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European Network of
Transmission System Operators
for Electricity

MERIT ORDER LIST DOCUMENT
UML MODEL AND SCHEMA

2020-06-30
APPROVED DOCUMENT
VERSION 1.2

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Revision History

Version	Release	Date	Comments
0	1	2017-01-10	First drafting of the document based on maintenance request from WG EDI .
1	0	2017-02-24	Version to be submitted to Market Committee following WG EDI meeting in March 2017.
1	1	2019-10-30	This new version has into account the update performed in v7.2 of MOL document: • New optional paymentTerms Attribute added to Auction class Approved by MC
1	2	2020-06-30	This new version has into account the update performed in v7.3 of MOL document: • New optional related_ReserveBidDocument_mRID and related_ReserveBidDocument_revisionNumber attributes added to MeritOrderList_MarketDocument class. • A Reason Class was added to the MeritOrderList_MarketDocument class with cardinality 0..* Approved by MC.

60

1 Objective

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

The schema of the MeritOrderList_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 MeritOrderList_MarketDocument

2.1 MeritOrderList contextual model

2.1.1 Overview of the model

Figure 1 shows the model.

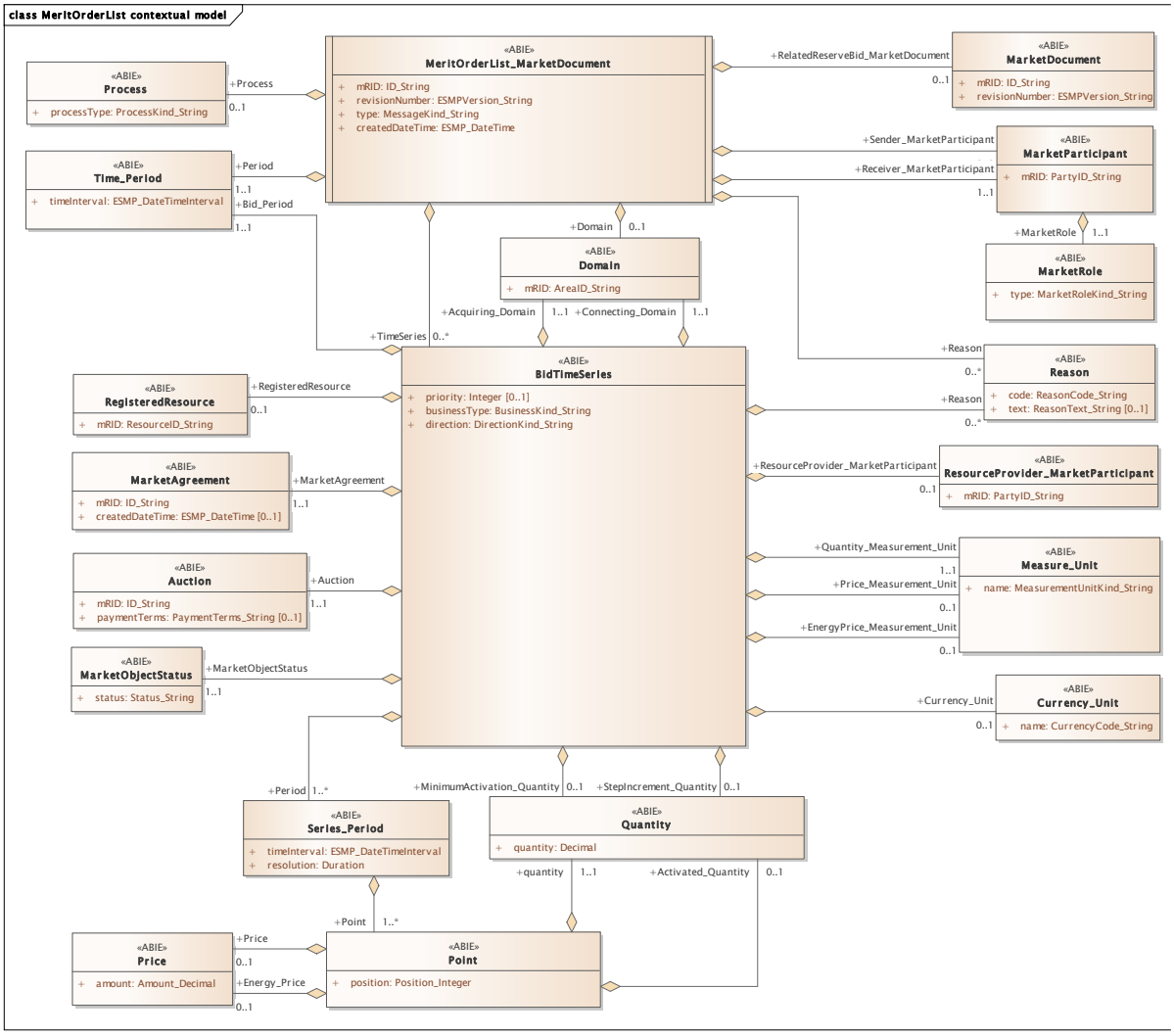

Figure 1 - MeritOrderList contextual model

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
Auction	TC57CIM::IEC62325::MarketManagement::Auction
BidTimeSeries	TC57CIM::IEC62325::MarketManagement::BidTimeSeries
Currency_Unit	TC57CIM::IEC62325::MarketManagement::Unit
Domain	TC57CIM::IEC62325::MarketManagement::Domain
MarketAgreement	TC57CIM::IEC62325::MarketManagement::MarketAgreement
MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
MarketObjectStatus	TC57CIM::IEC62325::MarketManagement::MarketObjectStatus
MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
MarketRole	TC57CIM::IEC62325::MarketCommon::MarketRole
Measure_Unit	TC57CIM::IEC62325::MarketManagement::Unit
MeritOrderList_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Point	TC57CIM::IEC62325::MarketManagement::Point
Price	TC57CIM::IEC62325::MarketManagement::Price
Process	TC57CIM::IEC62325::MarketManagement::Process
Quantity	TC57CIM::IEC62325::MarketManagement::Quantity
Reason	TC57CIM::IEC62325::MarketManagement::Reason
RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource
ResourceProvider_MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
Time_Period	TC57CIM::IEC62325::MarketManagement::Period

