

Technical Balance Group Regulations

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List of abbreviations

Abbreviation	Meaning
ACK	Acknowledge Message
ANC	Anomaly Report for Capacity Violations
ANO	Anomaly Report for mismatches
BG	Balance group
BGM	Balance Group Manager
BT	Business Type
CAI	Capacity Agreement Identification
CONS	Consumption Time Series
CC	Coordination Center
CCP	Central Counter Party Does clearing and settlement for power exchanges
CCT	Capacity Contract Type
COT	Cut Off Time
DA	Day Ahead
DB AG	Deutsche Börse Aktien Gesellschaft
DSO	Distribution System Operator
DTD	Document Type Definition
ENTSO-E	European Network of Transmission System Operators for Electricity
EPEX Spot	European Power Exchange
ESRD	ENTSO-E Status Request Document
ESS-IG	ENTSO-E Scheduling System – Implementation Guide
fCNF	Final Confirmation
iCNF	Intermediate Confirmation
JAO S.A.	Joint Allocation Office Société Anonyme
TPS	Trade-responsible Party Schedule
LTC	Long-Term Contract
ML	Merchant Line
PROD	Production Time Series
PUMP	Pump power Time Series
PP	Power Plant
PT	Process Type
PTR	Physical Transmission Right
RD	Rights Document
SA	Scheduling Area
SAS	Scheduling Area Schedule
SAX	Scheduling Area exchange Schedule
VP	Verification Platform

XBID	Cross border Intraday
XML	Extensible Markup Language
XSD	XML Schema Definition

Preamble

The following Technical Balance Group Regulations form an integral part of the Balance Group Contract between Swissgrid and the BGM. They describe the provisions governing the operational implementation of the Balance Group Contract and the management of schedule messages and balance group billing.

The general requirements and procedures applicable to balance groups are contained in the General Balance Group Regulations, which likewise form an integral part of the Balance Group Contract.

1 Trade in schedule management

1.1 General

Two trade types are differentiated between in the context of schedule management:

- A. internal trade
- B. external trade

Refer to Figure 1 below for a graphical overview of the two trade types.

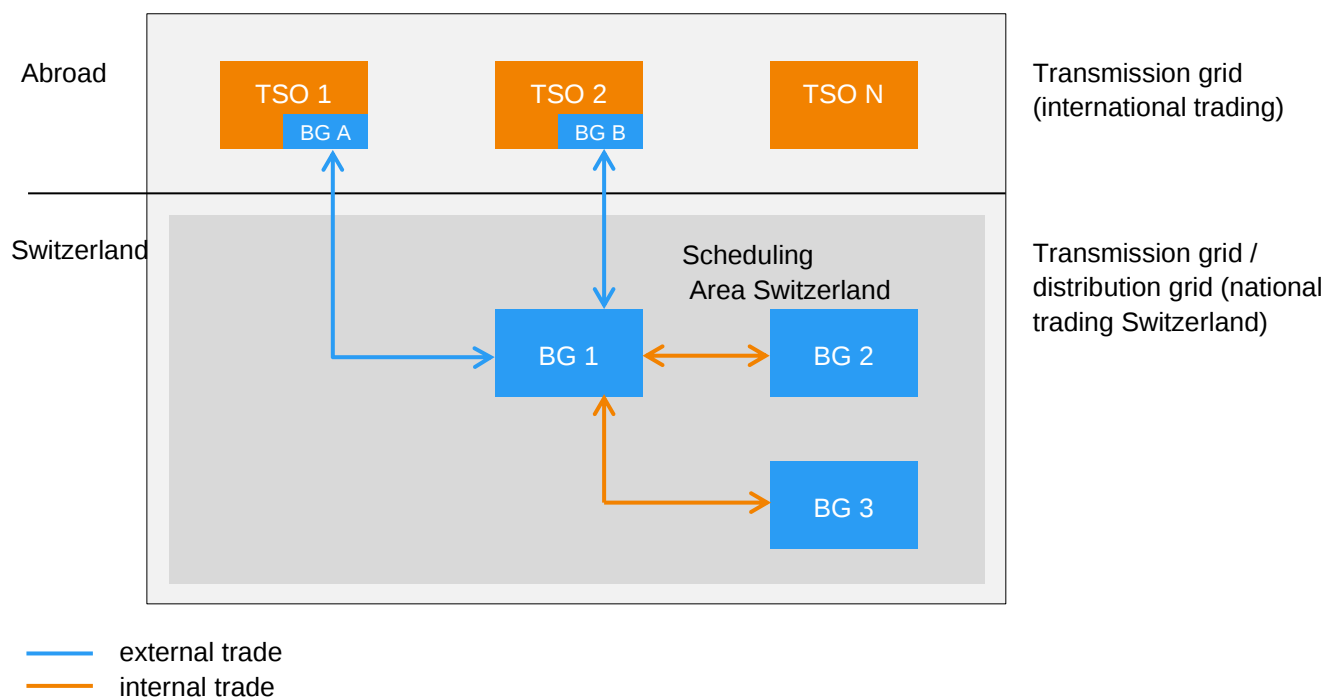


Fig. 1: Balance group model – schematic representation of internal and external schedule submission

All cross-border schedules (external trade) must be nominated by the balance groups on the basis of rights (long-term, day-ahead, and intraday). The time series already submitted and agreed in previous versions must also be included in the new schedule message. No changes may be made to schedule values which have already been matched in a previous process step (e.g. LT schedule values in DA). Exceptions to this are the LTC rights at the Swiss-French border.

A rights-based schedule coordination is carried out between Switzerland and the TSOs Italy, France, Austria and Transnet BW. The rights-based schedule-coordination between Swissgrid and Amprion is currently not planned.

1.2 Overview of the individual business types for each border

The following table shows the individual business types for each border and the attributes to be considered for BG schedule message submission, in the form of Business Type (BT), Process Type (PT), Capacity Contract Type (CCT) and Capacity Agreement Identification (CAI).

Business type	Process type	Business type	Process type	Capacity Contract Type	Capacity Agreement Identification
Internal trade (incl. schedules based on Power-Plant (PP)-Shares)	Day-ahead	«A02» (Internal trade)	«A17» (Schedule day)	None	
	Intraday	«A02» (Internal trade)	«A17» (Schedule day)	None	
	Post-scheduling	«A02» (Internal trade)	«A17» (Schedule day)	None	
External trade (with capacity check) CH-AT	Long-term	«A03» (External trade explicit capacity)	«A17» (Schedule day)	«A04» (Yearly) «A03» (Monthly)	as provided by JAO
	Day-ahead	«A03» (External trade explicit capacity)	«A17» (Schedule day)	«A01» (Daily)	as provided by JAO
	Intraday	«A03» (External trade explicit capacity)	«A17» (Schedule day)	«A07» (Intraday contract)	as provided by DB AG
External trade (with capacity check) CH-DE	Long-term	«A03» (External trade explicit capacity)	«A17» (Schedule day)	«A04» (Yearly) «A03» (Monthly)	as provided by JAO
	Day-ahead	«A03» (External trade explicit capacity)	«A17» (Schedule day)	«A01» (Daily)	as provided by JAO
	Intraday	«A03» (External trade explicit capacity)	«A17» (Schedule day)	«A07» (Intraday contract)	as provided by DB AG
External trade (with capacity check) CH-FR	Long-term	«A03» (External trade explicit capacity)	«A17» (Schedule day)	«A12» (Historical contract) «A04» (Yearly) «A03» (Monthly)	For A12: according to agreement between RTE and Swissgrid Otherwise: as provided by JAO
	Day-ahead	«A03» (External trade explicit capacity)	«A17» (Schedule day)	«A01» (Daily)	as provided by JAO
	Intraday	«A03» (External trade explicit capacity)	«A17» (Schedule day)	«A07» (Intraday contract)	as provided by DB AG
	Intraday (balancing)	«A03» (External trade explicit capacity)	«A17» (Schedule day)	«A11» (Intraday balancing mechanism)	as provided by DB AG
External trade (with capacity check) CH-IT	Long-term	«A03» (External trade explicit capacity)	«A17» (Schedule day)	«A12» (Historical contract) «A04» (Yearly) «A03» (Monthly)	For A12: according to agreement between Terna and Swissgrid Otherwise: as provided by JAO
	Day-ahead	«A03» (External trade explicit capacity)	«A17» (Schedule day)	«A01» (Daily)	as provided by JAO

