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European Network of
Transmission System Operators
for Electricity

ENTSO-E
Capacity allocation configuration

IMPLEMENTATION GUIDE

2015-03-05

DOCUMENT FOR APPROVAL
VERSION 1.0

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Revision History

Version	Release	Date	Paragraph	Comments
0	0	2015-02-25		Draft release
1	0	2015-03-05		Initial release

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INTRODUCTION

This document was drafted based on IEC 62325 series. In particular, the IEC 62325-450 methodology was applied to develop the conceptual and assembly models.

1 Scope

The objective of this implementation guide is to make it possible for software vendors to develop an IT application to enable the submission to the ENTSO-E central transparency platform of documents describing instances of transmission capacity allocations and in particular the handling of the transmission capacity allocation calendar of the platform.

The implementation guide is one of the building blocks for using UML (Unified Modelling Language) based techniques in defining processes and documents for interchange between the involved actors.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC TS 61970-2, *Energy management system application program interface (EMS-API) –Part 2: Glossary*

IEC 62325-301, *Framework for energy market communications – Part 301: Common information model (CIM) extensions for markets*

IEC 62325-351, *Framework for energy market communications – Part 351: CIM European market model exchange profile*

IEC 62325-450, *Framework for energy market communications – Part 450: Profile and context modeling rules*

IEC 62325-451-1, *Framework for energy market communications – Part 451-1: Acknowledgement business process and contextual model for CIM European market*

3 The transmission capacity allocation configuration business process

3.1 Overall business context

The capacity allocation processes have to be configured on the ENTSO-E central transparency platform before any data describing the offered or allocated capacities are submitted. Data providers have a choice between manually configuring the capacity allocation processes or submitting a capacity allocation configuration document.

The ENTSO-E central transparency platform will use the allocation configuration to validate data submitted under articles 11.1(a), 12.1.a, 12.1.c, 12.1.e and 12.1.h of the EU Transparency Regulation. The allocation configuration will also be used to monitor compliance with the submission deadlines outlined in articles 11.2, 12.2.a, 12.2.c and 12.2.g of the EU Transparency Regulation.

3.2 Use case

The provision of capacity allocation configuration is relatively straightforward (see Figure 1) and is basically broken down into two alternative sub use cases. The two alternative sub use cases are as follows:

a) Provide explicit capacity allocation configuration

b) Provide implicit capacity allocation configuration

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The capacity allocation configuration will not be published by the ENTSO-E central transparency platform. Rather, it is intended to validate submitted data and to monitor compliance with submission deadlines.

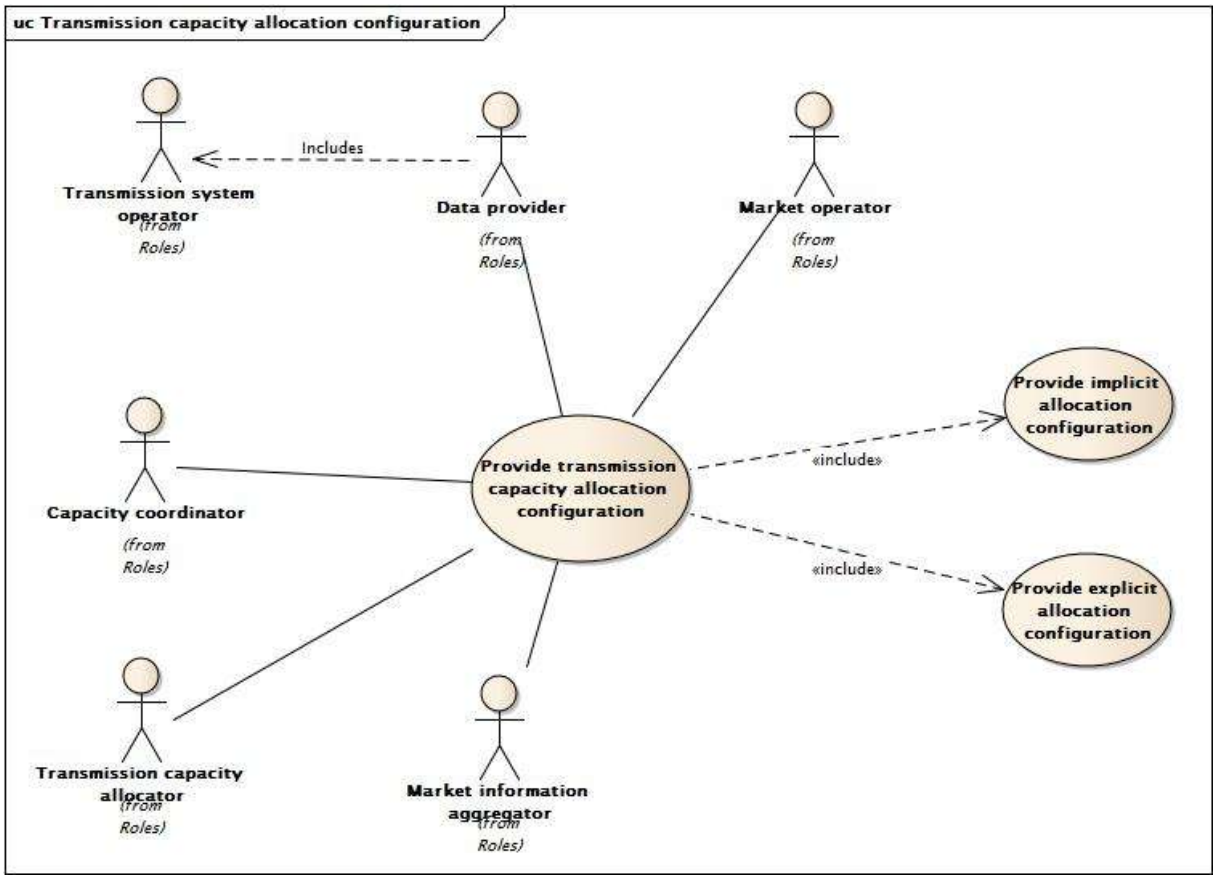

Figure 1 – Use case

3.3 Sequence diagram

The sequence diagram is provided in Figure 2.

