

BRS

(Business Requirement Specification)

For

Nordic Balance Settlement

**A market model for data exchange
between eSett and TSOs/Market
Operators**

Business process: Nordic Balance Settlement for
TSOs and Market Operators
Version: 3.3.A
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1 Introduction

1.1 Background

The Nordic Balance Settlement (NBS) is run by [eSett](#), while the Nordic Market Expert Group (NMEG) is responsible for the development and maintenance of the Business Requirement Specifications (BRS) and User Guides for the NBS processes.

This document is a Business Requirement Specification (BRS) for the Nordic Balancing System, detailing the document exchanges. The focus of the document is the business aspects of the document exchanges and the basis for the documents to be exchanged are the 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 used in the BRS.

There is a separate BRS for data exchanges between NBS (eSett) and the actors in the Nordic downstream energy market, such as Balance Responsible Parties, Energy Suppliers (Retailers) and the data hubs, see [7].

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, Business Data View, the documents that will be exchanged between NBS and the market actors are described in detail.

1.3 About Nordic Ediel BRSs

The NMEG Ediel Business Requirement Specifications (BRSs) describes business processes where data is exchanged between market participants in the Nordic energy market based on the UN/CEFACT Modelling Methodology (UMM). A BRS is a tool that helps the participants in the Nordic energy market to implement effective and harmonised data-exchange processes. The Ediel BRSs can be seen as a framework designed to improve communication between stakeholders, reduce development time, and minimise errors.

The Nordic Ediel BRSs covers all aspects of a business requirement specification for a specific data-exchange process and purpose, including functional requirements, non-functional requirements (partly), UseCases, and data flows.

NMEG Ediel BRSs will as far as possible be based on already available standards and best practices, such as:

- 1) ENTSO-E Implementation Guides (IGs) based on IEC 62325-451-n standards
- 2) ENTSO-E Implementation Guides (IGs) based on IEC 62325-351 standard
- 3) Other Implementation Guides (IGs) based on IEC 62325-351 standard
- 4) EU Implementation Regulations
- 5) Documents from the DSO Entity and the ENTSO-E and DSO Entity Joint Working Group (JWG)
- 6) Nordic BRSs, IGs, regulations etc.

In addition, the NMEG Ediel BRS will document Nordic extensions and/or restrictions compared with the standards and best practices the BRS is based on.

1.2 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 [6].

1.3 Project organisation

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

1.4 Terms and notations used in this BRS

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.

1.5 References

- [1] ENTSO-E implementation guides, see [ENTSO-E Electronic Data Interchange \(EDI\) Library](#), e.g.:
 - ENTSO-E Modelling Methodology (EMM)
 - ENTSO-E UCTE SO-SO Process
 - ENTSO-E Scheduling System, ESS
 - ENTSO-E Settlement Process, ESP
 - ENTSO-E Reserve Resource Planning, ERRP
 - ENTSO-E Capacity Allocation and Nomination System, ECAN
 - ENTSO-E Status Report, ESR
 - 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 <https://unece.org/trade/uncefact/umm>
- [5] Ediel Implementation guides, see <https://ediel.org/common-ediel-documents/>
- [6] Nordic Energy Market Domain Model, see <https://ediel.org/common-ediel-documents/>
- [7] BRS for Nordic Balancing System for the retail market (NBS BRS), see <https://ediel.org/nordic-balance-settlement-nbs/>
- [8] BRS for Nordic Balance Settlement, Exchange of Master Data, see <https://ediel.org/nordic-balance-settlement-nbs/>
- [9] BRS for Nordic trading system, will be published at <https://ediel.org/common-ediel-documents/>
- [10] BRS for Nordic Scheduling and Ancillary Services process, see <https://ediel.org/common-ediel-documents/>
- [11] Common Nordic XML rules and recommendations, see <https://ediel.org/common-ediel-documents/>
- [12] eSett Handbook, see <https://www.esett.com/handbook/>

1.6 Change log

| Ver/rel/rev | Changed by | Date | Changes |
|-------------|------------|----------|--|
| 3.3.A | Ove Nesvik | 20240612 | <ul style="list-style-type: none"> • Addition of new Reason codes “Z89, Base load” and “Z93, mFRR-D correction” to the Ediel ERRP Reserve Allocation Result Document • Update of dependency matrix for Ediel ERRP Reserve Allocation Result Document |
| 3.2.A | Ove Nesvik | 20240408 | <ul style="list-style-type: none"> • Alignment of the first four chapters with the NBS BRS [7]. |
| 3.1.A | Ove Nesvik | 20240408 | <ul style="list-style-type: none"> • Changes to Ediel ERRP Reserve Allocation Result Document: <ul style="list-style-type: none"> ○ Replaced Reason codes Z77 and Z78 by Z54 and Z55 (AOF/non-AOF Reasons codes). |

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| Ver/rel/rev | Changed by | Date | Changes |
|-------------|------------|----------|--|
| | | | <ul style="list-style-type: none"> ○ Opened for usage of Reason codes Z54 and Z55 both for aFRR (Process Type A30 (Tertiary reserve process)) and mFRR (A29 (Secondary reserve process)). |
| 3.0.A | Ove Nesvik | 20231208 | <ul style="list-style-type: none"> ● Addition of the Process type code “A59, Internal trade reporting” to ENTSO-E ESS Schedule Document. <p>The code 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 Z05.</p> |
| 2.9.A | Ove Nesvik | 20231023 | <ul style="list-style-type: none"> ● Addition of Reason codes for the 1st repetition of the Reason class in the Ediel ERRP Reserve Allocation Result Document: <ul style="list-style-type: none"> Z77 aFRR AOF activation Z78 aFRR non-AOF activation ● Addition of a new Process type code for the Ediel ECAN Publication Document: <ul style="list-style-type: none"> A51 Automatic frequency restoration reserve |
| 2.8.A | Ove Nesvik | 20231005 | <ul style="list-style-type: none"> ● Addition of codes for Contract types: <ul style="list-style-type: none"> A14 First intraday auction contract A15 Second intraday auction contract A16 Third intraday auction contract ● Rename of Balance Supplier to Energy Supplier ● Correction of spelling errors. |
| 2.7.A | Ove Nesvik | 20230316 | <ul style="list-style-type: none"> ● Addition of new reason codes to the Ediel ERRP Reserve Allocation Result Document: <ul style="list-style-type: none"> Z58 Scheduled activation Z59 Direct activation Z60 Faster activation Z61 Faster deactivation Z62 Slower activation Z63 Period shift activation Z75 aFRR correction Z76 mFRR correction ● Rename Market Balance Area (MBA) to Bidding Zone (BZ) ● Correction of spelling errors. |
| 2.6.A | Ove Nesvik | 20221114 | <ul style="list-style-type: none"> ● Addition of Process Type “A02 Intraday incremental” to ESS Schedule document, Day-ahead/Intraday trade and ESS Schedule document, Day-ahead/Intraday flow |

| Ver/rel/rev | Changed by | Date | Changes | |
|-------------|------------|----------|--|---|
| 2.5.A | Ove Nesvik | 20210917 | <ul style="list-style-type: none"> Addition of down direction Ediel ERRP Reserve Allocation Result Document. Rename of Reason Code: | |
| | | | From: | To: |
| | | | Z42 Frequency Containment Reserve, Normal operation, day minus one (FCR-N, D-1) | Z42 Frequency Containment Reserve, Normal operation, day minus one (FCR-N, D-1 late) |
| | | | Z43 Frequency Containment Reserve, Normal operation, day minus two (FCR-N, D-2) | Z43 Frequency Containment Reserve, Normal operation, day minus one (FCR-N, D-1 early) |
| | | | Z44 Frequency Containment Reserve, Normal operation, day minus one, correction (FCR-N, D-1, correction) | Z44 Frequency Containment Reserve, Normal operation, day minus one, correction (FCR-N, D-1 , late correction) |
| | | | Z45 Frequency Containment Reserve, Normal operation, day minus two, correction (FCR-N, D-2, correction) | Z45 Frequency Containment Reserve, Normal operation, day minus one , correction (FCR-N, D-1 early correction) |
| | | | Z46 Frequency Containment Reserve, Disturbance, day minus one (FCR-D, D-1) | Z46 Frequency Containment Reserve, Disturbance, day minus one (FCR-D, D-1 late) |
| | | | Z47 Frequency Containment Reserve, Disturbance, day minus two (FCR-D, D-2) | Z47 Frequency Containment Reserve, Disturbance, day minus one (FCR-D, D-1 early) |
| | | | Z48 Frequency Containment Reserve, Disturbance, day minus one, correction (FCR-D, D-1, correction) | Z48 Frequency Containment Reserve, Disturbance, day minus one, correction (FCR-D, D-1 late correction) |
| | | | Z49 Frequency Containment Reserve, Disturbance, day minus two, correction (FCR-D, D-2, correction) | Z49 Frequency Containment Reserve, Disturbance, day minus one , correction (FCR-D, D-1 early correction) |
| 2.4.H | Ove Nesvik | 20210702 | <ul style="list-style-type: none"> Addition of Business Types B67 and B68 to ENTSO-E ESS Schedule document, Day-ahead/Intraday flow document. | |

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| Ver/rel/rev | Changed by | Date | Changes |
|-------------|------------|----------|--|
| 2.4.G | Ove Nesvik | 20210512 | <ul style="list-style-type: none"> • Addition of BSP (A46) as receiver and ISR (A05) as sender of “Ediel ERRP Reserve Allocation Result Document”. • Update of sequence diagram in chapter 2.3, i.e. addition of “Ediel ERRP Reserve Allocation Result Document” from ISR to BSP in new arrows 18 and 21. • Addition of definition of BSP in chapter 3.1. • Update of roles and domains in chapter 3 to the latest version of the Harmonised Role Model. |
| 2.4.F | Ove Nesvik | 20210415 | <ul style="list-style-type: none"> • Addition of BSP for “Ediel ERRP Reserve Allocation Result Document” (Tendering Party) and the related dependency matrix (table 9). |
| 2.4.E | Ove Nesvik | 20210218 | <ul style="list-style-type: none"> • Addition of new Direction code A03 for Process Type A28, Business type A11, Document Type A81 and Reason code Z49 in Ediel ERRP Reserve Allocation Result Document |
| 2.4.D | Ove Nesvik | 20210121 | <ul style="list-style-type: none"> • Addition of new Process Type to ESS Schedule document (both “Day-ahead/Intraday trade” and “Day-ahead/Intraday flow”) and ECAN Publication Document: <ul style="list-style-type: none"> • Z15 External trade (“Trade outside the Capacity Calculation Region” used for the North Sea Link cable). • Addition of new Business Type to ESS Schedule document (“Day-ahead/Intraday trade”) and ECAN Publication Document: <ul style="list-style-type: none"> • A06 External trade without explicit capacity (used for the North Sea Link cable). • Addition of clarifying text. |
| 2.4.C | Ove Nesvik | 20210105 | <ul style="list-style-type: none"> • Addition of new Reason Code Z56 in Ediel ERRP Reserve Allocation Result Document. • Textual clarifications in related dependency matrix. |
| 2.4.B | Ove Nesvik | 20191219 | <ul style="list-style-type: none"> • Update of dependency matrix for Ediel ERRP Reserve Allocation Result Document: <ul style="list-style-type: none"> ○ Denmark will use Reason Codes Z30, Z31 and Z35. |
| 2.4.A | Ove Nesvik | 20191213 | <ul style="list-style-type: none"> • Update of Ediel ERRP Reserve Allocation Result Document: <ul style="list-style-type: none"> ○ Addition of new Document Type Code A81 ○ Addition of new Measure Unit Quantity KWT (kW) and MAW (MW) ○ Addition of new Direction Code A03 ○ Addition of Reason codes Z42 to Z49 • Correction of spelling errors and textual clarifications |
| 2.3.A | Ove Nesvik | 20190128 | <ul style="list-style-type: none"> • Addition of quarterly resolution for all time series documents (PT15M) <ul style="list-style-type: none"> ○ Addition of new Business Types (Z74 and Z75) in the Ediel ECAN Publication Document |
| 2.2.A | Ove Nesvik | 20190110 | <ul style="list-style-type: none"> • FCR-N and FCR-D are moved from Business Type codes to Reason codes in the Ediel ERRP Reserve Allocation Result Document. |
| 2.1.B | Ove Nesvik | 20181129 | <ul style="list-style-type: none"> • Clarification of national code usage in table 9. |

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| Ver/rel/rev | Changed by | Date | Changes |
|-------------|------------|----------|---|
| 2.1.A | Ove Nesvik | 20181015 | <ul style="list-style-type: none"> • Addition of new Business Types in Ediel ERRP Reserve Allocation Result Document: <ul style="list-style-type: none"> ○ Z03 Frequency Containment Reserves, Normal (FCR-N) ○ Z06 Frequency Containment Reserves, Disturbance (FCR-D) • A textbox “Added for the Nordic countries” has been removed from the class diagram for the Ediel ERRP Reserve Allocation Result Document. • The Reason class is made required in the attribute table for the Ediel ERRP Reserve Allocation Result Document. • NEG is renamed Ediel. |
| 2.0.D | Ove Nesvik | 20170704 | <ul style="list-style-type: none"> • Addition of business rules for NEG ERRP Reserve Allocation Result Document (paragraph 5.3.2) • Replaced Elspot with Day-ahead • Replaced Elbas with Intraday |
| 2.0.C | Ove Nesvik | 20170505 | <ul style="list-style-type: none"> • Removed Nord Pool logo on the front page • Update of sequence diagram in Figure 4, including: <ul style="list-style-type: none"> ○ Removal of arrow 7, 8 and 9; Documented in BRS for Schedules ○ Removal of arrow 10 (not used) ○ Removal of arrow 4 and 5; documented in BRS for Trade ○ Removal of arrow 7, 8 and 9; documented in BRS for Schedules • Update of Figure 11: <ul style="list-style-type: none"> ○ Removal of “Flow [In Sweden]” • Update of Figure 13: <ul style="list-style-type: none"> ○ Removal of “Flow [Only in Sweden]” • Addition of clarifying text related to Business Type B24 and B25; reporting of sales and purchases is seen from the Imbalance Settlement Responsible (not the BRP). |
| 2.0.B | Ove Nesvik | 20170213 | <ul style="list-style-type: none"> • Updated logos on the front page • Replaced Nord Pool and NPS with Market Operator • Replaced Elspot with Day-ahead • Replaced Elbas with Intraday • Updated NTC and NEG member list • Renamed Svenska Kraftnät to Svenska kraftnät • Removed arrow 6 and 7 in the sequence diagram for NBS Metering and settlement phase, and added a note to new arrow 7 and 8 “only used in Sweden” • Corrected the usage of time zones for settlement structure in chapter 5.7.2.1 |
| 2.0.A | Ove Nesvik | 20161121 | The status of the document is changed from “For test implementation” to “For implementation”. |
| 1.6.C | Ove Nesvik | 20161014 | Error correction: The sequence of the elements in the “Schedule Document” part of the paragraph “5.1.3 Attribute usage: ENTSO-E ESS Schedule document, Elspot/Elbas trade” is changed, so that “Domain” is before “Subject Party”. |
| 1.6.B | Ove Nesvik | 20160905 | NEG ERRP Reserve Allocation Result Document: <ul style="list-style-type: none"> • Process Type is set to [1] |

