13
Table 9 - Association ends of Allocation result assembly model::Series_Period with other classes 13
Table 10 - Attributes of Allocation result assembly model::TimeSeries 13
Table 11 - Association ends of Allocation result assembly model::TimeSeries with other classes 15

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61

Revision History

Version	Release	Date	Comments
0	1	2018-03-12	First drafting of the document.
1	0	2018-05-08	Document approved by MC
1	1	2021-04-20	Title changed to Allocation Result document UML and schema instead of Allocation document. Changes in XSD v7.1: Reason is to align the market document name with the schema name. Cardinality of Bid_Original_MarketDocument association was changed from [1] to [0..1]. Approved by MC.
1	2	2022-02-01	Updates in allocation result document XSD v7.2 • Quantity_Measure_Unit.name & Price_Measure_Unit.name attributes were renamed to Quantity_Measurement_Unit.name & Price_Measurement_Unit.name to be compliant with the ESMP. Approved by MC.

62

Objective

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

The schema of the AllocationResult_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.

AllocationResult_MarketDocument

2.1 Allocation result contextual model

2.1.1 Overview of the model

Figure 1 shows the model.

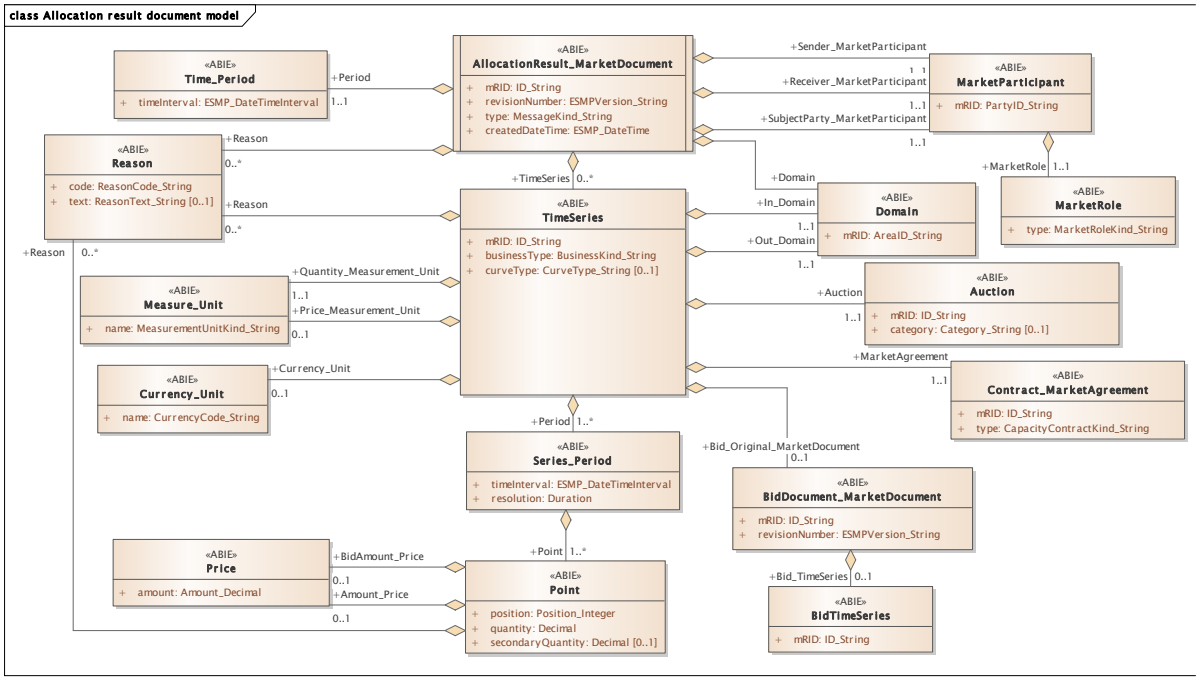

Figure 1 - Allocation result contextual model

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
AllocationResult_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Auction	TC57CIM::IEC62325::MarketManagement::Auction
BidDocument_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
BidTimeSeries	TC57CIM::IEC62325::MarketManagement::BidTimeSeries
Contract_MarketAgreement	TC57CIM::IEC62325::MarketManagement::MarketAgreement
Currency_Unit	TC57CIM::IEC62325::MarketManagement::Unit
Domain	TC57CIM::IEC62325::MarketManagement::Domain
MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
MarketRole	TC57CIM::IEC62325::MarketCommon::MarketRole
Measure_Unit	TC57CIM::IEC62325::MarketManagement::Unit
Point	TC57CIM::IEC62325::MarketManagement::Point
Price	TC57CIM::IEC62325::MarketManagement::Price
Reason	TC57CIM::IEC62325::MarketManagement::Reason
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
Time_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries

95

96 2.2 Allocation result assembly model

97 2.2.1 Overview of the model

98 Figure 2 shows the model.

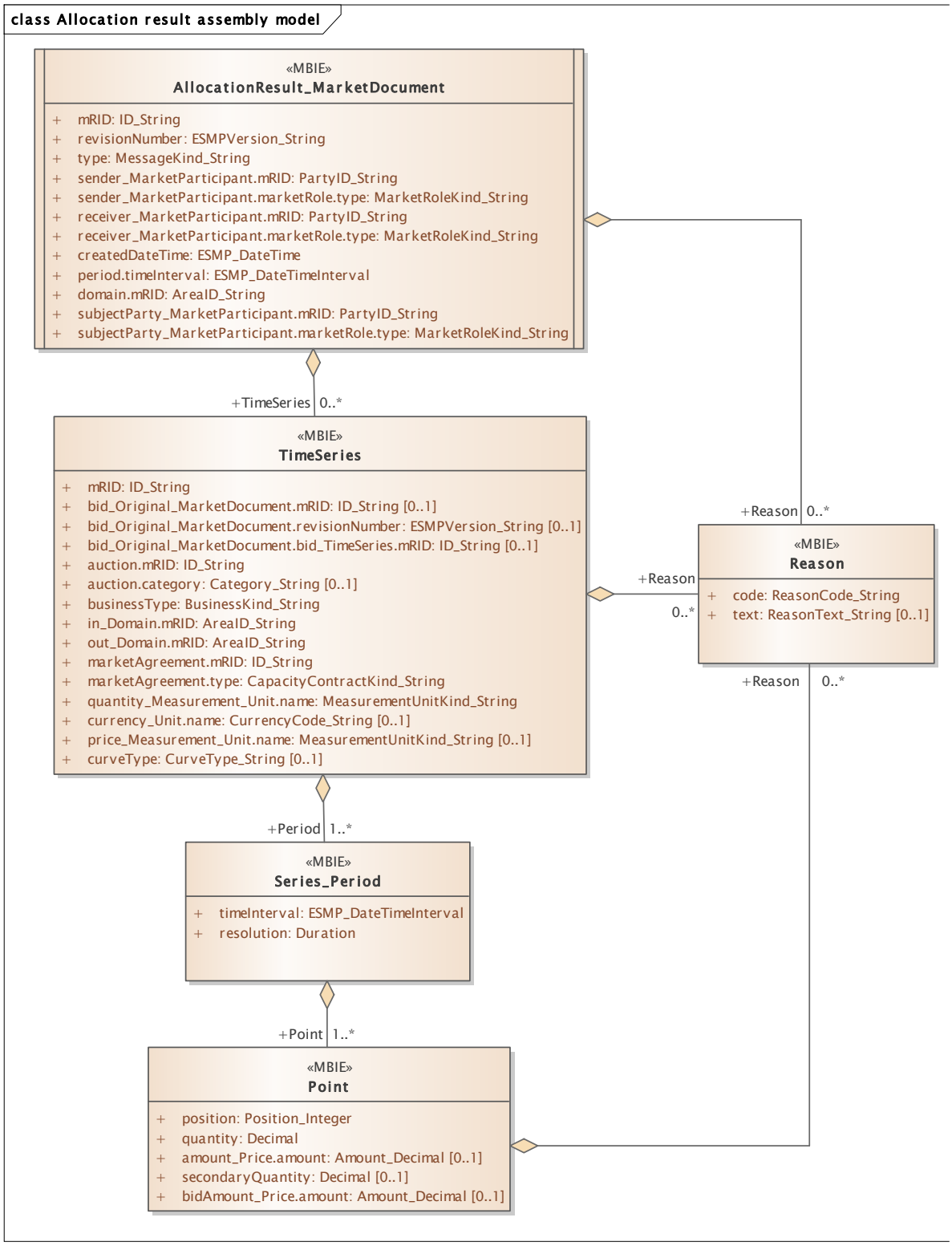

Figure 2 - Allocation result assembly model

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
AllocationResult_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

