# Process description

# Nomination of schedules in Germany

| | |
|---|---|
| Version | 4.7 |
| Publication date: | 10/01/2026 |
| Applicable from: | 04/01/2027 |
| Author | AG FPM |
| Status | Festgelegt |

# Contents

**1. Introduction ..... 6**
**2. Involved roles, areas, objects and definitions ..... 7**
2.1 Roles, areas and objects ..... 7
2.2 Definitions and abbreviations ..... 7

**3. Framework conditions and basics ..... 13**
3.1 Transactions that cross scheduling area boders (external schedule) ..... 14
3.1.1 "One balance group model" ..... 14
3.1.2 Additional nomination procedures (N:M/1:1) ..... 15
3.1.3 Matching process ..... 17
3.1.4 Comparison of business types A03 and A06 ..... 17
3.2 Transactions within scheduling areas (internal schedule) ..... 18
3.2.1 Transactions between two balance groups within a scheduling area ..... 18
3.2.2 Forecast schedules for the production and consumption of energy within a balance group and Redispatch-Activities ..... 18
3.2.2.1 Forecast production ..... 19
3.2.2.2 Forecast consumption ..... 19
3.2.2.3 Forecast Redispatch ..... 20
3.3 Matching rules ..... 21
3.3.1 Special regulations ..... 21
3.3.2 Day-ahead process ..... 21
3.3.2.1 Rejecting of schedule messages by exceeding declared limits ..... 21
3.4 Intraday process ..... 23
3.4.1 Principle of automatic scheduling area matching process ..... 23
3.4.2 Intraday schedule nomination ..... 23
3.4.2.1 Schedule nomination in the day-ahead matching process phase ..... 23
3.4.2.2 Schedule message in the intraday process phase ..... 24
3.4.2.2.1 Fault-tolerant schedule acceptance ..... 24
3.4.2.2.2 Matching: Confirmation/anomaly report ..... 25
3.4.2.3 Recommended frequency of schedule changes ..... 26
3.5 Day after schedule message process ..... 26
3.5.1.1 Urgent Call ..... 26

**4. The data exchange process in the German market model ..... 28**
4.1 Overview: Schedule processing in Germany ..... 28
4.2 Transmission of the schedule file ..... 29
4.2.1 Use case: Transmission of the schedule ..... 29
4.2.2 Sequence diagram: Transmission of the schedule file ..... 30
4.2.3 Activities diagram: Transmission of the schedule file ..... 32
4.2.3.1 Acknowledgement message and formal check ..... 32
4.2.3.2 Verification of the data (anomaly and confirmation report) ..... 33
4.2.3.2.1 Scheduling area internal schedules ..... 34
4.2.3.2.2 Scheduling area external schedules ..... 34
4.2.3.2.2.1 Day-ahead process ..... 34
4.2.3.2.2.2 Intraday process ..... 35
4.2.3.3 Confirmation Report ..... 35
4.2.3.3.1 Intermediate Confirmation Report ..... 36
4.2.3.3.1.1 Responses in an Intermediate Confirmation Report (iCNF) ..... 37
4.2.3.3.2 Day-Ahead Confirmation Report ..... 37

4.2.3.3.2.1 Responses in a Day-Ahead Confirmation Report (dCNF) ..... 38
4.2.3.3.3 Final Confirmation Report ..... 38
4.2.3.3.3.1 Responses in a final confirmation report (fCNF) ..... 39
4.2.3.3.4 Use of imposed and modified TimeSeries in an ESS confirmation report ..... 39
4.2.3.3.4.1 Imposed TimeSeries ..... 39
4.2.3.3.4.2 Confirmed TimeSeries with a “modified” status ..... 39
4.2.4 Data format of the schedule message ..... 40
4.3 Transmission of the status request ..... 41
4.3.1 Use case: Transmission of the status request ..... 41
4.3.2 Sequence diagram: Transmission of the status request ..... 42
4.3.3 Activities diagram: Transmission of the status request ..... 43
4.3.4 Data format of the status request ..... 44

**5. List of references ..... 45**
5.1 Legislative texts and contracts ..... 45
5.2 Documents on all data formats ..... 45
5.3 ESS 2.3 data format ..... 45
5.4 CIM data format ..... 46

**Appendix AUse of the ESS data formats ..... 47**
Appendix A.1 Character set in the xml files ..... 47
Appendix A.2 ESS 2.3 data format ..... 48
Appendix A.1.1 Schedule Message ..... 48
Appendix A.2.1.1 Message Header ..... 48
Appendix A.2.1.2 ScheduleTimeSeries ..... 50
Appendix A.2.1.3 Period Level ..... 50
Appendix A.2.1.4 Interval Level ..... 51
Appendix A.2.2 Acknowledgement Message ..... 52
Appendix A.2.2.1 Message Header ..... 52
Appendix A.2.2.2 Time Series Rejection ..... 53
Appendix A.2.2.3 Time Interval Error ..... 53
Appendix A.2.3 Anomaly Report ..... 54
Appendix A.2.3.1 Message Header ..... 54
Appendix A.2.3.2 Times Series Anomaly ..... 55
Appendix A.2.3.3 Period ..... 56
Appendix A.2.3.4 Interval ..... 56
Appendix A.2.4 Confirmation Report ..... 57
Appendix A.2.4.1 Message Header ..... 57
Appendix A.2.4.2 Time Series Confirmation ..... 58
Appendix A.2.4.3 Imposed TimeSeries ..... 59
Appendix A.2.4.4 Period ..... 60
Appendix A.2.4.5 Interval ..... 60
Appendix A.3 CIM / IEC data format 62325-451 ..... 61
Appendix A.3.1 Differences to the ESS 2.3 data format ..... 61
Appendix A.3.2 Schedule Message [62325-451-2:2014] ..... 62
Appendix A.3.2.1 Message Header ..... 62
Appendix A.3.2.2 ScheduleTimeSeries ..... 64
Appendix A.3.2.3 Period Level ..... 65
Appendix A.3.2.4 Point Level [formerly: Interval] ..... 65
Appendix A.3.3 Acknowledgement Document [62325-451-1:2013] ..... 67
Appendix A.3.3.1 Acknowledement_MarketDocument ..... 67

Appendix A.3.3.2 Time Series ..... 68
Appendix A.3.3.3 Time_Period ..... 68
Appendix A.3.4 Anomaly Report [62325-451-2:2014] ..... 70
Appendix A.3.4.1 AnomalyReport_ MarketDocument ..... 70
Appendix A.3.4.2 Original Market Document ..... 71
Appendix A.3.4.3 Anomaly_TimeSeries ..... 71
Appendix A.3.4.4 Series_Period ..... 72
Appendix A.3.4.5 Point ..... 72
Appendix A.3.5 Confirmation Report [62325-451-2:2014] ..... 73
Appendix A.3.5.1 Confirmation_MarketDocument ..... 73
Appendix A.3.5.2 Confirmed TimeSeries ..... 74
Appendix A.3.5.3 Imposed TimeSeries ..... 75
Appendix A.3.5.4 Series Period ..... 76
Appendix A.3.5.5 Point ..... 76
Appendix A.4 Status Request ..... 77
Appendix A.4.1 Status Request 1.0 ..... 77
Appendix A.4.1.1 Message Header ..... 77
Appendix A.4.2 CIM Status Request [62325-451-5:2015] ..... 78
Appendix A.4.2.1 Message Header ..... 78
Appendix A.4.2.2 Attribute Instance Component ..... 78
Appendix A.5 Specifications for all data formats ..... 80
Appendix A.5.1 General information ..... 80
Appendix A.5.1.1 Netting ..... 80
Appendix A.5.1.2 Scope of information for changes ..... 80
Appendix A.5.1.3 Cancelling time series ..... 80
Appendix A.5.1.4 Schedule messages at international borders ..... 80
Appendix A.5.2 Indication of time series ..... 81
Appendix A.5.3 Versioning schedule messages and TimeSeries ..... 81
Appendix A.5.4 TimeSeries Identification ..... 81

**Appendix B Connections to international scheduling areas ..... 82**
**Appendix C Special features of schedule messages at international borders ..... 83**
**Appendix D Schedule processing at auctioned borders ..... 86**
Appendix D.1 Schedule processing at the German/Belgium border ..... 86
Appendix D.2 Schedule processing at the German/French border ..... 87
Appendix D.3 Schedule processing at the German/Dutch border ..... 88
Appendix D.4 Schedule processing at the German/Austrian border ..... 89
Appendix D.5 Schedule processing at the German/Swiss border ..... 90

**Appendix E Basic structure of the ESS data format ..... 93**
**Appendix F Responses in the acknowledgement report ..... 95**
Appendix F.1 List of responses in the Acknowledgement Report of a Schedule Message ..... 95
Appendix F.2 List of responses in the Acknowledgement Report of Status-Request ..... 99

**Appendix G Permitted business types within the scope of the market model ..... 100**

# List of figures

Figure 2-2: Illustration of a “one balance group model” ..... 7
Figure 2-3: Illustration of N:M nomination ..... 11
Figure 3-1: Types of transactions ..... 13
Figure 3-2: External schedules within Germany or national borders ..... 14
Figure 3-3: External schedules using the “one balance group model” ..... 14
Figure 3-4: External schedules using the N:M nomination ..... 15
Figure 3-6: Transactions between balance groups within a scheduling area ..... 18
Figure 3-6: Forecast production within a scheduling area ..... 19
Figure 3-7: Forecast consumption within a scheduling area ..... 19
Figure 3-9: Redispatch forecast within a scheduling area ..... 20
Figure 4-1: Use case diagram of schedule processing in Germany ..... 28
Figure 4-2: Use case diagram of the transmission of the schedule file ..... 29
Figure 4-3: Sequence diagram of the transmission of the schedule file ..... 30
Figure 4-4: Definitions of the deadlines for schedule submission ..... 31
Figure 4-5: Activities diagram for the acknowledgement message and formal check ..... 32
Figure 4-6: Activities diagram of the responses after data verification ..... 33
Figure 4-7: Activities diagram of the intermediate confirmation report in the day-ahead or intraday process phase ..... 36
Figure 4-8: Responses in an intermediate confirmation report ..... 37
Figure 4-9: Activities diagram of the Day-Ahead Confirmation Report ..... 37
Figure 4-10: Responses in a day-ahead confirmation report ..... 38
Figure 4-11: Activities diagram of the final confirmation report ..... 38
Figure 4-12: Responses in a final confirmation report ..... 39
Figure 4-13: Use case diagram for the transmission of the status request ..... 41
Figure 4-14: Sequence diagram for the transmission of the status request ..... 42
Figure 4-15: Activities diagram of the status request ..... 43
Figure A-1: ESS 2.3 schedule message: Information model ..... 48
Figure A-2: ESS 2.3 acknowledgement message: Information model ..... 52
Figure A-3: ESS 2.3 anomaly report: Information model ..... 54
Figure A-4: ESS 2.3 confirmation report: Information model ..... 57
Figure A-5: Schedule message: Information model ..... 62
Figure A-6: Differences between the schedule message Header in both File Types ..... 62
Figure A-7: Differences between the TimeSeries Header in both File Types ..... 64
Figure A-8: Acknowledgement document: Information model ..... 67
Figure A-10: Anomaly report: Information model ..... 70
Figure A-11: Confirmation report: Information model ..... 73
Figure A-12: Status Request 1.0: Information model ..... 77
Figure A-13: CIM status request: Assembly model ..... 78
Figure A-14: Period of validity of a schedule in UTC time format ..... 81
Figure A-15: Example for the assignment of version numbers ..... 81
Figure B-1: Connections to international scheduling areas ..... 82
Figure D-1: Sequential data exchange process for a daily auction ..... 90
Figure E-1: ESS schedule message: “Message Header” ..... 93
Figure E-2: ESS schedule message: “TimeSeries Header” ..... 94
Figure E-3: ESS schedule message: “Period Level” ..... 94
Figure E-4: ESS schedule message: “Interval Level” ..... 94

# 1. Introduction

Following the successful implementation of the “ESS” (**ENTSO-E** **S**cheduling **S**ystem) schedule format [4] in 2003, various changes and developments occured as a result of increasing requirements.

The “one balance group model” is used to transmit schedules for the TSOs within Germany to ensure simple and clear schedule coordination between the TSOs. In derogation of this, the 1:N or N:M nomination model is used at some international borders (see Appendix C).

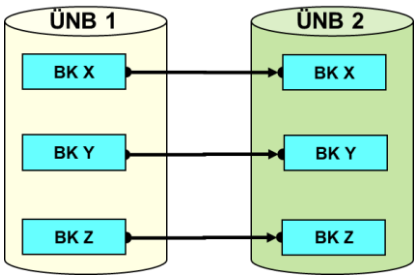
# 2. Involved roles, areas, objects and definitions

## 2.1 Roles, areas and objects

Roles, areas and objects are based on the definitions of the BDEW application guide "Rollenmodell für die Marktkommunikation im deutschen Energiemarkt" (see [6]).

| | |
|---|---|
| Parties involved in the process: | BRP, TSO |
| Objects: | Balance group |
| Areas: | Scheduling area |

## 2.2 Definitions and abbreviations

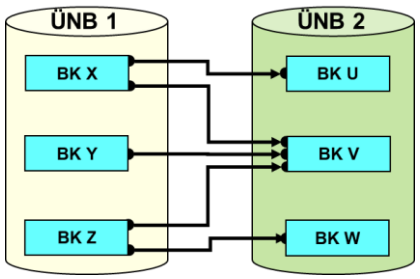
| Term | Description |
|---|---|
| **1BK nomination** | In a "one balance group model", the balance responsible party (BRP) on both sides of the border shall be identical, see Figure 2-1.<br>For example: Within Germany<br>  <br><br>Figure 2-1: Illustration of a "one balance group model" |
| **Accepted time series** | A time series gets the "Accepted" status, if it was included in a schedule file, which was confirmed in an acknowledgement (ACK) with the reason code "A01" (message fully accepted).<br>It is used by the TSO for further coordination. |
| **Nomination** | A nomination is the sending of a schedule to the TSO. |
| Balance group **(BG)** | A Balance Group is assigned to a Balance Responsible Party.<br>As part of the schedule process, a Balance Group is identified via an EIC. |
| Balance responsible party **(BRP)** | Balance Responsible Party (BRP), according to the ENTSO-E Harmonized Electricity Market Role Model [HRM].<br>One or more balance groups are assigned to a BRP.<br>The BRP reports schedules for the balance groups assigned to it. |
| **Schedule** | A schedule contains all transaction and forecast time series of a BG for a calendar day. |

| Term | Description |
|---|---|
| **Time Series** | The time series is either a transaction time series specifying how much electrical power is exchanged between two Balance Groups on a calendar day in each time unit (¼-h), or a forecast time series specifying how much electrical power is fed in or taken out from the feed-in or withdrawal points assigned to the Balance Group on a calendar day in each time unit (¼-h). |
| **CAS** (Control Area Schedule) | A CAS file is exchanged between two TSOs to reconcile the control area balance of both TSOs. The file contains all schedules between the two scheduling areas (e.g. TransnetBW and Amprion). |
| **COT** (Cut off time) | In case of differences after the GCT, the BRP can correct the schedule message up to the COT. |
| **Data verification** | Data verifications involve checks that are required for the data of corresponding market participants. |
| **Formal check** | Formal checks include all checks for which no data of other market participants or other data types are required. |
| **GCT** (Gate closure time) | Schedules have to be sent by the BRP until this time for each process phase. The matching process between scheduling areas starts at the GCT.<br><br>The GCT is the time at which a schedule with schedule changes that cross control areas must be received by the relevant TSOs at the latest. It is based on the lead time for the time period whose value is to be changed (in relation to the schedule notification currently available to the TSO and accepted with ACK).<br><br>Different lead times that arise due to foreign regulations are listed in Appendix C. |
| **Confirmed time series** | For a BG, a time series is considered confirmed (= relevant for billing) when this time series has been sent by the TSO in a confirmation report. Within the confirmation report, this time series can be transmitted unchanged, as a “Confirmed TimeSeries (TS)”, as an “Imposed TS” or as a “Modified TS”. Confirmed time series are relevant for billing process. Confirmed external schedules additionally lead to an energy exchange with other scheduling areas. External schedules are automatically or manually confirmed as the result of a CAS check (comparison between the external schedules of the two involved TSO). |

| Term | Description |
|---|---|
| **In Area** | External schedule: Scheduling area to which the energy is to be delivered.<br><br>Schedule within a scheduling area: The scheduling area for which this schedule was submitted shall be entered here. The information in the “Out Area” and “In Area” fields shall be identical. |
| **In Party** | Balance group to which the energy is to be delivered. |
| **Intraday change** | An intraday change is any schedule change that is received by the relevant TSO after the GCT Day-Ahead and which is not within the day after process. For the lead times specified in the balancing group contract and all other checks based on them, the time of receipt (time stamp of receipt) of the schedule in the schedule system of the respective TSO applies - not the time of dispatch or generation of this schedule at the BRP.<br>For lead times, see the balancing group contract 5.1 Annex 3, Paragraph 1.3, 1.4 and 1.5 |
| **Correction cycle** | The matching process between scheduling areas starts at the GCT and ends at the COT. The period between these two points in time is referred to as the correction cycle.<br><br>For example, if anomalies are identified after the GCT for the day-ahead process, especially for external schedules, the TSO may ask the relevant market participants to correct their schedules and transmit this prior to the COT. |
| **Message version** | Version of the submitted schedule. The version number starts at 1 for every schedule day and is incremented for every change, separated by data columns (TimeSeries). (Also refer to Appendix A.5.3 ) |

| Term | Description |
|---|---|
| **Minimum rule** | If, after the expiration of the latest submission deadline (COT) for a time series, a difference to the corresponding time series is identified, the further processing is based on the minimum of both time series for every fifteen minutes.<br><br>See the following example: |

| | Schedule message | | | Minimum rule |
|---|---|---|---|---|
| Out Area | A | A | | A |
| In Area | B | B | | B |
| Out Party | BG1 | BG 1 | | BG1 |
| In Party | BG2 | BG 2 | | BG2 |
| Notifying party | BG1 | BG 22 | | -- |
| *TSO* | *A* | *B* | ⇨ | |
| | 1 | 1 | | 1 |
| | 1 | 1 | | 1 |
| | 2 | 2 | | 2 |
| | 0 | 5 | | 0 |
| | 5 | 6 | | 5 |
| | 9 | 8 | | 8 |

| Term | Description |
|---|---|
| **N:M nomination** | Every balance group in a scheduling area may nominate schedules with any other balance group located in another scheduling area (see Figure 2-2).<br>For example:<br>DE/CZ or DE/PL border<br>  <br><br>Figure 2-2: Illustration of N:M nomination |
| **Out Area** | External schedule: Scheduling area from which the energy is to be procured.<br>Schedule within a scheduling area: The scheduling area for which this schedule was submitted shall be entered here. The information in the “Out Area” and “In Area” fields shall be identical. |
| **Out Party** | Balance group from which the energy is to be procured. |
| **Receiver Identification** | Identification of the receiver |
| **Schedule Time Interval** | Start and end time of the schedule in UTC format |
| **Sender Identification** | Identification of the sender |
| **TS-ID** (TimeSeries Identification) | Unique designation of a time series within a schedule message.<br>The TS-ID may be comprised of a maximum of 35 characters [A-Z, a-z, 0-9] |
| **UTC** (Universal Time Coordinated) | Coordinated universal time<br>The times indicated by all countries relate to this time.<br>Corresponds to GMT (Greenwich Mean Time).<br>The UTC is continuous and does not switch between summer and winter time.<br>CET (Central European Time) or CEST (Central European Summer Time) applies in Germany.<br>CEST is two hours behind UTC (UTC + 2h), while CET is one hour behind UTC (UTC + 1h). |

| Term | Description |
|---|---|
| **UTC time format** | See standard: ISO 8601; for the ESS, the formats described in [7] and [9] apply. |

# 3. Framework conditions and basics

In Germany, any number of balance groups may exchange energy with each other (see Figure 3-1).

The resulting transactions can be split into two types: transactions within scheduling areas (internal schedules) and transactions that cross a border of a scheduling area (external schedules). Both types are also divided into subgroups (see Table 3-1).

The TSOs are notified of all of these transactions via “schedules”.

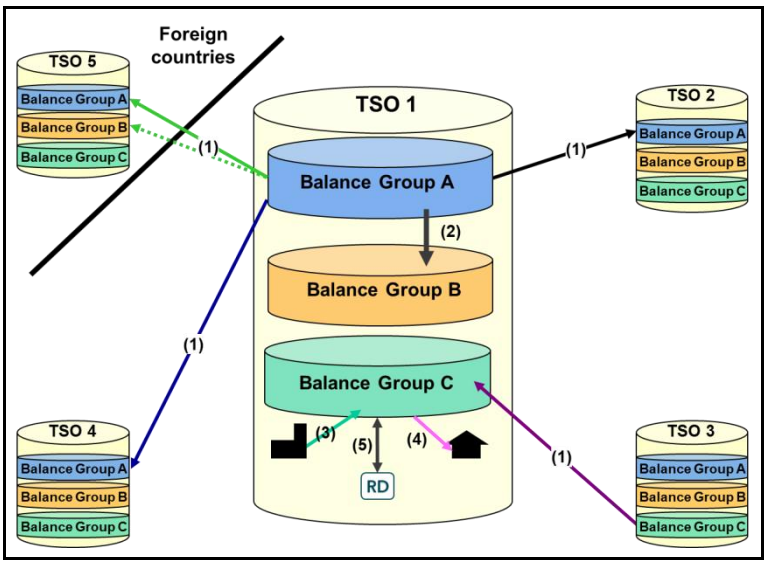



Figure 3-1: Types of transactions

Only the netted position of the transactions between the balance groups is to be indicated in the schedules.

| | |
|---|---|
| **A)** | **External** |
| (1) | External schedules on borders within Germany and external schedules on national borders |
| **B)** | **Internal** |
| (2) | Internal schedules between balance groups within a scheduling area |
| (3) | Forecast production (FC-PROD) |
| (4) | Forecast consumption (FC-CONS) |
| (5) | Forecast Redispatch (FC-RD) |

Table 3-1: Types of transactions

The scheduling process uses roles described in the ENTSO-EENTSO-E Harmonized Electricity Market Role Model (HRM) (see [5]).

Each BRP has to use the HRM Role “Balance Responsible Party”. It is not relevant which roles the BRP uses in sub processes.

For the scheduling process, the BRP has to send only one scheduling file including a summary of all his trades for one delivery day. The schedule data must be balanced, every quarter of an hour.
(Exceptions for intraday schedules are possible in accordance with the balancing contract for electricity.)
There is no differentiation in the schedule data regarding the activity of different roles of the same party.

## 3.1 Transactions that cross scheduling area boders (external schedule)

In case of external schedules, the balance groups in both scheduling areas shall be specified as such as that they can be clearly identified by the TSO of the target or source scheduling area and the schedule can be clearly assigned to the balance groups.

In this case, the affected transactions for every scheduling area shall be reconcilable and comprehensible for both TSOs.

Figure 3-2 shows an extract of an external schedule within Germany, from balance group A from the scheduling area of TSO1 to balance group A in the scheduling area of TSO4.

Appendix B and Appendix C provide an overview of the connections between the four German TSOs to the international TSOs.

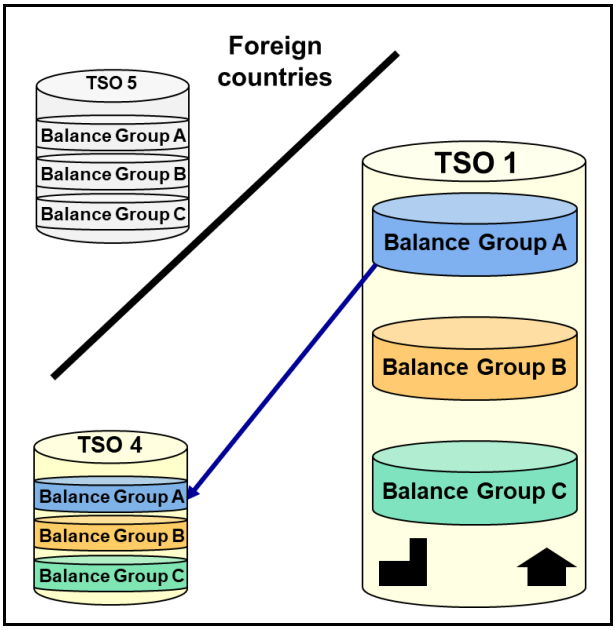



Figure 3-2: External schedules within Germany or national borders

### 3.1.1 “One balance group model”

The “one balance group model” allows a BRP to nominate between the balance groups with the same name in both scheduling areas (Figure 3-3).

Errors should be easily identified, as only one responsible party notifies both TSO about the relevant schedules.

For example, this model is used between all German scheduling areas.

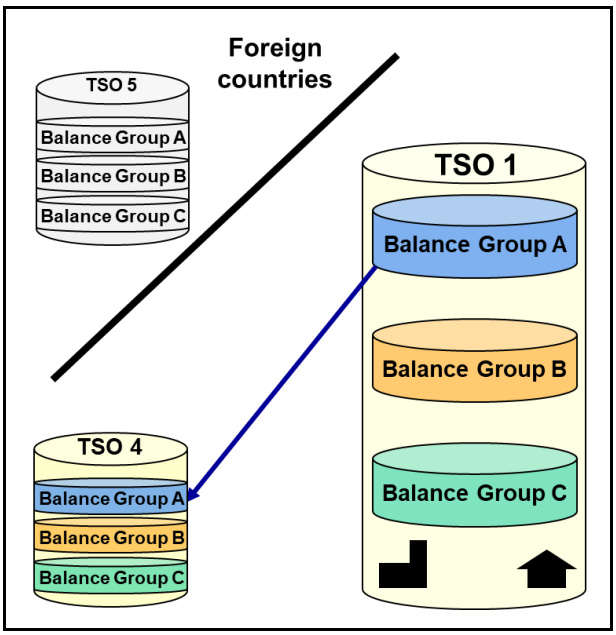



Figure 3-3: External schedules using the “one balance group model”

### 3.1.2 Additional nomination procedures (N:M/1:1)

At certain national borders (see Appendix C) it is possible to nominate external schedules between two balance groups with different names.

Figure 3-4 shows an extract of N:M external schedules for balance group A and B from the scheduling area of TSO1 with balance groups A, B and C in the scheduling area of TSO5.

