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European Network of
Transmission System Operators
for Electricity

ENTSO-E TRANSMISSION TRANSPARENCY PROCESS IMPLEMENTATION GUIDE

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VERSION 3 RELEASE 0

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Revision History

Version	Release	Date	Paragraph	Comments
1	0	2013-06-24		First version.
2	0	2013-09-12		Following the Manual of Procedure review
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. Addition of reference to 451-3 concerning the publication document. Addition of Winners_MarketParticipant class Dependency table clarification. Approved by Market Committee on 2014-02-04.

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. (note: all articles mentioned in the current document come from this regulation).
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

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8. IEC 62325-450, Profile and context modeling rules.
9. IEC 62361 part 100, Naming and design rules for CIM profiles to XML schema mapping.
10. IEC 62325-451-1, Framework for energy market communications The acknowledgement document.
11. IEC 62325-451-3, Transmission capacity allocation and nomination process. The publication document (note: the publication document schema shall be the schema generated in the context of the ECAN process. The description is provided in this document for information).
12. The introduction of different time series possibilities (CurveType) within ENTSO-E electronic documents.
13. Estimated Net Transfer Capacity (NTC) Publication Business Requirement Specification v1r0

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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 for the publication of the transmission data as defined in the regulation, the EMFIP detailed description and the EMFIP Business Requirements Specification.

Its purpose is to facilitate the provision of transmission 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 transmission 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.

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2 THE TRANSMISSION PROCESS OVERVIEW

2.1 BREAKDOWN OF THE TRANSMISSION PROCESS

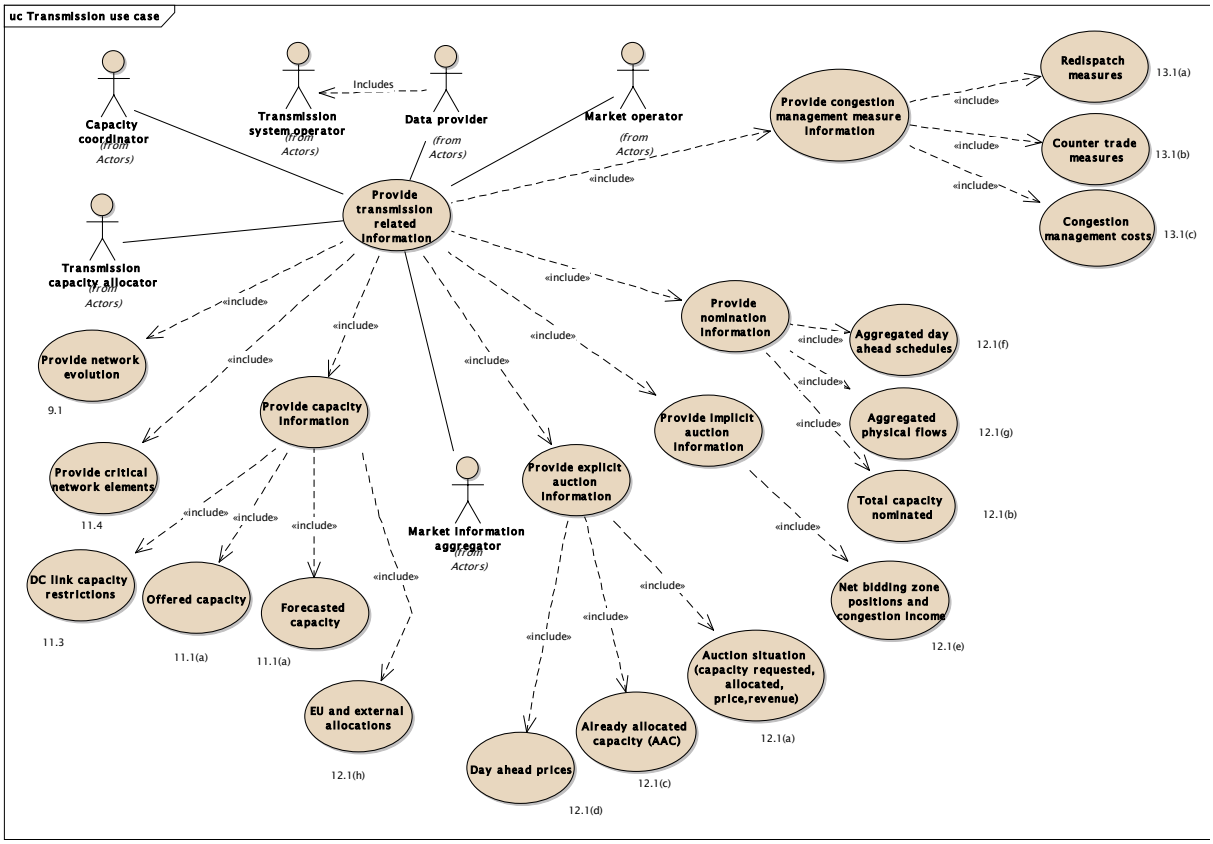


FIGURE 1: INFORMATION EXCHANGE FOR THE PROVISION OF TRANSMISSION INFORMATION

The provision of transmission information is relatively straightforward and is basically broken down into seven sub use cases and one publication use case. The seven sub use cases are as follows:

1. Provide network evolution information
2. Provide critical network elements.
3. Provide capacity information. This in its own right can be broken down into three further sub use cases:
    a. DC link capacity restrictions
    b. Offered capacity
    c. Forecasted capacity
    d. EU and external allocations

4. Provide explicit auction information
    a. Day ahead prices
    b. Already allocated capacity
    c. Auction situation
5. Provide implicit auction information
6. Provide nomination information
    a. Total capacity nominated
    b. Aggregated physical flows
    c. Aggregated day ahead schedules
7. Provide congestion management measure information.
    a. Redispatch measures
    b. Counter trade measures
    c. Congestion management costs

The platform makes the information provided in the seven initial use cases available to the public as soon as any information is received through the eighth use case “provide transmission results”.

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3 THE TRANSMISSION PROCESSING SEQUENCE

3.1 GENERIC PROCESSING SEQUENCE

The transmission process basically follows the periodicities defined in the regulation.