Business type	Process type	Business type	Process type	Capacity Contract Type	Capacity Agreement Identification
	Intraday ¹	„A03“ (External trade explicit capacity)	«A17» (Schedule day)	“A07” (Intraday Contract)	as provided by JAO
Consumption forecast («CONS»)	Day-ahead	«A04» (Consumption)	«A17» (Schedule day)	None	
	Intraday	«A04» (Consumption)	«A17» (Schedule day)	None	
	Post Scheduling	“A04” (Consumption)	“A17” (Schedule Day)	Keiner	
Production forecast («PROD»)	Day Ahead	“A01” (Production)	“A17” (Schedule Day)	Keiner	
	Intraday	“A01” (Production)	“A17” (Schedule Day)	Keiner	
	Post Scheduling	“A01” (Production)	“A17” (Schedule Day)	Keiner	
Pump power forecast («PUMP»)	Day Ahead	“B27” (Pump power)	“A17” (Schedule Day)	Keiner	
	Intraday	“B27” (Pump power)	“A17” (Schedule Day)	Keiner	
	Post Scheduling	“B27” (Pump power)	“A17” (Schedule Day)	Keiner	
Secondary control energy	Post-scheduling	«A12» (Secondary control)	«A17» (Schedule day)	None	
Schedule activated tertiary control reserve	Post-scheduling	«A10» (Tertiary control) «A98» (TERRE) «A97» (MARI)	«A17» (Schedule day)	None	
Control pooling (control pooling schedule for BG and difference schedule for BG of the ASP)	Post-scheduling	«A14» (Aggregated energy data)	«A17» (Schedule day)	None	
Energy deficit	Day-ahead	«A15» (Losses)	«A17» (Schedule day)	None	
National redispatch	Post-scheduling	«A85» (Internal redispatch)	«A17» (Schedule day)	None	
National longterm redispatch	Post-scheduling	“C81” (Long term international redispatch)	«A17» (Schedule day)	None	
Energy – reserve	Post-scheduling	“C89” (energy – reserve)	«A17» (Schedule day)	None	

Table 1: Overview of the individual Business Type (BT), Process Type (PT), Capacity Contract Type (CCT) and Capacity Agreement Identification (CAI) for each border

¹ At the Switzerland-Italy border, available capacity is allocated by JAO in two explicit intraday auctions (the first on day D-1 at 4.15 p.m. and the second on day D at 9.15 a.m.)

1.3 Consumption-, production- and pump power forecast (CONS/PROD/PUMP)

Balance groups with metering points must nominate the consumption- production and pump power forecast (CONS/PROD/PUMP) in the TPS (TPS = **T**rade-responsible **P**arty **S**chedule). Otherwise the whole TPS will be rejected. If no pump power is currently available, zero values have to be submitted.

Balance groups without metering points submit either no consumption - production and pump power forecast or a consumption- production and pump power forecast with zero values in the TPS. Otherwise the whole TPS will be rejected.

These forecasts must be nominated in the first schedule version. In the intraday, the same lead times apply as for internal trades.

Value changes in the forecasts are permitted until the post-scheduling adjustment process.

1.4 Internal trade

The exchange of electrical energy between balance groups in Switzerland is managed in the form of internal trade. All BGMs can exchange electrical energy with one another via their respective balance groups by means of netted schedule messages. This is presupposing that the involved balance group schedule messages have been submitted to Swissgrid with the same business type and identical schedule values. The process comprises the following steps (see also Fig. 2). The BGMs concerned coordinate all schedule messages with one another. Following this coordination, the BGMs must submit the schedule messages to Swissgrid via TPS within the time period specified by Swissgrid.

Swissgrid carries out the formal validation and schedule coordination.

If any discrepancies are revealed by the formal validation or the schedule coordination, the BGM concerned is notified by Swissgrid. The BGM may correct incorrect schedule messages within the time period specified by Swissgrid.

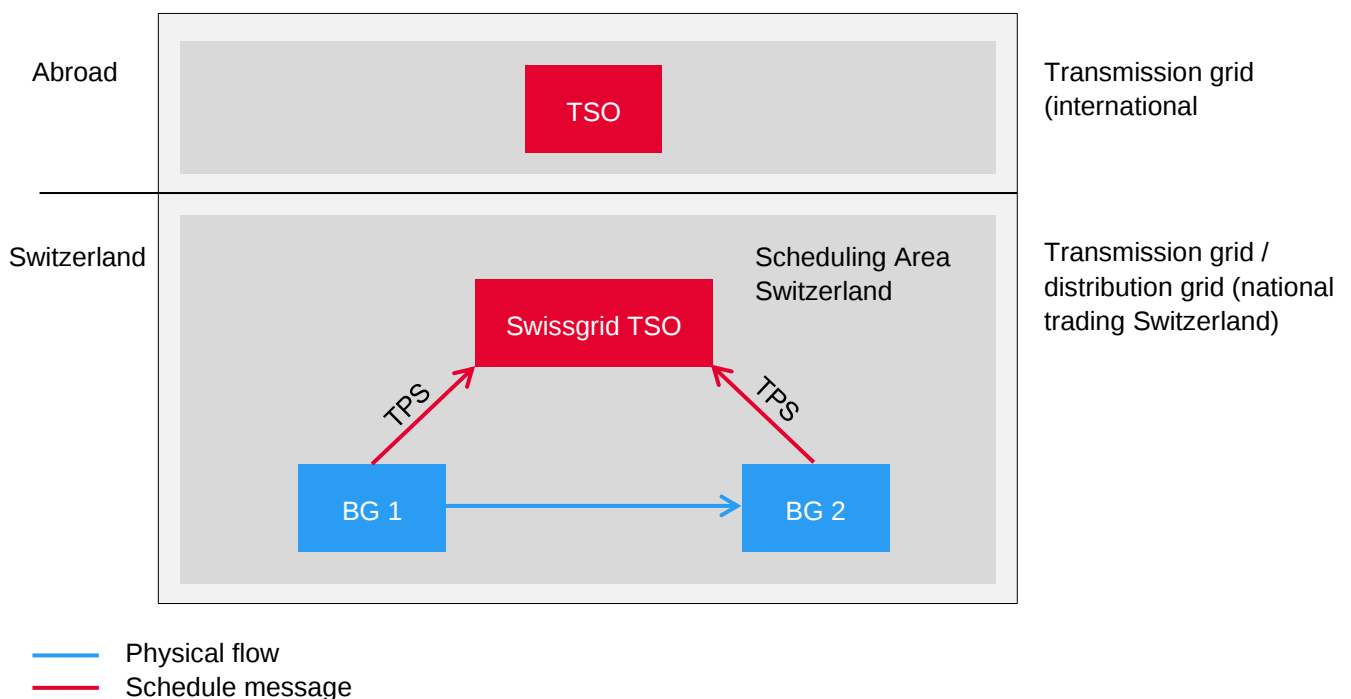


Fig. 2: Internal trade within the Swiss Scheduling area

1.5 External trade

External trade involves the exchange of electrical energy between a balance group in the Swiss scheduling area and a balance group in a scheduling area adjoining the Swiss scheduling area, whereby the balance group in Switzerland and the balance group in the neighbouring scheduling area are generally assigned to the same BGM (A:A nomination). Alternatively, another process may be applied to each border (e.g. M:N nomination). This is published on the Swissgrid website (www.swissgrid.ch) or in the corresponding allocation rules. The process comprises the following steps (see also Figure 3):

The BGM must submit to Swissgrid and the BGM abroad to the corresponding neighbouring TSO, a schedule message (TPS) that corresponds to the counterpart schedule message within the specified time periods.

Swissgrid carries out the formal validation and the capacity check of the received schedule messages. The TSO in the adjacent scheduling area concerned carries out a similar validation of the schedules submitted to it. Then Swissgrid and the neighbouring TSO carry out schedule coordination by means of a comparison of the corresponding SAS and TPS, taking into account the capacity rights in the rights document.

If any discrepancies are revealed by the formal validation, the capacity check or the schedule coordination, the BGM concerned is notified by Swissgrid. The BGM is obliged to correct any incorrect schedule messages within the specified time period.

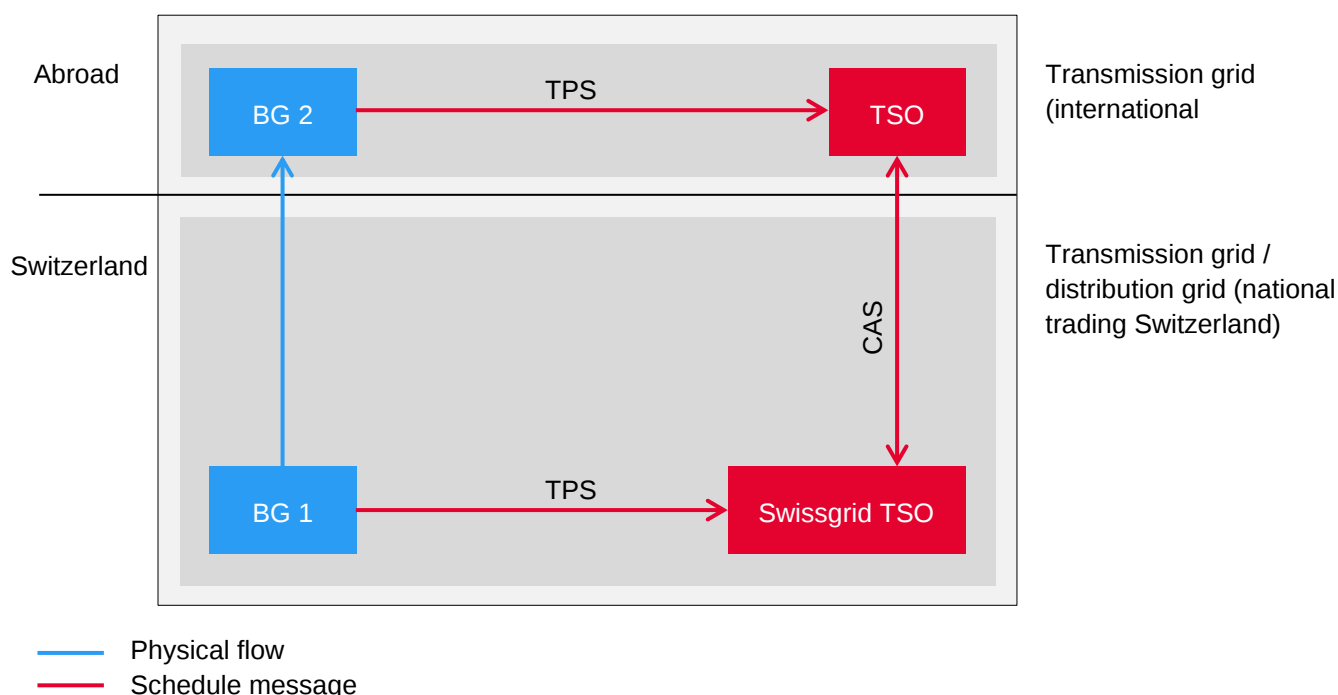


Fig. 3: External trade between scheduling areas

2 Classification of schedule messages

Schedule messages are classified as follows:

- **«submitted»** means that a schedule message has been submitted to Swissgrid in accordance with the DTD/XSD and ESS-IG.
- **«accepted»** means that a schedule message has been read into the scheduling system following a formal validation.
- **«rejected»** means that a schedule message, or one or more schedule time series or consumption time series, has not been read into the schedule system following a formal validation.
- **«matched»** means that a schedule time series has successfully passed the capacity check as well as schedule coordination. The BGM receives an Intermediate Confirmation Report (iCNF).
- **«confirmed»** one distinguishes between an “intermediate” (iCNF) and a “final” Confirmation) (fCNF). iCNF means, the submitted schedule is confirmed to the sender as matched. This happens after each successful matching ahead of the final Intra-Day submission deadline. fCNF means that the schedule has been implemented. After the final submission deadline on the schedule day, i.e. after the end of the post-scheduling adjustment process, the BGM receives a Final Confirmation Report (fCNF).

3 Additions to the ESSIG

Schedule message submission and coordination is managed in Switzerland in accordance with the ENTSO-E (www.entsoe.eu) Scheduling System – Implementation Guide (ESS-IG). These Technical Balance Group Regulations take precedence over the ESS-IG.

The structure of the schedule messages is based on the rules described in Clause 3.3 of the ESS IG v2r3. The following supplementary, specific or contrary provisions must be complied with in connection with the ESS IG rules referred to below:

- Re. rule 1:** The BGM must submit all schedule messages in XML format in accordance with the ESS IG v2r3.
- Re. rule 3:** If a time series is rejected in the long-term, day-ahead and intraday process, the entire message is not discarded (each time series is checked individually and accepted or discarded). In the post-scheduling adjustment process, the entire message is always discarded in the event of an error. The stipulations pursuant to Clause 1.3 apply to the consumption, production and pump power time series (CONS, PROD, PUMP).
- Re. rule 10:** A schedule time series always comprises the full calendar day. A schedule time unit comprises 15 minutes. Each schedule time series thus comprises 96 schedule time units. Exceptions are 92 schedule time units at the start of summer time and 100 schedule time units at the start of winter time (see also fig. 4).

- Re. rule 11:** The time interval of the schedule message must be identical to the time intervals of the schedule time series it contains. The start and end time of this interval are specified in UTC (local day 12.00 a.m. to 12.00 a.m., see also Clause 5).
- Re. rule 12:** Negative values are not allowed in schedule time series. The direction is not determined by a sign but by the following information: «out area», «in area» and/or «out party», «in party». The schedule time series are netted schedules, i.e. if energy supplies are exported and imported on one schedule day, then two time series must be submitted. Only one of these two schedule time series can be not equal to zero in each schedule time unit. This rule does not apply to external schedules with rights-based submission.
- Re. rule 14:** Values for a schedule time series are specified as mean power. MW (code «MAW») is defined as the unit. Up to three decimal digits are allowed. A full stop («.») is always used as the decimal separator. The decimal digits are not mandatory. Omitted decimal digits are assumed to be zero (100 MAW = 100.000 MAW). Schedule coordination for internal trades takes account of the three decimal digits (152.006 ≠ 152.007). Different provisions apply to external trades, depending on the border.

The following additional rule applies to all schedule messages: The sender of a schedule message specifies the version number. All reply messages (Acknowledgement Message, Anomaly Report for mismatches, Anomaly Report for capacity violations, Intermediate Confirmation Report or Final Confirmation Report) include the version number of the schedule message concerned.

A schedule message should normally consist exclusively of schedule time series which contain a value not equal to zero in at least one schedule time unit (exception: schedule time series in accordance with the ESS IG Clause 3.3, Rule 13). Unsubmitted but anticipated schedule time series are interpreted as schedule time series with zero values.

In a schedule message Swissgrid accepts only the letters «A to Z» as well as «a to z» in the English character set, the numbers «0-9» and the special characters underscore «_» and hyphen «-».

Different values may be contained in the schedule messages for each schedule time unit.

In the case of external schedule time series, the schedule processing guidelines of the TSO responsible at the respective borders must be observed.

4 Version numbers in schedule messages

Version numbers must be specified in compliance with ESSIG Clause 4.2.2.1.1.

The allocation of version numbers starts again at 1 every day. They must be indicated in each schedule time series as well as in the message header of the schedule message (see also Table 2).

Example 1: First submission of a schedule message

Version number of the schedule message	Schedule time series of the schedule message	Version number of the schedule time series
1	Schedule time series 1	1
	Schedule time series 2	1
	Schedule time series 3	1

A schedule message must be rewritten and resubmitted each time its content changes. The version number of the schedule message («message version») must be increased, and the changed schedule time series identified with this new version number (see also Example 3 and Example 4). Otherwise, the schedule time series is interpreted as unchanged and rejected in the schedule coordination.

Example 2: Second submission of the schedule message (schedule time series 2 changed)

Version number of the schedule message	Schedule time series of the schedule message	Version number of the schedule time series
2	Schedule time series 1	1
	Schedule time series 2	2
	Schedule time series 3	1

Example 3: Third submission of the schedule message (schedule time series 1 and 3 changed)

Version number of the schedule message	Schedule time series of the schedule message	Version number of the schedule time series
3	Schedule time series 1	3
	Schedule time series 2	2
	Schedule time series 3	3

If a schedule time series is added to the schedule message, the version number of the schedule message is increased by 1 and the new schedule time series is identified with this version number.

Example 4: Fourth submission of the schedule message (addition of a new schedule time series 4)

Version number of the schedule message	Schedule time series of the schedule message	Version number of the schedule time series
4	Schedule time series 1	3
	Schedule time series 2	2
	Schedule time series 3	3
	Schedule time series 4	4

If the unchanged schedule message needs to be processed again, the version numbers of the schedule message itself and all schedule time series must be increased (see also Example 5).

Example 5: Fifth submission of the schedule message (all schedule time series are unchanged but need to be read in again)

Version number of the schedule message	Schedule time series of the schedule message	Version number of the schedule time series
5	Schedule time series 1	5
	Schedule time series 2	5
	Schedule time series 3	5
	Schedule time series 4	5

When transferring from long-term to day-ahead process, from day-ahead to intraday process or from intraday to the post-scheduling adjustment process, the version numbers need to be further incremented. The message ID remains unchanged.

The allocation of a version number is in general always the responsibility of the ESS participant creating the schedule message.

5 Times in schedule messages

All times and dates given in the document are in local Swiss time (CET).

All times in schedule messages must be specified in UTC. UTC deviates from local Swiss time (CET) by one hour in winter and two hours in summer (refer also to Figure 4).

Times are specified as follows in the schedule messages:

YYYY-MM-DDTHH:MMZ/YYYY-MM-DDTHH:MMZ in UTC

YYYY: year

MM: month

DD: day

HH: hour

MM: minute

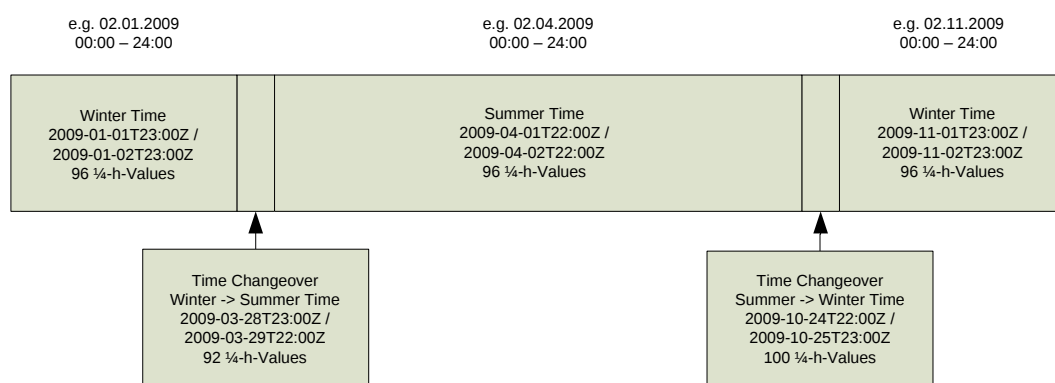


Fig. 4: Changeover to summer or winter time (times in CET)

6 Schedule difference rules

The schedule difference rules are applied if, at the settlement deadline, schedule differences exist between the schedule time series of the BGM and the corresponding schedule time series or capacity rights are not adhered to. Special rules can be applied to special processes. A distinction is made between the following cases:

6.1 Internal trade

Day-Ahead process

- If the schedule time units concerned have the same electrical energy delivery direction in both the schedule message and the counterpart schedule message, the lower of the two values in the schedule message and the counterpart schedule message is selected in the event of schedule differences between these schedule time units.
- If the electrical energy delivery direction is not the same in the schedule message and in the counterpart schedule message, the relevant schedule time series in the two schedule messages are set to zero in the schedule time units concerned.
- A missing schedule time series is considered to be a time series with zero values.
- Despite the provisions above, in the event of a mismatch between the schedule time series of the balance group and the Central Counterparty (CCP), the values of the Central Counterparty (CCP) shall be used..

