# BRS

## (Business Requirement Specification)

## Nordic Balance Settlement (NBS)

## Exchange of master data

| | |
|---|---|
| **Business process:** | Nordic Balance Settlement |
| **Version:** | 2.3.A |
| **Status:** | Approved by NMEG |
| **Date:** | April 9th, 2024 |

## CONTENT

# 1 Introduction

## 1.1 Background

A common Nordic Balance Settlement (NBS) system between Denmark, Finland, Norway and Sweden started up May 1st, 2017. The NBS system is run by eSett Oy.

## 1.2 Summary

This document is a Business Requirement Specification (BRS) for the Nordic Balancing System, made by a project group with participants from eSett and NMEG (Nordic Market Expert Group).

The BRS is detailing the exchange of Master Data needed to perform a Nordic Balance Settlement. The focus of the document is the technical aspects of the document exchanges. The documents have been developed by NMEG, since neither ebIX® nor ENTSO-E has specified similar documents.

The structure of most of the documents is based on ENTSO-E Implementation Guides, see [1]. In addition, the Harmonised Electricity Market Role Model from ENTSO-E, ebIX® and EFET, see [3], is used for identifying the relevant roles and domains used in the BRS. However, there is strategic decision from the Nordic TSOs to migrate to CIM XML schemas, hence the latest updated documents, such as the Trade Structure Document, are based on IEC/CIM.

There are separate BRSs for data exchanges between eSett and the actors in the Nordic energy market, and between eSett and the Nordic TSOs and Market Operators.

The first part of the document, chapter 2, 3 and 4, describes the business processes relevant for data exchange within the Nordic Balance Settlement (NBS) process area. In chapter 5 the documents that will be exchanged between the Imbalance Settlement Responsible (eSett) and the market actors are described in detail.

## 1.3 Nordic Energy Domain Model

A Nordic Energy Market Domain model, giving an overall overview of the structure and processes used in the Nordic Energy market, can be found in [5].

## 1.4 Project organisation

The project is organised as a project group within the Nordic Market Expert Group.

## 1.5 Terms and notations used in this BRS

In this BRS the term Generator Group is used instead of the term Regulation Object, which is used in the NBS Handbook [9] and the term Resource is used instead of the term Production Unit, which is used in the NBS Handbook [9].

Documents are described by a class diagram showing the full set of attributes in the related xml schema. In addition, the usage of the document is described by one or more tables detailing the usage of each attribute. Optional attributes from the class diagram, not used in the specific data exchange, are omitted from the table.

## 1.6 References


[1] ENTSO-E implementation guides, see https://www.entsoe.eu/publications/electronic-data-interchange-edi-library/, e.g.: ENTSO-E Acknowledgement process

[2] ebIX® Business Requirement Specifications, see http://www.ebix.org/

[3] The Harmonised Role Model, ENTSO-E, ebIX® and EFET, see http://www.ebix.org/

[4] UN/CEFACT Unified Modelling Methodology (UMM), see UN/CEFACT Modelling Methodology (UMM)

[5] Nordic Energy Market Domain Model, see http://www.ediel.org/

[6] BRS for Nordic Settlement System, documents between eSett and the actors in the Nordic energy market, see http://www.ediel.org/

[7] BRS for Nordic Settlement System, documents between eSett, TSOs and Market operator, see http://www.ediel.org/

[8] Common Nordic XML rules and recommendations, see http://www.ediel.org/

[9] Nordic Imbalance Settlement (NBS) Handbook, see https://www.esett.com/handbook/

## 1.7 Change log

| Ver/rel/rev | Changed by | Date | Changes |
|---|---|---|---|
| 2.4.A | Ove Nesvik | 20240312 | • Addition of a new appendix A and B, containing CIM based Ediel Party Master Data and Resource Master Data documents. The documents are intended used by both NBM (Nordic Balancing Model) and NBS (Nordic Balance Settlement).<br>• Update of definition of roles and domains in chapter 3 to be in line with the lates version of the Harmonised Role Model [3].<br>• Correction of spelling errors. |
| 2.3.A | Ove Nesvik | 20231208 | • Addition of Asset Type codes to Ediel (NEG) Resource (Production Unit and Generator Group Relations) Master Data Document:<br>**A05** Load (replaces **Z07**)<br>**B18** Wind offshore<br>**B19** Wind onshore (replaces **Z05**)<br>**B25** Energy storage<br>**B31** Hydro unspecified (replaces **Z06**)<br>**B37** Thermal unspecified (replaces **Z04**)<br>• Addition of an Asset Type attribute and Asset Type code to the NEG Party Master Data Document:<br>**B25** Energy storage |
| 2.2.B | Ove Nesvik | 20230814 | • Correction of spelling errors. |
| 2.2.A | Ove Nesvik | 20230626 | • Update of roles and domains to be in line with the ebIX® EFET and ENTSO-E Harmonised European Market Role Model (HEMRM) version 2022-01, including replace of Balance Responsible Party with Balancing Service Provider.<br>• Replaced Market Balance Area with Bidding Zone<br>• Replace Resource Object to Resource, where not part of an xml schema.<br>• Removed NEG Area Specification Document from the sequence diagram in chapter 2.3 since the document currently not is used.<br>• Aligned the actual senders/receivers with sequence diagrams and sender/receiver in document headings.<br>• Corrected the usage of BRP and BSP in various processes. |
| 2.1.A | Ove Nesvik | 20210608 | • Addition of Contract Type "**A06** Long term contract" to Ediel Request PX Trade Structure Document |
| 2.0.A | Ove Nesvik | 20210415 | • Addition of BSP as receiver in NEG Area Specification Document for MBA-MGA Relations |
| 1.9.B | Ove Nesvik | 20200420 | • Added Settlement Method "**E15** Non-profiled with special rules (Flex settled)" to NEG Party Master Data Document. |
| 1.9.A | Ove Nesvik | 20191003 | • The Note regarding the Country attribute in NEG Area Specification Document for MBA and MGA Master Data is changed to "Must be used for MBAs";<br>• "**DK** Denmark" is added as Country Code. |

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| 1.8.A | Ove Nesvik | 20180606 | • Recast of the Trade Structure Documents (previously NEG Bilateral Trade Structure Document). The latest description is based on CIM.<br>• Update of the Ediel Resource Object (Production Unit) Master Data Document, among others:<br>○ Removal of Related Object element from chapter 5.3.3.<br>○ The cardinality of "Party details" is changed to 0..*, also in chapter 5.3.3. |
| 1.7.B | Ove Nesvik | 20170510 | • Added version numbers to class diagrams and headings |
| 1.7.A | Ove Nesvik | 20170419 | • Updated class diagrams for Party Master Data and Resource Object Master Data<br>• Added new element "Status" to Party Master Data and Resource Object Master Data documents<br>• Added new element "Reference" to Party Master Data document<br>• Rephrased and added Document Type codes for Party Master Data and Resource Object Master Data documents<br>• Updated cardinalities for Party Master Data and Resource Object Master Data documents<br>• Added textual clarifications, incl. removed Nord Pool logo on the front page<br>• Added new Energinet logo |
| 1.6.B | Ove Nesvik | 20170213 | Textual corrections:<br>• Updated logos on the front page<br>• Replaced Nord Pool and NPS with Market Operator<br>• Updated NTC and NEG member list |
| 1.6.A | Ove Nesvik | 20161206 | • NEG Party Master Data Document:<br>○ Replaced Document type "**Z17** Party Relation Master Data Document" with:<br>**Z18** Party Relation Master Data Document where Validity Start and/or Validity End are within the Validity Time Interval<br>**Z19** Party Relation Master Data Document where relations are valid sometime within the Validity Time Interval<br>○ Added a Validity Time Interval in the header section |
| 1.5.A | Ove Nesvik | 20161027 | • The type for Validity Start and Validity End have been changed from date to "date and time"<br>• Addition of Party relation document in the sequence diagram in chapter 2.3<br>• Addition of clarifying text |
| 1.4.A | Ove Nesvik | 20160210 | • NEG Resource Object (Production Unit) Master Data Document:<br>○ Error corrections in class diagram (Production Type)<br>○ Addition of clarifying text<br>• Textual error corrections<br>• NEG Party Master Data Document:<br>○ Addition of Related Party |

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| | | | ○ Addition of Business Type **A01**, Production<br>○ Addition of Document Type **Z17**, Party relation master data document and related codes and new elements<br>○ Settlement method is made optional |
| 1.3.B | Ove Nesvik | 20151027 | • Recipient ID and Role is made optional in the Area Specification Document and the Party Master Data Document<br>• Rename of Business Type "**Z68**, Production Units own consumption (Only used in Finland)" to **B36** in Party Master Data Document |
| 1.3.A | Ove Nesvik | 20150923 | • The MGA type "**Z02** Only losses" is removed from "NEG Area Specification Document for MBA and MGA Master Data"<br>• Addition of clarifying text, such as a description of the Bilateral Trade ID<br>• Addition of Production Type in NEG-Resource Object Master Data document<br>• Bilateral Trade Master Data Report is renamed to NEG Bilateral Trade Structure Document<br>• Addition of Business Type "**Z68** Production Units own consumption" in the Party Master Data document<br>• Correction of cardinality for NEG Area Specification Document for MBA-MGA Relations; the cardinality of "Area specification details" is [1..*] |
| 1.2.A | Ove Nesvik | 20150421 | • Addition of MGA Type "**Z07** Transmission (main/central) grid" |
| 1.1.A | Ove Nesvik | 20150624 | • Addition of MGA Type "**Z06**, Production"<br>• Changed cardinality of the relation between "Resource Object Details" and "Related Area" to [0..*] in the NEG-Resource Object Master Data<br>• "**A08** Balance Responsible Party" is added as sender role and "**A05** Imbalance settlement responsible" is added as receiver role in NEG Resource Object (Generator Group – Generator Relations) Master Data Document<br>• Correction of textual errors, such as Document Type Codes in the Resource Object Master Data document class diagram.<br>• Addition of Object Aggregation in Resource Object (Production Unit) Master Data Document<br>• Addition of new Asset Type code "**Z07** Consumption" in Resource Object (Production Unit) Master Data Document<br>• Asset Type "**B20** Other" is renamed" to "Other production" |
| 1.0.A | Ove Nesvik | 20150123 | First version for test implementation |

Table 1: Change log

# 2 Overview of the Nordic energy market domain

## 2.1 Settlement in the overall context (Domain model)

The Domain model describes the main business process areas needed to have a well-functioning energy market. The model is important for having a common and agreed understanding on how the energy market works as a basis for development of common methods for exchange of information.

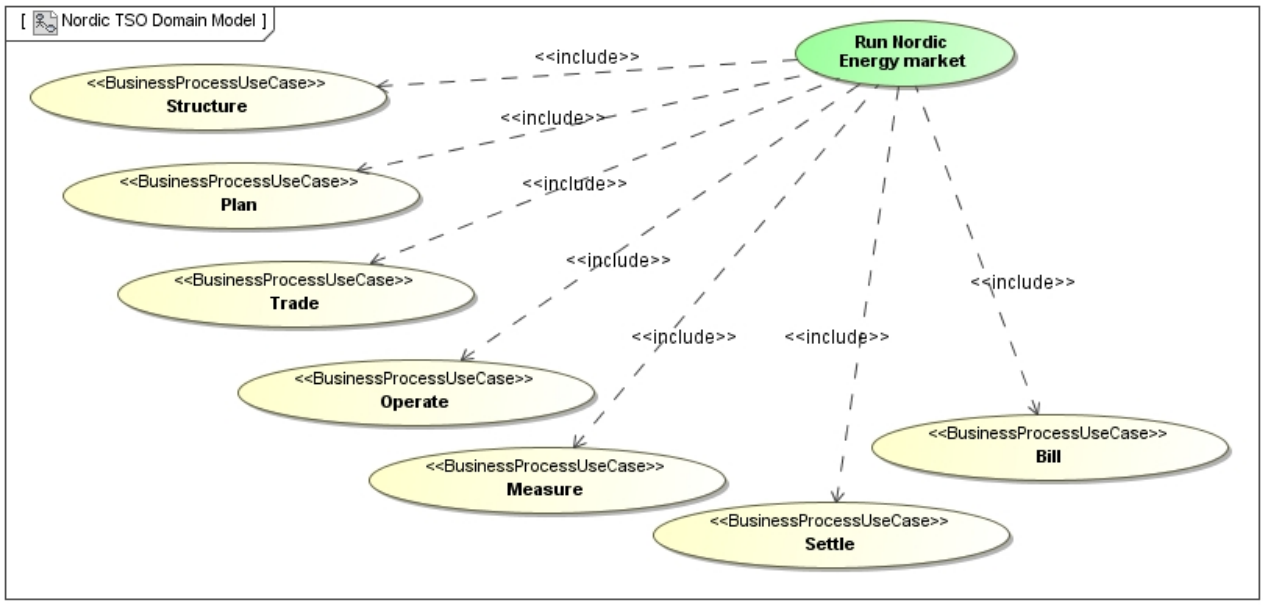


**Figure 1:** UseCase diagram: ebIX® Energy Market Domain Model

The domain model of the energy market covers all stages from the structuring of the market until the settlement and billing of consumption and transport of energy, with a focus on the exchange of information:

- Exchange of master data including the Change of Supplier processes
- Planning of production, consumption, exchange and transport
- Trade on different markets, including ancillary services, bilateral trade, etc.
- Operation
- Measuring of production, consumption, exchange and transport
- Settlement
- Billing

The Nordic Settlement System process includes parts of the process areas Trade, Plan and Measure.

For a more elaborated description of the processes included in the domain model, see [5].

## 2.2 Breakdown of the settlement phase

In the rest of this document, the processes related to the Nordic Balancing System, with a focus on the Business area (UseCase) Settle, is further elaborated.

The core imbalance settlement activity takes place once the operational phase is completed. However, there are some preceding processes run before operation, such as exchange of Load Profile Shares (LPS) and exchange of traded volumes, both at the power exchange and bilaterally. The imbalance settlement is composed of three basic activities:

- The first activity receives all the schedules agreed and regulation data that has been required for balancing the area.
- The second activity recuperates the measured values of the delivered products, for each continuous metered Metering Point and settles the imbalance in the balance regulation market.
- The final activity reconciles the values for the profile-metered Metering Points, identifies the imbalances and establishes the imbalance settlement amounts, thus requiring pricing information.

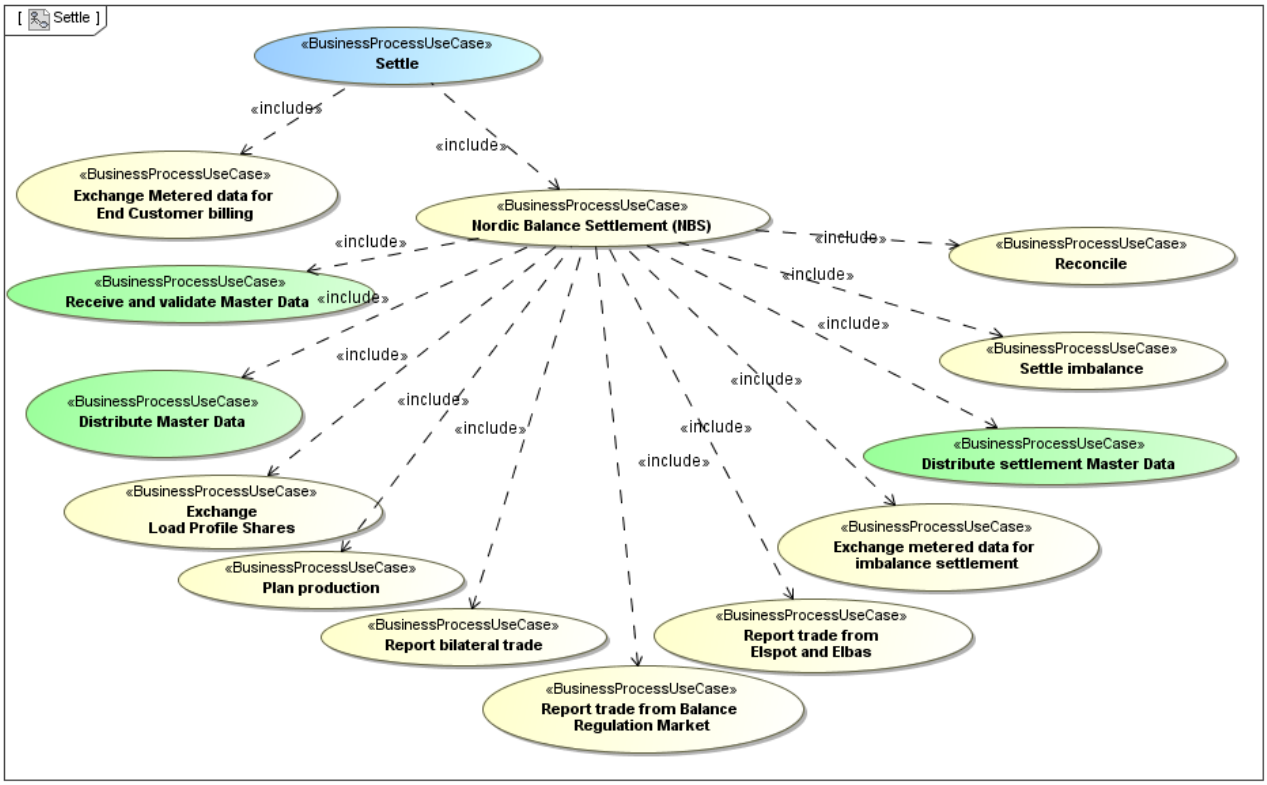


**Figure 2:** UseCase diagram: Breakdown of the settlement phase

The settlement phase, outlined in **Figure 2**, describes the principal UseCases of the Nordic Balance Settlement system.

The roles that take part in the imbalance settlement process are (see also chapter 3):

- Balance Responsible Party, who receives the settlement information on both Metering Point- and aggregated level for invoicing of the Energy Suppliers.
- Energy Supplier, who receives the settlement information on a Metering Point level for invoicing of the Parties connected to grid (Consumers and Producers).
- Billing Agent, who invoices the Balance Responsible Parties.
- Market Operator, who supplies the Imbalance Settlement Responsible with the result of the trade on the day-ahead and intraday markets.

- Imbalance Settlement Responsible, who establishes the imbalance (quantities and amounts).
- Metered Data Aggregator, who provides aggregated metered information. The Metered Data Aggregator may have Local Metered Data Aggregators that provide initial aggregated input for consolidation and validation before being sent to the Imbalance Settlement Responsible.
- Reconciliation Accountable, who is paying for the imbalances from the reconciliation process.
- Reconciliation Responsible, who is calculating the reconciliation settlement (second settlement).
- System Operator, who provides the finalised schedule information and regulation data.
- Energy Trader, who buys and sells electricity, either on an electricity exchange or by bilateral contracts. Opposite to a Balance Responsible Party, an Energy Trader does not necessarily have to be a Balance Responsible Party. An Energy Trader must however have a contract with a Balance Responsible Party, which provides financial security and identifies balance responsibility with the Imbalance Settlement Responsible of the Bidding Zone, entitling the party to operate in the market.

The basic data that is required for imbalance settlement includes the following:

- Finalised schedules that originate at the last stage of the ENTSO-E Scheduling process and could be day ahead or intraday schedules.
- Aggregated metered values for each Balance Responsible Party and area (Metering Grid Area or Bidding Zone). These consist of values for each schedule interval (60 minutes) for the complete accounting settlement period.
- Regulation data, such as ancillary services. These are established by the System Operator and consist of time series information used in the imbalance settlement.
- Settlement pricing information.

The DSO will send metered data, acting in the role of Metered Data Responsible and Metered Data Aggregator, to the Imbalance Settlement Responsible. The Imbalance Settlement Responsible is then in position to conduct the balance settlement.

The System Operator sends activated reserves (volume and amounts) to the Imbalance Settlement Responsible.

The Imbalance Settlement Responsible will conduct a limited QA of received metered data and calculate the imbalance settlement using Nordic harmonised rules. Data will thereafter be made available for the Balance Responsible Parties, either through messages or through a web-application, on an aggregated level.