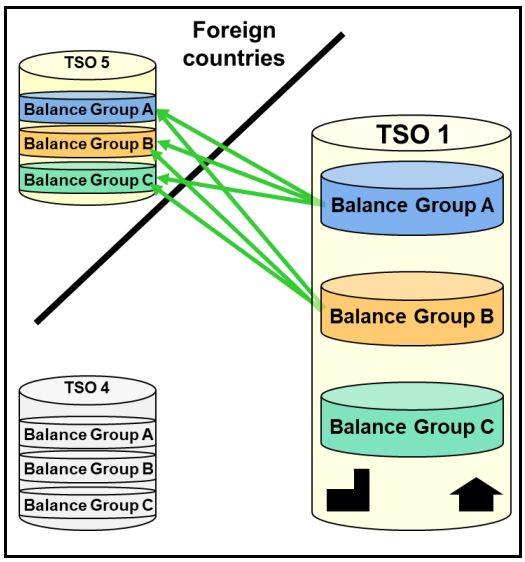



Figure 3-4: External schedules using the N:M nomination

The N:M nomination procedure allows a market participant to nominate a schedule directly with another market participant in a different scheduling area. However, if a market participant has a balance group on both sides of a scheduling area border, it remains possible for this market participant to also execute external schedules using its own balance group and subsequently distribute the energy within the receiving scheduling area.

The N:M or 1:1 nomination procedure permits different combinations in the header of an external schedule.

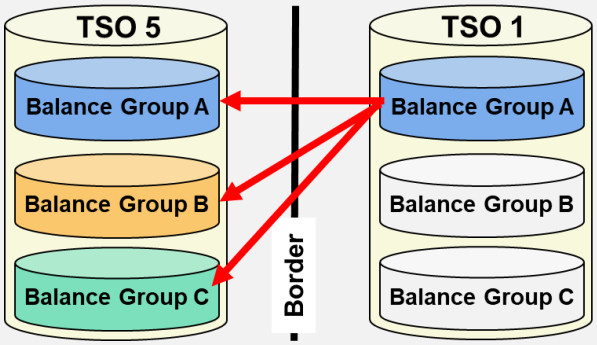
The following rules apply for these combinations:

- The sender shall have a valid grid access authorisation (e.g. balancing contract for electricity) in the receiving scheduling area.
- If the “In Area” corresponds to the EIC of the scheduling area of the receiving TSO, the EIC of the sending balance group shall be entered in the “In Party” field.
- If the “Out Area” corresponds to the EIC of the scheduling area of the receiving TSO, the EIC of the sending balance group shall be entered in the “Out Party” field.
- The header information of a time series must only be present once in a schedule.
- The Out Party may also be identical to the In Party (corresponds to the “one” balance group model)
- Formal checks for balancing as well as the version check remain unaffected.

Also refer to the example below:

Example 3-1: SchedulesSchedule using N:M nomination

*The schedule notifications for balance group A at TSO 1 and the schedule notifications for balance groups A, B and C at TSO 5 are considered.*
*(red arrows in the figure to the right)*




**Nomination of the BRP for the Balance Groups A, B and C at TSO 5**

**Schedule Document**

| Schedule Message | |
|---|---|
| Sender ID: | Bilanzkreis A |
| Receiver ID: | X-ÜNB 5 |

| Schedule Time Series | |
|---|---|
| Business Type | A06 oder A03 |
| Out Area: | Y-ÜNB 1 |
| In Area: | Y-ÜNB 5 |
| Out Party: | Bilanzkreis A |
| In Party: | Bilanzkreis A |

**Schedule Document**

| Schedule Message | |
|---|---|
| Sender ID: | Bilanzkreis C |
| Receiver ID: | X-ÜNB 5 |

| Schedule Time Series | |
|---|---|
| Business Type | A06 oder A03 |
| Out Area: | Y-ÜNB 1 |
| In Area: | Y-ÜNB 5 |
| Out Party: | Bilanzkreis A |
| In Party: | Bilanzkreis C |

**Schedule Document**

| Schedule Message | |
|---|---|
| Sender ID: | Bilanzkreis B |
| Receiver ID: | X-ÜNB 5 |

| Schedule Time Series | |
|---|---|
| Business Type | A06 oder A03 |
| Out Area: | Y-ÜNB 1 |
| In Area: | Y-ÜNB 5 |
| Out Party: | Bilanzkreis A |
| In Party: | Bilanzkreis B |

**Nomination of the BRP for the Balance Group A at TSO 1**

**Schedule Document**

| Schedule Message | |
|---|---|
| Sender ID: | Bilanzkreis A |
| Receiver ID: | X-ÜNB 1 |

| Schedule Time Series | |
|---|---|
| Business Type | A06 oder A03 |
| Out Area: | Y-ÜNB 1 |
| In Area: | Y-ÜNB 5 |
| Out Party: | Bilanzkreis A |
| In Party: | Bilanzkreis A |

| Schedule Time Series | |
|---|---|
| Business Type | A06 oder A03 |
| Out Area: | Y-ÜNB 1 |
| In Area: | Y-ÜNB 5 |
| Out Party: | Bilanzkreis A |
| In Party: | Bilanzkreis B |

| Schedule Time Series | |
|---|---|
| Business Type | A06 oder A03 |
| Out Area: | Y-ÜNB 1 |
| In Area: | Y-ÜNB 5 |
| Out Party: | Bilanzkreis A |
| In Party: | Bilanzkreis C |

### 3.1.3 Matching process

For the matching process between two TSOs, the individual time series of the balance groups from the neighbouring TSO's counter-CAS are checked.

The matching process involves the comparison of the time series with the same header information.

The relevant header information is:

- Business Type (A03 or A06)
- In Area
- Out Area
- In Party
- Out Party

If Business Type A03 is used, the two following elements shall also be indicated:

- Capacity Contract Type
- Capacity Agreement Identification

The matching rules for the individual time series remain unchanged in this case.

### 3.1.4 Comparison of business types A03 and A06

In the ESS, an external time series can be labelled with different business types depending on the agreed rules for the border.

The specification of the business type indicates whether a capacity contract type and a capacity agreement identification needs to be indicated. These two values are generally issued by an auction office for explicit auctions.

| Business Type | Description |
|---|---|
| A03 | External time series with the use of capacity rights (using capacity contract type and capacity agreement identification)<br><br>Formal checks (see chapter 4.2.3.1) verify whether these elements are present. If not, the relevant schedule message is rejected. |
| A06 | External time series without the use of capacity rights (capacity contract type and capacity agreement identification will not be used)<br><br>In this case, the capacity contract type and capacity agreement identification shall not be indicated. |

Table 3-2: Business Type

## 3.2 Transactions within scheduling areas (internal schedule)

### 3.2.1 Transactions between two balance groups within a scheduling area

Within a scheduling area, schedule transactions between all approved balance groups in the relevant scheduling area are possible.

The schedule shall always be sent by both involved balance groups.

Figure 3-5 shows an extract of the schedule of BG A.

BG B shall send a corresponding schedule that contains a counter-schedule with identical values.

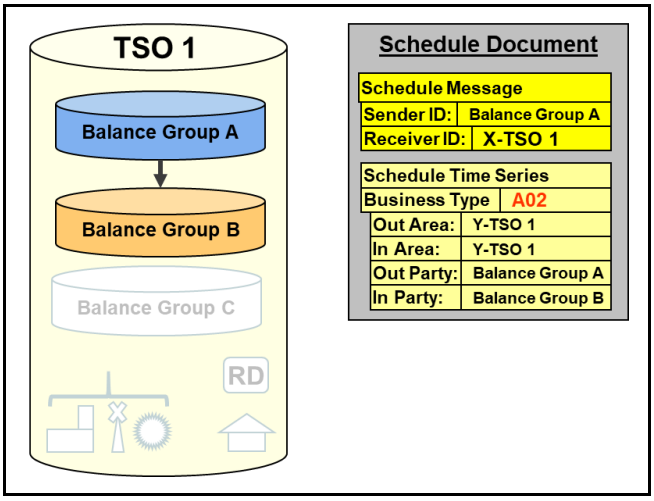



Figure 3-5: Transactions between balance groups within a scheduling area

### 3.2.2 Forecast schedules for the production and consumption of energy within a balance group and Redispatch-Activities

According to the balancing contract for electricity [1], BRP are obliged to send a complete portfolio with each schedule nomination.

If physical feed-ins or extractions are assigned to the balance group, the BRP shall additionally nominate forecast schedules, without netting the production and consumption forecasts. For balance groups where the BRP does not submit schedules, the forecasts have to be submitted for the assigned balance group for which scheduling does take place.

**For Forecast Schedules:**
Forecast schedules for production and consumption can be nominated only for those balance groups, for which a declaration of FC-Prod or FC-Cons, respectively, has been made in Annex 2 of the Balancing Contract for electricity [2].

**For redispatch-activities only:**
If a System Operator (SO) procures energy for a redispatch-activity according to the Redispatch Prognosis Model (German: “Prognosemodell”), the SO has to ensure that this energy equals the expected compensation work and delivers the redispatch prognosis time series (FC-RD) accordingly. Forecast schedules for redispatch-activities can be nominated only for those balance groups, for which a declaration has been made in the separate sheet “Deklaration eines Bilanzkreises zur Abwicklung von Redispatch-Prozessen durch den Netzbetreiber (NB)”.

The submitted consumption, production and redispatch forecasts and the relevant schedules for billing enable the TSO to verify the whole portfolio of the BRP. [1]

In case of an update of the consumption or production forecasts during the Day after process, the amount of energy for consumption or production has to be declared which was expected in the quarter hour before delivery.

### 3.2.2.1 Forecast production

To submit Forecast production, the business type “A01” has to be used (see Figure 3-6).

The EIC `11XFC-PROD-----E` shall be entered as the “Out Party”.

The EIC of the own balance group shall be entered as the “In Party”.
This field shall not be left empty.

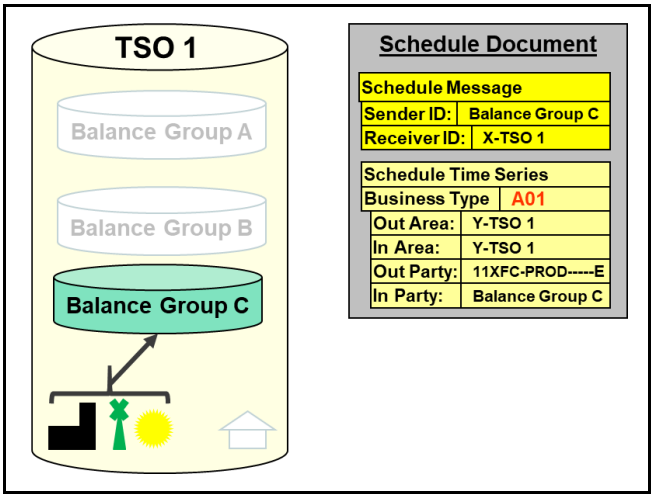



Figure 3-6: Forecast production within a scheduling area

### 3.2.2.2 Forecast consumption

To submit Forecast consumption, the business type “A04” has to be used (see Figure 3-7).

The EIC `11XFC-CONS-----0` shall be entered as the “In Party”.

The EIC of the own balance group shall be entered as the “Out Party”.
This field shall not be left empty.

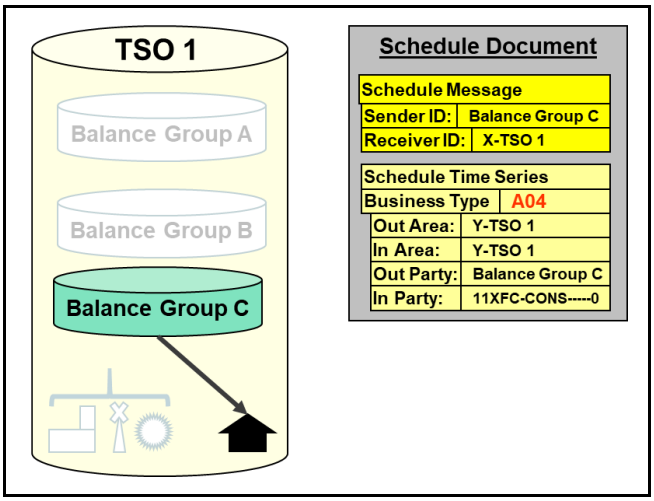



Figure 3-7: Forecast consumption within a scheduling area

[1] The balance of a schedule file is checked for each balance group, not across several balance groups. Within the Redispatch Prognosis Model, the System Operator declares the amount of curtailment. The exact amount of curtailment will be set in the accounting process (Deficiency work transfer time series, German: “Ausfallarbeitsüberführungszeitreihe”)

### 3.2.2.3 Forecast Redispatch

To submit a redispatch forecast, the business type “A85” has to be used (see Figure 3-8).

The EIC `11YD-1111-0001-7` shall be entered as “In Party” or “Out Party”.

Depending on the direction of the redispatch (increase/reduction), the EIC of the own balance group shall be entered as “Out Party” or “In Party”.
This field shall not be left empty.

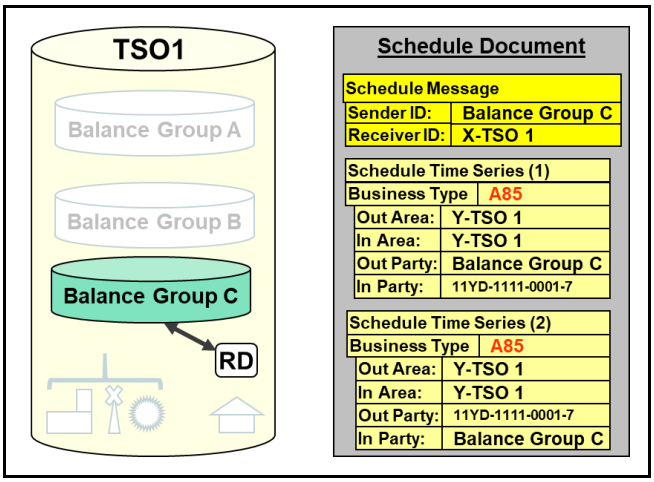



Figure 3-8: Redispatch forecast within a scheduling area

Positive and / or negative redispatch forecasts are possible.

- Is there only a positive <u>or</u> a negative redispatch forecast for a schedule day, it is not necessary to send a corresponding redispatch forecast in the other direction with zero values.
- Is there a positive and a negative redispatch forecast for the same schedule day, the BRP has to send two redispatch forecast time series with netted values.

## 3.3 Matching rules

1. The matching rules specified in this chapter apply for schedules within Germany.
2. The conditions defined in Appendix C apply for international schedules.

### 3.3.1 Special regulations

In case of anomalies with special balance groups (such as power exchanges, the German Renewable Energy Act (EEG) and system service balance groups of the TSO), the values of these special balance groups are taken for billing purposes.

These special rules apply for all of the following processes.

### 3.3.2 Day-ahead process

After the expiration of the day-ahead GCT, the TSOs match the schedules between the German scheduling areas.
The BRP's are subsequently informed about errors and shall submit a corrected schedule message by 3:30 PM (the Cut Off Time) (also refer [1] Annex 3; Chapter 1.3).

In the case of congested scheduling area borders, validations of the external schedules against capacity rights are also possible before the GCT, depending on the auction rules.

If it is determined that market participants have registered different values for external schedules or different notifications are present after the correction cycle, these are adjusted by the TSO accordingly.

- The minimum rule is applied.
- If a corresponding notification does not exist for an external schedule, the missing notification is interpreted as a zero-time series when applying the minimum rule. The relevant time series is therefore set to zero for both balance groups.
- Exception: Special rules in accordance with chapter 3.3.1

After completing the correction cycle, the TSO sends a "DayAhead Confirmation Report" with message type A09 [Finalised Schedules] to every BRP that has sent a schedule for the schedule day.

#### 3.3.2.1 Rejecting of schedule messages by exceeding declared limits

The balancing contract for electricity [1] authorized the TSO to reject schedule messages which exceed twice the amount declared in Annex 1.1 [of the balancing contract for electricity] in several hours and which lead to an imbalance of the balance group. See [1] Annex 3, Number 1.3 Paragraph 3.

In this case, the TSO has the obligation to inform the BRP about the significant breach of the declared limits and to give him the opportunity to announce a corrected schedule message within a period of 1 hour.

The related scheduling process is the following:

If the received schedule message exceeds the declared limits as described above, the schedule message will be rejected.

The sender will receive a negative ACK with the following Reason Codes:

- A02 - Message fully rejected

- A59 - Not compliant with local market rules

  With a hint to the deadline in the Reason Text:
  „Im Rahmen der heutigen Fahrplananmeldung haben wir Fahrpläne für Ihren Bilanzkreis erhalten, welche die in Anlage 1.1 deklarierten Maximalwerte in mehreren Stunden überschreiten. Sie haben ab Zugang dieser Nachricht 1 Stunde Zeit, die Fahrplananmeldung zu korrigieren. Der Zeitpunkt 15:30 Uhr darf nicht überschritten werden.“

- A59 - Not compliant with local market rules
  With a hint which type of limit has been breached in the Reason Text.

## 3.4 Intraday process

The statements in this chapter exclusively relate to external schedule changes within Germany, unless otherwise described.

The very short lead times for intraday changes that apply in Germany necessitates an automated matching process between the TSOs.

Bilateral agreements are implemented at international borders, as the legislation and market rules of the participating countries differ (for example, see Appendix C).

### 3.4.1 Principle of automatic scheduling area matching process

Immediately after each quarter-hour change, all intraday changes received between the German scheduling areas up to the relevant quarter-hour change are automatically matched.

After the matching took place, the result is automatically forwarded to the affected BRPs via Intermediate Confirmation Report (CNF) and, if discrepancies are identified, an additional Anomaly Report (ANO). This only applies to quarter-hours for which the intraday COT has not yet been reached.

If there is still a discrepancy at the COT, the last matched version of the time series applies. This also applies if the corresponding time series shows zero values or is missing.

### 3.4.2 Intraday schedule nomination

The format of the BRP's schedule messages within the intraday process does not differ from the one for the day-ahead process. The schedule messages shall always contain all schedules for the relevant day.

The intraday changes can be divided into two different process phases, each with different characteristics. Additional conditions exist for these process phases. These are described in the following chapters.

#### 3.4.2.1 Schedule nomination in the day-ahead matching process phase

Schedule messages between the GCT of the day-ahead phase (D-1 02:30 PM) and the starting time of the intraday phase (D-1 04:00 PM) are processed for the following day by the receiving TSO at the start of the intraday phase. No further checks or reconciliation of the time series take place during this phase.

If the file contains formal errors, a negative acknowledgement report (ACK, with reason code A02: "Message fully rejected") is immediately sent to the affected BRP.

A formally correct schedule is confirmed with an ACK at the start of the intraday process.

CNF and ANO, which the BRP receives during this day-ahead matching phase or which the BRP has requested via a status request, are generally based on the last accepted schedule messages.

Within this correction cycle schedules can be accepted manually by the TSO´s. This step is communicated to the BRP by sending an ACK.

#### 3.4.2.2 Schedule message in the intraday process phase

With the start of the intraday phase (D-1 04:00 p.m.), a matching process is initiated at the TSOs every 15 minutes, in which the latest available schedule of a respective BRP is taken into consideration. A new version of the schedule can be sent at any time. The TSO carries out a formal check and confirms the reception via ACK.

It should be noted that, in the ongoing matching process, the status of the time series at the time of the quarter-hour change is matched at all TSOs. The BRP must therefore ensure that identical time series are available at all affected TSOs for all remaining quarter-hours at the GCT!

The TSO sends the result of the process to the BRP via CNF.

Recommendation:

In the intraday process, only one schedule should be sent per ¼ hour so that the TSOs have the same data basis for the intraday matching process. Thus, only one schedule should be sent per balance group and fulfillment day within a quarter of an hour and sufficient lead time should be provided before the quarter-hour change (e.g. 5 minutes).

##### 3.4.2.2.1 Fault-tolerant schedule acceptance

Schedule messages with external changes in within Germany, which are received by the TSO after the GCT, will still be accepted by the scheduling systems, but only values for which the next valid GCT has not been reached will be stored and used by the TSO.

The result of this “fault-tolerant acceptance” of schedules is communicated as follows:

The ACK provides a response with the following reason codes:

- Message Level:
  - A01 - Message fully accepted
  - A03 - Message contains errors at the TimeSeries level
- Time Series Level:
  - A57 - Deadline limit exceeded /Gate not open
  - A21 - TimeSeries accepted with specific time interval errors
    - with the reason text:
      “Time series has exceeded the lead time for the relevant time interval. Only the values for which the relevant lead time has not yet expired were accepted. See interval level.”
- Interval Level:
  - A42 - Quantity inconsistency

If the modified time series from the “fault-tolerant acceptance” are part of the CNF, the structure or content of the file will be as follows:

- Message Level:
  - A07 - Schedule partially accepted

- Time Series Level:
  - A63 - TimeSeries modified
- Interval Level:
  - A43 - Quantity increased

  or
  - A44 - Quantity decreased

*For example:*

*External schedule change between two German scheduling areas for the current day, first change in the intraday schedule for the quarter hour between 02:00 PM and 02:15 PM as well as changes for additional quarter hour periods during the day.*
*→ GCT = 01:45 PM*

*If this schedule is received by the TSO after 01:45 PM, only the changes that respect the relevant GCT at the time of receipt will be accepted.*

*E.g. receipt of the schedule at 01:52 PM: Only Changes for intervals from 02:15 PM are accepted and processed by the TSO.*

*Receipt of the schedule at 02:32 PM: Only changes for intervals from 03:00 PM are accepted and processed by the TSO.*

#### 3.4.2.2.2 Matching: Confirmation/anomaly report

The TSOs' matching process starts after every GCT. This takes a maximum of 5 minutes. The result of the matching process is transmitted to the affected BRPs in the form of complete CNF/ANO reports.

In the event of inconsistencies in the schedules, a distinction must be made between the following scenarios:

- GCT has not yet been reached:
  The differences are identified as part of the matching process. In the case of congested borders, the schedules are additionally validated against a capacity right and modified, if necessary, in accordance with the auction rules. As part of the complete CNF/ANO report, the BRP is notified of the identified anomalies in the ANO report. The BRP has the option (depending on the auction rules) of sending a correction of the change to one or both TSOs.
- Gate closure time exceeded:
  All values changed by the BRP in the inconsistent schedule are overwritten (modified) with the previously confirmed values of the schedule. In the case of congested borders, different matching rules may apply and the schedules are additionally validated against a capacity right and modified, if necessary, in accordance with the auction rules. The BRP receives a complete CNF/ANO report from the TSO. The modified schedule is part of the CNF report and the modified values are marked as such (also refer to the information on the topic of "modified and imposed TimeSeries" in chapter 4.2.3.3.4). The ANO report

may list other identified inconsistencies, which relate to other schedules and which can still be corrected at a later date in line with the market rules. The current matching cycle is therefore completed for the relevant BRP.

If the BRP requests a change to the modified schedule for quarters of an hour where the GCT has not yet been reached, a new version of the schedule needs to be submitted to both TSO.

In the event of disrupted inter-TSO communication, the complete CNF/ANO reports are sent to the BRP after the expiration of the 5-minute deadline based on the matching status reached until that point in time. In this state, the TSO will continue the matching via manual intervention, whereby the achieved result will also be communicated to the BRP by sending of complete CNF/ANO reports.

#### 3.4.2.3 Recommended frequency of schedule changes

The overly frequent sending of schedule messages can lead to unwanted matching results between the TSOs due to versioning and timing conflicts with the consequence that the market participant may be faced with additional imbalance costs.

Recommendation:
Only one schedule message should be sent each quarter of an hour per balance group and delivery day. An adequate lead time prior to the fifteen-minute GCT should also be ensured, e.g. 5 minutes prior to the quarter hour changeover.

In addition, the number of schedules that can be transmitted is limited by ESS versioning as only a 3-digit number is allowed. Therefore, version 999 is the highest possible value.

## 3.5 Day after schedule message process

For schedules within a scheduling area, day after schedule modifications are only possible until the deadlines specified in the balance group contract.

If an anomaly exists, the involved market participants have time until COT to correct this. If an anomaly still exists at COT, the last confirmed version of the schedule message applies. This also applies, if the corresponding schedule contains zeros or is missing.

This excludes the special rules under chapter 3.3.1.

#### 3.5.1.1 Urgent Call

The Urgent Call allows the TSO to receive the final schedules earlier than usual in case of a suspected fraud.

In case of a suspected fraud, the TSO has the obligation to minimize potential damage and the impact on system security.

Urgent Call key points are the following:

- The information about an Urgent Call will be send latest at 04:00 p.m. for all days where the Gate of the post scheduling is still open.
- An Urgent Call will be sent to suspected and unsuspected balance responsible parties (BRP).
- The BRP has to send the final schedules latest at 10:00 a.m. on the next day.
- The actual schedule at 10:00 a.m. on the next day is used for the billing.
- Schedules, which are received later than 10:00 a.m. on the next day, are rejected.
- A BRP has to check everyday until 04:00 p.m. if he is affected by an Urgent Call. If yes, he has to send adjusted schedules until 10:00 a.m. until the next day.
- Twice a year, the TSOs are allowed to arrange an Urgent Call for test purposes.

If a BRP is affected by an Urgent Call, corrected schedules need to be sent by 10:00 a.m. the next day for all balance groups (EIC) the BRP is responsible for.
Here, two cases are possible:

1. The BRP has changes in his schedules or his portfolio
   The newest schedules for all balance groups of the BRP need to be sent.
2. The BRP has no changes in his schedules or his portfolio.
   The latest schedules for all balance groups should be sent again. Alternatively, the same schedules with a higher Version number can be sent without changing any values.

# 4. The data exchange process in the German market model

The data exchange process, as described in the ESS Implementation Guide (see [7] for data format ESS 2.3, or [9] for ESS CIM), describes the fundamental and mandatory processes based on which the data exchange for processing energy exchanges must be organised in the individual countries.

The ESS Implementation Guide permits several alternatives for executing the individual process steps. In addition, the market models in the countries can specify the execution of process steps.

As a result, the process mapping described in the ESS must also be specified and detailed for the German market model.