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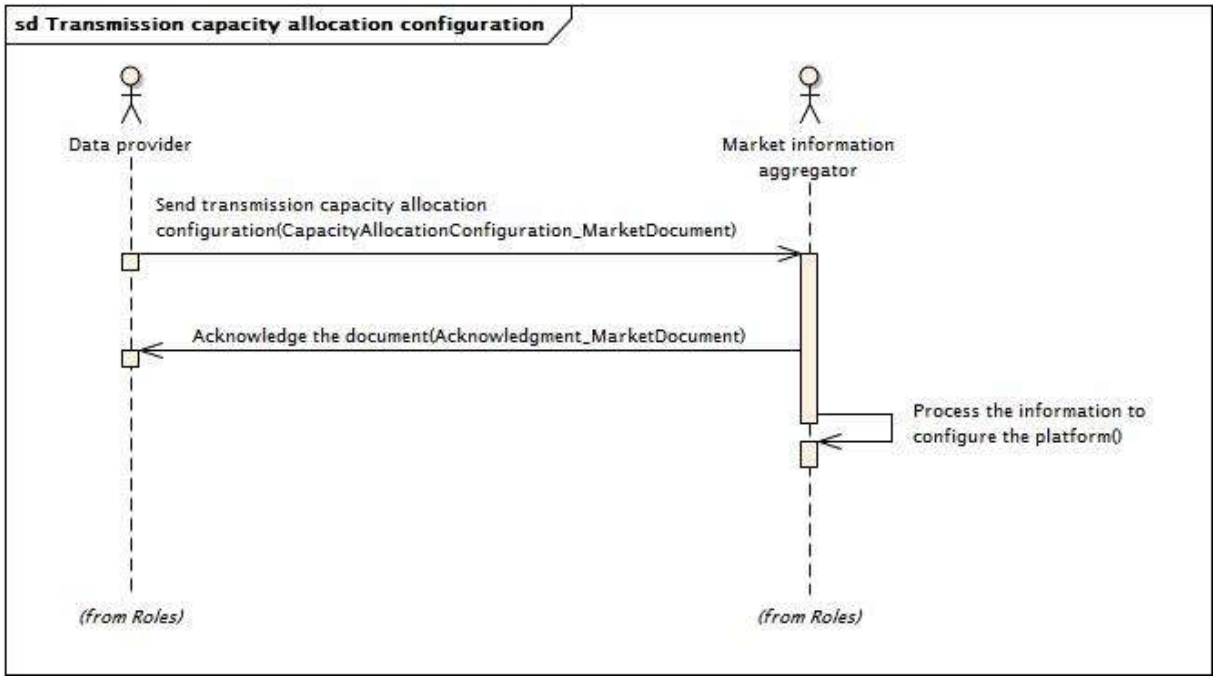

Figure 2 – Sequence diagram

4 Business rules for the capacity allocation configuration process

4.1 General rules

For each electronic data interchange defined in this document, an acknowledgement document, as defined in IEC 62325-451-1, should be generated either accepting the whole received document or rejecting it completely.

4.2 Cancelation of allocation instance

The cancelation of an allocation instance, i.e. the couple (allocation instance and delivery period), is carried out as an update with the attribute cancelled set to “A01” (yes).

4.3 Dependencies governing the Document

The XML document described in this implementation guide is to be used for the upload of information to the ENTSO-E central platform. It is currently not foreseen that the document would be used to download information.

The attributes described in Table 1 are mandatory:

Table 1 – Mandatory attributes of the document

Attribute name	Set of value
mRID	Mandatory
type	A51 = Capacity auction specification document
process.processType	A07 = Capacity allocation
sender_MarketParticipant.mRID	Mandatory
sender_MarketParticipant.marketRole.type	Mandatory
receiver_MarketParticipant.mRID	The EIC code is 10X1001A1001A450 for the EMFIP platform.
receiver_MarketParticipant.marketRole.type	The role is A32, market information aggregator.
createdDateTime	Mandatory as YYYY-MM-DDTHH:MM:SSZ

162 The attributes in table 2 are dependent:

163 **Table 2 – Dependent attributes**

Attribute		Explicit allocation	Implicit allocation
Allocation_TimeSeries	Name	Mandatory 20 character length	
	cancelledTS	May be used A01 = Yes (Allocation Instance should be cancelled) A02 = No (Allocation Instance is active and valid). A02 is the default value when element is not provided.	
	description	May be used 100 character length	
	auction.type	A02 = Explicit	A01 = Implicit
	subType_Auction.type	May be used A06 = shadow auction	Not used
	auction.allocationMode	May be used A01 = Auction (with pro rata as secondary criterion) A02 = Auction (with first come – first served as secondary criterion) A03 = First come – first served A04 = Pro rata A05 = Continuous	
	marketAgreement.type	Mandatory A01 = Daily. A02 = Weekly A03 = Monthly A04 = Yearly A06 = Long term A07 = Intraday A08 = Quarter Yearly A09 = Semestrial	
	timeZone_AttributeInstanceComponent.attribute	Mandatory WET – Western European Time CET – Central European Time EET – Eastern European Time UTC – Coordinated Universal Time	
	delivery_Period.timeInterval	Mandatory	
	allocation_Period.timeInterval	Mandatory	
	bidding_Period.timeInterval	May be used	
	offeredCapacityProvider_MarketParticipant.mRID	May be used Article 11.1	
	useOfCapacityProvider_MarketParticipant.mRID	May be used Article 12.1(a)	Not used
	alreadyAllocatedCapacityProvider_MarketParticipant.mRID	May be used Article 12.1(c)	Not used
	auctionRevenueProvider_MarketParticipant.mRID	May be used Article 12.1(a)	Not used

Attribute		Explicit allocation	Implicit allocation
	capacityThirdCountriesProvider_MarketParticipant.mRID	May be used Article 12.1(h)	Not used
	congestionIncome_MarketParticipant.mRID	Not used	May be used Article 12.1(e)
	conductingParty_MarketParticipant.mRID	May be used	
Point	position	Mandatory	
	timeSeries.name	Mandatory	
	timeSeries.in_Domain.mRID	Mandatory	
	timeSeries.out_Domain.mRID	Mandatory	
	timeSeries.currency_Unit.name	Mandatory	
	timeSeries.auction.category	Mandatory A01 = Base A02 = Peak A03 = Offpeak A04 = Hourly	Not used

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5 Contextual and assembly models

5.1 Capacity allocation configuration contextual model

5.1.1 Overview of the model

Figure 3 shows the model.