Intraday / post scheduling adjustment process

- Intraday process > If there is a mismatch at 23:45, the market rule would be applied.
- Post scheduling adjustment process > If there is a mismatch at D+2 16:00, the market rule would be applied.
- Irrespective of whether the electrical energy delivery direction in the schedule message and in the counterpart schedule message is the same or not, the schedule time series concerned of the two schedule messages in the schedule time units concerned are set to the last successfully matched status. When a schedule message is submitted for the first time the last matched status is zero.
- In the case of the delivery of schedules by Swissgrid to the BGM as part of the processing of ancillary services, Swissgrid's values shall take precedence in the event of differences.
- Notwithstanding the above provisions, in the event of a mismatch between the schedule time series of the balance group and the Central Counterparty (CCP), the values of the Central Counterparty (CCP) shall be used.

6.2 External trades

The schedule difference rules for external trades described below apply to COT for the respective process (Long-term, Day Ahead, and Intraday).

6.2.1 Schedule difference rules in the long-term process

Swiss-German border

At this border there is no LT-coordination between Swissgrid and the TSOs. Only compliance with the capacity rights assigned by JAO is verified. A matching process between Swissgrid and the TSOs only takes place in the day-ahead process.

Swiss-Austrian border

- In the case of schedule differences, the lower value of the corresponding schedule time series is adopted in each case. If there is no such schedule time series in the SAS of APG, the schedule time series of the corresponding balance group is set to zero.
- In the event that the capacity rights of the schedules are exceeded, the values of the corresponding schedule time series are reduced to the values in the rights document.
- If there are schedule differences and the capacity rights are exceeded, the lower value between the two rules for schedule differences and capacity overruns is always to be adopted.

Swiss-Italian border

- In the event that there are schedule differences in compliance with the capacity rights, the lower of the two schedule values is adopted. If there is no such schedule time series in the SAS of TERN, the schedule time series of the corresponding balance group is set to zero.
- In the event that the capacity rights of the schedules are exceeded, the values of the corresponding schedule time series are reduced to the values in the rights document.
- In the event that the sum of the schedules of the individual supply relationships (M:N) are exceeded the capacity rights, a pro-rata reduction of the individual supply relationships (M:N), which are based on the same CAI is carried out, for the values in the rights document².
- If there are schedule differences and the capacity rights are exceeded, the lower value from the two SAS files of TERN and Swissgrid is adapted. In case the resulting value still violates the corresponding capacity right, a pro-rata reduction of the individual supply relationships (M:N), which are based on the same CAI is carried out, based on the respective value in the rights document.

Swiss-French border

- In the event that there are schedule differences in compliance with the capacity rights, the schedule value submitted in the SAS by RTE shall apply. If there is no such schedule time series in the SAS of RTE, the schedule time series of the corresponding balance group is set to zero.
- In the event that the capacity rights of the schedules are exceeded, the values of the corresponding schedule time series are reduced to the values in the rights document.

² A pro-rata reduction is applied to all schedule time series that are based on the same CAI. This is a proportional reduction, for which the total of all the schedule values with the same CAI is placed in relation to the capacity right according to the rights document (corresponding to proportionality factor) and multiplied by the schedule value. The values are rounded down to full MW.

6.2.2 Schedule time differences in the day-ahead process

It is a fundamental rule that any LT schedule time series that are already matched are confirmed according to d-1 LT COT and can no longer be changed³.

Swiss-Austrian border

- In the case of schedule differences, the lower value of the corresponding DA schedule time series is adopted in each case. If there is no such DA schedule time series in the SAS of APG, the DA schedule time series of the corresponding balance group is set to zero.
- In the event that the capacity rights of the schedules are exceeded, the values of the corresponding DA schedule time series are reduced to the values in the rights document.
- If there are schedule differences and the capacity rights are exceeded, the lower value from the two rules for schedule differences and capacity overruns must always be adopted.

Swiss-Italian border

- In the case of schedule differences in compliance with the capacity rights, the lower value of the corresponding DA schedule time series is adopted in each case. If there is no such DA schedule time series in the SAS of Terna, the DA schedule time series of the corresponding balance group is set to zero.
- In the event that the capacity rights of the schedules are exceeded, the values of the corresponding DA schedule time series are reduced to the values in the rights document.
- If there are schedule differences and the capacity rights are exceeded, the lower value from the two rules for schedule differences and capacity overruns must always be adopted.

Swiss-German border

- In the event that there are schedule differences in compliance with the capacity rights, the schedule value submitted in the SAS by the neighbouring TSO shall apply. If there is no such schedule time series in the SAS of the neighbouring TSO, the schedule time series of the corresponding balance group is set to zero.
- In the event that the capacity rights of the schedules are exceeded, the values of the corresponding schedule time series are reduced to the values in the rights document.

Swiss-French border

- In the case of schedule differences in compliance with the capacity rights, the lower value of the corresponding DA schedule time series is adopted in each case. If there is no such DA schedule time series in the SAS of RTE, the DA schedule time series of the corresponding balance group is set to zero.
- In the event that the capacity rights of the schedules are exceeded, the values of the corresponding DA schedule time series are reduced to the values in the rights document.
- If there are schedule differences and the capacity rights are exceeded, the lower value from the two rules for schedule differences and capacity overruns must always be adopted.

³ There is no separate LT schedule coordination process for the Swiss-German border. The LT schedule time series are matched in the course of the day-ahead schedule process.

6.2.3 Schedule difference rules in the intraday process

Swiss-Austrian, Swiss-German and Swiss-French border

- In the case of differences between the schedules of the balance group and of the capacity rights according to the rights document, these values are replaced by the values of the current rights document.

Swiss-Italian border

- In the case of schedule differences in compliance with the capacity rights, the lower value of the corresponding ID schedule time series is adopted in each case. If there is no such ID schedule time series in the SAS of Terna, the ID schedule time series of the corresponding balance group is set to zero.
- In the event that the capacity rights of the schedules are exceeded, the values of the corresponding ID schedule time series are reduced to the values in the rights document.
- If there are schedule differences and the capacity rights are exceeded, the lower value from the two rules for schedule differences and capacity overruns must always be adopted.

7 Capacity check

Immediately on receipt of the rights document from JAO S.A. or DB AG for the long-term, day-ahead and intraday processes, Swissgrid first carries out a validation and then a capacity check of the submissions. The process is as follows:

a. CAI-CCT validation based on time series header level:

1. Valid CAI: The CAI specified for the schedule time series must be the same as the CAI submitted by JAO S.A. or DB AG in the rights document⁴.
2. Correct allocation of CAI and CCT in the schedule of the BGM. This allocation must correspond to the allocation in the rights document of JAO S. A. or DB AG.
3. The In Party or the Out Party in the schedule of the BGM must correspond to the rights owner according to the rights document.⁵
4. The In Area and the Out Area must be identical with the areas of the associated right from the rights document.

b. Capacity check based on time series value level:

Every time series positively validated in step a) is checked in terms of capacity compliance. A distinction is made between the following processes:

b-1) long-term, day-ahead

The individual values within a schedule time series do not violate a capacity right if the values are equal to or lower than the capacity right according to rights document.

b-2) intraday

The submitted schedules may not differ from the capacity rights from the rights document, i.e. may be neither lower nor higher.

⁴ This does not apply to LTC schedules with the CCT «A12» at the CH-FR and CH-IT borders.

⁵ If the schedule includes an A:A relationship, the in party and the out party in the BGM's schedule must correspond to the rights owner according to the rights document.

If the check according to step a) or step b) is not successful, the BGM receives an ANC Report. The BGM is thus asked to correct the affected schedule time series before COT. Otherwise, the schedule difference rules at the border in question apply according to Clause 6.2.

The following approach shall be followed by the BGM, in order to correct the affected schedule time series, in case the check according to step a) was not successful:

- In case of an invalid CAI or an invalid combination of CAI/CCT, the correction shall be performed in the already submitted time series.
- In case of an invalid combination of In Party / Out Party or an invalid combination of In Area / Out Area, the already submitted time series shall be set to 0 and a new time series, including the respective valid combination, shall be submitted.

The following table shows which CCTs of JAO S. A. and DB AG are transferred in the rights document and to which time horizon these are assigned. The capacity rights coordinated bilaterally between Swissgrid and the adjoining TSO are of type A12.

Time horizon	JAO S. A.	DB AG	Bilateral
Yearly (long-term)	A04		
Monthly (long-term)	A03		
Daily	A01		
Intraday	A07 ⁶	A07 ⁷	
Historical (long-term)			A12

Table 2: Overview of the CCTs used by the transmission capacity allocators in the rights document

⁶ Only applicable at the CH-IT border

⁷ Not applicable at the CH-IT border

8 Nomination rules

The following nomination rules are valid for the nomination processes at Swissgrid. Different rules may apply to cross-border schedule relationships with an allocation process. The respective allocation rules take precedence over these Technical Balance Group Regulations.