## 4.1 Overview: Schedule processing in Germany

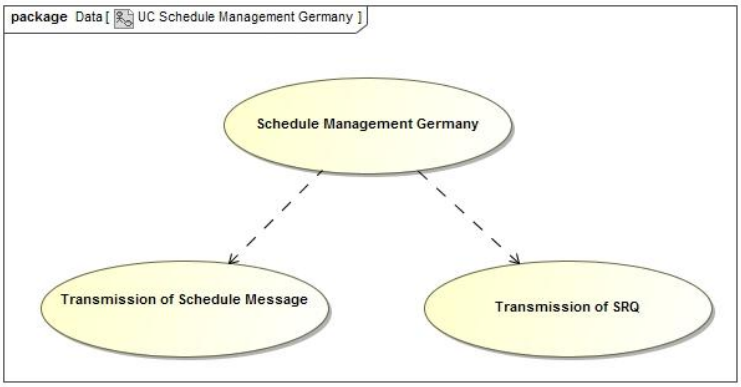



Figure 4-1: Use case diagram of schedule processing in Germany

Table 4-1: Deadline overview

| Use case | **Roles involved** | **Deadline for the initial exchange** |
|---|---|---|
| Transmission of the schedule | BRP, TSO | Pursuant to Appendix C |
| Transmission of SRQ | BRP, TSO | -- |

## 4.2 Transmission of the schedule file

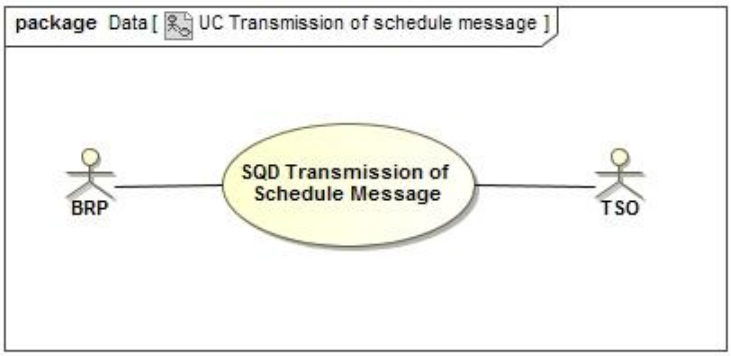



Figure 4-2: Use case diagram of the transmission of the schedule file

### 4.2.1 Use case: Transmission of the schedule

Table 4-2: Use case description of the transmission of the schedule file

| Use case name | Transmission of the schedule |
|---|---|
| Process objective | The BRP has successfully transmitted the schedule file to the TSO.<br>The TSO has sent an ACK to the BRP.<br>The TSO has informed the BRP of the current status of their notification as part of an ANO and/or CNF, where applicable. |
| Description of the use case | The BRP transmits a schedule file to the TSO. |
| Roles | • BRP<br>• TSO |
| Precondition | • A valid balancing contract for electricity exists<br>• All the necessary master data have been exchanged |
| Post-condition in case of success | The notified schedules are used in the subsequent processes. |
| Post-condition in case of error | The schedules must be re-transmitted. |
| Errors | - XML file faulty<br>- File contains formal errors<br>- … |
| Additional requirements | - |

### 4.2.2 Sequence diagram: Transmission of the schedule file

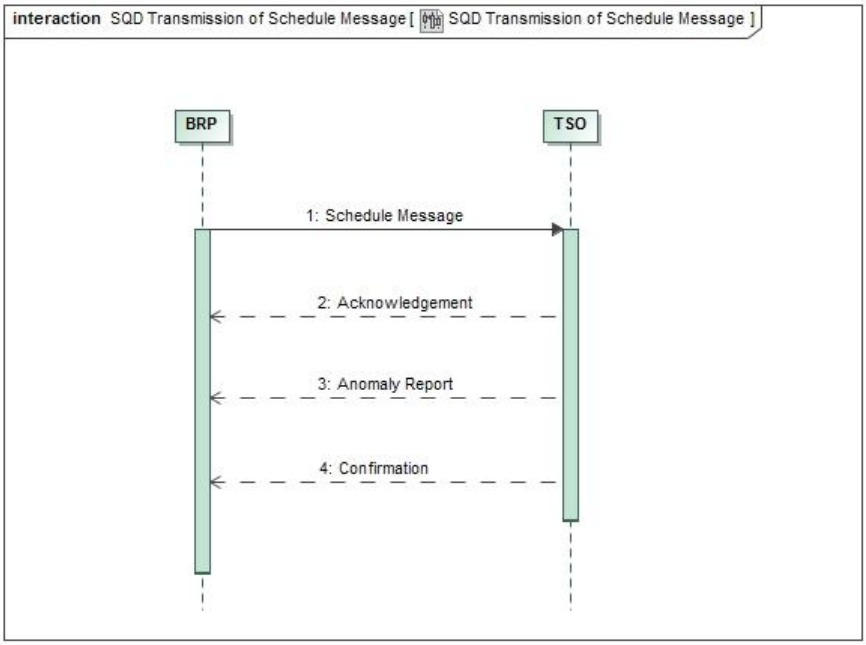



Figure 4-3: Sequence diagram of the transmission of the schedule file

Table 4-3: Sequence diagram description of the transmission of the schedule file

| No. | Action | Deadline | Note/remark |
|---|---|---|---|
| 1 | Send the schedule | Pursuant to Appendix C | |
| 2 | Send the ACK | Immediately | |
| 3 | Send the ANO | Immediately | Not sent in all cases, see activity diagram. |
| 4 | Send the CNF | Immediately | Not sent in all cases, see activity diagram. |

With regard to the processing of schedule messages within Germany for a delivery day D, a distinction must be made between the following process phases:

Table 4-4: Process phases in schedule management

| | |
|---|---|
| Day-ahead: | Previous month until D-1, 02:30 PM |
| Day-ahead matching: | D-1, 02:30 PM until D-1 03:30 PM:<br>The characteristics are described in chapter 3.4.2.1. |
| Intraday: | D-1, 04:00 PM until GCT of the relevant delivery time:<br>The start time for the automated intraday matching process is generally D-1, 04:00 PM.<br>The TSO can delay this starting time to a later time in exceptional cases. |

Table 4-4: Process phases in schedule management

| | |
|---|---|
| Day after schedule change: | From the relevant intraday COT until the deadlines specified in the balancing contract for electricity. |

As a result, both the current, as well as the following day are in the intraday phase between 04:00 PM and midnight.

Figure 4-4 provides a corresponding overview.

Different deadlines may exist with regard to the processing of international schedule messages. These are listed in Appendix C.

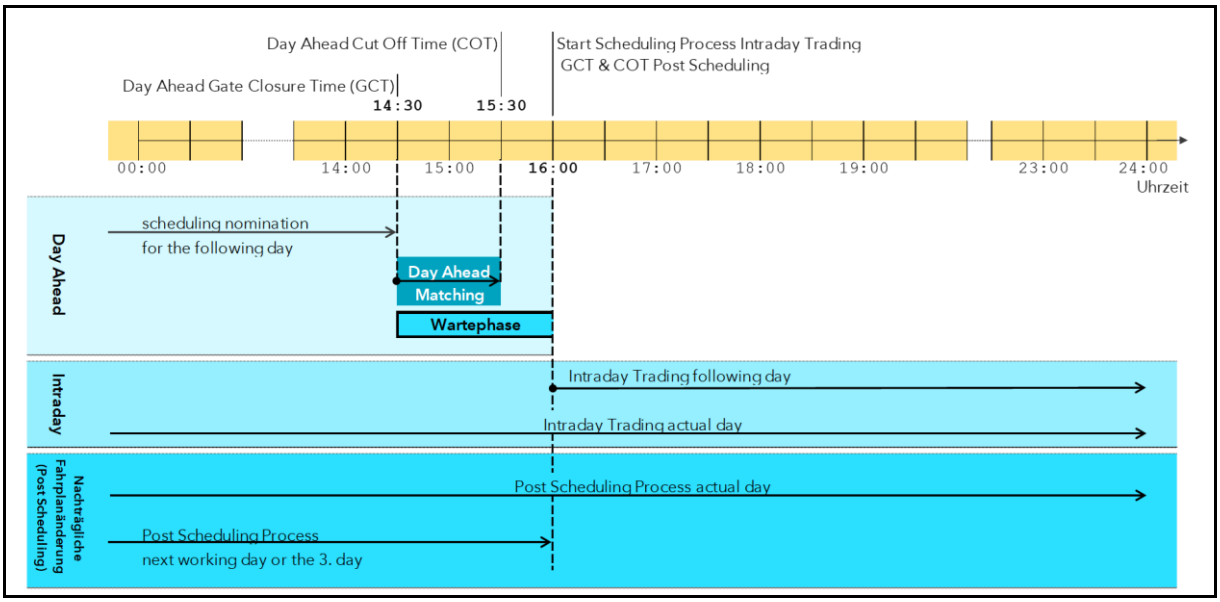



Figure 4-4: Definitions of the deadlines for schedule submission

### 4.2.3 Activities diagram: Transmission of the schedule file

#### 4.2.3.1 Acknowledgement message and formal check

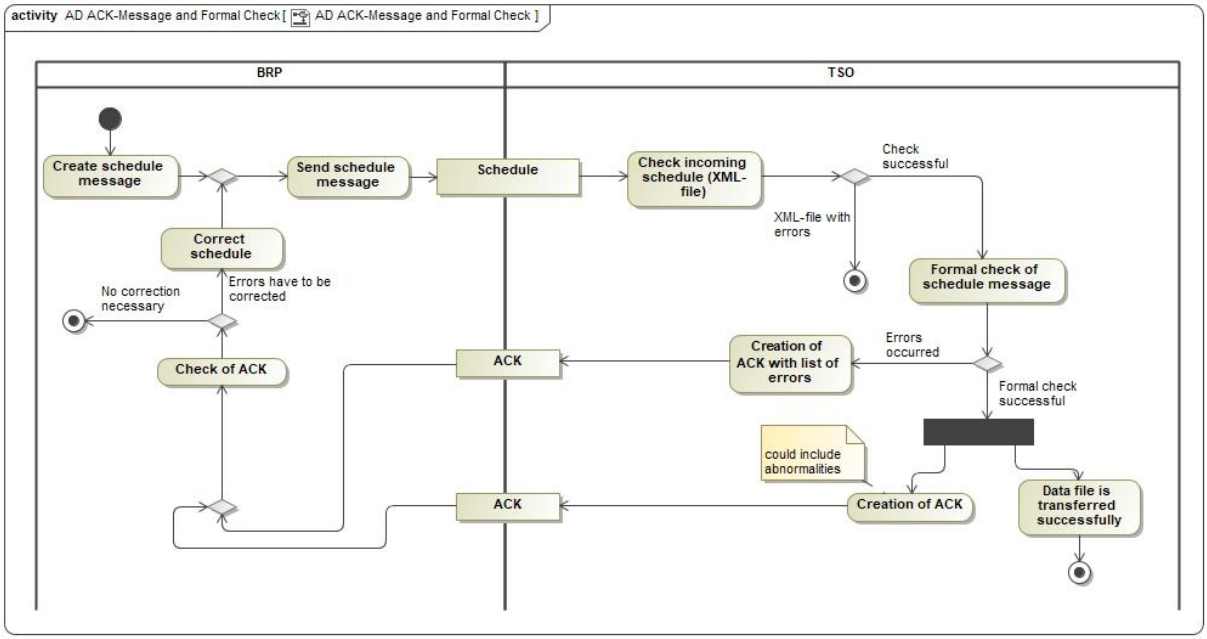



Figure 4-5: Activities diagram for the acknowledgement message and formal check

Upon receipt of the schedule message by a TSO, various checks (see figure above) are triggered.

First, a check takes place to confirm whether the sent message corresponds to the expected XML schema.

If this is not the case, the schedule will not be processed and the BRP will not receive an ACK.

If the schedule message corresponds to a valid XML schema, the formal check of the data is performed.

As a result of the formal check, an ACK with one of the following codes is sent to the sender:

- Flawless formal check:
  In the event of a flawless result, reason code “A01” (message fully accepted) is returned. The data has then been stored in the database. If necessary, indications and inconsistencies identified as part of the checks, which do not automatically lead to the rejection of the schedule message, are included.
- Formal check with errors:
  However, if significant errors occurred during the formal check, the entire message is rejected with reason code “A02” (message fully rejected). In addition, a list of identified errors is given in the acknowledgement message.

The acknowledgement message is the recipient’s confirmation of receipt for a dispatched schedule message, i.e. the sender can only assume that the schedules have been received by the receiving TSO after receipt of this message.

A positive acknowledgement message as a result of the formal check only contains the statement

- that the data of the transmitted schedule message was formally correct and has been accepted.
- and a list of ¼ h periods where the schedules are not in balance.

ESS reports (ACK, ANO, CNF) are always only sent to the communication addresses registered as master data.

#### 4.2.3.2 Verification of the data (anomaly and confirmation report)

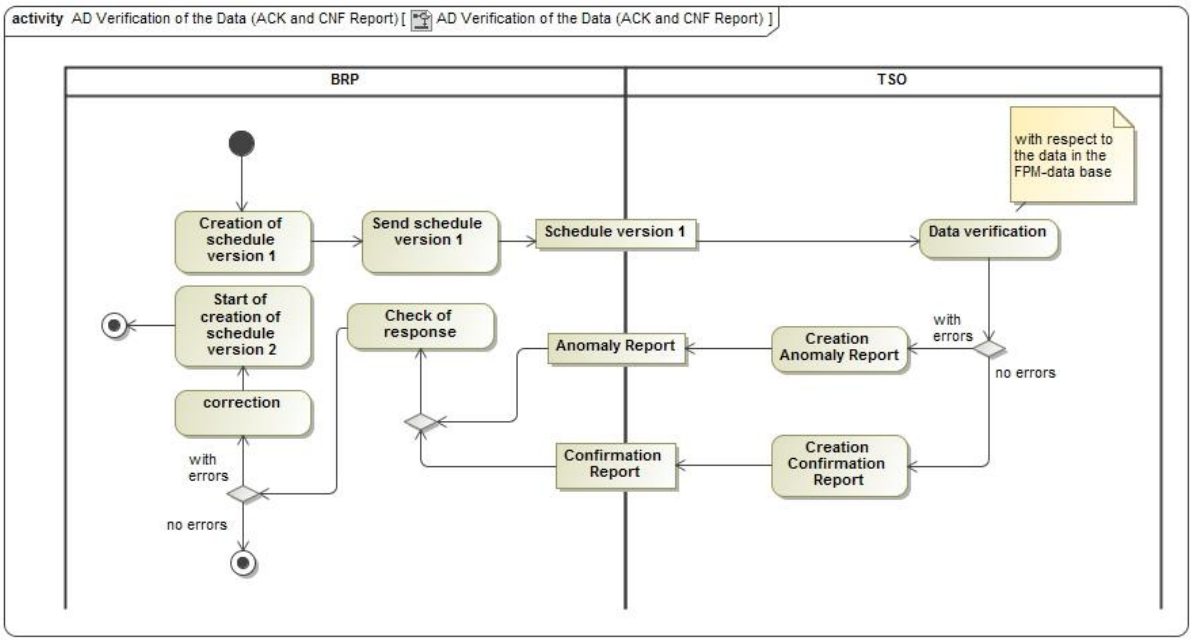



Figure 4-6: Activities diagram of the responses after data verification

After passing through the receiving process (data receipt and formal check), the schedule message received from the relevant BRP is checked for content.

I.e. after completing the receiving process, a check takes place to confirm whether, for example,

- schedules of other balance groups on the indicated internal scheduling area transactions (corresponding data),
- or rights documents from auction processes exist.

In this case, the conformity of the data is checked and a confirmation report and, if necessary, an anomaly report must be returned according to the result.
If corresponding schedules exist, the responses are always sent to both BRPs.

The results are processed as follows:

- **Data verification without errors:**
  If no anomalies are identified, the relevant time series is returned in the confirmation report.

If no corresponding data exists in the day-ahead process, the BRP receives a confirmation report with message header, referring to the transmitted schedule message, but without time series.

- **Data verification with errors:**
  If anomalies are identified, a confirmation report as well as an anomaly report is sent to both affected BRPs. Both files contain all identified errors at the time of the report creation as well as the BRPs' flawless time series.
  For example, an error may be:
  - **Value or time anomaly:**
    Balance group A has reported a transaction with balance group B for the period between 9:00 AM and 10:00 AM, while balance group B has reported the same transaction, but for the period between 10:00 AM and 11:00 AM.
  - **Missing counter-message:**
    One of the two BRPs has reported a transaction between balance groups A and B, but the other has not. If no corresponding data on different time series exist in the day-ahead process, the BRP receives an anomaly report with the differences and a confirmation report without time series. I.e. the confirmation report only contains the message header with a reference to the sent schedule message and no time series.
- **Missing time series:**
  If a scheduling area internal time series is not reported to the BRP in the confirmation report or in the anomaly report in the day-ahead process, i.e. until 2:30 PM of the previous day, this will indicate that the TSO has not yet received a schedule message from the corresponding BRP.
  The TSO can only unequivocally determine whether a corresponding time series is missing in the day-ahead process upon reaching the gate closure time (2:30 PM).
  If a corresponding BRP has not submitted a schedule message, according to the market rules, this is only an error from 2:30 PM onwards and will only be reported as an error to both BRPs in an anomaly report at this time.

#### 4.2.3.2.1 Scheduling area internal schedules

For scheduling area internal schedules, a check is only possible after the receipt of the data from the corresponding balance group.

#### 4.2.3.2.2 Scheduling area external schedules

External schedules can only be fully checked after the gate closing time, as counter-notifications from both TSOs are required for this purpose. These are initially exchanged immediately after the relevant GCT.

A distinction between two cases must be made for the external schedules.

##### 4.2.3.2.2.1 Day-ahead process

In the day-ahead process, external schedules can only be checked after the day-ahead gate closing time (02:30 PM).

The TSOs exchange the relevant data at the start of the day-ahead matching process. The BRP is informed of the result of the matching process. See chapter 4.2.3.2.

#### 4.2.3.2.2.2 Intraday process

The procedure for the intraday matching process is described in chapter 3.4.2.2.
The result of the intraday matching process is communicated to the BRP. See chapter 4.2.3.2.

### 4.2.3.3 Confirmation Report

The confirmation report either provides information on the current (intermediate CNF/iCNF) status, the status after the completion of the day-ahead process (day-ahead CNF/dCNF) or the final (final CNF/fCNF) status of a BRP's portfolio.

A CNF is automatically sent after:

- Resolution of an anomaly
- Completion of the day-ahead process
- Completion of the day after schedule message process
- Registration of a schedule for which a consistent, corresponding registration exists
- Upon request (status request), if confirmed time series exist

The time of generation is indicated in the report in the "Message Date and Time" field.

#### 4.2.3.3.1 Intermediate Confirmation Report

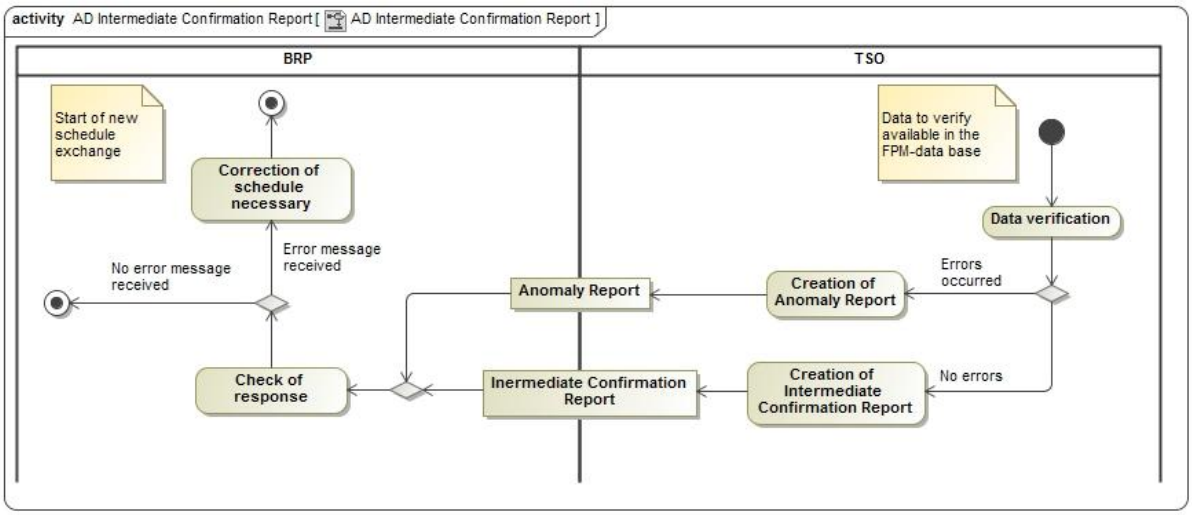



Figure 4-7: Activities diagram of the intermediate confirmation report in the day-ahead or intraday process phase

The iCNF represents the (intermediate status) at the time indicated in the “Message Date and Time”:

- The iCNF does not necessarily relate to the BRP’s entire portfolio. Individual inconsistencies or schedules not transmitted by the counterparty may be missing in the intermediate CNF report; if necessary, they are transmitted to the BRP in a separate ANO report indicating the specific error.
  In the day-ahead phase, schedules that have only been received from one side are not transmitted to the BRP in the CNF or in the ANO report.
- The intermediate CNF report can contain modified or imposed time series.

The workflow is presented in Figure 4-7.

#### 4.2.3.3.1.1 Responses in an Intermediate Confirmation Report (iCNF)

Figure 4-8 shows the responses in an intermediate confirmation report.

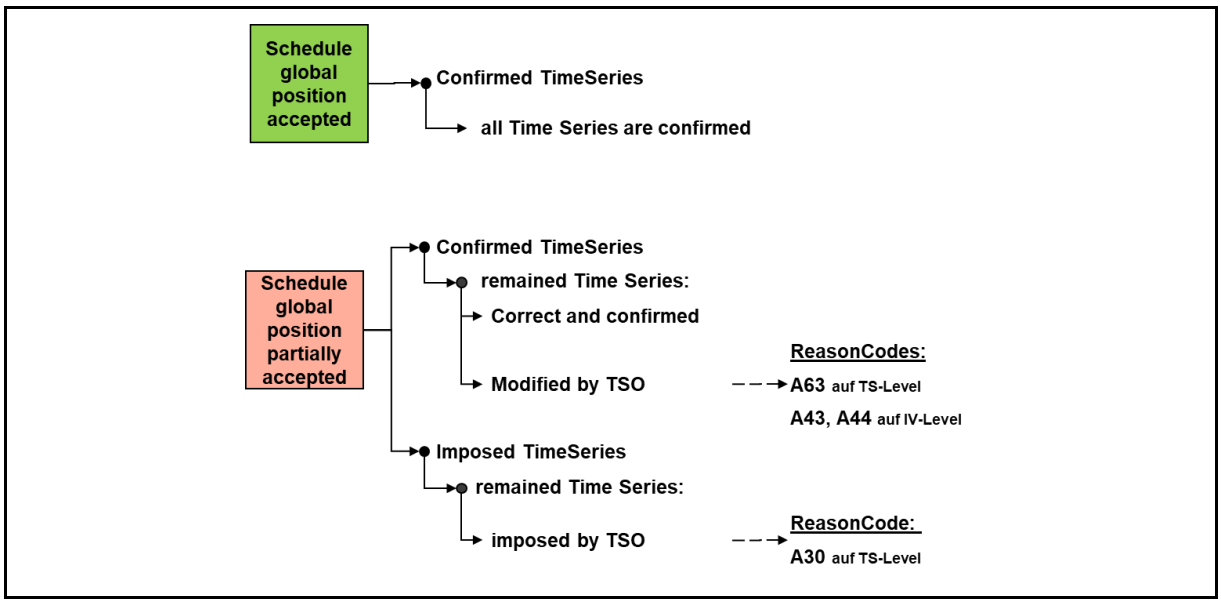



Figure 4-8: Responses in an intermediate confirmation report

If an iCNF report has the A06 status (schedule global position accepted), all of the BRP's schedules are correct.

However, if an iCNF report has the A07 status (schedule global position partially accepted), time series have been modified or imposed by the TSO pursuant to the market rules.

#### 4.2.3.3.2 Day-Ahead Confirmation Report

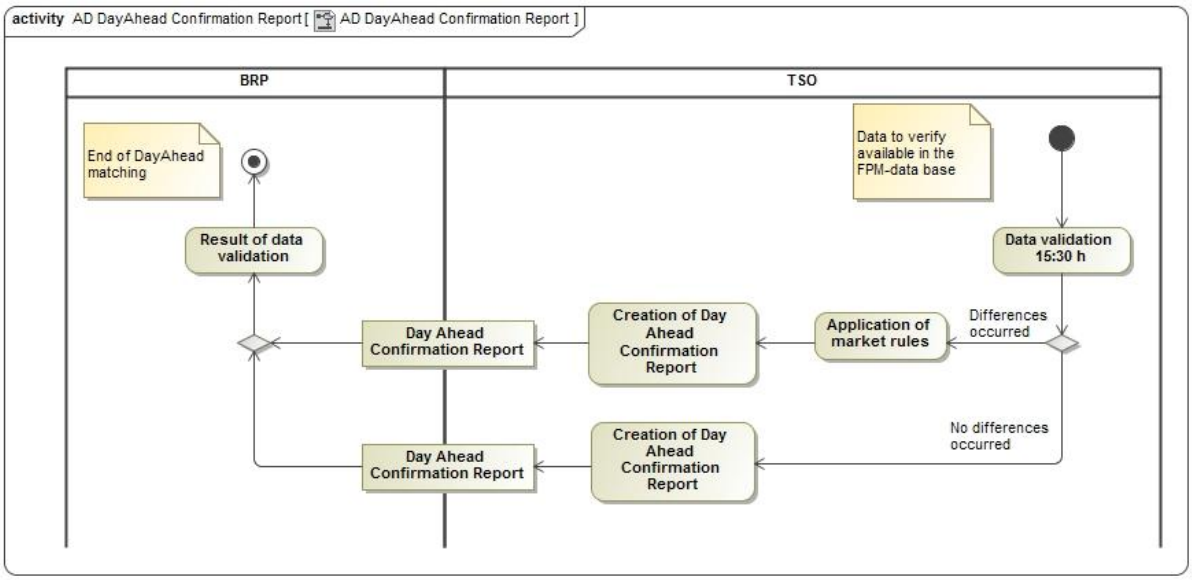



Figure 4-9: Activities diagram of the Day-Ahead Confirmation Report

After completing the day-ahead correction cycle, the TSO sends a "day-ahead Confirmation Report" to every BRP who has sent a schedule for the schedule day.

The day-ahead confirmation report is sent after complete processing by the TSO, incl.

- the rejection of schedules
- and the resolution of anomalies in line with the market rules. See chapter 3.3.2.

#### 4.2.3.3.2.1 Responses in a Day-Ahead Confirmation Report (dCNF)

Figure 4-10 shows the responses in a day-ahead confirmation report.