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| Ver/rel/rev | Changed by | Date | Changes |
|-------------|------------|----------|---|
| | | | <ul style="list-style-type: none"> The related dependency matrix is extended with a Process Type |
| 1.6.A | Ove Nesvik | 20160531 | <ul style="list-style-type: none"> ENTSO-E ESS Schedule document, Elspot/Elbas trade: <ul style="list-style-type: none"> Addition of clarifying text for Capacity Agreement Identification Removal of "Portfolio ID" Addition of Subject Party in the header level (currently not used) Addition of Trader (optional) in the In Party. Removal of Out Area (same as In area) Removal of Out Party (Market Operator) The term "Trader ID" is renamed to "Retailer ID" for InParty. NEG ECAN Publication Document <ul style="list-style-type: none"> Changed cardinality for Price to [0..1] Removed Business Type "A87, Balancing energy price" Chapter 5.1.4 "Attribute usage: ENTSO-E ESS Schedule document, Elspot/Elbas flow": <ul style="list-style-type: none"> Flows will be always reported with positive values NEG ERRP Reserve Allocation Result Document: <ul style="list-style-type: none"> Addition of clarifying text regarding usage of Settlement Amount Tendering party for Reason Code Z38 is corrected to be BRP (only used in Finland) Reserve Object is corrected to N/A for Reason Code Z22 Addition of clarifying text regarding updates and usage of Settlement Amount Correction of spelling errors Addition of a new chapter 7 Technical Business Rules |
| 1.5.C | Ove Nesvik | 20151027 | <ul style="list-style-type: none"> Addition of clarifying text and error corrections |
| 1.5.B | Ove Nesvik | 20151002 | <ul style="list-style-type: none"> Correction of Reason codes in NEG ERRP Reserve Allocation Result Document Correction of spelling errors, such as: <ul style="list-style-type: none"> Correction to "2-13 calendar days" in Figure 5 |
| 1.5.A | Ove Nesvik | 20150923 | <ul style="list-style-type: none"> Measure Unit Energy Price is removed from "NEG ERRP Reserve Allocation Result Document" Removal of arrow 8 (Confirmation of BRPs and Traders trade in Elspot and Elbas) from figure 4 (Sequence diagram: The NBS scheduling phase) Removal of NEG addition of Curve Type in Planned resource schedule document (no consequence for NBS messaging) Addition of clarifying text and error corrections |
| 1.4.B | Ove Nesvik | 20150421 | <ul style="list-style-type: none"> Addition of clarifying text |
| 1.4.A | Ove Nesvik | 20150123 | <ul style="list-style-type: none"> Update of description of content of areas, parties and quantity in ESS Schedule document for bilateral trade Update of references The term "master data" is used instead of "structure information" where applicable. |

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|-------------|------------|----------|---|
| | | | <ul style="list-style-type: none"> NBS is renamed to Imbalance Settlement Responsible (ISR) or eSett, when used as a role. |
| 1.3.B | Ove Nesvik | 20141205 | <ul style="list-style-type: none"> Update the harmonised roles in chapter 3, i.e. addition of Metering Point Administrator |
| 1.3.A | Ove Nesvik | 20141017 | <ul style="list-style-type: none"> Document status is changed to “For test implementation” Alignment of chapter “2, Overview of the Nordic energy market domain” with NBS BRS NEG ERRP Reserve Allocation Result Document: <ul style="list-style-type: none"> Addition of reason codes: <ul style="list-style-type: none"> Z29 FCR Z30 aFRR Z31 mFRR, Balancing Power Z32 mFRR, Countertrades Z33 mFRR, Peak Load Reserve Regulation Z34 mFRR, Quarter regulation Z35 mFRR, Special Regulation Z36 Hour Change Regulation Z37 Power Transaction Z38 TSO Internal Countertrades Z39 Day Ahead Production Adjustment Reason (Reserve allocation result Time Series Level) is changed from optional [0..1] to Required [1] Addition of Portfolio ID in ENTSO-E ESS Schedule document, Elspot/Elbas trade Textual clarifications Updated Business Type codes: <ul style="list-style-type: none"> Z55 -> B20 Balance up regulation price Z56 -> B21 Balance down regulation price Z57 -> B22 Main direction Z58 -> B23 Consumption imbalance price Z59 -> B24 Production sales imbalance price Z60 -> B25 Production purchase imbalance price Z61 -> B26 Average balance price between MBAs (Renamed to “MBAs prices between Market Balance Areas”) |
| 1.2.C | Ove Nesvik | 20140422 | <ul style="list-style-type: none"> Textual corrections (clarifications) |
| 1.2.B | Ove Nesvik | 20140418 | <ul style="list-style-type: none"> Textual corrections (clarifications) |
| 1.2.A | Ove Nesvik | 20140411 | <ul style="list-style-type: none"> Addition of new Business types in EPD document: <ul style="list-style-type: none"> Z55 Balance up regulation price Z56 Balance down regulation price Z57 Main direction Z58 Consumption imbalance price Z59 Production sales imbalance price Z60 Production purchase imbalance price Z61 Middle balance price between MBAs Addition of Direction in the Interval class in the EPD document Correction of relations in “Figure 7: Outline of the Harmonised role model within the scope of NBS settlement system” Addition of NBS acknowledgement principles Restriction of <i>Resolution Duration</i> to always cover one hour Addition of <i>Unit type</i> MWh |

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| Ver/rel/rev | Changed by | Date | Changes |
|-------------|------------|----------|---|
| | | | <ul style="list-style-type: none"> • Restriction of <i>Energy Quantity</i> to max Watt resolution |
| 1.1.D | Ove Nesvik | 20140117 | <ul style="list-style-type: none"> • Addition of clarifying text and error corrections |
| 1.1.C | Ove Nesvik | 20131201 | <ul style="list-style-type: none"> • Time frame for exchange of data for imbalance settlement will be corrected to 2 - 13 days • Addition of a new arrow 23, Confirmation of production plans, in the sequence diagram for the Scheduling phase • Updated acknowledgement process in chapter 5 • Addition of clarifying text and corrections of spelling errors |
| 1.1.B | Ove Nesvik | 20131108 | <ul style="list-style-type: none"> • Corrections of spelling errors |
| 1.1.A | Ove Nesvik | 20131108 | <ul style="list-style-type: none"> • Update of links to other documents in the sequence diagrams. • Error corrections, such as: <ul style="list-style-type: none"> ○ Rename of ebix[®], Confirmation of Aggregated Data per Neighbouring Grid for Settlement Responsible to NEG, Confirmation of Aggregated Data per Neighbouring Grid For Settlement Responsible ○ Rename of code E?? to Z08 |
| 1.0.A | Ove Nesvik | 20130906 | <ul style="list-style-type: none"> • First approved version for review and comments |

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.

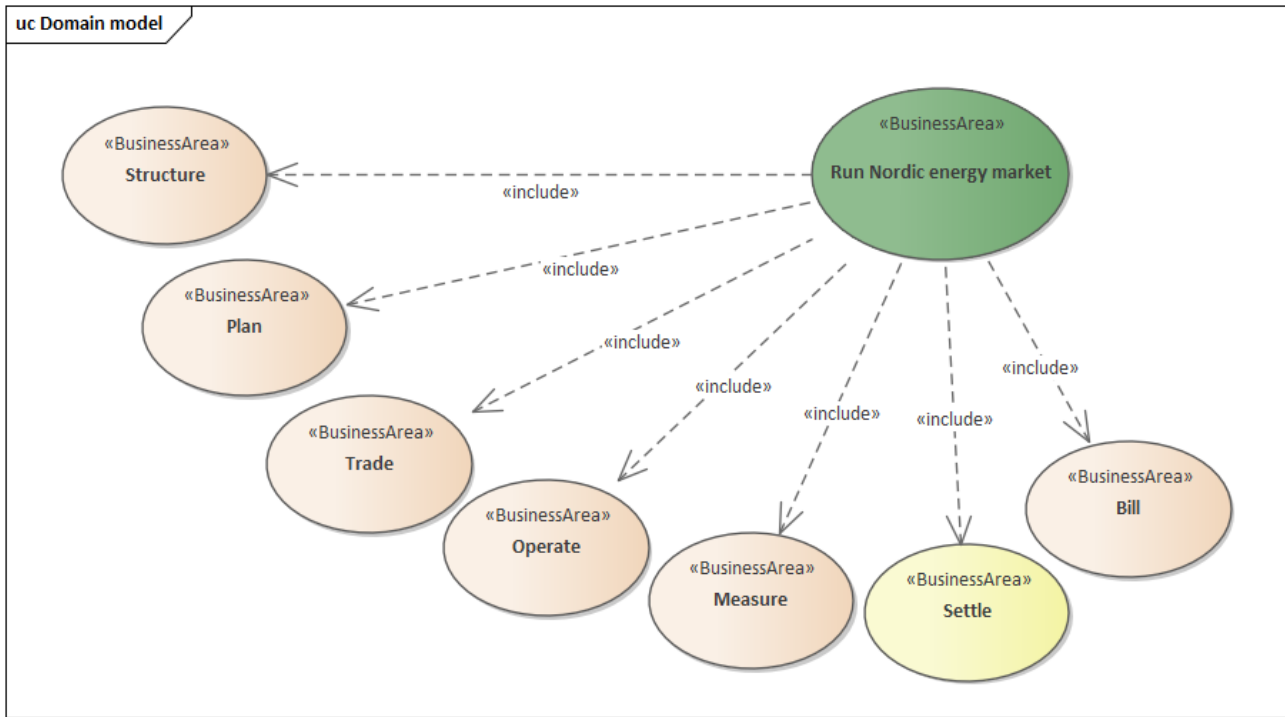


Figure 1: UseCase diagram: Ediel Energy Market Domain Model

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 and Plan.

For a more elaborated description of the processes included in the domain model, see [6].

2.2 Breakdown of the settlement phase

For a detailed overview of sub UseCases within the UseCase Settle, see BRS for Nordic Balancing System for the retail market (NBS BRS) [7].

2.3 Overview of information exchange for the NBS scheduling phase

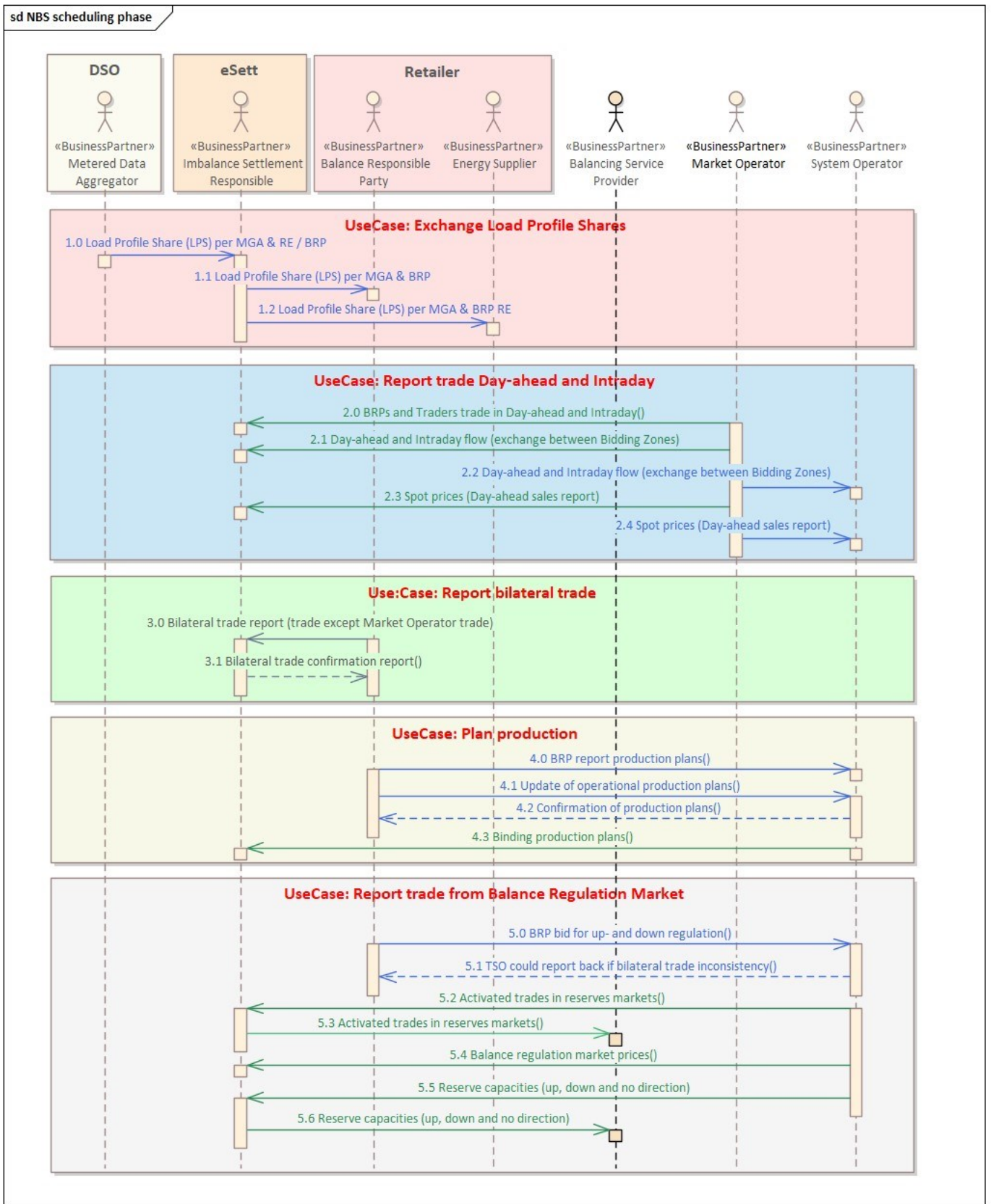


Figure 2: Sequence diagram: The NBS scheduling phase

Comments to the diagram:

- Only documents exchanged between eSett, and TSOs and Market Operators, i.e., only documents (arrows) with green colour, is further elaborated in this document.
- Documents (arrows) with black colour are documented in the NBS BRS [7], while documents (arrows) with blue colour are or will be documented in other BRSs from NEG, i.e. [9] and [10].

| NBS document | Roles | Identified object(s) | Documentation |
|--|--------------|---------------------------|--|
| Before the delivery month | | | |
| 1.0 Load Profile Share (LPS) per MGA & RE / BRP | | | Not handled in the first version of the BRS. |
| 1.1 Load Profile Share (LPS) per MGA & BRP | | | Only published on web |
| 1.2 Load Profile Share (LPS) per MGA & BRP RE | | | Only published on web |
| Before gate closure | | | |
| 2.0 BRPs and Traders trade in Day-ahead and Intraday | MO → ISR | BZ, BRP or Trader (RE) | ENTSO-E ESS Schedule Document [1] For details see: 5.1 |
| 2.1 Day-ahead and Intraday flow (exchange between Bidding Zones) | MO → ISR | BZ 1, BZ 2 | ENTSO-E ESS Schedule Document [1] For details see: 5.1 |
| 2.2 Day-ahead and Intraday flow (exchange between Bidding Zones) | | | ENTSO-E ESS Schedule Document [1] For details see: BRS for Nordic Scheduling Process [10] |
| 2.3 Spot prices (Day-ahead sales report) | MO → ISR | BZ | ENTSO-E ECAN Publication Document [1] For details see: 5.4 |
| 2.4 Spot prices (Day-ahead sales report) | | | ENTSO-E ECAN Publication Document [1] For details see: BRS for Nordic Trading System [9] |
| 3.0 Bilateral trade report (trade except Market Operator trade) | BRP → ISR | BZ, Trader 1, Trader 2 | ENTSO-E ESS Schedule Document [1] For details see: BRS for Nordic Balance Settlement [7] |
| 3.1 Bilateral trade confirmation report | ISR → BRP | BZ, Trader 1, Trader 2 | ENTSO-E ESS Schedule Document [1] For details see: BRS for Nordic Balance Settlement [7] |
| 4.0 BRP report production plans | | | ENTSO-E ERRP Planned Resource schedule [1] For details see: BRS for Nordic Scheduling Process [10] |
| 4.1 Update of operational production plans | | | ENTSO-E ERRP Planned Resource schedule [1] For details see: BRS for Nordic Scheduling Process [10] |
| 4.2 Confirmation of production plans | | | ENTSO-E ERRP Resource schedule confirmation report [1] For details see: BRS for Nordic Scheduling Process [10] |
| 4.3 Binding production plans | SO → ISR | BZ, R, BRP, RE | ENTSO-E ERRP Planned resource schedule [1] For details see: 5.2 |

BRS for Nordic Balance Settlement for data exchange between eSett and TSOs/Market Operators

| NBS document | Roles | Identified object(s) | Documentation |
|--|--------------|---|--|
| 5.0 BRP bid for up- and down regulation | | | ENTSO-E ERRP Reserve Bid Document for Reserve Tenders [1] For details see: BRS for Nordic Trading System [9] |
| 5.1 TSO could report back if bilateral trade inconsistency | | | ENTSO-E ESS Confirmation Report [1] For details see: BRS for Nordic Scheduling Process [10] |
| Short time after gate closure | | | |
| 5.2 Activated trades in reserves markets A) Reserves Up B) Reserves Down C) Supportive power Sold D) Supportive power Bought | SO → ISR | A) and B): BZ, BRP, R C) and D): BZ 1, BZ 2, TSO | Ediel ERRP Reserve Allocation Result Document [1] For details see: 5.3 |
| 5.3 Activated trades in reserves markets A) Reserves Up B) Reserves Down C) Supportive power Sold D) Supportive power Bought | ISR → BSP | A) and B): BZ, BRP, R C) and D): BZ 1, BZ 2, TSO | Ediel ERRP Reserve Allocation Result Document [1] For details see: 5.3 |
| 5.4 Balance regulation market prices | SO → ISR | BZ | ENTSO-E ECAN Publication Document [1] For details see: 5.4 |
| 5.5 Reserve capacities (up, down and no direction) | SO → ISR | BZ | Ediel ERRP Reserve Allocation Result Document [1] For details see: 5.3 |
| 5.6 Reserve capacities (up, down and no direction) | ISR → BSP | BZ | Ediel ERRP Reserve Allocation Result Document [1] For details see: 5.3 |

Table 2: NBS scheduling phase documents

2.4 Overview of information exchange for the NBS metering, settlement and reconciliation phase

For a detailed overview of information exchange for the NBS metering, settlement and reconciliation phase, see BRS for Nordic Balancing System for the retail market (NBS BRS) [7].

3 Harmonised roles used in Nordic settlement system

For a detailed overview of the relevant roles from the ebIX®, EFET and ENTSO-E Harmonised Electricity Market Role Model (HEMRM), see BRS for Nordic Balancing System for the retail market (NBS BRS) [7].

4 Process areas within Nordic settlement system

4.1 Process area: Receive and validate Master Data

See separate BRS [8].

4.2 Process area: Master Data

See separate BRS [8].

4.3 Process area: Exchange Load Profile Shares

For a detailed overview of the Process area: Exchange Load Profile Shares, see BRS for Nordic Balancing System for the retail market (NBS BRS) [7].

4.4 Process area: Report trade from Day-ahead and Intraday

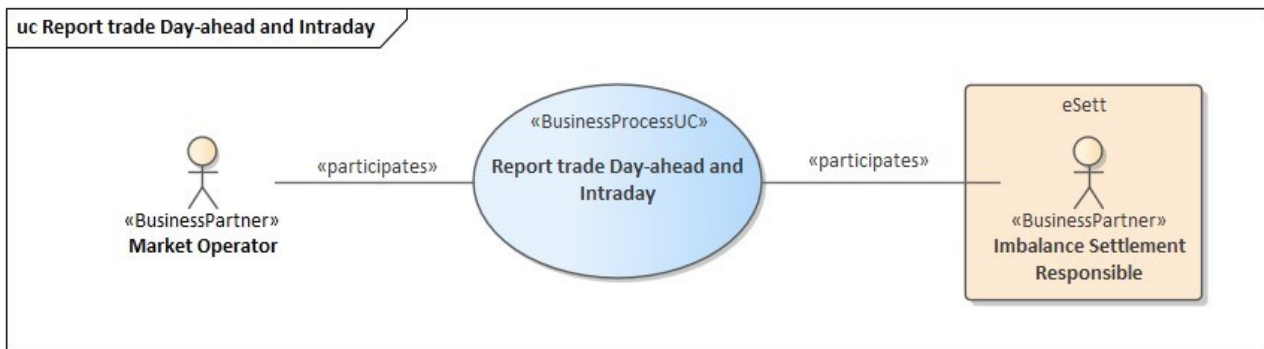


Figure 3: UseCase: Report trade from Day-ahead and Intraday

On the *Day-ahead market*, power contracts are traded daily for physical delivery in the next day's 24-hour period. The price calculation is based on the balance between bids and offers from all market participants – finding the intersection point between the market's supply curve and demand curve. This trading method is referred to as equilibrium point trading, auction trading, or simultaneous price setting. The price mechanism in *Day-ahead market* adjusts the flow of power across the interconnectors, and on certain connections within the Norwegian and Swedish grids, to the available trading capacity given by the Nordic Transmission System Operators. Thus, *Day-ahead market* is a common power market for the Nordic countries, with an implicit capacity auction on the interconnectors between the *Bidding Zones*.

All participants who meet the requirements set by the Market Operator are given access to the *Day-ahead market*. However, *Day-ahead market* participants must have a balancing agreement with the respective Transmission System Operator or through a third party.

The intraday market is a tool for Trade Responsible Parties to adjust their balance during intraday. The parties on the intraday market are Producers, Consumers and Traders.

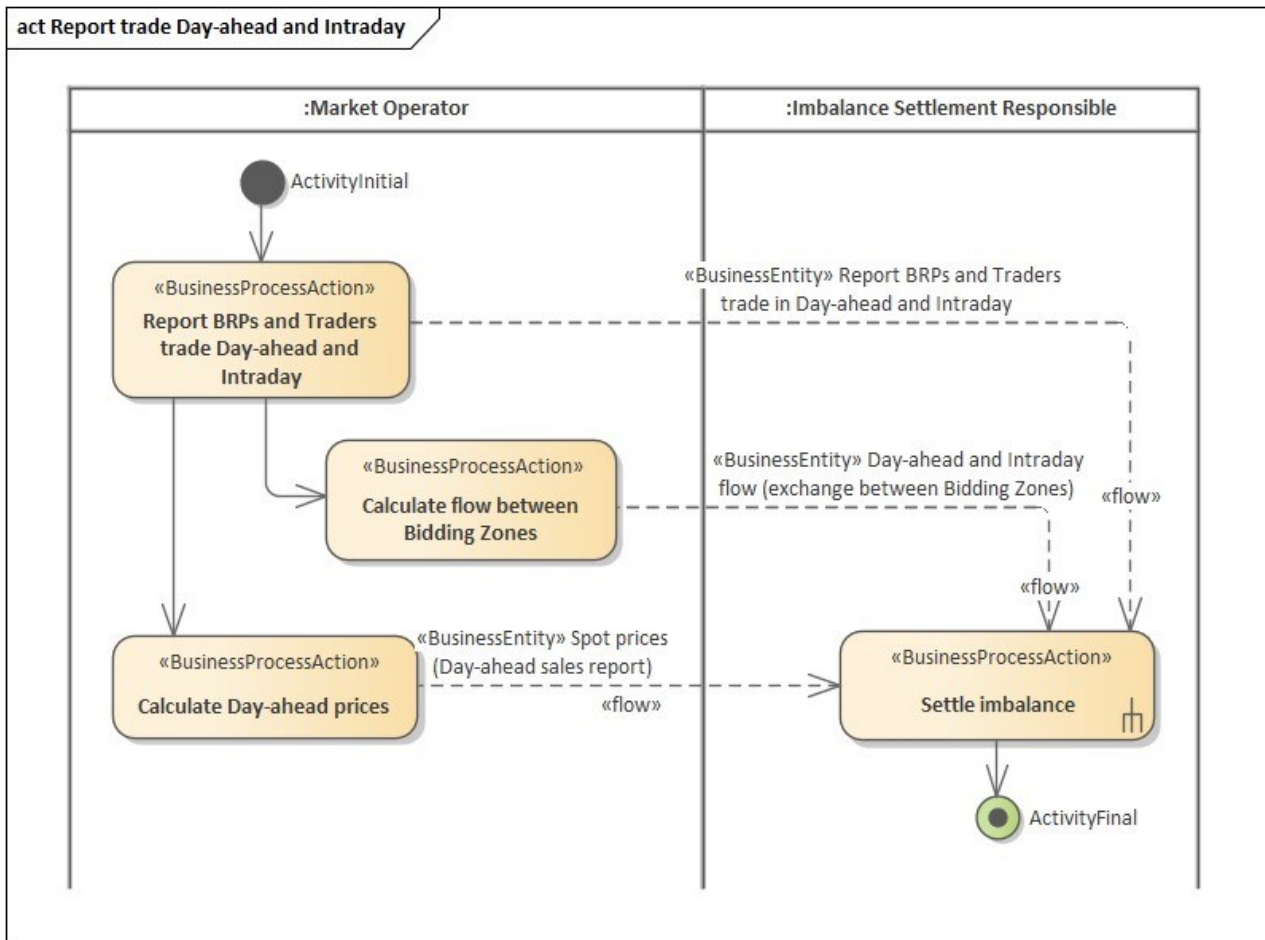


Figure 4: Activity diagram: Report trade from Day-ahead and Intraday

Comment to the diagram:

- Only actions and documents related to eSett is shown.

4.5 Process area: Report bilateral trade

For a detailed overview of the Process area: Report bilateral trade, see BRS for Nordic Balancing System for the retail market (NBS BRS) [7].