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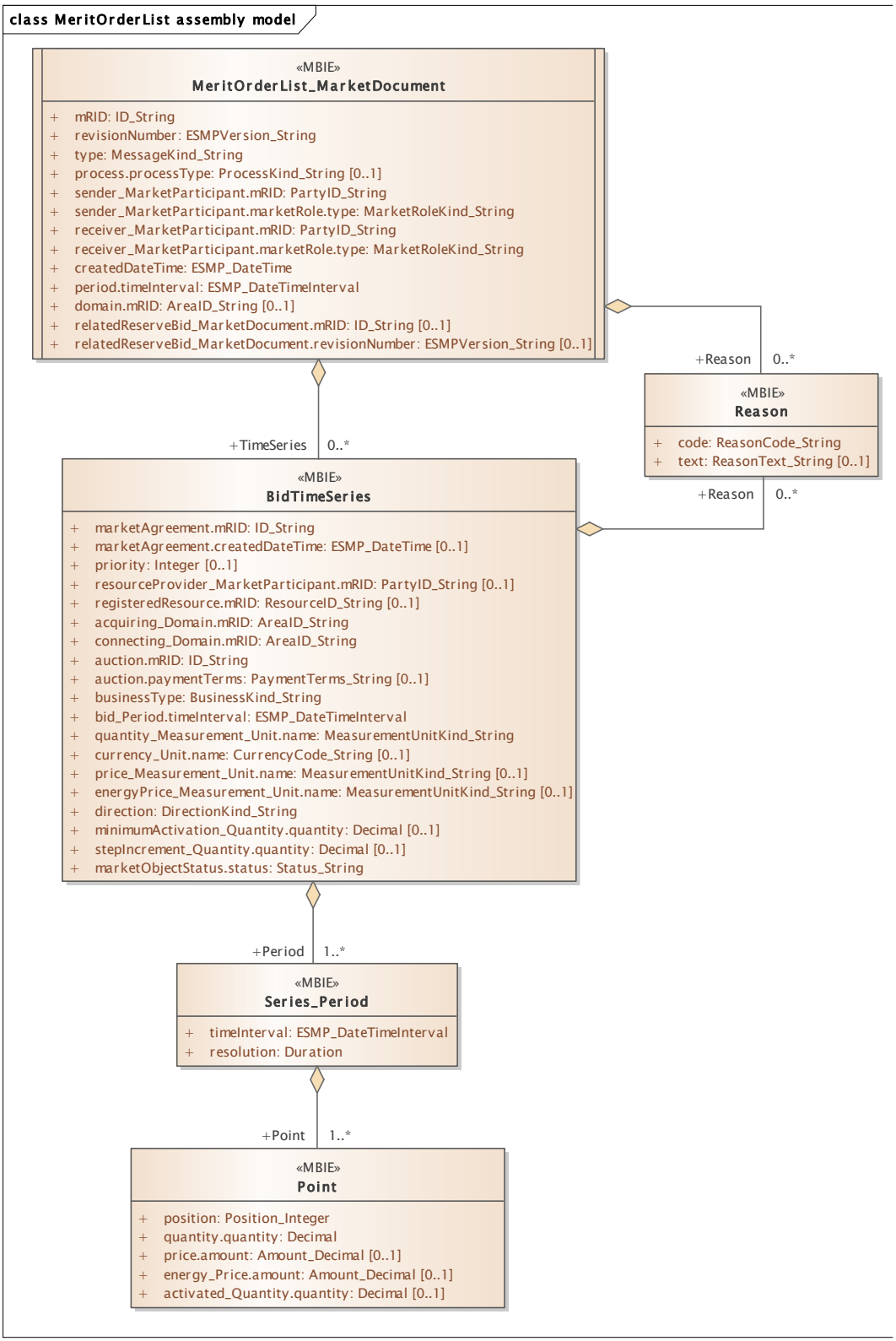
93 ## 2.2 MeritOrderList assembly model

94 ### 2.2.1 Overview of the model

95 Figure 2 shows the model.



96

97 **Figure 2 - MeritOrderList 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
BidTimeSeries	TC57CIM::IEC62325::MarketManagement::BidTimeSeries
MeritOrderList_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Point	TC57CIM::IEC62325::MarketManagement::Point
Reason	TC57CIM::IEC62325::MarketManagement::Reason
Series_Period	TC57CIM::IEC62325::MarketManagement::Period

2.2.3 Detailed MeritOrderList assembly model

2.2.3.1 MeritOrderList_MarketDocument root class

This document enables to exchange information about the merit order list for balance management process.

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

Table 3 shows all attributes of MeritOrderList_MarketDocument.

Table 3 - Attributes of MeritOrderList assembly model::MeritOrderList_MarketDocument

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	The unique identification of the document being exchanged within a business process flow.
1	[1..1]	revisionNumber ESMPVersion_String	The identification of the version that distinguishes one evolution of a document from another.
2	[1..1]	type MessageKind_String	The coded type of a document. The document type describes the principal characteristic of the document.
3	[0..1]	process.processType ProcessKind_String	The identification of the nature of process that the document addresses. --- The process dealt with in the document.
4	[1..1]	sender_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- Document owner.
5	[1..1]	sender_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- Document owner. --- The role associated with a MarketParticipant.
6	[1..1]	receiver_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- Document recipient.
7	[1..1]	receiver_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- Document recipient. --- The role associated with a MarketParticipant.

Order	mult.	Attribute name / Attribute type	Description
8	[1..1]	createdDateTime ESMP_DateTime	The date and time of the creation of the document.
9	[1..1]	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 time interval covered in this document.
10	[0..1]	domain.mRID AreaID_String	The unique identification of the domain. --- The identification of the domain that is covered in the document.
11	[0..1]	relatedReserveBid_MarketDocument.mRID ID_String	The unique identification of the document being exchanged within a business process flow. In the ESMP context, the "model authority" is defined as a party (originator of the exchange) that provides an identification in the context of a business exchange such as document identification, ... Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements. --- The identification of an electronic document that is related to an electronic document header.
12	[0..1]	relatedReserveBid_MarketDocument.revisionNumber ESMPVersion_String	The identification of the version that distinguishes one evolution of a document from another. --- The identification of an electronic document that is related to an electronic document header.