2.2.3 Detailed Allocation result assembly model

2.2.3.1 AllocationResult_MarketDocument root class

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

There is only one allocation result document per sender and subject party for a given auction identification and bid time interval.

In the case where the allocation result document contains all bids and resales that have been validated for processing in the auction in the latest version of bid and resales documents received, this shall include bids and resales that have not been satisfied. In this case the quantity and price amount of the bids and resales that have not been satisfied shall be equal to zero.

It is also possible for the allocation result document to contain only the bids that have been allocated capacity transmission rights and resales that have sold capacity transmission rights.

A third possibility exists where only the aggregation of the bids that have capacity transmission rights and the aggregation of transmission rights that have been sold are provided. In this case the bid identification shall not be specified.

Only one of these possibilities is permitted in a given allocatio nresult document.

Table 3 shows all attributes of AllocationResult_MarketDocument.

Table 3 - Attributes of Allocation result assembly model::AllocationResult_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.

Order	mult.	Attribute name / Attribute type	Description
3	[1..1]	sender_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- Document owner.
4	[1..1]	sender_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- Document owner.
5	[1..1]	receiver_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- Document recipient.
6	[1..1]	receiver_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- Document recipient.
7	[1..1]	createdDateTime ESMP_DateTime	The date and time of the creation of the document.
8	[1..1]	period.timeInterval ESMP_DateTimeInterval	The start and end date and time for a given interval. --- The beginning and ending date and time of the period covered by the document.
9	[1..1]	domain.mRID AreaID_String	The unique identification of the domain. --- The domain covered within the document.
10	[1..1]	subjectParty_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The party for whom the bid is allocated.
11	[1..1]	subjectParty_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- The party for whom the bid is allocated.

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

Table 4 - Association ends of Allocation result assembly model::AllocationResult_MarketDocument with other classes

Order	mult.	Class name / Role	Description
12	[0..*]	TimeSeries TimeSeries	Association Based On: Allocation result contextual model::TimeSeries.TimeSeries[0..*] ----- Allocation result contextual model::AllocationResult_MarketDocument.[]
13	[0..*]	Reason Reason	Association Based On: Allocation result contextual model::Reason.Reason[0..*] ----- Allocation result contextual model::AllocationResult_MarketDocument.[]

2.2.3.2 Point

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

Table 5 shows all attributes of Point.

136 **Table 5 - Attributes of Allocation result 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 quantity that has been allocated or resold in the auction. The principal quantity identified for a point.
2	[0..1]	amount_Price.amount Amount_Decimal	A number of monetary units specified in a unit of currency. --- The price expressed for each unit of quantity allocated.
3	[0..1]	secondaryQuantity Decimal	The quantity that was in the original bid or resale document. The secondary quantity identified for a point.
4	[0..1]	bidAmount_Price.amount Amount_Decimal	A number of monetary units specified in a unit of currency. --- The original price expressed in the original bid or resale for each unit of quantity requested.

137

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

139 **Table 6 - Association ends of Allocation result assembly model::Point with other**
140 **classes**

Order	mult.	Class name / Role	Description
5	[0..*]	Reason Reason	Association Based On: Allocation result contextual model::Reason.Reason[0..*] ----- Allocation result contextual model::Point.[]

141

142 **2.2.3.3 Reason**

143 The motivation of an act.

144 Table 7 shows all attributes of Reason.

145 **Table 7 - Attributes of Allocation result 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.

146

147 **2.2.3.4 Series_Period**

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

149 Table 8 shows all attributes of Series_Period.

Table 8 - Attributes of Allocation result 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.