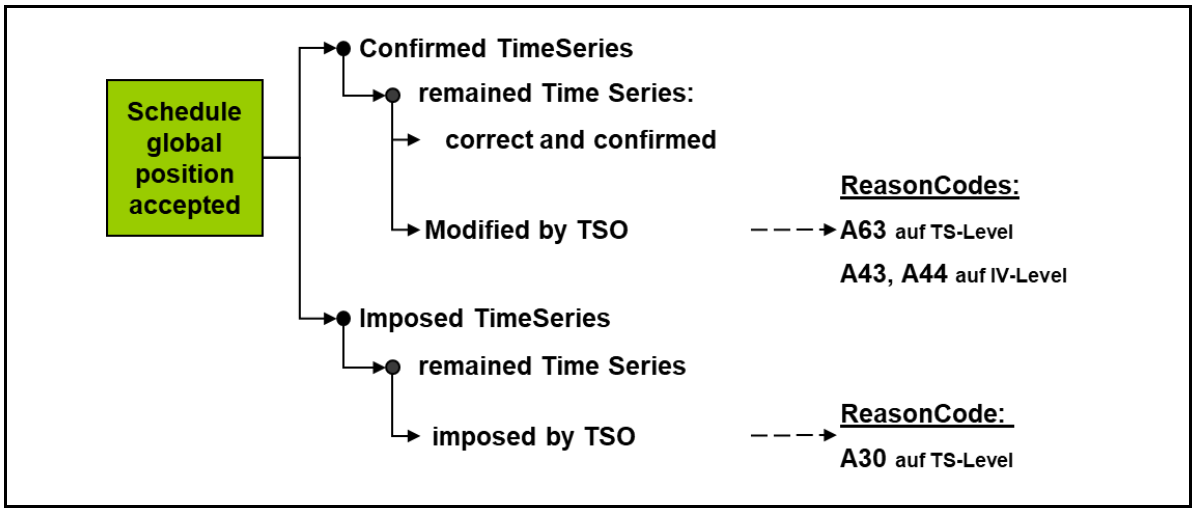



Figure 4-10: Responses in a day-ahead confirmation report

#### 4.2.3.3.3 Final Confirmation Report

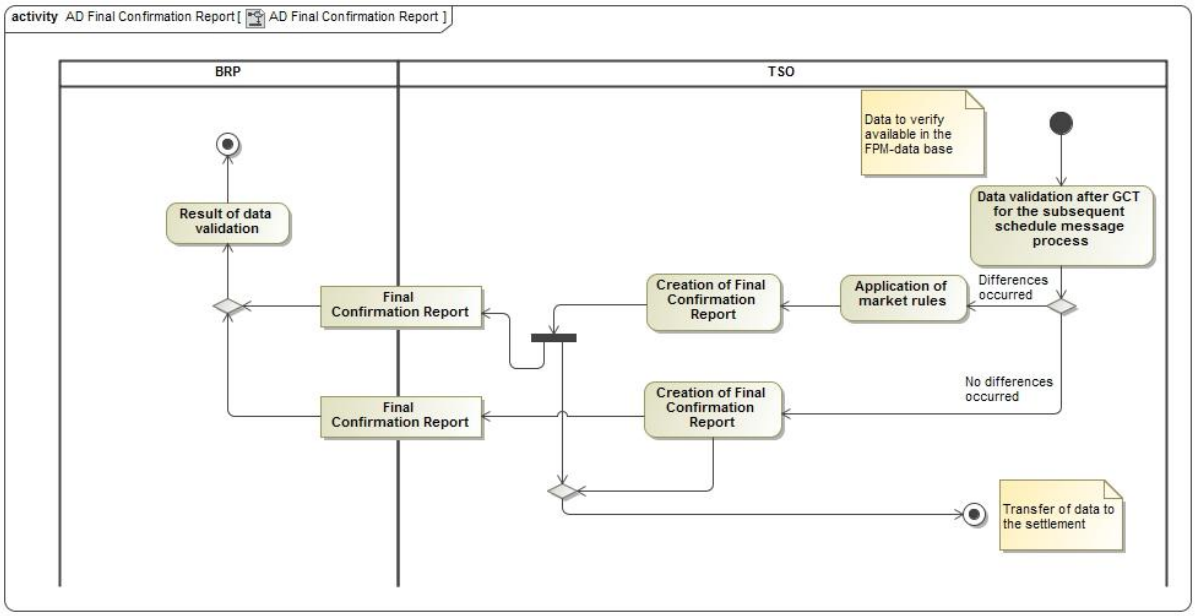



Figure 4-11: Activities diagram of the final confirmation report

The final confirmation report is sent after final processing by the TSO at the deadlines specified in the balancing contract for electricity 5.1.

The report contains the data that will be used for settlement.

#### 4.2.3.3.3.1 Responses in a final confirmation report (fCNF)

Figure 4-12 shows the responses in a final confirmation report.

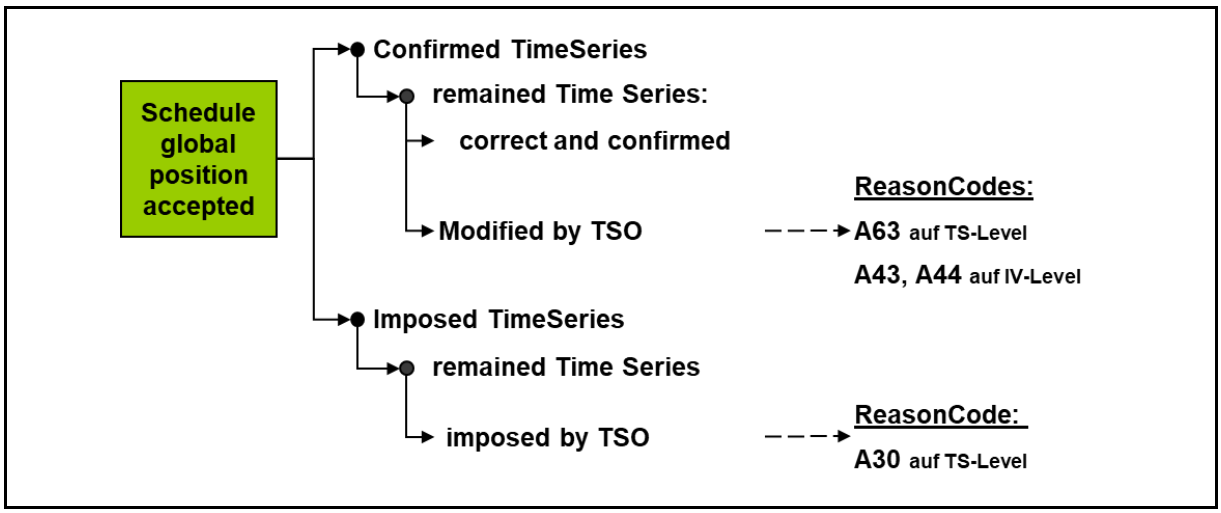



Figure 4-12: Responses in a final confirmation report

### 4.2.3.3.4 Use of imposed and modified TimeSeries in an ESS confirmation report

Time series can be returned to a market participant as confirmed or imposed in an ESS confirmation report. The following rules are defined for the German market model:

#### 4.2.3.3.4.1 Imposed TimeSeries

A time series that is added to the BRP's portfolio by the TSO and which has not previously been reported for this day by the BRP is considered as an imposed time series.

1. The TimeSeries Identification (TS-ID) or mRID is generated by the TSO, as no time series with this constellation has previously been reported by the BRP. The TS-ID created by the TSO and used for this time series is therefore referred to as the imposed TS-ID.
2. The confirmed message version is used as the version number for the Imposed TimeSeries.
3. In the case the BRP has not transmitted an accepted schedule message to the TSO for the relevant day, the version number 1 will be used for the Imposed TimeSeries. The confirmed message ID and confirmed message version elements will not be transmitted in the confirmation report.
4. The BRP may overwrite an imposed TS-ID assigned by the TSO with his own TS-ID as a one-off measure in the event of a revised schedule message for the relevant day, which the BRP shall then use for all subsequent updates to this schedule.

#### 4.2.3.3.4.2 Confirmed TimeSeries with a "modified" status

If the TSO modifies values in a time series that has been sent by the BRP, this is a confirmed time series with a "modified" status.

1. The last accepted TimeSeries version transmitted by the BRP is used as the version number.
2. The modified schedule is identified with corresponding reason codes at the TimeSeries level as well as the interval level in the confirmation report.

### 4.2.4 Data format of the schedule message

The TSOs accept a schedule message in the ETSO ESS 2.3 format [7] or in the CIM format [9].

Guidelines how to fill in the data in the respective formats can be found in Appendix A.2 and Appendix A.4.2 of this process description.

## 4.3 Transmission of the status request

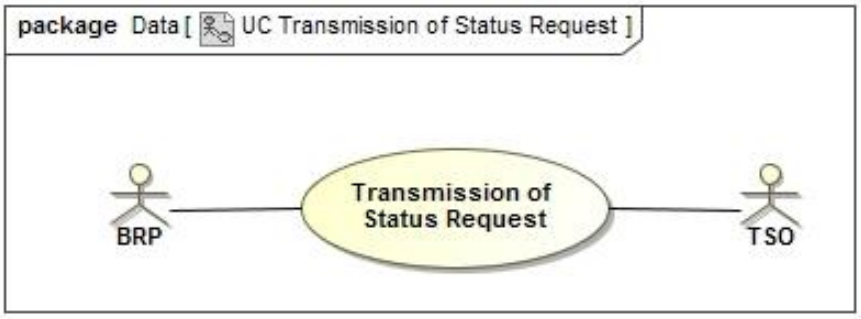



Figure 4-13: Use case diagram for the transmission of the status request

### 4.3.1 Use case: Transmission of the status request

Table 4-5: Use case description for the transmission of the status request

| Use case name | Transmission of the status request |
|---|---|
| Process objective | The BRP has successfully transmitted a status request (SRQ) to the TSO.<br>The TSO has sent the BRP the current status of their notification as part of an ACK or ANO and/or CNF. |
| Description of the use case | The BRP transmits an SRQ to the TSO. |
| Roles | • BRP<br>• TSO |
| Precondition | • A valid balancing contract for electricity exists.<br>• All the necessary master data have been exchanged. |
| Post-condition in case of success | The BRP is aware of the current status of their schedule application with the TSO. |
| Post-condition in case of error | - |
| Errors | - |
| Additional requirements | - |

### 4.3.2 Sequence diagram: Transmission of the status request

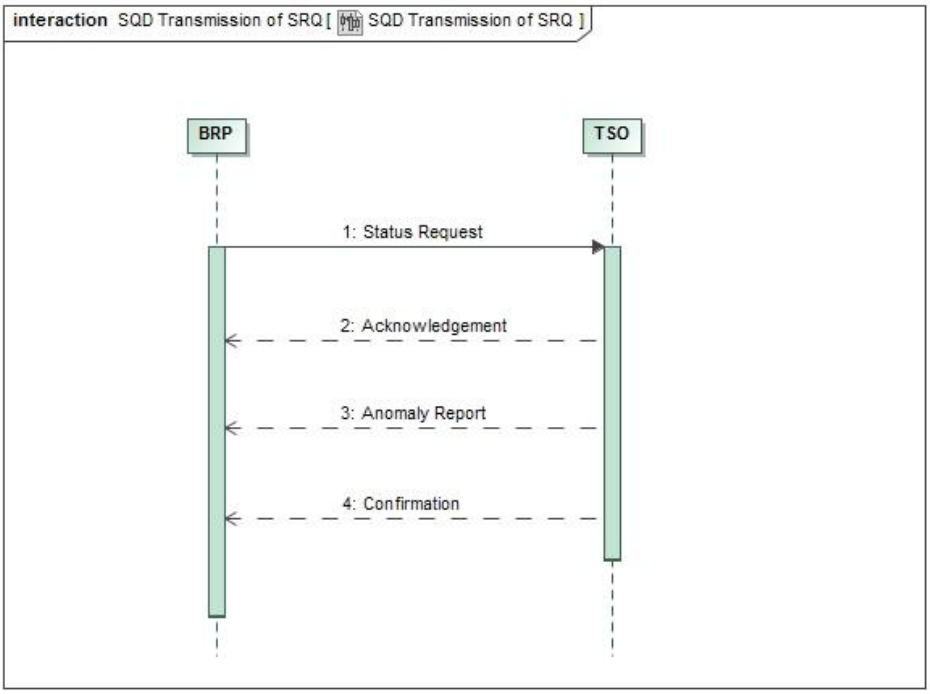



Figure 4-14: Sequence diagram for the transmission of the status request

Table 4-6: Sequence diagram description for the transmission of the status request

| No. | Action | Deadline | Note/remark |
|---|---|---|---|
| 1 | Send the SRQ | - | |
| 2 | Send the ACK | Immediately | Not sent in all cases, see activities diagram |
| 3 | Send the ANO | Immediately | Not sent in all cases, see activities diagram |
| 4 | Send the CNF | Immediately | Not sent in all cases, see activities diagram |

### 4.3.3 Activities diagram: Transmission of the status request

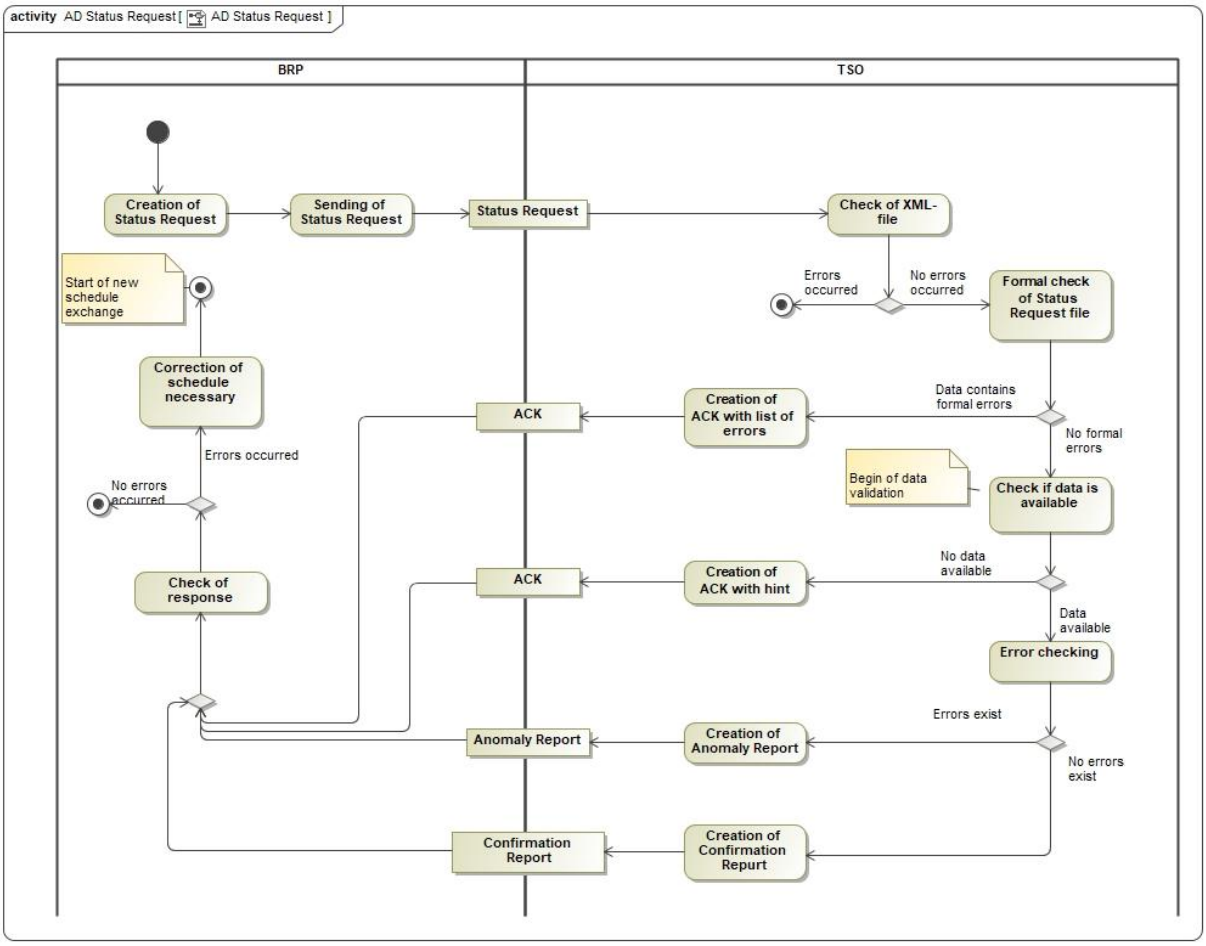



Figure 4-15: Activities diagram of the status request

A “status request” can be used by the BRP to check their data for a certain schedule day.

Upon receiving a status request, a check first takes place to confirm whether the file corresponds to the expected XML schema (as described in chapter 4.2.3.1 of this process description).

If this is not the case, the request will not be processed and the BRP will receive no reply.:

Following the successful reception check, a data verification is performed for the BG indicated in the status request, as detailed in chapter 4.2.3.2 of this process description.

The responses are sent to the BRP’s communication address(es) stored in the system.

The responses are based on the latest data that has been stored in the TSO scheduling system at the time of receiving the status request.

Depending on the time of receipt of the status request, either an intermediate confirmation report and, where applicable, an anomaly report or a final confirmation report are sent.

The final confirmation report is only sent if the TSO has already sent a final confirmation. If the TSO does not have any data available for the requested schedule day, an acknowledgement message with reason code B08 [Data not yet available] is returned. For example, this situation can occur if a schedule message and an SRQ are sent at the same time.

Recommendation:
Only one SRQ should be sent within a fifteen-minute period per balance group and delivery day.

### 4.3.4 Data format of the status request

The status request must be sent in the ETSO Status Request 1.0 format [8] or in the CIM format [11].

Guidelines how to fill in the data in the respective formats can be found in Appendix A.4.1 and Appendix A.4.2 of this process description.

# 5. List of references

Reference is made to the following documents in this process description:

## 5.1 Legislative texts and contracts

[1] Bilanzkreisvertrag Strom über die Führung von Bilanzkreisen https://www.bundesnetzagentur.de/DE/Service-Funktionen/Beschlusskammern/1_GZ/BK6-GZ/2018/BK6-18-061/BK6-18-061_Standardbilanzkreisvertrag_01_08_2020.pdf?__blob=publicationFile&v=4

[2] Deklaration eines Bilanzkreises zur Abwicklung von Redispatch-Prozessen durch den Netzbetreiber (NB) gem. §11a Strom NZV

[3] [ALF]: Allgemeine Festlegungen zu den EDIFACT- und XML-Nachrichten; www.edi-energy.de; aktuell gültige Dokumente

## 5.2 Documents on all data formats

[4] ENTSO-E General Code Lists for Data Interchange, as amended https://www.entsoe.eu/publications/electronic-data-interchange-edi-library/Pages/default.aspx

[5] The Harmonized Electricity Market Role Model (HRM), as amended; ENTSO-E; https://www.entsoe.eu/digital/cim/role-models/

[6] Rollenmodell für die Marktkommunikation im deutschen Energiemarkt, as amended https://www.bdew.de/service/anwendungshilfen/rollenmodell-fuer-die-marktkommunikation-im-deutschen-energiemarkt/

## 5.3 ESS 2.3 data format

[7] ETSO Scheduling System (ESS); Implementation Guide, Version 2 Release 3, 29/04/2003, https://www.entsoe.eu/Documents/EDI/Library/cim_based/archive/ESS%20V4R1%20and%20older.zip

[8] ETSO Status Request; Implementation Guide, Version 1 Release 1, 21/10/2003, https://www.entsoe.eu/Documents/EDI/Library/cim_based/archive/ESRD_StatusRequest_v3r0_and_older.zip

## 5.4 CIM data format

[9] Framework for energy market communications – Part 451-2: Scheduling business process and contextual model for CIM European market; IEC 62325-451-2:2014;

[10] Framework for energy market communications – Part 451-1: Acknowledgement business process and contextual model for CIM European market; IEC 62325-451-1:2017;

[11] Framework for energy market communications - Part 451-5: Problem statement and status request business processes, contextual and assembly models for European market; IEC 62325-451-5:2015;

[12] XSD and schema files:
The XSD schema files on the CIM data formats are published on the ENTSO-E website.
https://www.entsoe.eu/publications/electronic-data-interchange-edi-library/

# Appendix A Use of the ESS data formats

The TSOs essentially respond to incoming messages in the response formats of the relevant format family.

In the German market system, schedules can be exchanged in the following formats:

- ENTSO-E ESS 2.3
  See number [7] in the list of references
- CIM/IEC 62325-451-2
  See number [9] in the list of references

Both formats are currently offered in parallel. From the TSOs' perspective, the target format is CIM.

The format family cannot be changed during a schedule day.

## Appendix A.1 Character set in the xml files

UTF-8 is allowed as character set in the xml messages. For the individual elements in the xml message, the character set can be further restricted by the data type (z. B. xsd:decimal) or by declaration of the pattern. If no defined code liste and no information for the pattern is present, e.g. for data type string, then all characters of the character set UTF-8 are allowed.[2]

[2] see [3] ; S. 95; Chapter 8.7 Zeichensatz

## Appendix A.2 ESS 2.3 data format

If a schedule message is sent in the ESS 2.3 data format, the TSOs will also respond with messages in the ESS 2.3 data format.

### Appendix A.1.1 Schedule Message

A BRP schedule message shall contain all the data (TimeSeries) for a delivery day. The following indications shall be made in the schedule message:

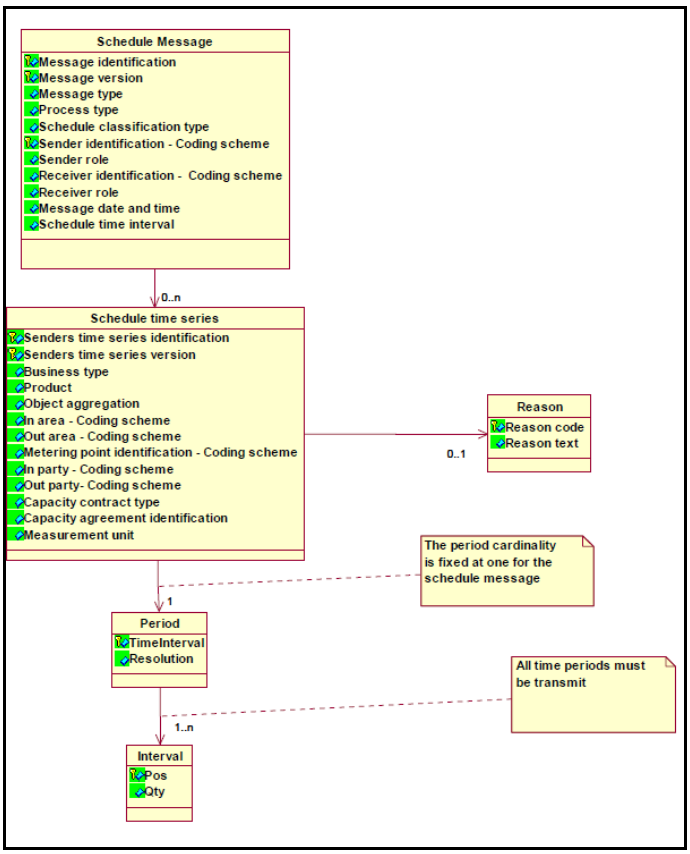



Figure A-1: ESS 2.3 schedule message: Information model

#### Appendix A.2.1.1 Message Header

a. **Message Identification**:
Freely selectable by the balance group within the scope of the specifications pursuant to [7] (see p. 36, chapter 4.3.1). The message identification ensures that the schedule message(s) is/are clearly defined by the balance group for the TSO for a delivery day. This means that a unique message identification shall be assigned per calendar day, schedule type and sender/receiver tuple.

b. **Message Version/Time Series Version**:
Versioning shall take place pursuant to the specifications in Appendix A.5.3 of this document.

c. **Message Type**:
“A01“shall be used for the schedule message.

d. **Process Type**:
For schedule messages, the code “A17“ [Schedule Day] shall be used for all process phases (day-ahead, intraday and day after schedule changes).

e. **Schedule Classification Type**:
“A01“ shall be used for the schedule message.

f. **Sender Identification – Coding Scheme**:
The EIC of the balance group for which this schedule message is sent must be entered as the sender identification.
The “coding scheme” mentioned in [7] is limited to the value “A01”

g. **Sender Role**:
For the balance group, as the sender of the schedule message, the code "A08" [Balance responsible party] shall be indicated pursuant to [7] and [4].

h. **Receiver Identification – Coding Scheme**:
The "coding scheme" indicated in [4] is restricted to the value "A01", so only the receiver's EIC identifier is allowed. The TSO's relevant EIC "10X..." shall be used as the receiver identification for the TSO and not the EIC area code "10Y..." from the in/out area entries in the TimeSeries Header!

i. **Receiver Role**:
For the TSO, as the recipient of the schedule message, the code "A04" shall be indicated pursuant to [7] and [4].

j. **Message date and time**:
Date and time of the transmission of the schedule message to the TSO. The time shall be indicated in UTC time (format see [7], chapter 4.3.10)

k. **Schedule time interval**:
The start and end time of the day for which the schedule message is transmitted shall be indicated in UTC time pursuant to [7], chapter 4.3.11.

For example:

The information in the schedule message for 01/07/2018 is
**2018-06-30T22:00Z/2018-07-01T22:00Z**

### Appendix A.2.1.2 ScheduleTimeSeries

a. **Senders Time Series Identification**:
Freely selectable by the balance group within the scope of the specifications pursuant to [7], chapter 4.4.1.

b. **Senders Time Series Version:**
Versioning shall take place pursuant to the specifications in Appendix A.5.3 of this document.

c. **Business Type:**
The business types listed in Table G-1 are permitted as part of the schedule message

d. **Product:**
As the time series exclusively contain fifteen-minute power values, the XML code for active power ("8716867000016") shall be used.

e. **Object Aggregation:**
Only "A01" shall be used.

f. **Metering Point Identification**:
No entry takes place at this point. The element shall not be used.

g. **In Area; Out Area - Coding Scheme**:
Only entries pursuant to EIC are permitted. The "coding scheme" indicated in [7] is restricted to the value "A01".

h. **In Party; Out Party - Coding Scheme**:
Only entries pursuant to EIC are permitted. The "coding scheme" indicated in [4] is restricted to the value "A01".

i. **Capacity contract type**:
Only used if "A03" has been used as business type.
The values from the allocation process shall be used.

j. **Capacity agreement identification**:
Only used if "A03" has been used as business type.
The values from the allocation process shall be used.

k. **Measurement unit**:
As all of the TimeSeries values need to be indicated in MW, only "MAW" is allowed as the necessary information pursuant to the code list [7].