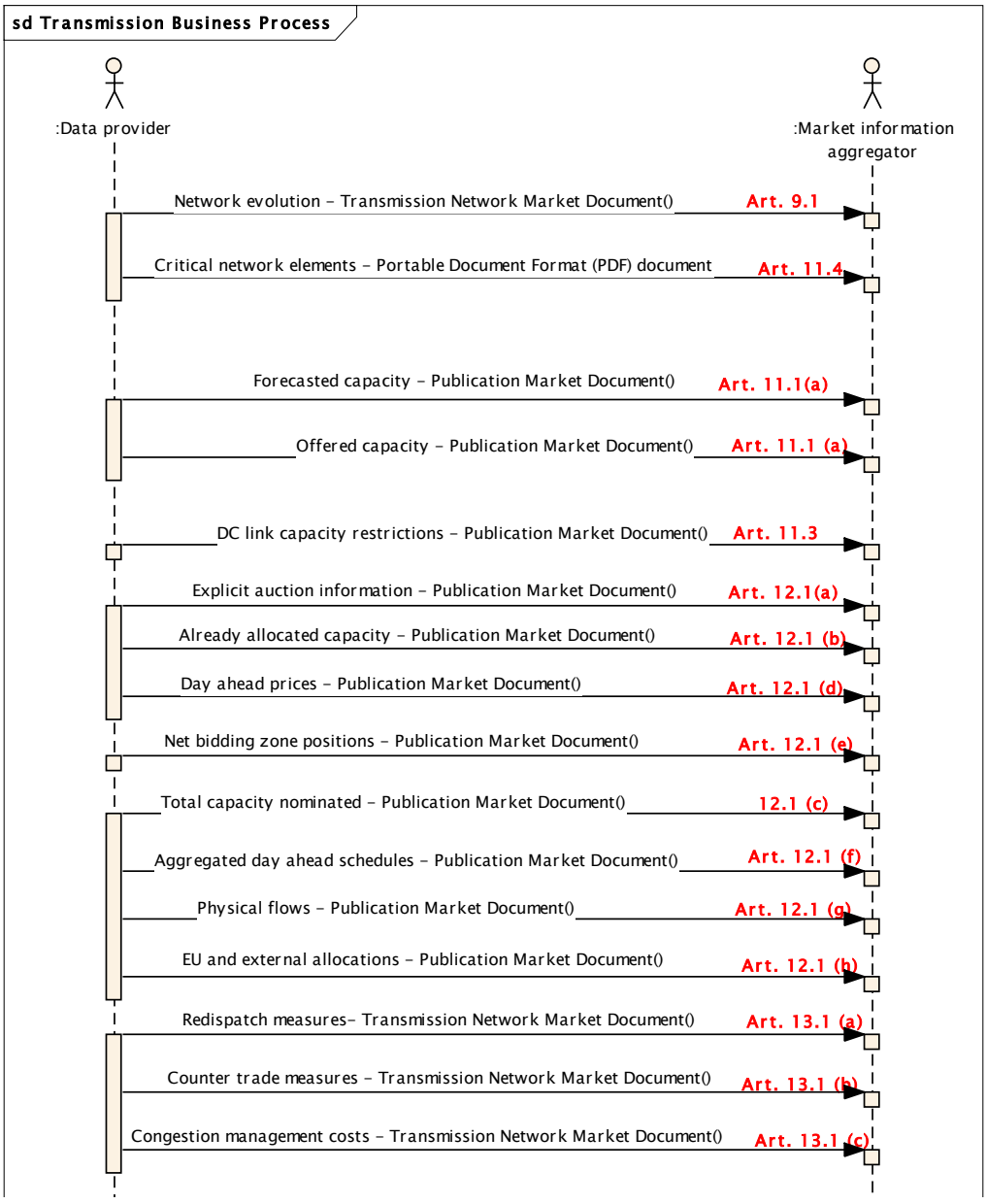


FIGURE 2: GENERIC TRANSMISSION PROCESS SEQUENCE

Following the reception of a transmission network market document or a publication market document, the acknowledgement business process as per IEC 62325-451-1 shall be applied.

In particular, the Data provider shall receive an acknowledgement stating whether the document has been accepted or rejected and the reasons for the rejection.

Note: A Portable Document Format (PDF) document is a freeform document for which the content or structure is not defined in this document. It can be assimilated to a picture of a Microsoft Word document.