4.6 Process area: Plan production

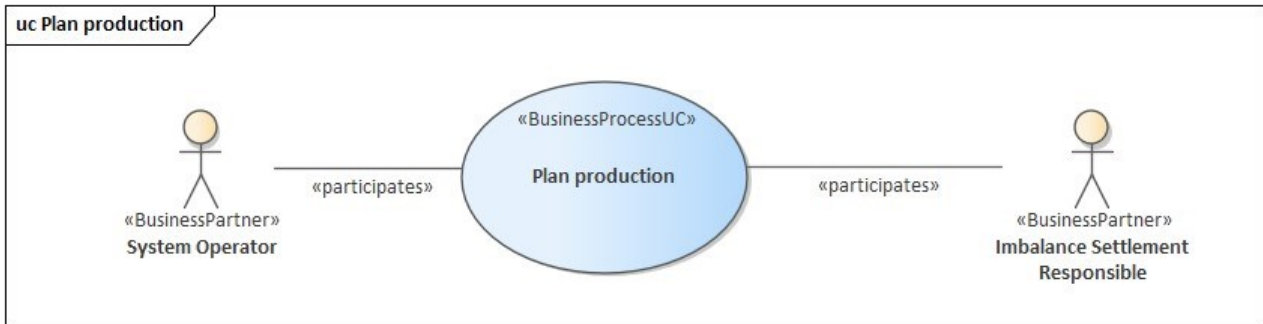


Figure 5: UseCase: Plan production

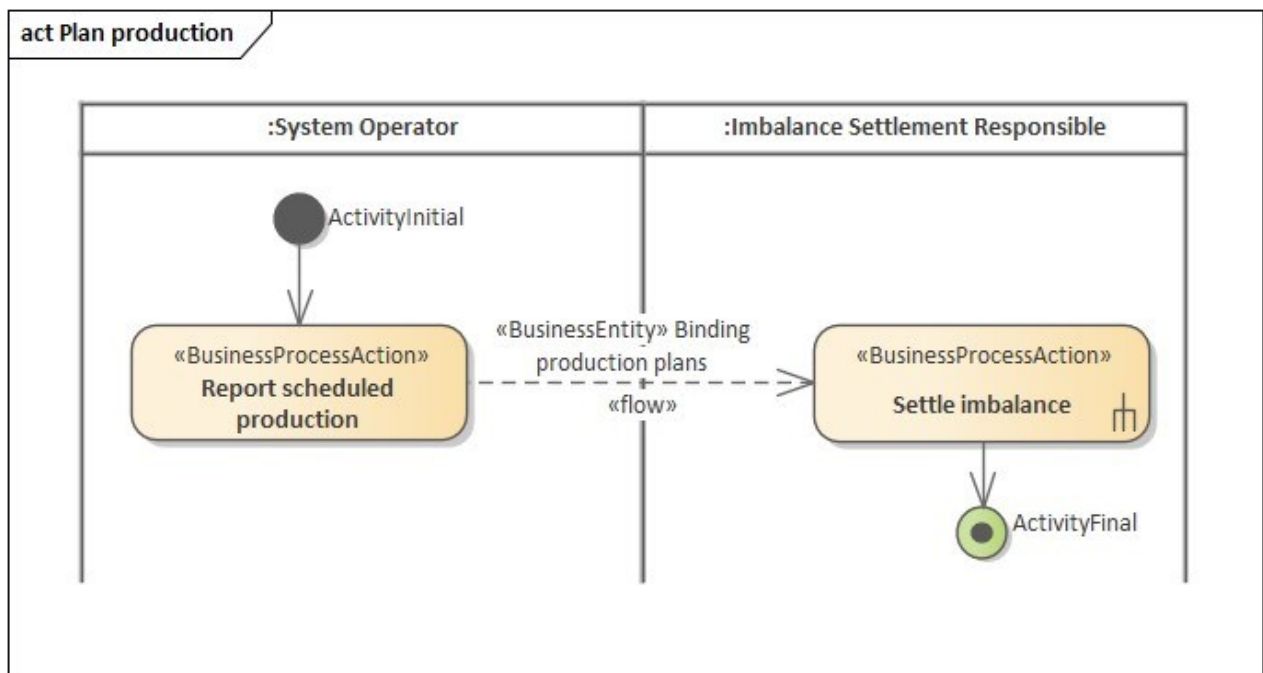


Figure 6: Activity diagram: Plan production

4.7 Process area: Report trade from Balance Regulation Market

The trade on the balance regulation market is documented in [7], BRS for the Nordic trading system. The Activated Trade in Reserves Market is reported from the *System Operator* to the *Imbalance Settlement Responsible* as the interface between the *Nordic trading system* and the *Nordic Balancing System*.

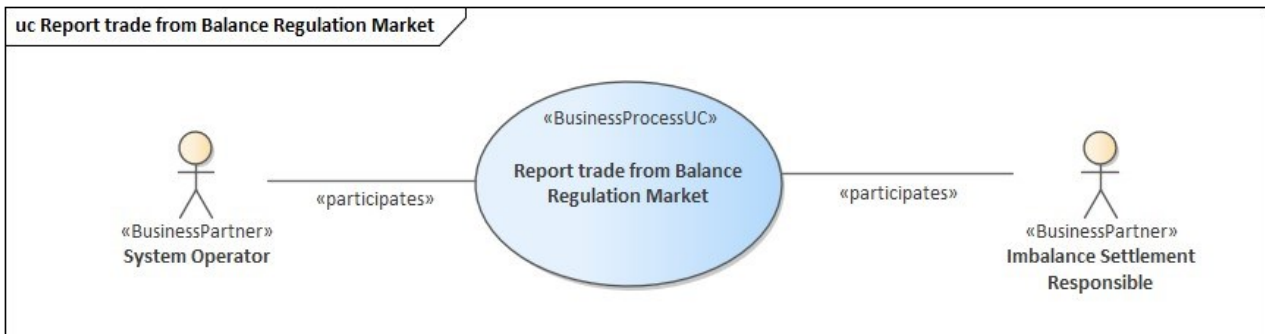


Figure 7: UseCase: Report trade from Balance Regulation Market

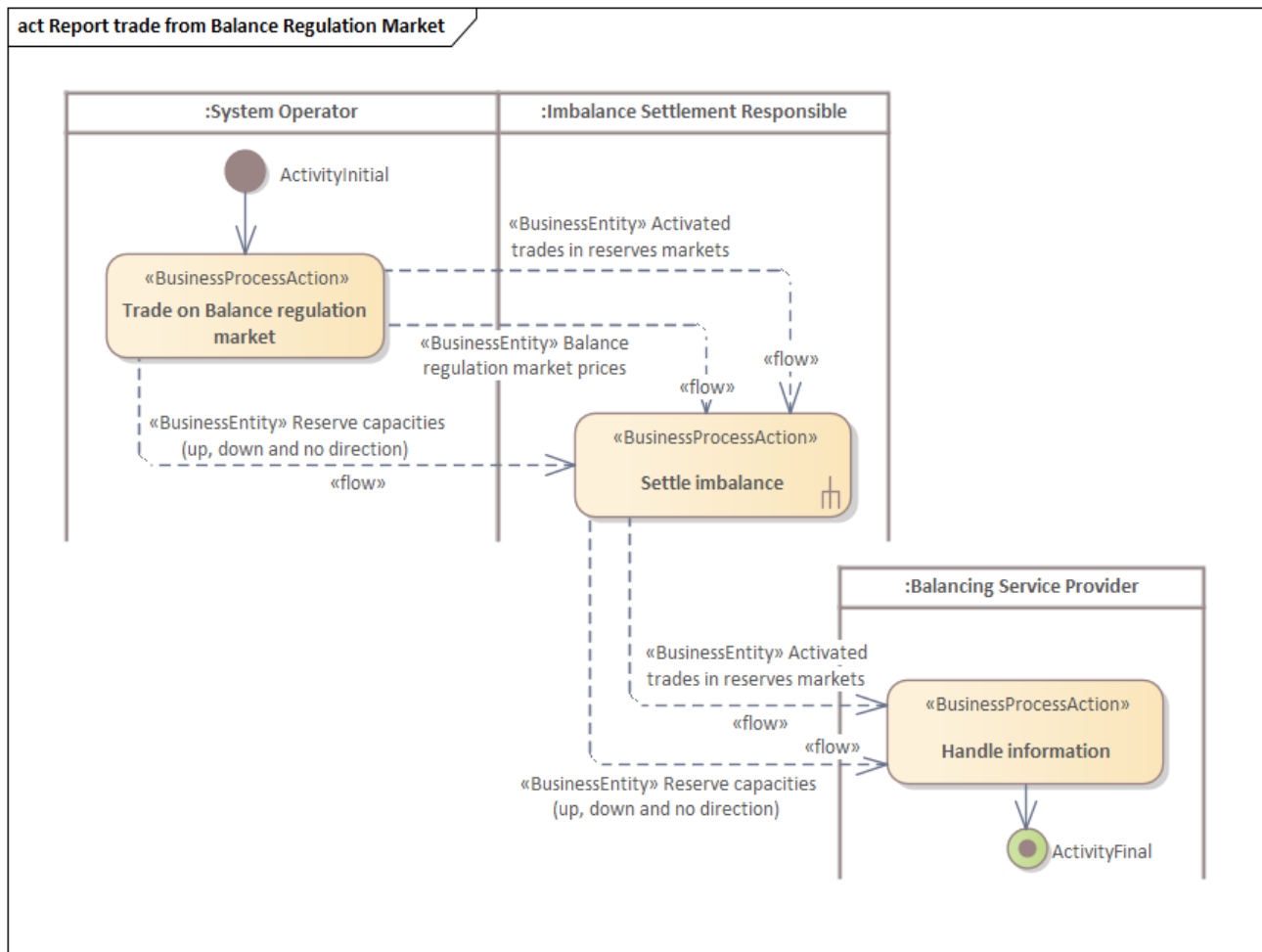


Figure 8: Activity diagram: Report trade from Balance Regulation Market

4.8 Process area: Exchange metered data for imbalance settlement

For a detailed overview of the Process area: Exchange metered data for imbalance settlement, see BRS for Nordic Balancing System for the retail market (NBS BRS) [7].

4.9 Process area: Report balancing services

For a detailed overview of the Process area: Report balancing services, see BRS for Nordic Balancing System for the retail market (NBS BRS) [7].

4.10 Process area: Distribute settlement basis data

Not handled in the first version of a common Nordic Balance Settlement.

4.11 Process area: Settle imbalance

For a detailed overview of the Process area: Settle imbalance, see BRS for Nordic Balancing System for the retail market (NBS BRS) [7].

4.12 Process area: Reconcile

Not handled in the first version of a common Nordic Balance Settlement.

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 object (Station 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 ENTSO-E ESS Schedule document

The *ENTSO-E ESS Schedule document* is documented in the *ENTSO-E Scheduling System (ESS) Implementation Guide*, see [1].

5.1.1 Class diagram: ENTSO-E ESS Schedule document

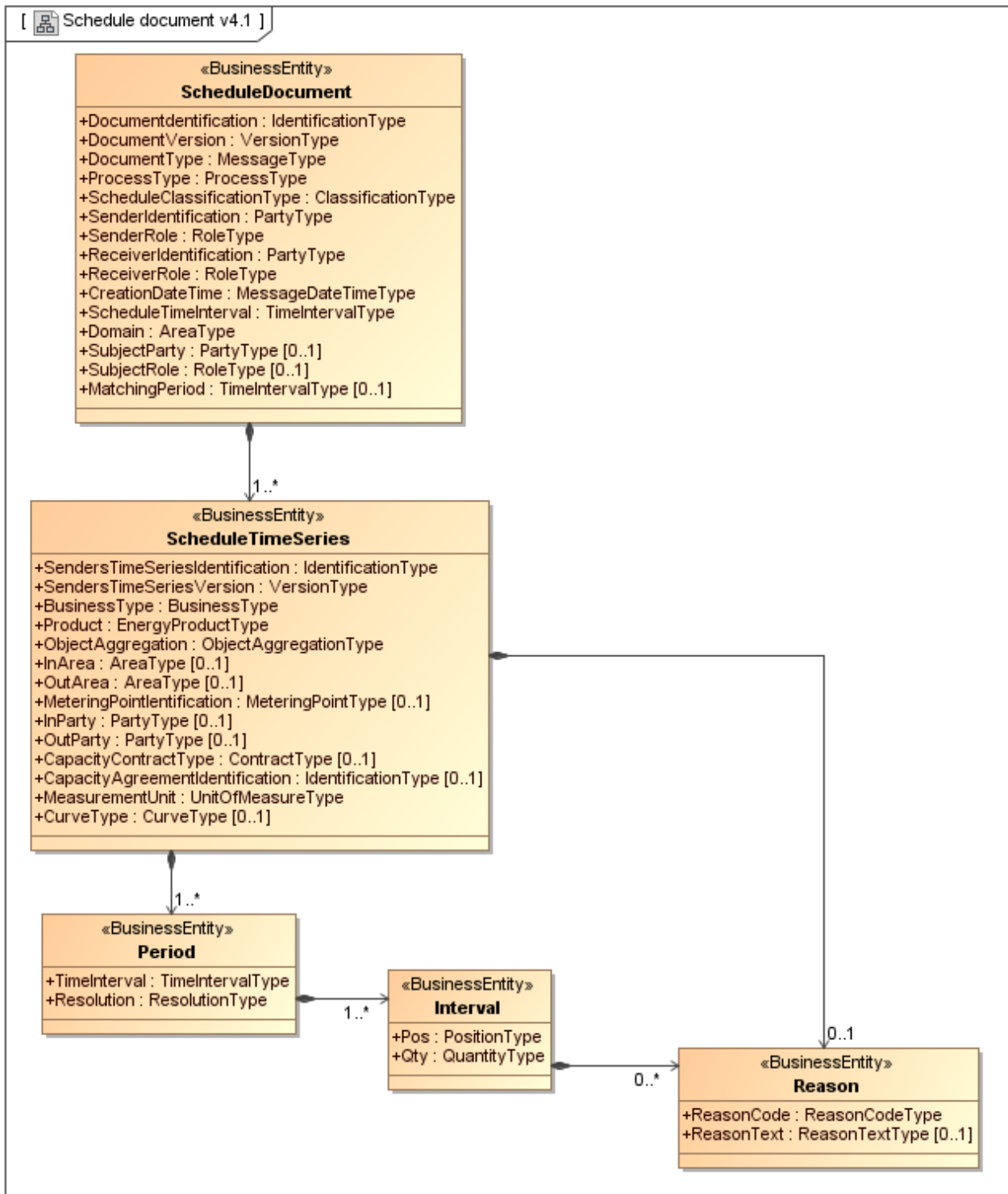


Figure 9: Class diagram: ENTSO-E ESS Schedule document

The document is used in the following exchanges:

- Overview of information exchange for the NBS scheduling phase, **Table 2: NBS scheduling phase documents**:
 - 2.0, BRPs and Traders trade in Day-ahead and Intraday
 - 2.1, Day-ahead and Intraday flow (exchange between Bidding Zones)

5.1.2 Attribute usage: ENTSO-E ESS Schedule document, Bilateral trade

| ESS Attribute | Cl. | Content | Descriptions and comments |
|------------------------------------|--------|---------------------------------------|---|
| Schedule Document | [1] | | |
| Document Identification | [1] | Document ID | Unique identification of the document |
| Document Version | [1] | Version | Fixed 1 |
| Document Type | [1] | A01 | A01 Balance responsible schedule |
| Process Type | [1] | A59 or Z05 | A59 Internal trade reporting Z05 Bilateral trade ¹ |
| Schedule Classification Type | [1] | A02 | A02 Summary type |
| Sender Identification | [1] | SO or BRP ID | Unique identification of the sender |
| Sender role | [1] | A04 or A08 | A04 System Operator A08 Balance Responsible Party |
| Receiver Identification | [1] | ISR ID | Unique identification of the Receiver |
| Receiver role | [1] | A05 | A05 Imbalance Settlement Responsible |
| Creation Date Time | [1] | Creation date/time | The date and time that the message was prepared for transmission by the application of the sender. |
| Schedule Time Interval | [1] | Start and end date of the time series | The beginning and ending date and time of the period covered by the message containing the schedule. |
| Domain | [1] | Nordic Market Area ID | Identification of the area covered by the document, i.e. 10Y1001A1001A91G (Nordic market area) |
| Schedule Time Series | [1..*] | | |
| Senders Time Series Identification | [1] | Time series ID | Unique identification of the Time Series (unique over time for the sender in question) |
| Senders Time Series Version | [1] | Version | Fixed 1 |
| Business Type | [1] | A08 | A08 Net internal trade (Within a Bidding Zone) (Net internal trade - where the direction from out party (seller) to in party (buyer) is positive and the opposite direction is negative (with minus signs)). |
| Product | [1] | 8716867000030 | 8716867000030 Active energy |
| Object Aggregation | [1] | A01 | A01 Area |

¹ The code “Z05 Bilateral trade” 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 Z05.