### Appendix A.2.1.3 Period Level

a. **Time Interval**:
The entry for the time interval, which must take place for every TimeSeries, must correspond to the content and the form of the information on the schedule time interval.

b. **Resolution**:
The TimeSeries exclusively consists of fifteen-minute values. Only "PT15M" is permitted pursuant to [7], chapter 4.6.2.

## Appendix A.2.1.4 Interval Level

a. **Pos:**
For every fifteen-minute value, the position at which the relevant fifteen-minute time interval occurs in the chronological sequence of the fifteen-minute values shall be indicated. As the fifteen-minute values are always transmitted for a delivery day (based on the local time), values shall be indicated for positions 1 to 96 (on days with Daylight Saving, for 92 or 100 positions). Every position shall exist only once per TimeSeries.

> For example:
>
> The value for the fifteen minutes between 3:00 AM and 3:15 AM local time (UTC time in the summer: 1:00 AM to 1:15 AM) is assigned position 13.

b. **Qty:**
This is where the value for the relevant position (fifteen minutes) is indicated. A maximum of 3 decimals is possible. This means that the smallest power unit that can be processed in the schedule transaction is 1 kW. The decimal points shall be separated by a point rather than a comma. Thousands separators are prohibited. A value in the form of a number >= 0 shall be transmitted for every fifteen-minute interval (interval position) of the relevant day.

> For example:
>
> The value for `3500043` kW shall be entered as “`3500.043`“.

## Appendix A.2.2 Acknowledgement Message

The basic layout of the acknowledgement message is described in the ENTSO-E Implementation Guide for ESS 2.3 in chapter 5. Also refer to number [7] in the list of references.

The following describes how the elements of an acknowledgement message are used by the TSOs in the German market model.

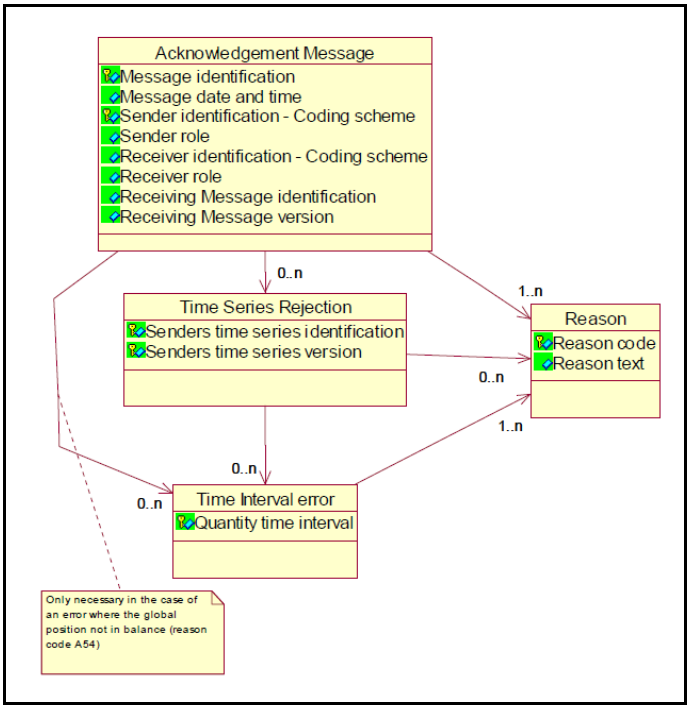



Figure A-2: ESS 2.3 acknowledgement message: Information model

### Appendix A.2.2.1 Message Header

a. **Message Identification**:
ID of the acknowledgement message pursuant to the specifications in accordance with [7] (p. 36, chapter 5.3.1).
A separate (new) ID is assigned for every acknowledgement message that is sent.

b. **Message date and time:**
Time at which the acknowledgement message was created in UTC.

c. **Sender Identification – Coding Scheme:**
X-EIC of the sending TSO.
"A01" is indicated as the coding scheme.

d. **Sender Role:**
The TSO, as the sender of the ACK, uses the role "A04".

e. **Receiver Identification – Coding Scheme:**
EIC of the balance group for which the ACK is sent.
"A01" is indicated as the coding scheme.

f. **Receiver Role:**
For the balance group, as the receiver of the ACK, the code "A08" [Balance responsible party] is indicated pursuant to [7] and [4].

g. **Receiving Message Identification:**
Message identification from the schedule message to which a response is provided with this ACK.

h. **Receiving Message Version:**
Message version from the schedule message to which a response is provided with this ACK.

i. **Reason Codes at the level of the Message Header:**
Various reason codes are returned at the level of the message header depending on the result of the formal checks.
Appendix F lists the individual reason codes to be returned.

### Appendix A.2.2.2 Time Series Rejection

If one or more time series have been identified as faulty as part of the formal check, these are listed in the "TimeSeries Rejection" area. In this case, the following initial information is provided:

a. **Senders Time Series Identification:**
Time series identification of the rejected time series from the schedule message.

b. **Senders Time Series Version:**
Time series version of the rejected time series from the schedule message.

There are also reason codes which describe the error in more detail and, where applicable, refer to the fact that the error lies in the area of the interval level of the schedule message.

c. **Reason Codes at the level of the Time Series Rejection:**
Various reason codes at the level of the TimeSeries Rejection are returned at the level of the message header depending on the result of the formal checks.
Appendix F lists the individual reason codes to be returned.

### Appendix A.2.2.3 Time Interval Error

The time interval error area is indicated in two cases:

I. If time series were identified to be erroneous on the interval level as part of the formal check, these are listed in the "Time Interval Error" area. In this case, the entries are made as subitems to the "Time Series Rejection" area.

II. If the balance of the sent schedule message is not zero, the relevant fifteen-minute periods are also indicated in the acknowledgement message. In this case, the entries are made as sub-items to the "Message Header" area.

In both cases, the following information is provided:

a. **Quantity Time Interval:**
Time range of the fifteen-minute period in which the error has been found. Start and end of the relevant fifteen-minute period in UTC.

> For example:
>
> "*2018-01-25T12:00Z/2018-01-25T12:15Z*"
> indicates the time range between 1:00 PM and 1:15 PM on 25/01/2018

b. **Reason Codes at the level of the Time Interval Error:**
Various reason codes in the area of the time interval error are returned depending on the result of the formal checks.
Appendix F " Responses in the acknowledgement report" lists the individual reason codes to be returned.

## Appendix A.2.3 Anomaly Report

The basic layout of the anomaly report is described in the ENTSO-E Implementation Guide for ESS 2.3 in chapter 6. Also refer to number [7] in the list of references.

The following describes how the elements of an anomaly report are used by the TSOs in the German market model.

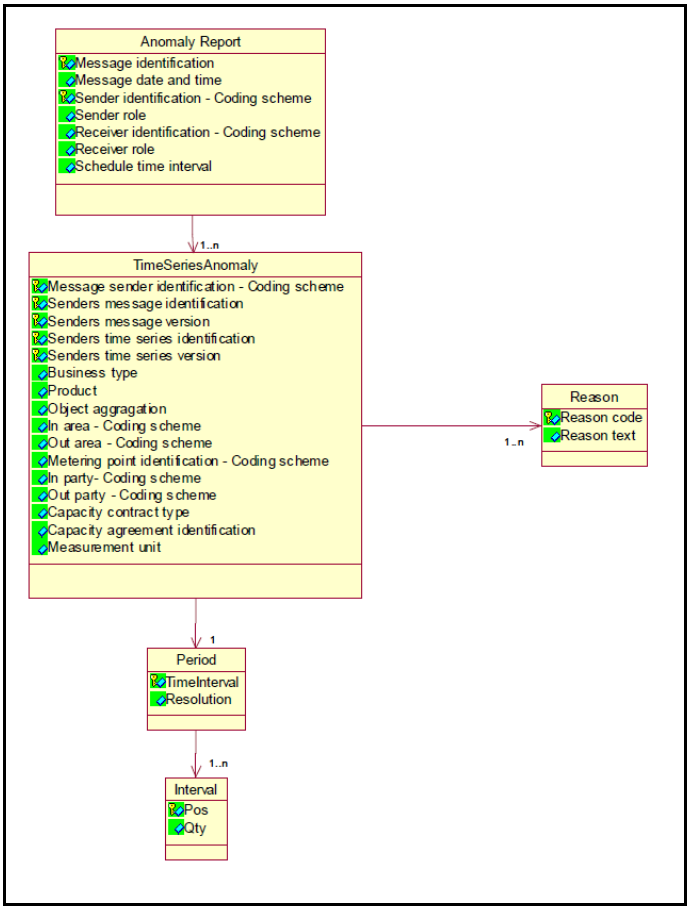



Figure A-3: ESS 2.3 anomaly report: Information model

### Appendix A.2.3.1 Message Header

a. **Message Identification**:
ID of the anomaly report pursuant to the specifications in accordance with [7] (p. 36, chapter 6.3.1).
A separate (new) ID is assigned for every anomaly report that is sent.

b. **Message date and time:**
The time at which the anomaly report is created in UTC time.

c. **Sender Identification – Coding Scheme:**
X-EIC of the sending TSO.
"A01" is indicated as the coding scheme in this case.

d. **Sender Role:**
The TSO, as the sender of the anomaly report, uses the code "A04".

e. **Receiver Identification – Coding Scheme:**
EIC of the balance group for which the anomaly report is sent.
"A01" is indicated as the coding scheme in this case.

f. **Receiver Role:**
For the balance group, as the receiver of the anomaly report, the code "A08" [Balance responsible party] is indicated pursuant to [5] and [4].

g. **Schedule Time Interval**
The start and end time of the day for which the anomaly report is transmitted shall be indicated in UTC time pursuant to [7], chapter 4.3.11.

For example:

The information in the schedule message for 01/07/2018 is
`2018-06-30T22:00Z/2018-07-01T22:00Z`

## Appendix A.2.3.2 Times Series Anomaly

a. **Message Sender Identification – Coding Scheme:**
EIC of the balance group whose time series is indicated here.
For external schedules, this is the information from the relevant TSO's reconciliation file (CAS). In this case, the TSO's X-EIC is indicated here.
"A01" is indicated as the coding scheme.

b. **Senders Message Identification**
Message identification from the schedule message which the balance group specified in the "Message Sender Identification" element used to send the schedule data to the TSO.
For external schedules, this is the information from the relevant TSO's reconciliation file (CAS).

c. **Senders Message Version**
Message version from the schedule message which the balance group specified in the "Message Sender Identification" element used to send the schedule data to the TSO.
For external schedules, this is the information from the relevant TSO's reconciliation file (CAS).

d. **Senders Time Series identification**
Time series identification from the schedule message which the balance groups specified in the "Message Sender Identification" element used to send the schedule data to the TSO.
For external schedules, this is the information from the relevant TSO's reconciliation file (CAS).

e. **Senders Time Series Version**
Time series version from the schedule message which the balance group specified in the "Message Sender Identification" element used to send the schedule data to the TSO.
For external schedules, this is the information from the relevant TSO's reconciliation file (CAS).

f. **Business Type:**
The original business type is returned.

g. **Product:**
As the time series exclusively contain fifteen-minute power values, the code for active power ("8716867000016") must be returned.

h. **Object Aggregation:**
"A01" is used.

i. **In Area; Out Area - Coding Scheme**:
The area codes stipulated by the balance group [Message Sender Identification] are returned.
As only EIC are permitted here, the "A01" coding scheme is indicated.

j. **Metering Point Identification**:
No entry takes place at this point. The element shall not be indicated.

k. **In Party; Out Party - Coding Scheme**:
The codes stipulated by the balance group [Message Sender Identification] are returned.
As only EIC are permitted here, the "A01" coding scheme is indicated.

l. **Capacity contract type**:
Only given if "A03" has been used as business type.

m. **Capacity agreement identification**:
Only indicated if "A03" has been used as business type.

n. **Measurement unit**:
As all of the TimeSeries values shall be indicated in MW, "MAW" is returned pursuant to the code list [4].

o. **Reason:**
The following reason codes, among others, are used at the level of the time series anomaly:

- "A09" - Time series not matching
- "A27" - Cross border capacity exceeded
- "A28" - Counterpart TimeSeries missing

### Appendix A.2.3.3 Period

a. **Time Interval**:
The entry for the time interval corresponds to the information in the Schedule Time Interval element.

b. **Resolution**:
The TimeSeries exclusively consists of fifteen-minute values. Only "PT15M" is returned pursuant to [7], chapter 6.5.2.

### Appendix A.2.3.4 Interval

a. **Pos:**
For every fifteen-minute value, the position at which the relevant fifteen-minute time interval occurs in the chronological sequence of the fifteen-minute values is indicated. As the fifteen-minute values are always transmitted for a delivery day (based on the local time), values shall be indicated for positions 1 to 96 (on days with Daylight Saving for 92 or 100 positions). Every position shall exist precisely once per TimeSeries.

> For example:
>
> The value for the fifteen minutes between 3:00 AM and 3:15 AM local time (UTC time in the summer: 1:00 AM to 1:15 AM) is assigned position 13.

b. **Qty:**
This is where the value for the relevant position (fifteen minutes) is entered in MW. A maximum of 3 decimal places is possible.

> For example:
> The value for "3500043 kW" is entered as "3500.043" (MW).

## Appendix A.2.4 Confirmation Report

The basic layout of the confirmation report is described in the ENTSO-E Implementation Guide for ESS 2.3 in chapter 7. Also refer to number [7] in the list of references.

The following describes how the elements of a confirmation report are used by the TSOs in the German market model.

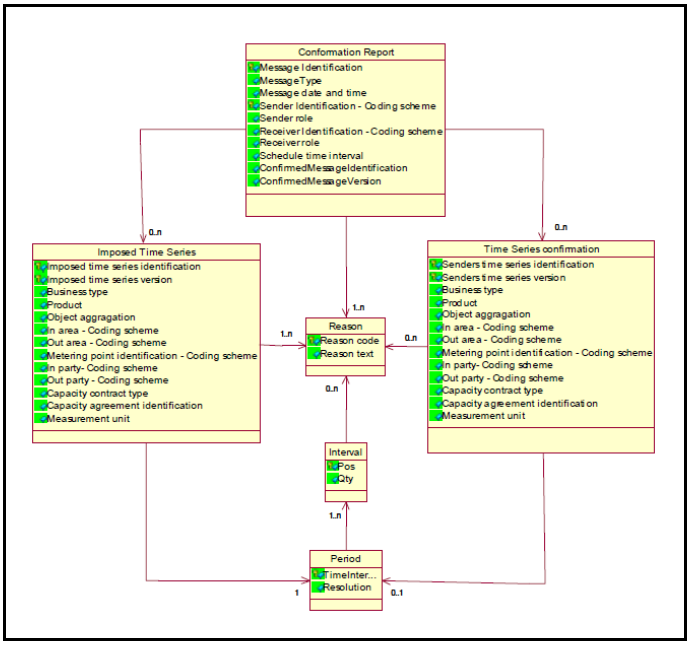


Figure A-4: ESS 2.3 confirmation report: Information model

### Appendix A.2.4.1 Message Header

a. **Message Identification**:
ID of the confirmation report pursuant to the specifications in accordance with [7] (p. 36, chapter 5.3.1).
A separate (new) ID is assigned for every confirmation report that is sent.

b. **Message Type:**
One of the following message types is used depending on the time at which the confirmation report is sent:

   i. "A07" - Intermediate Confirmation Report

   ii. "A08" - Final Confirmation Report

   iii. "A09" - Finalised Schedules (Day-Ahead Confirmation Report)

c. **Message date and time:**
The time at which the confirmation report is created in UTC time.

d. **Sender Identification – Coding Scheme:**
X-EIC of the sending TSO.
"A01" is indicated as the coding scheme.

e. **Sender Role:**
The TSO, as the sender of the confirmation report, uses the role "A04".

f. **Receiver Identification – Coding Scheme:**
EIC of the balance group for which the confirmation report is sent.
"A01" is indicated as the coding scheme.

g. **Receiver Role:**
For the balance group, as the receiver of the confirmation report, the code "A08" [Balance responsible party] is indicated pursuant to [5] and [4].

h. **Schedule Time Interval**
The start and end time of the day for which the confirmation report is transmitted shall be indicated in UTC time pursuant to [7], chapter 7.2.8.

For example:

The information in the schedule message for 01/07/2018 is
2018-06-30T22:00Z/2018-07-01T22:00Z

i. **Confirmed Message Identification**
Message identification from the schedule message to which a response is provided with this confirmation report.

j. **Confirmed Message Version**
Message version from the schedule message to which a response is provided with this confirmation report.

k. **Reason:**

The following reasons codes are used at the level of the message header:

- "A06"- Schedule accepted
- "A07"- Schedule partially accepted
- "A28"- Counterpart TimeSeries missing

### Appendix A.2.4.2 Time Series Confirmation

a. **Senders Time Series identification**
Time series identification from the schedule message which has been sent by the BRP.

b. **Senders Time Series Version**
Time series version from the schedule message which has been sent by the BRP.

c. **Business Type:**
The original business type is returned.

d. **Product:**
As the time series exclusively contain fifteen-minute power values, the code for active power ("8716867000016") must be returned.

e. **Object Aggregation:**
"A01" is used.

f. **In Area; Out Area - Coding Scheme**:
The area codes stipulated by the balance group [Receiver Identification] are returned. As only EIC are permitted, the "A01" coding scheme is indicated.

g. **Metering Point Identification**:
No entry takes place at this point. The element shall not be indicated.

h. **In Party; Out Party - Coding Scheme**:
The codes stipulated by the balance group [Receiver Identification] are returned. As only EIC are permitted here, the "A01" coding scheme is indicated.

i. **Capacity contract type**:
Only indicated if "A03" has been entered as the business type.

j. **Capacity agreement identification**:
Only indicated if "A03" has been entered as the business type.

k. **Measurement unit**:
As all of the TimeSeries values need to be indicated in MW, "MAW" is returned pursuant to the code list [4].

l. **Reason:**
The following reason codes, among others, are used as the level of the time series confirmation:

- "A63"- Time series modified

### Appendix A.2.4.3 Imposed TimeSeries

a. **Imposed Time Series Identification**
The imposed TimeSeries Identification is generated by the TSO, as no time series with this constellation has previously been reported by the BRP.

b. **Imposed Time Series Version**
Is identical to the information in the "Confirmed Message Version" element from the message header.

c. **Business Type:**
An allowed business type pursuant to 0 is returned.

d. **Product:**
As the time series exclusively contain fifteen-minute power values, the code for active power ("8716867000016") is returned.

e. **Object Aggregation:**
"A01" is used.

f. **In Area; Out Area - Coding Scheme**:
The necessary area codes for the imposed TimeSeries are returned.
As only EIC are permitted here, the "A01" coding scheme is indicated.

g. **Metering Point Identification**:
No entry takes place at this point. The element shall not be indicated.

h. **In Party; Out Party - Coding Scheme**:
The necessary codes for the Imposed TimeSeries are returned.
As only EIC are permitted here, the "A01" coding scheme is indicated.

i. **Capacity contract type**:
Only indicated if "A03" has been entered as the business type.

j. **Capacity agreement identification**:
Only indicated if "A03" has been entered as the business type.

k. **Measurement unit**:
As all of the TimeSeries values need to be indicated in MW, "MAW" is returned pursuant to the code list [4].

l. **Reason:**
The following reason codes, among others, are used at the level of the Imposed TimeSeries:

- "A30" - Imposed TimeSeries from nominated party's TimeSeries

- “A63” - Time series modified

### Appendix A.2.4.4 Period

a. **Time Interval**:
The entry for the time interval corresponds to the information in the Schedule Time Interval element in the message header of the confirmation report.

> Example:
>
> “2018-01-25T12:00Z/2018-01-25T12:15Z“
> indicates the time range between 1:00 PM and 1:15 PM on 25/01/2018.

b. **Resolution**:
The TimeSeries exclusively consists of fifteen-minute values. Only “PT15M“ is returned pursuant to [7], chapter 6.5.2.

### Appendix A.2.4.5 Interval

a. **Pos:**
For every fifteen-minute value, the position at which the relevant fifteen-minute time interval occurs in the chronological sequence of the fifteen-minute values is indicated. As the fifteen-minute values are always transmitted for a delivery day (based on local time), values shall be indicated for positions 1 to 96 (on days with Daylight saving, for 92 or 100 positions). Every position shall exist only once per TimeSeries.

> For example:
>
> The value for the fifteen minutes between 3:00 AM and 3:15 AM local time (UTC time in the summer: 1:00 AM to 1:15 AM) is assigned position 13.

b. **Qty:**
This is where the value for the relevant position (fifteen minutes) is entered in MW. A maximum of 3 decimals is possible.

> For example:
>
> The value for 3500043 kW is entered as “3500.043“ (MW).

c. **Reason:**

The following reason codes, among others, are used at the interval level:

- “A43“ - Quantity increased
- “A44“ - Quantity decreased

## Appendix A.3 CIM / IEC data format 62325-451

Alternatively, it is also possible to send a schedule message with the CIM data format [62325-451-2:2014] (ESS CIM).
If a schedule message is sent in the CIM IEC 62325-451-2 data format, the TSOs will also respond with messages from that format family.
For the official Implementation Guide, as amended, see [9].

### Appendix A.3.1 Differences to the ESS 2.3 data format

The main differences to the ESS 2.3 data format are:

- The standardisation and inclusion of CIM means that all elements have received new names.
- In the message header, the domain, subject_MarketParticipant and subject_MarketParticipant.marketRole elements have been added, while at the level of the time series, the curveType has been added.
- Confirmation report/anomaly report:
  A CIM IEC document is also sent as a confirmation report/anomaly report: CIM IEC 62325-451-2. Once again, the standardisation and inclusion of CIM means that all elements have received new names.
- Acknowledgement message:
  A CIM IEC document is also sent as an acknowledgement: CIM IEC 62325-451-1. Once again, the standardisation and inclusion of CIM means that all elements have received new names.

## Appendix A.3.2 Schedule Message [62325-451-2:2014]

The basic layout of a CIM schedule message is described in 62325-451-2:2014, in chapters 6.1 and 6.2. Also refer to [9].

The following describes how the elements of a schedule message are to be used in the German market model.

A BRP schedule message shall contain all the data for all schedules (TimeSeries) for a delivery day.

The following entries shall be made in the schedule message:

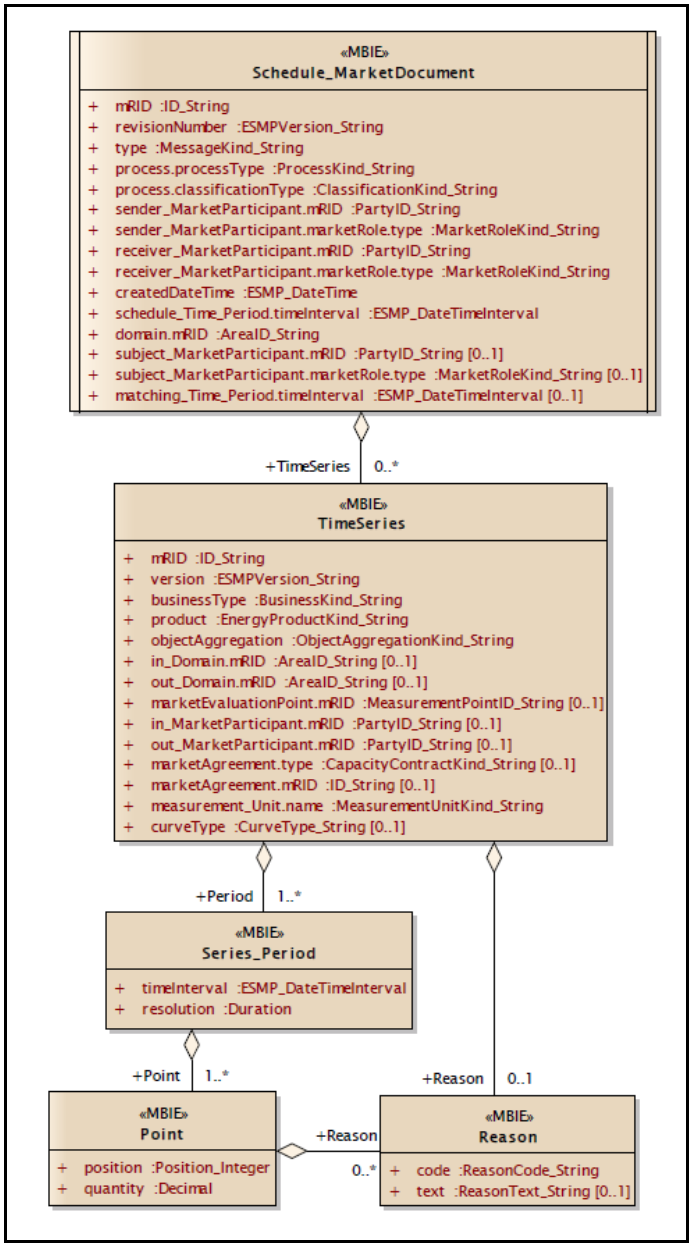



Figure A-5: Schedule message: Information model

### Appendix A.3.2.1 Message Header

As can be seen in Figure A-6, all elements in the file have received a new name as a result of the standardisation and inclusion of CIM.

The domain.mRID, subject_MarketParticipant.mRID, subject_MarketParticipant.marketRole.type and matching_Time_Period.timeInterval elements have also been added.

a. **mRID** [formerly Message Identification]:
   Freely selectable by the balance group within the scope of the specifications pursuant to [9].
   It shall not exceed 35 alphanumeric characters.
   This unique ID shall be assigned per delivery day, schedule type and sender/receiver tuple.