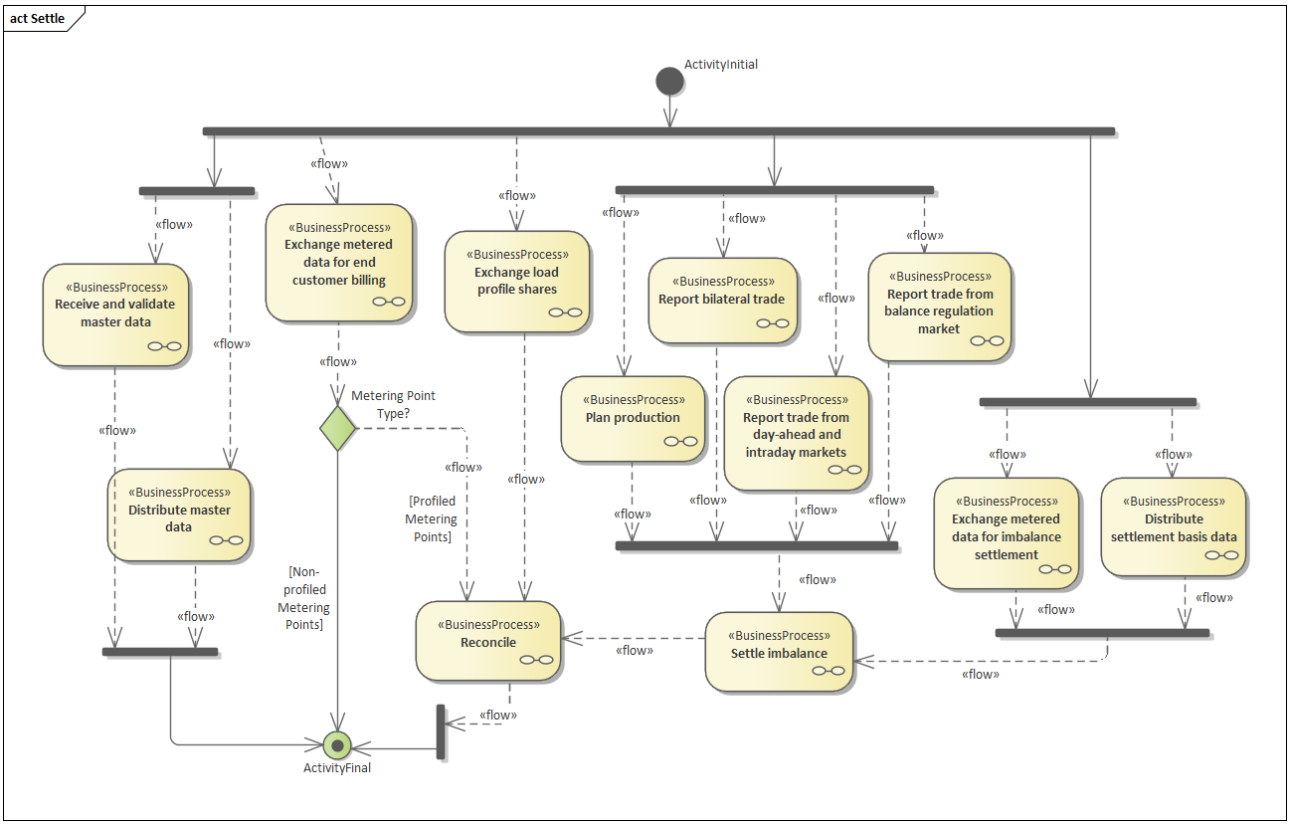


**Figure 3** Activity diagram: The Nordic Settlement process

## 2.3 Overview of information exchange for the NBS Master Data exchange phase

### 2.3.1 NBS Master Data exchange phase - Receive and validate master data

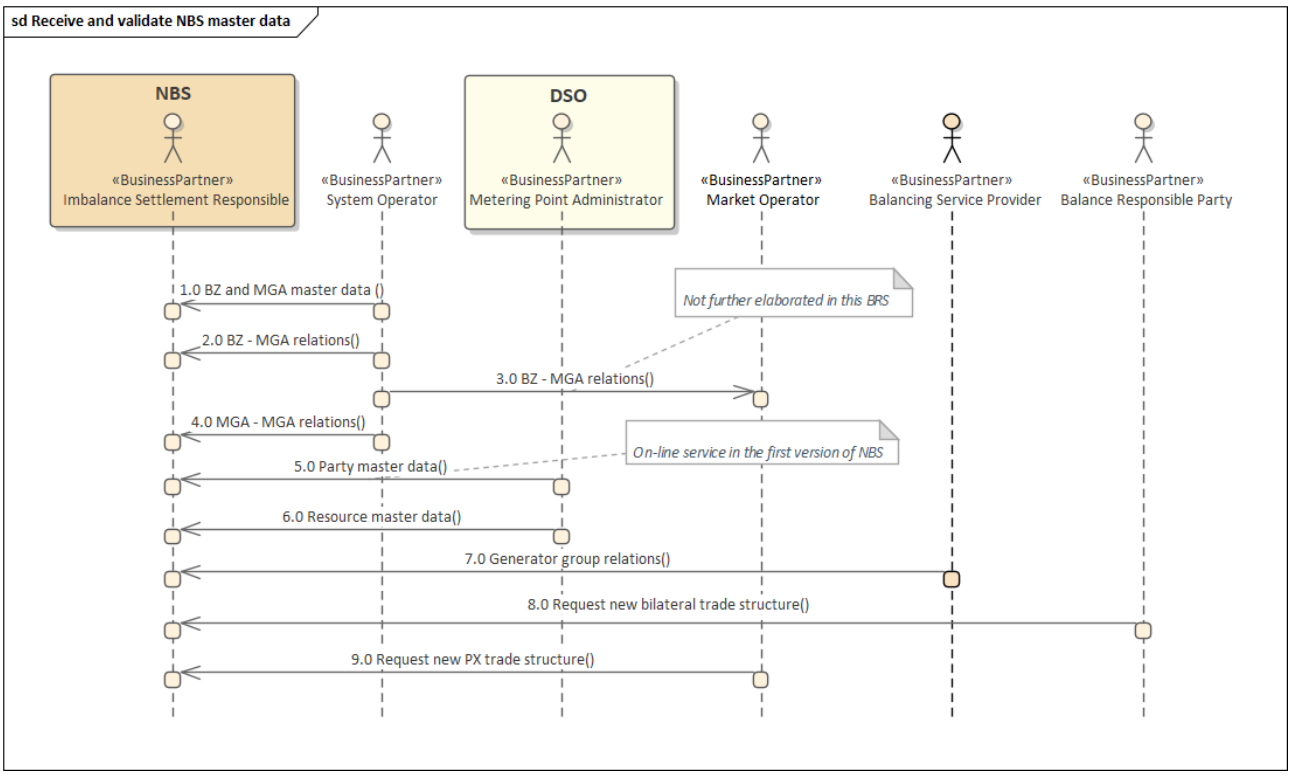


**Figure 4** Sequence diagram: NBS Master Data exchange phase - Receive and validate master data[1]

[1] In an interim period, the Balancing Service Provider may be replaced by the Balance Responsible Party.

| NBS document | Roles | Documentation |
|---|---|---|
| **Receive and validate Master Data** | | |
| 1. BZ and MGA Master Data | SO → eSett | NEG Area Specification Document<br><br>**For details see:** 5.1.2 |
| 2. BZ - MGA Relations | SO → eSett | NEG Area Specification Document<br><br>**For details see:** 5.1.3 |
| 3. BZ - MGA Relations | SO → MO | NEG Area Specification Document<br><br>**For details see:** 5.1.3 |
| 4. MGA - MGA Relations | SO → eSett | NEG Area Specification Document<br><br>**For details see:** 5.1.4 |
| 5. Party Master Data | MPA (DSO) → eSett | NEG Party Master Data Document<br><br>**For details see:** 5.2.2 |
| 6. Resource, Production Unit Master Data | MPA (DSO) → eSett | Ediel (NEG) Resource (Production Unit) Master Data Document<br><br>**For details see:** 5.3.2 |
| 7. Generator group relation | BSP → eSett | Attribute usage: Ediel (NEG) Resource Object (Generator Group Relations) Master Data Document<br><br>**For details see:** 5.3.3 |
| 8. Request new Bilateral Trade Structure | BRP → eSett | Ediel Request Trade Structure Document<br><br>**For details see:** 5.4.3 |
| 9. Request new PX Trade Structure | MO → eSett | Ediel Request Trade Structure Document<br><br>**For details see:** 5.4.4 |

**Table 2:** NBS Master Data exchange phase documents

### 2.3.2 NBS Master Data exchange phase – Distribute master data

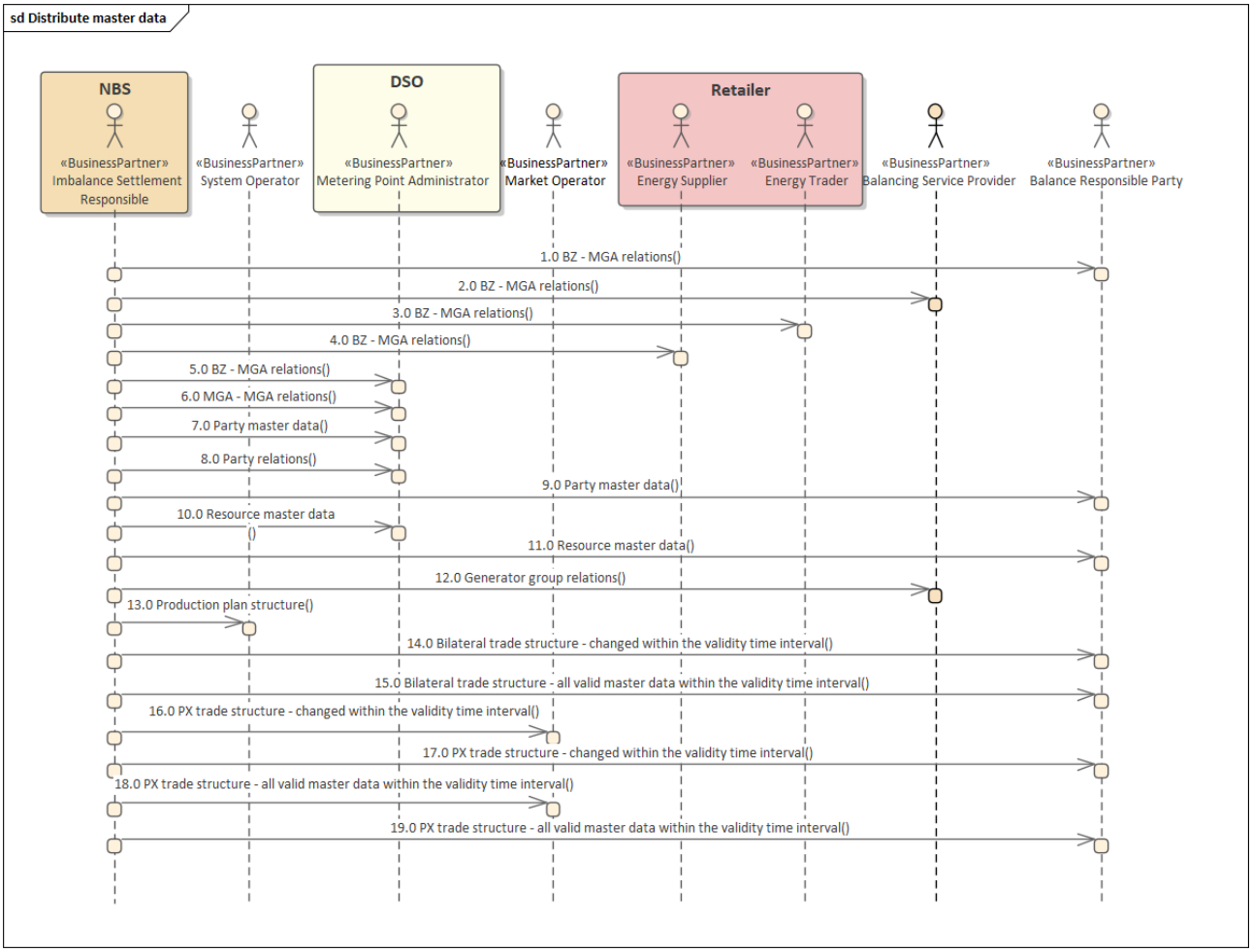


**Figure 5** Sequence diagram: NBS Master Data exchange phase - Distribute master data[2]

[2] In an interim period, the Balancing Service Provider may be replaced by the Balance Responsible Party.

| NBS document | Roles | Documentation |
|---|---|---|
| **Distribute Master Data** | | |
| 1. BZ - MGA Relations | eSett → BRP | NEG Area Specification Document<br><br>**For details see:** 5.1.3 |
| 2. BZ - MGA Relations | eSett → BSP | NEG Area Specification Document<br><br>**For details see:** 5.1.3 |
| 3. BZ - MGA Relations | eSett → Energy Trader | NEG Area Specification Document<br><br>**For details see:** 5.1.3 |
| 4. BZ - MGA Relations | eSett → Energy Supplier | NEG Area Specification Document<br><br>**For details see:** 5.1.3 |
| 5. BZ- MGA Relations | eSett → MPA (DSO) | NEG Area Specification Document<br><br>**For details see:** 5.1.3 |
| 6. MGA - MGA Relations | eSett → MPA (DSO) | NEG Area Specification Document<br><br>**For details see:** 5.1.4 |
| 7. Party Master Data | eSett → MPA (DSO) | NEG Party Master Data Document<br><br>**For details see:** 5.2.2 |
| 8. Party Relation | eSett → MPA (DSO) | NEG Party Master Data Document<br><br>**For details see:** 5.2.2 |
| 9. Party Master Data | eSett → BRP | NEG Party Master Data Document<br><br>**For details see:** 5.2.2 |
| 10. Resource Master Data | eSett → MPA (DSO) | Ediel (NEG) Resource (Production Unit) Master Data Document<br><br>**For details see:** 5.3.2 |
| 11. Resource Master Data | eSett → BRP | Ediel (NEG) Resource (Production Unit) Master Data Document<br><br>**For details see:** 5.3.2 |
| 12. Resource, Generator Group and Relations Master Data | eSett → BSP | Ediel (NEG) Resource (Production Unit) Master Data Document<br><br>**For details see:** 5.3.3 |
| 13. Resource, Production Plan Structure Master Data | eSett → SO | Ediel (NEG) Resource (Production Unit) Master Data Document<br><br>**For details see:** 5.3.3 |
| 14. Bilateral Trade Structure - changed within the Validity Time Interval | eSett → BRP | Ediel Notify Trade Structure Document<br><br>**For details see:** 5.5.3 |
| 15. Bilateral Trade Structure - all valid master data within the Validity Time Interval | eSett → BRP | Ediel Notify Trade Structure Document<br><br>**For details see:** 5.5.3 |
| 16. PX Trade Structure - changed within the Validity Time Interval | eSett → MO | Ediel Notify Trade Structure Document<br><br>**For details see**: 5.5.4 |

| NBS document | Roles | Documentation |
|---|---|---|
| 17. PX Trade Structure - changed within the Validity Time Interval | eSett → BRP | Ediel Notify Trade Structure Document<br><br>**For details see**: 5.5.4 |
| 18. PX Trade Structure - all valid master data within the Validity Time Interval | eSett → MO | Ediel Notify Trade Structure Document<br><br>**For details see**: 5.5.4 |
| 19. PX Trade Structure - all valid master data within the Validity Time Interval | eSett → BRP | Ediel Notify Trade Structure Document<br><br>**For details see**: 5.5.4 |

**Table 3:** NBS Master Data exchange phase documents

# 3 Harmonised roles used in Nordic settlement system

In **Figure 6** the relevant parts of the ebIX®, EFET and ENTSO-E Harmonised role model are outlined.

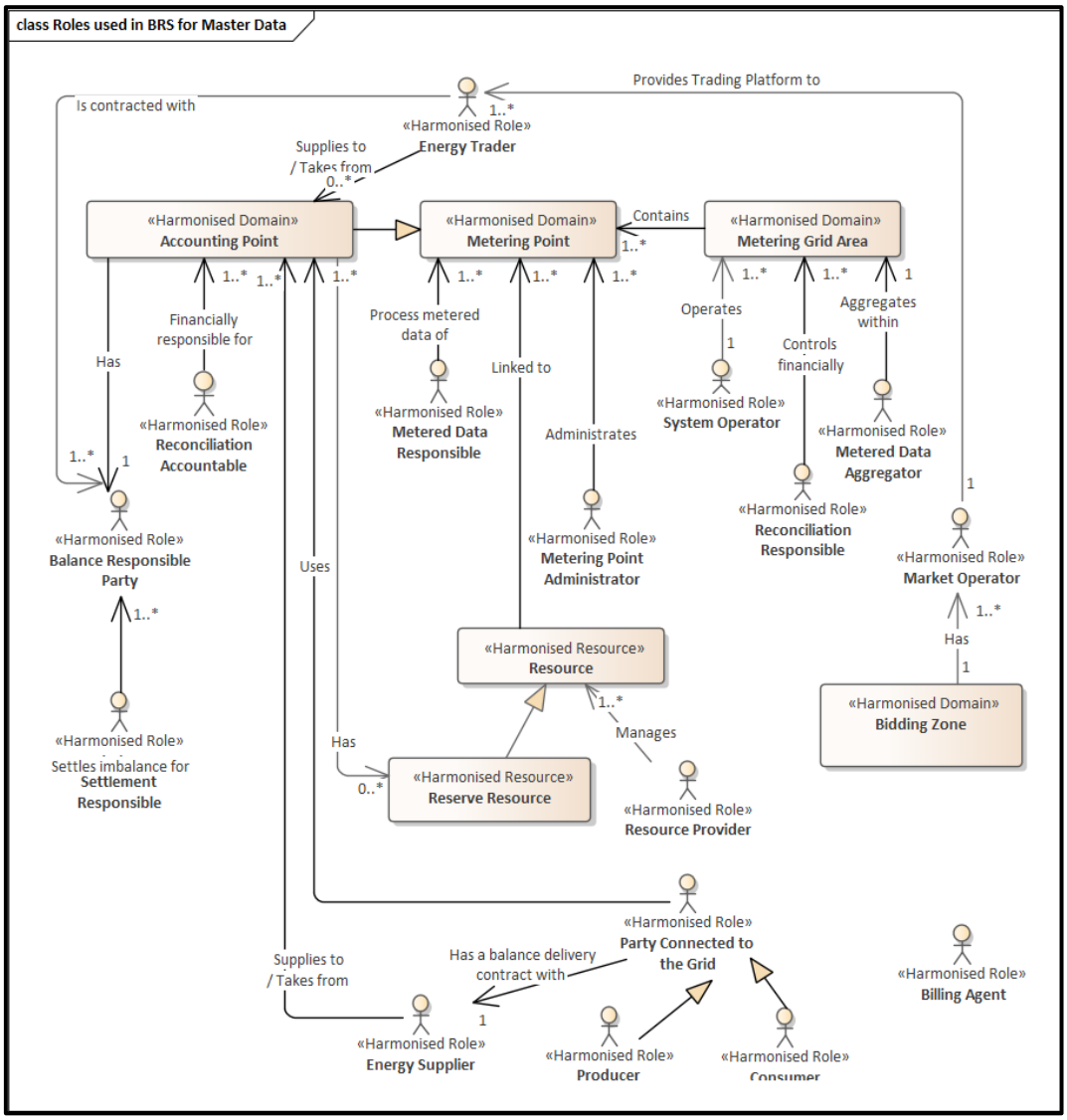


**Figure 6:** Outline of the Harmonised role model within the scope of Nordic Balance Settlement system

## 3.1 Definitions (from the ebIX®, EFET and ENTSO-E Harmonised role model):

### 3.1.1 Roles

**Balance Responsible Party:**
A party financially accountable for its imbalances.

**Based on:** Consolidated text: Commission Regulation (EU) 2017/2195 - Art.2 Definitions.

**Additional information:**
A balance responsibility requires a contract proving financial security with the Imbalance Settlement Responsible of the Scheduling Area entitling the party to operate in the market.

Imbalance means an energy volume calculated for a Balance Responsible Party and representing the difference between the allocated volume attributed to that Balance Responsible Party and the final

position of that Balance Responsible Party, including any imbalance adjustment applied to that Balance Responsible Party, within a given imbalance settlement period.

### Billing Agent:
The party responsible for invoicing a concerned party.

### Consumer:
A party that consumes electricity.

### Additional information:
This is a Type of Party Connected to the Grid.

### Energy Supplier:
An Energy Supplier delivers energy to or takes energy from a Party Connected to the Grid at an Accounting Point.

**Additional information:**
An Accounting Point can have only one Energy Supplier.

When additional suppliers (with firm (block) energy contracts) are involved, the Energy Supplier delivers/takes the difference between contracted and established (e.g. measured or calculated) production/consumption.

### Energy Trader:
A party that is selling or buying energy.

### Imbalance Settlement Responsible:
A party that is responsible for settlement of the difference between the contracted quantities with physical delivery and the established quantities of energy products for the Balance Responsible Parties in a Scheduling Area.

**Additional information:**
The Imbalance Settlement Responsible may delegate the invoicing responsibility to a more generic role such as a Billing Agent.

### Market Operator:
A party that provides a service whereby the offers to sell energy are matched with bids to buy energy.

**Based on:** Consolidated text: Regulation (EU) 2019/943.

**Additional information:**
This activity can be conducted in the forward, days-ahead and/or intraday timeframes, and can be combined with transmission capacity allocation in the context of market coupling.

This is usually an energy/power exchange or platform.

### Metered Data Aggregator:
A party responsible for the establishment and qualification of measured data from the Metered Data Responsible. This data is aggregated according to a defined set of market rules.

### Metered Data Responsible:
A party responsible for the establishment and validation of measured data based on the collected data received from the Metered Data Collector. The party is responsible for the history of metered data for a Metering Point.

### Metering Point Administrator:
A party responsible for administrating and making available the Metering Point characteristics, including registering the parties linked to the Metering Point.