BRS for Nordic Balance Settlement for data exchange between eSett and TSOs/Market Operators

| ESS Attribute | Cl. | Content | Descriptions and comments |
|-----------------------------------|--------|--------------------------|---|
| In Area | [1] | BZ ID | The Bidding Zone where the trade has taken place. |
| Out Area | [1] | BZ ID | The same Bidding Zone as defined in In Area, i.e. where the trade has taken place. |
| In Party | [1] | BRP 1 ID | The Balance Responsible Party acting as the buyer in the bilateral trade. |
| Out Party | [1] | BRP 2 ID | The Balance Responsible Party acting as the seller in the bilateral trade. |
| Capacity Agreement Identification | [0..1] | Bilateral Trade ID | An ID only used when reporting trade on a Energy Supplier (Retailer) level, identifying the two involved Energy Suppliers and the related Bidding Zone. The Bilateral Trade ID will be unique in combination with In Party, Out Party and BZ. Note: Currently not used |
| Measurement Unit | [1] | KWH or MWH | KWH kWh MWH MWh |
| Period | [1..*] | | |
| Time Interval | [1] | Start and end date time | The start and end date and time of the time interval of the period in question. |
| Resolution | [1] | Resolution | The resolution is expressed in compliance with ISO 8601 in the following format: PnYnMnDTnHnMnS. Where nY expresses a number of years, nM a number of months, nD a number of days. The letter "T" separates the date expression from the time expression and after it nH identifies a number of hours, nM a number of minutes and nS a number of seconds. In NBS hourly or quarterly resolution is used, i.e., PT1H , PT60M or PT15M . |
| Interval | [1..*] | | |
| Pos | [1] | Position | Position |
| Qty | [1] | Quantity | Quantity The direction from out party (seller) to in party (buyer) is positive, while the opposite direction is negative (with minus signs)) The resolution is maximum in Watt, i.e. max 3 decimals for kWh and max 6 decimals for MWh |

Table 3: Attribute usage: ENTSO-E ESS Schedule document, Bilateral trade

5.1.3 Attribute usage: ENTSO-E ESS Schedule document, Day-ahead/Intraday trade

| ESS Attribute | Cl. | Content | Descriptions and comments |
|------------------------------------|--------|--|--|
| Schedule Document | [1] | | |
| Document Identification | [1] | Document ID | Unique identification of the document |
| Document Version | [1] | Version | Fixed 1 |
| Document Type | [1] | A01 | A01 Balance responsible schedule |
| Process Type | [1] | A01 A02 A19 Z15 | A01 Day-ahead A02 Intraday incremental A19 Intraday accumulated Z15 External trade (Trade outside the Capacity Calculation Region) |
| Schedule Classification Type | [1] | A02 | A02 Summary type |
| Sender Identification | [1] | MO or SO ID | Unique identification of the sender |
| Sender Role | [1] | A04 A11 | A04 System Operator A11 Market Operator |
| Receiver Identification | [1] | ISR ID | Unique identification of the Receiver |
| Receiver Role | [1] | A05 | A05 Imbalance Settlement Responsible |
| Creation Date Time | [1] | Creation date/time | The date and time that the message was prepared for transmission by the application of the sender. |
| Schedule Time Interval | [1] | Start and end date of the time series | The beginning and ending date and time of the period covered by the message containing the schedule. |
| Domain | [1] | Nordic Market Area ID | Identification of the area covered by the document, i.e., 10Y1001A1001A91G (Nordic market area) |
| Subject Party | [1] | BRP ID | Unique identification of the BRP in question |
| Subject Role | [1] | A08 | A08 Balance Responsible Party |
| Schedule Time Series | [1..*] | | |
| Senders Time Series Identification | [1] | Time series ID | Unique identification of the Time Series (unique over time for the sender in question) |
| Senders Time Series Version | [1] | Version | Fixed 1 |
| Business Type | [1] | A06 or A08 | A06 External trade without explicit capacity (used for the North Sea Link cable). A08 Net internal trade (Within a Bidding Zone) (Net internal trade - where the direction from out party (seller) to in party (buyer) is positive and the opposite direction is negative (with minus signs). Business Type A06 is used together with Process Type Z15 . Business Type A08 is used together with Process Type A01 , A02 and A19 . |
| Product | [1] | 8716867000030 | 8716867000030 Active energy |

BRS for Nordic Balance Settlement for data exchange between eSett and TSOs/Market Operators

| ESS Attribute | Cl. | Content | Descriptions and comments |
|--------------------|--------|-------------------------|---|
| Object Aggregation | [1] | A01 | A01 Area |
| In Area | [1] | BZBZ ID | Bidding Zone |
| In Party | [0..1] | Retailer ID | The unique identification of the Retailer (Company) in question |
| Measurement Unit | [1] | KWH or MWH | KWH kWh MWH MWh |
| Period | [1..*] | | |
| Time Interval | [1] | Start and end date time | The start and end date and time of the time interval of the period in question. |
| Resolution | [1] | Resolution | The resolution is expressed in compliance with ISO 8601 in the following format: PnYnMnDTnHnMnS. Where nY expresses a number of years, nM a number of months, nD a number of days. The letter "T" separates the date expression from the time expression and after it nH identifies a number of hours, nM a number of minutes and nS a number of seconds. In NBS hourly or quarterly resolution is used, i.e., PT1H , PT60M or PT15M . |
| Interval | [1..*] | | |
| Pos | [1] | Position | Position |
| Qty | [1] | Quantity | Quantity The resolution is maximum in Watt, i.e., max 3 decimals for kWh and max 6 decimals for MWh The direction from out party (seller) to in party (buyer) is positive, while the opposite direction is negative (with minus signs)) |

Table 4: Attribute usage: ENTSO-E ESS Schedule document, Day-ahead and Intraday trade

5.1.4 Attribute usage: ENTSO-E ESS Schedule document, Day-ahead/Intraday flow

| ESS Attribute | Cl. | Content | Descriptions and comments |
|------------------------------------|--------|--|---|
| Schedule Document | [1] | | |
| Document Identification | [1] | Document ID | Unique identification of the document |
| Document Version | [1] | Version | Fixed 1 |
| Document Type | [1] | A55 | A55 Summarised Market Schedule (A compilation of all external schedules concerning two Bidding Zones of all balance responsible parties) |
| Process Type | [1] | A01 A02 A19 Z15 | A01 Day-ahead A02 Intraday incremental A19 Intraday accumulated Z15 External trade (Trade outside the Capacity Calculation Region) |
| Schedule Classification Type | [1] | A02 | A02 Summary type |
| Sender Identification | [1] | MO ID | Unique identification of the Market operator (sender) |
| Sender role | [1] | A11 | A11 Market Operator |
| Receiver Identification | [1] | ISR ID | Unique identification of the Imbalance Settlement Responsible (receiver) |
| Receiver role | [1] | A05 | A05 Imbalance Settlement Responsible |
| Creation Date Time | [1] | Creation date/time | The date and time that the message was prepared for transmission by the application of the sender. |
| Schedule Time Interval | [1] | Start and end date of the time series | The beginning and ending date and time of the period covered by the message containing the schedule. |
| Domain | [1] | Nordic Market Area ID | Identification of the area covered by the document, i.e., 10Y1001A1001A91G (Nordic market area) |
| Schedule Time Series | [1..*] | | |
| Senders Time Series Identification | [1] | Time series ID | Unique identification of the Time Series (unique over time for the sender in question) |
| Senders Time Series Version | [1] | Version | Fixed 1 |
| Business Type | [1] | A66 | A66 Energy flow B67 DC flow with losses - DC flow with losses refers to the values at the importing end of the DC line B68 DC flow without losses - DC flow without losses refers to the values at the exporting end of the DC line. |
| Product | [1] | 8716867000030 | 8716867000030 Active energy |
| Object Aggregation | [1] | A01 | A01 Area |
| In Area | [1] | BZ 1 ID | One Bidding Zone |
| Out Area | [1] | BZ 2 ID | The other Bidding Zone |

BRS for Nordic Balance Settlement for data exchange between eSett and TSOs/Market Operators

| ESS Attribute | Cl. | Content | Descriptions and comments |
|------------------|--------|--------------------------|--|
| Measurement Unit | [1] | KWH or MWH | KWH kWh MWH MWh |
| Period | [1..*] | | |
| Time Interval | [1] | Start and end date time | The start and end date and time of the time interval of the period in question. |
| Resolution | [1] | Resolution | The resolution is expressed in compliance with ISO 8601 in the following format: PnYnMnDTnHnMnS. Where nY expresses a number of years, nM a number of months, nD a number of days. The letter "T" separates the date expression from the time expression and after it nH identifies a number of hours, nM a number of minutes and nS a number of seconds. In NBS hourly or quarterly resolution is used, i.e., PT1H , PT60M or PT15M . |
| Interval | [1..*] | | |
| Pos | [1] | Position | Position |
| Qty | [1] | Quantity | Quantity Flows will always be reported with positive values. For each connection, flows will be reported as two time series, one for each direction. Positive values for flow from Out Area to In Area and zero in the corresponding position in the other time series. The resolution is maximum in Watt, i.e., max 3 decimals for kWh and max 6 decimals for MWh |

Table 5: Attribute usage: ENTSO-E ESS Schedule document, Day-ahead/intraday flow

5.2 ENTSO-E ERRP Planned resource schedule

The *ENTSO-E ERRP Planned resource schedule* is documented in the *ENTSO-E Reserve Resource Process (ERRP) Implementation Guide*, see [1].

5.2.1 Class diagram: ENTSO-E ERRP Planned resource schedule

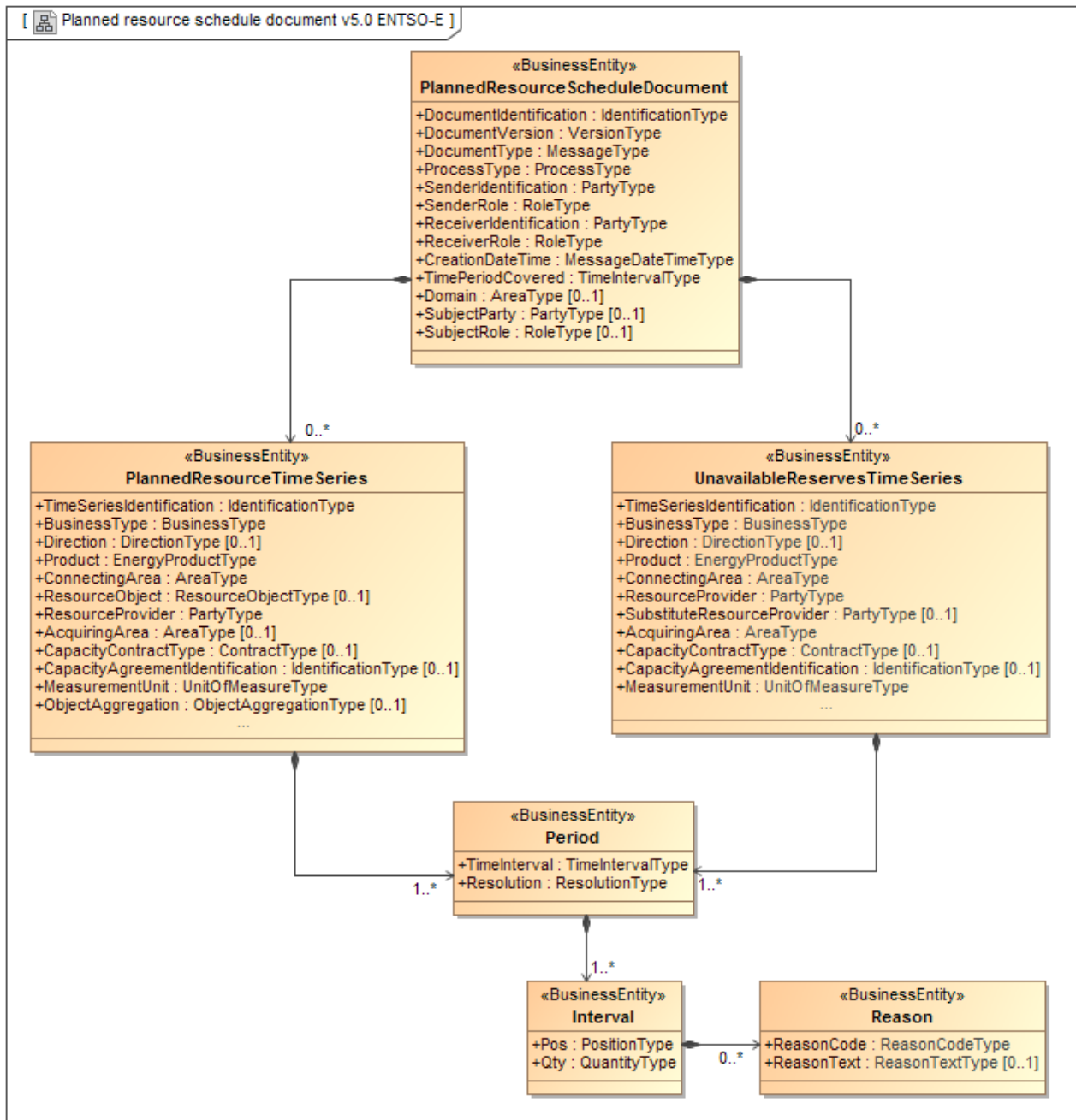


Figure 10: Class diagram: ENTSO-E ERRP Planned resource schedule

The document is used in the following exchanges:

- Overview of information exchange for the NBS scheduling phase, **Table 2: NBS scheduling phase documents**:
 - 4.3, Binding production plans

5.2.2 [Attribute usage: ENTSO-E ERRP Planned resource schedule](#)

| ERRP Planned Resource Schedule Attribute | Cl. | Content | Descriptions and comments |
|--|--------|---------------------------------------|---|
| Planned Resource Schedule Document | [1] | | |
| Document Identification | [1] | Document ID | Unique identification of the document |
| Document Version | [1] | "1" | Fixed 1 |
| Document Type | [1] | A14 | A14 Resource Provider Resource Schedule |
| Process Type | [1] | A17 | A17 Schedule day - The process concerns the day ahead, intraday and eventually ex-post scheduling in a single document. The schedule will be transferred within the total position including historic information (The trade balance of a party at a given time) |
| Sender Identification | [1] | SO ID | Unique identification of the System Operator, sending the schedule |
| Sender role | [1] | A04 | A04 System Operator |
| Receiver Identification | [1] | ISR ID | Unique identification of the Imbalance Settlement Responsible, receiving the schedule |
| Receiver role | [1] | A05 | A05 Imbalance Settlement Responsible |
| Creation Date Time | [1] | Creation date/time | The date and time that the document was prepared for transmission by the application of the sender. |
| Time Period Covered | [1] | Start and end date of the time series | The beginning and ending date and time of the period covered by the document. |
| Domain | [1] | Nordic Market Area ID | Identification of the area covered by the document, i.e., 10Y1001A1001A91G (Nordic market area) |
| Subject Party | [0..1] | RE ID | The Retailer (RE) is only used in Finland |
| Subject Role | [0..1] | A12 | A12 Energy Supplier (Retailer), only used in Finland |
| Planned Resource Schedule Time Series | [1..*] | | |
| Time Series Identification | [1] | Time series ID | Unique identification of the Time Series (unique over time for the sender in question) |
| Business Type | [1] | Business Type | A01 Production A04 Consumption (general consumption) Z52 Small scale production |
| Product | [1] | 8716867000030 | 8716867000030 Active energy |
| Connecting Area | [1] | BZ ID | Unique identification of the Bidding Zone |
| Resource Object | [1] | RO ID | The Resource Object of the production plans |

BRS for Nordic Balance Settlement for data exchange between eSett and TSOs/Market Operators

| ERRP Planned Resource Schedule Attribute | Cl. | Content | Descriptions and comments |
|--|--------|--------------------------|--|
| Resource Provider | [1] | BRP ID | The Resource Provider (BRP) of the production plans |
| Measurement Unit | [1] | KWH or MWH | KWH kWh MWH MWh |
| Object Aggregation | [1] | A06 | A06 Resource Object |
| Period | [1..*] | | |
| Time Interval | [1] | Start and end date time | The start and end date and time of the time interval of the period in question. |
| Resolution | [1] | Resolution | <p>The resolution is expressed in compliance with ISO 8601 in the following format:</p> <p style="text-align: center;">PnYnMnDTnHnMnS.</p> <p>Where nY expresses a number of years, nM a number of months, nD a number of days.</p> <p>The letter "T" separates the date expression from the time expression and after it nH identifies a number of hours, nM a number of minutes and nS a number of seconds.</p> <p>In NBS hourly or quarterly resolution is used, i.e., PT1H, PT60M or PT15M.</p> |
| Interval | [1..*] | | |
| Pos | [1] | Position | Position |
| Qty | [1] | Quantity | <p>Quantity</p> <p>The resolution is maximum in Watt, i.e., max 3 decimals for kWh and max 6 decimals for MWh</p> |

Table 6: Attribute usage: ENTSO-E ERRP Planned resource schedule

5.3 Ediel ERRP Reserve Allocation Result Document

The *ENTSO-E ERRP Reserve Allocation Result Document* is documented in the *ENTSO-E Reserve Resource Process (ERRP) Implementation Guide*, see [1].

5.3.1 Class diagram: Ediel ERRP Reserve Allocation Result Document

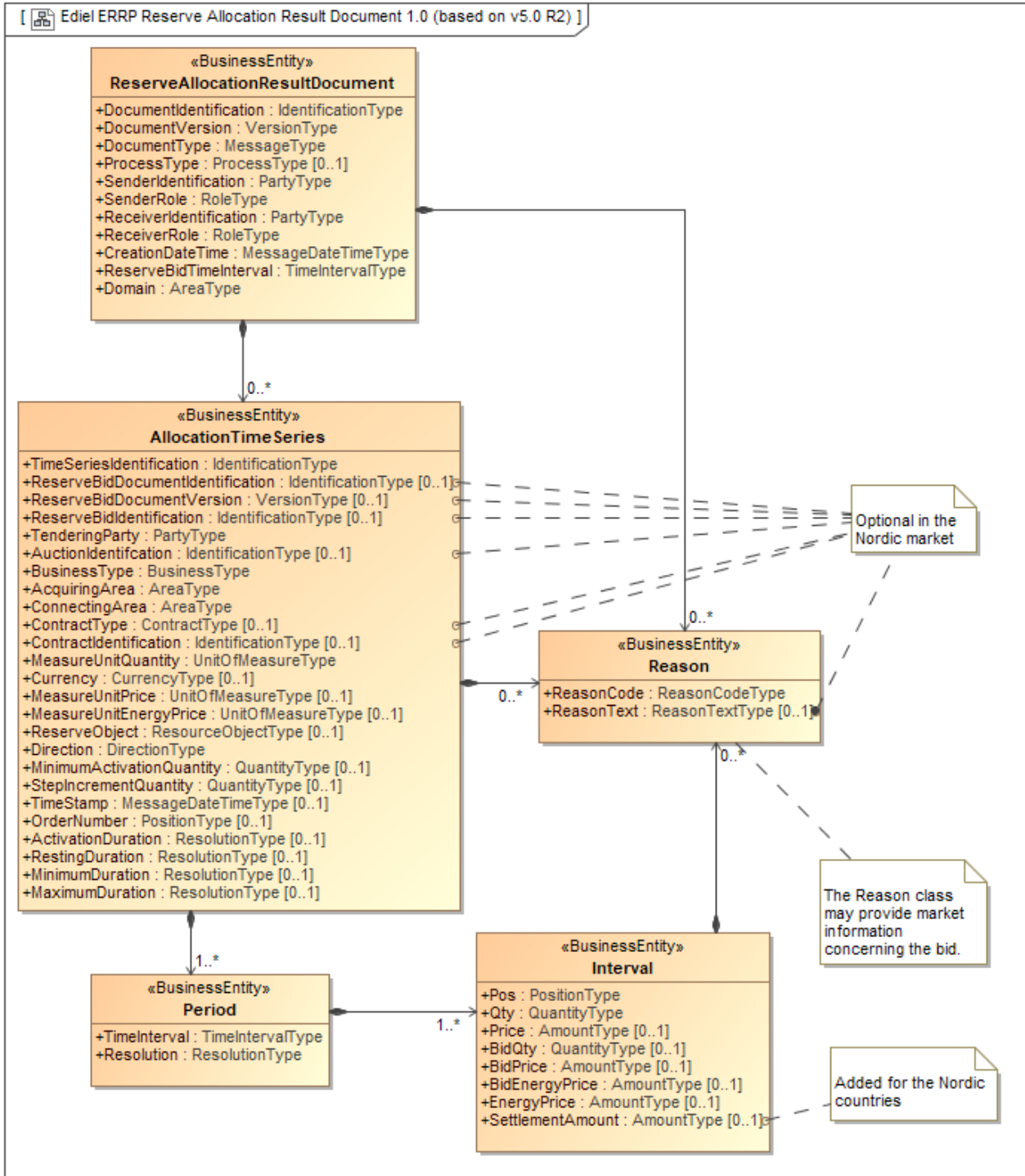


Figure 11: Class diagram: Ediel ERRP Reserve Allocation Result Document

The document is used in the following exchanges:

- Overview of information exchange for the NBS scheduling phase, **Table 2: NBS scheduling phase documents**:
 - 5.2, Activated trades in reserves markets:
 - Reserves Up
 - Reserves Down
 - Supportive power Sold
 - Supportive power Bought
 - 5.3, Activated trades in reserves markets:
 - Capacities up
 - Capacities down
 - Capacity, no direction
 - 5.5, Reserve capacities (up, down and no direction)
 - 5.6, Reserve capacities (up, down and no direction)

5.3.2 Business rules:

- All valid regulations for a period and Process Type (primary, secondary or tertiary regulations) must be sent in one document.
- If updates are sent, all valid regulations for the relevant period must be sent in the update-document (i.e. all still valid time series from the predecessor). An update-document shall always cover the same period as its predecessor. The latest received message will always replace the previous one.
- All regulations not part of the latest update-document shall be deleted.

5.3.3 Attribute usage: Ediel ERRP Reserve Allocation Result Document

| Ediel ERRP Reserve Allocation Result Document Attribute | Cl. | Content | Descriptions and comments |
|--|------------|--------------------------|---|
| Reserve Allocation Result Document | [1] | | |
| Document Identification | [1] | Document ID | Unique identification of the document |
| Document Version | [1] | "1" | Fixed 1 |
| Document Type | [1] | A38 or A81 | A38 Reserve Allocation Result A81 Contracted reserves |
| Process Type | [1] | Process Type | A28 Primary reserve process A29 Secondary reserve process A30 Tertiary reserve process |
| Sender Identification | [1] | SO ID | Unique identification of the System Operator, sending the document |
| Sender role | [1] | A04 | A04 System Operator A05 Imbalance Settlement Responsible |
| Receiver Identification | [1] | ISR ID | Unique identification of the Imbalance Settlement Responsible, receiving the schedule |
| Receiver role | [1] | A05 or A46 | A05 Imbalance Settlement Responsible A46 Balancing Service Provider (BSP) |

BRS for Nordic Balance Settlement for data exchange between eSett and TSOs/Market Operators

| Ediel ERRP Reserve Allocation Result Document Attribute | Cl. | Content | Descriptions and comments |
|---|--------|---------------------------------------|---|
| Creation Date Time | [1] | Creation date/time | The date and time that the document was prepared for transmission by the application of the sender. |
| Reserve Bid Time Interval | [1] | Start and end date of the time series | The beginning and ending date and time of the period covered by the document. |
| Domain | [1] | Nordic Market Area ID | Identification of the area covered by the document, i.e. 10Y1001A1001A91G (Nordic market area) |
| Allocation Time Series | [0..*] | | |
| Time Series Identification | [1] | Time series ID | Unique identification of the Time Series (unique over time for the sender in question) |
| Tendering Party | [1] | BRP, BSP or TSO ID | See dependency matrix below |
| Business Type | [1] | Business Type | A10 Tertiary control A11 Primary control A12 Secondary control |
| Acquiring Area | [1] | BZ ID | Unique identification of the Bidding Zone (BZ) where the energy is purchased. This will be the same BZ as the Connecting Area, except for supportive power (incl. transit) where the resource is connected in another BZ. |
| Connecting Area | [1] | BZ ID | Unique identification of the Bidding Zone (BZ) where the resource is connected. |
| Measure Unit Quantity | [1] | Measure Unit | KWH kWh (kilowatt hour) MWH MWh (megawatt hour) KWT kW (kilowatt) MAW MW (megawatt) |
| Currency | [1] | Currency | ISO three-digit currency code, e.g.: DKK Denmark, krone EUR European Union, Euro NOK Norway, krone SEK Sweden, krona |
| Reserve Object | [0..1] | RO ID | See dependency matrix below |
| Direction | [1] | Direction | A01 Up A02 Down A03 UP and DOWN (symmetrical) For supportive power (incl. transit) the Direction is related to Up- or Down-regulation in the Connecting Area. When reporting Capacity Reserves (Document Type = A81) and Reason Code from Z42 to Z45 , the direction A03 (UP and DOWN (symmetrical)) shall be used. |
| Reason (Allocation Result Time Series Level) | [1] | | 1st REPETITION |
| Reason Code | [1] | Reason Code | Z22 Supportive power Z26 Transit triangle |

BRS for Nordic Balance Settlement for data exchange between eSett and TSOs/Market Operators

| Ediel ERRP Reserve Allocation Result Document Attribute | Cl. | Content | Descriptions and comments |
|---|-----|---------|--|
| | | | <p>Z27 Transit redispatch</p> <p>Z28 Transit SB Loop Long</p> <p>Z29 FCR (Frequency Containment Reserve (FCR) is an automatic and momentarily regulation, to adjust the physical balance in the power system)</p> <p>Z30 aFRR (Frequency Restoration Reserve - Automatic (aFRR) is an automatic reserve, activated continuously by the frequency)</p> <p>Z31² mFRR, Balancing Power (Frequency Restoration Reserve - Manual activated reserves (mFRR), Balancing Power)</p> <p>Z34 mFRR, Quarter regulation (Frequency Restoration Reserve - Manual activated reserves (mFRR), Quarter regulation when TSO need transfer of production (usually start 15 min earlier))</p> <p>Z35³ mFRR, Special Regulation (Frequency Restoration Reserve - Manual activated reserves (mFRR), Special Regulation where regulation does not affect the regulation price)</p> <p>Z36 Hour Change Regulation (to reduce problems encountered at the turn of the hour in the Nordic countries or in Finland, Fingrid reserves the right to transfer the planned changes to begin 15 minutes before or after the planned moment)</p> <p>Z37 Power Transaction (Fixed price transaction used for specific purposes outside of ordinary regulation)</p> <p>Z38 TSO Internal Countertrades (The time series concern TSO Internal Countertrades)</p> <p>Z39 Day Ahead Production Adjustment (Energy (production) moved from one hour to another to avoid major changes between hours)</p> <p>Z40 Frequency Containment Reserve, Normal operation (FCR-N).</p> <p>Z41 Frequency Containment Reserve, Disturbance (FCR-D).</p> <p>Z42 Frequency Containment Reserve, Normal operation, day minus one (FCR-N, late)</p> <p>Z43 Frequency Containment Reserve, Normal operation, day minus one (FCR-N, early)</p> <p>Z44 Frequency Containment Reserve, Normal operation, day minus one, correction (FCR-N, late correction)</p> <p>Z45 Frequency Containment Reserve, Normal operation, day minus one, correction (FCR-N, early correction)</p> <p>Z46 Frequency Containment Reserve, Disturbance, day minus one (FCR-D, late)</p> <p>Z47 Frequency Containment Reserve, Disturbance, day minus one (FCR-D, early)</p> |

² Balancing power (**Z31**) can be direct activation (**Z59**) in case forecasted need for Balancing Power is not correct.

