



ENTSO-E CONFIGURATION TRANSPARENCY PROCESS IMPLEMENTATION GUIDE

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This document is maintained by the ENTSO-E CIM EG. Comments or remarks are to be provided at cim@entsoe.eu

Revision History

Version	Release	Date	Comments
1	0	2013-06-24	First version
2	0	2013-09-12	Version taking into account the comments issued during the Public Consultation.
3	0	2014-01-24	Version taking into account comments in addition to correcting some typing errors. Alignment of the models and attribute names with the CIM model following integrity check. Clarification of synchronisation possibility in 3.1, 4.3 and 4.4.3. Addition of party connected to the grid in 4.4.5 used only for transmissions to a System Operator. Suppressed unnecessary sequence flows. Clarification of production unit use. Approved by Market Committee on 2014-02-04.
4	0	2015-01-08	This version takes into account the EMFIP corrigendum version 5. The following changes have been made: <ul style="list-style-type: none"> Update of Business Type description in §4.5.2 and of the dependency table in §4.3.2.
4	1	2016-04-28	Maintenance request EMFIP30: The attributes based on ESMP_ActivePower or ESMP_Voltage has the following constraints: <i>The maximum length of this information is 17 numeric characters.</i> <i>The number of decimal places identifying the fractional part of the quantity is limited to one (1) only.</i> Changes have been made in 4.5.2 and of the dependency table in 4.3.2
4	2	2018-10-08	This version takes into account the last changes applied on the Configuration_MarketDocument XSD v3.2. <ul style="list-style-type: none"> Chapter 3 updated. New dependency tables for the new analog class. Chapter 4 updated. New contextual and assembly models.

Reference Documents

1. Commission Regulation No 543/2013 of 14 June 2013 on submission and publication of data in electricity markets and amending Annex I to Regulation (EC) No 714/2009 of the European Parliament and of the Council.
2. Central Information Transparency Platform - Business Requirements Specification.
3. The ENTSO-E Harmonised Role Model.
4. A Common Identification System for the Energy Industry, The Energy Identification Coding Scheme – EIC.
5. The ENTSO-E Code List.
6. IEC 62325-301, Framework for energy market communications Common information model (CIM) Extensions for markets.
7. IEC 62325-351, Framework for energy market communications CIM European market model exchange profile
8. IEC 62325-450, Profile and context modelling rules.
9. IEC 62361 part 100, Naming and design rules for CIM profiles to XML schema mapping.
10. IEC 62325-451-1 the acknowledgement document.
11. ENTSO-E XML namespace reference document version 2 release 0. This reference shall ensure to have compliant electronic document instance files; and in particular to apply the following recommendations:
 - **In order to enable flexibility, it is recommended that the schema location instruction (and xsi definition) in the schema compliant instance should not be used.**

1 INTRODUCTION

This implementation guide is one of the implementation guides drafted by ENTSO-E to enable the establishment of a common level of fundamental data transparency as per the Regulation on transparency and provision of information in European electricity markets.

This implementation guide focuses on defining the information to be exchanged to enable the a central information platform to be configured with the information necessary to satisfy the requirements defined the regulation, the EMFIP detailed description and the EMFIP Business Requirements Specification.

Its purpose is to provide a means of transmitting basic configuration information to a central information platform. This platform should enable the establishment of a coherent and consistent view of the European wholesale electricity market by all the market participants as well as to interested European consumers.

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 actors in the electrical industry in Europe.

This guide provides a standard for enabling a uniform layout for the transmission of configuration data between the European electricity market participants and the Transparency platform via the Data Provider (who may be the Transmission System Operator). The information model within the guide shall ensure that a common interface can be provided between different software solutions.