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

Table 9 - Association ends of Allocation result assembly model::Series_Period with other classes

Order	mult.	Class name / Role	Description
2	[1..*]	Point Point	Association Based On: Allocation result contextual model::Point.Point[1..*] ----- Allocation result contextual model::Series_Period.[]

2.2.3.5 TimeSeries

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

For each time series in the document, the identification shall be a unique number assigned by the auction office.

Table 10 shows all attributes of TimeSeries.

Table 10 - Attributes of Allocation result assembly model::TimeSeries

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	A unique identification of the time series.
1	[0..1]	bid_Original_MarketDocument.mRID ID_String	The unique identification of the document being exchanged within a business process flow. --- The identification of the document that contains the bids or resales referenced in the BidTimeSeries.
2	[0..1]	bid_Original_MarketDocument.revisionNumber ESMPVersion_String	The identification of the version that distinguishes one evolution of a document from another. --- The identification of the document that contains the bids or resales referenced in the BidTimeSeries.
3	[0..1]	bid_Original_MarketDocument.bid_TimeSeries.mRID ID_String	A unique identification of the time series. --- The identification of the document that contains the bids or resales referenced in the BidTimeSeries. --- The identification of the time series that was used in the original bid or resale. This is the unique number that is assigned by the bidder when he made his original bid or resale.

Order	mult.	Attribute name / Attribute type	Description
4	[1..1]	auction.mRID ID_String	The unique identification of the auction. --- The identification linking the allocation to a set of specifications created by the auction operator.
5	[0..1]	auction.category Category_String	The product category of an auction. --- The identification linking the allocation to a set of specifications created by the auction operator.
6	[1..1]	businessType BusinessKind_String	The identification of the nature of the time series.
7	[1..1]	in_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the energy is to be put.
8	[1..1]	out_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the energy is coming from.
9	[1..1]	marketAgreement.mRID ID_String	The unique identification of the agreement. --- The contract type defines the conditions under which the transmission capacity was allocated and handled, e.g.: daily auction, weekly auction, monthly auction, yearly auction, long term contract, etc. The significance of this type is dependent on the in area and out area specific coded working methods. The transmission capacity allocator responsible for the area in question auctions defines the contract type to be used.
10	[1..1]	marketAgreement.type CapacityContractKind_String	The specification of the kind of the agreement, e.g. long term, daily contract. --- The contract type defines the conditions under which the transmission capacity was allocated and handled, e.g.: daily auction, weekly auction, monthly auction, yearly auction, long term contract, etc. The significance of this type is dependent on the in area and out area specific coded working methods. The transmission capacity allocator responsible for the area in question auctions defines the contract type to be used.
11	[1..1]	quantity_Measurement_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure that is applied to the quantities in which the time series is expressed, e.g. MAW.
12	[0..1]	currency_Unit.name CurrencyCode_String	The identification of the formal code for a currency (ISO 4217). --- The currency in which the monetary amount is expressed.
13	[0..1]	price_Measurement_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure in which the price in the time series is expressed
14	[0..1]	curveType CurveType_String	The identification of the coded representation of the type of curve being described.

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

Table 11 - Association ends of Allocation result assembly model::TimeSeries with other classes

Order	mult.	Class name / Role	Description
15	[1..*]	Series_Period Period	Association Based On: Allocation result contextual model::Series_Period.Period[1..*] ----- Allocation result contextual model::TimeSeries.[]
16	[0..*]	Reason Reason	Association Based On: Allocation result contextual model::Reason.Reason[0..*] ----- Allocation result contextual model::TimeSeries.[]

2.2.4 Datatypes

The list of datatypes used for the Allocation result assembly model is as follows:

- ESMP_DateTimeInterval compound
- Amount_Decimal datatype
- AreaID_String datatype, codelist CodingSchemeTypeList
- BusinessKind_String datatype, codelist BusinessTypeList
- CapacityContractKind_String datatype, codelist ContractTypeList
- Category_String datatype, codelist CategoryTypeList
- CurrencyCode_String datatype, codelist CurrencyTypeList
- CurveType_String datatype, codelist CurveTypeList
- 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
- ReasonCode_String datatype, codelist ReasonCodeTypeList
- ReasonText_String datatype
- YMDHM_DateTime datatype