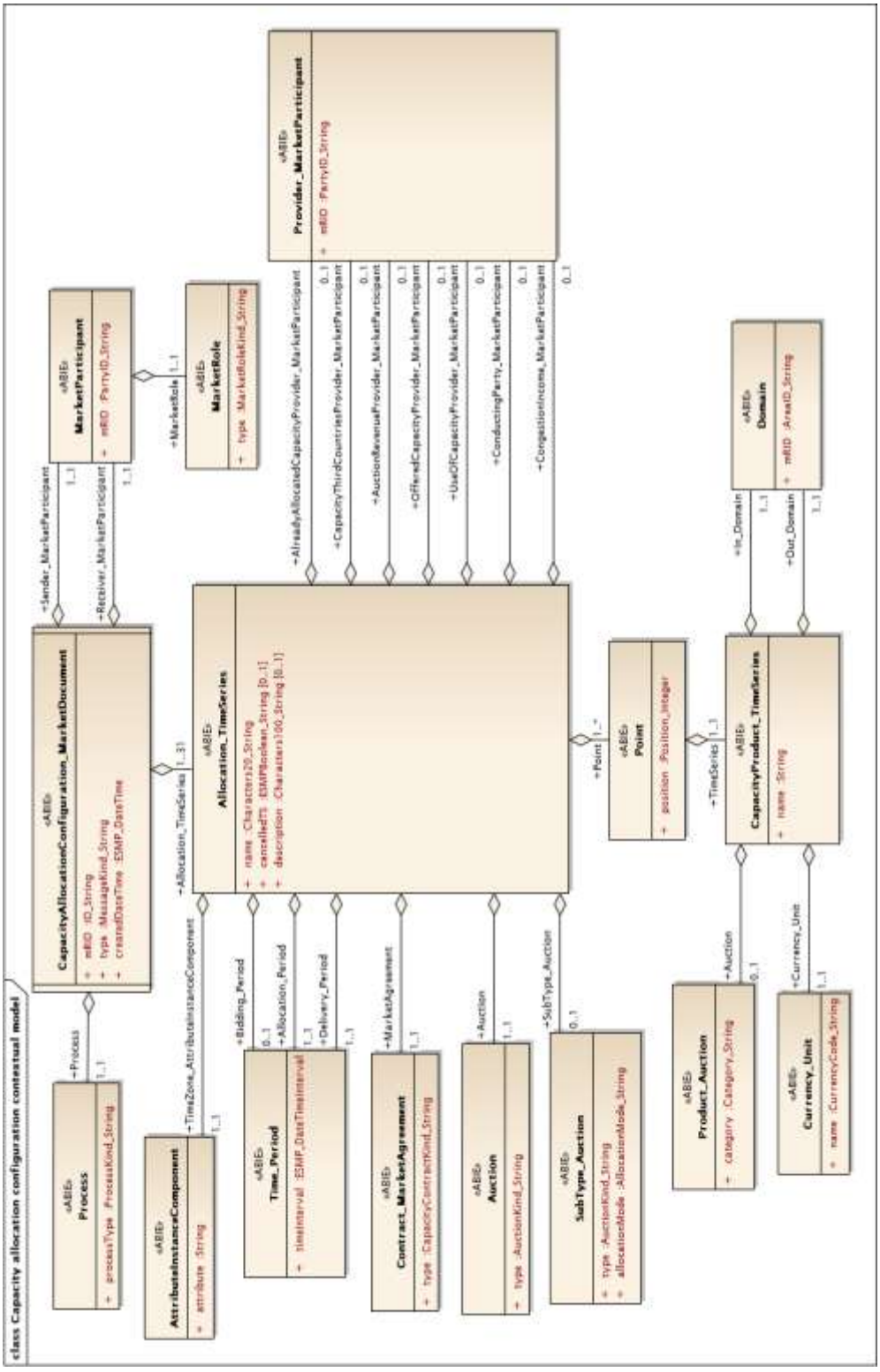

Figure 3 – Capacity allocation configuration contextual model

5.1.2 IsBasedOn relationships from the European style market profile

Table 3 shows the traceability dependency of the classes used in this package towards the upper level.

Table 3 – IsBasedOn dependency

Name	Complete IsBasedOn Path
Allocation_TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries
AttributeInstanceComponent	TC57CIM::IEC62325::MarketManagement::AttributeInstanceComponent
Auction	TC57CIM::IEC62325::MarketManagement::Auction
CapacityAllocationConfiguration_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
CapacityProduct_TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries
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
Point	TC57CIM::IEC62325::MarketManagement::Point
Process	TC57CIM::IEC62325::MarketManagement::Process
Product_Auction	TC57CIM::IEC62325::MarketManagement::Auction
Provider_MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
SubType_Auction	TC57CIM::IEC62325::MarketManagement::Auction
Time_Period	TC57CIM::IEC62325::MarketManagement::Period

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5.2 Capacity allocation configuration assembly model

5.2.1 Overview of the model

Figure 4 shows the model.