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

Table 4 - Association ends of MeritOrderList assembly model::MeritOrderList_MarketDocument with other classes

Order	mult.	Class name / Role	Description
13	[0..*]	BidTimeSeries TimeSeries	The time series that is associated with an electronic document. Association Based On: MeritOrderList contextual model::BidTimeSeries.TimeSeries[0..*] ----- MeritOrderList contextual model::MeritOrderList_MarketDocument.[]
14	[0..*]	Reason Reason	The Reason associated with the electronic document header providing different motivations for the creation of the document. Association Based On: MeritOrderList contextual model::MeritOrderList_MarketDocument.[] ----- MeritOrderList contextual model::Reason.Reason[0..*]

2.2.3.2 BidTimeSeries

The formal specification of specific characteristics related to a bid.

If there is no BidTimeSeries, this means that there is no bid for the time interval.

Table 5 shows all attributes of BidTimeSeries.

121 **Table 5 - Attributes of MeritOrderList assembly model::BidTimeSeries**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	marketAgreement.mRID ID_String	The unique identification of the agreement. --- The identification of an agreement associated with a TimeSeries.
1	[0..1]	marketAgreement.createdDateTime ESMP_DateTime	The date and time of the creation of the agreement. --- The identification of an agreement associated with a TimeSeries.
2	[0..1]	priority Integer	The numeric local priority given to a bid. Lower numeric values will have higher priority.
3	[0..1]	resourceProvider_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of the party that supplied the reserve. The identification of a market participant associated with a TimeSeries.
4	[0..1]	registeredResource.mRID ResourceID_String	The unique identification of a resource. --- This is the resource used to provide the reserve. The identification of a resource associated with a TimeSeries.
5	[1..1]	acquiring_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the product is being delivered. The domain associated with a TimeSeries.
6	[1..1]	connecting_Domain.mRID AreaID_String	The unique identification of the domain. --- The area where the resource is located. The domain associated with a TimeSeries.
7	[1..1]	auction.mRID ID_String	The unique identification of the auction. --- The auction characteristics that are associated with a TimeSeries.
8	[0..1]	auction.paymentTerms PaymentTerms_String	The terms which dictate the determination of the bid payment price. --- The auction characteristics that are associated with a TimeSeries.
9	[1..1]	businessType BusinessKind_String	The identification of the nature of the time series.
10	[1..1]	bid_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 tender. The time interval associated with a TimeSeries within an electronic document.
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 associated with the quantities in a TimeSeries.
12	[0..1]	currency_Unit.name CurrencyCode_String	The identification of the formal code for a currency (ISO 4217). --- The currency associated with a TimeSeries.
13	[0..1]	price_Measurement_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- This is the power price in the TimeSeries. The unit of measure associated with the quantities in a TimeSeries.
14	[0..1]	energyPrice_Measurement_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- This is the energy price in TimeSeries. The unit of measure associated with the quantities in a TimeSeries.
15	[1..1]	direction DirectionKind_String	The coded identification of the energy flow. It states how the energy flows from the perspective of the acquiring domain's system operator.

Order	mult.	Attribute name / Attribute type	Description
16	[0..1]	minimumActivation_Quantity.quantity Decimal	The quantity value. --- The minimum quantity of the product that can be activated. The quantity information associated to a TimeSeries.
17	[0..1]	stepIncrement_Quantity.quantity Decimal	The quantity value. --- The minimum step quantity permitted. The quantity information associated to a TimeSeries.
18	[1..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.

Table 6 shows all association ends of BidTimeSeries with other classes.

Table 6 - Association ends of MeritOrderList assembly model::BidTimeSeries with other classes

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

2.2.3.3 Point

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

Table 7 shows all attributes of Point.