2.2.5 AllocationResult_MarketDocument XML schema structure

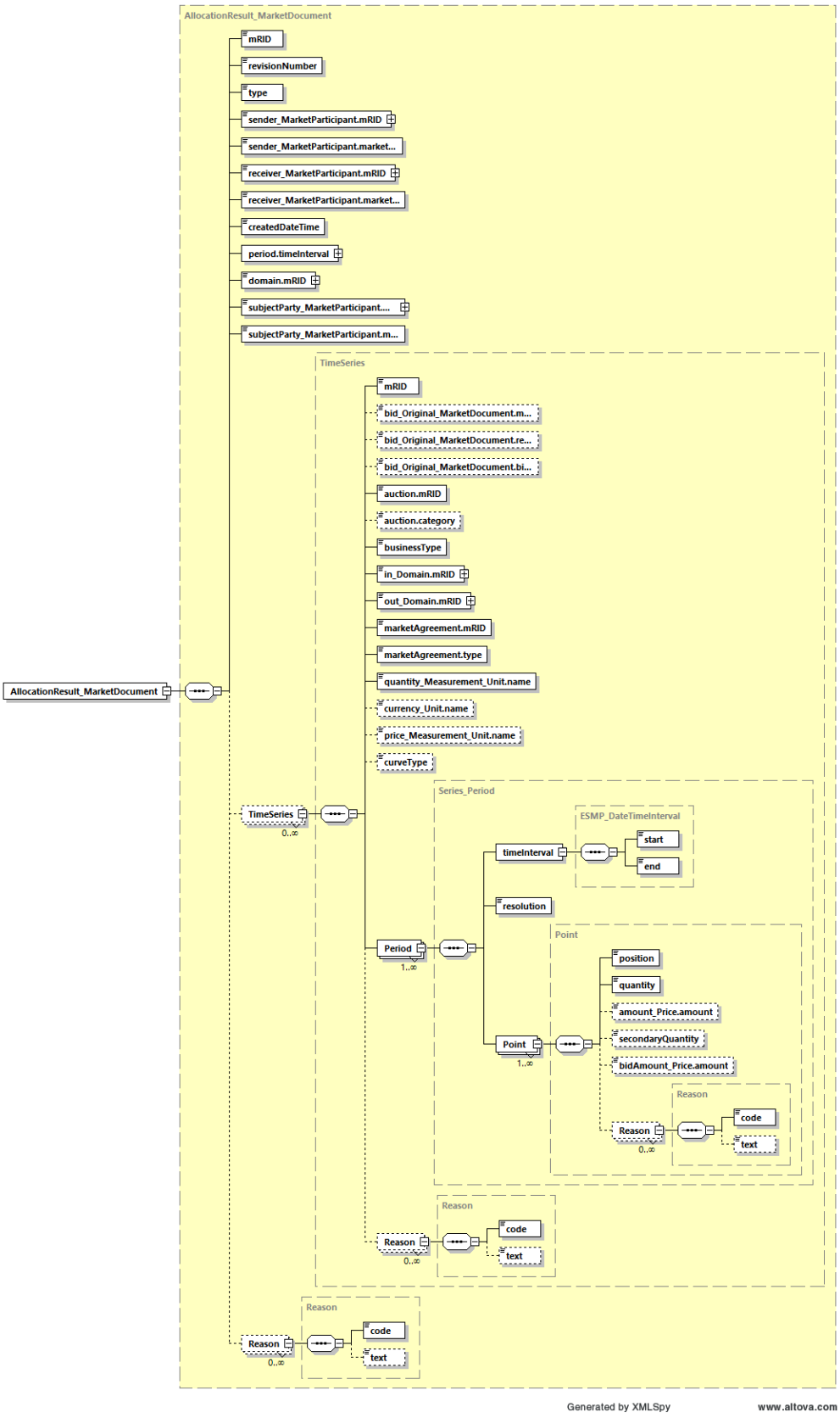

Figure 3 - AllocationResult_MarketDocument schema structure

2.2.6 AllocationResult_MarketDocument XML schema

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

urn:iec62325.351:tc57wg16:451-3:allocationresultdocument:7:2

```
m <?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:ecl="urn:entsoe.eu:wgedi:codelists"
xmlns="urn:iec62325.351:tc57wg16:451-3:allocationresultdocument:7:2"
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:tc57wg16:451-3:allocationresultdocument:7:2"
elementFormDefault="qualified" attributeFormDefault="unqualified">
	<xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-
entsoe-eu-wgedi-codelists.xsd"/>
	<xs:element name="AllocationResult_MarketDocument"
type="AllocationResult_MarketDocument"/>
	<xs:simpleType name="ID_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
		<xs:restriction base="xs:string">
			<xs:maxLength value="60"/>
		</xs:restriction>
	</xs:simpleType>
	<xs:simpleType name="ESMPVersion_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
		<xs:restriction base="xs:string">
			<xs:pattern value="[1-9]([0-9]){0,2}"/>
		</xs:restriction>
	</xs:simpleType>
	<xs:simpleType name="MessageKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
		<xs:restriction base="ecl:MessageTypeList"/>
	</xs:simpleType>
	<xs:simpleType name="PartyID_String-base"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
		<xs:restriction base="xs:string">
			<xs:maxLength value="16"/>
		</xs:restriction>
	</xs:simpleType>
	<xs:complexType name="PartyID_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
		<xs:simpleContent>
			<xs:extension base="PartyID_String-base">
				<xs:attribute name="codingScheme"
type="ecl:CodingSchemeTypeList" use="required"/>
			</xs:extension>
		</xs:simpleContent>
	</xs:complexType>
	<xs:simpleType name="MarketRoleKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
		<xs:restriction base="ecl:RoleTypeList"/>
	</xs:simpleType>
	<xs:simpleType name="ESMP_DateTime"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
```

```
247                 <xs:restriction base="xs:dateTime">
248                       <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-
249   9]|[12][0-9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
250   9]|30))T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-
251   9])Z)|(([13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][0
252   48]|[02468][048][02468][048]|[02468][1235679](0)[48]|[02468][1235679][2468][048]|[
253   0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-
254   5][0-9]:[0-5][0-
255   9])Z)|(([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][0134578
256   9][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[0246
257   8][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
258   9]|2[0-8])T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)"/>
259                 </xs:restriction>
260           </xs:simpleType>
261           <xs:simpleType name="AreaID_String-base"
262   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
263                 <xs:restriction base="xs:string">
264                       <xs:maxLength value="18"/>
265                 </xs:restriction>
266           </xs:simpleType>
267           <xs:complexType name="AreaID_String"
268   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
269                 <xs:simpleContent>
270                       <xs:extension base="AreaID_String-base">
271                             <xs:attribute name="codingScheme"
272   type="ecl:CodingSchemeTypeList" use="required"/>
273                       </xs:extension>
274                 </xs:simpleContent>
275           </xs:complexType>
276           <xs:simpleType name="YMDHM_DateTime"
277   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
278                 <xs:restriction base="xs:string">
279                       <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-
280   9]|[12][0-9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