2 THE CONFIGURATION PROCESS OVERVIEW

2.1 BREAKDOWN OF THE CONFIGURATION PROCESS

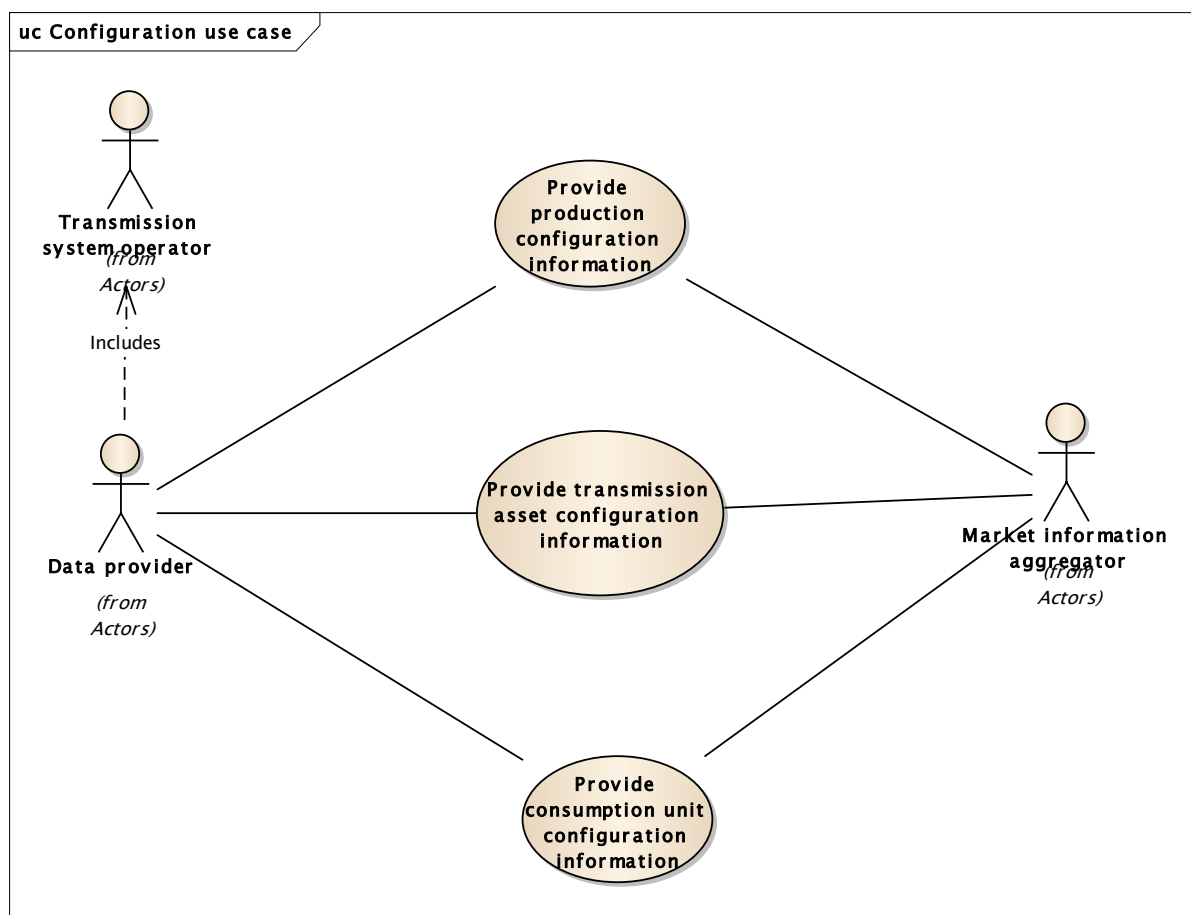


FIGURE 1 - INFORMATION EXCHANGE FOR THE PROVISION OF CONFIGURATION INFORMATION

The provision of configuration information is relatively straightforward and is basically broken down into three use cases as follows:

1. Provide production configuration information this includes both production unit configuration information and may include generation unit configuration information. The management of a generation unit is handled through the production unit. Consequently if there is an addition of a generation unit or change to a generation unit this requires that the change is carried out as a change of the production unit.
2. Provide Transmission asset configuration information.
3. Provide consumption unit configuration information.

The platform requires this basic configuration in order to ensure the validation and coherence of the information that is transmitted by the data providers for publication. The configuration

information may evolve over time and consequently modifications or deactivations will have to be provided.

3 THE CONFIGURATION PROCESSING SEQUENCE

3.1 GENERIC PROCESSING SEQUENCE

The configuration process consists of an initial transmission of all information required for the configuration of the platform when the platform is set up. After this initial transmission, configuration information can be sent as required to provide the creation, modification or deactivation of the configuration information or for its synchronisation where the Data Provider may send the complete set of configuration information whenever it changes.

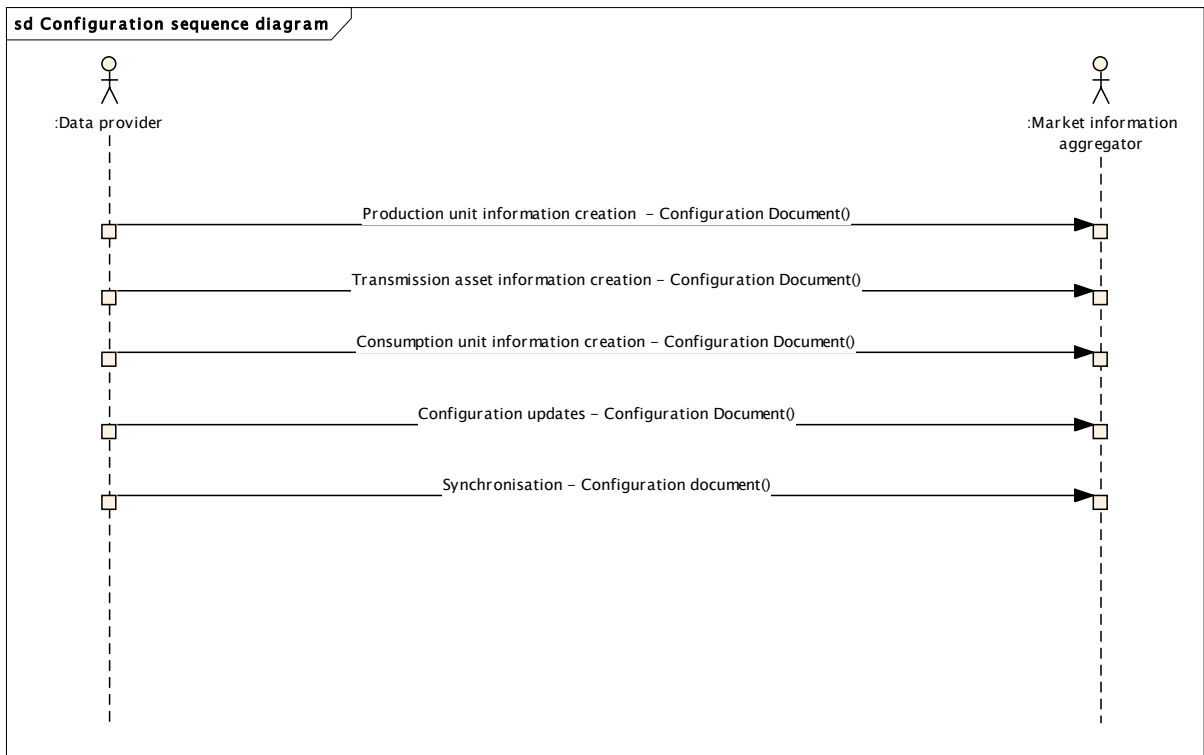


FIGURE 2 - GENERIC CONFIGURATION PROCESS SEQUENCE

The initial flows cover the creation of production units with their related generation units, transmission assets and consumption units.

The configuration updates flow covers the modification or deactivation of previously transmitted information.

167 The last flow covers the synchronisation of the configuration information between the Data
168 Provider and the Market Information Provider.