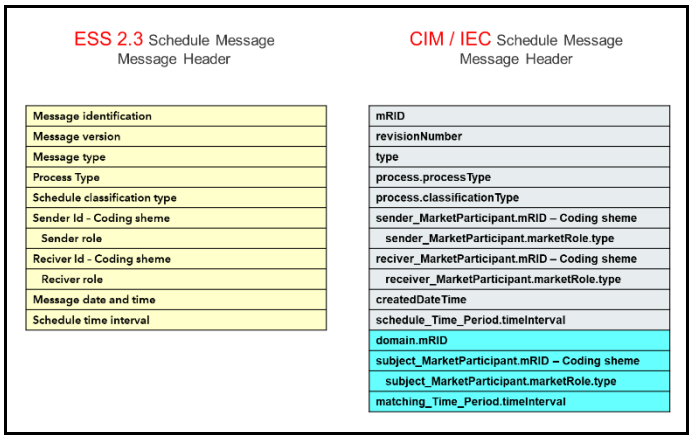



Figure A-6: Differences between the schedule message Header in both File Types

b. **revisionNumber [**formerly Message Version]:
The versioning shall take place pursuant to the specifications in Appendix A.5.3 of this document.

c. **type [formerly Message Type]:**
"A01" shall be entered for the schedule message.

d. **process.processType [formerly Process Type]:**
For schedule messages, the code "A17" [Schedule Day] shall be entered for all process phases (day-ahead, intraday, day after).

e. **process.classificationType [formerly Schedule Classification Type]:**
"A01" shall be entered for the schedule message.

f. **sender_MarketParticipant.mRID** [formerly Sender Identification] – Coding Scheme**:**
The EIC of the balance group for which this schedule message is sent must be entered as Sender_MarketParticipant.mRID.
The "coding scheme" indicated in [9] is restricted to the value "A01". This means that only an EIC identifier for the sender is allowed.

g. **sender_MarketParticipant.marketRole.type** [formerly Sender Role]:
For the balance group, as the sender of the schedule message, the code "A08" [Balance responsible party] shall be indicated pursuant to [9] and [4].

h. **receiver_MarketParticipant.mRID** [formerly Receiver Identification] – Coding Scheme:
The "coding scheme" indicated in [9] is restricted to the value "A01". This means that only the receiver's EIC identifier is permitted. The TSO's relevant EIC "10X..." shall be entered as the receiver_MarketParticipant.mRID and not the EIC area code "10Y..." from the in/out entries in the TimeSeries Header!

i. **receiver_MarketParticipant.marketRole.type** [formerly Receiver Role]:
For the TSO, as the recipient of the schedule message, the code "A04" shall be indicated pursuant to [9] and [4].

j. **createdDateTime** [formerly Message date and time]:
Date and time of transmission of the schedule message to the TSO. The time shall be indicated in UTC time.

k. **schedule_Time_Period.timeInterval** [formerly Schedule time interval]:
The start and end time of the day for which the schedule message is transmitted shall be indicated in UTC time.

> Example:
>
> The information in the schedule message for 01/07/2018 is
> `2018-06-30T22:00Z/2018-07-01T22:00Z`

The following elements are new in relation to the ESS 2.3 data format

l. **domain.mRID** [new]:
The TSO's relevant EIC area code "10Y..." to which the schedule document is sent shall be entered as the domain. The "coding scheme" indicated in [9] is restricted to the value "A01". This means that only the EIC identifier for the Domain.mRID is allowed.

m. **subject_MarketParticipant.mRID** [new]:
This element shall contain the same content as in the “Sender_MarketParticipant.mRID” element.

n. **subject_MarketParticipant.marketRole.type** [new]:
This element shall contain the same content as in the “Sender_MarketParticipant.marketRole.type” element.

o. **matching_Time_Period.timeInterval** [new]:
Not used for a schedule message. As a result, it shall therefore not be indicated as part of the schedule message.

## Appendix A.3.2.2 ScheduleTimeSeries

As can be seen in Figure A-7, all elements in the file have received a new name as a result of the standardisation and inclusion of CIM.

The CurveType element has also been added.

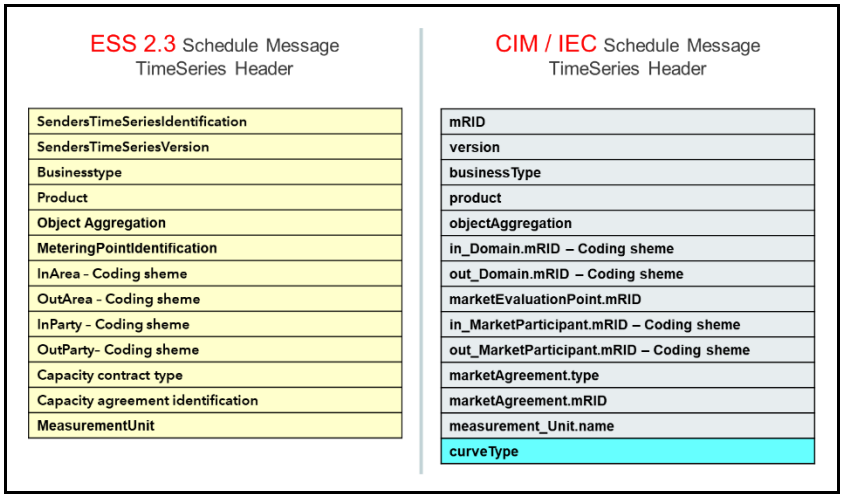



Figure A-7: Differences between the TimeSeries Header in both File Types

a. **mRID** [formerly Senders Time Series Identification]:

The mRID for a time series shall not exceed 35 alphanumeric characters and shall not be repeated within a file.

b. **version** [formerly Senders Time Series Version]:
The versioning shall take place pursuant to the specifications in Appendix A.5.3 of this document.

c. **businessType:**
The business types listed in Table G-1 are permitted as part of the schedule message

d. **product:**
As the time series exclusively contain fifteen-minute power values, the code for active power (“8716867000016“) shall be used.

e. **objectAggregation:**
Only “A01” shall be entered.

f. **in_Domain.mRID or out_Domain.mRID** [formerly In Area or Out Area - Coding Scheme]:
The “coding scheme” indicated in [9] is restricted to the value “A01“. This means that only the EIC identifier is allowed.

g. **marketEvaluationPoint.mRID** [formerly Metering Point Identification]:
The element shall not be indicated.

h. **in_MarketParticipant.mRID or out_MarketParticipant.mRID:**
[formerly In Party; or Out Party - Coding Scheme]:
The "coding scheme" indicated in [9] is restricted to the value "A01". This means that only the EIC identifier is allowed.

i. **marketAgreement.type** [formerly Capacity contract type]:
Only indicated if "A03" has been entered as the business type.
The values from the allocation process shall be used.

j. **marketAgreement.mRID** [formerly Capacity agreement identification]:
Only indicated if "A03" has been entered as the business type.
The values from the allocation process shall be used.

k. **measurement_Unit.name** [formerly Measurement unit]:
As all of the TimeSeries values need to be indicated in MW, only "MAW" is allowed as the necessary information pursuant to the code list [4].

l. **curveType** [new]:
Only the "A01" [Sequential fixed size block] identification may be entered for schedule messages.

### Appendix A.3.2.3 Period Level

a. **timeInterval** [formerly Time Interval]:
The entry for the time interval, which shall take place for every TimeSeries, shall correspond to the schedule_Time_Period.timeInterval from the document header.

b. **resolution:**
The TimeSeries exclusively consists of fifteen-minute values.
Only "PT15M" is permitted.

### Appendix A.3.2.4 Point Level [formerly: Interval]

a. **position** [formerly Pos]:
For every fifteen-minute value, the position at which the relevant fifteen-minute time interval occurs in the chronological sequence of the fifteen-minute values shall be indicated. As the fifteen-minute values are always transmitted for a delivery day (based on the local time), values shall be indicated for positions 1 to 96 (on days with Daylight saving, for 92 or 100 positions). Every position shall exist only once per TimeSeries.

> Example:
>
> The value for the fifteen minutes between 3:00 AM and 3:15 AM local time (UTC time in the summer: 1:00 AM to 1:15 AM) is assigned position 13.

b. **quantity** [formerly Qty]:
This is where the value for the relevant position (fifteen minutes) is entered in MW. A maximum of 3 decimals is possible. This means that the smallest power unit that can

be processed in the schedule transaction is 1 kW. The decimal points shall be separated by a point rather than a comma. Thousands separators are prohibited. A value in the form of a number >= 0 shall be transmitted for every fifteen-minute interval (interval position) of the relevant day.

Example:

The value for 3500043 kW shall be entered as “3500.043“ (MW).

## Appendix A.3.3 Acknowledgement Document [62325-451-1:2013]

The basic layout of the acknowledgement document is described in 62325-451-1:2013. Also refer to [10].

The following describes how the elements of an acknowledgement document are used by the TSOs in the German market model.

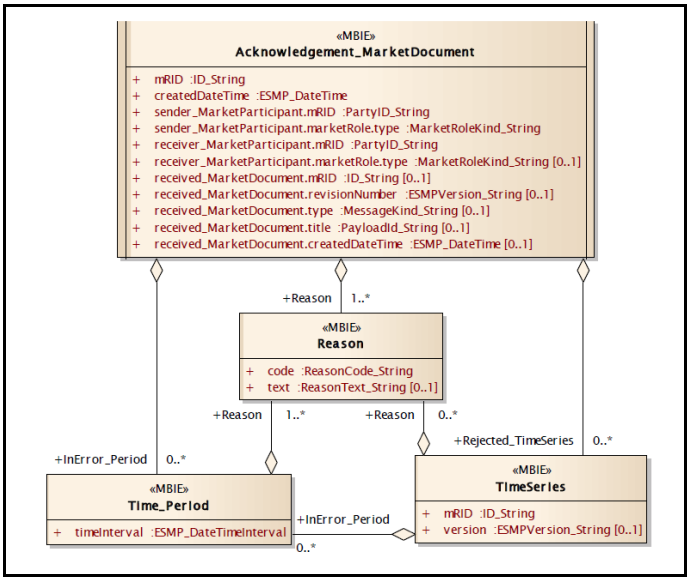


Figure A-8: Acknowledgement document: Information model

### Appendix A.3.3.1 Acknowledgement_MarketDocument

a. **mRID**:
ID of the acknowledgement message pursuant to the specifications in accordance with [10] (p. 25, tab. 19; row 2).
A separate (new) ID is assigned for every acknowledgement message that is sent.

b. **createdDateTime:**
Time at which the acknowledgement message was created in UTC.

c. **Sender_MarketParticipant.mRID – Coding Scheme:**
X-EIC of the sending TSO.
“A01“ is indicated as the coding scheme.

d. **Sender_MarketParticipant.marketRole.type:**
The TSO, as the sender of the ACK, uses the role “A04“.

e. **Receiver_MarketParticipant.mRID – Coding Scheme:**
EIC of the balance group to which the ACK is sent.
“A01“ is indicated as the coding scheme.

f. **Receiver_MarketParticipant.marketRole.type:**
For the balance group, as the receiver of the ACK, the code “A08“ [Balance responsible party] is indicated pursuant to [10] and [4].

g. **Received_MarketDocument.mRID:**
mRID at the message level of the schedule message to which a response is provided with this ACK.

h. **Received_MarketDocument.revisionNumber:**
Version number (revisionNumber) at the message level of the schedule message to which a response is provided with this ACK.

i. **Received_MarketDocument.type:**
Type from the schedule message to which a response is provided with this ACK.

j. **Received_MarketDocument.title:**
This element is not used as part of a “normal” ACK.

k. **Received_MarketDocument.createdDateTime:**
Creation date and time (createdDateTime) from the schedule message to which a response is provided with this ACK.

l. **Reason**
Various reason codes are returned at the level of the message header depending on the result of the formal checks.
Appendix F " Responses in the acknowledgement report" lists the individual reason codes to be returned.

### Appendix A.3.3.2 Time Series

If time series were sent which were identified as faulty as part of the formal check, these are listed in the "rejected_TimeSeries" area. In this case, the following initial information will be provided:

a. **mRID:**
mRID of the TimeSeries from the schedule message to which a response is provided with this ACK.

b. **Version:**
Version of the TimeSeries from the schedule message to which a response is provided with this ACK.

Reason codes are also given, which describe the error in greater detail and, where applicable, refer to the fact that the error occured at interval level of the schedule message.

c. **Reason:**
Various reason codes at the level of the TimeSeries Rejection are returned at the level of the message header depending on the result of the formal checks.
Appendix F lists the individual reason codes to be returned.

### Appendix A.3.3.3 Time_Period

The Time_Period area is indicated in two cases:

I. If time series are part of the sent schedule message, for which errors were identified in the point level area as part of the formal check, these are listed in the "Time_Period" area. In this case, the entries are made as subitems to the "TimeSeries" area.

II. If the balance of the sent schedule message is not zero, the relevant fifteen-minute periods are also indicated in the acknowledgement message. In this case, the entries are made as subitems to the "AcknowledgementMarketDocument" area.

In both cases, the following information is provided:

a. **TimeInterval**
Time range of the fifteen-minute period in which the error was found. Start and end of the relevant fifteen-minute period in UTC.

> For example:
>
> "2018-01-25T12:00Z/2018-01-25T12:15Z"
> indicates the time range between 1:00 PM and 1:15 PM on 25/01/2018.

**b. Reason**
Various reason codes in the Time_Period area are returned depending on the result of the formal checks.
Appendix F lists the individual reason codes to be returned.

## Appendix A.3.4 Anomaly Report [62325-451-2:2014]

The basic layout of the anomaly report is described in 62325-451-2:2014 in chapters 6.3 and 6.4. Also refer to [9].

The following shows how the elements of an anomaly report are used by the TSOs in the German market model.

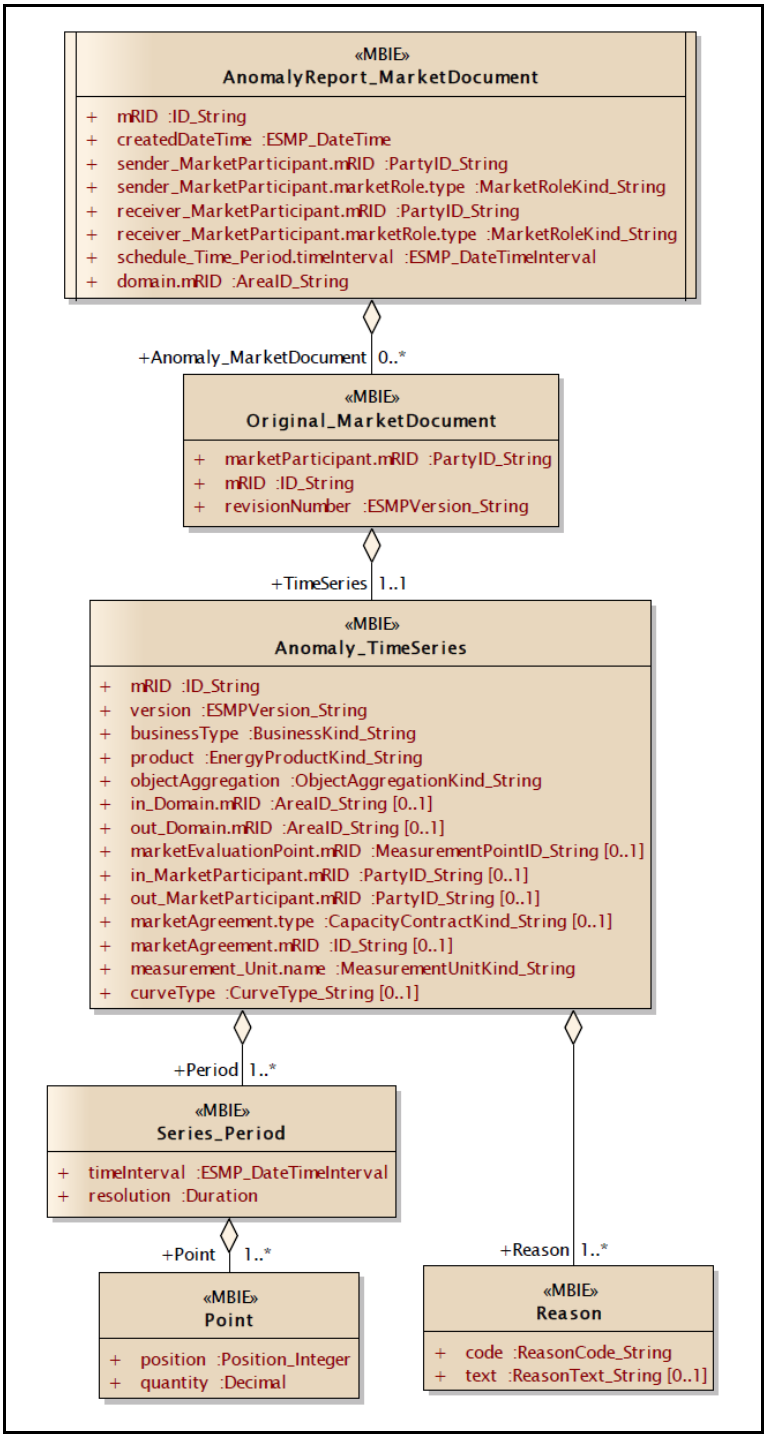



Figure A-9: Anomaly report: Information model

### Appendix A.3.4.1 AnomalyReport_MarketDocument

a. **mRID:**
ID of the anomaly report pursuant to the specifications in accordance with [9] (p. 47, chapter 6.3.3.1).
A separate (new) ID is assigned for every anomaly report that is sent.

b. **createdDateTime:**
The time at which the anomaly report is created in UTC time.

c. **sender_MarketParticipant.mRID – Coding Scheme:**
X-EIC of the sending TSO.
"A01" is indicated as the coding scheme.

d. **sender_MarketParticipant.marketRole.type:**
The TSO, as the sender of the ACK, uses the role "A04".

e. **receiver_MarketParticipant.mRID – Coding Scheme:**
EIC of the balance group to which the ACK is sent.
"A01" is indicated as the coding scheme.

f. **receiver_MarketParticipant.marketRole.type:**
For the balance group, as the receiver of the ACK, the code "A08" [Balance responsible party] is indicated pursuant to [7] and [4].

g. **schedule_Time_Period.timeInterval**:
The start and end time of the day for which the schedule message is transmitted shall be indicated in UTC time.

h. **domain.mRID - Coding Scheme:**
The relevant EIC area code "10Y..." of the TSO sending the document is entered as the domain. The "coding scheme" indicated in [6] is restricted to the value "A01".

### Appendix A.3.4.2 Original Market Document

a. **marketParticipant.mRID – Coding Scheme:**
EIC of the balance group whose time series is indicated.
For external schedules, this is the information from the relevant TSO's reconciliation file (CAS). In this case, the TSO's X-EIC is indicated here.
"A01" is used as the coding scheme.

b. **mRID:**
mRID from the schedule message that was sent to the TSO.
For external schedules, this is the information from the relevant TSO's reconciliation file (CAS).

c. **revisionNumber:**
revisionNumber from the schedule message that was sent to the TSO.

For external schedules, this is the information from the relevant TSO's reconciliation file (CAS).

### Appendix A.3.4.3 Anomaly_TimeSeries

a. **mRID:**
mRID of the TimeSeries from the schedule message which the balance group specified in the "marketParticipant.mRID" element used to send the schedule data to the TSO.
For external schedules, this is the information from the relevant TSO's reconciliation file (CAS).

b. **version:**
Version of the time series from the schedule message which the balance group specified in the "marketParticipant.mRID" element used to send the schedule data to the TSO.
For external schedules s, this is the information from the relevant TSO's reconciliation file (CAS).

c. **businessType:**
The sent business type is returned.

d. **product:**
As the time series only contains fifteen-minute power values, the code for active power ("8716867000016") must be returned.

e. **objectAggregation:**
"A01" is used.

f. **in_Domain.mRID; out_Domain.mRID - Coding Scheme**:
The area codes stipulated by the balance group [marketParticipant.mRID] are returned. As only EIC are permitted here, the "A01" coding scheme is indicated.

g. **in_MarketParticipant.mRID; out_MarketParticipant.mRID - Coding Scheme**:
The codes stipulated by the balance group [marketParticipant.mRID] are returned. As only EIC are permitted here, the "A01" coding scheme is indicated.

h. **marketAgreement.type:**
Only indicated if "A03" has been entered as the business type.

i. **marketAgreement.mRID**:
Only indicated if "A03" has been entered as the business type.

j. **measurement_Unit.name:**
As all of the TimeSeries values need to be indicated in MW, "MAW" is returned pursuant to the code list [4].

k. **reason:**
The following reason codes, among others, are used at the level of the Anomaly_TimeSeries:

- "A09" - Time series not matching
- "A27" - Cross border capacity exceeded
- "A28" - Counterpart TimeSeries missing

### Appendix A.3.4.4 Series_Period

a. **timeInterval**:
The entry corresponds to the information in the schedule_Time_Period.timeInterval element.

b. **resolution**:
The TimeSeries exclusively consists of fifteen-minute values. Only "PT15M" is permitted.

### Appendix A.3.4.5 Point

a. **position:**
For every fifteen-minute value, the position at which the relevant fifteen-minute time interval occurs in the chronological sequence of the fifteen-minute values is indicated. As the fifteen-minute values are always transmitted for a delivery day (based on the local time), values shall be indicated for positions 1 to 96 (on days with daylight saving either 92 or 100 positions). Every position shall exist only once per TimeSeries.

b. **quantity:**
This is where the value for the relevant position (fifteen minutes) is entered in MW. A maximum of 3 decimals is possible.

## Appendix A.3.5 Confirmation Report [62325-451-2:2014]

The basic layout of the confirmation report is described in 62325-451-2:2014 in chapters 6.5 and 6.6. Also refer to [9].

The following describes how the elements of a confirmation report are used by the TSOs in the German market model.

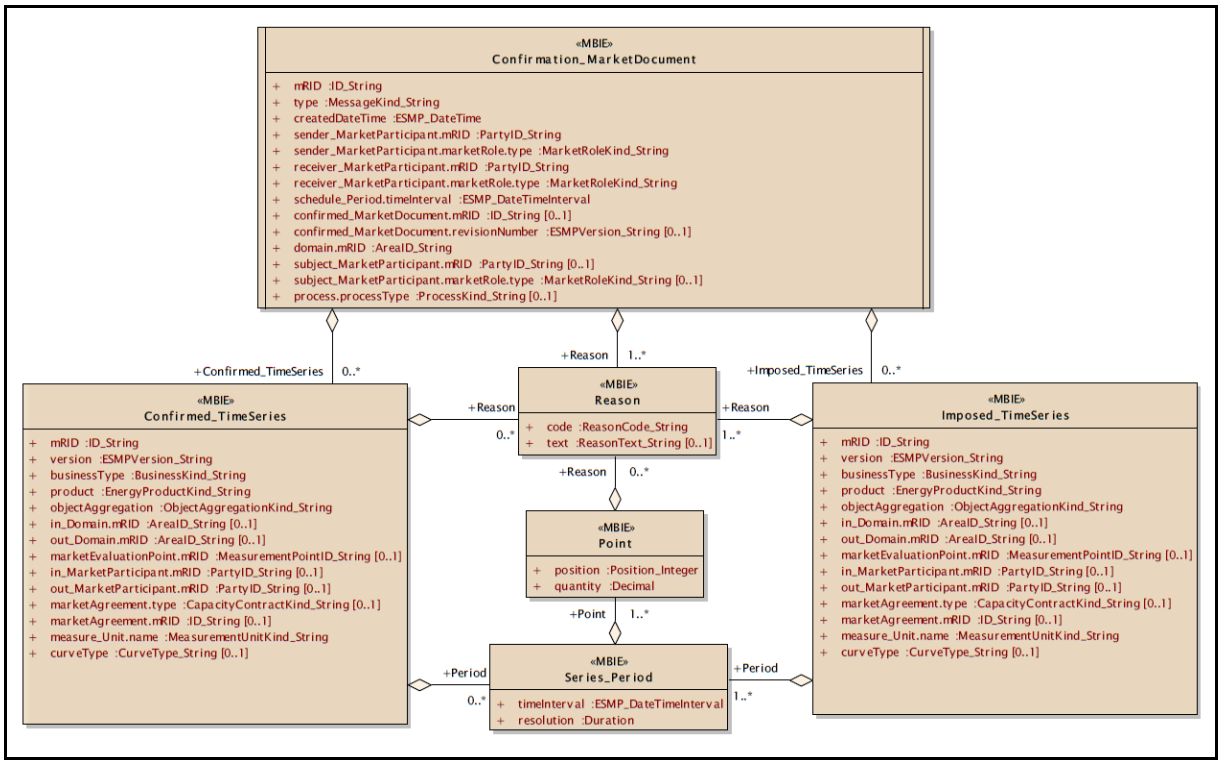



Figure A-10: Confirmation report: Information model

### Appendix A.3.5.1 Confirmation_MarketDocument

a. **mRID**:
   mRID of the confirmation report pursuant to the specifications in accordance with [9]. A separate (new) mRID is assigned for every confirmation report that is sent.

b. **type:**
   One of the following types is used depending on the time at which the confirmation report is sent:

   i. "A07" - Intermediate Confirmation Report

   ii. "A08" - Final Confirmation Report

   iii. "A09" - Finalised Schedules

c. **createdDateTime:**
   The time at which the confirmation report is created in UTC time.

d. **sender_MarketParticipant.mRID – coding scheme:**
   X-EIC of the sending TSO.
   "A01" is indicated as the coding scheme.

e. **sender_MarketParticipant.marketRole.type:**
The TSO, as the sender of the confirmation report, uses the role "A04".

f. **receiver_MarketParticipant.mRID – coding scheme:**
EIC of the balance group to which the confirmation report is sent.
"A01" is indicated as the coding scheme.

g. **receiver_MarketParticipant.marketRole.type:**
For the balance group, as the receiver of the confirmation report, the code "A08" [Balance responsible party] is indicated pursuant to [5] and [4].

h. **schedule_Period.timeInterval:**
The start and end time of the day for which the confirmation report is transmitted shall be indicated in UTC time pursuant to [7], chapter 7.2.8.

i. **confirmed_MarketDocument.mRID:**
mRID from the schedule message to which a response is provided with this confirmation report.

j. **confirmed_MarketDocument.revisionNumber:**
Message version from the schedule message to which a response is provided with this confirmation report.

k. **domain.mRID - Coding Scheme:**
The relevant EIC area code "10Y..." of the TSO sending the document is entered as the domain. The "coding scheme" indicated in [6] is restricted to the value "A01", so only the EIC identifier is allowed.

l. **reason:**
The following reasons codes are used at the level of the Confirmation_MarketDocument:

- "A06" - Schedule accepted
- "A07" - Schedule partially accepted
- "A28"- Counterpart TimeSeries missing

### Appendix A.3.5.2 Confirmed TimeSeries

a. **mRID:**
mRID from the schedule message that was sent to the TSO.

b. **version:**
Version of the TimeSeries from the schedule message that was sent to the TSO.

c. **businessType:**
One of the business types listed in Table G-1 is returned.

d. **product:**
As the time series only contains fifteen-minute power values, the code for active power ("8716867000016") must be returned.

e. **objectAggregation:**
"A01" is used.

f. **in_Domain.mRID; out_Domain.mRID- Coding Scheme**:
The area codes stipulated by the balance group [receiver_MarketParticipant.mRID] are

returned.
As only EIC are permitted here, the "A01" coding scheme is indicated.

g. **in_MarketParticipant.mRID; out_MarketParticipant.mRID - Coding Scheme:**
The codes stipulated by the balance group [receiver_MarketParticipant.mRID] are returned.
As only EIC are permitted here, the "A01" coding scheme is indicated.

h. **marketAgreement.type**:
Only indicated if "A03" has been entered as the business type.

i. **marketAgreement.mRID:**
Only indicated if "A03" has been entered as the business type.

j. **measurement_Unit.name**:
As all of the TimeSeries values need to be indicated in MW, "MAW" is returned pursuant to the code list [4].

k. **reason:**
The following reason codes, among others, are used at the level of the Confirmed TimeSeries:

- "A63" - Time series modified

### Appendix A.3.5.3 Imposed TimeSeries

a. **mRID:**
The mRID is generated by the TSO, as no time series with this constellation bas previously been reported by the BRP.

b. **version:**
Is identical to the information in the "Version" element from the message header.

c. **businessType:**
One of the business types listed in Table G-1 is returned.

d. **product:**
As the time series only contains fifteen-minute power values, the code for active power ("8716867000016") must be returned.

e. **objectAggregation:**
"A01" is used.

f. **in_Domain.mRID; out_Domain.mRID- Coding Scheme**:
The area codes stipulated by the balance group [receiver_MarketParticipant.mRID] are returned.
As only EIC are permitted here, the "A01" coding scheme is indicated.

g. **in_MarketParticipant.mRID; out_MarketParticipant.mRID - Coding Scheme**:
The codes stipulated by the balance group [receiver_MarketParticipant.mRID] are returned.
As only EIC are permitted here, the "A01" coding scheme is indicated.

h. **marketAgreement.type**:
Only indicated if "A03" has been entered as the business type.

i. **marketAgreement.mRID:**
Only indicated if "A03" has been entered as the business type.

j. **measurement_Unit.name**:
As all of the TimeSeries values need to be indicated in MW, "MAW" is returned pursuant to the code list [4].

k. **reason:**
The following reason codes, among others, are used at the level of the Imposed TimeSeries:

- "A30" - Imposed TimeSeries from nominated party's TimeSeries
- "A63" - Time series modified

### Appendix A.3.5.4 Series Period

a. **timeInterval**:
The entry for the time interval corresponds to the information in the Schedule Time Interval element in the message header of the confirmation report.

b. **resolution**:
The TimeSeries exclusively consists of fifteen-minute values. Only "PT15M" is permitted.