4 TRANSMISSION NETWORK MARKET DOCUMENT IMPLEMENTATION

4.1 CONTEXTUAL MODEL

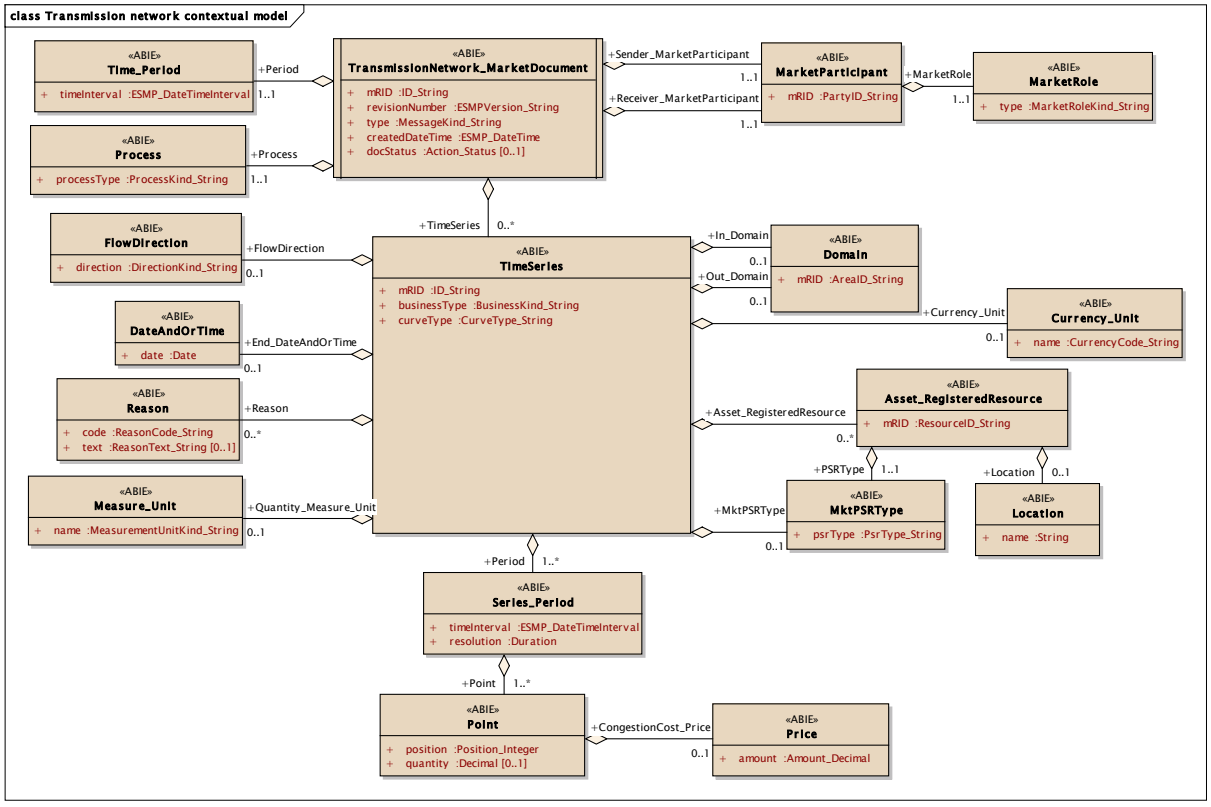


FIGURE 3: TRANSMISSION NETWORK MARKET DOCUMENT CONTEXTUAL MODEL

4.2 INFORMATION MODEL

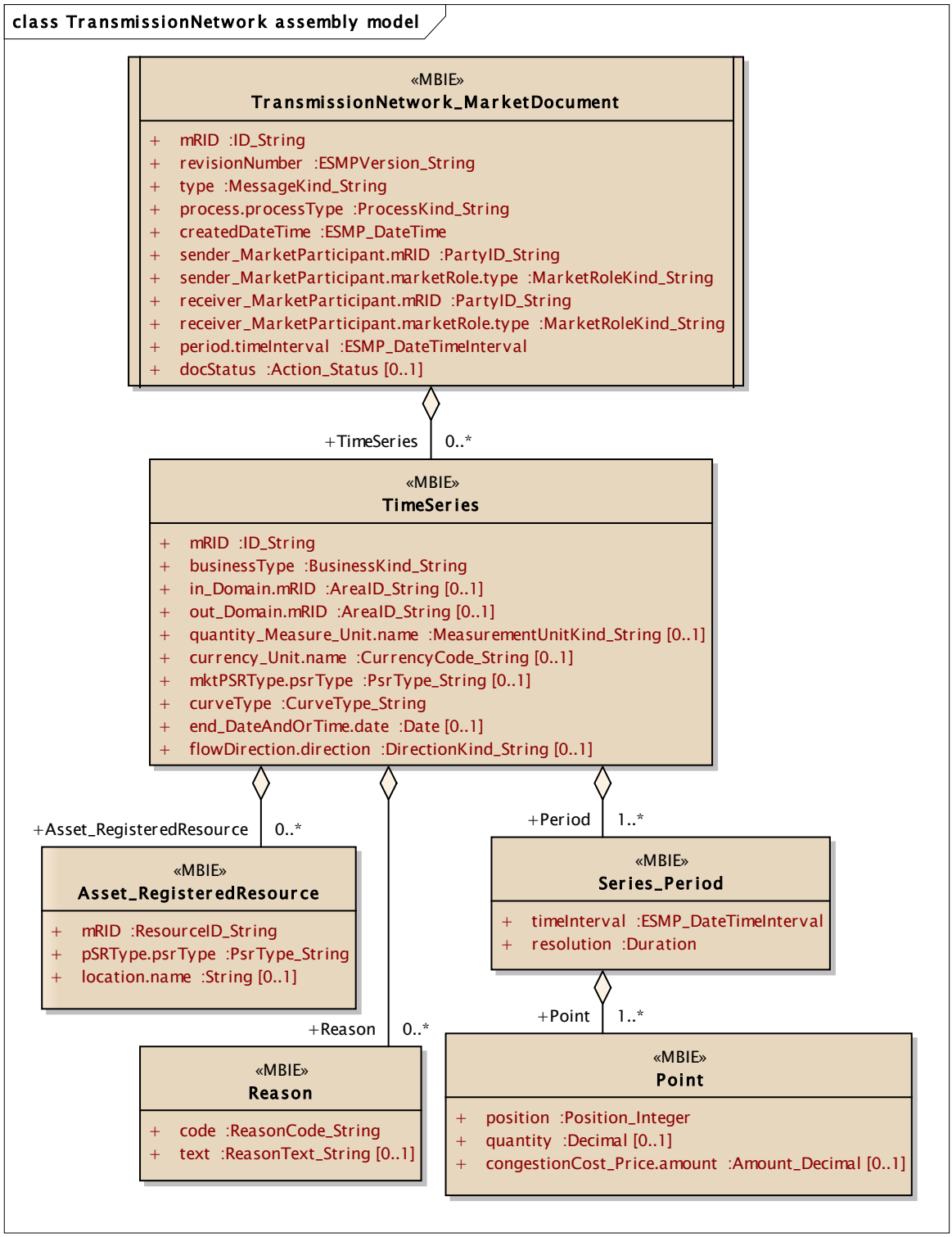


FIGURE 4 TRANSMISSION NETWORK MARKET DOCUMENT INFORMATION MODEL

4.3 RULES GOVERNING THE TRANSMISSION NETWORK MARKET DOCUMENT

4.3.1 THE TRANSMISSION OF NETWORK INFORMATION

The Transmission Network Market Document is used to transmit the transmission network information concerning future changes to the network elements including expansion and dismantling of the transmission grids over a three year period.

The Transmission Network Market Document is also used to transmit information relating to congestion management.

A Transmission Network Market Document may be revised through the use of the revision number. The latest revision of the document provides the current state of the network information.

4.3.2 STATUS INFORMATION

Network information when transmitted may have two states, either it is active or it has been cancelled.

Two other cases are foreseen:

- A status of cancelled where the planned network evolution will not take place,
- A status of withdrawn where there has been an error in the transmission of the information (in this case, a "proper" reason should be given).

4.3.3 DOCUMENT INSTANCE IMPLEMENTATION

The XML documents described in this implementation guide are to be used for the upload of information to the EMFIP platform; they may also be used for the download of information to market participants in order to enable automatic processing of the information within their systems.

Consequently attributes that describe basic configuration information (such as name, voltage level, etc.) have been included in the XML documents as optional attributes that may be used only in the case where information is downloaded from the platform. This information shall not be used in the case where information is uploaded to the platform.

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253 ## 4.3.4 DOCUMENT ATTRIBUTE DEPENDENCIES

Transmission Network Dependency Table				
Attribute involved	Article 9.1 Transmission infrastructure	Article 13 (a) Redispatch	Article 13 (b) Countertrading	Article 13 (c) Congestion costs
type	A90 Interconnector network expansion	A63 Redispatch notice	A91 Counter trade notice	A92 Congestion costs
process.processType	A35 Network information	A16 Realised	A16 Realised	A16 Realised
businessType	B01 Interconnector network evolution B02 interconnector network dismantling	A46 System Operator redispatching A85 Internal redispatch	B03 Countertrade	B04 Congestion costs B03 Countertrade A46 System Operator redispatch
in_Domain.mRID	Used	Used	Used	In_Domain is the same as Out_Domain
out_Domain.mRID	Used	Used	Used	Out_Domain is the same as In_Domain
measurement_Unit.name	MAW	MAW	MAW	Not used
currency_Unit.name	Not used	Not used	Not used	Used
mktPSRType.psrType	Not used	Used	Not used	Not used
curveType	Used	Used	Used	Used
end_Date.date	Used	Not used	Not used	Not used
flowDirection	Not used	Used	used	Not used
Asset_RegisteredResource.mRID	Used	Used	Not used	Not used
Asset_RegisteredResource.asset_PSRType.psrType	Used only for download transmissions Not used for upload transmissions	Used only for download transmissions Not used for upload transmissions	Not used	Not used
Asset_RegisteredResource.Location.Name	Used only for download transmissions Not used for upload transmissions	Used only for download transmissions Not used for upload transmissions	Not used	Not used
resolution	Used	PT15M; PT30M; PT60M	PT15M; PT30M; PT60M	P1M
timeInterval	Used	Used	Used	Used
position	Used	Used	Used	Used
quantity	impact	impact	impact	Not used
congestionCost.amount	Not used	Not used	Not used	Used

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255 **FIGURE 5: TRANSMISSION NETWORK DEPENDENDENCY TABLE**

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256 ## 4.4 TRANSMISSIONNETWORK_MARKETDOCUMENT CLASS

257 SPECIFICATION

258 ### 4.4.1 MRID

ACTION	DESCRIPTION
Definition of element	Unique identification of the document being exchanged within a business process flow.
Description	A Transmission Network Market Document describes for a three year period the evolution of the network or on yearly basis critical network elements. Each document must have a unique identification assigned by the sender of the document for all transmissions to the receiver. The document may also be used to provide congestion management information. All additions, modifications, or suppressions concerning the transmission network must use the same identification.
Size	The identification of a document may not exceed 35 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None

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4.4.2 REVISIONNUMBER

ACTION	DESCRIPTION
Definition of element	Identification of the version that distinguishes one evolution of a document from another.
Description	The document version is used to identify a given version of a transmission network document. The first version number for a given document identification shall normally be 1. The document version number must be incremented for each retransmission of a document that contains changes to the previous version. The receiving system should ensure that the version number for a document is superior to the previous version number received. Every document version has a creation date and time that could be effectively used as the document timestamp since a new document version cancels and replaces the previous document version.
Size	A version number may not exceed 3 numeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

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4.4.3 TYPE

ACTION	DESCRIPTION
Definition of element	The coded type of a document. The document type describes the principal characteristic of the document.
Description	The document type identifies the information flow characteristics. ***Permitted codes are:*** A90 = Interconnector network expansion A63 = Redispatch notice A91 = Counter trade notice A92 = Congestion costs
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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261 ### 4.4.4 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:*** A35 = Network information A16 = Realised
Size	The process type value may not exceed 3 alphanumeric characters (no blanks).
Applicability	This information is mandatory.
Dependence requirements	None.