281   9]|30))T(([01][0-9]|2[0-3]):[0-5][0-
282   9])Z)|(([13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][0
283   48]|[02468][048][02468][048]|[02468][1235679](0)[48]|[02468][1235679][2468][048]|[
284   0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-
285   5][0-
286   9])Z)|(([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][0134578
287   9][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[0246
288   8][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
289   9]|2[0-8])T(([01][0-9]|2[0-3]):[0-5][0-9])Z)"/>
290                 </xs:restriction>
291           </xs:simpleType>
292           <xs:complexType name="ESMP_DateTimeInterval"
293   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTimeInterval">
294                 <xs:sequence>
295                       <xs:element name="start" type="YMDHM_DateTime" minOccurs="1"
296   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
297   cim16#DateTimeInterval.start"/>
298                       <xs:element name="end" type="YMDHM_DateTime" minOccurs="1"
299   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
300   cim16#DateTimeInterval.end"/>
301                 </xs:sequence>
302           </xs:complexType>
```

```
303         <xs:complexType name="AllocationResult_MarketDocument"
304   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
305                <xs:sequence>
306                      <xs:element name="mRID" type="ID_String" minOccurs="1"
307   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
308   cim16#IdentifiedObject.mRID"/>
309                      <xs:element name="revisionNumber" type="ESMPVersion_String"
310   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
311   schema-cim16#Document.revisionNumber"/>
312                      <xs:element name="type" type="MessageKind_String" minOccurs="1"
313   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
314   cim16#Document.type"/>
315                      <xs:element name="sender_MarketParticipant.mRID"
316   type="PartyID_String" minOccurs="1" maxOccurs="1"
317   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
318   cim16#IdentifiedObject.mRID"/>
319                      <xs:element name="sender_MarketParticipant.marketRole.type"
320   type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
321   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
322                      <xs:element name="receiver_MarketParticipant.mRID"
323   type="PartyID_String" minOccurs="1" maxOccurs="1"
324   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
325   cim16#IdentifiedObject.mRID"/>
326                      <xs:element name="receiver_MarketParticipant.marketRole.type"
327   type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
328   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
329                      <xs:element name="createdDateTime" type="ESMP_DateTime"
330   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
331   schema-cim16#Document.createdDateTime"/>
332                      <xs:element name="period.timeInterval"
333   type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1"
334   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
335   cim16#Period.timeInterval"/>
336                      <xs:element name="domain.mRID" type="AreaID_String"
337   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
338   schema-cim16#IdentifiedObject.mRID"/>
339                      <xs:element name="subjectParty_MarketParticipant.mRID"
340   type="PartyID_String" minOccurs="1" maxOccurs="1"
341   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
342   cim16#IdentifiedObject.mRID"/>
343                      <xs:element
344   name="subjectParty_MarketParticipant.marketRole.type" type="MarketRoleKind_String"
345   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
346   schema-cim16#MarketRole.type"/>
347                      <xs:element name="TimeSeries" type="TimeSeries" minOccurs="0"
348   maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
349   cim16#MarketDocument.TimeSeries"/>
350                      <xs:element name="Reason" type="Reason" minOccurs="0"