### Party Connected to Grid:
A party that contracts for the right to take out or feed in energy at an Accounting Point.

### Producer:
A party that generates electricity.

**Additional information:**
This is a type of Party Connected to the Grid.

**Based on:** Consolidated text: Directive (EU) 2019/944.

### Reconciliation Accountable:
A party that is financially accountable for the reconciled volume of energy products for a profiled Accounting Point.

### Reconciliation Responsible:
A party that is responsible for reconciling, within a Metering Grid Area, the volumes used in the imbalance settlement process for profiled Accounting Points and the actual metered quantities.

**Additional information:**
The Reconciliation Responsible may delegate the invoicing responsibility to a more generic role such as a Billing Agent.

### Resource Provider:
A role that manages a resource and provides production/consumption schedules for it, if required.

### System Operator:
A party responsible for operating, ensuring the maintenance of and, if necessary, developing the system in a given area and, where applicable, its interconnections with other systems, and for ensuring the long-term ability of the system to meet reasonable demands for the distribution or transmission of energy.

**Based on:** Consolidated text: Directive (EU) 2019/944

### 3.1.2 Domains

**Accounting Point:**
A domain under balance responsibility where Energy Supplier change can take place and for which commercial business processes are defined.

**Additional information:**
This is a type of Metering Point.

**Metering Grid Area:**
A Metering Grid Area is a physical area where consumption, production and exchange can be measured. It is delimited by the placement of meters for continuous measurement for input to, and withdrawal from the area.

**Additional information:**
It can be used to establish volumes that cannot be measured such as network losses.

**Metering Point:**
An entity where energy products are measured or computed.

**Reserve Resource:**
A resource technically pre-qualified using a uniform set of standards to supply reserve capabilities to a System Operator and is associated with one or more tele-measuring devices.

**Additional information:**
This is a type of Resource.

**Resource:**
A market representation of an asset or a group of assets related to the energy industry.

**Additional information:**
A Resource represents for example grid assets, consumption assets or production assets, such as generating units, consumption units, energy storage units or virtual power plants.

# 4 Process areas related to exchange of Master Data within Nordic settlement system

## 4.1 Process area: Receive and validate Master Data

### 4.1.1 Process area: Receive and validate Master Data from TSOs

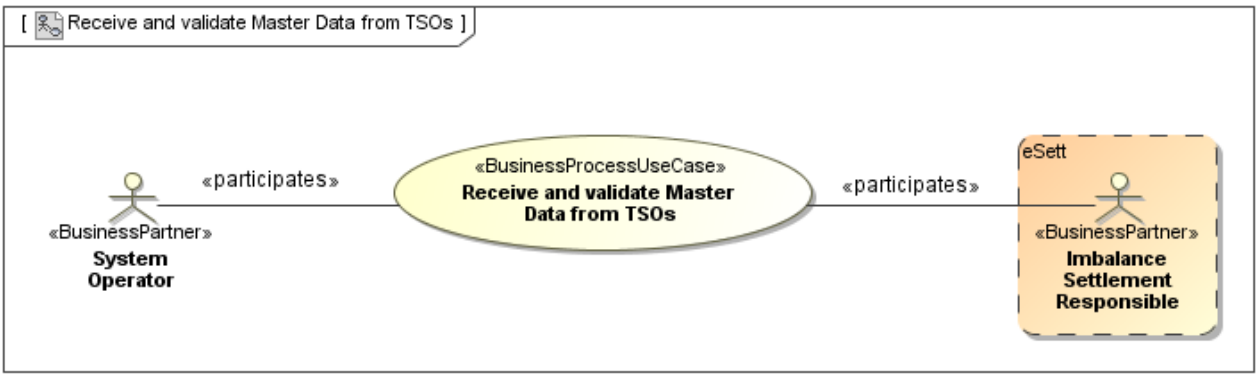


**Figure 7:** UseCase: Receive and validate Master Data from TSOs

The TSOs, in the role as System Operators, are responsible for maintenance of Master Data for the Bidding Zone (BZ) and the Metering Grid Areas (MGA), i.e.:

- Master data for the BZ and MGAs, such as name and identification of the domain (area), and the DSO or TSO that is responsible for the domain
- Which MGAs that belong to a BZ
- Which MGAs an MGA is connected to

In addition, the TSOs are responsible for the Master Data regarding Resources connected to the main grid, such as Generator Groups.

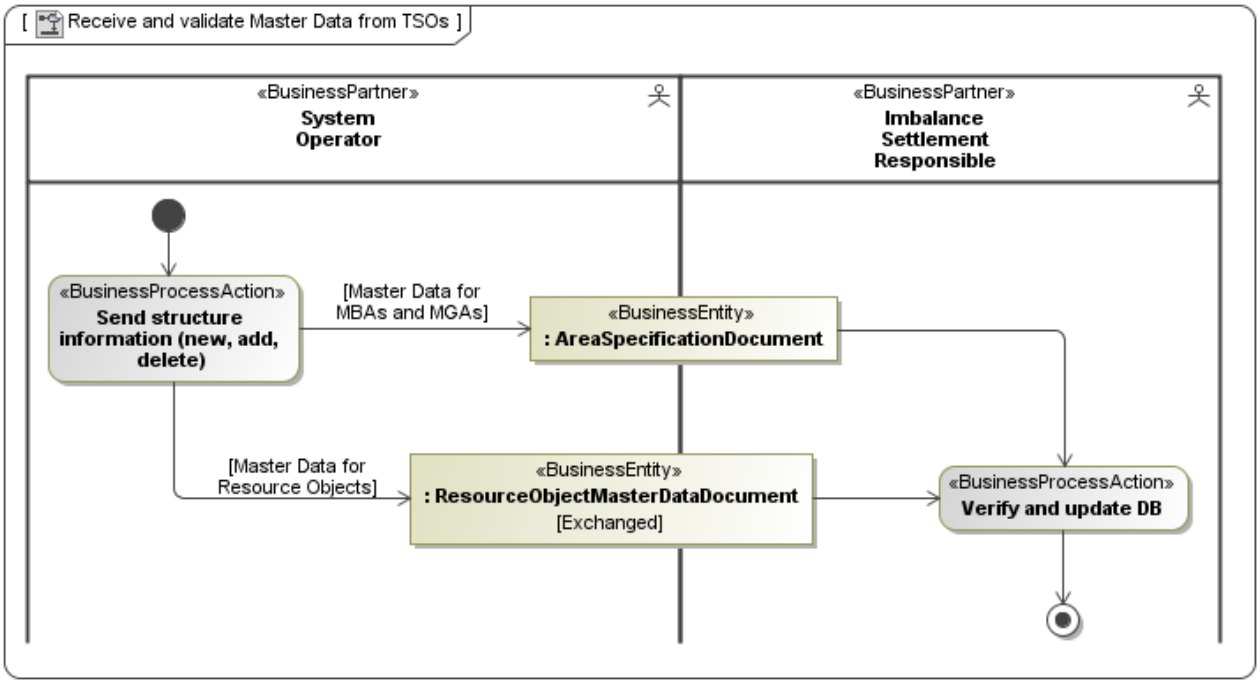


**Figure 8:** Activity diagram: Receive and validate Master Data from TSOs

### 4.1.2 Process area: Receive and validate Master Data from DSOs

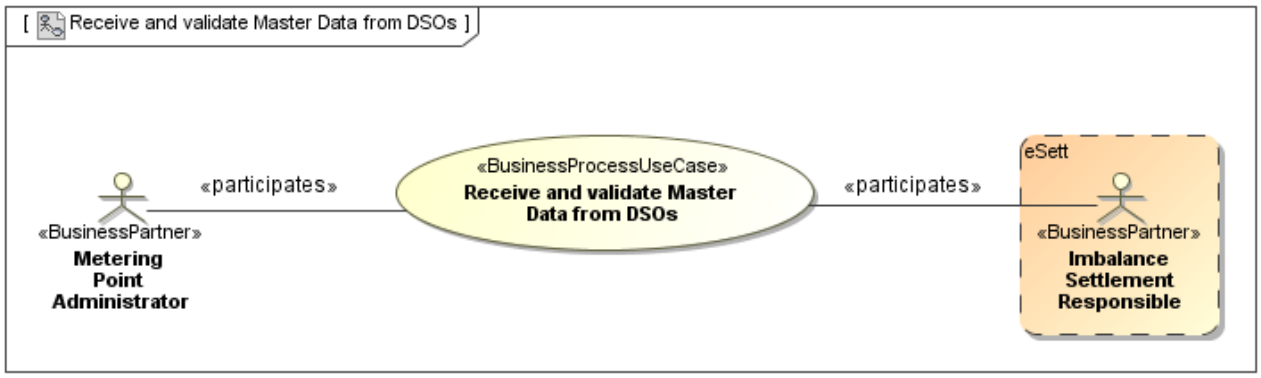


**Figure 9:** UseCase: Receive and validate Master Data from DSOs

The DSOs, in the role as Metering Point Administrator (MPA), are responsible for maintenance of Master Data for parties, such as Balance Responsible Parties and Energy Suppliers (Retailers). In addition, the DSOs are responsible for the Master Data regarding Resources connected to regional grids and distribution grids, such as production units.

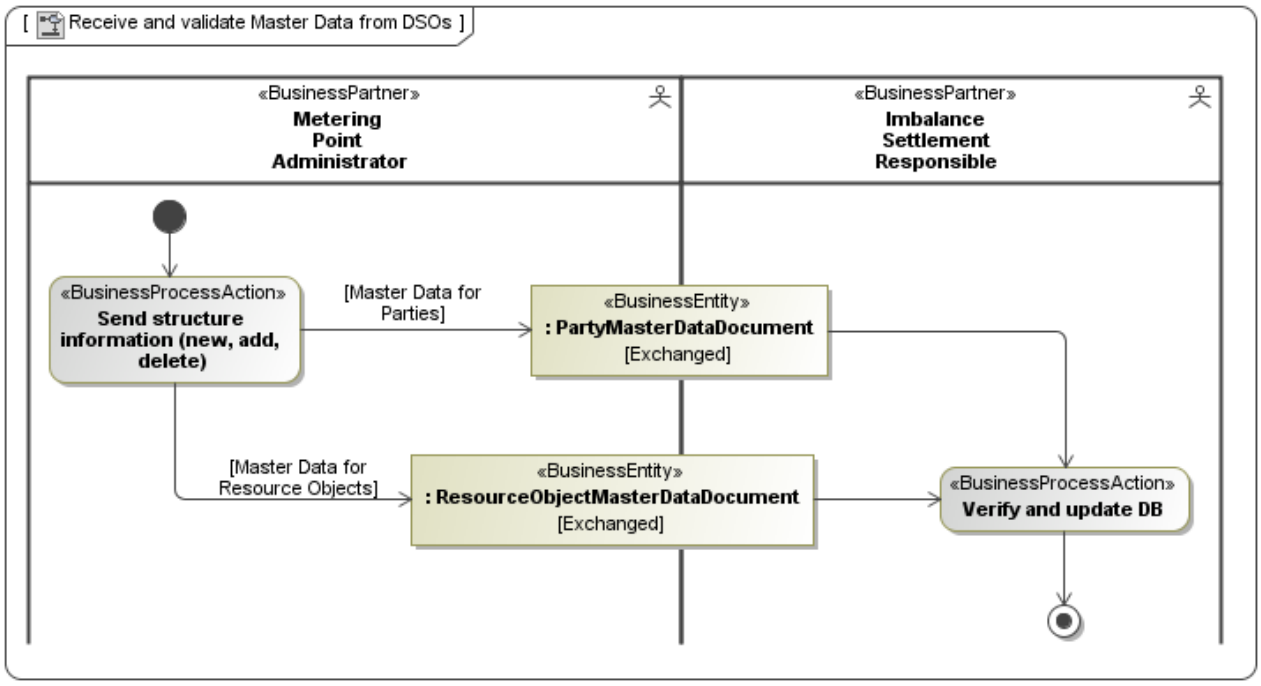


**Figure 10:** Activity diagram: Receive and validate Master Data from DSOs

### 4.1.3 Process area: Receive and validate Master Data from BRPs

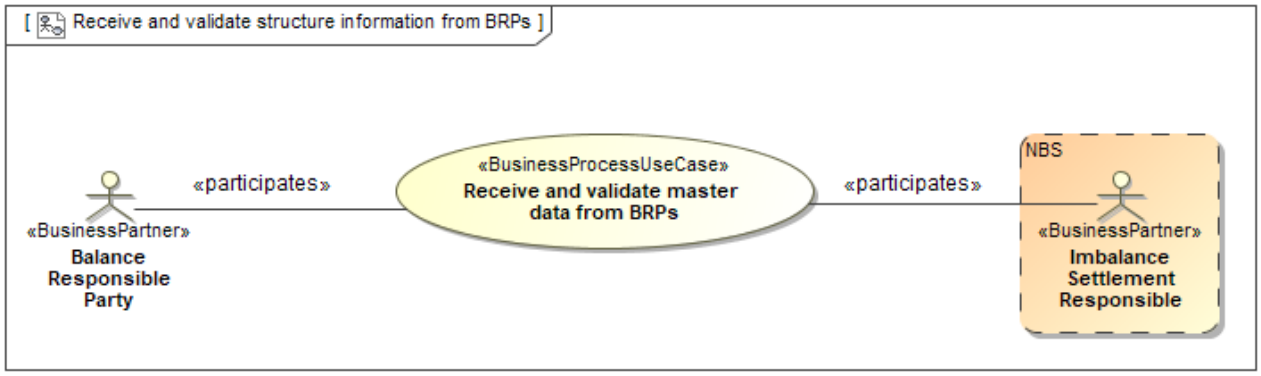


**Figure 11:** UseCase: Receive and validate Master Data from BRPs

The Balance Responsible Parties (BRPs) are responsible for maintenance of Master Data for Generator Groups and related Generator Relations. In addition, the BRPs may request new Bilateral Trade Structures, i.e. a combination of two BRPs and related Energy Traders (Retailers).

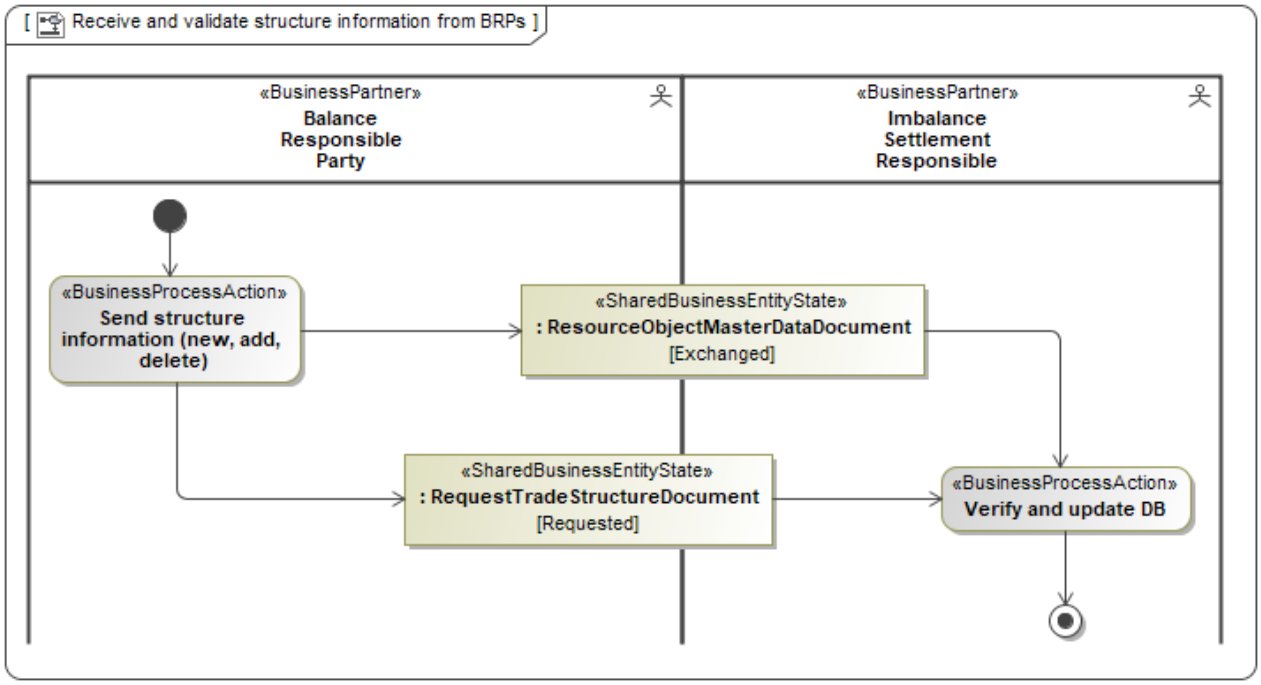


**Figure 12:** Activity diagram: Receive and validate Master Data from BRPs

### 4.1.4 Process area: Receive and validate Master Data from Market Operators

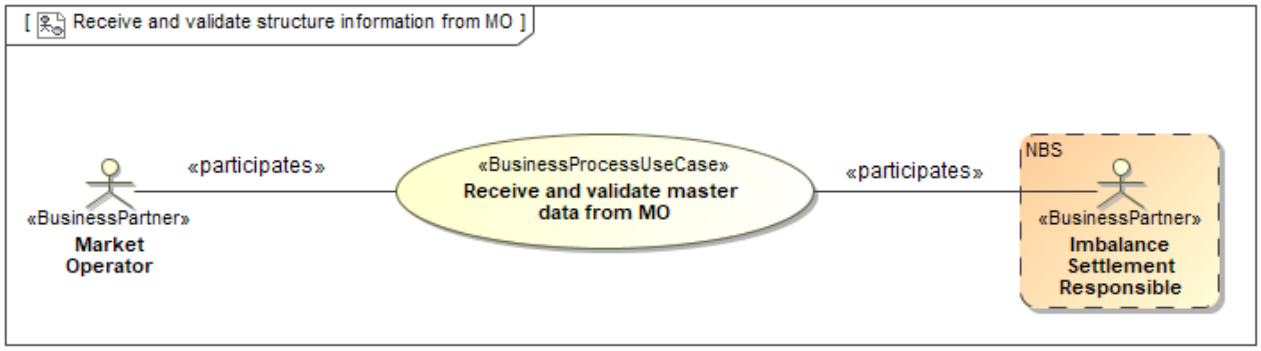


**Figure 13:** UseCase: Receive and validate Master Data from Market Operators

The Market Operators (NEMO) may request new Trade Structures, i.e. a BRP and the related Energy Trader (Retailer).

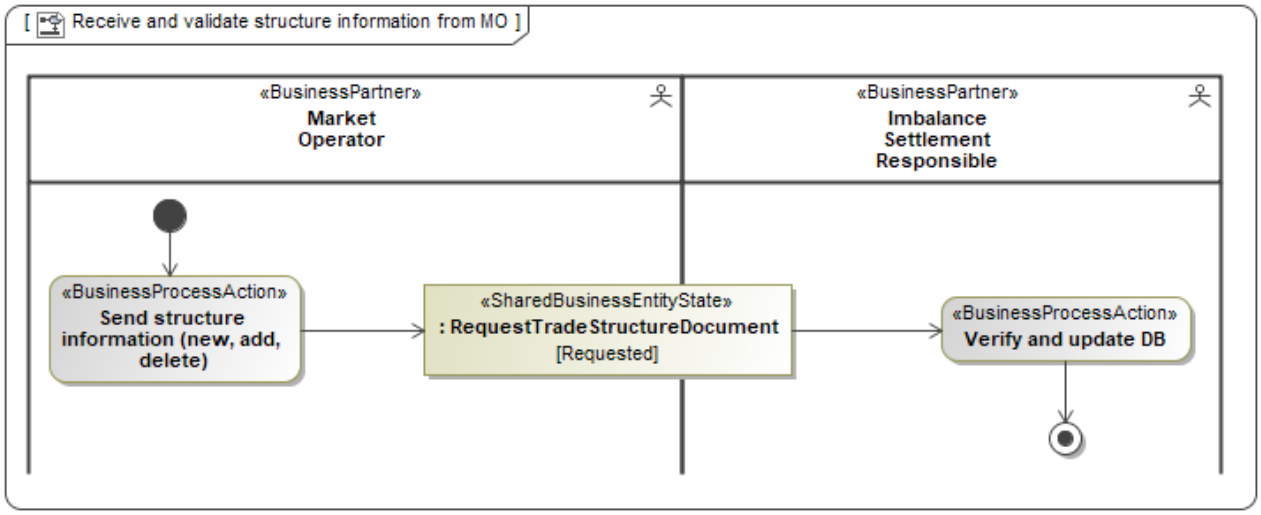


**Figure 14:** Activity diagram: Receive and validate Master Data from Market Operator

## 4.2 Process area: Distribute Master Data

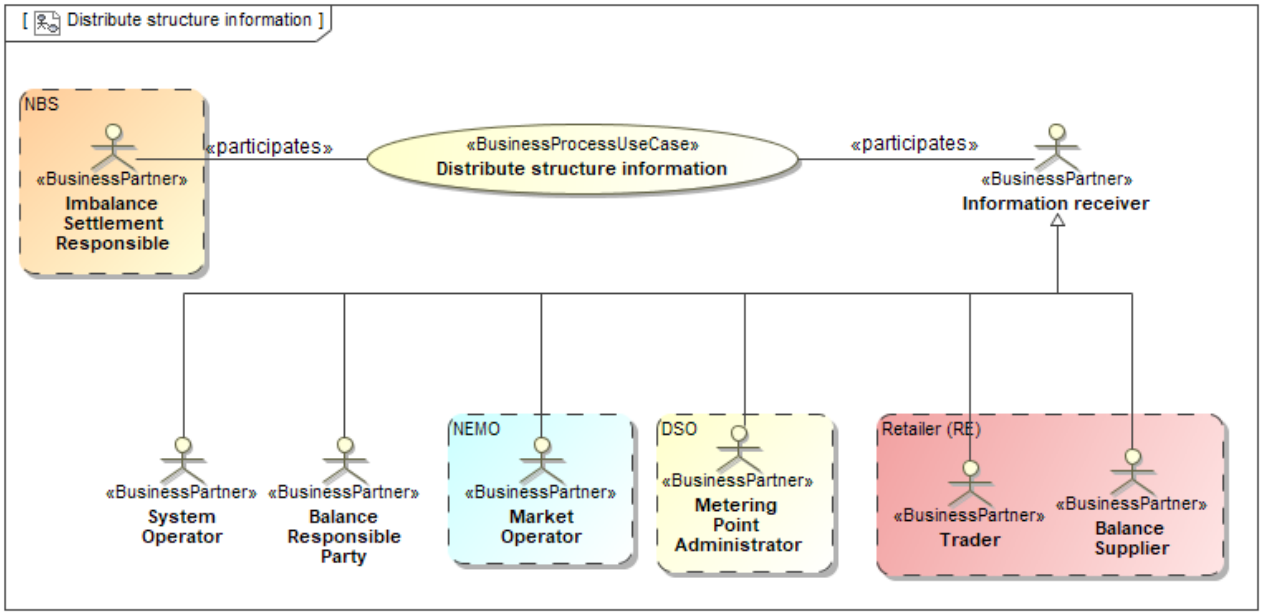


**Figure 15:** UseCase: Distribute Master Data

eSett will distribute Master Data received from the TSOs and the DSOs to the actors needing them.