³ In many cases Special/system Regulations (**Z35**) can be scheduled since they are known early. In those cases, the activation is scheduled activation (**Z58**). If the special/system regulation need comes suddenly, then the activation will be direct activation (**Z59**)

BRS for Nordic Balance Settlement for data exchange between eSett and TSOs/Market Operators

| Ediel ERRP Reserve Allocation Result Document Attribute | Cl. | Content | Descriptions and comments |
|---|--------|-------------------------|--|
| | | | <p>Z48 Frequency Containment Reserve, Disturbance, day minus one, correction (FCR-D, late correction)</p> <p>Z49 Frequency Containment Reserve, Disturbance, day minus one, correction (FCR-D, early correction)</p> <p>Z54 Activation by AOF (Activation Optimisation Function)</p> <p>Z55 Manual activation not based on AOF</p> <p>Z56 Fast Frequency Reserve (FFR)</p> <p>Z63 Period shift activation</p> <p>Z74 Disturbance reserve mFRR-D</p> <p>Z75 aFRR, correction</p> <p>Z76 mFRR, correction</p> <p>Z89 Base load</p> <p>Z93 mFRR-D correction</p> |
| Reason (Allocation Result Time Series Level) | [0..1] | | <p style="text-align: center;">2ND REPETITION</p> <p>Dependency:</p> <p>Shall be used if the following reason codes is specified in the first repetition of the Reason class:</p> <p>Z31 mFRR, Balancing Power (Frequency Restoration Reserve - Manual activated reserves (mFRR), Balancing Power)</p> <p>Z35 mFRR, Special Regulation (Frequency Restoration Reserve - Manual activated reserves (mFRR), Special Regulation where regulation does not affect the regulation price)</p> |
| Reason Code | [1] | Reason Code | <p>Z58 Scheduled activation</p> <p>Z59 Direct activation</p> <p>Z60 Faster activation</p> <p>Z61 Faster deactivation</p> <p>Z62 Slower activation</p> |
| Period | [1..*] | | |
| Time Interval | [1] | Start and end date time | The start and end date and time of the time interval of the period in question. |
| Resolution | [1] | Resolution | <p>The resolution is expressed in compliance with ISO 8601 in the following format:</p> <p style="text-align: center;">PnYnMnDTnHnMnS.</p> <p>Where nY expresses a number of years, nM a number of months, nD a number of days.</p> <p>The letter "T" separates the date expression from the time expression and after it nH identifies a number of hours, nM a number of minutes and nS a number of seconds.</p> <p>In NBS hourly or quarterly resolution is used, i.e., PT1H, PT60M or PT15M.</p> |
| Interval | [1..*] | | |
| Pos | [1] | Position | Position |

BRS for Nordic Balance Settlement for data exchange between eSett and TSOs/Market Operators

| Ediel ERRP Reserve Allocation Result Document Attribute | Cl. | Content | Descriptions and comments | | | | | | | | | | | | | | | |
|---|----------|-------------------------------------|--|--|-------|-------------------------------------|---------------------|----------|----------|---------------------|----------|----------|-----------------------|----------|----------|-----------------------|----------|----------|
| Qty | [1] | Quantity | Quantity The resolution is maximum in Watt, i.e., max 3 decimals for kWh and max 6 decimals for MWh | | | | | | | | | | | | | | | |
| Settlement Amount | [1] | Amount | Rules for the supportive power (incl. transit) – Reason Codes Z22, Z26, Z27 and Z28 <ul style="list-style-type: none"> The Acquiring Area is always related to the Buyer and the Connecting Area is always related to the Seller. Positive values are used when the energy direction is from the Connecting Area to the Acquiring Area, i.e., up-regulation. Negative values are used when the energy direction is from the Acquiring Area to the Connecting Area, i.e., down-regulation. Rules for other Reason Codes: <ul style="list-style-type: none"> Settlement Amount is always Quantity multiplied with price. The table below shows the sign convention to be used: <table border="1" data-bbox="834 925 1505 1126"> <thead> <tr> <th></th> <th>Price</th> <th>Sign when sending from TSO to eSett</th> </tr> </thead> <tbody> <tr> <td>Up regulation (A01)</td> <td>Positive</td> <td>Negative</td> </tr> <tr> <td>Up regulation (A01)</td> <td>Negative</td> <td>Positive</td> </tr> <tr> <td>Down regulation (A02)</td> <td>Positive</td> <td>Positive</td> </tr> <tr> <td>Down regulation (A02)</td> <td>Negative</td> <td>Negative</td> </tr> </tbody> </table> When positive prices, up-regulation means negative Settlement Amount while down-regulation means positive Settlement Amount. Opposite sign occurs when prices are negative. | | Price | Sign when sending from TSO to eSett | Up regulation (A01) | Positive | Negative | Up regulation (A01) | Negative | Positive | Down regulation (A02) | Positive | Positive | Down regulation (A02) | Negative | Negative |
| | Price | Sign when sending from TSO to eSett | | | | | | | | | | | | | | | | |
| Up regulation (A01) | Positive | Negative | | | | | | | | | | | | | | | | |
| Up regulation (A01) | Negative | Positive | | | | | | | | | | | | | | | | |
| Down regulation (A02) | Positive | Positive | | | | | | | | | | | | | | | | |
| Down regulation (A02) | Negative | Negative | | | | | | | | | | | | | | | | |

Table 7: Attribute usage: Ediel ERRP Reserve Allocation Result Document

5.3.4 Dependency matrix: Ediel ERRP Reserve Allocation Result Document

| Process type | Business type | Doc. Type | Direction | Reason Code, 1 st repetition | Reason Code, 2 nd repetition | Tendering Party | Reserve Object | Used in | | | |
|--|---------------------------|-----------|------------|---|---|-----------------|----------------|---------|----|----|----|
| | | | | | | | | DK | FI | NO | SE |
| A30 (Tertiary reserve process) | A10 (Tertiary control) | A38 | A01 or A02 | Z22 Supportive power | N/A | TSO | N/A | | ✓ | | |
| | | | | Z26 Transit triangle | N/A | TSO | N/A | | | ✓ | |
| | | | | Z27 Transit redispatch | N/A | TSO | N/A | | | ✓ | |
| | | | | Z28 Transit SB Loop Long | N/A | TSO | N/A | | | ✓ | |
| | | | | Z31 mFRR, Balancing Power (NO: Ordinary regulation) | Z58 Scheduled activation | BRP | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | | | Z59 Direct activation | BRP | ✓ | ✓ | ✓ | ✓ | |
| | | | | | Z60 Faster activation | BRP | ✓ | ✓ | | ✓ | |
| | | | | | Z61 Faster deactivation | BRP | ✓ | ✓ | | ✓ | |
| | | | | | Z62 Slower activation | BRP | ✓ | ✓ | | ✓ | |
| | | | | Z34 mFRR, Quarter regulation | N/A | BRP | ✓ | | | ✓ | |
| | | | | Z35 mFRR, Special Regulation (NO: Specially regulation) | Z58 Scheduled activation | BRP | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | | | Z59 Direct activation | BRP | ✓ | ✓ | ✓ | ✓ | |
| | | | | | Z60 Faster activation | BRP | ✓ | ✓ | | ✓ | |
| | | | | | Z61 Faster deactivation | BRP | ✓ | ✓ | | ✓ | |
| | | | | | Z62 Slower activation | BRP | ✓ | ✓ | | ✓ | |
| | | | | Z36 Hour Change Regulation (NO: Move of production) | N/A | BRP | ✓ | | ✓ | ✓ | ✓ |
| | | | | Z37 Power Transaction | N/A | BRP | ✓ | | ✓ | | |
| Z38 TSO Internal Countertrades (Only used in Finland) | N/A | BRP | ✓ | | ✓ | | | | | | |
| Z39 Day Ahead Production Adjustment (NO: Production smoothing) | N/A | BRP | ✓ | | | ✓ | | | | | |

BRS for Nordic Balance Settlement for data exchange between eSett and TSOs/Market Operators

| Process type | Business type | Doc. Type | Direction | Reason Code, 1 st repetition | Reason Code, 2 nd repetition | Tendering Party | Reserve Object | Used in | | | | | | |
|--------------|---------------|----------------------------------|--------------------------|---|--|-----------------|---|---------|------------|-----|----|---|---|---|
| | | | | | | | | DK | FI | NO | SE | | | |
| | | | | Z54 | Activation by AOF (Activation Optimisation Function) | N/A | BSP | ✓ | ✓ | ✓ | ✓ | | | |
| | | | | Z55 | Manual activation not based on AOF | N/A | BSP | ✓ | ✓ | ✓ | ✓ | | | |
| | | | | Z63 | Period shift activation | N/A | BRP | ✓ | | ✓ | | | | |
| | | | | Z74 | Disturbance reserve mFRR-D | N/A | BRP | ✓ | | ✓ | ✓ | | | |
| | | | | Z89 | Bidless activation (Activation without BSP bid) | N/A | BRP | ✓ | | ✓ | ✓ | | | |
| | | A81 | A01 or A02 | Z31 | mFRR, Balancing Power (NO: Ordinary regulation) | N/A | BRP or BSP | N/A | ✓ | | ✓ | ✓ | | |
| | | | | Z35 | mFRR, Special Regulation (NO: Specially regulation) | N/A | BRP or BSP | N/A | ✓ | | | ✓ | | |
| | | | | Z74 | Disturbance reserve mFRR-D | N/A | BRP or BSP | N/A | | | ✓ | | | |
| | | | | Z76 | mFRR, correction | N/A | BRP or BSP | N/A | | | ✓ | ✓ | | |
| | | | | Z93 | mFRR-D correction | N/A | BRP or BSP | N/A | | | ✓ | | | |
| | | A28 (Primary reserve process) | A11 (Primary control) | A38 | A01 or A02 | Z29 | FCR | N/A | BRP | ✓ | ✓ | ✓ | ✓ | |
| | | | | A38 | A01 or A02 | Z40 | Frequency Containment Reserves, Normal (FCR-N) | N/A | | | ✓ | | | ✓ |
| | | | | A38 | A01 or A02 | Z41 | Frequency Containment Reserves, Disturbance (FCR-D) | N/A | | | | | | ✓ |
| | | A28 | A11 | A81 | A01, A02 or A03 | Z29 | FCR | N/A | BRP or BSP | N/A | ✓ | | | ✓ |

BRS for Nordic Balance Settlement for data exchange between eSett and TSOs/Market Operators

| Process type | Business type | Doc. Type | Direction | Reason Code, 1 st repetition | Reason Code, 2 nd repetition | Tendering Party | Reserve Object | Used in | | | | | | | | | |
|---------------------------------|-------------------------|-----------|---------------------------------|---|---|-----------------|----------------|---------|-----|------------------------------------|-----|-----|---|---|---|---|---|
| | | | | | | | | DK | FI | NO | SE | | | | | | |
| (Primary Reserve process) | (Primary control) | | A03 | Z42 | FCR-N, late | N/A | | | ✓ | | | ✓ | | | | | |
| | | | | Z43 | FCR-N, early | N/A | | | ✓ | | | ✓ | | | | | |
| | | | | Z44 | FCR-N, late correction | N/A | | | ✓ | | | ✓ | | | | | |
| | | | | Z45 | FCR-N, early correction | N/A | | | ✓ | | | ✓ | | | | | |
| | | | A01 or A02 | Z46 | FCR-D, late | N/A | | | ✓ | | | ✓ | | | | | |
| | | | | Z47 | FCR-D, early | N/A | | | ✓ | | | ✓ | | | | | |
| | | | | Z48 | FCR-D, late correction | N/A | | | ✓ | | | ✓ | | | | | |
| | | | | Z49 | FCR-D, early correction | N/A | | | ✓ | | | ✓ | | | | | |
| | | | A01 or A02 | Z56 | FFR | N/A | | | ✓ | | | ✓ | | | | | |
| | | | A29 (Secondary reserve process) | A12 (Secondary control) | A38 | A01 or A02 | | | Z30 | aFRR | N/A | BRP | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | | | | | | | Z54 | Activation by AOF | N/A | BSP | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | | | | | | | Z55 | Manual activation not based on AOF | N/A | BSP | ✓ | ✓ | ✓ | ✓ | ✓ |
| A29 (Secondary reserve process) | A12 (Secondary control) | A81 | A01 or A02 | Z30 | aFRR | N/A | BRP or BSP | N/A | ✓ | | ✓ | ✓ | | | | | |
| | | | | Z75 | aFRR, correction | N/A | BRP or BSP | N/A | | | ✓ | ✓ | | | | | |

Table 8: Dependency matrix: Ediel ERRP Reserve Allocation Result Document

5.4 Ediel ECAN Publication Document

The *Publication document* is used for summaries from all markets within the Nordic trading system. The document is based on the *Publication Document* from the ENTSO-E ECAN IG, see [1].