Table 7 - Attributes of MeritOrderList 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.quantity Decimal	The quantity value. --- The quantity that is tendered for the interval in question. The Quantity information associated with a given Point.
2	[0..1]	price.amount Amount_Decimal	A number of monetary units specified in a unit of currency. --- This is the power price for each unit of quantity.
3	[0..1]	energy_Price.amount Amount_Decimal	A number of monetary units specified in a unit of currency. --- The price of energy that is used.
4	[0..1]	activated_Quantity.quantity Decimal	The quantity value. --- The quantity that has been activated for the interval in question.

2.2.3.4 Reason

The motivation of an act.

Table 8 shows all attributes of Reason.

Table 8 - Attributes of MeritOrderList 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.

2.2.3.5 Series_Period

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

Table 9 shows all attributes of Series_Period.

Table 9 - Attributes of MeritOrderList 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 10 shows all association ends of Series_Period with other classes.

Table 10 - Association ends of MeritOrderList assembly model::Series_Period with other classes

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

2.2.4 Datatypes

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

- ESMP_DateTimeInterval compound
- Amount_Decimal datatype
- AreaID_String datatype, codelist CodingSchemeTypeList
- BusinessKind_String datatype, codelist BusinessTypeList
- CurrencyCode_String datatype, codelist CurrencyTypeList
- DirectionKind_String datatype, codelist DirectionTypeList
- 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
- PaymentTerms_String datatype, codelist PaymentTermsTypeList
- 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
- YMDHM_DateTime datatype