169 The creation of a production unit shall be composed of all dependent generation units. The
170 creation, modification or deactivation of a generation unit represents a change in the
171 production unit configuration and consequently a modification to the production unit is
172 necessary with all the valid generation units.

173 Following the reception of a configuration document, the acknowledgement business process
174 as per IEC 62325-451-1 shall be applied. In particular, the Data provider shall receive an
175 acknowledgement stating whether the document has been accepted or rejected and the
176 reasons for the rejection.

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3.2 RULES GOVERNING THE CONFIGURATION MARKET DOCUMENT

3.2.1 THE TRANSMISSION OF CONFIGURATION INFORMATION

The Configuration Market Document is used to transmit the information necessary to permit the validation of production units, transmission assets and consumption units when market information is provided by the Data Providers to the Market Information Aggregator for publication.

The Configuration Market Document is also used to transmit modifications or deactivations that evolve the initial configuration information over time. In the specific case of a production unit it should be noted that all evolutions take place in respect to the production unit as a whole. That is to say that an evolution of a production incorporates any associated generation units that belong to it. For example if a production unit changes its name then all associated generation units must be changed as well.

3.2.2 DOCUMENT ATTRIBUTE DEPENDENCIES

Article involved Attribute		Production	Transmission assets	Consumption
	type	A95: configuration document	A95: configuration document	A95: configuration document
TimeSeries	businessType	B11: production unit	B16: transmission asset	B17: consumption unit
	biddingZone_Domain.mRID	Used	Not used	Used
	controlArea_Domain mRID	Only one occurrence permitted	Multiple occurrence permitted	Only one occurrence permitted
	provider_MarketParticipant mRID	Only one occurrence permitted	Multiple occurrence permitted	Only one occurrence permitted
MktPSRType	production_PowerSystemResources.highVoltageLimit	Used	Not used	Not used
	nominalP	Used	Not used	Used
	GeneratingUnit_PowerSystemResources	Used for generation units	Not used	Not used
Analog	measurementType	Not Used	A17: Loss Factor (Only for interconnectors)	Not Used
	unitSymbol	Not Used	P1: Percent (Only for interconnectors)	Not Used
	analogValues.value	Not Used	Used (Only for interconnectors)	Not Used

FIGURE 3 - CONFIGURATION DEPENDENCY TABLE

3.3 CONFIGURATION MARKET DOCUMENT CLASS SPECIFICATION

An electronic document containing the information necessary to satisfy the requirements of the configuration management business process.

3.3.1 MRID

ACTION	DESCRIPTION
Definition of element	Unique identification of the configuration document being exchanged within a given business process flow.
Description	<p>A Configuration Market Document contains configuration information for given set of objects. Each document must have a unique identification assigned by the sender of the document for all transmissions to the receiver.</p> <p>A specific Configuration Market Document shall be used for the creation, modification or deactivation of configuration information.</p>
Size	The identification of a document may not exceed 35 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None

3.3.2 TYPE

ACTION	DESCRIPTION
Definition of element	The coded type of a document. The document type describes the principal characteristic of the document.
Description	<p>The document type identifies the information flow characteristics.</p> <p>Permitted codes are: A95 = Configuration document</p>
Size	The document type value may not exceed 3 alphanumeric characters (no blanks).
Applicability	This information is mandatory.
Dependence requirements	None.

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3.3.3 PROCESS.PROCESSTYPE

ACTION	DESCRIPTION
Definition of element	The identification of the nature of process that the document addresses. --- The Process associated with an electronic document header that is valid for the whole document.
Description	The process type identifies the type of processing to be carried out on the information. Permitted codes are: A36 = Creation A37 = Modification A38 = Deactivation A39 = Synchronisation Note: The creation of a production unit shall be composed of all dependent generation units. The creation, modification or deactivation of a generation unit represents a change in the production unit configuration and consequently a modification to the production unit is necessary with all the valid generation units.
Size	The process type value may not exceed 3 alphanumeric characters (no blanks).
Applicability	This information is mandatory.
Dependence requirements	None.

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3.3.4 SENDER_MARKETPARTICIPANT.MRID

ACTION	DESCRIPTION
Definition of element	The identification of a party in the energy market. --- The transmitting MarketParticipant associated with an electronic document header.
Description	The sender of the document is identified by a unique coded identification. This code identifies the party that is responsible for the document content. The codification scheme used shall be : A01 = EIC coding scheme.
Size	The maximum length of a sender's identification is 16 alphanumeric characters. The maximum length of the coding scheme code is 3 alphanumeric characters.
Applicability	Both the identification and the coding scheme are mandatory.
Dependence requirements	None.

200

3.3.5 SENDER_MARKETPARTICIPANT.MARKETROLE.TYPE

ACTION	DESCRIPTION
Definition of element	Identification of the role played by a market player. --- The MarketParticipant associated with an electronic document header. --- The role associated with a MarketParticipant.
Description	The sender role, which identifies the role of the sender within the document. Permitted codes are: A04 = System Operator or TSO A20 = Party connected to the grid. Note this role can only be used as a sender in an exchange to a receiver who has the role of System Operator (A04). A39 = Data Provider
Size	The maximum length of a sender role is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

201

3.3.6 RECEIVER_MARKETPARTICIPANT.MRID

ACTION	DESCRIPTION
Definition of element	The identification of a party in the energy market. --- The receiving MarketParticipant associated with an electronic document header.
Description	The receiver of the document is identified by a unique coded identification. The codification scheme used shall be: A01 = EIC coding scheme
Size	The maximum length of a receiver's identification is 16 alphanumeric characters. The maximum length of the coding scheme code is 3 alphanumeric characters.
Applicability	Both the identification and the coding scheme are mandatory.
Dependence requirements	None.