351   maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
352   cim16#MarketDocument.Reason"/>
353                </xs:sequence>
354         </xs:complexType>
355         <xs:simpleType name="Position_Integer"
356   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
357                <xs:restriction base="xs:integer">
358                      <xs:maxInclusive value="999999"/>
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359                     <xs:minInclusive value="1"/>
360               </xs:restriction>
361         </xs:simpleType>
362         <xs:simpleType name="Amount_Decimal"
363   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Decimal">
364               <xs:restriction base="xs:decimal">
365                     <xs:totalDigits value="17"/>
366               </xs:restriction>
367         </xs:simpleType>
368         <xs:complexType name="Point"
369   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point">
370               <xs:sequence>
371                     <xs:element name="position" type="Position_Integer"
372   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
373   schema-cim16#Point.position"/>
374                     <xs:element name="quantity" type="xs:decimal" minOccurs="1"
375   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
376   cim16#Point.quantity"/>
377                     <xs:element name="amount_Price.amount" type="Amount_Decimal"
378   minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
379   schema-cim16#Price.amount"/>
380                     <xs:element name="secondaryQuantity" type="xs:decimal"
381   minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
382   schema-cim16#Point.secondaryQuantity"/>
383                     <xs:element name="bidAmount_Price.amount" type="Amount_Decimal"
384   minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
385   schema-cim16#Price.amount"/>
386                     <xs:element name="Reason" type="Reason" minOccurs="0"
387   maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
388   cim16#Point.Reason"/>
389               </xs:sequence>
390         </xs:complexType>
391         <xs:simpleType name="ReasonCode_String"
392   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
393               <xs:restriction base="ecl:ReasonCodeTypeList"/>
394         </xs:simpleType>
395         <xs:simpleType name="ReasonText_String"
396   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
397               <xs:restriction base="xs:string">
398                     <xs:maxLength value="512"/>
399               </xs:restriction>
400         </xs:simpleType>
401         <xs:complexType name="Reason"
402   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason">
403               <xs:sequence>
404                     <xs:element name="code" type="ReasonCode_String" minOccurs="1"
405   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
406   cim16#Reason.code"/>
407                     <xs:element name="text" type="ReasonText_String" minOccurs="0"
408   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
409   cim16#Reason.text"/>
410               </xs:sequence>
411         </xs:complexType>
412         <xs:complexType name="Series_Period"
413   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">
414               <xs:sequence>
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                    <xs:element name="timeInterval" type="ESMP_DateTimeInterval"
minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#Period.timeInterval"/>
                    <xs:element name="resolution" type="xs:duration" minOccurs="1"
maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Period.resolution"/>
                    <xs:element name="Point" type="Point" minOccurs="1"
maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Period.Point"/>
                </xs:sequence>
            </xs:complexType>
            <xs:simpleType name="Category_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
                <xs:restriction base="ecl:CategoryTypeList"/>