### Appendix A.3.5.5 Point

a. **position:**
For every fifteen-minute value, the position at which the relevant fifteen-minute time interval occurs in the chronological sequence of the fifteen-minute values is indicated. As the fifteen-minute values are always transmitted for a delivery day (based on the local time), values shall be indicated for positions 1 to 96 (on days with daylight saving either 92 or 100 positions). Every position shall exist only once per TimeSeries.

b. **quantity:**
This is where the value for the relevant position (fifteen minutes) is entered in MW. A maximum of 3 decimals is possible.

c. **reason:**

The following reason codes, among others, are used at the Point level:

- "A43" - Quantity increased
- "A44" - Quantity decreased

## Appendix A.4 Status Request

### Appendix A.4.1 Status Request 1.0

The basic layout of the status report is described in the ENTSO-E Implementation Guide for the ETSO STATUS REQUEST. Also refer to number [8] in the list of references.

The following describes how the elements of a status request are used by the TSOs in the German market model.

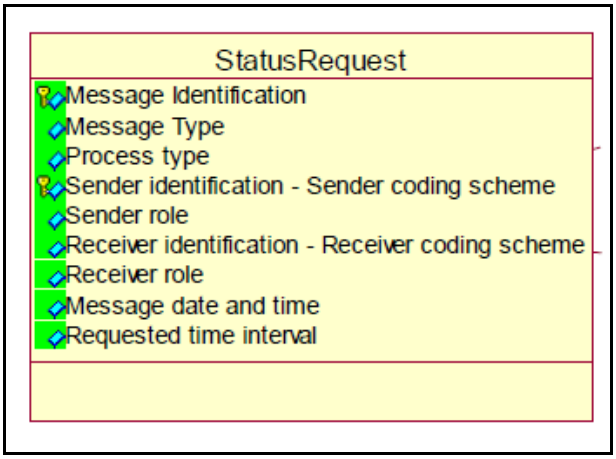



Figure A-11: Status Request 1.0: Information model

#### Appendix A.4.1.1 Message Header

a) **Message Identification**:
ID of the status request document pursuant to the specifications in accordance with [8] (p. 11, chapter 5.3.1).
A separate (new) ID shall be assigned for every status request that is sent.

b) **Message Type:**
The value "A59" [information request] shall be entered here.

c) **Process Type:**
For a status request, the code "A17" [Schedule Day] shall be entered for all process phases (day-ahead, intraday, day after schedule changes).

d) **Sender Identification – Coding Scheme**:
EIC of the balance group as the sender of the status request.
As only EIC are allowed here, the value "A01" shall be used as the "Coding Scheme".

e) **Sender Role**:
For the balance group, as the sender of the status request, the code "A08" [Balance responsible party] shall be indicated pursuant to [7] and [4].

f) **Receiver Identification – Coding Scheme**:
The relevant EIC "10X..." shall be used as the ReceiverIdentification for the TSO and not the EIC area code "10Y...".
As only EIC are permitted here, the value "A01" shall be used as the "Coding Scheme".

g) **Receiver Role**:
For the TSO, as the recipient of the status request, the code "A04" shall be indicated pursuant to [7] and [4].

h) **Message Date and Time:**
The time at which the status request is created in UTC time.

i) **Requested time interval:**
The start and end time of the day for which the status request is to be issued shall be indicated. The times shall be indicated in UTC.

For example:

The information for a request on schedule day 01/07/2018 is
**2018-06-30T22:00Z/2018-07-01T22:00Z**

## Appendix A.4.2 CIM Status Request [62325-451-5:2015]

The basic layout of the CIM status request is described in document [11] in chapters 6.3 and 6.4.

The following shows how the elements of a CIM status request are used by the TSOs in the German market model.

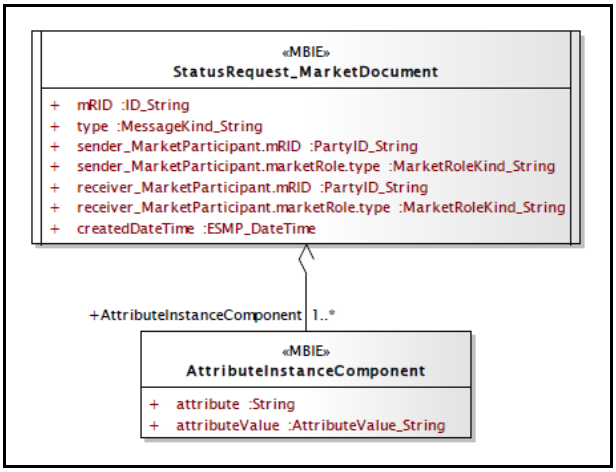



Figure A-12: CIM status request: Assembly model

### Appendix A.4.2.1 Message Header

a) **mRID**:
ID of the status request document pursuant to the specifications in accordance with [11] (p. 31, chapter 6.3.3.1, table 38).
A separate (new) ID shall be assigned for every status request that is sent.

b) **type:**
The value "A59" [information request] shall be entered here.

c) **sender_MarketParticipant.mRID**:
The "coding scheme" indicated in [11] is restricted to the value "A01". This means that only the EIC identifier for the sender is allowed.

d) **sender_MarketParticipantmarketRole.type**:
For the balance group, as the sender of the status request, the code "A08" [Balance responsible party] shall be indicated pursuant to [11] and [4].

e) **receiver_MarketParticipant.mRID**:
The relevant EIC "10X..." shall be used as the ReceiverIdentification for the TSO and <u>not</u> the EIC area code "10Y...".
The "coding scheme" indicated in [11] is restricted to the value "A01". This means that only the receiver's EIC identifier is allowed.

f) **receiver_MarketParticipant.marketRole.type**:
For the TSO, as the recipient of the status request, the code "A04" shall be indicated pursuant to [11] and [4].

g) **createdDateTime:**
The time at which the status request is created in UTC time.

### Appendix A.4.2.2 Attribute Instance Component

The following 3 attributes shall be entered in the Attribute Instance Component area:

a. **Attribute:**
The “subject_MarketParticipant.mRID” text/value shall be entered here.

b. **attributeValue:**
The EIC of the balance group for which the status request is to be issued shall be entered here.

c. **Attribute:**
The “subject_MarketParticipant.marketRole.type” text/value shall be entered here.

d. **AttributeValue:**
For the balance group the code “A08“ [Balance responsible party] shall be indicated pursuant to [4].

e. **Attribute:**
The “schedule_Time_Period.timeInterval” text/value shall be entered here.

f. **AttributeValue:**
The start and end time of the day for which the status request is to be issued shall be indicated. The times shall be indicated in UTC.

Example:

The information for a request on schedule day 01/07/2018 is
**2018-06-30T22:00Z/2018-07-01T22:00Z**

## Appendix A.5 Specifications for all data formats

### Appendix A.5.1 General information

The following general principles apply for the creation of for all messages used in the scheduling process:

#### Appendix A.5.1.1 Netting

“Netted” TimeSeries without algebraic signs shall be indicated.

The direction is determined by the information given in the “In Area”, “Out Area”, “In Party”, “Out Party” [ESS 2.3] or “in_Domain.mRID”, “out_Domain.mRID”, “in_MarketParticipant.mRID” and “out_MarketParticipant.mRID” [CIM] elements.

If both directions exist, a TimeSeries is reported for every direction.

Only one of these two TimeSeries can receive a value different from zero for a 15 minute interval.

The netting rule does not apply at auctioned borders that use certificates (“Capacity Agreement Identification” and “Capacity Contract Type” or “marketAgreement.type” and “marketAgreement.mRID”), i.e. time series with business type A03.

#### Appendix A.5.1.2 Scope of information for changes

The information content in a schedule message accepted by the TSO shall not be reduced in the event of a change or cancellation. All TimeSeries already submitted to and accepted by the TSO shall be included in every additional schedule messages for the relevant day. However, these time series can be set to 0.

Exception:

This rule does not need to be applied for schedule messages that have not been accepted. If a schedule message is rejected by the TSO due to a TimeSeries with an unknown “In Party” or “Out Party” (or “in_MarketParticipant.mRID” and “out_MarketParticipant.mRID” in CIM format) (Message Fully Rejected in the ACK), this TimeSeries shall be completely removed from the file. In this case, setting it to zero is not sufficient.

#### Appendix A.5.1.3 Cancelling time series

If a times series has been reported and accepted by the TSO for a day and this needs to be cancelled, all values shall be changed to “0” and included in all subsequent schedule messages for the relevant day.

#### Appendix A.5.1.4 Schedule messages at international borders

The relevant bilateral regulations apply for schedule messages at international borders. For details see Appendix C.

## Appendix A.5.2 Indication of time series

The period of validity of a schedule shall be indicated in UTC time format.

Figure A-13 illustrates the provision of the UTC time for a calendar day in the different seasons (winter time, summer time as well as days with daylight saving).

The change winter/summer time takes place on the last Sunday in March.

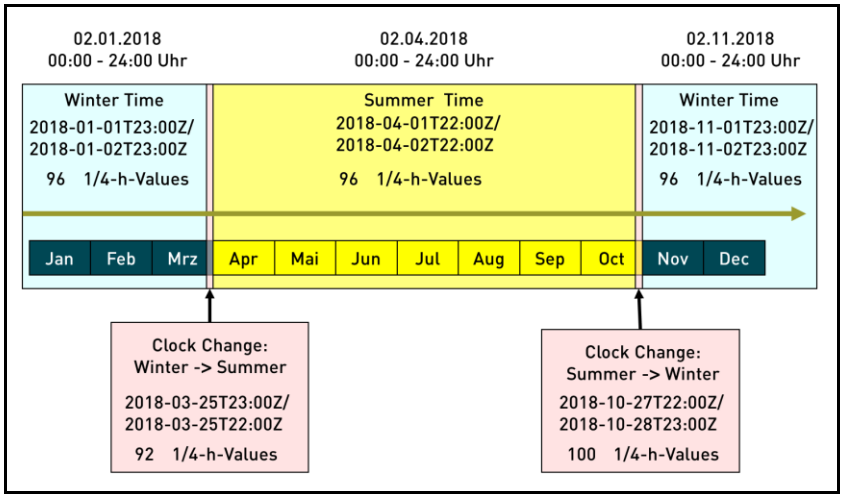



Figure A-13: Period of validity of a schedule in UTC time format

The change summer/winter time takes place on the last Sunday in October.

## Appendix A.5.3 Versioning schedule messages and TimeSeries

The versioning of the schedule messages and the relevant time series shall take place in accordance with the following rules:

Example

| | Version Nr | | | |
|---|---|---|---|---|
| | File Nr | TimeSeries A | TimeSeries B | TimeSeries C |
| First Version | 01 | 1 | 1 | Not extist |
| Change TimeSeries B | 02 | 1 | 2 | Not extist |
| Change TimeSeries A | 03 | 3 | 2 | Not extist |
| New TimeSeries C | 04 | 3 | 2 | 4 |

Figure A-14: Example for the assignment of version numbers

a) Only whole numbers between 1 and 999 are permitted.

b) Leading zeros are prohibited.

c) The version number restarts from 1 for every schedule day.

d) The Message Version [ESS 2.3] or revisionNumber [CIM] shall be incremented by at least 1 for every change.
The modified or new TimeSeries shall also be identified with this new number (also refer to Figure A-14).

## Appendix A.5.4 TimeSeries Identification

The “TimeSeries ID” of an XML document shall be unique for all TimeSeries within the document.

The ESS Implementation Guide permits 35 alphanumeric characters at this point. (See [7] p. 44, chapter 4.4.1. or[9])

The German TSOs have no mandatory requirements for the TimeSeries ID in the BRP’s schedule messages.

# Appendix B Connections to international scheduling areas

The connections between German TSOs and international TSOs are listed in Table B-1.

| TSO | Foreign TSO |
|---|---|
| TransnetBW | RTE, APG, Swissgrid |
| Amprion | TenneT B.V., RTE, APG, swissgrid, CREOS, ELIA |
| TenneT | energinet.dk (West), TenneT B.V., APG, CEPS, Statnett, Svenska Kraftneät |
| 50Hertz | PSE, CEPS, energinet.dk (East) |

Table B-1: Connection points to foreign TSOs

The following provides a graphic overview of these connections:

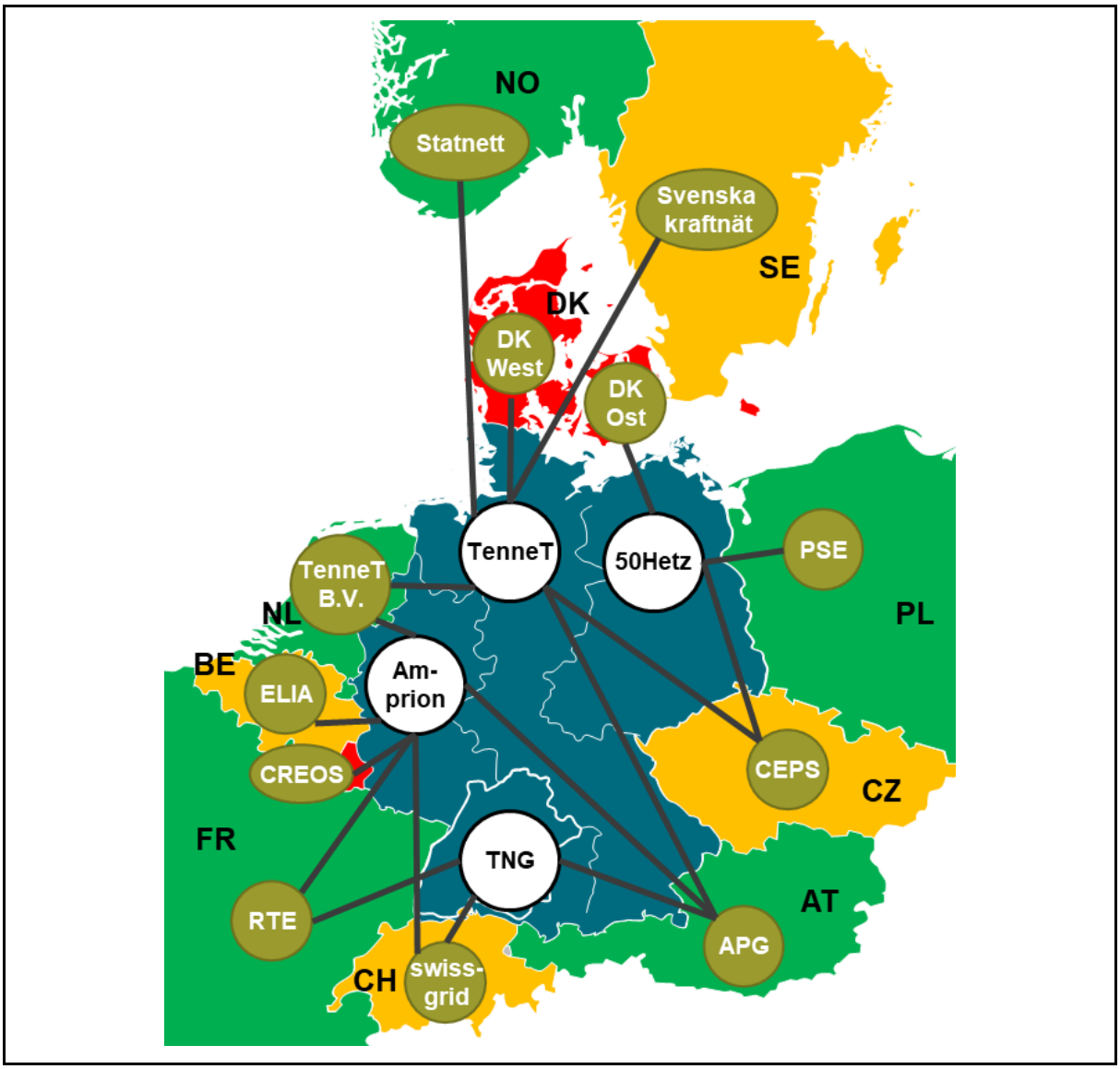



Figure B-1: Connections to international scheduling areas

# Appendix C Special features of schedule messages at international borders

| Country | Type | Time | Resolution / Time grid | Special features/verifications | Permitted business types |
|---|---|---|---|---|---|
| Within Germany (DE) | DayAhead | Gate Closure D-1 02:30 PM | MW to 3 decimals (0.001)<br><br>Fifteen minute interval | Matching rules: See chapter 3.3 in this document | See Appendix G |
| | IntraDay | Continuous<br>15 min. to the 15-min. changeover with the modified value (GCT & COT)<br>→ 15 min. lead time<br>Start from D-1 04:00 PM | | Matching rules: See chapter 3.3 in this document | |
| | DayAfter | Up to the deadlines specified in the balancing contract for electricity. | | Matching rules: See chapter 3.3 in this document<br>Transactions within scheduling areas only | |
| DE <> AT | DayAhead | Gate Closure D-1 02:30 PM | MW to 3 decimals (0.001)<br><br>Fifteen minute interval | Congestion present:<br>Conditions, see the auction rules for this border<br>CAI = EIC of BG<br>CCT = A05 | A03 |
| | IntraDay | Only implicitly via SIDC | | | |
| DE <> BE | DayAhead | Gate Closure: D-1 02:30 PM,<br>Only implicitly via NEMOs | MW to 3 decimals (0.001)<br><br>Fifteen minute interval | Congestion present:<br>Conditions, see the auction rules for this border<br>CAI = EIC of BG<br>CCT = A05 | A03 |
| | IntraDay | Only implicitly via XBID | | | |
| DE <> CH | Long Term | Reservation message to auction coordinator TransnetBW<br>Gate Closure D-1 08:30 AM | MW to 3 decimals (0.001)<br><br>Fifteen minute interval | Congestion present:<br>Conditions, see the auction rules for this border | A06 |
| | DayAhead | Gate Closure D-1 02:30 PM | | | |
| | IntraDay | Continuous<br>45 min. to the 15-min. changeover with the modified value<br>+ 15 min. for capacity reservation<br>→ 60 min. lead time<br>Start from D-1 06:00 PM | | | |

| Country | Type | Time | Resolution / Time grid | Special features/verifications | Permitted business types |
|---|---|---|---|---|---|
| DE <> CZ | DayAhead | Gate Closure: D-1 02:30 PM | MW with no decimal places (0)<br><br>Fifteen minute interval | Congestion present:<br>Conditions, see the auction rules for this border | A03 |
| | IntraDay | Only implicitly via XBID | | | |
| DE <> DK East | DayAhead | Gate Closure D-1 02:30 PM | MW to 1 decimal (0.1)<br><br>Fifteen minute interval | Congestion present:<br>Conditions, see the auction rules for this border | A03 |
| | IntraDay | Only implicitly via XBID | | | |
| DE <> DK West | DayAhead | Gate Closure D-1 02:30 PM | MW to 1 decimal (0.1)<br><br>Fifteen minute interval | Congestion present:<br>Conditions, see the auction rules for this border | A03 |
| | IntraDay | Only implicitly via XBID | | | |
| DE <> FR | DayAhead | DE: Gate Closure D-1 02:30 PM | MW to 2 decimals (0.01)<br><br>30 minute intervals | Congestion present:<br>Conditions, see the auction rules for this border<br>CAI = EIC of BG<br>CCT = A05 | A03 |
| | IntraDay | Continuous via SIDC<br>45 min. to the hourly changeover with the modified value<br>+ 15 min. for capacity reservation<br>→ 60 min. lead time to the full hour | | | |
| | IntraDay (Balancing Market) | Continuous<br>15 min. to the hourly changeover with the modified value<br>+ 15 min. for capacity reservation<br>→ 30 min. lead time | | Only at the request of RTE<br>Congestion present:<br>Conditions, see the auction rules for this border<br>CAI = EIC of BG<br>CCT = A05 | |
| DE <> LU | DayAhead | Gate Closure D-1 02:30 PM | MW to 3 decimals (0.001)<br>Fifteen minute interval | | A06 |
| | IntraDay | Continuous<br>15 min. to the 15-min. changeover with the modified value<br>Start from D-1 06:00 PM | | | |

| Country | Type | Time | Resolution / Time grid | Special features/verifications | Permitted business types |
|---|---|---|---|---|---|
| DE <> NL | DayAhead | Gate Closure D-1 02:30 PM | MW to 1 decimal (0.1)<br>Fifteen minute interval | Congestion present:<br>Conditions, see the auction rules for this border<br>Without CCT and CAI | A03 / A06 |
| | IntraDay | Only implicitly via SIDC | | | |
| DE <> NO | DayAhead | Gate Closure: D-1 02:30 PM, only implicitly via participating NEMOs | MW to 1 decimal (0.1)<br>Fifteen minute interval | Congestion present:<br>Conditions, see the auction rules for this border | A03 |
| | IntraDay | Only implicitly via SIDC | | | |
| DE <> PL | DayAhead | Gate Closure: D-1 02:30 PM | MW with no decimal places (0)<br>Fifteen minute interval | Congestion present:<br>Conditions, see the auction rules for this border | A03 |
| | IntraDay | Only implicitly via XBID | | | |
| DE <> SE | DayAhead | Gate Closure: D-1 02:30 PM, only through Baltic Cable | MW to 1 decimal (0.1)<br>Hourly intervals | Congestion present:<br>Conditions, see the auction rules for this border | A06 |
| | IntraDay | only through Baltic Cable | | | |

# Appendix D Schedule processing at auctioned borders

The harmonised long-term auction rules for western and southern Europe (Rules for Capacity Allocation by Explicit Auctions within Central West Europe Region (CWE), Central South Region (CSE) and Switzerland), which entered into force on 01/01/2012, no longer provide a description of the schedule process at these borders.

The processing at the Germany/Belgium, Germany/France, Germany/Dutch, Germany/Austria and Germany/Switzerland borders will described in this chapter.

For all other borders, the rules published on the relevant TSO homepages apply.

## Appendix D.1 Schedule processing at the German/Belgium border

An explicit daily auction only exists as a fallback solution for the DE-BE border in case of decoupling of the implicit auction (price-coupling).

In this case, the BRP can purchase additional capacity rights for the relevant day as part of the shadow auction. There will be no separate capacity allocation. In this special case the reservation of daily capacity will be performed as schedule nomination to the TSOs Amprion and Elia.

Schedule values that exceed the value range are reduced to the limit value.

In case of discrepancies between the nomination values that exist on the German and Belgium side, the nomination values are set to the minimum value in the relevant hours by Amprion and Elia. The BRP receives information on the matching of its nomination in the TSO's responses (ANO report, iCNF report).

1:1 nomination is requested, Business-Type A03 has to be used with CAI = EIC of nomination BRP and CCT = A05.

## Appendix D.2 Schedule processing at the German/French border

Amprion GmbH coordinates the German-French border for Germany.

Since 1.1.2020 Long-term reservation is not possible as the process is executed via Financial Transmission Rights.

An explicit daily auction only exists as a fallback solution for the DE-FR border in case of a CWE decoupling. In this case, the BRP can purchase additional capacity rights for the relevant day as part of the shadow auction. The BRP has to nominate allocated capacity explicitly to Amprion and/or TransnetBW on German side and RTE on French side.

Schedule values that exceed the value range are reduced to the limit value.

In case of discrepancies between the nomination values that exist on the German and French side in one direction, the values of the TSO from whose scheduling area the power is exported apply. If the value range permits nominations in different directions and the BRP has submitted nominations in both directions on both sides of the border, the nomination values are set to zero in the relevant hours by the two affected TSOs (Amprion/RTE or TransnetBW/RTE). The BRP receives information on the matching of its nomination in the TSO's responses (ANO report, iCNF report).

1:1 nomination is requested, Business-Type A03 has to be used. The CAI has to be the EIC of the nominated BRP and the CCT has to be "A05".

## Appendix D.3 Schedule processing at the German/Dutch border

TenneT B.V. Netherlands (TTN) is the coordinator for the long-term coordination at the German-Dutch border. The long-term capacities at this border are processed via Financial Transmission Rights (FTR). This means that no nomination of the rights is possible for the long-term capacities. An explicit daily auction (shadow auction) for the DE-NL border only exists as a fallback solution in the event of decoupling of the implicit auction. The following steps only exist in the event of a shadow auction. The BKV can acquire additional capacity rights for the relevant day as part of the shadow auction carried out.

(1) In the event of a shadow auction, TenneT Netherlands receives from JAO the shadow auction rights acquired by the BKV for the Netherlands / Germany border.