202

3.3.7 RECEIVER_MARKETPARTICIPANT.MARKETROLE.TYPE

ACTION	DESCRIPTION
Definition of element	Identification of the role played by a market player. --- The MarketParticipant associated with an electronic document header. --- The role associated with a MarketParticipant.
Description	The receiver role, which identifies the role of the receiver within the document. Permitted codes are: A04 = System Operator or TSO A32 = Market Information Aggregator
Size	The maximum length of a receiver role is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

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3.3.8 CREATEDDATE TIME

ACTION	DESCRIPTION
Definition of element	The date and time of the creation of the document.
Description	The date and time that the document was prepared for transmission by the application of the sender.
Size	The date and time must be expressed in UTC as YYYY-MM-DDTHH:MM:SSZ.
Applicability	This information is mandatory.
Dependence requirements	None.

3.4 RULES GOVERNING THE TIME SERIES CLASS

A time series shall exist to describe a specific production unit, transmission asset or consumption unit. It conveys the data related to the configuration of the defined information.

3.4.1 MRID

ACTION	DESCRIPTION
Definition of element	A unique identification of the time series.
Description	A unique identification within the document assigned by the sender. This must be unique for the whole document and guarantee the non-duplication of all the attributes of the time series class.
Size	The maximum size of a time series identification is 35 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

3.4.2 BUSINESS TYPE

ACTION	DESCRIPTION
Definition of element	The identification of the nature of the time series.
Description	The nature of the time series for which the product is handled. Permitted codes are: B11 = Production unit B16 = Transmission asset B17 = Consumption unit
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

3.4.3 IMPLEMENTATION_DATEANDOR TIME.DATE

ACTION	DESCRIPTION
Definition of element	Date as "yyyy-mm-dd", which conforms with ISO 8601. --- The date of application of the information provided.
Description	This identifies the date of the effective implementation of the information provided in the time series. In the case of a creation this signifies that the object will be operational at this date. In the case of modification this signifies that the changes will be operational at this date. In the case of a deactivation this signifies that the deactivation will be effective at this date.
Size	The date must be expressed as YYYY-MM-DD.
Applicability	This information is mandatory.
Dependence requirements	None.

3.4.4 BIDDINGZONE_DOMAIN.MRID

ACTION	DESCRIPTION
Definition of element	Unique identification of the domain. --- The domain associated with a TimeSeries
Description	The identification of the bidding domain associated with a production or consumption unit. The codification scheme used shall be: A01 = EIC coding scheme.
Size	The maximum length of the domain code is 16 alphanumeric characters. The maximum length of the coding scheme code is 3 alphanumeric characters.
Applicability	This information is dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

3.5 RULES GOVERNING THE REGISTEREDRESOURCE CLAS

The RegisteredResource class provides the identification of the resource.

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3.5.1 REGISTEREDRESOURCE.MRID

ACTION	DESCRIPTION
Definition of element	The unique identification of a resource. --- The identification of a resource associated with a TimeSeries.
Description	The identification of a registered resource for which the information is being provided. The codification scheme used shall be: A01 = EIC coding scheme.
Size	The maximum length of the asset registered resource code is 16 alphanumeric characters. The maximum length of the coding scheme code is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

215

3.5.2 REGISTEREDRESOURCE.NAME

ACTION	DESCRIPTION
Definition of element	The name is any free human readable and possibly non unique text naming the object. --- The identification of a resource associated with a TimeSeries.
Description	The name of the registered resource being provided.
Size	The maximum length of the name is 35 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

3.5.3 REGISTEREDRESOURCE.LOCATION.NAME

ACTION	DESCRIPTION
Definition of element	The name is any free human readable and possibly non unique text naming the object. --- The identification of a resource associated with a TimeSeries. --- Location of this power system resource.
Description	The name of the location of the registered resource for which the configuration information is being provided.
Size	The maximum length of the name is 35 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

3.6 RULES GOVERNING THE ANALOG CLASS

The Analog class provides different types of measurement values for the registered resource.

To provide the loss factor of an interconnector, exactly one instance of the Analog class may be included..

The Analog class is not mandatory.

223

3.6.1 MEASUREMENTTYPE

ACTION	DESCRIPTION
Definition of element	Specifies the type of measurement.
Description	<p>The type of the measurement is defined by a unique coded identification.</p> <p>The codes to be used here are:</p> <ul style="list-style-type: none"> A17 = Loss Factor.
Size	The maximum length of the measurementType code is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

224

3.6.2 UNITSYMBOL

ACTION	DESCRIPTION
Definition of element	The unit of measure of the measured quantity.
Description	<p>The unit of measure is defined by a unique coded identification.</p> <p>The codes to be used here are:</p> <p>If measurementType code is A17:</p> <ul style="list-style-type: none"> P1: Percent
Size	The maximum length of the unitSymbol code is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	Only used if measurementType code is A17.

3.6.3 ANALOGVALUES.VALUE

ACTION	DESCRIPTION
Definition of element	Measurement to which this value is connected.
Description	The values of the measurement
Size	Value of the measurement. It's recommended to provide round float values with maximum three decimals.
Applicability	This information is optional.
Dependence requirements	Only used if measurementType code is A17.

3.7 RULES GOVERNING THE PROVIDER_MARKETPARTICIPANT CLASS

The identification of the party that provides the information concerning the resource object defined in the time series.

At least one provider shall exist.

3.7.1 MRID

ACTION	DESCRIPTION
Definition of element	The identification of a party in the energy market. --- The provider MarketParticipant of the information associated with a time series
Description	The provider of the information for the registered resource is identified by a unique coded identification. The codification scheme used shall be : A01 = EIC coding scheme.
Size	The maximum length of a provider's identification is 16 alphanumeric characters. The maximum length of the coding scheme code is 3 alphanumeric characters.
Applicability	Both the identification and the coding scheme are mandatory.
Dependence requirements	None.