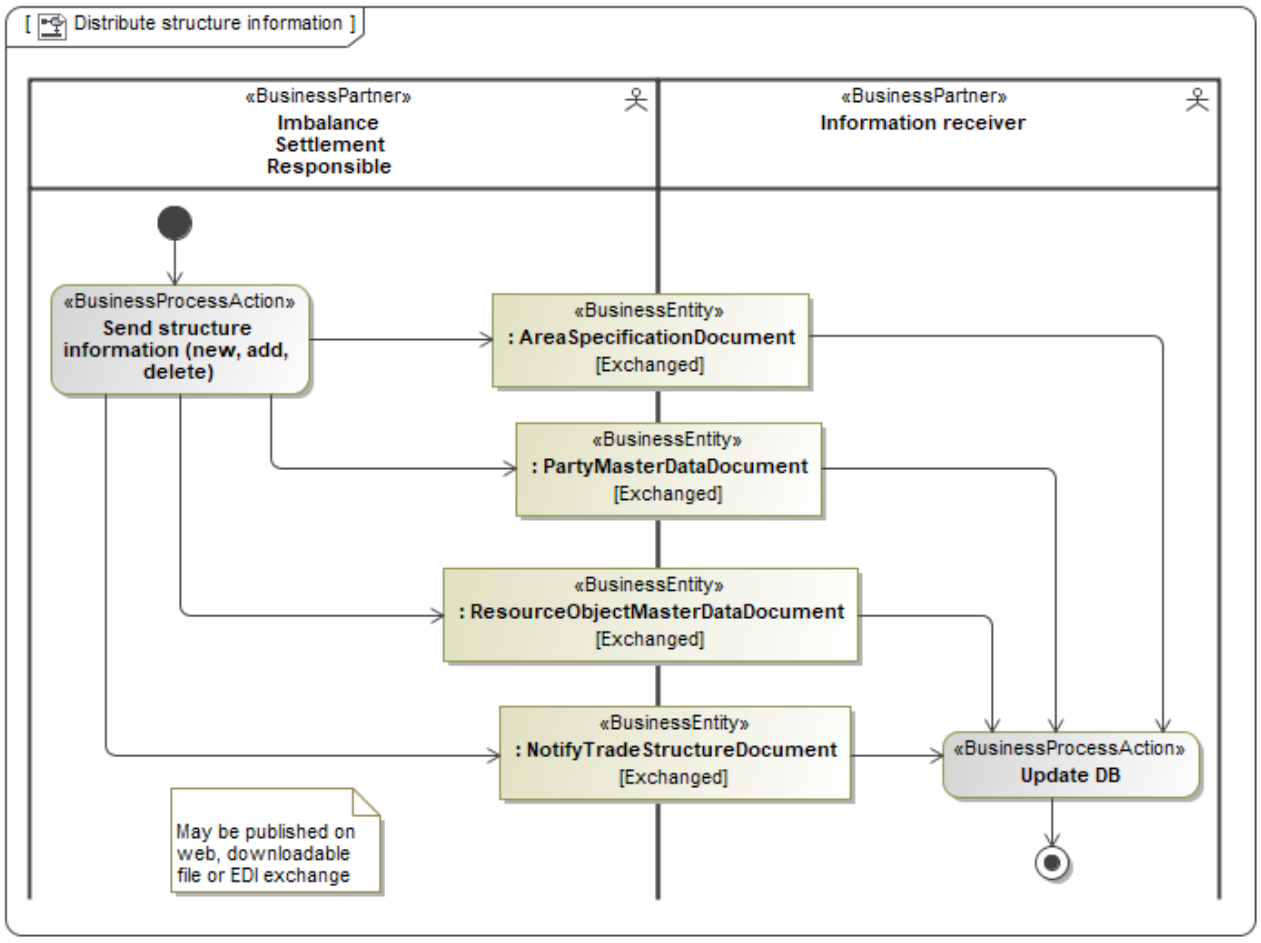


**Figure 16:** Activity diagram: Distribute Master Data

# 5 Business Data View

This chapter describes class diagrams, showing the content of the business documents defined in the previous defined UML diagrams. The class diagram shows the important information needed to identify the document header, time series and observations to be exchanged, such as:

- The reported object, such as Metering point, Resource (Generator Group or Regulation Object), In Area and Out Area.
- The level of aggregation, such as per Energy Supplier and Balance Responsible Party.
- The characteristics needed to express the nature of the time series, such as Business type and Product.

Technical elements related to the communication channel (SMTP, WS…) and syntax (EDIFACT, XML….) are skipped.

## 5.1 NEG Area Specification Document

The NEG Area Specification Document is used for sending Master Data for areas, such as Bidding Zones (BZ) and Metering Grid Areas (MGA).

In relation to NBS, the Area Specification Document is split into three distinct usages of the documents, i.e.:

i. BZ and MGA Master Data
ii. BZ - MGA Relations
iii. MGA - MGA Relations

### 5.1.1 Class diagram: NEG Area Specification Document version 1.0

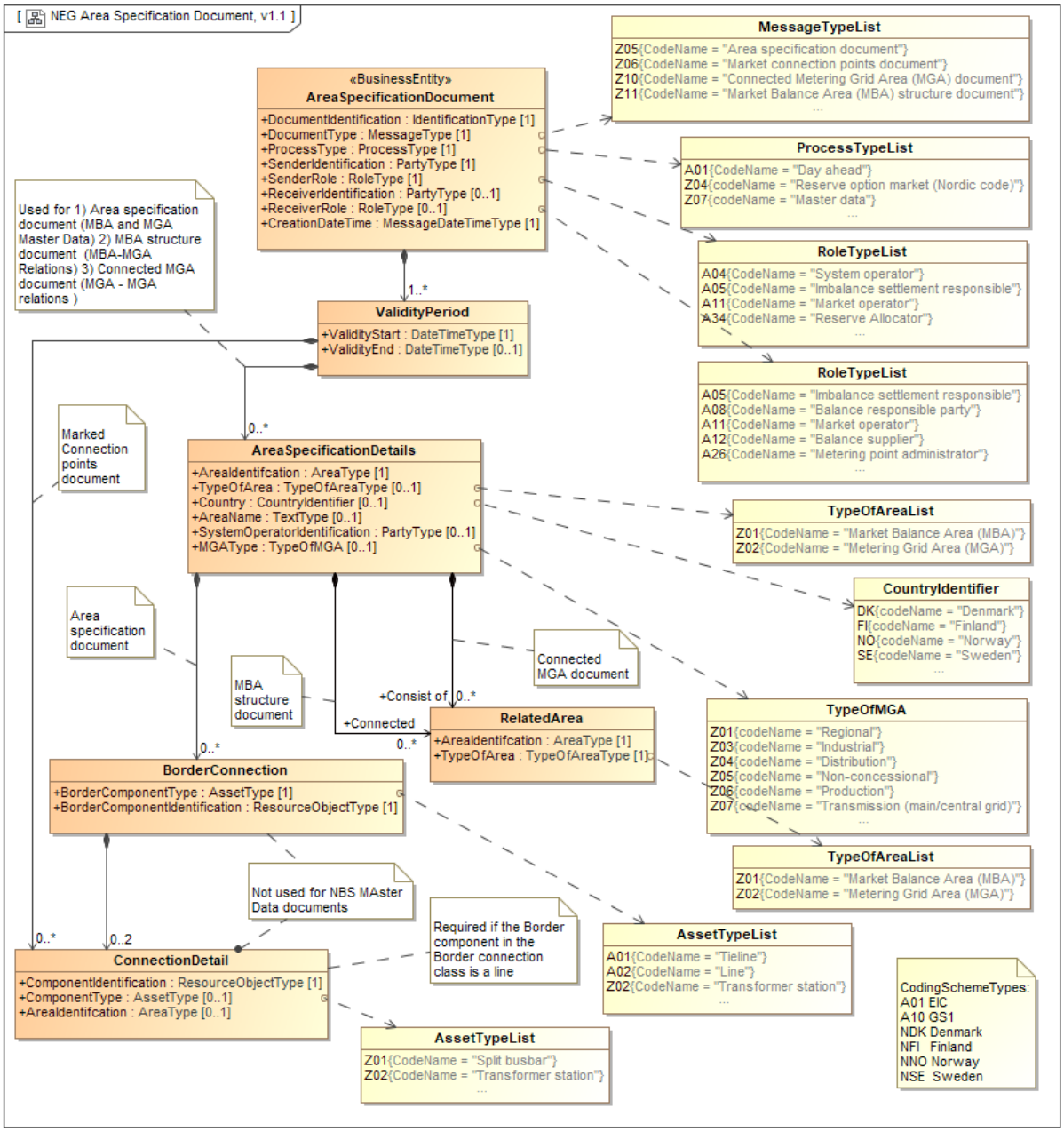


**Figure 17**: Class diagram: NEG Area Specification Document version 1.0

### 5.1.2 Attribute usage: NEG Area Specification Document for BZ and MGA Master Data

*The NEG Area Specification Document for BZ and MGA Master Data is used in the following exchanges:*

- NBS Master Data exchange phase - Receive and validate master data:
  - 1, BZ and MGA Master Data

| Attribute | Cl. | Code and description |
|---|---|---|
| **Header** | [1] | |
| Document Identification | [1] | Unique identification of the document |
| Document Type | [1] | **Z05** Area specification document |
| Process Type | [1] | **Z07** Master data |
| Sender Identification | [1] | Identification of the party who is sending the document (and codingScheme) |
| Sender Role | [1] | **A04** System Operator |
| Receiver Identification | [0..1] | Identification of the party who is receiving the master data (and codingScheme) |
| Receiver Role | [0..1] | **A05** Imbalance settlement responsible |
| Creation Date Time | [1] | Date and time for creation of the document |
| ***Validity period*** | [1..*] | May be repeated for each BZ and/or MGA, but must be repeated if the validity start and end date and time differs between the BZs and/or MGAs |
| Validity Start | [1] | Date Time |
| Validity End | [0..1] | Date Time |
| ***Area specification details*** | [1..*] | |
| Area Identification | [1] | Unique ID of the area (and codingScheme) |
| Type of Area | [1] | **Z01** Bidding Zone (BZ)<br>**Z02** Metering Grid Area (MGA) |
| Country | [0..1] | **DK** Denmark<br>**FI** Finland<br>**NO** Norway<br>**SE** Sweden<br><br>**Note:** Must be used for BZs |
| Area Name | [1] | Name of the BZ or MGA in clear text |
| System Operator Identification | [1] | The unique identification of the DSO responsible for the MGA or the TSO responsible for the BZ (and codingScheme) |
| MGA Type | [0..1] | **Z01** Regional<br>**Z03** Industrial<br>**Z04** Distribution<br>**Z05** Non-concessional<br>**Z06** Production<br>**Z07** Transmission (main/central grid)<br><br>**Note:** Shall be used for MGAs – Not used for BZs |
| ***Connected Related Area*** | [0..*] | **Note:** May be used for *Type of Area* = **Z02** Metering Grid Area (MGA)<br>Not used for *Type of Area* = **Z01** Bidding Zone (BZ) |
| Area Identification | [1] | Unique ID of the area (and codingScheme) |
| Type of Area | [1] | **Z01** Bidding Zone (BZ) |

**Table 4:** Attribute usage: NEG Area Specification Document for BZ and MGA Master Data

### 5.1.3 Attribute usage: NEG Area Specification Document for BZ-MGA Relations

*The NEG Area Specification Document for BZ and MGA Relations is used in the following exchanges:*

- NBS Master Data exchange phase - Receive and validate master data:
  - 2, BZ - MGA Relations
  - 3, BZ - MGA Relations
- NBS Master Data exchange phase – Distribute master data
  - 2, BZ - MGA Relations
  - 3, BZ - MGA Relations
  - 4, BZ - MGA Relations
  - 5, BZ- MGA Relations

| Attribute | Cl. | Code and description |
|---|---|---|
| **Header** | [1] | |
| Document Identification | [1] | Unique identification of the document |
| Document Type | [1] | **Z11** Bidding Zone (BZ) Master Data document |
| Process Type | [1] | **Z07** Master data |
| Sender Identification | [1] | Identification of the party who is sending the document (and codingScheme) |
| Sender Role | [1] | **A04** System Operator<br>**A05** Imbalance Settlement Responsible |
| Receiver Identification | [0..1] | Identification of the party who is receiving the master data (and codingScheme) |
| Receiver Role | [0..1] | **A05** Imbalance settlement responsible<br>**A08** Balance responsible party (BRP)<br>**A12** Energy Supplier<br>**A26** Metering point administrator<br>**A46** Balancing Service Provider (BSP)<br>**A47** Energy Trader (non-balance responsible party) |
| Creation Date Time | [1] | Date and time for creation of the document |
| ***Validity period*** | [1..*] | May be repeated for each BZ, but must be repeated if the validity start and end date time differs between the BZs |
| Validity Start | [1] | Date Time |
| Validity End | [0..1] | Date Time |
| ***Area specification details*** | [1..*] | May be repeated for each BZ with the same validity start and end date |
| Area Identification | [1] | Unique ID of the area (and codingScheme) |
| Type of Area | [1] | **Z01** Bidding Zone (BZ) |
| ***Consist of Related Area*** | [1..*] | |
| Area Identification | [1] | Unique ID of the area (and codingScheme) |
| Type of Area | [1] | **Z02** Metering Grid Area (MGA) |

**Table 5:** Attribute usage: NEG Area Specification Document for BZ - MGA Relations

### 5.1.4 Attribute usage: NEG Area Specification Document for MGA-MGA Relations

*The NEG Area Specification Document for MGA and MGA Relations is used in the following exchanges:*

- NBS Master Data exchange phase - Receive and validate master data:
  - 4, MGA - MGA Relations
- NBS Master Data exchange phase – Distribute master data
  - 6, MGA - MGA Relations

| Attribute | Cl. | Code and description |
|---|---|---|
| **Header** | [1] | |
| Document Identification | [1] | Unique identification of the document |
| Document Type | [1] | **Z10** Connected Metering Grid Area (MGA) document |
| Process Type | [1] | **Z07** Master data |
| Sender Identification | [1] | Identification of the party who is sending the document (and codingScheme) |
| Sender Role | [1] | **A04** System operator<br>**A05** Imbalance settlement responsible |
| Receiver Identification | [0..1] | Identification of the party who is receiving the master data (and codingScheme) |
| Receiver Role | [0..1] | **A05** Imbalance settlement responsible<br>**A26** Metering point administrator |
| Creation Date Time | [1] | Date and time for creation of the document |
| ***Validity period*** | [1..*] | |
| Validity Start | [1] | Date Time |
| Validity End | [0..1] | Date Time |
| ***Area specification details*** | [1..*] | |
| Area Identification | [1] | Unique ID of the area (and codingScheme) |
| Type of Area | [1] | **Z02** Metering Grid Area (MGA) |
| ***Connected Related Area*** | [1..*] | |
| Area Identification | [1] | Unique ID of the area (and codingScheme) |
| Type of Area | [1] | **Z02** Metering Grid Area (MGA) |

**Table 6:** Attribute usage: NEG Area Specification Document for MGA-MGA Relations

## 5.2 NEG Party Master Data Document

The NEG Party Master Data Document is used for sending Master Data for parties, such as Energy Suppliers (Retailers).

### 5.2.1 Class diagram: NEG Party Master Data Document version 1.3

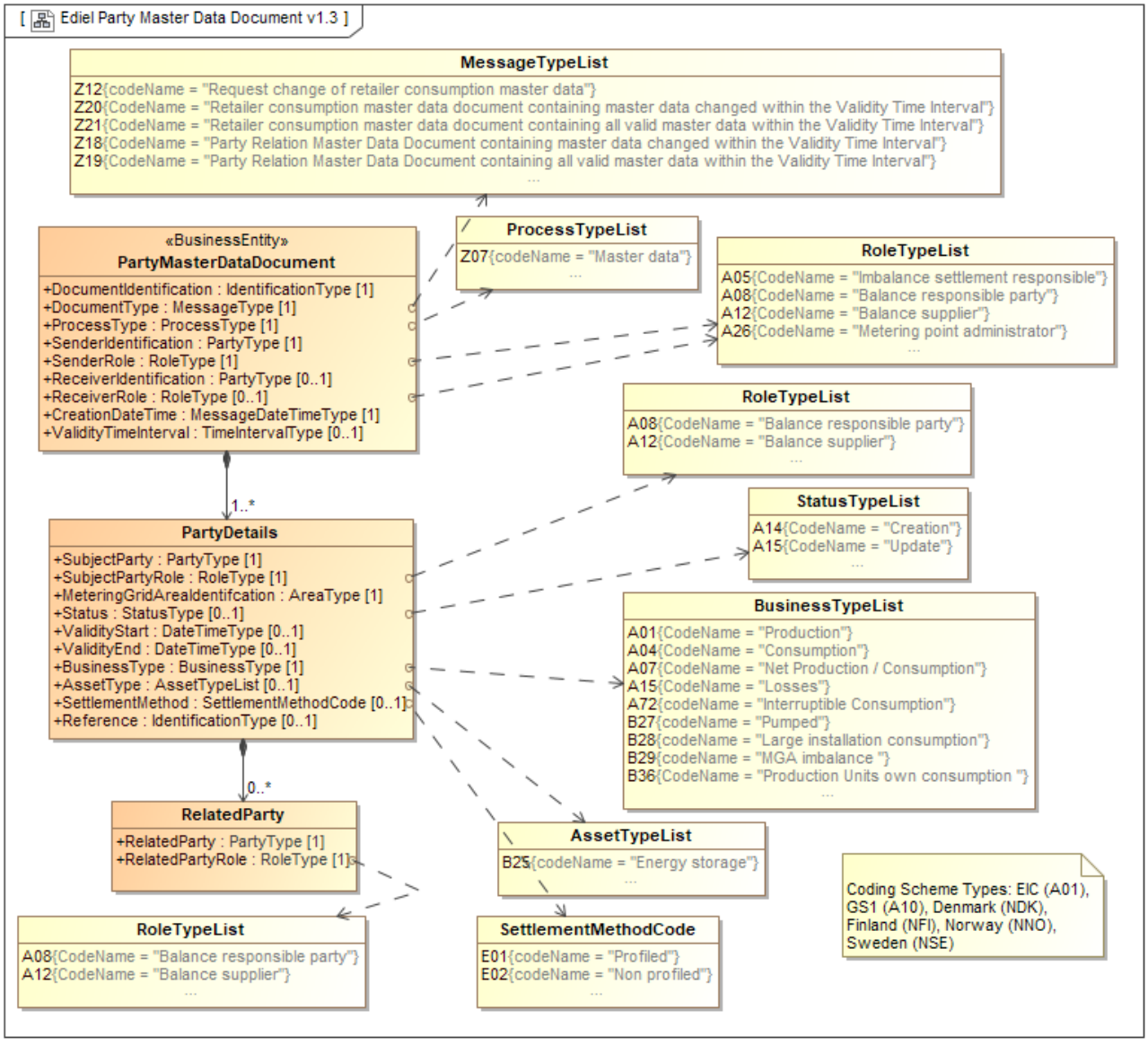


**Figure 18:** Class diagram: NEG Party Master Data Document version 1.0

*The NEG Party Master Data Document is used in the following exchanges:*

- NBS Master Data exchange phase - Receive and validate master data:
  - 5, Party Master Data
- NBS Master Data exchange phase – Distribute master data
  - 7, Party Master Data
  - 8, Party Relation
  - 9, Party Master Data