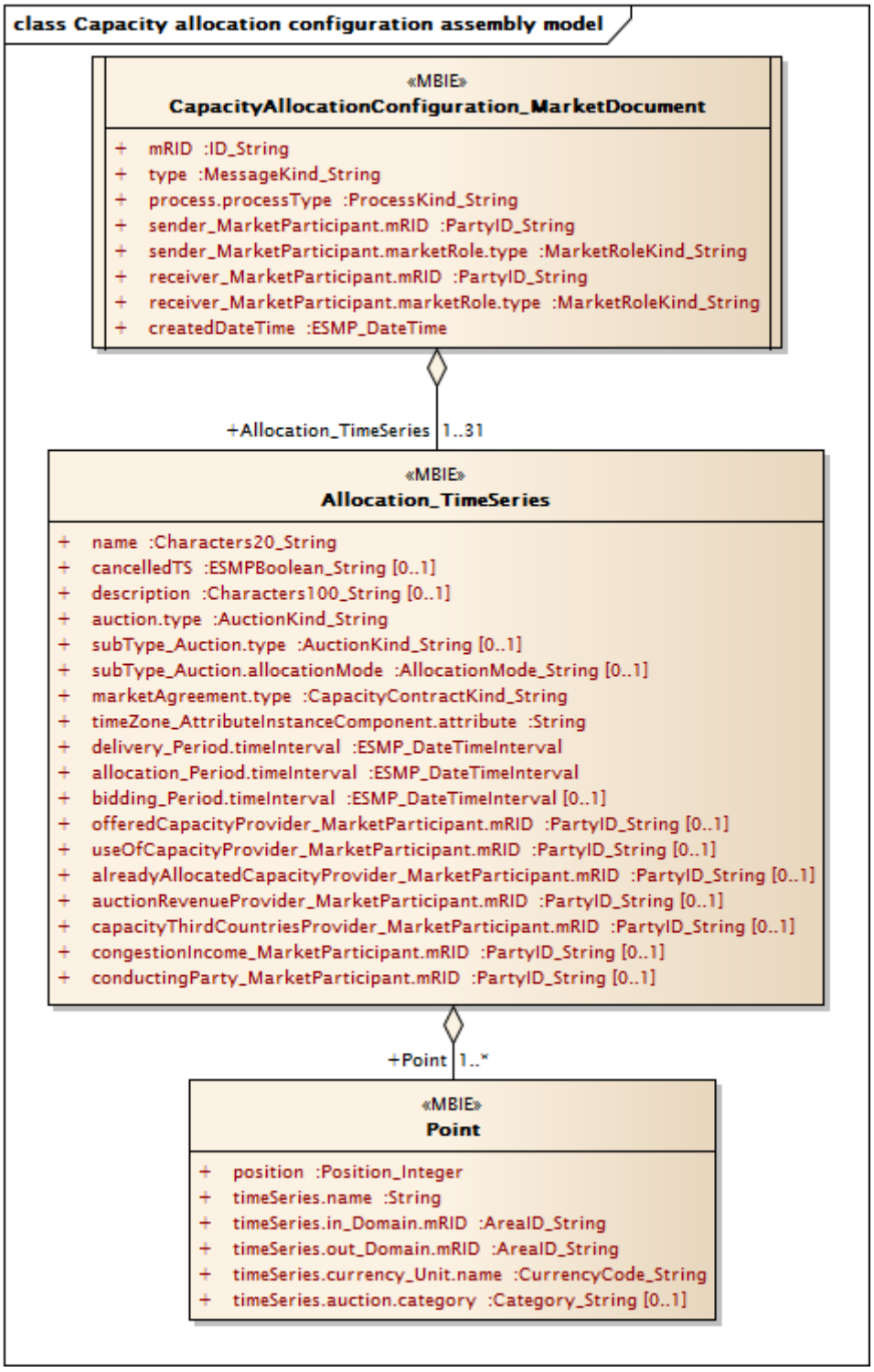

Figure 4 – Capacity allocation configuration assembly model

5.2.1 IsBasedOn relationships from the European style market profile

Table 4 shows the traceability dependency of the classes used in this package towards the upper level.

184 **Table 4 – IsBasedOn dependency**

Name	Complete IsBasedOn Path
Allocation_TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries
CapacityAllocationConfiguration_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Point	TC57CIM::IEC62325::MarketManagement::Point

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186 ### 5.2.2 Detailed Capacity allocation configuration assembly model

187 #### 5.2.2.1 CapacityAllocationConfiguration_MarketDocument root class

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

190 The CapacityAllocationConfiguration_MarketDocument is issued by the data provider to
191 inform about the transmission capacity allocation calendar

192 It provides information on the auction that will be carried out.

193 Table 5 shows all attributes of CapacityAllocationConfiguration_MarketDocument.

194 **Table 5 – Attributes of Capacity allocation configuration assembly**
195 **model::CapacityAllocationConfiguration_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]	type MessageKind_String	The coded type of a document. The document type describes the principal characteristic of the document.
2	[1..1]	process.processType ProcessKind_String	The identification of the nature of process that the document addresses.
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. --- The role associated with a MarketParticipant.
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. --- The role associated with a MarketParticipant.
7	[1..1]	createdDateTime ESMP_DateTime	The date and time of the creation of the document.

196

197 Table 6 shows all association ends of CapacityAllocationConfiguration_MarketDocument with
198 other classes.

Table 6 – Association ends of Capacity allocation configuration assembly model::CapacityAllocationConfiguration_MarketDocument with other classes

Order	mult.	Class name / Role	Description
8	[1..31]	Allocation_TimeSeries Allocation_TimeSeries	The time series that is associated with an electronic document. Association Based On : Capacity allocation configuration contextual model::Allocation_TimeSeries.Allocation_TimeSeries[1..31] --- Capacity allocation configuration contextual model::CapacityAllocationConfiguration_MarketDocument.[]

5.2.2.2 Allocation_TimeSeries

The Allocation_TimeSeries provide the necessary information about what is auctioned as transmission capacity.

A maximum of 31 timeseries per document is accepted. Note that recurring allocations can be configured manually in the ENTSO-E central transparency platform via the web based graphical user interface.

Table 7 shows all attributes of Allocation_TimeSeries.

Table 7 – Attributes of Capacity allocation configuration assembly model::Allocation_TimeSeries

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	name Characters20_String	The name is any free human readable and possibly non unique text naming the object. This attribute identifies the allocation instance. It may be non unique; however the combination of the name and delivery_Period shall be unique.
1	[0..1]	cancelledTS ESMPBoolean_String	An indicator stating that the allocation instance is cancelled.
2	[0..1]	description Characters100_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.
3	[1..1]	auction.type AuctionKind_String	The kind of the auction (e.g. implicit, explicit, ...).
4	[0..1]	subType_Auction.type AuctionKind_String	Additional information about the auction, i.e. shadow auction.
5	[0..1]	subType_Auction.allocationMode AllocationMode_String	The identification of the method of allocation in an auction.
6	[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 capacity will be allocated.
7	[1..1]	timeZone_AttributeInstanceComponent.attribute String	Definition of the time zone where the allocation is planned. This information could be used to map the UTC datetime values into the local business time. The identification of an attribute for a given request component. --- It provides the information of the local time zone where the allocation will be carried out.