Yearly/monthly PTRs

	Border CH-DE ⁸	Border CH-FR	Border CH-AT	Border CH-IT
Nomination	Balance groups submit their schedules to Swissgrid for the following direction: CH->DE, DE->CH	Balance groups submit their schedules to Swissgrid for the following direction: CH->FR, FR->CH	Balance groups submit their schedules to Swissgrid for the following direction: CH->AT, AT->CH	Balance groups submit their schedules to Swissgrid for the following direction: CH->IT, IT->CH
Nomination principle	A:A	A:A and A:B (LTC schedules)	A:A	M:N (LTC and LT schedules)
Nominations deadline	D-1 2:30 p.m.	D-1 8:30 a.m.	D-1 8:00 a.m.	D-1 8:30 a.m.
Nomination type	Rights-based FP registration via CCT, CAI and direction, not netted ⁹	Rights-based FP registration via CCT, CAI and direction, not netted	Rights-based FP registration via CCT, CAI and direction, not netted	Rights-based FP registration via CCT, CAI and direction, not netted
Nomination timeframe	D-30 until D-1 2:30 p.m.	D-30 until D-1 8:30 a.m.	D-30 until D-1 8:00 a.m.	D-30 until D-1 8:30 a.m.
Decimal places	3	1	3	1
Format (see Clause 17.1.2)	ESS v2r3	ESS v2r3	ESS v2r3	ESS v2r3
Nomination resolution	15 minutes	15 minutes	15 minutes	15 minutes
Possibility of nominating different values within an hour	No	No	No	No
Schedule difference rules after COT	None, as no long-term schedule coordination	a) in the case of schedule differences: the RTE values apply b) in the event of capacity overruns: the RTE values apply	a) in the case of schedule differences: the lower value is adopted b) in the event of capacity overruns: the values in the rights document apply c) in the event of schedule	a) in the case of schedule differences: the lower value is adopted b) in the event of capacity overruns of a single supply relationship: the values in the rights document apply c) in the event of capacity overruns of the sum of the individual supply relationship with

⁸ While rights-based schedule submission does apply to the balance groups for the long-term process at the CH-DE border, LT schedule coordination does not take place.

⁹ Since the rights document of JAO is not netted, non-zero values for both directions of a specific border can be nominated for one specific time-interval

differences and capacity overruns: the lower value from rules a) and b) applies

the same CAI: pro rata reduction of the individual supply relationship to the values in the rights document

d) in the event of schedule differences and capacity overruns: the rule a) will be applied and then, if necessary, the rule b) or c).

Table 3: Yearly/monthly PTRs

Daily PTRs

	Border CH-DE	Border CH-FR	Border CH-AT	Border CH-IT
Nomination	Balance groups submit their schedules to Swissgrid for the following direction: CH->DE, DE->CH	Balance groups submit their schedules to Swissgrid for the following direction: CH->FR, FR->CH	Balance groups submit their schedules to Swissgrid for the following direction: CH->AT, AT->CH	Balance groups submit their schedules to Swissgrid for the following direction: CH->IT, IT->CH
Nomination principle	A:A	A:A	A:A	A:B
Nomination deadline	D-1 2:30 p.m.	D-1 2:30 p.m.	D-1 2:30 p.m.	D-1 2:30 p.m.
Nomination type	Rights-based FP registration via CCT, CAI and direction, not netted ¹⁰	Rights-based FP registration via CCT, CAI and direction, not netted	Rights-based FP registration via CCT, CAI and direction, not netted	Rights-based FP registration via CCT, CAI and direction, not netted
Nomination timeframe	From receipt of capacity rights from JAO to D-1 2.30 p.m.	From receipt of capacity rights from JAO to D-1 2.30 p.m.	From receipt of capacity rights from JAO to D-1 2.30 p.m.	From receipt of capacity rights from JAO to D-1 2.30 p.m.
Decimal places	3	1	3	1
Format (see Clause 16.1.2)	ESS v2r3	ESS v2r3	ESS v2r3	ESS v2r3
Nomination resolution	15 minutes	15 minutes	15 minutes	15 minutes
Possibility of nominating different values within an hour	Yes	No	Yes	Yes
Schedule difference rules after COT	a) Acceptance of the nomination from the respective TSO provided that	a) in the case of schedule differences: the lower value is adopted b) in the event of capacity overruns:	a) in the case of schedule differences: the lower value is adopted b) in the event of capacity overruns: the	a) in the case of schedule differences: the lower value is adopted b) in the event of capacity overruns: the values

¹⁰ Since the rights document of JAO is not netted, non-zero values for both directions of a specific border can be nominated for one specific time-interval

the capacity rights are respected ¹¹	the values in the rights document apply	values in the rights document apply	in the rights document apply
b) in the event of capacity overruns: the values in the rights document apply	c) in the event of schedule differences and capacity overruns: the lower value from rules a) and b) applies	c) in the event of schedule differences and capacity overruns: the lower value from rules a) and b) applies	c) in the event of schedule differences and capacity overruns: the lower value from rules a) and b) applies

Table 4: Daily PTRs

Intraday PTRs

	Border CH-DE	Border CH-FR	Border CH-AT	Border CH-IT
Nomination	Balance groups submit their schedules to Swissgrid for the following direction: CH->DE, DE->CH	Balance groups submit their schedules to Swissgrid for the following direction: CH->FR, FR->CH	Balance groups submit their schedules to Swissgrid for the following direction: CH->AT, AT->CH	Balance groups submit their schedules to Swissgrid for the following direction: CH->IT, IT->CH
Nomination principle	A:A	A:A	A:A	A:A
Nomination deadline	45 min. prior to start of delivery	45 min. prior to start of delivery this deadline applies also for control energy market (balancing mechanism)	45 min. prior to start of delivery	ID1: D-1 22:35 ID2: D 10:35
Nomination type	Netted ¹² Rights-based FP registration via CCT, CAI and direction	Netted Rights-based FP registration via CCT, CAI and direction	Netted Rights-based FP registration via CCT, CAI and direction	Non Netted Rights-based FP registration via CCT, CAI and direction
Nomination timeframe	As soon as CAI is known, up to 45 min. prior to start of delivery	As soon as CAI is known, up to 45 min. prior to start of delivery this applies also for control energy market	As soon as CAI is known, up to 45 min. prior to start of delivery	ID1: After receiving of rights documents from JAO until D-1 22:35 ID2: After receiving of rights documents from JAO until D 10:35
Decimal places	3	1	3	1

¹¹ Swissgrid receives for the border CH-DE a total netted SAS, including the netted sum of the yearly, monthly and daily PTRs. This means that in case the schedule difference rule shall be applied, the netted values shall be distributed to the rights-based CNF to the balance groups according to the following logic: Firstly the yearly, then the monthly and finally the daily capacity rights based on the RD from JAO will be used for the direction indicated in the netted SAS from the respective TSO.

¹² Since the rights document of DB AG is netted, non-zero values for only one direction of a specific border can be nominated for one specific time-interval.

	Border CH-DE	Border CH-FR	Border CH-AT	Border CH-IT
Format	ESS v2r3	ESS v2r3	ESS v2r3	ESS v2r3
Nomination resolution	15 minutes	15 minutes	15 minutes	15 minutes
Possibility of nominating different values within an hour	Yes	No	Yes	Yes
Schedule difference rules	the values in the rights document apply	the values in the rights document apply	the values in the rights document apply	a) In the case of schedule differences: lower value is adopted b) in the event of capacity overruns: the values in the rights document apply c) in the event of schedule differences and capacity overruns: the lower value from rules a) and b) applies

Table 5: Intraday PTRs

Post-scheduling

	Bilateral trades between BGs	Trades for the processing of ancillary services by Swissgrid
Nomination platform	Swissgrid	Swissgrid
Nomination principle	A:N	A:B (A = Swissgrid)
Nomination deadline	D+2 working days 4.00 p.m.	Submission of INS (Information Schedule) Data up to D+1 working days 11.00 a.m. Coordination D+1 00:00 a.m. - D+2 working days 4.00 p.m.
Nomination type	Total netted	Total netted
Nomination timeframe	From D-30 00:00 a.m. to D+2 working days 4.00 p.m.	From D-30 00:00 a.m. to D+2 working days 4.00 p.m.
Decimal places	3	3
Format (see Clause 16.1.2)	ESS V2R3 (business type A02)	ESS V2R3 (business type A10, A12, A14, A85, A97, A98, C81 or C89)
Matching rules	Last matched values	Swissgrid values shall prevail

Table 6: Post-scheduling

9 Long-term process

Fig. 5 shows the time sequence and Fig. 6 the process steps (without discrepancies or corrective measures) in the long-term process.