2.2.5 MeritOrderList_MarketDocument XML schema structure

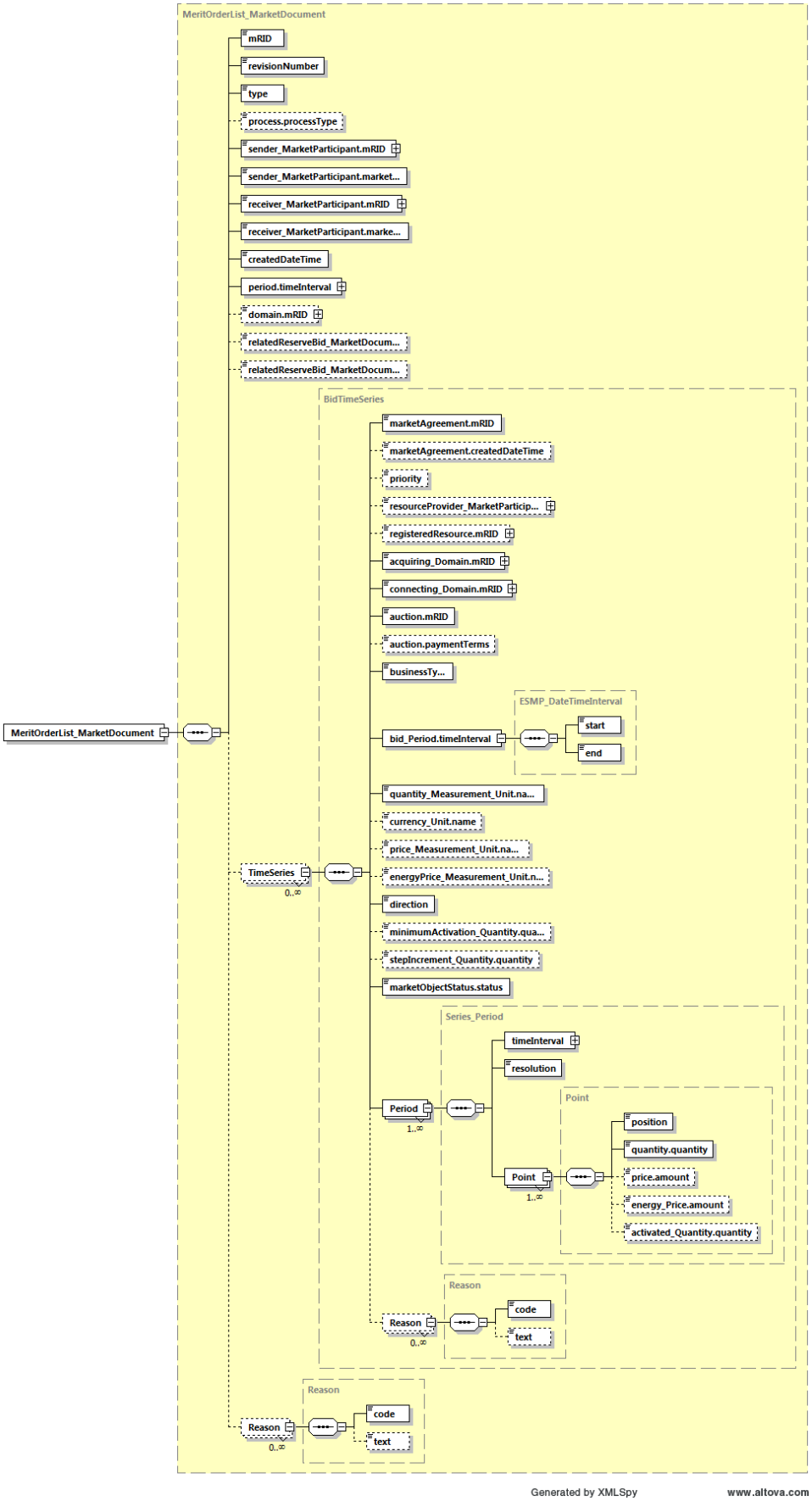


Figure 3 - MeritOrderList_MarketDocument schema structure

2.2.6 MeritOrderList_MarketDocument XML schema

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

urn:iec62325.351:tc57wg16:451-7:moldocument:7:3

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:ecl="urn:entsoe.eu:wgedi:codelists"
xmlns="urn:iec62325.351:tc57wg16:451-7:moldocument:7:3"
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:tc57wg16:451-7:moldocument:7:3"
elementFormDefault="qualified" attributeFormDefault="unqualified">
	<xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-
entsoe-eu-wgedi-codelists.xsd"/>
	<xs:element name="MeritOrderList_MarketDocument"
type="MeritOrderList_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="ESMP_DateTime"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
		<xs:restriction base="xs:dateTime">
			<xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-
9]|[12][0-9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
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0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-
5][0-9]:[0-5][0-
9])Z)|(([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][0134578
9][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[0246
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]:[0-5][0-9])Z)"/>
		</xs:restriction>
	</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="ResourceID_String-base"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
		<xs:restriction base="xs:string">
			<xs:maxLength value="60"/>
```