262 ### 4.4.5 CREATEDDATETIME

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.

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4.4.6 SENDER_MARKETPARTICIPANT.MRID

ACTION	DESCRIPTION
Definition of element	The identification of a party in the energy market. --- The 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.

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4.4.7 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 A07 = Transmission Capacity Allocator A11 = Market Operator A39 = Data Provider A32 = Market Information Aggregator A36 = Capacity Coordinator
Size	The maximum length of a sender role is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

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265 4.4.8 RECEIVER_MARKETPARTICIPANT.MRID

ACTION	DESCRIPTION
Definition of element	The identification of a party in the energy market. --- The 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.

266 4.4.9 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 A33 = Information receiver
Size	The maximum length of a receiver role is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

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267 4.4.10 PERIOD.TIMEINTERVAL

ACTION	DESCRIPTION
Definition of element	The start and end date and time for a given interval. --- The beginning and ending date and time of the period that the transmission network document is covering
Description	This information provides the start and end date and time of the period the transmission network document is covering.
Size	Both the start and the end date and time must be expressed in UTC as YYYY-MM-DDTHH:MMZ
Applicability	This information is mandatory.
Dependence requirements	None.

268 4.4.11 DOCSTATUS

ACTION	DESCRIPTION
Definition of element	Identification of the condition or position of the document with regard to its standing.
Description	This information is only provided to indicate the withdrawal or cancellation of a transmission network document, The cancelled status only applies to transmission network information. The withdrawn status is only used to indicate that a transmission network document should be removed. The permitted code of this information is: A09 = Cancelled A13 = Withdrawn. Note: In the case of this document the term “cancelled” refers to the cancellation of a transmission network document. The term “withdrawn” refers to a transmission network document that is erroneous and has to be removed from the transparency platform.
Size	The maximum length of a doc status is 3 alphanumeric characters.
Applicability	This information is dependent.
Dependence requirements	This information is only provided if a transmission network document has been withdrawn or cancelled.

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4.5 RULES GOVERNING THE TIME SERIES CLASS

A time series shall exist to describe a specific piece of a transmission network structure or congestion management information. It conveys the data related to the evolution of a network or provides congestion management measures. It identifies the impact on cross zonal capacity per direction.

4.5.1 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.

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275 4.5.2 BUSINESSTYPE

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:*** B01 = Interconnector network evolution B02 = Interconnector network dismantling A46 =System operator redispatching A85 = Internal redispatch B03 = Counter trade B04 = Congestion costs Note: For article 13(c) it is necessary to distinguish between costs for redispatching (A46), countertrading (B03) and any other remedial actions. The other remedial actions are the difference between the total congestion costs (B04) and the total redispatch and counter trade costs (i.e. B04 – (A46 + B03)).
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

276 4.5.3 IN_DOMAIN.MRID

ACTION	DESCRIPTION
Definition of element	Unique identification of the domain. --- The domain where energy is going associated with a TimeSeries
Description	The identification of the domain where the energy is going for which the transmission network information is being provided. 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.

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4.5.4 OUT_DOMAIN.MRID

ACTION	DESCRIPTION
Definition of element	Unique identification of the domain. --- The domain where energy is coming from associated with a TimeSeries.
Description	The identification of the domain where the energy is coming from for which the transmission network information is being provided. 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.

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4.5.5 QUANTITY_MEASURE_UNIT.NAME

ACTION	DESCRIPTION
Definition of element	Identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure associated with the quantities in a TimeSeries.
Description	The unit of measurement used for the quantities expressed within the time series. Possible units of measure codes are: MAW = Megawatts
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

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279 ### 4.5.6 CURRENCY_UNIT.NAME

ACTION	DESCRIPTION
Definition of element	The identification of the formal code for a currency (ISO 4217). --- The currency associated with a TimeSeries.
Description	The currency used for the monetary amount expressed within the document. **Refer to ENTSO-E Code list document for valid codes.**
Size	The maximum length of this information is 3 alphanumeric characters respecting the standard ISO 4217.
Applicability	This information is dependent
Dependence requirements	This information is provided in accordance with the dependency table.

280 ### 4.5.7 MKTPSRTYPE.PSRTYPE

ACTION	DESCRIPTION
Definition of element	The coded type of a power system resource. --- The classification for a type of network element.
Description	This represents the coded identification of a type of network element. 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 dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

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281 4.5.8 CURVETYPE

ACTION	DESCRIPTION
Definition of element	The identification of the coded representation of the type of curve being described.
Description	This represents the coded identification of the curve that is described in the Period and Interval class. Possible CurveType codes are: A01 = Sequential fixed size block A02 = Point A03 = Variable sized blocks
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

282 4.5.9 END_DATEANDORTIME.DATE

ACTION	DESCRIPTION
Definition of element	Date as "yyyy-mm-dd", which conforms with ISO 8601. --- An end date associated with a TimeSeries.
Description	This identifies the date of the change of the network evolution being described in the time series.
Size	The date must be expressed as YYYY-MM-DD.
Applicability	This information is dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

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4.5.10 FLOWDIRECTION.DIRECTION

ACTION	DESCRIPTION
Definition of element	The coded identification of the direction of energy flow. --- The flow direction associated with a TimeSeries
Description	This identifies the direction of the intended flow of the congestion management action. ***Permitted codes are:*** A01 = Up. A02 = Down
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

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4.6 RULES GOVERNING THE ASSET_REGISTEREDRESOURCE CLASS

An asset registered resource class shall exist to identify the transmission assets involved in the document.

Assets will be sent in accordance with the dependency table.

4.6.1 MRID

ACTION	DESCRIPTION
Definition of element	The unique identification of a resource.
Description	The identification of a transmission infrastructure asset 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 dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

4.6.2 PSRTYPE.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.

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4.6.3 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 asset.
Description	The name of the location of the asset for which the transmission network information is being provided.
Size	The maximum length of the name is 35 alphanumeric characters.
Applicability	This information is dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

4.7 RULES GOVERNING THE SERIES_PERIOD CLASS

The series period class provides the market time unit information for the the impact on cross zonal capacity.

At least one series period class shall exist.

The number of periods within a time series as characterized by the resolution must completely cover the period's time interval.

A sender's minimal resolution must respect one of the resolutions as defined in the dependency table.

4.7.1 TIMEINTERVAL

ACTION	DESCRIPTION
Definition of element	The start and end time of the period.
Description	This information provides the start and end date and time of the period being reported.
Size	Both the start and the end date and time must be expressed in UTC as YYYY-MM-DDTHH:MMZ
Applicability	This information is mandatory.
Dependence requirements	None.