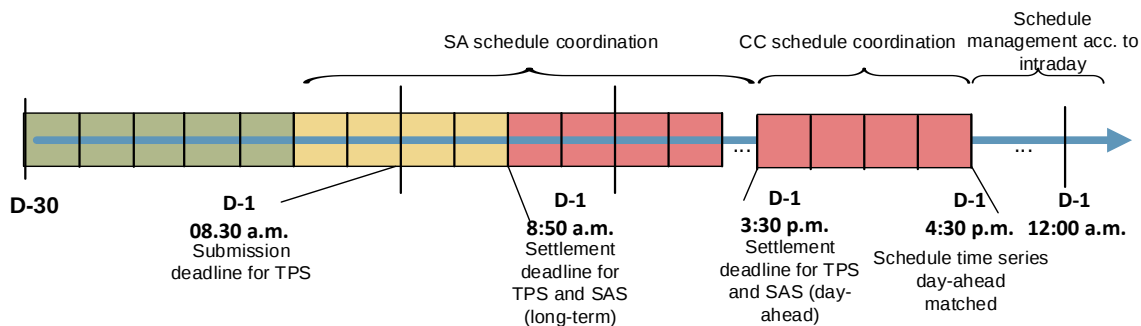


Fig. 5: Example of long-term process (times in CET and D-1)



Fig. 6: Example of long-term process (external trade)

D-30 until one day preceding the day on which the schedule message is executed (D-1):

By D-2, 12:30 p.m.

Schedules which are sent before submission of the rights document by JAO S. A. to Swissgrid are formally validated. The BGM then receives an acknowledgement message (ACK).

D-2 12:30 p.m.

JAO S. A. sends the rights document for the long-term process to Swissgrid and the neighbouring TSOs. Any schedules previously received and formally validated are now subjected to a capacity check as in Section 7. If capacity rights according to the rights document are exceeded, the affected BGMs receive an ANC.

By D-1 8:30 a.m.

Submission of schedule messages for the next day to Swissgrid by the BGM. The BGM

then receives an acknowledgement message (ACK). If capacity rights according to the rights document are exceeded, the affected BGMs receive an ANC.

D-1 8:30 a.m.¹³ Submission deadline for schedule messages submitted to Swissgrid by the BGM. Long-term schedule messages submitted after 8.30 a.m. are partially rejected if they contain new schedule time series. However, schedule differences and/or capacity overruns may be corrected.

From D-1 8:30 a.m.

Start of schedule coordination between Swissgrid and the TSO of the adjoining scheduling area. In the event of schedule differences, the affected BGMs receive an ANO. Schedule differences can be corrected by submitting a new long-term schedule message. Matched schedule time series can no longer be changed. Between 8:30 a.m. and 8:50 a.m., only schedule differences and capacity overruns are matched.

D-1 8:50 a.m. Settlement deadline¹⁴: From this point in time onwards, long-term schedule messages for correcting schedule differences can no longer be submitted by the BGMs. At the settlement deadline, all successfully matched long-term schedule messages are classified as «matched». If schedule differences still exist, they are corrected according to the schedule difference rules.

From D-1 9:00 a.m.

After the settlement deadline and the possible application of the schedule difference rules, Intermediate Confirmation Reports (ICNFs) are sent to the BGM. This means that the long-term schedule message is classified as «matched».

¹³ At the border with DE there is no LT-matching process between Swissgrid and the TSOs. The matching process between Swissgrid and the TSOs only takes place in the day-ahead process. For this reason, the submission deadline for schedule messages submitted to Swissgrid by the BGM is set at D-1 14:30. At the border with AT, the deadline is d-1 08:00

¹⁴ Cut-off deadline CH-IT: D-1 9:00 a.m. Cut-off deadline CH-AT: D-1 8:20 a.m.

10 Day-ahead process

Fig. 7 shows the time sequence and Fig 8 the process steps (without discrepancies or corrective measures) in the day-ahead process.

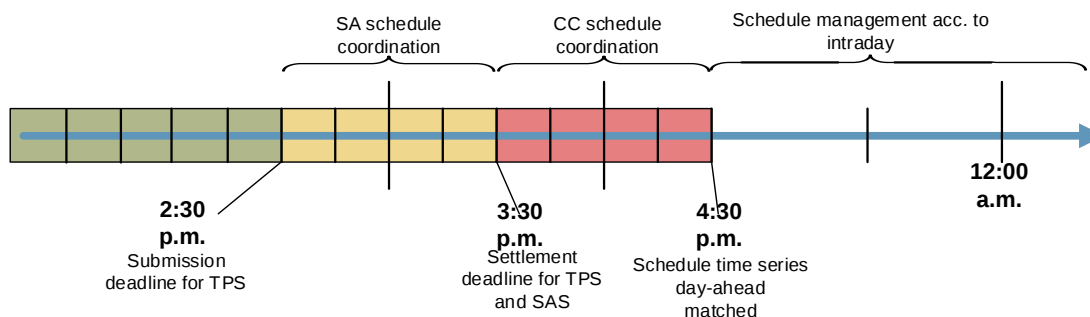


Fig. 7: Example of day-ahead process (times in CET and D-1)

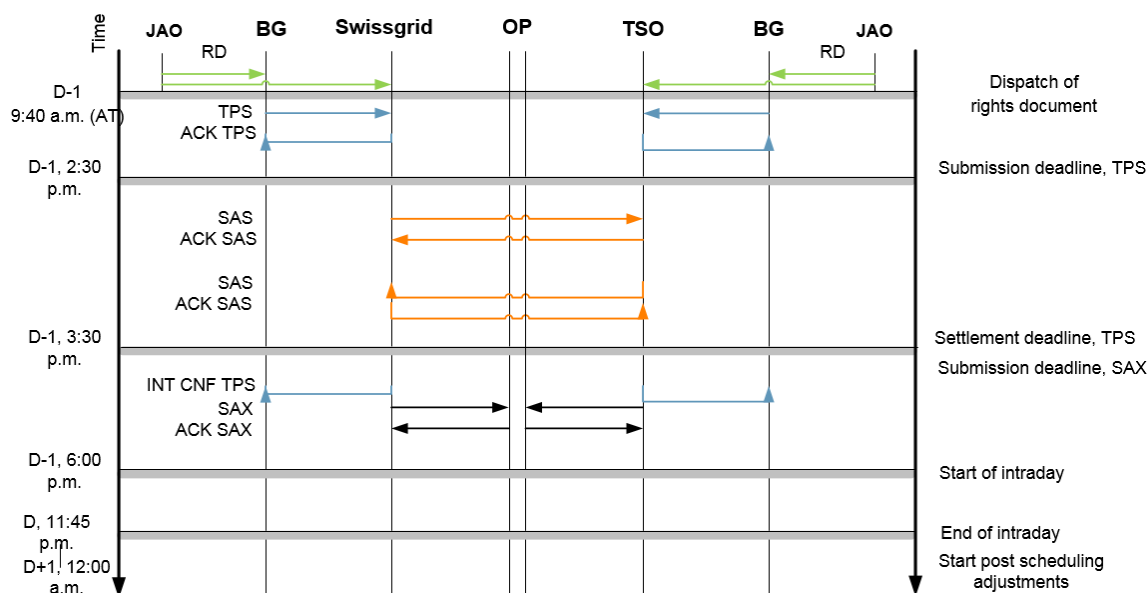


Fig. 8 shows the steps necessary for successful coordination process in the day-ahead process (without discrepancies or corrective measures).

Day preceding the day on which the schedule message is executed (D-1):

Until D-1 14:30

Submission of schedule messages for the next day to Swissgrid by the BGM. An acknowledgement message (ACK) is sent by Swissgrid to the BGM each time a schedule message is received. Schedules, which are sent before submission of the rights document by JAO S. A. to Swissgrid, are first formally validated. Following submission of the rights document, the schedules are subjected to a capacity check. If schedules exceed the capacity rights according to the rights document, the affected BGMS receive an ANC.

D-1 2:30 p.m.

Submission deadline for schedule messages submitted to Swissgrid by the BGM. Day-ahead schedule messages submitted after 2.30 p.m. are partially rejected if they contain new schedule time series or matched long-term schedule time series have subsequently been changed. However, corrections of schedule differences and/or exceedance of capacity's may be corrected. New schedule time series can only be submitted in the context of intraday schedule messages.

From D-1 2:30 p.m.

Start of schedule coordination in the Swiss scheduling area and between Swissgrid and the TSOs in the neighbouring scheduling areas. In the event of schedule mismatches, an Anomaly Report (ANO) is sent to the concerned BGM. Schedule differences can be corrected by submitting a new day-ahead schedule message. Matched schedule time series can no longer be changed.

D-1 3:30 p.m.

Cut-off deadline: From this point in time onwards, day-ahead schedule messages for correcting schedule differences can no longer be submitted by the BGM. At the cut-off deadline, all successfully matched day-ahead schedule messages are classified as «matched». If schedule differences still exist, they are corrected according to the schedule difference rules. Any DA schedule messages received after 3.30 p.m. which have been classified as DA schedule messages (CCT with coding «A01») are rejected.

From D-1 3:30 p.m.

After the cut-off deadline and the possible application of the schedule difference rules, Intermediate Confirmation Reports (iCNFs) are sent to the BGM. This means that the day-ahead schedule message is classified as «matched».

11 Intraday process for external trades on the borders with Germany, Austria and France

In addition to the modified or new schedule time series, intraday schedule messages always contain all schedule time series relating to the current day that have already been submitted. This includes long-term and day-ahead schedules. These can no longer be changed. They cover the whole day (12.00 a.m. to 12.00 a.m.).

Fig. 9 shows the time sequence and Fig. 10 the process steps (without discrepancies or corrective measures) in the intraday process.