```
232                 </xs:restriction>
233           </xs:simpleType>
234           <xs:complexType name="ResourceID_String"
235     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
236                 <xs:simpleContent>
237                       <xs:extension base="ResourceID_String-base">
238                             <xs:attribute name="codingScheme"
239     type="ecl:CodingSchemeTypeList" use="required"/>
240                       </xs:extension>
241                 </xs:simpleContent>
242           </xs:complexType>
243           <xs:simpleType name="AreaID_String-base"
244     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
245                 <xs:restriction base="xs:string">
246                       <xs:maxLength value="18"/>
247                 </xs:restriction>
248           </xs:simpleType>
249           <xs:complexType name="AreaID_String"
250     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
251                 <xs:simpleContent>
252                       <xs:extension base="AreaID_String-base">
253                             <xs:attribute name="codingScheme"
254     type="ecl:CodingSchemeTypeList" use="required"/>
255                       </xs:extension>
256                 </xs:simpleContent>
257           </xs:complexType>
258           <xs:simpleType name="PaymentTerms_String"
259     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
260                 <xs:restriction base="ecl:PaymentTermsTypeList"/>
261           </xs:simpleType>
262           <xs:simpleType name="BusinessKind_String"
263     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
264                 <xs:restriction base="ecl:BusinessTypeList"/>
265           </xs:simpleType>
266           <xs:simpleType name="MeasurementUnitKind_String"
267     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
268                 <xs:restriction base="ecl:UnitOfMeasureTypeList"/>
269           </xs:simpleType>
270           <xs:simpleType name="CurrencyCode_String"
271     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
272                 <xs:restriction base="ecl:CurrencyTypeList"/>
273           </xs:simpleType>
274           <xs:simpleType name="DirectionKind_String"
275     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
276                 <xs:restriction base="ecl:DirectionTypeList"/>
277           </xs:simpleType>
278           <xs:simpleType name="Status_String"
279     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
280                 <xs:restriction base="ecl:StatusTypeList"/>
281           </xs:simpleType>
282           <xs:simpleType name="YMDHM_DateTime"
283     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime">
284                 <xs:restriction base="xs:string">
285                       <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-
286     9]|[12][0-9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-
287     9]|30))T(([01][0-9]|2[0-3]):[0-5][0-
288     9])Z)|(([13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][0
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290     0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-
291     5][0-
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9][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[0246
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="BidTimeSeries"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#BidTimeSeries">
            <xs:sequence>
                  <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.createdDateTime"
type="ESMP_DateTime" minOccurs="0" maxOccurs="1"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Document.createdDateTime"/>
                  <xs:element name="priority" type="xs:integer" minOccurs="0"
maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#BidTimeSeries.priority"/>
                  <xs:element name="resourceProvider_MarketParticipant.mRID"
type="PartyID_String" minOccurs="0" maxOccurs="1"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID"/>
                  <xs:element name="registeredResource.mRID"
type="ResourceID_String" minOccurs="0" maxOccurs="1"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID"/>
                  <xs:element name="acquiring_Domain.mRID" type="AreaID_String"
minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#IdentifiedObject.mRID"/>
                  <xs:element name="connecting_Domain.mRID" type="AreaID_String"
minOccurs="1" 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"/>
                  <xs:element name="auction.paymentTerms"
type="PaymentTerms_String" minOccurs="0" maxOccurs="1"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Auction.paymentTerms"/>
                  <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="bid_Period.timeInterval"
type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Period.timeInterval"/>
```

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                    <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="energyPrice_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="direction" type="DirectionKind_String"
minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#BidTimeSeries.direction"/>
                    <xs:element name="minimumActivation_Quantity.quantity"
type="xs:decimal" minOccurs="0" maxOccurs="1"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Quantity.quantity"/>
                    <xs:element name="stepIncrement_Quantity.quantity"
type="xs:decimal" minOccurs="0" maxOccurs="1"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Quantity.quantity"/>
                    <xs:element name="marketObjectStatus.status"
type="Status_String" minOccurs="1" maxOccurs="1"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#MarketObjectStatus.status"/>
                    <xs:element name="Period" type="Series_Period" minOccurs="1"
maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#BidTimeSeries.Period"/>
                    <xs:element name="Reason" type="Reason" minOccurs="0"
maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#BidTimeSeries.Reason"/>
                </xs:sequence>
            </xs:complexType>
            <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="ProcessKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
                <xs:restriction base="ecl:ProcessTypeList"/>
            </xs:simpleType>
            <xs:simpleType name="MarketRoleKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
                <xs:restriction base="ecl:RoleTypeList"/>
            </xs:simpleType>
            <xs:complexType name="MeritOrderList_MarketDocument"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
                <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"/>
```