5.4.1 Class diagram: Ediel ECAN Publication document

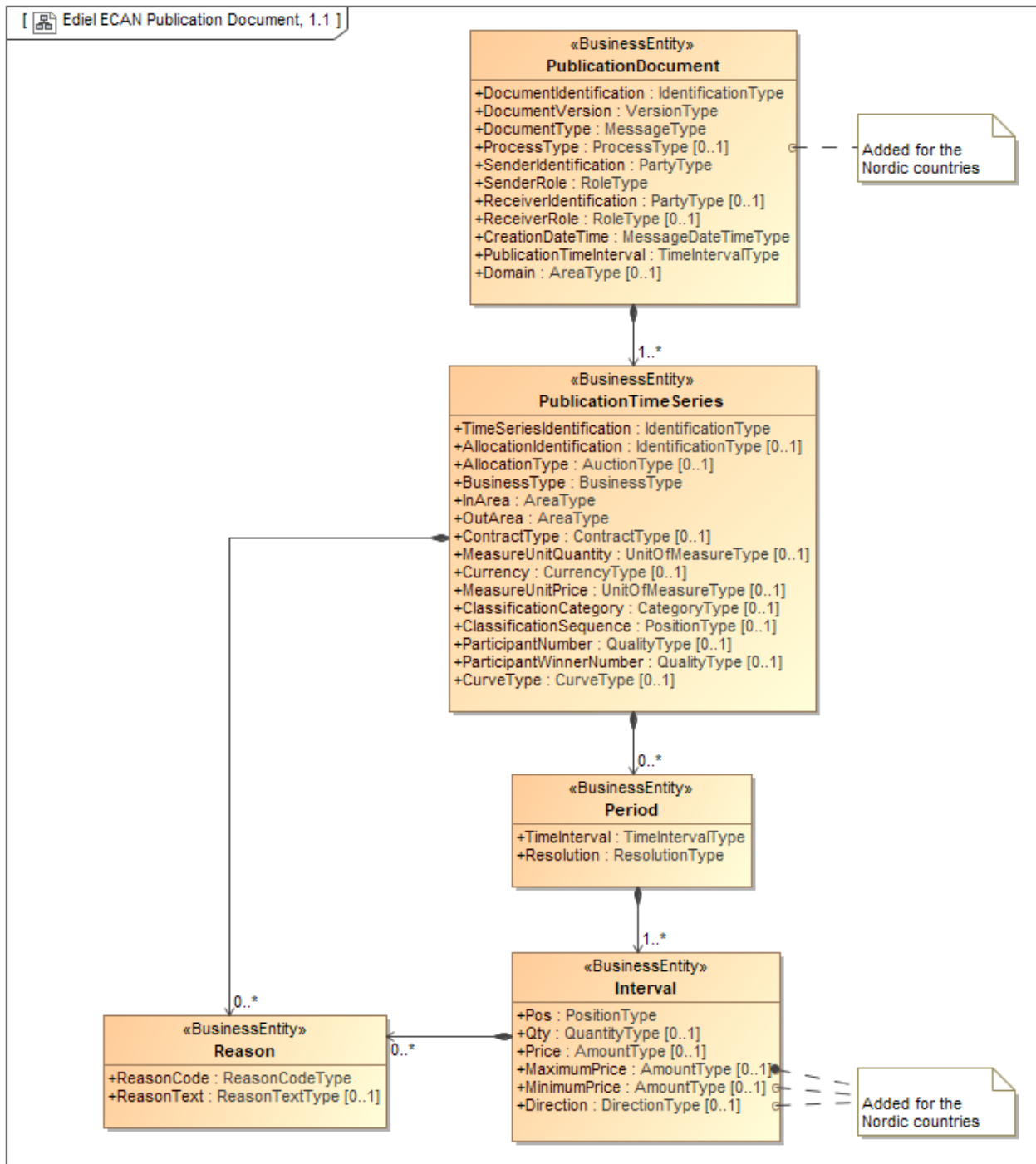


Figure 12: Class diagram: Ediel ECAN Publication Document

BRS for Nordic Balance Settlement for data exchange between eSett and TSOs/Market Operators

The document is used in the following exchanges:

- Overview of information exchange for the NBS scheduling phase, **Table 2:** NBS scheduling phase documents:
 - 2.3, Spot prices (Day-ahead sales report)
 - 5.4, Balance regulation market prices

BRS for Nordic Balance Settlement for data exchange between eSett and TSOs/Market Operators

5.4.2 Attribute usage: Ediel ECAN Publication Document

| Ediel ECAN Publication Document Attribute | Cl. | Content | Descriptions and comments |
|---|--------|---------------------------------------|--|
| Allocation Result Document | [1] | | |
| Document Identification | [1] | Document ID | Unique identification of the document |
| Document Version | [1] | "1" | Fixed 1 |
| Document Type | [1] | A44 | A44 Price document |
| Process Type | [1] | Process Type | A01 Day-ahead A30 Tertiary reserves process A51 Automatic frequency restoration reserve Z15 External trade (Trade outside the Capacity Calculation Region) |
| Sender Identification | [1] | SO or MO ID | Identification of the party who is sending the document |
| Sender role | [1] | Sender Role | A04 System Operator A11 Market Operator |
| Receiver Identification | [1] | ISR ID | Identification of the Imbalance Settlement Responsible, who is receiving the document |
| Receiver role | [1] | A05 | A05 Imbalance Settlement Responsible |
| Creation Date Time | [1] | Creation date/time | The date and time that the message was prepared for transmission by the application of the sender. |
| Publication Time Interval | [1] | Start and end date of the time series | The beginning and ending date and time of the period covered by the document. |
| Domain | [1] | Nordic Market Area ID | Identification of the area covered by the document, i.e., 10Y1001A1001A91G (Nordic market area) |
| Publication Time Series | [1..*] | | |
| Time Series Identification | [1] | Time series ID | Unique identification of the Time Series (unique over time for the sender in question) |
| Business Type | [1] | Business Type | A06 External trade without explicit capacity (used for the North Sea Link cable). A62 Spot price B20 Balance up regulation price B21 Balance down regulation price B22 Main direction (no price) B23 Consumption imbalance price B24 Production sales imbalance price B25 Production purchase imbalance price B26 BZs prices between Bidding Zones (inter-TSO exchange) Z74 Imbalance sales price Z75 Imbalance purchase price Note regarding Business Type B24 and B25: The view for reporting of sales and purchases is seen from the Imbalance Settlement Responsible (not the BRP). |

BRS for Nordic Balance Settlement for data exchange between eSett and TSOs/Market Operators

| Ediel ECAN Publication Document Attribute | Cl. | Content | Descriptions and comments |
|---|--------|-------------------------|---|
| | | | Business Type A06 is used together with Process Type Z15 . |
| In Area | [1] | BZ ID | Relevant Bidding Zone (BZ) for the market |
| Out Area | [1] | BZ ID | Same as In Area for all Business Types, except “ B26 BZs prices between Bidding Zones”, where the second border-BZ is used |
| ContractType | [0..1] | Contract types | Contract types: A14 First intraday auction contract A15 Second intraday auction contract A16 Third intraday auction contract |
| Currency | [1] | Currency | ISO three-digit currency code, e.g.: DKK Denmark, krone EUR European Union, Euro NOK Norway, krone SEK Sweden, krona |
| Measurement Unit Price | [1] | MWH | MWH MWh |
| Period | [1..*] | | |
| Time Interval | [1] | Start and end date time | The start and end date and time of the time interval of the period in question. |
| Resolution | [1] | Resolution | The resolution is expressed in compliance with ISO 8601 in the following format: PnYnMnDTnHnMnS. Where nY expresses a number of years, nM a number of months, nD a number of days. The letter “T” separates the date expression from the time expression and after it nH identifies a number of hours, nM a number of minutes and nS a number of seconds. In NBS hourly or quarterly resolution is used, i.e., PT1H , PT60M or PT15M . |
| Interval | [1..*] | | |
| Pos | [1] | Position | Position |
| Price | [0..1] | Price | Price |
| Direction | [0..1] | Direction | A01 Up A02 Down A04 Stable Only used if Business Type is B22 <i>Main direction</i> |

Table 9: Attribute usage: Ediel ECAN Publication Document

6 Acknowledgements

NBS will follow the ENTSO-E acknowledgment process [1]:

- A document is controlled within the system environment at two levels:
 1. It is first controlled at system level to detect syntax errors (XML parsing errors, file-processing errors, etc.).
 2. It is then controlled at the application level to detect any semantic errors (invalid data, wrong process, etc.).
- If there is a problem encountered at the first level, then a technical acknowledgement will be sent to inform the originator of the problem.
- If errors are encountered at the second level, a negative application acknowledgement will be sent to inform the originator of the problem.
- If the application can successfully process the information, then a positive application acknowledgement will be sent to inform the originator that the original document is accepted.

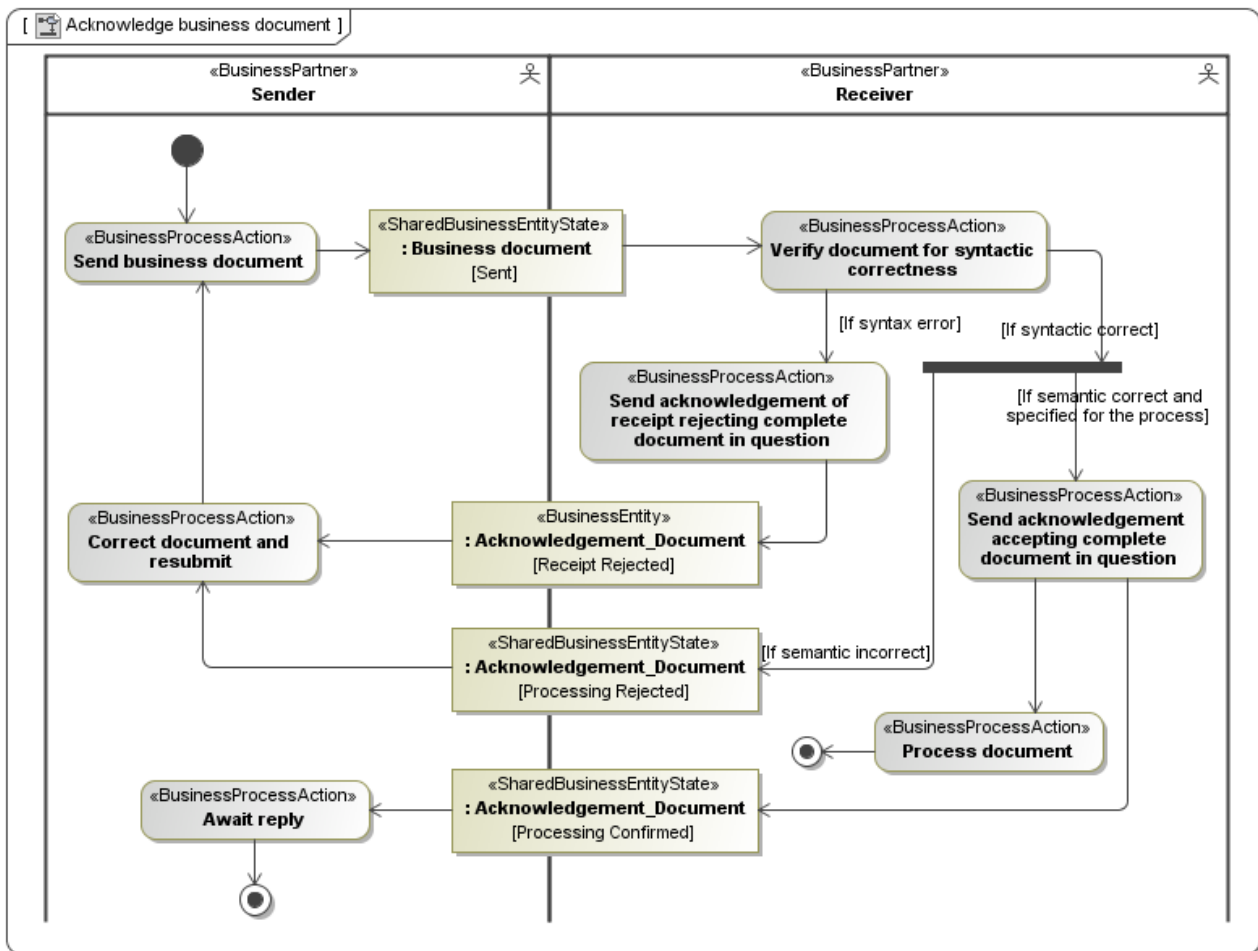


Figure 13: Activity diagram: ENTSO-E Acknowledgement process

Details of the acknowledgment document are found in *Common Nordic XML rules and recommendations* [11].

6.1 NBS requirements for acknowledgements

6.1.1 All or Nothing Principle

The all-or-nothing principle will be used for acknowledgements from eSett. This means that documents are accepted only if the documents contain no errors. If a document contains at least one error, it will be fully rejected, and no partial acceptance will be applied. However, if errors are found in a document, the rest of the document will be gone through, and all errors found will be added in the response (if possible).

6.1.2 Positive acknowledgements

eSett will send positive acknowledgements on all received documents. Similarly, eSett require acknowledgements in return for all documents sent to the actors.

7 Technical business rules

7.1 Time Series Identification (Time Series ID)

The *Time Series Identification* shall be a unique ID over time for the originator (sender) of a time series. I.e., every time a time series changed, the originator shall issue a new *Time Series ID*.

Note that this is a Nordic rule that is stricter than what is stated in the ENTSO-E implementation guides, which only requires the Time Series Identification to be unique within the document.

7.2 Usage of Resolution and Position

The resolution of a time series period shall always be one hour or 15 minutes, expressed according to ISO 8601, i.e., **PT1H**, **PT60M** or **PT15M**.

The time interval defined in the period class shall always be a multiple of its resolution.

The position (eBIX® term: Sequence) must begin with 1 and increment by 1 for each subsequent position forming a series of contiguous numbers covering the complete range of the Period.

Appendix A Identifying sender and recipient in communication headers

It is assumed that there will be a SOAP envelope or similar that will contain the physical sender ID and recipient ID of an information exchange. The parties identified in this envelope will be the same parties as today are transmitted in the EDIFACT UNB segment. These parties may be the “juridical parties”, i.e., the parties responsible for the content of the document, or third parties acting on behalf of the parties responsible for the content of the document.

The document header will contain the “juridical parties”, i.e., the parties responsible for the content of the document. For instance, the responsible DSO or Balance Responsible Parties will be explicitly identified in the document header. The parties identified in this document header will be the same parties as today are transmitted in the EDIFACT NAD segments.