Order	mult.	Attribute name / Attribute type	Description
8	[1..1]	delivery_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 when the capacity is to be used.
9	[1..1]	allocation_Period.timeInterval ESMP_DateTimeInterval	The start and end date and time for a given interval. --- The allocation period is the period of time during an auction when capacity allocation (e.g. auction for explicit capacity) is carried out
10	[0..1]	bidding_Period.timeInterval ESMP_DateTimeInterval	The start and end date and time for a given interval. --- The beginning and ending date and time of the bidding period within which capacity traders can submit a bid to the transmission capacity allocator.
11	[0..1]	offeredCapacityProvider_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of a market participant associated with a TimeSeries. The party providing data describing the offered capacity (article 11.1 of transparency regulation).
12	[0..1]	useOfCapacityProvider_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of a market participant associated with a TimeSeries. The party providing data describing the requested and allocated capacity, the price of the capacity and possibly also the auction revenue (article 12.1.a of transparency regulation).
13	[0..1]	alreadyAllocatedCapacityProvider_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of a market participant associated with a TimeSeries. The party providing data describing the already allocated capacity (article 12.1.c of transparency regulation).
14	[0..1]	auctionRevenueProvider_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of a market participant associated with a TimeSeries. The party providing data describing the auction revenue (article 12.1.a of transparency regulation).
15	[0..1]	capacityThirdCountriesProvider_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of a market participant associated with a TimeSeries. The party providing data describing the cross-zonal capacities allocated between bidding zones in Member States and third countries (article 12.1.h of transparency regulation).
16	[0..1]	congestionIncome_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of a market participant associated with a TimeSeries. The party providing data describing the congestion income (article 12.1.e of transparency regulation).

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Order	mult.	Attribute name / Attribute type	Description
17	[0..1]	conductingParty_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- The identification of the party who manages the allocation process. The party conducting the capacity allocation.

211

212 Table 8 shows all association ends of Allocation_TimeSeries with other classes.

213 **Table 8 – Association ends of Capacity allocation configuration assembly**
214 **model::Allocation_TimeSeries with other classes**

Order	mult.	Class name / Role	Description
18	[1..*]	Point Point	The values and the position associated with the TimeSeries. Association Based On : Capacity allocation configuration contextual model::Point.Point[1..*] ----- Capacity allocation configuration contextual model::Allocation_TimeSeries.[]

215

216 **5.2.2.3 Point**

217 The identification of the values.

218 Table 9 shows all attributes of Point.

219 **Table 9 – Attributes of Capacity allocation configuration assembly model::Point**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	position Position_Integer	A sequential value representing a relative sequence number. This defines the sequence of the capacity product within a given auction category such as Base 1 or Base 2. This corresponds to the auction round being carried out for a product category.
1	[1..1]	timeSeries.name String	The name is any free human readable and possibly non unique text naming the object. Any human readable and possibly non unique text naming the capacity product, for example EURO Base 1 FR>BE. --- TheTimeSeries provides additional information related to a Position within a given time interval.
2	[1..1]	timeSeries.in_Domain.mRID AreaID_String	The unique identification of the domain. --- TheTimeSeries provides additional information related to a Position within a given time interval. --- The identification of the area where the energy is flowing into. The identification of the area where the energy is destined for the capacity product. The codification scheme used for the coded identification is indicated by the coding scheme attribute. Refer to ENTSO-E Core Component Code list document for valid coding scheme codes.
3	[1..1]	timeSeries.out_Domain.mRID AreaID_String	The unique identification of the domain. --- TheTimeSeries provides additional information related to a Position within a given time interval. --- The identification of the area from where the energy is coming. The identification of the area where the energy is destined for the capacity product. The codification scheme used for the coded identification is indicated by the coding scheme attribute. Refer to ENTSO-E Core Component Code list document for valid coding scheme codes.

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Order	mult.	Attribute name / Attribute type	Description
4	[1..1]	timeSeries.currency_Unit.name CurrencyCode_String	The identification of the formal code for a currency (ISO 4217). --- TheTimeSeries provides additional information related to a Position within a given time interval. --- The currency associated with a TimeSeries.
5	[0..1]	timeSeries.auction.category Category_String	The product category of an auction. --- TheTimeSeries provides additional information related to a Position within a given time interval. --- The auction characteristics that are associated with a TimeSeries. The category of the capacity product as defined by market rules. This information describes what hours of the day are covered by the product. The following codes have been initially defined: A01: Base A02: Peak A03: Off-peak A04: Hourly

5.2.3 Datatypes

The list of datatypes used for the Capacity allocation configuration assembly model is as follows:

- ESMP_DateTimeInterval compound
- AllocationMode_String datatype, codelist AllocationModeTypeList
- AreaID_String datatype, codelist CodingSchemeTypeList
- AuctionKind_String datatype, codelist AuctionTypeList
- CapacityContractKind_String datatype, codelist ContractTypeList
- Category_String datatype, codelist CategoryTypeList
- Characters100_String datatype
- Characters20_String datatype
- CurrencyCode_String datatype, codelist CurrencyTypeList
- ESMP_DateTime datatype
- ESMPBoolean_String datatype, codelist IndicatorTypeList
- ID_String datatype
- MarketRoleKind_String datatype, codelist RoleTypeList
- MessageKind_String datatype, codelist MessageTypeList
- PartyID_String datatype, codelist CodingSchemeTypeList
- Position_Integer datatype
- ProcessKind_String datatype, codelist ProcessTypeList
- YMDHM_DateTime datatype

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6 XML schema

6.1 Schema structure

Figure 5 to Figure 7 provide the schema.