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409                     <xs:element name="revisionNumber" type="ESMPVersion_String"
410   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
411   schema-cim16#Document.revisionNumber"/>
412                     <xs:element name="type" type="MessageKind_String" minOccurs="1"
413   maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
414   cim16#Document.type"/>
415                     <xs:element name="process.processType"
416   type="ProcessKind_String" minOccurs="0" maxOccurs="1"
417   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
418   cim16#Process.processType"/>
419                     <xs:element name="sender_MarketParticipant.mRID"
420   type="PartyID_String" minOccurs="1" maxOccurs="1"
421   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
422   cim16#IdentifiedObject.mRID"/>
423                     <xs:element name="sender_MarketParticipant.marketRole.type"
424   type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
425   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
426                     <xs:element name="receiver_MarketParticipant.mRID"
427   type="PartyID_String" minOccurs="1" maxOccurs="1"
428   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
429   cim16#IdentifiedObject.mRID"/>
430                     <xs:element name="receiver_MarketParticipant.marketRole.type"
431   type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
432   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
433                     <xs:element name="createdDateTime" type="ESMP_DateTime"
434   minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
435   schema-cim16#Document.createdDateTime"/>
436                     <xs:element name="period.timeInterval"
437   type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1"
438   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
439   cim16#Period.timeInterval"/>
440                     <xs:element name="domain.mRID" type="AreaID_String"
441   minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
442   schema-cim16#IdentifiedObject.mRID"/>
443                     <xs:element name="relatedReserveBid_MarketDocument.mRID"
444   type="ID_String" minOccurs="0" maxOccurs="1"
445   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
446   cim16#IdentifiedObject.mRID"/>
447                     <xs:element
448   name="relatedReserveBid_MarketDocument.revisionNumber" type="ESMPVersion_String"
449   minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
450   schema-cim16#Document.revisionNumber"/>
451                     <xs:element name="TimeSeries" type="BidTimeSeries"
452   minOccurs="0" maxOccurs="unbounded"
453   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
454   cim16#MarketDocument.TimeSeries"/>
455                     <xs:element name="Reason" type="Reason" minOccurs="0"
456   maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
457   cim16#MarketDocument.Reason"/>
458               </xs:sequence>
459         </xs:complexType>
460         <xs:simpleType name="Position_Integer"
461   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
462               <xs:restriction base="xs:integer">
463                     <xs:maxInclusive value="999999"/>
464                     <xs:minInclusive value="1"/>
465               </xs:restriction>
466         </xs:simpleType>
467         <xs:simpleType name="Amount_Decimal"
468   sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Decimal">
```

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469                 <xs:restriction base="xs:decimal">
470                       <xs:totalDigits value="17"/>
471                 </xs:restriction>
472           </xs:simpleType>
473           <xs:complexType name="Point"
474     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point">
475                 <xs:sequence>
476                       <xs:element name="position" type="Position_Integer"
477     minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
478     schema-cim16#Point.position"/>
479                       <xs:element name="quantity.quantity" type="xs:decimal"
480     minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
481     schema-cim16#Quantity.quantity"/>
482                       <xs:element name="price.amount" type="Amount_Decimal"
483     minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
484     schema-cim16#Price.amount"/>
485                       <xs:element name="energy_Price.amount" type="Amount_Decimal"
486     minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
487     schema-cim16#Price.amount"/>
488                       <xs:element name="activated_Quantity.quantity"
489     type="xs:decimal" minOccurs="0" maxOccurs="1"
490     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
491     cim16#Quantity.quantity"/>
492                 </xs:sequence>
493           </xs:complexType>
494           <xs:simpleType name="ReasonCode_String"
495     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
496                 <xs:restriction base="ecl:ReasonCodeTypeList"/>
497           </xs:simpleType>
498           <xs:simpleType name="ReasonText_String"
499     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
500                 <xs:restriction base="xs:string">
501                       <xs:maxLength value="512"/>
502                 </xs:restriction>
503           </xs:simpleType>
504           <xs:complexType name="Reason"
505     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason">
506                 <xs:sequence>
507                       <xs:element name="code" type="ReasonCode_String" minOccurs="1"
508     maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
509     cim16#Reason.code"/>
510                       <xs:element name="text" type="ReasonText_String" minOccurs="0"
511     maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
512     cim16#Reason.text"/>
513                 </xs:sequence>
514           </xs:complexType>
515           <xs:complexType name="Series_Period"
516     sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">
517                 <xs:sequence>
518                       <xs:element name="timeInterval" type="ESMP_DateTimeInterval"
519     minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
520     schema-cim16#Period.timeInterval"/>
521                       <xs:element name="resolution" type="xs:duration" minOccurs="1"
522     maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
523     cim16#Period.resolution"/>
524                       <xs:element name="Point" type="Point" minOccurs="1"
525     maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
526     cim16#Period.Point"/>
527                 </xs:sequence>
528           </xs:complexType>
```

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529     </xs:schema>
```