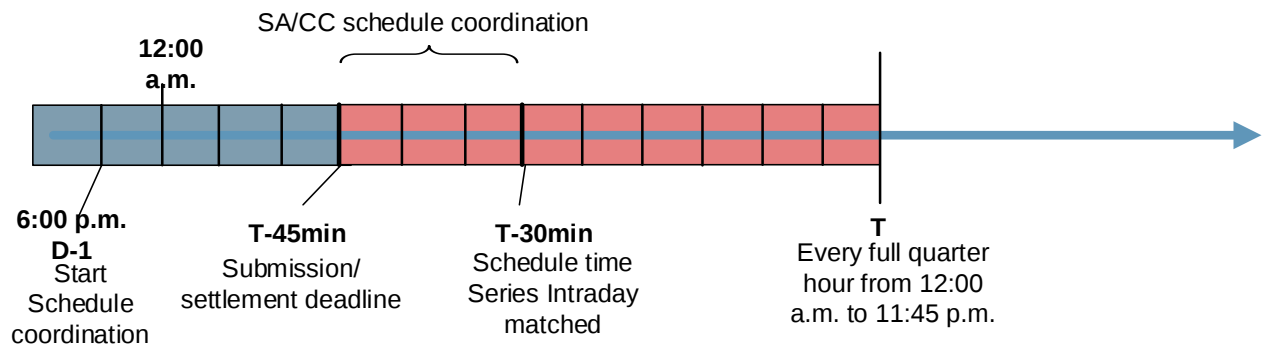


Fig. 9: Intraday process for external trades (times in CET)

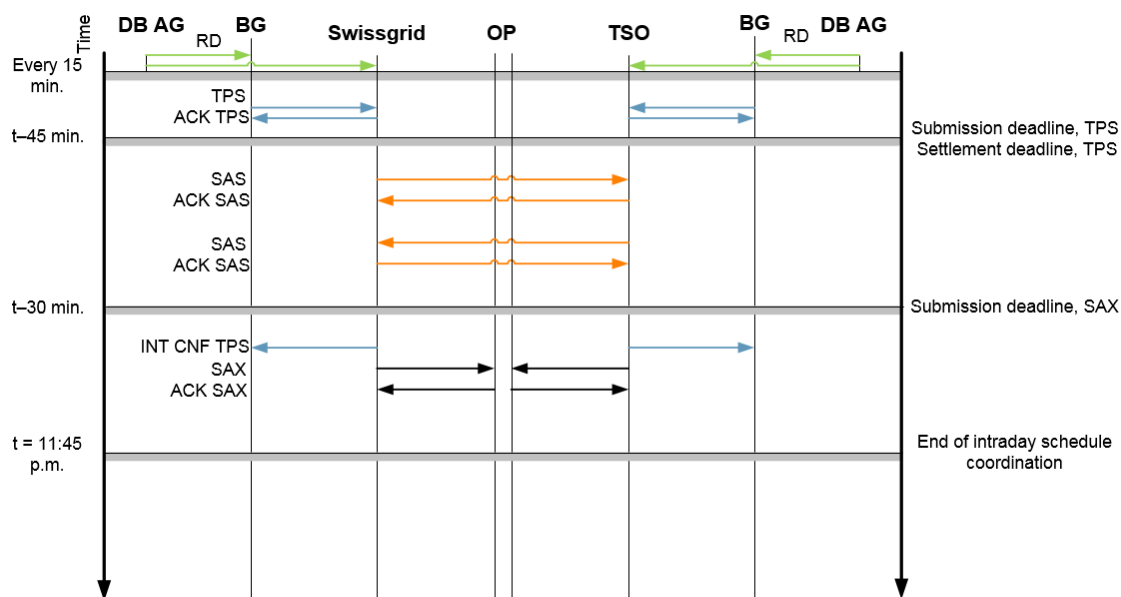


Fig. 10: Example of intraday process (external trade)

D-1 until day of execution of the schedule message:

D-1 from 3:30 p.m.

No intraday schedule messages for the following day are processed for the duration of the day-ahead schedule coordination between Swissgrid and the TSOs in the neighbouring scheduling areas. If such schedule messages are received, they are read into the schedule system (confirmation by acknowledgement) but are not processed until the start of the intraday process (confirmation by intermediate confirmation).

D-1 from 6:00 p.m.

Start of intraday schedule coordination for the following day. However, the time depends on the respective market.

The process described below is repeated every full quarter of an hour up until the latest time at which an intraday schedule message can be successfully submitted (6.00 p.m. (D-1) to 11.00 p.m. (D)).

- Until T-45 Intraday schedule messages submitted by the BGM must be received by Swissgrid no later than 45 minutes before the time at which the schedule message is to be executed. The submission deadline for a new or modified intraday schedule message that is to become effective from D 12.00 a.m. is therefore D-1 11.15 p.m. Schedules which are sent before submission of the rights document by DB AG (every 15 minutes) to Swissgrid are first formally validated. Following submission of the current rights document, the schedules are subjected to a capacity check. The BGM is notified of a violation of capacity rights by means of an ANC Report. The BGM may submit a new schedule message up to the submission deadline for the purpose of correcting capacity violations.
- T-45 Submission deadline and settlement deadline for intraday schedule messages.
- From T-45 Start of schedule coordination for all remaining schedule time series in the current day starting from the time (T). In the event of schedule differences, the market rules will be applied to all remaining time intervals in the day. Following schedule coordination, an Intermediate Confirmation Report is sent to the BGM.
- T-30 Completion of schedule coordination for the time (T).
- D 11:00 p.m. Latest possible submission deadline and settlement deadline for intraday schedule messages relating to the current day (for the 15-minute period from D 11:45 p.m. to D 12:00 a.m.).

Additional check:

15 minutes after receipt of the rights document, a check is made to see if the relevant schedule time series is available. If there is no schedule time series, an ANC is sent to the BGM.

12 Overview of intraday processes for short-term external trades with France

In the case of control energy delivery, it is also possible to submit external trades with France with a lead time of 45 minutes. This trade is submitted in accordance with Clause 1.1.

If a BGM wants to supply electrical energy between the Swiss scheduling area and the

French scheduling area in the context of participation in the French control energy market, it must also demonstrate to Swissgrid that it has access to production or consumption capacities in the Swiss scheduling area which are suitable for control energy use or reserve supplies, and with which it can guarantee deployment at short notice.

In addition, one of the following conditions must also demonstrably be met:

- The balance group can provide proof of participation in an international control energy market.
- The balance group participates in the national control energy market.
- The balance group can prove reserve supply contracts for power plant operators.

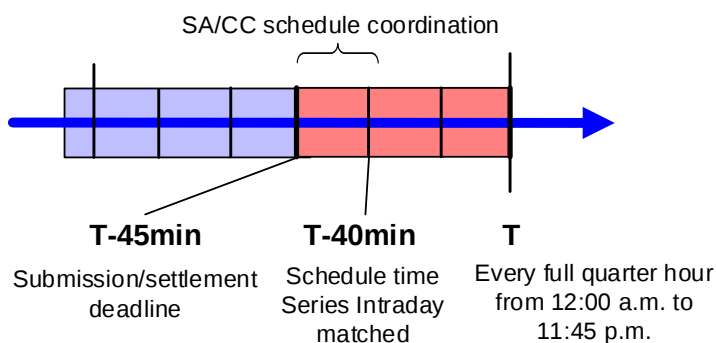


Fig. 11: Intraday process (short-term external trade on the Swiss-French border)

D-1 until day of execution of the schedule message:

D-1, from 21:00 Start of intraday schedule coordination for the following day.

The process described below is repeated every full quarter of an hour up until the latest time at which an intraday schedule message can be successfully submitted (9.00 p.m. (D-1) to 11.30 p.m. (D)).

Until T-45 Intraday schedule messages submitted by the BG must be received by Swissgrid no later than 45 minutes before the time at which the schedule message is to be executed. The submission deadline for a new or modified intraday schedule message that is to become effective at 12.00 a.m. (D) is therefore 11.15 p.m. (D-1).

Schedules which are sent before submission of the rights document by DB AG to Swissgrid are first formally validated. The submission phase is followed by the capacity check. Following submission of the rights document, the schedules are subjected to a capacity check. If capacity rights according to the rights document are exceeded, the affected BGs receive an ANC. The BGM may submit a new schedule message up to the submission deadline for the purpose of correcting capacity violations.

T-45 Submission deadline and settlement deadline for intraday schedule messages.

From T-45 From this point in time, the market rules will be applied to all remaining time intervals in the day. Following schedule coordination, an Intermediate Confirmation Report is sent to the BGM.

T -40	Completion of schedule coordination for the time (T).
23:15	Latest possible submission deadline and settlement deadline for intraday schedule messages relating to the current day.

13 Intraday process for external trade type at the border Switzerland-Italy

13.1 Overview of intraday procedure

At the Switzerland-Italy border, available capacity is allocated by JAO in two explicit intraday auctions (the first on day D-1 at 4.15 p.m. -> ID1 and the second on day D at 9.15 a.m. -> ID2). For more information on how to register and the respective intraday allocation rules in the current version, please visit <http://www.jao.eu>.

13.2 Details of intraday procedure

Intraday schedule messages are submitted at Swissgrid and Terna.

Schedule messages for the following day that are submitted to Terna and Swissgrid after 4.30 p.m. and schedule messages that relate to the current day are processed using the intraday procedure.