3.8 RULES GOVERNING THE CONTROLAREA_DOMAIN CLASS

The ControlArea_Domain class provides the identification of the control area where the resource object exists.

In the case of transmission assets there may be multiple control areas.

At least one control area class shall exist.

3.8.1 MRID

ACTION	DESCRIPTION
Definition of element	Unique identification of the domain. --- The domain where the resource object associated with a TimeSeries resides
Description	The identification of the domain where the resource object resides. The codification scheme used shall be: A01 = EIC coding scheme.
Size	The maximum length of the domain code is 16 alphanumeric characters. The maximum length of the coding scheme code is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

3.9 RULES GOVERNING THE MKTPSRTYPE CLASS

The MktPSRType class contains the information concerning the type of production, transmission asset or consumption unit that is identified in the time series.

3.9.1 PSRTYPE

ACTION	DESCRIPTION
Definition of element	The coded type of a power system resource. --- The classification for the asset.
Description	This represents the coded identification of the type of asset being described. Refer to the ENTSO-E codelist for the list of valid codes.
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

3.9.2 PRODUCTION_POWERSYSTEMRESOURCES.HIGHVOLTAGELIMIT

ACTION	DESCRIPTION
Definition of element	The bus bar's high voltage limit --- The voltage level of the RegisteredResource having the MktPSRType.
Description	This represents the voltage connection level of the production unit being described. This value shall always be provided in KVT. Recommended values could for example be: 400, 380, 225, 220, 150, 132, 110, 100, 90, 70, 63, 50. A decimal point value may be used to express values that are inferior to the defined unit of measurement. The decimal mark that separates the digits forming the integral part of a number from those forming the fractional part. (ISO 6093) shall always be a period ("."). All quantities are non-signed values.
Size	The maximum length of this information is 17 numeric characters. The number of decimal places identifying the fractional part of the quantity is limited to one (1) only.
Applicability	This information is dependent.
Dependence requirements	The highVoltageLimit is provided in accordance with the dependency table.

3.9.3 NOMINALIP_POWERSYSTEMRESOURCES.NOMINALP

ACTION	DESCRIPTION
Definition of element	<p>The nominal power of a production or a consumption unit.</p> <p>--- The installed capacity of a production unit or a consumption unit.</p>
Description	<p>This represents the installed capacity for a production unit or a consumption unit being described. This value shall always be provided in MAW.</p> <p>A decimal point value may be used to express values that are inferior to the defined unit of measurement.</p> <p>The decimal mark that separates the digits forming the integral part of a number from those forming the fractional part. (ISO 6093) shall always be a period (“.”).</p> <p>All quantities are non-signed values.</p>
Size	<p>The maximum length of this information is 17 numeric characters (decimal mark included).</p> <p>The number of decimal places identifying the fractional part of the quantity is limited to one (1) only.</p>
Applicability	<p>This information is dependent.</p>
Dependence requirements	<p>The nominal power is provided in accordance with the dependency table.</p>

3.10 RULES GOVERNING THE MKTGENERATINGUNIT CLASS

The MktGeneratingUnit Class provides the identifying information for a generation unit.

There may be multiple generation units per production unit.

A MktGeneratingUnit class is not mandatory.

3.10.1 MRID

ACTION	DESCRIPTION
Definition of element	The unique identification of the generation unit.
Description	The identification of the generation unit for which the generation information is being provided. The codification scheme used shall be: A01 = EIC coding scheme.
Size	The maximum length of the generation unit code is 16 alphanumeric characters. The maximum length of the coding scheme code is 3 alphanumeric characters.
Applicability	This information mandatory.
Dependence requirements	None.

3.10.2 NAME

ACTION	DESCRIPTION
Definition of element	The name is any free human readable and possibly non unique text naming the object.
Description	This represents the name of the generation unit.
Size	The maximum length of this information is 35 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

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3.10.3 NOMINALP

ACTION	DESCRIPTION
Definition of element	The nominal power of the generating unit.
Description	<p>This represents the installed generation capacity for the generation unit being described.</p> <p>This value shall always be provided in MAW.</p> <p>A decimal point value may be used to express values that are inferior to the defined unit of measurement.</p> <p>The decimal mark that separates the digits forming the integral part of a number from those forming the fractional part. (ISO 6093) shall always be a period (".").</p> <p>All quantities are non-signed values.</p>
Size	<p>The maximum length of this information is 17 numeric characters (decimal mark included).</p> <p>The number of decimal places identifying the fractional part of the quantity is limited to one (1) only.</p>
Applicability	This information is mandatory.
Dependence requirements	None.

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3.10.4 GENERATINGUNIT_PSRTYPE.PSRTYPE

ACTION	DESCRIPTION
Definition of element	The coded type of the generation unit.
Description	<p>This represents the coded identification of the type of resource being described.</p> <p>Refer to the ENTSO-E codelist for the list of valid codes.</p>
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

3.10.5 GENERATINGUNIT_LOCATION.NAME

ACTION	DESCRIPTION
Definition of element	The name is any free human readable and possibly non unique text naming the object. --- The location of the generation unit.
Description	The name of the location of the generation unit whose information is being provided.
Size	The maximum length of the name is 35 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

4 CONTEXTUAL AND ASSEMBLY MODELS

4.1 CONFIGURATION CONTEXTUAL MODEL

4.1.1 OVERVIEW OF THE MODEL

Figure 3 shows the model.