            </xs:simpleType>
            <xs:simpleType name="BusinessKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
                <xs:restriction base="ecl:BusinessTypeList"/>
            </xs:simpleType>
            <xs:simpleType name="CapacityContractKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
                <xs:restriction base="ecl:ContractTypeList"/>
            </xs:simpleType>
            <xs:simpleType name="MeasurementUnitKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
                <xs:restriction base="ecl:UnitOfMeasureTypeList"/>
            </xs:simpleType>
            <xs:simpleType name="CurrencyCode_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
                <xs:restriction base="ecl:CurrencyTypeList"/>
            </xs:simpleType>
            <xs:simpleType name="CurveType_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
                <xs:restriction base="ecl:CurveTypeList"/>
            </xs:simpleType>
            <xs:complexType name="TimeSeries"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries">
                <xs:sequence>
                    <xs:element name="mRID" type="ID_String" minOccurs="1"
maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID"/>
                    <xs:element name="bid_Original_MarketDocument.mRID"
type="ID_String" minOccurs="0" maxOccurs="1"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID"/>
                    <xs:element name="bid_Original_MarketDocument.revisionNumber"
type="ESMPVersion_String" minOccurs="0" maxOccurs="1"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Document.revisionNumber"/>
                    <xs:element
name="bid_Original_MarketDocument.bid_TimeSeries.mRID" type="ID_String"
minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#IdentifiedObject.mRID"/>
                    <xs:element name="auction.mRID" type="ID_String" minOccurs="1"
maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID"/>
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                    <xs:element name="auction.category" type="Category_String"
minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#Auction.category"/>
                    <xs:element name="businessType" type="BusinessKind_String"
minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#TimeSeries.businessType"/>
                    <xs:element name="in_Domain.mRID" type="AreaID_String"
minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#IdentifiedObject.mRID"/>
                    <xs:element name="out_Domain.mRID" type="AreaID_String"
minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#IdentifiedObject.mRID"/>
                    <xs:element name="marketAgreement.mRID" type="ID_String"
minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#IdentifiedObject.mRID"/>
                    <xs:element name="marketAgreement.type"
type="CapacityContractKind_String" minOccurs="1" maxOccurs="1"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.type"/>
                    <xs:element name="quantity_Measurement_Unit.name"
type="MeasurementUnitKind_String" minOccurs="1" maxOccurs="1"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
                    <xs:element name="currency_Unit.name"
type="CurrencyCode_String" minOccurs="0" maxOccurs="1"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
                    <xs:element name="price_Measurement_Unit.name"
type="MeasurementUnitKind_String" minOccurs="0" maxOccurs="1"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
                    <xs:element name="curveType" type="CurveType_String"
minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#TimeSeries.curveType"/>
                    <xs:element name="Period" type="Series_Period" minOccurs="1"
maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#TimeSeries.Period"/>
                    <xs:element name="Reason" type="Reason" minOccurs="0"
maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#TimeSeries.Reason"/>
                </xs:sequence>
            </xs:complexType>
</xs:schema>
```