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4.7.2 RESOLUTION

ACTION	DESCRIPTION
Definition of element	The definition of the number of units of time that compose an individual step within a period.
Description	This information defines the resolution of a single period.
Size	The Resolution is expressed in compliance with ISO 8601 and shall be equal to: • P1Y if the resolution is yearly • P1M if the resolution is monthly • P7D if the resolution is weekly • PT60M if the resolution is hourly • PT30M if the resolution is half hourly • PT15M if the resolution is quarter hourly
Applicability	This information is mandatory.
Dependence requirements	None.

4.8 RULES GOVERNING THE POINT CLASS

The Point class contains the relative position within a time interval period and the quantity associated with that position.

The position must respect the rules for position generation as defined in [11] ("*The introduction of different time series possibilities (CurveType) within ENTSO-E electronic documents*").

Any leading zeros in a position shall be suppressed.

Negative values are not allowed in time series quantities

Leading zeros in a quantity shall be suppressed before transmission.

4.8.1 POSITION

ACTION	DESCRIPTION
Definition of element	A sequential value representing the relative position within a given time interval.
Description	This information provides the relative position of a period within an interval.
Size	The relative position must be expressed as a numeric integer value beginning with 1. All leading zeros must be suppressed. The maximum number of characters is 6.
Applicability	This information is mandatory.
Dependence requirements	None.

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311 4.8.2 QUANTITY

ACTION	DESCRIPTION
Definition of element	Principal quantity identified for a point.
Description	This information defines the quantity related to the impact on cross zonal capacity. 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 (decimal mark included). The number of decimal places identifying the fractional part of the quantity depends on local market rules.
Applicability	This information is dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

312 4.8.3 CONGESTIONCOST_PRICE.AMOUNT

ACTION	DESCRIPTION
Definition of element	A number of monetary units specified in a unit of currency. --- The congestion costs related to a congestion management action.
Description	This identifies the cost of resolving a congestion issue.
Size	The maximum length of this information is 17 numeric characters (decimal mark included). The number of decimal places identifying the fractional part of the amount depends on local market rules.
Applicability	This information is dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

313 4.9 RULES GOVERNING THE REASON CLASS

314 The Reason Class provides the reasons for the network information being described.

315 It may be provided at the detailed level if specific information is provided for each time series.
316 This normally uses exclusively the code A95, complementary information.

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317 4.9.1 CODE

ACTION	DESCRIPTION
Definition of element	The motivation of an act in coded form.
Description	The reason code identifying that complementary information about the network information is being provided. • A95: complementary information (this requires the use of the ReasonText attribute.) **Refer to ENTSO-E Core Component Code list document for the valid list of codes.**
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

318 4.9.2 TEXT

ACTION	DESCRIPTION
Definition of element	The textual explanation corresponding to the reason code.
Description	This provides additional textual information concerning the network information which may be provided as necessary.
Size	The maximum length of this information is 512 alphanumeric characters.
Applicability	This information is dependent.
Dependence requirements	Used only if the reason code is insufficient to identify a reason information being provided.