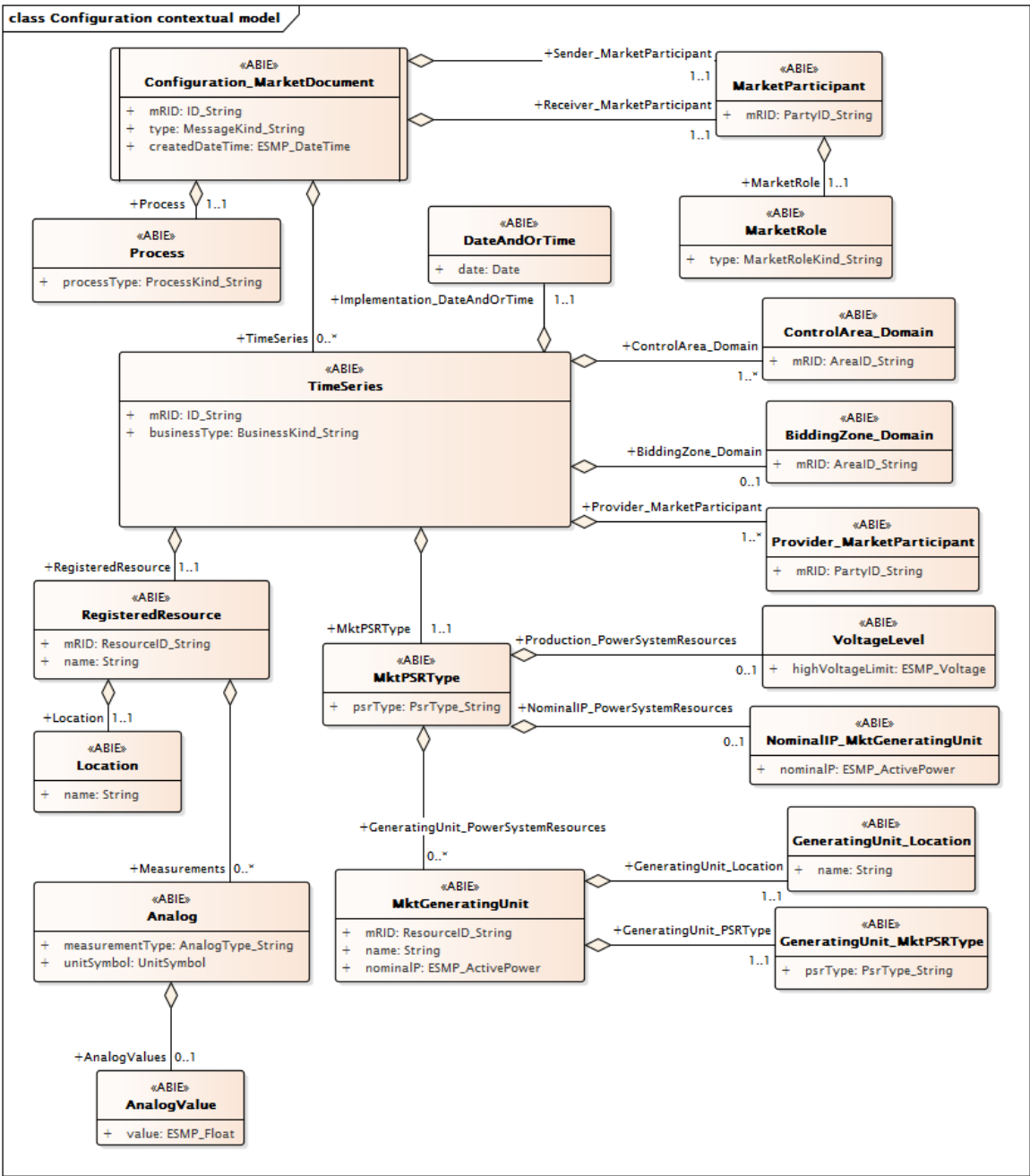


FIGURE 4 - CONFIGURATION CONTEXTUAL MODEL

4.1.2 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
Analog	TC57CIM::IEC61970::Base::Meas::Analog
AnalogValue	TC57CIM::IEC61970::Base::Meas::AnalogValue
BiddingZone_Domain	TC57CIM::IEC62325::MarketManagement::Domain
Configuration_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
ControlArea_Domain	TC57CIM::IEC62325::MarketManagement::Domain
DateAndOrTime	TC57CIM::IEC62325::MarketManagement::DateAndOrTime
GeneratingUnit_Location	TC57CIM::IEC61968::Common::Location
GeneratingUnit_MktPSRType	TC57CIM::IEC62325::MarketManagement::MktPSRType
Location	TC57CIM::IEC61968::Common::Location
MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
MarketRole	TC57CIM::IEC62325::MarketCommon::MarketRole
MktGeneratingUnit	TC57CIM::IEC62325::MarketCommon::MktGeneratingUnit
MktPSRType	TC57CIM::IEC62325::MarketManagement::MktPSRType
NominalIP_MktGeneratingUnit	TC57CIM::IEC62325::MarketCommon::MktGeneratingUnit
Process	TC57CIM::IEC62325::MarketManagement::Process
Provider_MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries
VoltageLevel	TC57CIM::IEC61970::Base::Core::VoltageLevel

4.2 CONFIGURATION ASSEMBLY MODEL

4.2.1 OVERVIEW OF THE MODEL

Figure 4 shows the model.