### 5.2.2 Attribute usage: NEG Party Master Data Document

| Attribute | Cl. | Code and description |
|---|---|---|
| **Header** | [1] | |
| Document Identification | [1] | Unique identification of the document |
| Document Type | [1] | **Z12** Request change of retailer consumption master data<br>**Z20** Retailer consumption master data document containing master data changed within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>**Z21** Retailer consumption master data document containing all valid master data within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>**Z18** Party Relation Master Data Document containing master data changed within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>**Z19** Party Relation Master Data Document containing all valid master data within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>*Business rules:*<br>• **Z12** is used for requests (create and update) to Imbalance Settlement Responsible.<br>• **Z18**, **Z19**, **Z20** and **Z21** are used for reporting from Imbalance Settlement Responsible. |
| Process Type | [1] | **Z07** Master data |
| Sender Identification | [1] | Identification of the party who is sending the document (and Coding Scheme). |
| Sender Role | [1] | **A05** Imbalance settlement responsible<br>**A26** Metering Point Administrator (DSO) |
| Receiver Identification | [0..1] | Identification of the party who is receiving the master data (and Coding Scheme)<br>*Business rules:*<br>• Required unless used for “broadcast” (same document to several recipients). |
| Receiver Role | [0..1] | **A05** Imbalance Settlement Responsible<br>**A08** Balance Responsible Party<br>**A26** Metering Point Administrator (DSO)<br>*Business rules:*<br>• Required unless used for “broadcast” (same document to several recipients) |
| Creation Date Time | [1] | Date and time for creation of the document |
| Validity Time Interval | [0..1] | The period for which this Party Master Data document details are valid. |
| **Party details** | [1..*] | Business rules for Party Details when sending request for structure change to eSett:<br>• One Party Details represents one request<br>• There cannot be more than one Party Details with the same object identification present in one file (multiple requests for more than one Subject Party will be rejected) |
| Subject Party | [1] | Unique ID of the Party in question (and Coding Scheme). |
| Subject Party Role | [1] | **A08** Balance Responsible Party |

| Attribute | Cl. | Code and description |
|---|---|---|
| | | **A12** Energy Supplier (Retailer) |
| Metering Grid Area Id. | [1] | Unique ID of the MGA (and Coding Scheme) |
| Status | [0..1] | **A14** Creation<br>**A15** Update<br>*Business rules:*<br>• Only used when requesting a creation or update of an object. Not used for information notifications. |
| Validity Start | [0..1] | Date Time<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present, with one exception; The Validity End can be extended to "unlimited" (i.e. no Validity End) by sending a Party Detail with Status = "**A15** Update" and no Validity Start or Validity End. |
| Validity End | [0..1] | Date Time<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present, with one exception; The Validity End can be extended to "unlimited" (i.e. no Validity End) by sending a Party Detail with Status = "**A15** Update" and no Validity Start or Validity End. |
| Business Type | [1] | **A01** Production<br>**A04** Consumption (general consumption)<br>**A07** Net production/ consumption (combined pumped storage)<br>**A15** Losses<br>**A72** Interruptible Consumption<br>**B27** Pumped<br>**B28** Large installation consumption<br>**B29** MGA imbalance<br>**B36** Production Units own consumption (Only used in Finland)<br>*Business rules:*<br>• See **Table 8**: Dependency table for NEG Party Master Data Document as Retailer Consumption Master Data |
| Asset Type | [0..1] | **B25** Energy storage<br>*Business rules:*<br>• Only to be used together with Business type **A04.** |
| Settlement Method | [0..1] | **E01** Profiled<br>**E02** Non-profiled<br>**E15** Non-profiled with special rules (Flex settled)<br>*Business rules:*<br>• See **Table 8**: Dependency table for NEG Party Master Data Document as Retailer Consumption Master Data |
| Reference | [0..1] | Reference to a set of "Party Details"[3] |
| ***Related Party*** | [0..*] | Only used for "Party relation master data document" (Document Type **Z18** and **Z19**). |
| Related Party | [1] | Unique ID of the Party in question (and Coding Scheme). |

[3] MEC (Market Entity Connection) ID, see eSett handbook [9]. The element is only used if an entity has several MEC IDs and the MEC ID is needed to identify the correct MEC.

| Attribute | Cl. | Code and description |
|---|---|---|
| Related Party Role | [1] | **A08** Balance Responsible Party<br>**A12** Energy Supplier (Retailer) |

**Table 7:** Attribute usage: NEG Party Master Data Document

### 5.2.3 Dependency table for NEG Party Master Data Document as Retailer Consumption Master Data

| Document Type | Business Type | Settlement Method | Sent from[4] | Sent to |
|---|---|---|---|---|
| **Z12** Request change of retailer consumption master data | **A04** Consumption (general consumption) | **E01** Profiled | DSO | eSett |
| | | **E02** Non-profiled | DSO | eSett |
| | | **E15** Non-profiled with special rules (Flex settled) | DSO | eSett |
| | **A15** Losses | **E01** Profiled | DSO | eSett |
| | | **E02** Non-profiled | DSO | eSett |
| | | **E15** Non-profiled with special rules (Flex settled) | DSO | eSett |
| | **B27** Pumped | **E01** Profiled | DSO | eSett |
| | | **E02** Non-profiled | DSO | eSett |
| | **A07** Net production/ consumption | **E02** Non-profiled | DSO | eSett |
| | **A72** Interruptible Consumption | **E02** Non-profiled | DSO | eSett |
| | **B28** Large installation consumption | **E02** Non-profiled | DSO | eSett |
| | **B29** MGA Imbalance | **E02** Non-profiled | DSO | eSett |
| | **B36**[5] Production Units own consumption | **E02** Non-profiled | DSO | eSett |
| **Z20** Retailer consumption master data document containing master data changed within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>**Z21** Retailer consumption master data document containing all valid master data within the Validity Time Interval (Start date/time inclusive and End date/time exclusive) | **A04** Consumption (general consumption) | **E01** Profiled | DSO | eSett |
| | | **E02** Non-profiled | DSO | eSett |
| | | **E15** Non-profiled with special rules (Flex settled) | DSO | eSett |
| | **A15** Losses | **E01** Profiled | DSO | eSett |
| | | **E02** Non-profiled | DSO | eSett |
| | | **E15** Non-profiled with special rules (Flex settled) | DSO | eSett |
| | **B27** Pumped | **E01** Profiled | DSO | eSett |
| | | **E02** Non-profiled | DSO | eSett |
| | **A07** Net production/ consumption | **E02** Non-profiled | eSett | DSO |
| | **A72** Interruptible Consumption | **E02** Non-profiled | eSett | DSO |
| | **B28** Large installation consumption | **E02** Non-profiled | eSett | DSO |
| | **B29** MGA Imbalance | **E02** Non-profiled | eSett | DSO, BRP |
| | **B36**[6] Production Units own consumption | **E02** Non-profiled | eSett | DSO |

[4] In Sweden, the profiled consumption will be sent from Svenska kraftnät
[5] Only used in Finland
[6] Only used in Finland

| Document Type | Business Type | Settlement Method | Sent from[4] | Sent to |
|---|---|---|---|---|
| **Z18** Party Relation Master Data Document containing master data changed within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>***Z19*** Party Relation Master Data Document containing all valid master data within the Validity Time Interval (Start date/time inclusive and End date/time exclusive) | **A01** Production<br>**A04** Consumption (general consumption) | Not used | eSett | DSO, BRP, BS |

**Table 8:** Dependency table for NEG Party Master Data Document as Retailer Consumption Master Data

## 5.3 Ediel (NEG) Resource (Production Unit) Master Data Document

The Ediel (NEG) Resource (Production Unit) Master Data Document is used for sending Master Data for Resources, such as Generator Groups and Generators.

### 5.3.1 Class diagram: Ediel (NEG) Resource (Production Unit) Master Data Document version 1.1

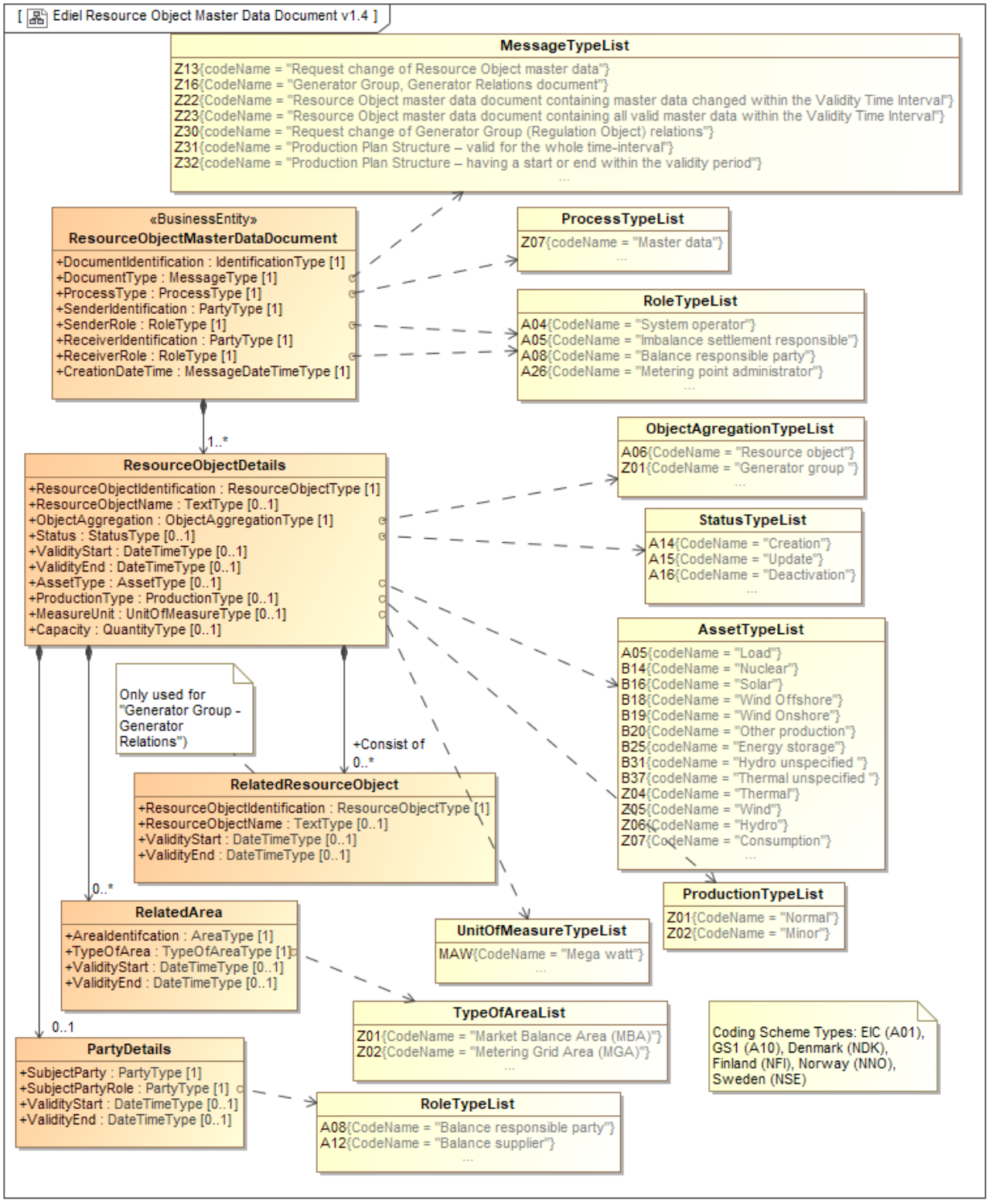


**Figure 19**: Class diagram: Ediel (NEG) Resource (Production Unit) Master Data Document version 1.1

### 5.3.2 Attribute usage: Ediel (NEG) Resource (Production Unit) Master Data Document

- Used by DSO for managing all Production Unit (PU) attributes except connecting Regulation Object (Generator Group):
  - Inbound Production Unit Data-flow (only changes);
  - Outbound Production Unit Data-flow (All, Delta).
- Used by BRP for managing connections between Production Unit and Regulation Object (Generator Group):
  - Inbound Production Unit - Regulation Object Relation Data-flow (only changes);
  - Outbound Production Unit - Regulation Object Relation Data-flow (All, Delta).

*The Ediel (NEG) Resource Object (Production Unit) Master Data Document is used in the following exchanges:*

- NBS Master Data exchange phase - Receive and validate master data:
  - 6, Resource, Production Unit Master Data
- NBS Master Data exchange phase – Distribute master data:
  - 10, Resource Master Data
  - 11, Resource Master Data

| Attribute | Cl. | Code and description |
|---|---|---|
| **Header** | [1] | |
| Document Identification | [1] | Unique identification of the document |
| Document Type | [1] | **Z13** Request change of Resource master data<br>**Z22** Resource master data document containing master data changed within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>**Z23** Resource master data document containing all valid master data within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>**Z30** Request change of Generator Group (Regulation Object) relations<br>*Business rules:*<br>• **Z13** is used for requests (create, update and deactivate) to Imbalance Settlement Responsible<br>• **Z22** and **Z23** are used for reporting from Imbalance Settlement Responsible<br>• **Z30** is included in arrow 7 in the sequence diagram in chapter 2.3.1. |
| Process Type | [1] | **Z07** Master data |
| Sender Identification | [1] | Identification of the party who is sending the document (and Coding Scheme) |
| Sender Role | [1] | **A05** Imbalance settlement responsible<br>**A26** Metering Point Administrator (DSO) |
| Receiver Identification | [1] | Identification of the party who is receiving the master data (and Coding Scheme) |
| Receiver Role | [1] | **A05** Imbalance settlement responsible<br>**A08** Balance responsible party (BRP)<br>**A26** Metering Point Administrator (DSO) |
| Creation Date Time | [1] | Date and time for creation of the document |
| ***Resource Object Details*** | [1..*] | *Business rules for Resource Details when sending request for structure change:*<br>• One Resource Details represents one request |

| Attribute | Cl. | Code and description |
|---|---|---|
| | | • There cannot be more than one Resource Details with the same object identification present in one xml file (multiple requests for more than one Production Unit will be rejected)<br>*Business rules for Resource Details when distributed from Imbalance Settlement Responsible:*<br>• Resource Details will repeat for each change of a time-dependent attribute<br>• Resource Details contain all attributes |
| Resource Object Identification | [1] | Unique ID of the Resource in question |
| Resource Object Name | [0..1] | Name of the Resource in clear text<br>*Business rules:*<br>• Resource Name and Asset Type for Production Units are not time-dependent, hence Validity Start and Validity End are NOT used when updating these attributes. |
| Object Aggregation | [1] | **A06** Resource (used for detailed units)<br>**Z01** Generator group |
| Status | [0..1] | **A14** Creation<br>**A15** Update<br>**A16** Deactivation<br>*Business rules:*<br>• Only used when requesting a change to an object. Not used for information notifications<br>• Deactivation is used to remove a linked party (Energy Supplier, Retailer or Balance Responsible Party) from a Resource. To reactivate a deactivation, **A15** Update is used<br>• For "**A14** Creation", all time-dependent attributes have the same validity as the Production Unit<br>• An "**A14** Creation" for a Resource already crated, will be rejected<br>• An "**A15** Update", for a not existing Resource, will be rejected<br>• An "**A16** Deactivation", for an already deactivated Resource, will be rejected |
| Validity Start | [0..1] | Date Time<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present, except for Status = "**A15** Update", for not time-dependent attributes (Resource Name and Asset Type) |
| Validity End | [0..1] | Date Time<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present, except for Status "**A15** Update" for not time-dependent attributes (Resource Name and Asset Type) |
| Asset Type[7] | [0..1] | **A05** Load (replaces **Z07**)<br>**B14** Nuclear<br>**B16** Solar<br>**B18** Wind offshore<br>**B19** Wind onshore (replaces **Z05**)<br>**B20** Other production |

[7] The "**Znn** codes" will be valid one year after eSett have announcement its removal, approximately until the end of 2024. In the transition period eSett will continue using "**Znn** codes".

| Attribute | Cl. | Code and description |
|---|---|---|
| | | **B25** Energy storage<br>**B31** Hydro unspecified (replaces **Z06**)<br>**B37** Thermal unspecified (replaces **Z04**)<br>**Z04** Thermal<br>**Z05** Wind<br>**Z06** Hydro<br>**Z07** Consumption<br>*Business rules:*<br>• Resource Name and Asset Type for Production Units are not time dependent, hence Validity Start and Validity End are NOT used when updating these attributes.<br>• Not required when updating Resource (Production Units) |
| Production Type | [0..1] | **Z01** Normal<br>**Z02** Minor<br>*Business rules:*<br>• Production Type is only used for creation of Production Units and for structure information sent from Imbalance Settlement Responsible to Market Parties, i.e. the Production Type cannot be changed |
| Measure Unit | [0..1] | **MAW** Megawatt<br>*Not used for Generator Groups* |
| Capacity | [0..1] | Capacity of the Resource<br>*Not used for Generator Groups* |
| ***Party Details*** | [0..1] | |
| Subject Party | [1] | Unique ID of the Energy Supplier (Retailer) or Balance Responsible Party in question (and codingScheme) |
| Subject Party Role | [1] | **A08** Balance Responsible Party<br>**A12** Energy Supplier |
| ***Related Area*** | [0..*] | *Business rules:*<br>• Required for Generators<br>• Required for Generator Groups in Sweden<br>• May be repeated if a Generator or a Generator group covers more than one area<br>• Related Area is only used for creation of Production Units and for structure information sent from Imbalance Settlement Responsible to Market Parties, i.e. the Related Area cannot be changed |
| Area Identification | [1] | Unique ID of the MGA or BZ (and Coding Scheme) |
| Type of Area | [1] | **Z01** Bidding Zone (BZ)<br>**Z02** Metering Grid Area (MGA) |
| ***Related Resource Object*** | ***[0..*]*** | *Business rules:*<br>• Only used for "Generator Group – Generator Relations", i.e. Document Type **Z30** |
| Resource Object Identification | [1] | Unique ID of the Resource (Generator) in question |

**Table 9:** Attribute usage: Ediel (NEG) Resource (Production Unit) Master Data Document

### 5.3.3 Attribute usage: Ediel (NEG) Resource Object (Generator Group Relations) Master Data Document

Used by TSO for managing Regulation Object (Generator Group) Structure - Name, type, code, BRP and Location (Bidding Zone), not connection to production unit (generator relations, which is managed by BRP only):

- Inbound Regulation Object Dataflow.
  **Note:**
  It is under discussion if the inbound (to eSett) Regulation Object Dataflow should contain the full set of Resources or only those that have been created, updated, or deactivated. If the latter option is chosen, a Status element (**A14** Creation, **A15** Update, **A16** Deactivation) will be added.
- Outbound Regulation Object Dataflow (All, Delta).
- Outbound Production Plan Structure (All, Delta).