(2) The capacity acquired by the BRP in the shadow auction must be optionally nominated to the German TSO (Amprion or TTG) and the Dutch TSO (TTN) (unused capacities expire).
For such a nomination, the business type A06 must be used without using CCT and CAI.
These day-ahead nominations are coordinated between TTN and TTG / Amprion. In the event of different nominations on both sides of the border, the values on the Dutch side apply.

## Appendix D.4 Schedule processing at the German/Austrian border

APG coordinates the German-Austria border.

Long-term reservation is not possible. Long-term rights will be replaced by Financial Transmission Rights.

An explicit daily auction only exists as a fallback solution for the DE-AT border in case of a CWE decoupling. In this case, the BRP can purchase additional capacity rights for the relevant day as part of the shadow auction. The BRP has to nominate allocated capacity explicitly to Amprion, TenneT TSO and/or TransnetBW on German side and APG on Austria side.

Schedule values that exceed the value range are reduced to the limit value.

In case of discrepancies between the nomination values that exist on the German and Austria side in one direction, the minimum values will apply.
The BRP receives information on the matching of its nomination in the TSO's responses (ANO report, iCNF report).

1:1 nomination is requested, Business-Type A03 has to be used. The CAI has to be the EIC of the nominated BRP and the CCT has to be "A05".

## Appendix D.5 Schedule processing at the German/Swiss border

The schedule processing at the auctioned Germany/Switzerland border is based on the process model for data exchange between auction participants, Joint Auction Office, TransnetBW and the auction partners, which is illustrated in the following overview:

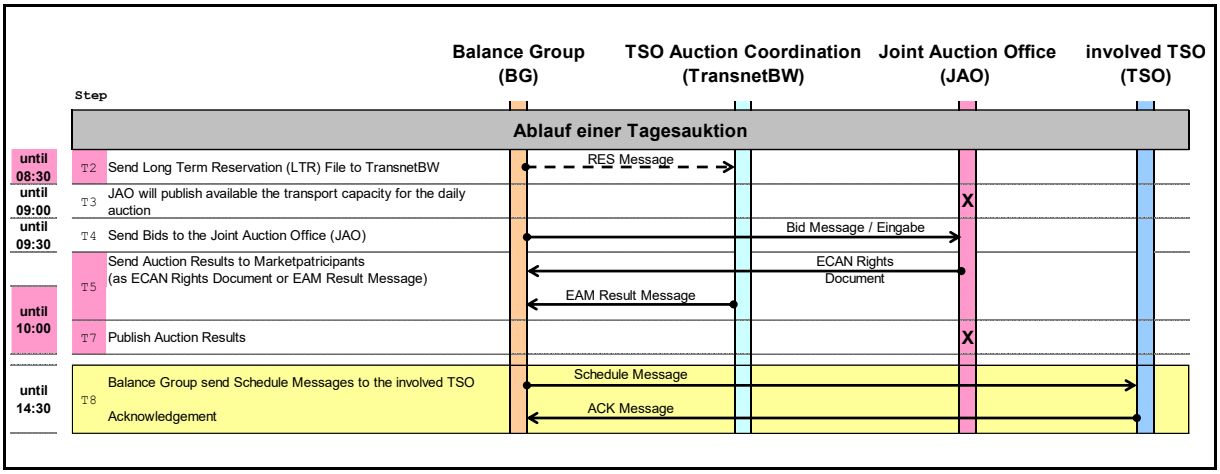



Figure D-1: Sequential data exchange process for a daily auction

### T 2 Reservation message

In the event that an auction participant wants to use their transport capacity shares purchased as part of the annual and/or monthly auction, it shall register their use with TransnetBW prior to the start of the daily auction in the form of a reservation message. Unused shares of available transport capacity from the annual and/or monthly auction are transferred to the daily auction where it increases the available transport capacity. An acknowledgement message in accordance with [7] is provided as confirmation of receipt.

### T 3 Publication of the transport capacity available for the daily auction

The auction coordinator determines the transport capacity available for the daily auction in consideration of the reservation messages (T2). The transport capacity available for the daily auction will published on the auction house's website.

### T 4 Bidding

The bids for the available transport capacity as part of the daily auction are transmitted to the auction house. During the daily auction, bidding takes place per scheduling area border. Bidding is limited by the closure of the bid defined in section 3.2 of the daily auction rules.

### T 5 Communication of the auction result to the auction participants

After the end of the auction, every auction participant receives a list of the share of the available transport capacity that they purchased at auction from the auction house. In addition, every auction participant receives a list of the limit values (lower and upper) that it shall comply with during schedule messaging from the auction house.

The information on the limit values to be complied with is provided per scheduling area border. The message may either be transferred as part of a result message or as an ECAN rights document.

The result message or ECAN rights document generally contains the following information:

- The lower limit value (Capacity Min), which shall be complied with in the schedule message by the relevant auction partner (one time series per scheduling area border),
- The upper limit value (Capacity Max), which shall not be exceeded in the schedule message by the relevant auction partner (one time series per scheduling area border),

Only one time series with the lower and upper limit value exists per scheduling area border.

After the completion of the auction, the Capacity Contract Type and Capacity Agreement Identification fields in the lower and upper limit value time series are used to transmit the values to be entered in the relevant fields for the schedule message for swissgrid in the ESS Schedule Message using business type A03 “External Trade Explicit Capacity”.

In the event that an auction participant only wants to utilise its transport capacities purchased in the annual and/or monthly auction, it shall submit a reservation message according to (T2) prior to the start of the daily auction. In this case, the submission of additional bids for the daily auctions is not necessary.

**T 7 Publication of the result of the auction**

The auction house publishes the results of the auction as well as the bids by the auction participants on the Internet in anonymised form.

**T 8 Auction participant schedule message to the auction partners**

The auction participants register their schedules with the auction partners in compliance with the applicable schedule management.

**<u>Matching rule for the day-ahead process</u>**

Schedule messages shall comply with the lower limit value (Capacity Min) and upper limit value (Capacity Max) determined in the auction.

If differences are identified after the expiration of the cut-off time, the relevant schedule is adapted to the limit values determined in the auction. Specifically, this means:

- The schedule does not meet the lower limit value (Capacity Min): In this case, the schedule value is increased to the lower limit value.
- The schedule does not meet the upper limit value (Capacity Max): In this case, the schedule value is reduced to the upper limit value.

At the start of the intraday process, the lower and upper limit value determined in the auction is set to the value in the schedule message in order to release the unused capacities in the day-ahead for the intraday process.

**Matching rule for the intraday process**

Schedule messages shall comply with the lower and upper limit values determined in the intraday capacity allocation. In the intraday process, the lower limit value is always equal to the upper limit value.

If differences are identified after the expiration of the cut-off time, the relevant schedule is adapted to the limit values determined in the intraday capacity allocation. Specifically, this means:

- The schedule does not meet the lower limit value (Capacity Min): In this case, the schedule value is increased to the lower limit value.
- The schedule does not meet the upper limit value (Capacity Max): In this case, the schedule value is reduced to the upper limit value.

# Appendix E Basic structure of the ESS data format

The following describes the basic structure of an ESS Schedule Message in version 2.3 based on an example.

**Example:**

The ATOZ BRP delivers 100.123 MW from the TransnetBW scheduling area to the Amprion scheduling area on 23/02/2018 from 12:00 AM to 12:00 AM.

An ESS Schedule Message (see Figure E-1) consists of the elements:

- Message Header
- TimeSeries Header
- Period Level
- Interval Level

The Message Header corresponds to an address area of an email or letter, e.g. for a delivery note. This is where the sender and receiver, among others, are mentioned as well as a unique name for the message.

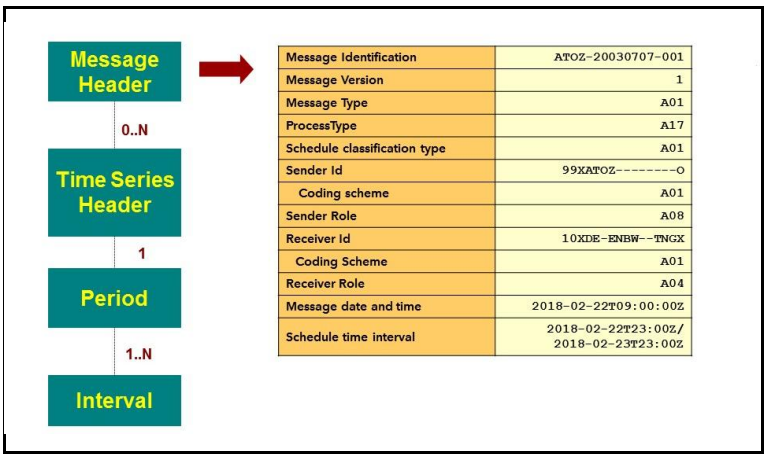
The TimeSeries Header corresponds to a list of the “delivered” objects.

The period and the interval level correspond to the delivered quantities.

Figure E-1 shows the details of the schedule message’s message header.

The entries in the yellow area correspond to the information from the above example.

The ATOZ BRP (sender ID) sends a schedule message (message type) for the date 23/02/2018 (schedule time interval) to the receiver TransnetBW (receiver ID).




| | |
|---|---|
| Message Identification | ATOZ-20030707-001 |
| Message Version | 1 |
| Message Type | A01 |
| ProcessType | A17 |
| Schedule classification type | A01 |
| Sender Id | 99XATOZ--------O |
| Coding scheme | A01 |
| Sender Role | A08 |
| Receiver Id | 10XDE-ENBW--TNGX |
| Coding Scheme | A01 |
| Receiver Role | A04 |
| Message date and time | 2018-02-22T09:00:00Z |
| Schedule time interval | 2018-02-22T23:00Z/ 2018-02-23T23:00Z |

Figure E-1: ESS schedule message: “Message Header”

A unique name for the message and the time series exists in the area of the message header and the TimeSeries header.

This is the “Message Identification” and the “TimeSeries Identification” respectively. Further information is provided in **Fehler! Verweisquelle konnte nicht gefunden werden.**.

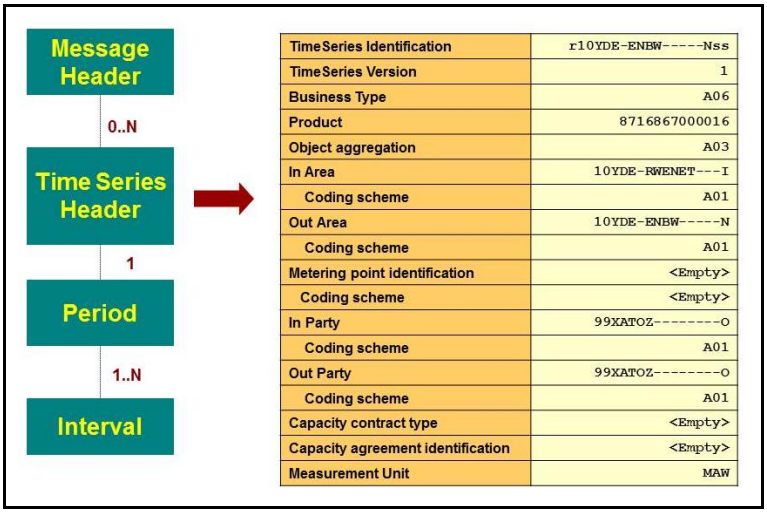
If the “delivery note” example is continued, the message identification can be equated to an invoice number and the TimeSeries identification to an order number of an item.

Figure E-2 shows the TimeSeries Header, the “header” of a schedule transaction.

This defines from where and to where a certain type of transaction is executed.

The elements with the <Empty> identification shall not be listed in the message, as an empty element represents an infringement of the schema.

The entries in the yellow area correspond to the information from the above example.




| | |
|---|---|
| TimeSeries Identification | r10YDE-ENBW-----Nss |
| TimeSeries Version | 1 |
| Business Type | A06 |
| Product | 8716867000016 |
| Object aggregation | A03 |
| In Area | 10YDE-RWENET---I |
| Coding scheme | A01 |
| Out Area | 10YDE-ENBW-----N |
| Coding scheme | A01 |
| Metering point identification | <Empty> |
| Coding scheme | <Empty> |
| In Party | 99XATOZ--------O |
| Coding scheme | A01 |
| Out Party | 99XATOZ--------O |
| Coding scheme | A01 |
| Capacity contract type | <Empty> |
| Capacity agreement identification | <Empty> |
| Measurement Unit | MAW |

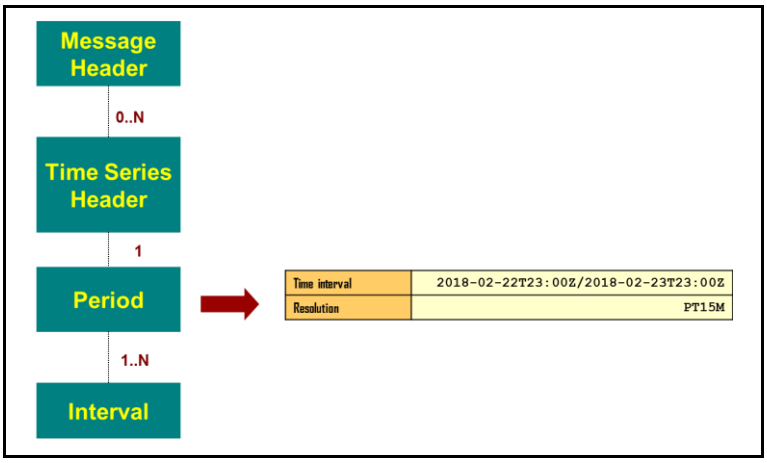
Figure E-2: ESS schedule message: “TimeSeries Header”

The ATOZ BRP submits an external schedule (business type A06). The energy is delivered from the TransnetBW scheduling area (Out Area) to the Amprion scheduling area (In Area).

The period level (see Figure E-3) contains the period for which the schedule is to be valid (time interval) and the resolution that is used.

The entries in the yellow area correspond to the information from the above example.

The schedule is intended for the day of the 23/02/2018 (time interval) and fifteen-minute values are provided (resolution).




| | |
|---|---|
| Time interval | 2018-02-22T23:00Z/2018-02-23T23:00Z |
| Resolution | PT15M |

Figure E-3: ESS schedule message: “Period Level”

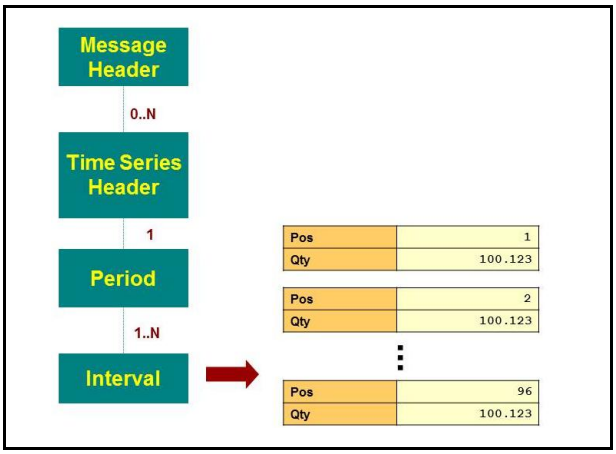
The interval level (see Figure E-4) contains the quantities to be delivered.

A position (Pos) and quantity (Qty) are indicated for every value.

The entries in the yellow area correspond to the information from the above example.

The schedule is intended for a “normal” day. Based on the resolution from the period level it can be determined that 96 entries are expected.

The quantity (Qty) amounts to 100.123 MW for the entire day.




| | |
|---|---|
| Pos | 1 |
| Qty | 100.123 |

| | |
|---|---|
| Pos | 2 |
| Qty | 100.123 |

⋮

| | |
|---|---|
| Pos | 96 |
| Qty | 100.123 |

Figure E-4: ESS schedule message: “Interval Level”

# Appendix F Responses in the acknowledgement report

When a schedule message is received it passes a series of checks. The result of these checks is returned via an acknowledgement report.

The first step is comprised of the “formal” checks. These include checks on the layout of the file or compliance with certain rules, such as the versioning. These formal checks also include all the checks or check possibilities for which no data of corresponding balance groups or TSOs are required.

## Appendix F.1 List of responses in the Acknowledgement Report of a Schedule Message

The following table offers an overview of the checks currently implemented. The table is not necessarily complete.

Tabelle F-1: List checks for responses in the Acknowledgement Report of a Schedule Message

| Description of the check | ReasonCodes in the Acknowledgement Report | | | |
|---|---|---|---|---|
| | Message | TimeSeries | Interval | Reason Text/ Comment |
| **Message Level** | | | | |
| Registration of the schedule in the correct scheduling area (Receiver ID pursuant to EIC code) | A02 + A53 | | | |
| Monitoring of the time of receipt | A02 + A57 | | | Schedule not accepted due to transgression |
| Sender’s balance group name (Sender ID pursuant to the EIC code) | A02 + A05 | | | |
| Schedule Time Interval: UTC format | A02 + A04 | | | |
| Check the message ID and version | A02 + A51 | | | |
| If all information is available (imbalance of the schedule file) | A01 + A54 | | A54 | Differences do not lead to a rejection |
| Energy quantity declaration of the balancing contract for electricity exceeded | A01 + A59 | | | Exceeding one of the values declared in Appendix 1.1; according to the BK agreement, these can lead to rejection. The Reason Text indicates the nature of the exceedance. |
| Fault tolerant schedule assumption see chapter (3.4.2.2.3) | A01 + A03 | A57 + A21 | A42 | |
| Schedule rejection due to the exceeding of declaration values | A02 + A59 | | A59 | Exceeding one of the values declared in Appendix 1.1; according to the BK agreement, these can lead to rejection. The Reason Text indicates the nature of the exceedance |
| | | | | |

Tabelle F-1: List checks for responses in the Acknowledgement Report of a Schedule Message

| Description of the check | ReasonCodes in the Acknowledgement Report | | | |
|---|---|---|---|---|
| | Message | TimeSeries | Interval | Reason Text/ Comment |
| **ScheduleTimeSeries** | | | | |
| **General Checks** | | | | |
| Balance group EIC code | A02 + A03 | A05<br>A22 | | A05: Incorrect balance group name<br>A22: Balance group's balancing contract for electricity not (yet) valid |
| Scheduling area name pursuant to EIC code | A02 + A03 | A23 | | |
| Time series not netted in the delivery and consumption direction | A02 + A03 | A56 | A56 | |
| Registered TimeSeries are missing in the new version | A02 + A03 | A52 | | |
| Check the Schedule TimeSeries ID and Version | A02 + A03 | A55 | | |
| Measurement Unit | A02 + A03 | A59 | | "MWH" expected |
| ***Schedule account correct (schedule header without date)*** | | | | |
| a) External schedule<br>Business Type A06 | | | | |
| 1. In Area <> Out Area | A02 + A03 | A22 | | In Area <> Out Area expected |
| 2. One of the areas shall be equivalent to the Receiver ID | A02 + A03 | A22 | | One Area = Receiver (Area) expected |
| 3. In Party = Out Party = Sender | A02 + A03 | A23 | | In Party = Out Party = Sender or Subject Party expected |
| 4. Prohibited 1:N or N:N registration | A02 + A03 | A58 | | |
| 5. Prohibited international registration | A02 + A03 | A23 | | |
| 6. Prohibited using of Capacity Contract Type and Capacity Agreement Identification | A02 + A03 | A59 | | Using of Capacity Contract Type and / or Capacity Agreement Identification prohibited |
| b) External schedule<br>Business Type A03 | | | | |
| 1. In Area <> Out Area | A02 + A03 | A22 | | In Area <> Out Area expected |
| 2. One of the areas shall be equivalent to the Receiver ID | A02 + A03 | A22 | | One Area = Receiver (Area) expected |
| 3. In Party = Out Party = Sender | A02 + A03 | A23 | | In Party = Out Party = Sender or Subject Party expected |
| 4. Prohibited 1:N or N:N registration | A02 + A03 | A58 | | |
| 5. Prohibited international registration | A02 + A03 | A23 | | |

Tabelle F-1: List checks for responses in the Acknowledgement Report of a Schedule Message

| Description of the check | ReasonCodes in the Acknowledgement Report | | | |
|---|---|---|---|---|
| | Message | TimeSeries | Interval | Reason Text/ Comment |
| 6. Capacity Contract Type and Capacity Agreement Identification missing | A02 + A03 | A69 | | Capacity Contract Type und / oder Capacity Agreement Identification expected |
| c) Internal schedules<br>Business Type A02 | | | | |
| 1. In Area = Out Area = own scheduling area | A02 + A03 | A22 | | In Area = Out Area = Receiver (Area) expected |
| 2. In Party <> Out Party | A02 + A03 | A23 | | In Party <> Out Party expected |
| 3. One party shall be equivalent to the sender | A02 + A03 | A23 | | One Party = Sender or Subject Party expected |
| d) Production schedule:<br>Business Type A01 | | | | |
| 1. In Area = own scheduling area | A02 + A03 | A22 | | In Area = Receiver (Area) expected |
| 2. If Out Area indicated:<br>In Area = Out Area = own scheduling area | A02 + A03 | A22 | | In Area = Out Area = Receiver (Area) expected |
| 3. In Party = Sender | A02 + A03 | A23 | | In Party = Sender or Subject Party expected |
| 4. If Out Party indicated:<br>Out Party = 11XFC-PROD-----E | A02 + A03 | A23 | | Out Party = 11XFC-PROD-----E expected |
| 5. Declaration of the energy quantities in the balancing contract for electricity exceeded | A01 + A03 | A10 | | Transgression of the declared FC-Prod value; Transgressions do not lead to a rejection |
| e) Consumption schedule:<br>Business Type A04 | | | | |
| 1. Out Area = own scheduling area | A02 + A03 | A22 | | Out Area = Receiver (Area) expected |
| 2. If In Area indicated:<br>In Area = Out Area = own scheduling area | A02 + A03 | A22 | | In Area = Out Area = Receiver (Area) expected |
| 3. Out Party = Sender | A02 + A03 | A23 | | Out Party = Sender or Subject Party expected |
| 4. If In Party indicated:<br>In Party 11XFC-CONS-----0 | A02 + A03 | A23 | | In Party 11XFC-CONS-----0 expected |
| 5. | | | | |
| 6. Declaration of the energy quantities in the balancing contract for electricity exceeded | A01 + A03 | A10 | | Transgression of the declared FC-CONS value; Transgressions do not lead to a rejection |
| f) Forecast Redispatch<br>Business Type A85 | | | | |

Tabelle F-1: List checks for responses in the Acknowledgement Report of a Schedule Message

| Description of the check | ReasonCodes in the Acknowledgement Report | | | |
|---|---|---|---|---|
| | Message | TimeSeries | Interval | Reason Text/ Comment |
| 1. In Area = Out Area = own scheduling area | A02 + A03 | A22 | | In Area = Out Area = Receiver (Area) expected |
| 2. In Party <> Out Party | A02 + A03 | A23 | | In Party <> Out Party expected |
| 3. One party shall be equivalent to the sender | A02 + A03 | A23 | | One Party = Sender or Subject Party expected |
| g) Schedule columns present multiple times | A02 + A03 | A55 | | |
| ***Versioning*** | | | | |
| 1. Values were changed for the same version number | A02 + A03 | A50 | A50 | |
| 2. Version number < version number of available TimeSeries | A02 + A03 | A50 | | |
| 3. Invalid version number, e.g. “0” or greater as the Message ID | A02 + A03 | A50 | | |
| 4. New TimeSeries with an invalid version number was added | A02 + A03 | A50 | | |
| **Period** | | | | |
| Period Time Interval (UTC format) | A02 + A03 | | | shall coincide with the Schedule Time Interval |
| Resolution: Only “PT15M” is accepted | A02 + A03 | A49 | A49 | “PT15M” is expected |
| **Interval** | | | | |
| ***Period (Interval.Pos)*** | | | | |
| a. Every position shall occur once. | A02 | A49 | A49 | |
| b. Number of values (periods) | | | | |
| 1. Winter/summer time change (92 values expected) | A02 | A49 | A49 | 92 periods expected |
| 2. Summer/winter time change (100 values expected) | A02 | A49 | A49 | 100 periods expected |
| 3. Other days (96 periods expected) | A02 | A49 | A49 | 96 periods expected |
| ***Value verification (Interval.Qty)*** | | | | |
| a. Value is not a number (Format Real) | A02 | A42 | A42 | |
| b. Negative numbers | A02 | A46 | A46 | |
| c. More than 3 decimal points | A02 | A42 | A42 | |
| d. Declaration of the energy quantities in the balancing contract for electricity exceeded | A01 | | A10 | Transgression of the declared FC-PROD or FC-CONS value; Transgressions do not lead to a rejection |

## Appendix F.2 List of responses in the Acknowledgement Report of Status-Request

The following table offers an overview of the checks currently implemented. The table is not necessarily complete.

Tabelle F-2: List of checks for responses in the Acknowledgement Report of Status-Request

| Description of the check | ReasonCodes in theAcknowledgement-Report | |
|---|---|---|
| | **Message** | **Reason Text / Remarks** |
| **Message Level** | | |
| Status Request isend tot e correct scheduning area (Receiver ID gem. EIC-Code) | A02 + A53 | |
| Sender's balance group name (Sender ID pursuant to the EIC code) | A02 + A22 | |
| Wrong Role Attribut | A02 + A78 | |
| Schedule Time Interval: UTC-Format | A02 + A04 | |
| **Attribut Level** | | |
| **Allgemeine Prüfungen** | | |
| Expected Attribut missing | A02 + A69 | A 69: Reason Text: Name of the missing Attribute |
| Sender's balance group name (Sender ID pursuant to the EIC code) | A02 + A22 | |
| Wrong Role Attribut | A02 + A78 | |
| Schedule Time Interval: UTC-Format | A02 + A04 | |

# Appendix G Permitted business types within the scope of the market model

Table G-1 lists the business types for the schedule process that are permitted in the German market model.

Table G-1: Permitted Business Type

| Business Type | Description |
|---|---|
| A01 | Production (forecast) in a scheduling area (chapter 3.2.2.1) |
| A02 | Transactions within a scheduling area (chapter 3.2) |
| A03 | External time series using capacity rights<br>(capacity contract type and capacity agreement identification)<br>The formal checks (see chapter 4.2.3.1) check whether the *Capacity Contract Type* and *Capacity Agreement Identification* elements are present.<br>If not, the relevant schedule message marked as incorrect and rejected (chapter 3.1). |
| A04 | Consumption (forecast) in a scheduling area (chapter 3.2.2.2) |
| A06 | External time series without using capacity rights.<br>The *Capacity Contract Type* and *Capacity Agreement Identification* elements shall not be indicated in this case.<br>If the elements are indicated despite this, the relevant schedule message is marked as incorrect and rejected. (chapter 3.1). |
| A85 | Forecast Redispatch in a scheduling area (chapter 3.2.2.3) |