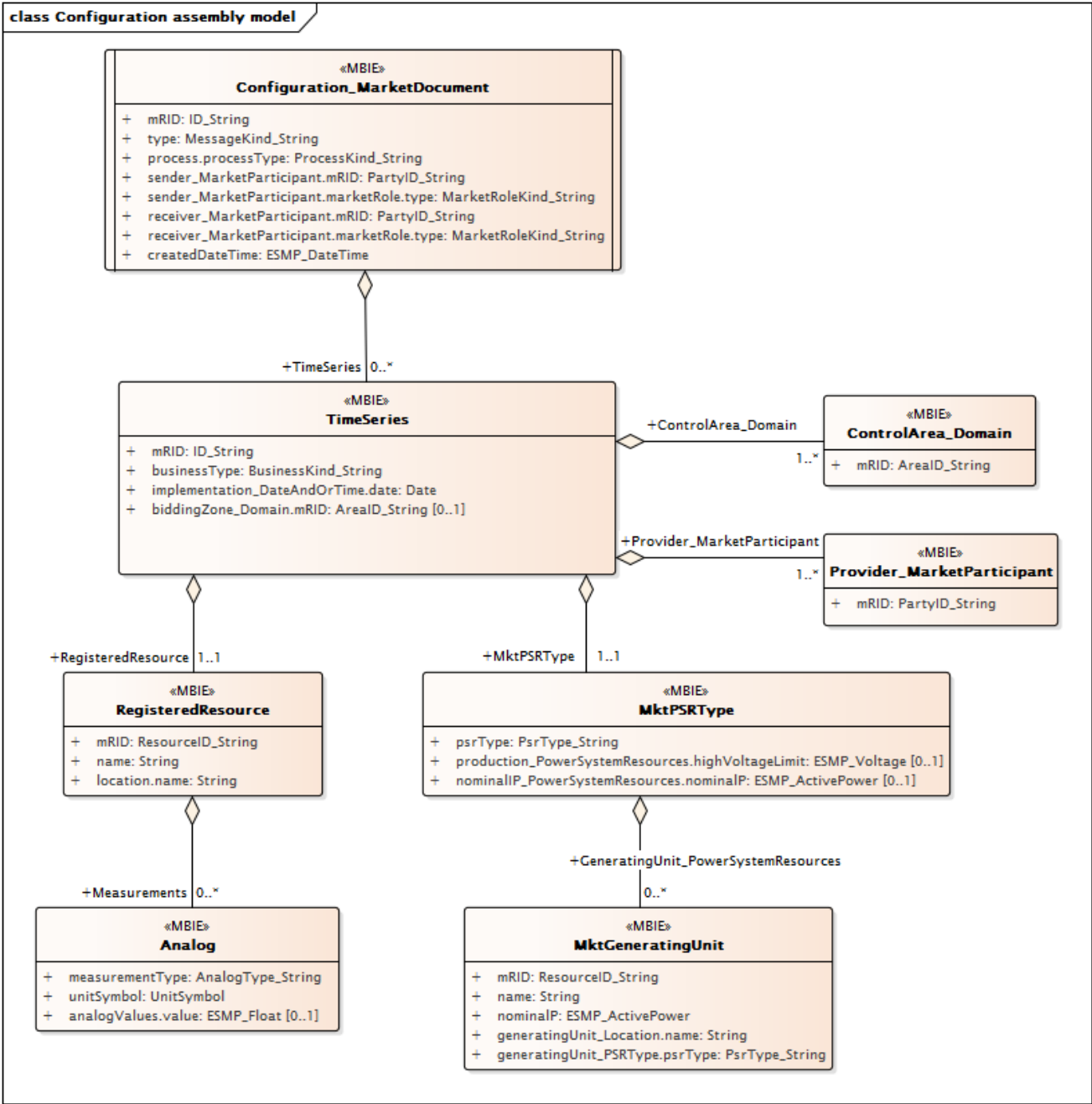


FIGURE 5 - CONFIGURATION ASSEMBLY MODEL

4.2.2 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
Analog	TC57CIM::IEC61970::Base::Meas::Analog
Configuration_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
ControlArea_Domain	TC57CIM::IEC62325::MarketManagement::Domain
MktGeneratingUnit	TC57CIM::IEC62325::MarketCommon::MktGeneratingUnit
MktPSRType	TC57CIM::IEC62325::MarketManagement::MktPSRType
Provider_MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
RegisteredResource	TC57CIM::IEC62325::MarketCommon::RegisteredResource
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries

4.2.3 DETAILED CONFIGURATION ASSEMBLY MODEL

4.2.3.1 CONFIGURATION_MARKETDOCUMENT ROOT CLASS

An electronic document containing the information necessary to satisfy the requirements of the configuration management business process.

The Configuration_MarketDocument is used to transmit the information necessary to permit the validation of production units, transmission assets and consumption units when market information is provided by the data providers to the market information aggregator for publication.

The Configuration_MarketDocument is also used to transmit modifications or deactivations that evolve the initial configuration information over time.

Table 3 shows all attributes of Configuration_MarketDocument.

Table 3 - Attributes of Configuration assembly model::Configuration_MarketDocument

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	Unique identification of the configuration document being exchanged within a given 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.

Order	mult.	Attribute name / Attribute type	Description
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.

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

Table 4 - Association ends of Configuration assembly model::Configuration_MarketDocument with other classes

Order	mult.	Class name / Role	Description
8	[0..*]	TimeSeries TimeSeries	Association Based On: Configuration contextual model::TimeSeries.TimeSeries[0..*] ----- Configuration contextual model::Configuration_MarketDocument.[]

4.2.3.2 ANALOG

Analog represents an analog Measurement.

Table 5 shows all attributes of Analog.

Table 5 - Attributes of Configuration assembly model::Analog

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	measurementType AnalogType_String	Specifies the type of measurement. For example, this specifies if the measurement represents an indoor temperature, outdoor temperature, bus voltage, line flow, etc.
1	[1..1]	unitSymbol UnitSymbol	The unit of measure of the measured quantity.
2	[0..1]	analogValues.value ESMP_Float	The value to supervise. --- Measurement to which this value is connected.

4.2.3.3 CONTROLAREA_DOMAIN

A domain covering a number of related objects, such as market balance area, grid area, borders etc.

Table 6 shows all attributes of ControlArea_Domain.

Table 6 - Attributes of Configuration assembly model::ControlArea_Domain

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID AreaID_String	The unique identification of the domain.

4.2.3.4 MKTGENERATINGUNIT

The information about a generating unit.

Table 7 shows all attributes of MktGeneratingUnit.