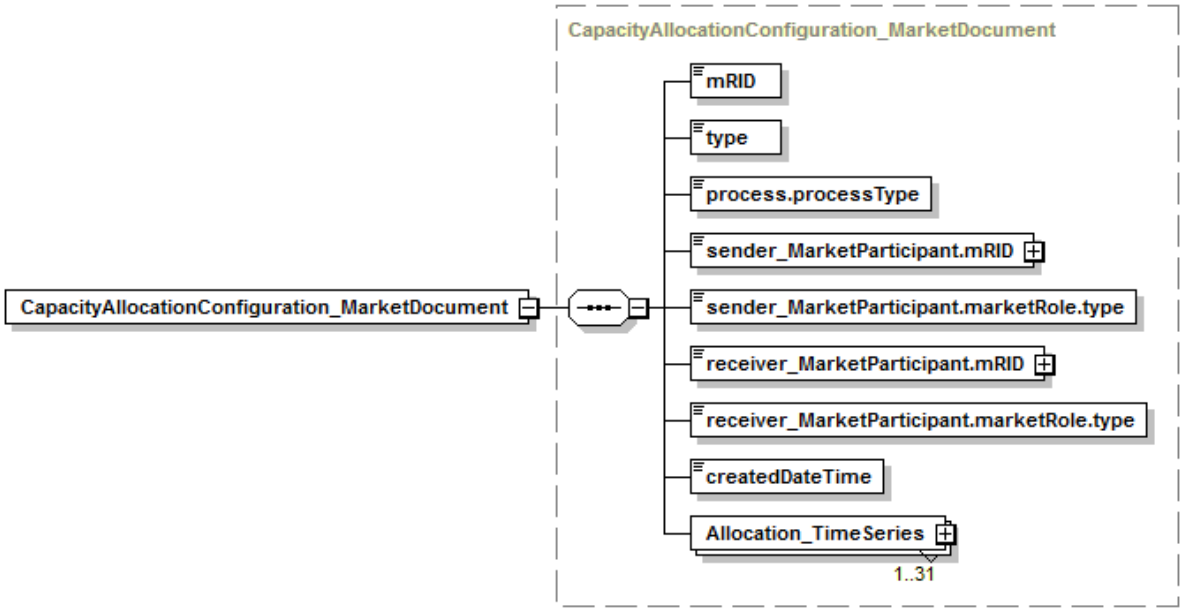

Figure 5 – Capacity allocation configuration document schema – 1/3

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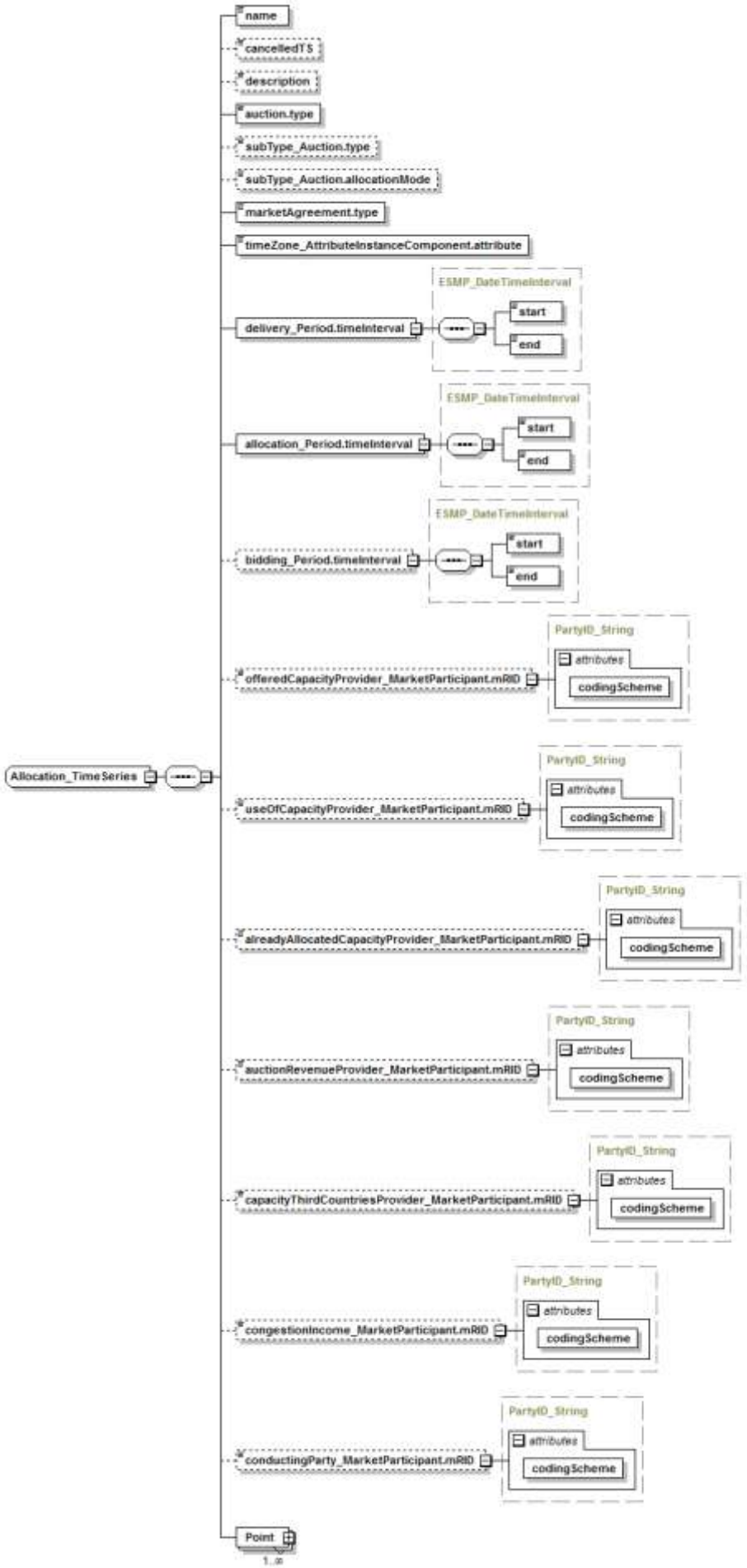
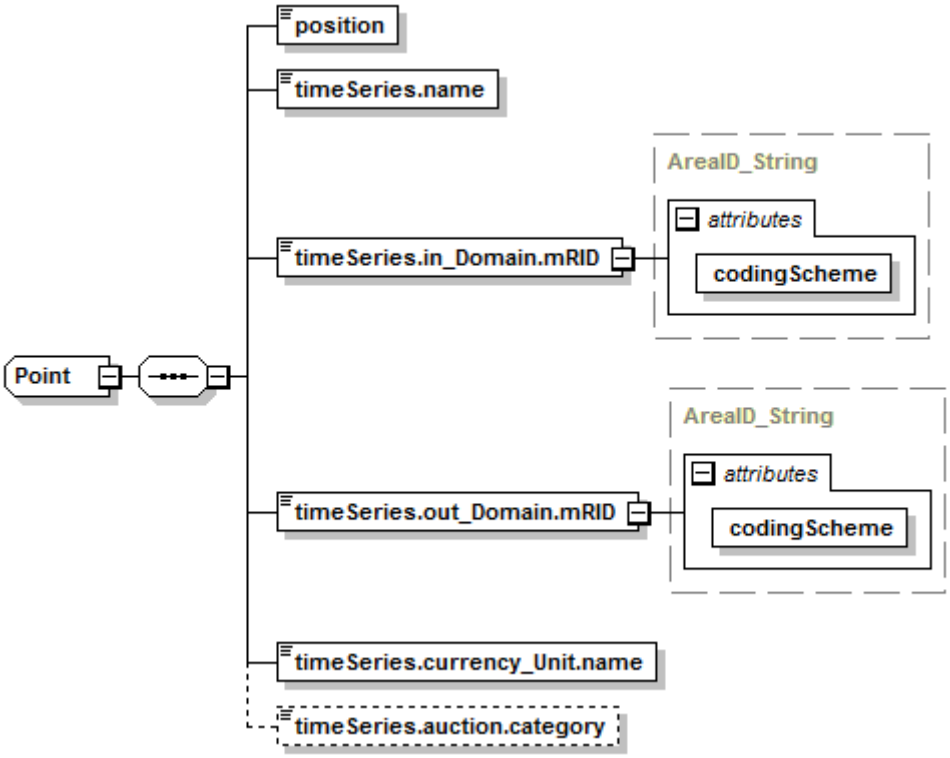