*The Ediel (NEG) Resource Object (Generator Group Relations) Master Data Document is used in the following exchanges:*

- NBS Master Data exchange phase - Receive and validate master data:
  - 7, Generator group relation
- NBS Master Data exchange phase – Distribute master data:
  - 12, Resource, Generator Group and Relations Master Data
  - 13, Resource, Production Plan Structure Master Data

| Attribute | Cl. | Code and description |
|---|---|---|
| **Header** | **[1]** | **Resource Object (Generator Group Relations) Master Data Document** |
| Document Identification | [1] | Unique identification of the document |
| Document Type | [1] | **Z16** Generator Group Relations document<br>**Z22** Resource master data document containing master data changed within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>**Z23** Resource master data document containing all valid master data within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>**Z31** Production Plan Structure – valid for the whole time-interval<br>**Z32** Production Plan Structure – having a start or end within the validity period<br>*Business rules:*<br>• **Z16** is only used for updates of BRP and/or Bidding Zone.<br>• **Z22** and **Z23** contains a list of all "MACs" identifying production plans and are only sent to the System Operators. The documents are without the Generator Group and Generator relations. |
| Process Type | [1] | **Z07** Master data |
| Sender Identification | [1] | Identification of the party who is sending the document (and codingScheme) |
| Sender Role | [1] | **A05** Imbalance settlement responsible<br>**A08** Balance Responsible Party |
| Receiver Identification | [1] | Identification of the party who is receiving the master data (and codingScheme) |
| Receiver Role | [1] | **A05** Imbalance settlement responsible<br>**A08** Balance Responsible Party |
| Creation Date Time | [1] | Date and time for creation of the document |

| Attribute | Cl. | Code and description |
|---|---|---|
| **Details** | [1..*] | |
| Resource Object Identification | [1] | Unique ID of the Resource (Generator Group) in question |
| Resource Object Name | [0..1] | Name of the Resource (Generator Group) in clear text |
| Object Aggregation | [1] | **A06** Resource object (used for detailed units)<br>**Z01** Generator group |
| Validity Start | [0..1] | Date Time<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present |
| Validity End | [0..1] | Date Time<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present |
| Asset Type | [0..1] | **A05** Load (replaces **Z07**)<br>**B14** Nuclear<br>**B16** Solar<br>**B18** Wind offshore<br>**B19** Wind onshore (replaces **Z05**)<br>**B20** Other production<br>**B25** Energy storage<br>**B31** Hydro unspecified (replaces **Z06**)<br>**B37** Thermal unspecified (replaces **Z04**)<br>**Z04** Thermal<br>**Z05** Wind<br>**Z06** Hydro<br>**Z07** Consumption |
| Production Type | [0..1] | **Z01** Normal<br>**Z02** Minor |
| **Party Details** | [0..*] | |
| Subject Party | [1] | Unique ID of the Balance Responsible Party in question (and codingScheme) |
| Subject Party Role | [1] | **A08** Balance Responsible Party |
| Validity Start | [0..1] | Date Time<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present |
| Validity End | [0..1] | Date Time<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present |
| | | |
| **Related Area** | [0..*] | Business rules:<br>• Required for Generators<br>• Required for Generator Groups in Sweden<br>• May be repeated if a Generator or a Generator group covers more than one area |
| Area Identification | [1] | Unique ID of the MGA or BZ (and codingScheme) |
| Type of Area | [1] | **Z01** Bidding Zone (BZ)<br>**Z02** Metering Grid Area (MGA) |
| Validity Start | [0..1] | Date Time<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present |

| Attribute | Cl. | Code and description |
|---|---|---|
| Validity End | [0..1] | Date Time<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present |

**Table 10:** Attribute usage: Ediel (NEG) Resource Object (Generator Group Relations) Master Data Document

## 5.4 Ediel Request Trade Structure Document

The Ediel Request Trade Structure Document is sent from a Balance Responsible Party (BRP) or a Nominated Electricity Market Operator (NEMO) to the Imbalance Settlement Responsible (ISR), requesting new trade structures, either for bilateral trade or for PX (Power Exchange) trade.

### 5.4.1 Class diagram: Ediel Request Trade Structure Document version 1.0

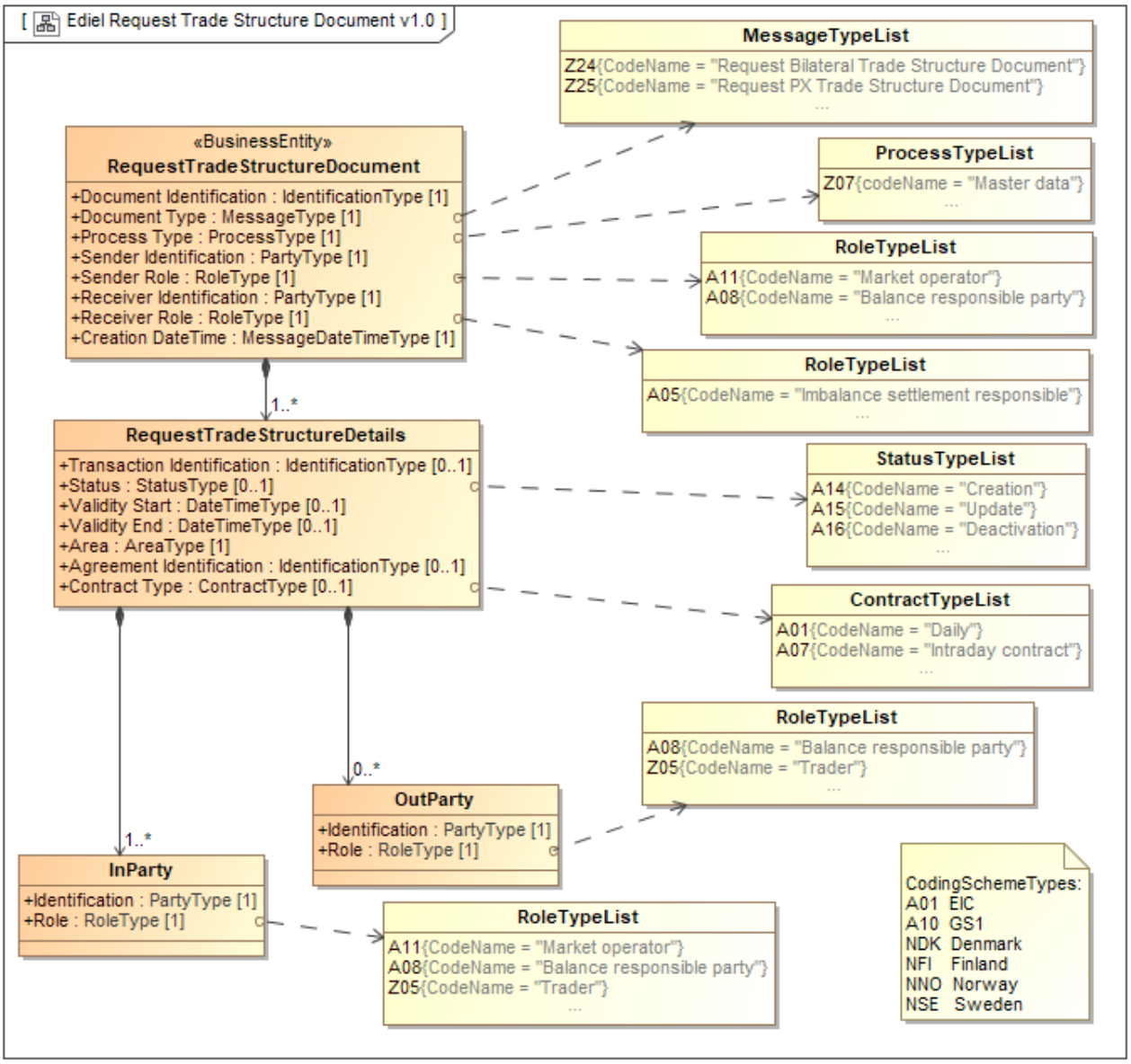


**Figure 20**: Class diagram: Ediel Request Trade Structure Document version 1.0

### 5.4.2 CIM assembly model class diagram: Ediel Request Trade Structure Document

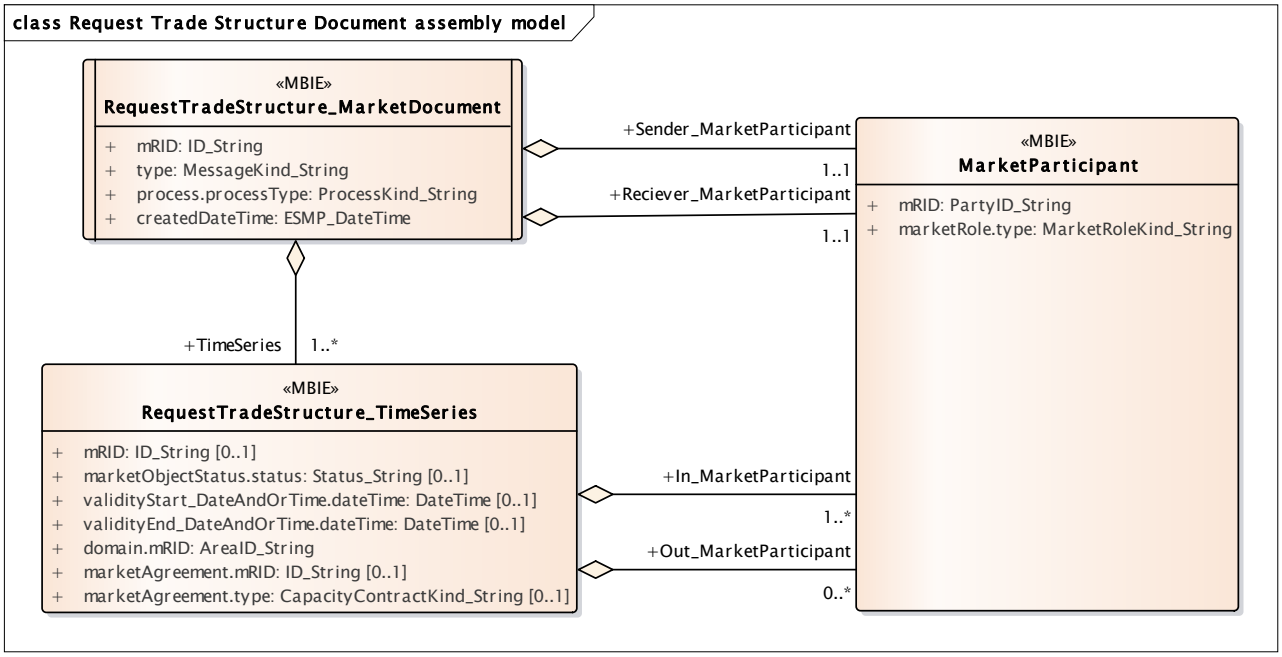


**Figure 21:** CIM assembly model class diagram: Ediel Request Trade Structure Document

### 5.4.3 Attribute usage: Ediel Request Bilateral Trade Structure Document

*The Ediel Request Bilateral Trade Structure Document is used in the following exchanges:*

- NBS Master Data exchange phase - Receive and validate master data:
  - 8, Request new Bilateral Trade Structure

| Attribute | Attribute from CIM | Cl | Code and description |
|---|---|---|---|
| **Header** | **RequestTradeStructure_MarketDocument** | [1] | |
| Document Identification | mRID | [1] | Unique identification of the document |
| Document Type | type | [1] | **Z24** Request Bilateral Trade Structure Document |
| Process Type | Process.processType | [1] | **Z07** Master data |
| Sender Identification | Sender_MarketParticipant.mRID | [1] | Identification of the party who is sending the document (and codingScheme) |
| Sender Role | Sender_MarketParticipant.marketRole.type | [1] | **A08** Balance Responsible Party |
| Receiver Identification | Reciever_MarketParticipant.mRID | [1] | Identification of the party who is receiving the master data (and codingScheme) |
| Receiver Role | Reciever_MarketParticipant.marketRole.type | [1] | **A05** Imbalance Settlement Responsible |
| Creation Date Time | createdDateTime | [1] | Date and time for creation of the document |
| **Details** | **RequestTradeStructure_TimeSeries** | [1..*] | |
| Transaction Identification | mRID | [1] | Unique ID of this transaction. |
| Status | MarketObjectStatus.status | [0..1] | **A14** Creation<br>**A15** Update<br>**A16** Deactivation (delete) |
| Validity Start | validityStart_DateAndOrTime.dateTime | [0..1] | Date Time |

| Attribute | Attribute from CIM | Cl | Code and description |
|---|---|---|---|
| | | | **Note:** At least one of Validity Start or Validity End must be present |
| Validity End | validityEnd_DateAndOrTime.dateTime | [0..1] | Date Time<br>**Note:** At least one of Validity Start or Validity End must be present |
| Area | domain.mRID | [1] | The Bidding Zone (BZ) where trade can take place. |
| Agreement Identification | marketAgreement.mRID | [0..1] | The Agreement ID is only used when updating an existing Bilateral Trade Structure with an existing Agreement ID. |
| **In Party** | **In_MarketParticipant** | [1..2] | The party being the **buyer** in the bilateral trade<br>**Note:** The BRP is required for Bilateral Trade Structure, while the Energy Trader is optional. |
| Identification | mRid | [1] | The identification of the In Party (and codingScheme). |
| Role | marketRole.type | [1] | The role of the in party, i.e.<br>**A08** Balance Responsible Party<br>**A47** Energy Trader |
| **Out Party** | **Out_MarketParticipant** | [1..2] | The party being the **seller** in the bilateral trade<br>**Note**: The BRP is required for Bilateral Trade Structure, while the Energy Trader is optional. |
| Identification | mRid | [1] | The identification of the Out Party (and codingScheme). |
| Role | marketRole.type | [1] | The role of the in party, i.e.<br>**A08** Balance Responsible Party<br>**A47** Energy Trader |

**Table 11:** Attribute usage: Ediel Request Bilateral Trade Structure Document

### 5.4.4 Attribute usage: Ediel Request PX Trade Structure Document

*The Ediel Request PX Trade Structure Document is used in the following exchanges:*

- NBS Master Data exchange phase - Receive and validate master data:
  - 9, Request new PX Trade Structure

| Attribute | Attribute from CIM | Cl. | Code and description |
|---|---|---|---|
| **Header** | **RequestTradeStructure_MarketDocument** | [1] | |
| Document Identification | mRID | [1] | Unique identification of the document |
| Document Type | type | [1] | **Z25** Request PX Trade Structure Document |
| Process Type | Process.processType | [1] | **Z07** Master data |
| Sender Identification | Sender_MarketParticipant.mRID | [1] | Identification of the party who is sending the document (and codingScheme) |
| Sender Role | Sender_MarketParticipant.marketRole.type | [1] | **A08** Balance Responsible Party<br>**A11** Market operator |
| Receiver Identification | Reciever_MarketParticipant.mRID | [1] | Identification of the party who is receiving the master data (and codingScheme) |
| Receiver Role | Reciever_MarketParticipant.marketRole.type | [1] | **A05** Imbalance Settlement Responsible |
| Creation Date Time | createdDateTime | [1] | Date and time for creation of the document |
| **Details** | **RequestTradeStructure_TimeSeries** | [1..*] | |
| Transaction Identification | mRID | [1] | Unique ID of the transaction |
| Status | MArketObjectStatus.status | [0..1] | **A14** Creation<br>**A15** Update |
| Validity Start | validityStart_DateAndOrTime.dateTime | [0..1] | Date Time<br>**Note:** At least one of Validity Start or Validity End must be present |
| Validity End | validityEnd_DateAndOrTime.dateTime | [0..1] | Date Time<br>**Note:** At least one of Validity Start or Validity End must be present |
| Area | domain.mRID | [1] | The Bidding Zone (BZ) where trade can take place (and codingScheme). |
| Agreement Identification | marketAgreement.mRID | [0..1] | MEC ID of the PX trade structure<br>In case of multiple occurrence of MEC IDs with the same attributes but with different validity start or end, the MEC ID may be sent to be able identify the trade uniquely for the validity date change. |
| Contract type | marketAgreement.type | [1] | Power Exchange market, i.e.:<br>**A01** Daily (Day Ahead)<br>**A06** Long term contract<br>**A07** Intraday contract |

| Attribute | Attribute from CIM | Cl. | Code and description |
|---|---|---|---|
| **In Party** | **In_MarketParticipant** | [2..3] | The BRP and MO are required for PX Trade Structure. The Energy Trader is optional. |
| Identification | mRid | [1] | The identification of the In Party (and codingScheme). |
| Role | marketRole.type | [1] | The role of the in party, i.e.<br>**A08** Balance Responsible Party<br>**A11** Market operator<br>**A47** Energy Trader |

**Table 12:** Attribute usage: Ediel Request PX Trade Structure Document

## 5.5 Ediel Notify Trade Structure Document

The Ediel Notify Trade Structure Document is sent from the Imbalance Settlement Responsible (ISR) to a Balance Responsible Party (BRP) or a Nominated Electricity Market Operator (NEMO), listing one or more trade structures, either for bilateral trade or for PX (Power Exchange) trade.

### 5.5.1 Class diagram: Ediel Notify Trade Structure Document version 1.0

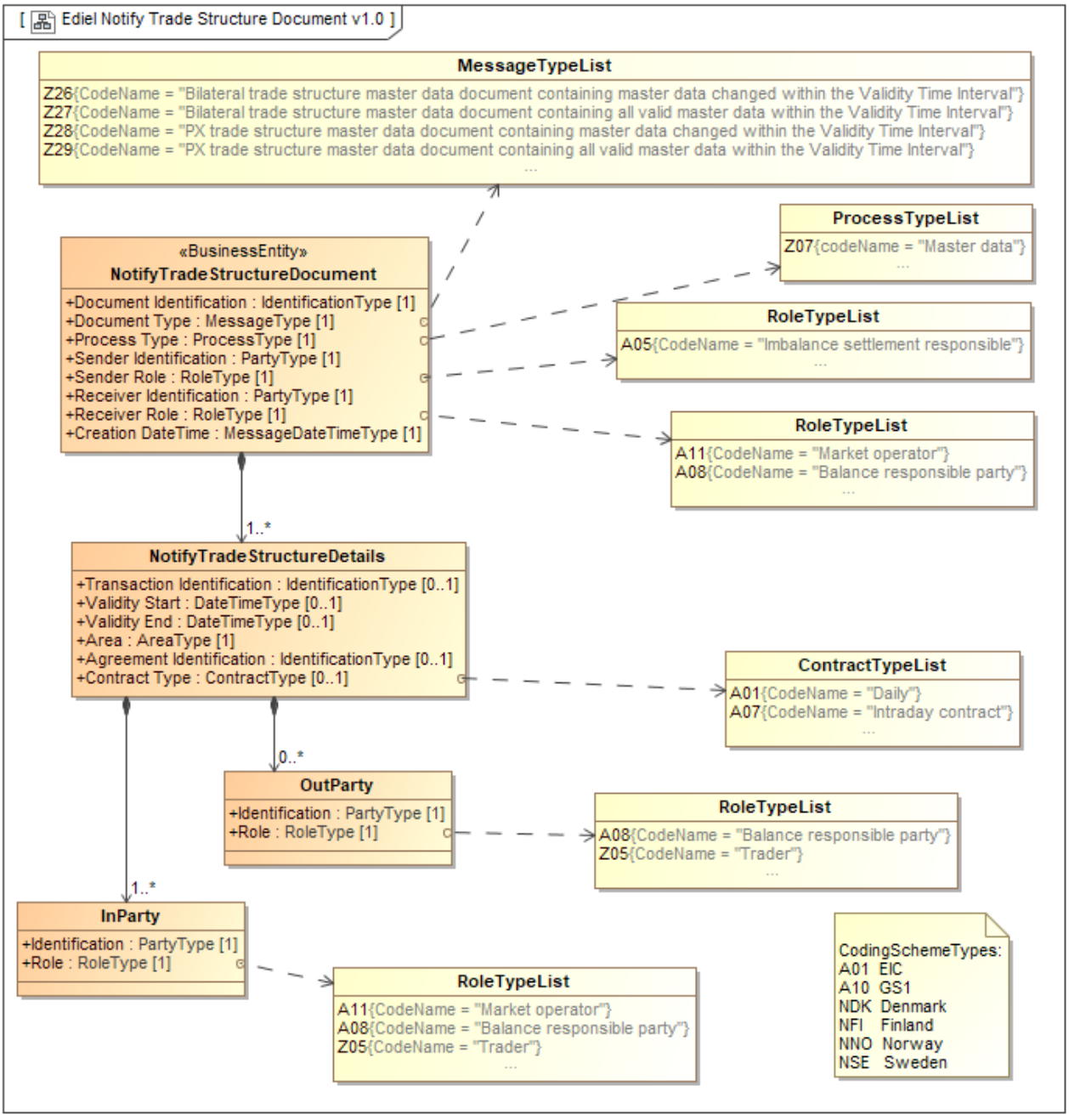


**Figure 22**: Class diagram: Ediel Notify Trade Structure Document version 1.0

### 5.5.2 CIM assembly model class diagram: Ediel Notify Trade Structure Document

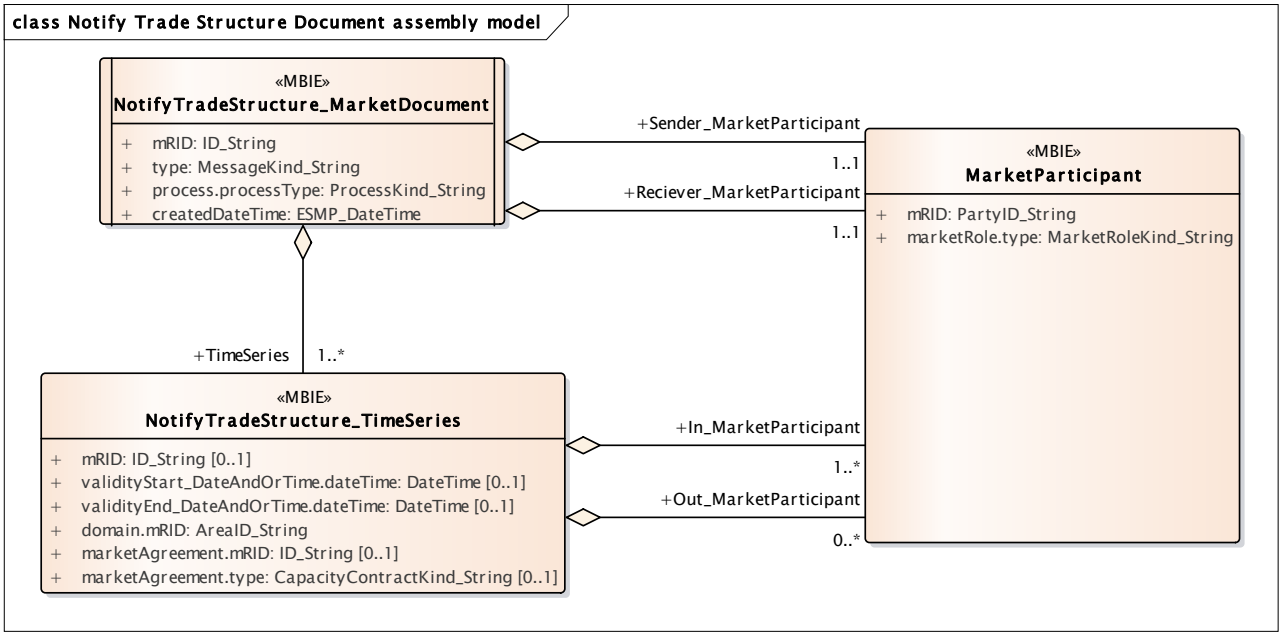


**Figure 23:** CIM assembly model class diagram: Ediel Notify Trade Structure Document

### 5.5.3 Attribute usage: Ediel Notify Bilateral Trade Structure Document

*The Ediel Notify Bilateral Trade Structure Document is used in the following exchanges:*