Table 7 - Attributes of Configuration assembly model::MktGeneratingUnit

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ResourceID_String	The unique identification of the generation unit.
1	[1..1]	name String	The name is any free human readable and possibly non unique text naming the object.
2	[1..1]	nominalP ESMP_ActivePower	The nominal power of the generating unit.
3	[1..1]	generatingUnit_Location.name String	The name is any free human readable and possibly non unique text naming the object. --- Location of the MktGeneratingUnit.
4	[1..1]	generatingUnit_PSRTYPE.psrType PsrType_String	The coded type of a power system resource. --- The coded type of the generating unit.

4.2.3.5 MKTPSRTYPE

The type of a power system resource

Table 8 shows all attributes of MktPSRType.

Table 8 - Attributes of Configuration assembly model::MktPSRType

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	psrType PsrType_String	The coded type of a power system resource.
1	[0..1]	production_PowerSystemResources.highVoltageLimit ESMP_Voltage	The bus bar's high voltage limit --- The voltage level of the RegisteredResource having the MktPSRType.
2	[0..1]	nominalIP_PowerSystemResources.nominalP ESMP_ActivePower	The nominal power of a production or consumption unit. --- The installed capacity of a production unit or a consumption unit.

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

Table 9 - Association ends of Configuration assembly model::MktPSRType with other classes

Order	mult.	Class name / Role	Description
3	[0..*]	MktGeneratingUnit GeneratingUnit_PowerSystemResources	The generating unit(s) associated with the RegisteredResource of the MktPSRType. Association Based On: Configuration contextual model::MktGeneratingUnit.GeneratingUnit_PowerSystemResources[0..*] ----- Configuration contextual model::MktPSRType.[]

4.2.3.6 PROVIDER_MARKETPARTICIPANT

The identification of the party that provides the information concerning the resource object defined in the time series.

Table 10 shows all attributes of Provider_MarketParticipant.

Table 10 - Attributes of Configuration assembly model::Provider_MarketParticipant

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID PartyID_String	The identification of a party in the energy market.

4.2.3.7 REGISTEREDRESOURCE

A resource that is registered through the market participant registration system. Examples include generating unit, load, and non-physical generator or load.

Table 11 shows all attributes of RegisteredResource.

Table 11 - Attributes of Configuration assembly model::RegisteredResource

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ResourceID_String	The unique identification of a resource.
1	[1..1]	name String	The name is any free human readable and possibly non unique text naming the object.
2	[1..1]	location.name String	The name is any free human readable and possibly non unique text naming the object. --- Location of this RegisteredResource.

Table 12 shows all association ends of RegisteredResource with other classes.

Table 12 - Association ends of Configuration assembly model::RegisteredResource with other classes

Order	mult.	Class name / Role	Description
3	[0..*]	Analog Measurements	The power system resource that contains the measurement. Association Based On: Configuration contextual model::Analog.Measurements[0..*] ----- Configuration contextual model::RegisteredResource.[]

4.2.3.8 TIMESERIES

A time series shall exist to describe a specific production unit, generating unit, transmission asset or consumption unit. It conveys the data related to the configuration of the defined information.

Table 13 shows all attributes of TimeSeries.

Table 13 - Attributes of Configuration assembly model::TimeSeries

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	A unique identification of the time series.
1	[1..1]	businessType BusinessKind_String	The identification of the nature of the time series.
2	[1..1]	implementation_DateAndOrTime.date Date	The date as "YYYY-MM-DD", which conforms with ISO 8601. --- The date of application of the information provided. This identifies the date of the effective implementation of the information provided in the time series. In the case of a creation this signifies that the object will be operational at this date. In the case of modification this signifies that the changes will be operational at this date. In the case of a deactivation this signifies that the deactivation will be effective at this date.
3	[0..1]	biddingZone_Domain.mRID AreaID_String	The unique identification of the domain. --- The domain associated with a TimeSeries.

Table 14 shows all association ends of TimeSeries with other classes.

Table 14 - Association ends of Configuration assembly model::TimeSeries with other classes

Order	mult.	Class name / Role	Description
4	[1..1]	RegisteredResource RegisteredResource	The identification of a resource associated with a TimeSeries. Association Based On: Configuration contextual model::RegisteredResource.RegisteredResource[1..1] ----- Configuration contextual model::TimeSeries.[]

Order	mult.	Class name / Role	Description
5	[1..*]	ControlArea_Domain ControlArea_Domain	The domain where the resource object associated with a TimeSeries resides. Association Based On: Configuration contextual model::ControlArea_Domain.ControlArea_Domain[1..*] ----- Configuration contextual model::TimeSeries.[]
6	[1..*]	Provider_MarketParticipant Provider_MarketParticipant	The identification of the party that provides the information concerning the resource object defined in the time series. Association Based On: Configuration contextual model::Provider_MarketParticipant.Provider_MarketParticipant[1..*] ----- Configuration contextual model::TimeSeries.[]
7	[1..1]	MktPSRType MktPSRType	The identification of the type of resource associated with a TimeSeries. Association Based On: Configuration contextual model::TimeSeries.[] ----- Configuration contextual model::MktPSRType.MktPSRType[1..1]

4.2.4 DATATYPES

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

AnalogType_String datatype, codelist AnalogTypeList
ArealID_String datatype, codelist CodingSchemeTypeList
BusinessKind_String datatype, codelist BusinessTypeList
ESMP_ActivePower datatype
ESMP_DateTime datatype
ESMP_Float datatype
ESMP_Voltage datatype
ID_String datatype
MarketRoleKind_String datatype, codelist RoleTypeList
MessageKind_String datatype, codelist MessageTypeList
PartyID_String datatype, codelist CodingSchemeTypeList
ProcessKind_String datatype, codelist ProcessTypeList
PsrType_String datatype, codelist AssetTypeList
ResourceID_String datatype, codelist CodingSchemeTypeList
UnitSymbol datatype, codelist UnitSymbol