Allocation_TimeSeries
name
cancelledTS
description
auction.type
subType_Auction.type
subType_Auction.allocationMode
marketAgreement.type
timeZone_AttributeInstanceComponent.attribute
delivery_Period.timeInterval
allocation_Period.timeInterval
bidding_Period.timeInterval
ESMP_DateTimeInterval
start
end
offeredCapacityProvider_MarketParticipant.mRID
useOfCapacityProvider_MarketParticipant.mRID
alreadyAllocatedCapacityProvider_MarketParticipant.mRID
auctionRevenueProvider_MarketParticipant.mRID
capacityThirdCountriesProvider_MarketParticipant.mRID
congestionIncome_MarketParticipant.mRID
conductingParty_MarketParticipant.mRID
PartyID_String
attributes
codingScheme
Point
1..∞

248 **Figure 6 – Capacity allocation configuration document schema – 2/3**



249

250 **Figure 7 – Capacity allocation configuration document schema – 3/3**

251 6.2 Schema description

```
252 <?xml version="1.0" encoding="utf-8"?>
253 <xs:schema xmlns:cl="urn:entsoe.eu:wgedi:codelists"
254 xmlns:sawsdl="http://www.w3.org/ns/sawsdl" xmlns="urn:iec62325.351:tc57wg16:451-
255 n:capacityallocationconfigurationdocument:1:0"
256 xmlns:cimp="http://www.iec.ch/cimprofile" attributeFormDefault="unqualified"
257 elementFormDefault="qualified" targetNamespace="urn:iec62325.351:tc57wg16:451-
258 n:capacityallocationconfigurationdocument:1:0"
259 xmlns:xs="http://www.w3.org/2001/XMLSchema">
260   <xs:import schemaLocation="urn-entsoe-eu-wgedi-codelists.xsd"
261 namespace="urn:entsoe.eu:wgedi:codelists" />
262   <xs:element name="CapacityAllocationConfiguration_MarketDocument"
263 type="CapacityAllocationConfiguration_MarketDocument" />
264   <xs:simpleType name="Characters20_String"
265 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
266     <xs:restriction base="xs:string">
267       <xs:maxLength value="20" />
268     </xs:restriction>
269   </xs:simpleType>
270   <xs:simpleType name="ESMPBoolean_String"
271 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
272     <xs:restriction base="cl:IndicatorTypeList" />
273   </xs:simpleType>
274   <xs:simpleType name="Characters100_String"
275 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
276     <xs:restriction base="xs:string">
277       <xs:maxLength value="100" />
278     </xs:restriction>
279   </xs:simpleType>
280   <xs:simpleType name="AuctionKind_String"
281 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
282     <xs:restriction base="cl:AuctionTypeList" />
283   </xs:simpleType>
284   <xs:simpleType name="AllocationMode_String"
285 sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
```

```
      <xs:restriction base="cl:AllocationModeTypeList" />
    </xs:simpleType>
    <xs:simpleType name="CapacityContractKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
      <xs:restriction base="cl:ContractTypeList" />
    </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="cl:CodingSchemeTypeList"
use="required" />
        </xs:extension>
      </xs:simpleContent>
    </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[1-9]|[12][0-
9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-9]|30))T(([01][0-9]|2[0-
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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 minOccurs="1" maxOccurs="1" name="start" type="YMDHM_DateTime"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#DateTimeInterval.start">
        </xs:element>
        <xs:element minOccurs="1" maxOccurs="1" name="end" type="YMDHM_DateTime"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#DateTimeInterval.end">
        </xs:element>
      </xs:sequence>
    </xs:complexType>
    <xs:complexType name="Allocation_TimeSeries"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries">
      <xs:sequence>
        <xs:element minOccurs="1" maxOccurs="1" name="name" type="Characters20_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.name">
        </xs:element>
        <xs:element minOccurs="0" maxOccurs="1" name="cancelledTS"
type="ESMPBoolean_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#TimeSeries.cancelledTS">
        </xs:element>
        <xs:element minOccurs="0" maxOccurs="1" name="description"
type="Characters100_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#IdentifiedObject.description">
        </xs:element>
        <xs:element minOccurs="1" maxOccurs="1" name="auction.type"
type="AuctionKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Auction.type">
        </xs:element>
```

```
      <xs:element minOccurs="0" maxOccurs="1" name="subType_Auction.type"
type="AuctionKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Auction.type">
      </xs:element>
      <xs:element minOccurs="0" maxOccurs="1" name="subType_Auction.allocationMode"
type="AllocationMode_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#Auction.allocationMode">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1" name="marketAgreement.type"
type="CapacityContractKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.type">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1"
name="timeZone_AttributeInstanceComponent.attribute" type="xs:string"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#AttributeInstanceComponent.attribute">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1" name="delivery_Period.timeInterval"
type="ESMP_DateTimeInterval" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#Period.timeInterval">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1" name="allocation_Period.timeInterval"
type="ESMP_DateTimeInterval" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#Period.timeInterval">
      </xs:element>
      <xs:element minOccurs="0" maxOccurs="1" name="bidding_Period.timeInterval"
type="ESMP_DateTimeInterval" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#Period.timeInterval">
      </xs:element>
      <xs:element minOccurs="0" maxOccurs="1"
name="offeredCapacityProvider_MarketParticipant.mRID" type="PartyID_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID">
      </xs:element>
      <xs:element minOccurs="0" maxOccurs="1"