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5 PUBLICATION MARKET DOCUMENT IMPLEMENTATION

5.1 CONTEXTUAL MODEL

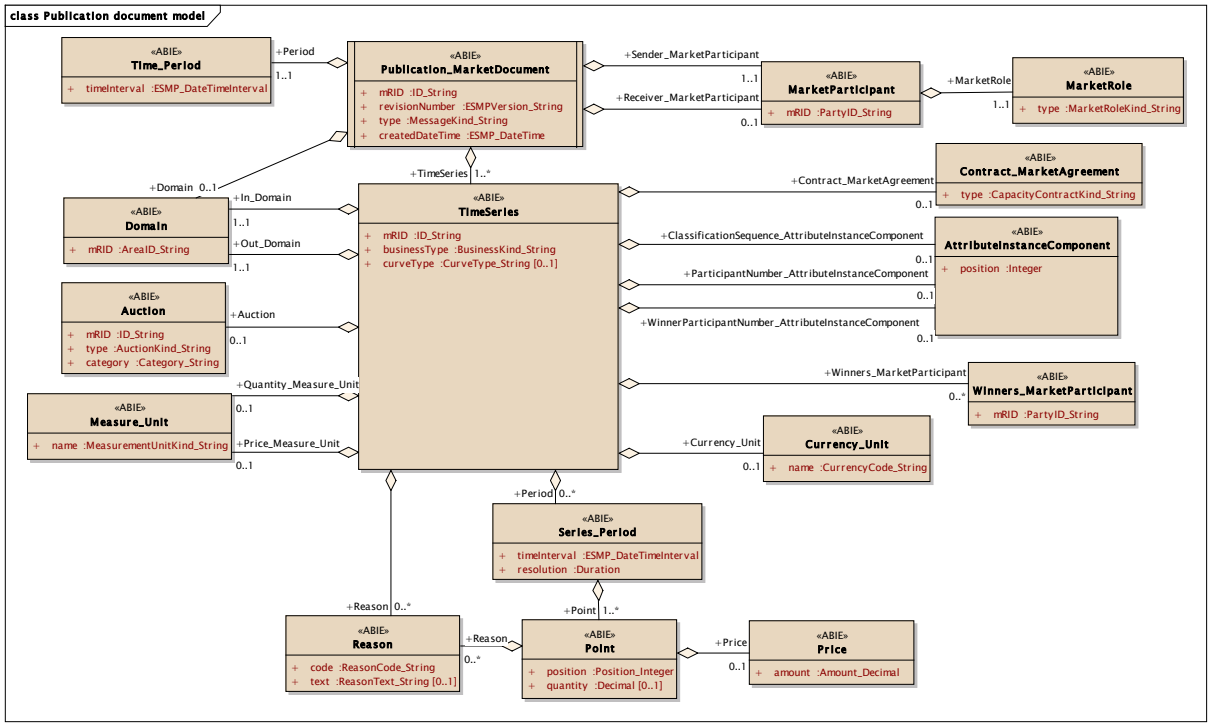


FIGURE 6: PUBLICATION MARKET DOCUMENT CONTEXTUAL MODEL

5.2 INFORMATION MODEL

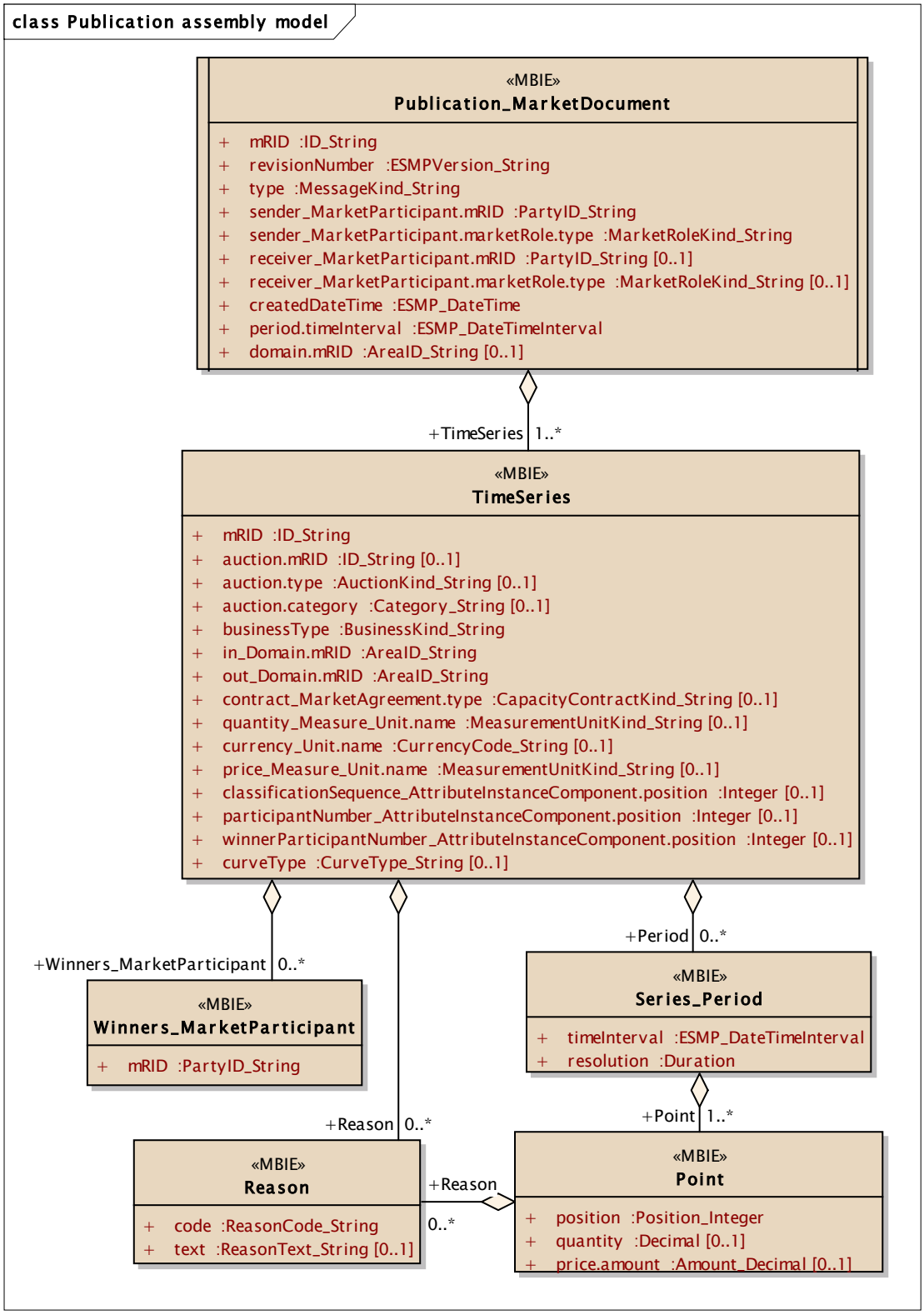


FIGURE 7 PUBLICATION MARKET DOCUMENT INFORMATION MODEL

5.3 RULES GOVERNING THE PUBLICATION MARKET DOCUMENT

5.3.1 THE TRANSMISSION OF PUBLICATION INFORMATION

All publication information for one of the given categories of information should be transmitted in a single document with the identification of the document being used as the identification of the publication in question.

A Publication Market Document may be revised through the use of the revision number. The latest revision of the document provides the current state of the publication information being reported and cancels and replaces all previous versions of the document in question. It should be noted that every document version has a creation date and time that could be effectively used as the document timestamp.

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5.3.2 DOCUMENT ATTRIBUTE DEPENDENCIES

Publication Market Document Article 11			
Attribute involved	11.1(a) Information relating to the estimation of cross border capacity	11.1(a) bis Information relating to the offer of cross border capacity	11.3 Intraday transit limits
type	A61 Estimated capacity	A31 Agreed Capacity	A93 DC link capacity
Receiver market participant and role	Used	Used	Used
Period_TimeInterval	The period will define whether the document refers to yearly, monthly, weekly, or daily information	Used	Used
domain	Not used	Not used	Not used
auction.mRID	Not used	used if explicit auction	Not used
auction.type	Not used	A01 Implicit auction A02 Explicit auction	Not used
businessType	A27 NTC (Estimated capacity)	A31 offered capacity	B06 = DC link constraint
in_Domain.mRID	In bidding zone	In bidding zone	In bidding zone
out_Domain_mRID	Out bidding Zone	Out bidding Zone	Out bidding Zone
contract_MarketAgreementType	Not used	Used	Not used
quantity_MeasureUnit.name	MAW	MAW	MAW
currency_Unit.name	Not used	Not used	Not used
price_MeasureUnit.name	Not used	Not used	Not used
auction.category	Not used	used if explicit auction	Not used
classificationSequence_AttributeInstanceComponent.position	Not used	used if explicit auction	Not used
participantNumber_AttributeInstanceComponent.position	Not used	Not used	Not used
winnerParticipantNumber__AttributeInstanceComponent.position	Not used	Not used	Not used
curveType	Used	Used	Used
resolution	P1M; P1D; PT60M; PT30M; PT15M	P1Y; P1M; P7D; P1D; PT60M; PT30M; PT15M	PT60M; PT30M; PT15M
quantity	Used	Used	Used Note: a negative signed value is possible.
priceAmount	Not used	Not used	Not used

FIGURE 8: PUBLICATION DEPENDENDENCY TABLE FOR ARTICLE 11

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Publication Market Document - Article 12								
Attribute involved	12.1(a) Explicit allocation information	12.1(b) Total capacity nominated	12.1 (c) Total capacity already allocated	12.1(d) Day ahead prices	12.1(e) Implicit auction net positions and congestion income	12.1(f) Scheduled day ahead commercial exchanges	12.1(g) Physical flows	12.1(h) Capacity allocated outside EU
type	A25 allocation results	A26 capacity document	A19 capacity for resale	A44 price document	A25 allocation results	A09 finalised schedules	A11 Aggregated energy data report	A94 non EU allocations
Receiver market participant and role	Used	Used	Used	Used	Used	Used	Used	Used
domain	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used
auction.mRID	Used	Not used	Used	Not used	Not used	Not used	Not used	Used
auction.type	A02 Explicit auction	Not used	A02 Explicit auction	Not used	A01 implicit	Not used	Not used	A02 explicit auction
businessType	A43 Requested capacity (without price) B05 Capacity allocated (including price) B07 auction revenue	B08 total nominated capacity	A41 released AAC	A62 spot price	B09 net position B10 congestion income (shall be in a differenct document)	A06 external trade without explicit capacity	A66 energy flow	A34 Capacity rights
in_Domain.mRID	In bidding zone	In bidding zone	In bidding zone	In bidding zone (same as out bidding zone)	In bidding zone (depending on direction this shall be the "Regional Market Area" or the "Bidding zone" in the case of net position. In the case of congestion income it shall be the same as the out_Domain)	In bidding zone	In bidding zone	In bidding zone
out_Domain_mRID	Out bidding zone	Out bidding zone	Out bidding zone	Out bidding zone (same as in bidding zone)	Out bidding zone (depending on direction this shall be the "Regional Market Area" or the "Bidding zone" in the case of net position. In the case of congestion income it shall be the same as the in_Domain)	Out bidding zone	Out bidding zone	Out bidding zone
contract_MarketAgreementType	Used	Used only for upload transmissions	Used	Not used	Used	Not used	Not used	Used
quantity_MeasureUnit.name	MAW	MAW	MAW	Not used	MAW	MAW	MAW	MAW
currency_Unit.name	Used	Not used	Not used	Used	Used if price	Not used	Not used	Not used
price_MeasureUnit.name	MWH	Not used	Not used	MWH	MWH if price	Not used	Not used	Not used
auction.category	Used	used	Used only for upload transmissions	Not used	Not used	Not used	Not used	Used
classificationSequence_AttributeInstanceComponent.position	Used	Not used	Not used	Not used	Not used	Not used	Not used	May be used
participantNumber_AttributeInstanceComponent.position	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used
winnerParticipantNumber__AttributeInstanceComponent.position	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used
curveType	Used	Used	Used	Used	Used	Used	Used	Used
resolution	PT60M; PT30M; PT15M	PT60M; PT30M; PT15M	PT60M; PT30M; PT15M	PT60M; PT30M; PT15M	PT60M; PT30M; PT15M	PT60M; PT30M; PT15M	PT60M; PT30M; PT15M	P1Y; P1M; P7D; P1D; PT60M; PT30M; PT15M
quantity	Used	Used	Used	Not used	used in case of net position	Used	Used	used
priceAmount	Used	Not used	Not used	Used	used in case of congestion income	Not used	Not used	Not used
					Note in the case of net position the in bidding zone and the out bidding zone shall contain depending on direction the "Regional Market Area" and the "Bidding Zone".			
					Note in the case of congestion income the in and out bidding zones should always be the same.			