- NBS Master Data exchange phase – Distribute master data:
  - 14, Bilateral Trade Structure - changed within the Validity Time Interval
  - 15, Bilateral Trade Structure - all valid master data within the Validity Time Interval

| Attribute | Attribute from CIM | Cl. | Code and description |
|---|---|---|---|
| **Header** | **NotifyTradeStructure_MarketDocument** | [1] | |
| Document Identification | mRID | [1] | Unique identification of the document |
| Document Type | type | [1] | **Z26** Bilateral trade structure master data document containing **master data changed** within the Validity Time Interval<br>**Z27** Bilateral trade structure master data document containing **all valid master data** within the Validity Time Interval |
| Process Type | Process.processType | [1] | **Z07** Master data |
| Sender Identification | Sender_MarketParticipant.mRID | [1] | Identification of the party who is sending the document (and codingScheme) |
| Sender Role | Sender_MarketParticipant.marketRole.type | [1] | **A05** Imbalance Settlement Responsible |
| Receiver Identification | Reciever_MarketParticipant.mRID | [1] | Identification of the party who is receiving the master data (and codingScheme) |
| Receiver Role | Reciever_MarketParticipant.marketRole.type | [1] | **A08** Balance Responsible Party |

| Attribute | Attribute from CIM | Cl. | Code and description |
|---|---|---|---|
| Creation Date Time | createdDateTime | [1] | Date and time for creation of the document |
| **Details** | **NotifyTradeStructure_TimeSeries** | [1..*] | |
| Transaction Identification | mRID | [1] | Unique ID of the transaction |
| Validity Start | validityStart_DateAndOrTime.dateTime | [0..1] | Date Time<br>**Note:** At least one of Validity Start or Validity End must be present |
| Validity End | validityEnd_DateAndOrTime.dateTime | [0..1] | Date Time<br>**Note:** At least one of Validity Start or Validity End must be present |
| Area | domain.mRID | [1] | The Bidding Zone (BZ) where trade can take place (and codingScheme). |
| Agreement Identification | marketAgreement.mRID | [1] | The unique ID of this bilateral trade structure |
| **In Party** | **In_MarketParticipant** | [1..2] | The party being the **buyer** in the bilateral trade<br>**Note:** The BRP is required for Bilateral Trade Structure, while the Energy Trader is optional. |
| Identification | mRid | [1] | The identification of the In Party (and codingScheme). |
| Role | marketRole.type | [1] | The role of the in party, i.e.<br>**A08** Balance Responsible Party<br>**A47** Energy Trader |
| **Out Party** | **Out_MarketParticipant** | [1..2] | The party being the **seller** in the bilateral trade<br>**Note**: The BRP is required for Bilateral Trade Structure, while the Energy Trader is optional. |
| Identification | mRid | [1] | The identification of the Out Party (and codingScheme). |
| Role | marketRole.type | [1] | The role of the in party, i.e.<br>**A08** Balance Responsible Party<br>**A47** Energy Trader |

**Table 13**: Attribute usage: Ediel Notify Bilateral Trade Structure Document

### 5.5.4 Attribute usage: Ediel Notify PX Trade Structure Document

***The Ediel Notify PX Trade Structure Document is used in the following exchanges:***

- NBS Master Data exchange phase – Distribute master data:
  - 16, PX Trade Structure - changed within the Validity Time Interval
  - 17, PX Trade Structure - changed within the Validity Time Interval
  - 18, PX Trade Structure - all valid master data within the Validity Time Interval
  - 19, PX Trade Structure - all valid master data within the Validity Time Interval

| Attribute | Attribute from CIM | Cl. | Code and description |
|---|---|---|---|
| **Header** | **NotifyTradeStructure_MarketDocument** | [1] | |
| Document Identification | mRID | [1] | Unique identification of the document |
| Document Type | type | [1] | **Z28** PX trade structure master data document containing **master data changed** within the Validity Time Interval<br>**Z29** PX trade structure master data document containing **all valid master data** within the Validity Time Interval |
| Process Type | Process.processType | [1] | **Z07** Master data |
| Sender Identification | Sender_MarketParticipant.mRID | [1] | Identification of the party who is sending the document (and codingScheme) |
| Sender Role | Sender_MarketParticipant.marketRole.type | [1] | **A05** Imbalance Settlement Responsible |
| Receiver Identification | Reciever_MarketParticipant.mRID | [1] | Identification of the party who is receiving the master data (and codingScheme) |
| Receiver Role | Reciever_MarketParticipant.marketRole.type | [1] | **A08** Balance Responsible Party<br>**A11** Market operator |
| Creation Date Time | createdDateTime | [1] | Date and time for creation of the document |
| **Details** | **NotifyTradeStructure_TimeSeries** | [1..*] | |
| Transaction Identification | mRID | [1] | Unique ID of the transaction |
| Validity Start | validityStart_DateAndOrTime.dateTime | [0..1] | Date Time<br>**Note:** At least one of Validity Start or Validity End must be present |
| Validity End | validityEnd_DateAndOrTime.dateTime | [0..1] | Date Time<br>**Note:** At least one of Validity Start or Validity End must be present |
| Area | domain.mRID | [1] | The Bidding Zone (BZ) where trade can take place (and codingScheme). |
| Contract type | marketAgreement.type | [1] | **A01** Daily (Day Ahead)<br>**A07** Intraday contract |
| **In Party** | **In_MarketParticipant** | [2..3] | The BRP and MO are required for PX Trade Structure. The Energy Trader is optional. |
| Identification | mRID | [1] | The identification of the In Party (and codingScheme). |
| Role | marketRole.type | [1] | The role of the in party, i.e.<br>**A08** Balance Responsible Party<br>**A11** Market operator<br>**A47** Energy Trader |

Table 14: Attribute usage: Ediel Notify PX Trade Structure Document

# Appendix A Ediel Party Master Data Market Document, CIM version

This chapter shows the Nordic Ediel CIM Party Master Data Document. The message covers the needs from both the Nordic Balance Settlement (NBS) and Nordic Balancing Model (NBM).

As you may see from the contextual model below it is proposed several extensions to CIM, shown as associations in red colour stereotyped «New» and attributes stereotyped «new».

It is expected that eSett will start using the CIM based Ediel Party Master Data Market Document sometime in the future.

## A.1 Ediel CIM Party Master Data Document contextual model

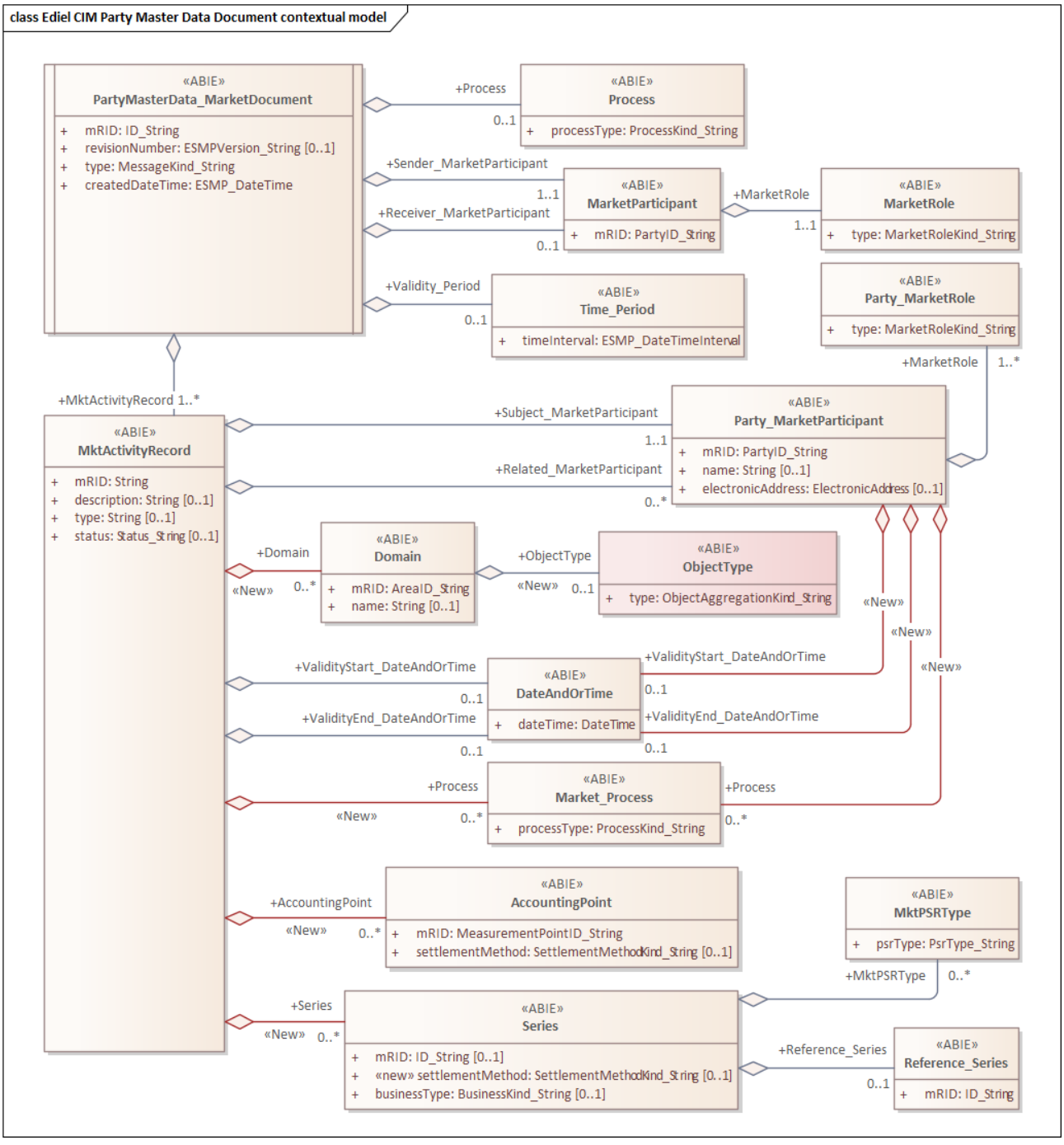

**Figure 24:** Class diagram: NMEG CIM Party Master Data Document Contextual model

## A.2 NMEG CIM Party Master Data Document assembly model

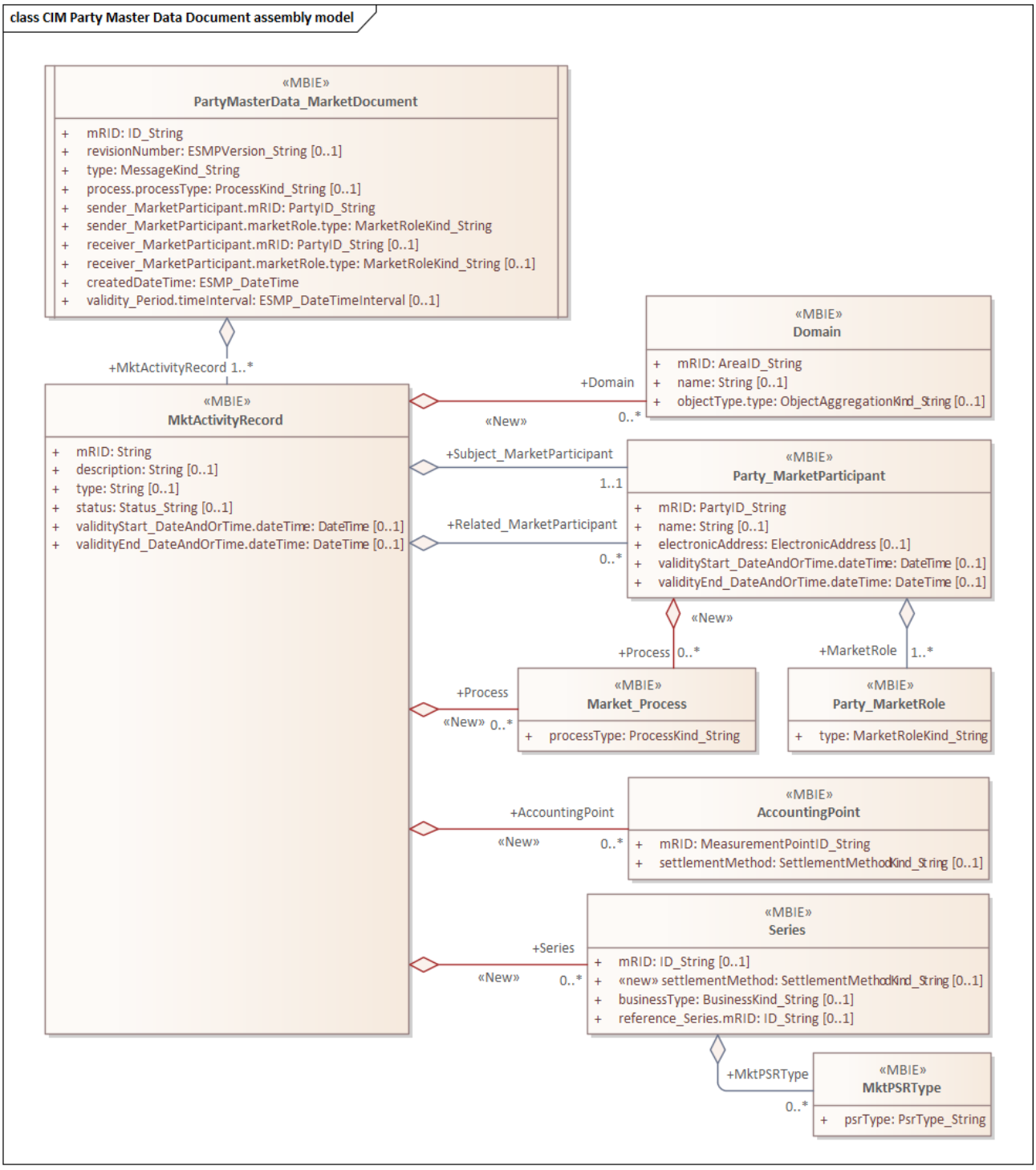


**Figure 25:** Class diagram: NMEG CIM Party Master Data Document assembly model

*The NEG Party Master Data Document is used in the following exchanges:*

- NBS Master Data exchange phase - Receive and validate master data:
  - 5, Party Master Data
- NBS Master Data exchange phase – Distribute master data
  - 7, Party Master Data

- 8, Party Relation
- 9, Party Master Data

## A.3 Attribute usage: Ediel CIM Party master data document

| Class/attribute | Card. | Codes and/or descriptions |
|---|---|---|
| **Ediel CIM Party Master Data Document** | [1] | |
| mRID | | Unique identification of the document |
| revisionNumber | [0..1] | Not used. |
| type | [1] | *Message Type enumeration:*<br>**Z12** Request change of retailer consumption master data<br>**Z20** Retailer consumption master data document containing master data changed within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>**Z21** Retailer consumption master data document containing all valid master data within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>**Z18** Party Relation Master Data Document containing master data changed within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>**Z19** Party Relation Master Data Document containing all valid master data within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>*Business rules:*<br>• **Z12** is used for requests (create and update) to Imbalance Settlement Responsible.<br>• **Z18**, **Z19**, **Z20** and **Z21** are used for reporting from Imbalance Settlement Responsible. |
| Process.processType | [0..1] | *Process Type enumeration:*<br>**A55** Exchange of Master data |
| Sender_MarketParticipant. mRID | [1] | Identification of the party who is sending the document (and Coding Scheme). |
| Sender_MarketParticipant. MarketRole.type | [1] | *Role Type enumeration:*<br>**A05** Imbalance settlement responsible<br>**A26** Metering Point Administrator (DSO) |
| Receiver_MarketParticipant. mRID | [0..1] | Identification of the party who is receiving the master data (and Coding Scheme)<br>*Business rules:*<br>• Required unless used for “broadcast” (same document to several recipients). |
| Receiver_MarketParticipant. MarketRole.type | [0..1] | *Role Type enumeration:*<br>**A05** Imbalance Settlement Responsible<br>**A08** Balance Responsible Party<br>**A26** Metering Point Administrator (DSO)<br>*Business rules:*<br>• Required unless used for “broadcast” (same document to several recipients) |

| Class/attribute | Card. | Codes and/or descriptions |
|---|---|---|
| createdDateTime | [1] | Date and time for creation of the document |
| Validity_Period. timeInterval | [0..1] | The period for which this Party Master Data document details are valid. |
| **MktActivityRecord** | **[1..*]** | Business rules for Party Details when sending request for structure change to eSett:<br>• One Party Details represents one request<br>• There cannot be more than one Party Details with the same object identification present in one file (multiple requests for more than one Subject Party will be rejected) |
| mRID | [1] | Unique ID of this transaction. |
| description | [0..1] | Not used by NBS |
| type | [0..1] | *Business Type enumeration:*<br>**A01** Production<br>**A04** Consumption (general consumption)<br>**A07** Net production/ consumption (combined pumped storage)<br>**A15** Losses<br>**A72** Interruptible Consumption<br>**B27** Pumped<br>**B28** Large installation consumption<br>**B29** MGA imbalance<br>**B36** Production Units own consumption (Only used in Finland) |
| status | [0..1] | *Status Type enumeration:*<br>**A14** Creation<br>**A15** Update<br>*Business rules:*<br>• Only used when requesting a creation or update of an object. Not used for information notifications. |
| **Domain** | [0..*] | |
| mRID | [0..1] | Unique ID of the Domain (and Coding Scheme) |
| name | [0..1] | Not used by NBS |
| ObjectType.type | [0..1] | *Object Aggregation Type enumeration:*<br>**A14** Metering Grid Area (MGA) |
| ValidityStart_DateAndOrTime. dateTime | [0..1] | The validity start date and time for this transaction. |
| ValidityEnd_DateAndOrTime. dateTime | [0..1] | The validity end date and time for this transaction. |
| **Subject_MarketParticipant** | **[1]** | |
| mRID | [1] | Unique ID of the Party in question (and Coding Scheme). |
| **MarketRole** | **[1..*]** | |
| type | [1] | *Role Type enumeration:*<br>**A08** Balance Responsible Party<br>**A12** Energy Supplier (Retailer) |
| name | [1..*] | Unique ID of the Party in question (and Coding Scheme). |

| Class/attribute | Card. | Codes and/or descriptions |
|---|---|---|
| electronicAddress. email1 | [0..1] | Not used by NBS |
| ValidityStart_DateAndOrTime. dateTime | [0..1] | The validity start date and time for this market participant.<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present, with one exception; The Validity End can be extended to "unlimited" (i.e. no Validity End) by sending a Party Detail with Status = "**A15** Update" and no Validity Start or Validity End. |
| ValidityEnd_DateAndOrTime. dateTime | [0..1] | The validity end date and time for this market participant.<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present, with one exception; The Validity End can be extended to "unlimited" (i.e. no Validity End) by sending a Party Detail with Status = "**A15** Update" and no Validity Start or Validity End. |
| **Process** | **[1..*]** | |
| processType | [1] | Unique ID of the Party in question (and Coding Scheme). |
| **Related_MarketParticipant** | **[0..*]** | |
| mRID | [0..*] | Unique ID of the Party in question (and Coding Scheme). |
| **MarketRole** | **[1..*]** | |
| type | [1..*] | *Role Type enumeration:*<br>**A08** Balance Responsible Party<br>**A12** Energy Supplier (Retailer) |
| name | [1..*] | Not used by NBS |
| electronicAddress. email1 | [0..1] | Not used by NBS |
| ValidityStart_DateAndOrTime. dateTime | [0..1] | Date Time<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present, with one exception; The Validity End can be extended to "unlimited" (i.e. no Validity End) by sending a Party Detail with Status = "**A15** Update" and no Validity Start or Validity End. |
| ValidityEnd_DateAndOrTime. dateTime | [0..1] | Date Time<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present, with one exception; The Validity End can be extended to "unlimited" (i.e. no Validity End) by sending a Party Detail with Status = "**A15** Update" and no Validity Start or Validity End. |
| **Process** | **[1..*]** | |
| processType | [1..*] | Not used by NBS |
| **Series** | **[0..*]** | |

| Class/attribute | Card. | Codes and/or descriptions |
|---|---|---|
| mRID | [0..1] | Reference to a set of "Party Details"[8] |
| settlementMethod | [0..1] | *Settlement Method Type enumeration:*<br>**E01** Profiled<br>**E02** Non-profiled<br>**E15** Non-profiled with special rules (Flex settled) |
| businessType | [0..1] | *Business Type enumeration:*<br>**A01** Production<br>**A04** Consumption (general consumption)<br>**A07** Net production/ consumption (combined pumped storage)<br>**A15** Losses<br>**A72** Interruptible Consumption<br>**B27** Pumped<br>**B28** Large installation consumption<br>**B29** MGA imbalance<br>**B36** Production Units own consumption (Only used in Finland) |
| **MktPSRType** | **[0..1]** | |
| psrType | [1] | Not used by NBS |
| **Process** | **[0..1]** | |
| Process.processType | [1] | Not used by NBS |
| **AccountingPoint** | **[0..1]** | |
| mRID | [1] | Not used by NBS |
| settlementMethod | [0..1] | *Settlement Method Type enumeration:*<br>**E01** Profiled<br>**E02** Non-profiled<br>**E15** Non-profiled with special rules (Flex settled) |

Table 15: Attribute usage: Ediel CIM Party master data document

[8] MEC (Market Entity Connection) ID. The element is only used if an entity has several MEC IDs and the MEC ID is needed to identify the correct MEC.