name="useOfCapacityProvider_MarketParticipant.mRID" type="PartyID_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID">
      </xs:element>
      <xs:element minOccurs="0" maxOccurs="1"
name="alreadyAllocatedCapacityProvider_MarketParticipant.mRID" type="PartyID_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID">
      </xs:element>
      <xs:element minOccurs="0" maxOccurs="1"
name="auctionRevenueProvider_MarketParticipant.mRID" type="PartyID_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID">
      </xs:element>
      <xs:element minOccurs="0" maxOccurs="1"
name="capacityThirdCountriesProvider_MarketParticipant.mRID" type="PartyID_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID">
      </xs:element>
      <xs:element minOccurs="0" maxOccurs="1"
name="congestionIncome_MarketParticipant.mRID" type="PartyID_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID">
      </xs:element>
      <xs:element minOccurs="0" maxOccurs="1"
name="conductingParty_MarketParticipant.mRID" type="PartyID_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="unbounded" name="Point" type="Point"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.Point">
      </xs:element>
    </xs:sequence>
  </xs:complexType>
```

```
    <xs:simpleType name="ID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#String">
      <xs:restriction base="xs:string">
        <xs:maxLength value="35" />
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="MessageKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
      <xs:restriction base="cl:MessageTypeList" />
    </xs:simpleType>
    <xs:simpleType name="ProcessKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
      <xs:restriction base="cl:ProcessTypeList" />
    </xs:simpleType>
    <xs:simpleType name="MarketRoleKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
      <xs:restriction base="cl:RoleTypeList" />
    </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][0-9]|30))T(([01][0-9]|2[0-
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8])T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)" />
      </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="CapacityAllocationConfiguration_MarketDocument"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketDocument">
      <xs:sequence>
        <xs:element minOccurs="1" maxOccurs="1" name="mRID" type="ID_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID">
        </xs:element>
        <xs:element minOccurs="1" maxOccurs="1" name="type" type="MessageKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.type">
        </xs:element>
        <xs:element minOccurs="1" maxOccurs="1" name="process.processType"
type="ProcessKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Process.processType">
        </xs:element>
        <xs:element minOccurs="1" maxOccurs="1" name="sender_MarketParticipant.mRID"
type="PartyID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID">
        </xs:element>
        <xs:element minOccurs="1" maxOccurs="1"
name="sender_MarketParticipant.marketRole.type" type="MarketRoleKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type">
        </xs:element>
        <xs:element minOccurs="1" maxOccurs="1" name="receiver_MarketParticipant.mRID"
type="PartyID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID">
        </xs:element>
        <xs:element minOccurs="1" maxOccurs="1"
name="receiver_MarketParticipant.marketRole.type" type="MarketRoleKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type">
        </xs:element>
        <xs:element minOccurs="1" maxOccurs="1" name="createdDateTime"
type="ESMP_DateTime" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Document.createdDateTime">
        </xs:element>
```

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      <xs:element minOccurs="1" maxOccurs="31" name="Allocation_TimeSeries"
type="Allocation_TimeSeries" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#MarketDocument.Allocation_TimeSeries">
      </xs:element>
    </xs:sequence>
  </xs:complexType>
  <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:simpleType name="AreaID_String-base"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
    <xs:restriction base="xs:string">
      <xs:maxLength value="18" />
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="AreaID_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
    <xs:simpleContent>
      <xs:extension base="AreaID_String-base">
        <xs:attribute name="codingScheme" type="cl:CodingSchemeTypeList"
use="required" />
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>
  <xs:simpleType name="CurrencyCode_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
    <xs:restriction base="cl:CurrencyTypeList" />
  </xs:simpleType>
  <xs:simpleType name="Category_String"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
    <xs:restriction base="cl:CategoryTypeList" />
  </xs:simpleType>
  <xs:complexType name="Point" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-
schema-cim16#Point">
    <xs:sequence>
      <xs:element minOccurs="1" maxOccurs="1" name="position" type="Position_Integer"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.position">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1" name="timeSeries.name" type="xs:string"
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.name">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1" name="timeSeries.in_Domain.mRID"
type="AreaID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1" name="timeSeries.out_Domain.mRID"
type="AreaID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#IdentifiedObject.mRID">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1" name="timeSeries.currency_Unit.name"
type="CurrencyCode_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Unit.name">
      </xs:element>
      <xs:element minOccurs="0" maxOccurs="1" name="timeSeries.auction.category"
type="Category_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-
cim16#Auction.category">
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:schema>
```


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