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341 **FIGURE 9: PUBLICATION DEPENDENDENCY TABLE FOR ARTICLE 12**

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343 ## 5.4 PUBLICATION MARKET DOCUMENT CLASS SPECIFICATION

344 ### 5.4.1 MRID

ACTION	DESCRIPTION
Definition of element	Unique identification of the document being exchanged within a business process flow.
Description	An Publication Market Document describes a specific transmission of information for publication and must have a unique identification assigned by the sender of the document for all transmissions to the receiver. All additions, modifications, or suppressions concerning the unavailability must use the same identification.
Size	The identification of a document may not exceed 35 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None

345 ### 5.4.2 REVISIONNUMBER

ACTION	DESCRIPTION
Definition of element	Identification of the version that distinguishes one evolution of a document from another.
Description	The document version is used to identify a given version of a publication document. The first version number for a given document identification shall normally be 1. The document version number must be incremented for each retransmission of a document that contains changes to the previous version. The receiving system should ensure that the version number for a document is superior to the previous version number received. Every document version has a creation date and time that could be effectively used as the document timestamp since a new document version cancels and replaces the previous document version.
Size	A version number may not exceed 3 numeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

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346 5.4.3 TYPE

ACTION	DESCRIPTION
Definition of element	The coded type of a document. The document type describes the principal characteristic of the document.
Description	The document type identifies the information flow characteristics. ***Permitted codes are:*** A93 = DC link capacity A94 = Non EU allocations A09 = finalised schedules A11 = Aggregated energy data report A19 = Capacity for resale A25 = Allocation results A26 = Capacity document A31 = Agreed capacity A44 = Price document A61 = Estimated capacity
Size	The document type value may not exceed 3 alphanumeric characters (no blanks).
Applicability	This information is mandatory.
Dependence requirements	None.

347 5.4.4 SENDER MARKET PARTICIPANT MRID

ACTION	DESCRIPTION
Definition of element	The identification of a party in the energy market. --- The 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.

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348 5.4.5 SENDER MARKET PARTICIPANT MARKET ROLE 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 A39 = Data Provider A07 = Transmission Capacity Allocator A11 = Market Operator A32 = Market Information Aggregator A36 = Capacity Coordinator
Size	The maximum length of a sender role is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

349 5.4.6 RECEIVER MARKET PARTICIPANT MRID

ACTION	DESCRIPTION
Definition of element	The identification of a party in the energy market. --- The 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.

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350 5.4.7 RECEIVER MARKET PARTICIPANT MARKET ROLE 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:*** A32 = Market Information Aggregator A04 = System Operator or TSO A11 = Market Operator A33 = Information receiver
Size	The maximum length of a receiver role is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

351 5.4.8 CREATED DATE 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.

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352 5.4.9 PERIOD.TIME INTERVAL

ACTION	DESCRIPTION
Definition of element	The start and end date and time for a given interval. --- The beginning and ending date and time of the period that the publication document is covering
Description	This information provides the start and end date and time of the period the publication document is reporting.
Size	Both the start and the end date and time must be expressed in UTC as YYYY-MM-DDTHH:MMZ
Applicability	This information is mandatory.
Dependence requirements	None.

353 5.4.10DOMAIN MRID

354 Not used.

355 5.5 RULES GOVERNING THE TIME SERIES CLASS

356 A time series shall exist to describe a specific time series for publication.

357 In the case where market information is being provided for a single domain, the In_Domain
358 and Out_Domain shall contain the same values.

359 5.5.1 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.

360 5.5.2 AUCTION.MRID

ACTION	DESCRIPTION
Definition of element	The unique identification of the auction. --- A unique identification of the set of specifications that clearly defines the allocation process to which the time series is addressed.
Description	The auction identification.
Size	The maximum size of an allocation identification is 35 alphanumeric characters.
Applicability	This information is dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

361 5.5.3 AUCTION.TYPE

ACTION	DESCRIPTION
Definition of element	The kind of the auction (e.g. implicit, explicit ...). --- A unique identification of the set of specifications that clearly defines the allocation process to which the time series is addressed.
Description	The type of the allocation used. The ipermitted codes are: A01 = Implicit A02 = Explicit
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

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5.5.4 AUCTION.CATEGORY

ACTION	DESCRIPTION
Definition of element	The product category of an auction. --- A unique identification of the set of specifications that clearly defines the allocation process to which the time series is addressed.
Description	The category of an auction. The permitted codes are: A01 = Base A02 = Peak A03 = Offpeak A04 = Hourly
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

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5.5.5 BUSINESS TYPE

ACTION	DESCRIPTION
Definition of element	The identification of the nature of the time series.
Description	The nature of the time series being reported for publication. ***Permitted codes are:*** B05 = Capacity allocated (including price) B06 = DC link constraint B07 = Auction revenue B08 = Total nominated capacity B09 = Net position B10 = Congestion income. A06 = External trade without explicit capacity A31 = Offered capacity A34 = Capacity rights A41 = released AAC A43 = Capacity requested without price A27 = NTC (Estimated capacity) A62 = Spot price A66 = Energy flow
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

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5.5.6 IN DOMAIN MRID

ACTION	DESCRIPTION
Definition of element	Unique identification of the domain. --- The domain where energy is going associated with a TimeSeries
Description	The identification of the domain where the energy is going for which the publication information is being provided. In the case of implicit auctions, the Market Operator managing an implicit auction shall have a domain that is used to indicate the direction of the inflows and outflows to and from the bidding zones. 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.

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365 ### 5.5.7 OUT DOMAIN MRID

ACTION	DESCRIPTION
Definition of element	Unique identification of the domain. --- The domain where energy is coming from associated with a TimeSeries.
Description	The identification of the domain where the energy is coming from for which the publication information is being provided. In the case of implicit auctions, the Market Operator managing an implicit auction shall have a domain that is used to indicate the direction of the inflows and outflows to and from the bidding zones 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.