# Appendix B NMEG Resource Master Data Market Document, CIM version

This chapter shows the Nordic Ediel CIM Party Master Data Document. The message covers the needs from both the Nordic Balance Settlement (NBS) and Nordic Balancing Model (NBM).
As you may see from the contextual model below it is proposed several extensions to CIM, shown as associations in red colour stereotyped «New» and attributes stereotyped «new».
It is expected that eSett will start using the CIM based Ediel Party Master Data Market Document sometime in the future.

## B.1 MEG CIM Resource Master Data Document contextual model

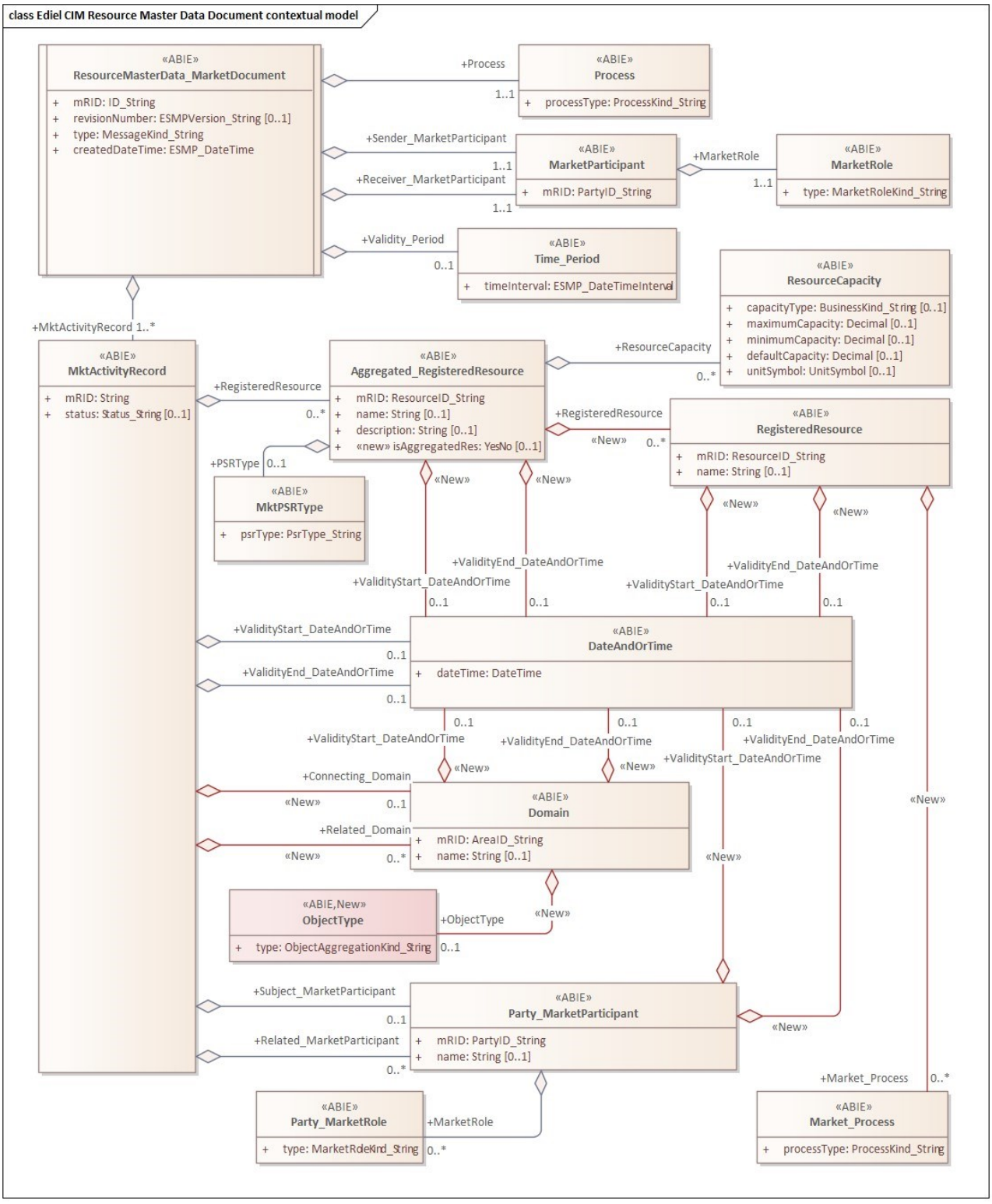


**Figure 26:** Class diagram: NMEG CIM Resource Master Data Document Contextual model

## B.2 NMEG CIM Resource Master Data Document assembly model

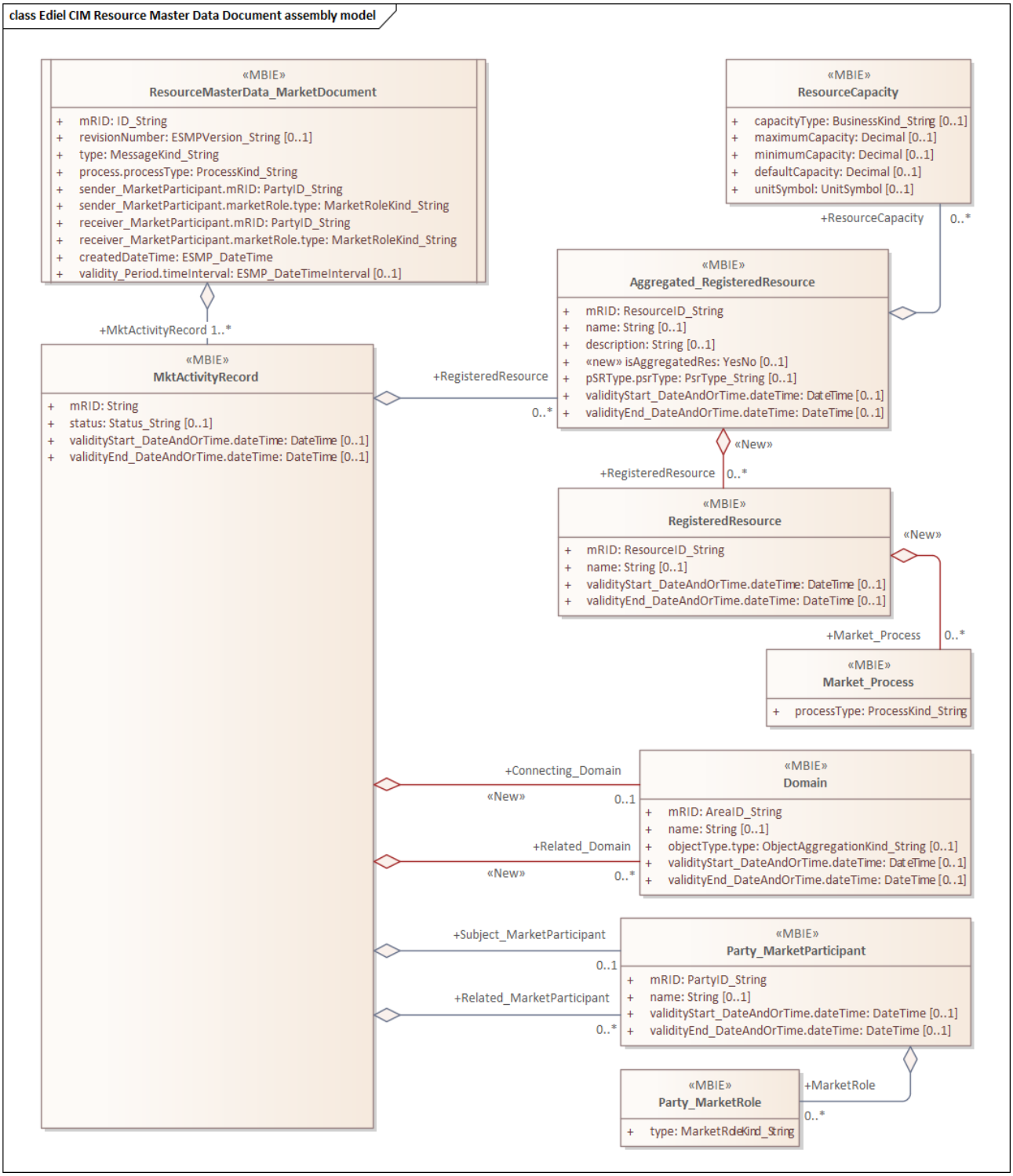


**Figure 27:** Class diagram: NMEG CIM Resource Master Data Document assembly model

*The Ediel (NEG) Resource Object (Production Unit) Master Data Document is used in the following exchanges:*

- NBS Master Data exchange phase - Receive and validate master data:
  - 6, Resource, Production Unit Master Data
- NBS Master Data exchange phase – Distribute master data:
  - 10, Resource Master Data
  - 11, Resource Master Data

*The Ediel (NEG) Resource Object (Generator Group Relations) Master Data Document is used in the following exchanges:*

- NBS Master Data exchange phase - Receive and validate master data:
  - 7, Generator group relation
- NBS Master Data exchange phase – Distribute master data:
  - 12, Resource, Generator Group and Relations Master Data
  - 13, Resource, Production Plan Structure Master Data

## B.3 Attribute usage: Ediel CIM Resource Master Data Document

| Class/attribute | Card. | Codes and/or descriptions |
|---|---|---|
| **Ediel CIM Resource Master Data Document** | [1] | |
| mRID | | Unique identification of the document |
| revisionNumber | [0..1] | Not used. |
| type | [1] | *Message Type enumeration:*<br>*Resource (Production Unit) **and** Resource Object (Generator Group Relations):*<br>**Z22** Resource master data document containing master data changed within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>**Z23** Resource master data document containing all valid master data within the Validity Time Interval (Start date/time inclusive and End date/time exclusive)<br>*Resource (Production Unit):*<br>**Z13** Request change of Resource master data<br>**Z30** Request change of Generator Group (Regulation Object) relations<br>*Resource Object (Generator Group Relations):*<br>**Z16** Generator Group Relations document<br>**Z31** Production Plan Structure – valid for the whole time-interval<br>**Z32** Production Plan Structure – having a start or end within the validity period<br>*Business rules:*<br>• **Z13** is used for requests (create, update and deactivate) to Imbalance Settlement Responsible<br>• **Z16** is only used for updates of BRP and/or Bidding Zone.<br>• *Resource (Production Unit):*<br>○ **Z22** and **Z23** are used for reporting from Imbalance Settlement Responsible<br>• *Resource Object (Generator Group Relations):*<br>○ **Z22** and **Z23** contains a list of all "MACs" identifying production plans and are only sent to the System Operators. The documents are without the Generator Group and Generator relations. |
| Process.processType | [0..1] | *Process Type enumeration:*<br>**A55** Exchange of Master data |
| Sender_MarketParticipant. mRID | [1] | Identification of the party who is sending the document (and Coding Scheme). |

| Class/attribute | Card. | Codes and/or descriptions |
|---|---|---|
| Sender_MarketParticipant. MarketRole.type | [1] | *Role Type enumeration:*<br>*Resource (Production Unit) **and** Resource Object (Generator Group Relations):*<br>**A05** Imbalance settlement responsible<br>*Resource (Production Unit):*<br>**A26** Metering Point Administrator (DSO)<br>*Resource Object (Generator Group Relations):*<br>**A08** Balance Responsible Party |
| Receiver_MarketParticipant. mRID | [0..1] | Identification of the party who is receiving the master data (and Coding Scheme) |
| Receiver_MarketParticipant. MarketRole.type | [0..1] | *Role Type enumeration:*<br>*Resource (Production Unit) **and** Resource Object (Generator Group Relations):*<br>**A05** Imbalance settlement responsible<br>**A08** Balance Responsible Party<br>*Resource (Production Unit):*<br>**A26** Metering Point Administrator (DSO) |
| createdDateTime | [1] | Date and time for creation of the document |
| Validity_Period. timeInterval | [0..1] | The period for which this Resource Master Data document details are valid. |
| **MktActivityRecord** | [1..*] | *Business rules for Resource Details when sending request for structure change:*<br>• One Resource Details represents one request<br>• There cannot be more than one Resource Details with the same object identification present in one xml file (multiple requests for more than one Production Unit will be rejected)<br>*Business rules for Resource Details when distributed from Imbalance Settlement Responsible:*<br>• Resource Details will repeat for each change of a time-dependent attribute<br>• Resource Details contain all attributes |
| mRID | [1] | Unique ID of this transaction |
| **RegisteredResource** | [0..*] | |
| mRID | [1] | Unique ID of the Resource (Generator Group) in question |
| name | [0..1] | Name of the Resource in clear text<br>*Business rules:*<br>• Resource Name and Asset Type for Production Units are not time-dependent, hence Validity Start and Validity End are NOT used when updating these attributes. |
| description | [0..1] | Not used |

| Class/attribute | Card. | Codes and/or descriptions |
|---|---|---|
| isAggregatedRes | [0..1] | *Boolean:*<br>**True**<br>**False**<br>*Business rules:*<br>• If "True", a Generator group is assumed. |
| pSRType.psrType | [0..1] | *Asset Type enumeration:*<br>**A05** Load (replaces **Z07**)<br>**B14** Nuclear<br>**B16** Solar<br>**B18** Wind offshore<br>**B19** Wind onshore (replaces **Z05**)<br>**B20** Other production<br>**B25** Energy storage<br>**B31** Hydro unspecified (replaces **Z06**)<br>**B37** Thermal unspecified (replaces **Z04**)<br>**Z04** Thermal<br>**Z05** Wind<br>**Z06** Hydro<br>**Z07** Consumption<br>*Business rules:*<br>• Resource Name and Asset Type for Production Units are not time dependent, hence Validity Start and Validity End are NOT used when updating these attributes.<br>• Not required when updating Resource (Production Units) |
| **ResourceCapacity** | [0..*] | |
| capacityType | [0..1] | *Business Type enumeration:*<br>**Z01** Normal<br>**Z02** Minor<br>*Business rules:*<br>• Production Type is only used for creation of Production Units and for structure information sent from Imbalance Settlement Responsible to Market Parties, i.e. the Production Type cannot be changed |
| maximumCapacity | [0..1] | Not Used |
| minimumCapacity | [0..1] | Not Used |
| defaultCapacity | [0..1] | Capacity of the Resource<br>*Business rules:*<br>• Not used for Generator Groups |
| unitSymbol | [0..1] | *Unit of Measure Type enumeration:*<br>**MAW** Megawatt<br>*Business rules:*<br>• Not used for Generator Groups |

| Class/attribute | Card. | Codes and/or descriptions |
|---|---|---|
| validityStart_DateAndOrTime.dateTime | [0..1] | *Resource (Production Unit):*<br>• At least one of Validity Start or Validity End must be present, except for Status = "**A15** Update", for not time-dependent attributes (Resource Name and Asset Type)<br>*Resource Object (Generator Group Relations):*<br>• At least one of Validity Start or Validity End must be present. |
| validityEnd_DateAndOrTime.dateTime | [0..1] | *Resource (Production Unit):*<br>• At least one of Validity Start or Validity End must be present, except for Status = "A15 Update", for not time-dependent attributes (Resource Name and Asset Type)<br>*Resource Object (Generator Group Relations):*<br>• At least one of Validity Start or Validity End must be present. |
| **RegisteredResource** | [0..*] | *Business rules:*<br>*Resource (Production Unit):*<br>• Only used for "Generator Group – Generator Relations", i.e. Document Type **Z30**<br>*Resource Object (Generator Group Relations):*<br>• Not used |
| mRID | [1] | Unique ID of the Resource (Generator) in question |
| name | [0..1] | Not Used |
| **Market_Process** | [0..*] | |
| processType | [1] | Not Used |
| validityStart_DateAndOrTime.dateTime | [0..1] | Not Used |
| validityStart_DateAndOrTime.dateTime | [0..1] | Not Used |
| status | [0..1] | *Status Type enumeration:*<br>*Resource Object (Generator Group Relations):*<br>**A14** Creation<br>**A15** Update<br>**A16** Deactivation<br>*Business rules:*<br>• Only used for Resource Object (Generator Group Relations)<br>• Only used when requesting a change to an object. Not used for information notifications<br>• Deactivation is used to remove a linked party (Energy Supplier (Retailer) or Balance Responsible Party) from a Resource. To reactivate a deactivation, **A15** Update is used<br>• For "**A14** Creation", all time-dependent attributes have the same validity as the Production Unit<br>• An "**A14** Creation" for a Resource already crated, will be rejected<br>• An "**A15** Update", for a not existing Resource, will be rejected<br>• An "**A16** Deactivation", for an already deactivated Resource, will be rejected |

| Class/attribute | Card. | Codes and/or descriptions |
|---|---|---|
| validityStart_DateAndOrTime.dateTime | [0..1] | Date Time<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present, except for Status = "**A15** Update", for not time-dependent attributes (Resource Name and Asset Type) |
| validityEnd_DateAndOrTime.dateTime | [0..1] | Date Time<br>*Business rules:*<br>• At least one of Validity Start or Validity End must be present, except for Status "**A15** Update" for not time-dependent attributes (Resource Name and Asset Type) |
| **Connecting_Domain** | [0..1] | |
| mRID | [1] | Not Used |
| name | [0..1] | Not Used |
| objectType.type | [0..1] | Not Used |
| validityStart_DateAndOrTime.dateTime | [0..1] | Not Used |
| validityStart_DateAndOrTime.dateTime | [0..1] | Not Used |
| **Related_Domain** | [0..1] | *Business rules:*<br>*Resource (Production Unit) **and** Resource Object (Generator Group Relations):*<br>• Required for Generators<br>• Required for Generator Groups in Sweden<br>• May be repeated if a Generator or a Generator group covers more than one area<br>*Resource (Production Unit):*<br>• Related Area is only used for creation of Production Units and for structure information sent from Imbalance Settlement Responsible to Market Parties, i.e. the Related Area cannot be changed |
| mRID | [1] | Unique ID of the MGA or BZ (and Coding Scheme) |
| name | [0..1] | Not Used |
| objectType.type | [0..1] | *Object Aggregation Type enumeration:*<br>**A12** Bidding Zone (BZ)<br>**A14** Metering Grid Area (MGA) |
| validityStart_DateAndOrTime.dateTime | [0..1] | *Resource (Production Unit):*<br>• Not Used<br>*Resource Object (Generator Group Relations):*<br>• At least one of Validity Start or Validity End must be present. |
| validityStart_DateAndOrTime.dateTime | [0..1] | *Resource (Production Unit):*<br>• Not Used<br>*Resource Object (Generator Group Relations):*<br>• At least one of Validity Start or Validity End must be present. |

| Class/attribute | Card. | Codes and/or descriptions |
|---|---|---|
| **Subject_MarketParticipant** | [0..1] | |
| mRID | [1] | Unique ID of the Energy Supplier (Retailer) or Balance Responsible Party in question (and codingScheme) |
| name | [0..1] | Not Used |
| **MarketRole** | [0..*] | |
| type | [1] | *Role Type enumeration:*<br>*Resource (Production Unit)* ***and*** *Resource Object (Generator Group Relations):*<br>**A08** Balance Responsible Party<br>*Resource (Production Unit):*<br>**A12** Energy Supplier |
| validityStart_DateAndOrTime.dateTime | [0..1] | *Resource (Production Unit):*<br>• Not Used<br>*Resource Object (Generator Group Relations):*<br>• At least one of Validity Start or Validity End must be present. |
| validityStart_DateAndOrTime.dateTime | [0..1] | *Resource (Production Unit):*<br>• Not Used<br>*Resource Object (Generator Group Relations):*<br>• At least one of Validity Start or Validity End must be present. |
| **Related_MarketParticipant** | [0..*] | |
| mRID | [1] | Not Used |
| name | [0..1] | Not Used |
| **MarketRole** | [0..*] | |
| type | [1] | Not Used |
| validityStart_DateAndOrTime.dateTime | [0..1] | Not Used |
| validityStart_DateAndOrTime.dateTime | [0..1] | Not Used |

Table 16: Attribute usage: Ediel CIM Resource Master Data Document