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5.5.8 CONTRACT_MARKETAGREEMENT.TYPE

ACTION	DESCRIPTION
Definition of element	The specification of the kind of the agreement, e.g. long term, daily contract. --- The contract type defines the conditions under which the capacity was allocated and handled,e.g.: daily auction, weekly auction, monthly auction, yearly auction, long term contract, etc. The significance of this type is dependent on the in area and out area specific coded working methods.
Description	The identification of the type of procurement time period for which information is provided. ***Permitted codes are:*** A01 = Daily. A02 = Weekly A03 = Monthly A04 = Yearly A06 = Long term A07 = Intraday
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

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367 5.5.9 QUANTITY_MEASURE_UNIT NAME

ACTION	DESCRIPTION
Definition of element	Identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure associated with the quantities in a TimeSeries.
Description	The unit of measurement used for the quantities expressed within the time series. Possible units of measure codes are: MAW = Megawatts
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

368 5.5.10 CURRENCY UNIT NAME

ACTION	DESCRIPTION
Definition of element	The identification of the formal code for a currency (ISO 4217). --- The currency associated with a TimeSeries.
Description	The currency used for the monetary amount expressed within the document. **Refer to ENTSO-E Code list document for valid codes.**
Size	The maximum length of this information is 3 alphanumeric characters respecting the standard ISO 4217.
Applicability	This information is dependent
Dependence requirements	This information is provided in accordance with the dependency table.

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369 5.5.11 PRICE_MEASURE_UNIT NAME

ACTION	DESCRIPTION
Definition of element	Identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure associated with the quantities in a TimeSeries.
Description	The unit of measurement used for the quantities expressed within the time series. Possible units of measure codes are: MAW = Megawatts MWH = Megawatt hours
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is dependent
Dependence requirements	This information is provided in accordance with the dependency table.

370 5.5.12 CLASSIFICATIONSEQUENCE_ATTRIBUTEINSTANCECOMPONENT.PO

371 SITION

ACTION	DESCRIPTION
Definition of element	A sequential value representing a relative sequence number. --- The sequence of a time series within a given auction category and contract type. A classification sequence is only provided in the case where there are several auctions in the same category and contract type.
Description	This defines the sequence of a time series within a given auction category such as Base 1 or Base 2. This in fact identifies the auction round being carried out for a category
Size	The maximum length of this information is 3 anumeric characters.
Applicability	This information is dependent
Dependence requirements	This information is provided in accordance with the dependency table.

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5.5.13 PARTICIPANTNUMBER_ATTRIBUTEINSTANCECOMPONENT.POSITION

Not used

5.5.14 WINNERPARTICIPANTNUMBER_ATTRIBUTEINSTANCECOMPONENT.POSITION

Not used

5.5.15 CURVETYPE

ACTION	DESCRIPTION
Definition of element	The identification of the coded representation of the type of curve being described.
Description	This represents the coded identification of the curve that is described in the Period and Interval class. Possible CurveType codes are: A01 = Sequential fixed size block A02 = Point A03 = Variable sized blocks
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

5.6 RULES GOVERNING THE SERIES_PERIOD CLASS

The series period class provides the market time unit information for the time series identified above.

At least one series period class shall exist.

There may be several series period classes for a time series per object type. The overall time interval covered by the period shall be within the complete Time Interval of the series period.

The number of periods within a time series as characterized by the resolution must completely cover the period's time interval.

A sender's minimal resolution must respect one of the resolutions as defined in the dependency table.

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5.6.1 TIME INTERVAL

ACTION	DESCRIPTION
Definition of element	The start and end time of the period.
Description	This information provides the start and end date and time of the period being reported.
Size	Both the start and the end date and time must be expressed in UTC as YYYY-MM-DDTHH:MMZ
Applicability	This information is mandatory.
Dependence requirements	None.

5.6.2 RESOLUTION

ACTION	DESCRIPTION
Definition of element	The definition of the number of units of time that compose an individual step within a period.
Description	This information defines the resolution of a single period.
Size	The Resolution is expressed in compliance with ISO 8601 and shall be equal to: • P1Y if the resolution is yearly • P1M if the resolution is yearly • P7D if the resolution is weekly • PT60M if the resolution is hourly • PT30M if the resolution is half hourly • PT15M if the resolution is quarter hourly
Applicability	This information is mandatory.
Dependence requirements	None.

5.7 RULES GOVERNING THE POINT CLASS

The Point class contains the relative position within a time interval period, the quantity associated with that position and the eventual price.

The position must respect the rules for position generation as defined in [11] ("*The introduction of different time series possibilities (CurveType) within ENTSO-E electronic documents*").

Any leading zeros in a position shall be suppressed.

Negative values are not allowed in time series quantities except in the case where intraday transit limits are being provided.

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400 Leading zeros in a quantity shall be suppressed before transmission.

401 5.7.1 POSITION

ACTION	DESCRIPTION
Definition of element	A sequential value representing the relative position within a given time interval.
Description	This information provides the relative position of a period within an interval.
Size	The relative position must be expressed as a numeric integer value beginning with 1. All leading zeros must be suppressed. The maximum number of characters is 6.
Applicability	This information is mandatory.
Dependence requirements	None.

402 5.7.2 QUANTITY

ACTION	DESCRIPTION
Definition of element	Principal quantity identified for a point.
Description	This information defines the quantities that is taken from or put into the area for the position within the interval period. 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 except for intraday transit limits where negative values could be provided. In such a case a « -» sign is to be included.
Size	The maximum length of this information is 17 numeric characters (decimal mark included and negative sign when provided). The number of decimal places identifying the fractional part of the quantity depends on local market rules.
Applicability	This information is dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

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403 5.7.3 PRICE.AMOUNT

ACTION	DESCRIPTION
Definition of element	A number of monetary units specified in a unit of currency.
Description	This identifies the price associated with the quantity identified in the point class.
Size	The maximum length of this information is 17 numeric characters (decimal mark included). The number of decimal places identifying the fractional part of the amount depends on local market rules.
Applicability	This information is dependent.
Dependence requirements	This information is provided in accordance with the dependency table.

404 5.8 RULES GOVERNING THE REASON CLASS

405 The Reason Class provides any additional information for publication. It may be provided at
406 the detailed level if specific information is provided for each time series. This normally uses
407 exclusively the code A95, complementary information.

408 5.8.1 CODE

ACTION	DESCRIPTION
Definition of element	The motivation of an act in coded form.
Description	A reason code providing any additional information.**Refer to ENTSO-E Core Component Code list document for the valid list of codes.**
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

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5.8.2 TEXT

ACTION	DESCRIPTION
Definition of element	The textual explanation corresponding to the reason code.
Description	This provides additional textual information concerning the unavailability which may be provided as necessary.
Size	The maximum length of this information is 512 alphanumeric characters.
Applicability	This information is dependent.
Dependence requirements	Used only if the reason code is insufficient to identify a reason information being provided.

5.9 RULES GOVERNING THE WINNERS_MARKETPARTICIPANT CLASS

The Winners_MarketParticipant Class provides the identification of parties participating in energy market business processes that are winners of an auction.

5.9.1 MRID

ACTION	DESCRIPTION
Definition of element	The identification of a party in the energy market..
Description	A unique identification of a party that has won an election. The codification scheme used shall be : A01 = EIC coding scheme.
Size	The maximum length of a party'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.

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