The nomination deadline for schedule messages in the intraday procedure is for the first intraday auction D-1, 10:35 p.m. (hours 0-24) and for the second intraday auction on day D, 10:35 a.m. (hours 12-24). Swissgrid and Terna then perform a 15-minute correction cycle. In the event of a mismatch, the lower value is used. Nominations at Terna must be made in accordance with the provisions of the currently valid Italian Agreement (Contratto di dispacciamento).

14 Overview of intraday procedures for internal trades

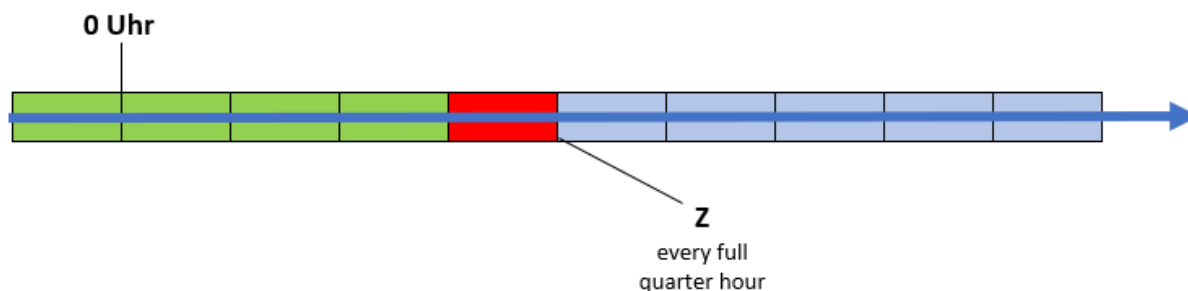


Fig. 12: Intraday process for internal trades

The schedules can be received by Swissgrid at any time. The values could also be adjusted into the past.

Additional anomaly check:

Five minutes after receipt of a schedule message, a check is made to see if the counterpart schedule is in place and, if necessary, an Anomaly Report is sent to the BGM. If the counter-party is known, i.e. it has already submitted another schedule on that day, it will also be in-formed of the missing schedule.

T -35 Check to see if the counterpart schedule has been received and possible dispatch of an Anomaly Report. If the counterparty is known, it will also be informed of the missing schedule.

15 Post-scheduling adjustment

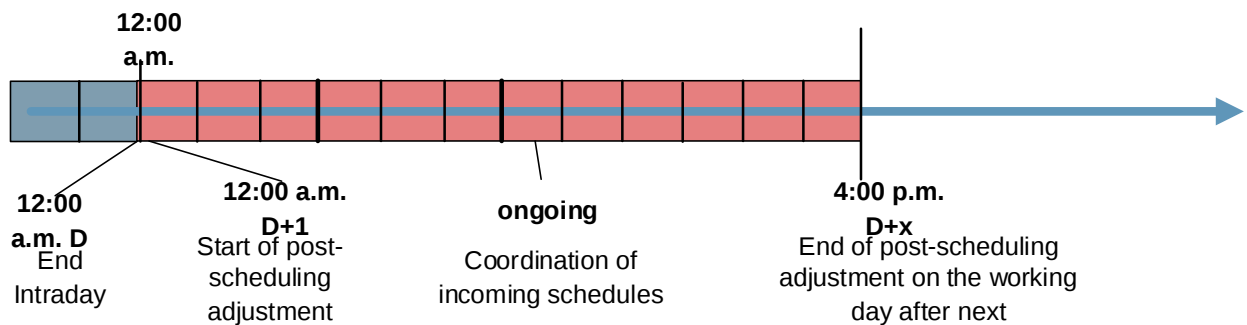


Fig. 13: Post-scheduling adjustment (times shown in CET)

15.1 Overview of post-scheduling adjustment

Schedules for internal trades can be changed or re-submitted on working days up to 4.00 p.m. D+2. Swissgrid publishes applicable holidays on its website, with exact definitions of the working days (D+2) and hence the post scheduling adjustment settlement deadline. The BGMs are informed separately each year, but no later than the end of November, of the rules regarding Christmas/New Year.

Swissgrid offers support for the post-scheduling adjustment process as an accompanying process only between D+2 1.30 p.m. and D+2 4.00 p.m. (on working days). No support for post-scheduling adjustment is offered at any other time, but schedules can be submitted at any time within the post-scheduling adjustment process deadlines.

Changes and re-submissions of schedules on the following two working days take place with the same message ID as long term, day-ahead and intraday and sequential versioning.

In addition to the changed and new internal time series, subsequent changes to the schedule always contain each of the time series already submitted for the balance group in day-ahead and intraday, including the consumption, production and pump power forecast (CONS,PROD,PUMP) of balance groups with metering points. They cover the entire schedule day (12.00 a.m.-12.00 a.m.) and all internal and external time series. The values of the external time series must correspond to the last matched version in the day-ahead and/or intraday process.

All the positions for the schedule days (previous days and preceding weekend and/or holidays) are continually matched. I.e. the post-scheduling process for Thursday is concluded on the following Monday. Coordination for Friday, Saturday and Sunday takes place on the following Tuesday. The BGMs receive an Anomaly Report on their schedule message if, at the schedule deadline, schedule differences exist between the schedule time series of the BGM and the corresponding schedule time series. Time series with discrepancies are rejected immediately if the settlement deadline has been reached (the version of the schedule message that has already been successfully matched is used).

The schedule messages of balance groups without metering points can be rejected in the post-scheduling adjustment process if the open position exceeds limit 3 within the meaning of Clause 2.2.2 of the General Balance Group Regulations and the open position increases compared with the last schedule message.

Submission procedure for post-scheduling adjustment

Messages can be submitted at any time after the end of the schedule day prior to the post-scheduling adjustment submission deadline and are formally validated immediately (ACK). They are matched as soon as

the counterpart schedule is received. The BGM receives an iCNF Report and, in the case of value differences, also an Anomaly Report.

15.2 Details of post-scheduling adjustment

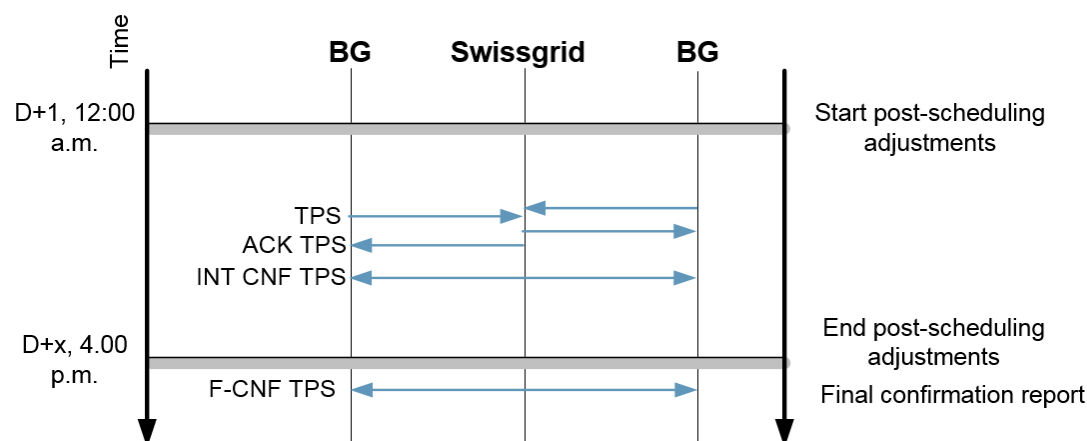


Fig. 14: Post-scheduling adjustment shows the procedural steps of the coordination process

From 12:00 a.m. D+1

Start of post-scheduling adjustment schedule check. Messages submitted with the process type A17 (schedule day) after the end of schedule day D are read in and formally validated and an ACK is sent.

As soon as a comparison with the counterparty is possible, the entire position of the day is matched and the corresponding results dispatched (Intermediate Confirmation Report or Anomaly Report). The intermediate confirmation is used to supply information about the status of the schedule message to the BGM. The Anomaly Reports are used by Swissgrid to inform the BGs concerned in the event of schedule differences. The BGs can re-submit the corrected changes.

Until 4:00 p.m. D+x

Post-scheduling adjustment schedule changes by the BGM must be received before the submission deadline on the second working day after the schedule day D.

4:00 p.m. D+x

Submission and settlement deadline for post-scheduling adjustment schedule changes from the BGM to Swissgrid (TPS).

After 4:00 p.m. D+x

If schedule differences exist after the submission deadline, the schedule difference rules apply.

Swissgrid sends a Final Confirmation to the BGs (on working days). The BGs are thus informed about their executed, billing-related schedule time series.

Other anomalies:

From 12:00 a.m. D+1

15 minutes after receipt of a schedule message, a check is made to see if the counterpart schedule is in place. An anomaly report is sent to the submitter of the schedule and also to the relevant counterparty.

16 Status request

The BGM may send a status request according to the ESRD (ENTSO-E Status Request Document Implementation Guide) v2r0. The status request file name should be generated in accordance with the naming convention in Section 21.

Two roles are involved in the processing of the status request.

- The BGM sends the status request (active role)
- Swissgrid receives the status request and answers it (passive role)

Once the status request has been received, Swissgrid carries out a verification check of the existing BGM data. The time that the check is carried out is also relevant to the results of the status request. The status request will be answered as fast as possible, taking into consideration the priority of the processing of TPS messages.

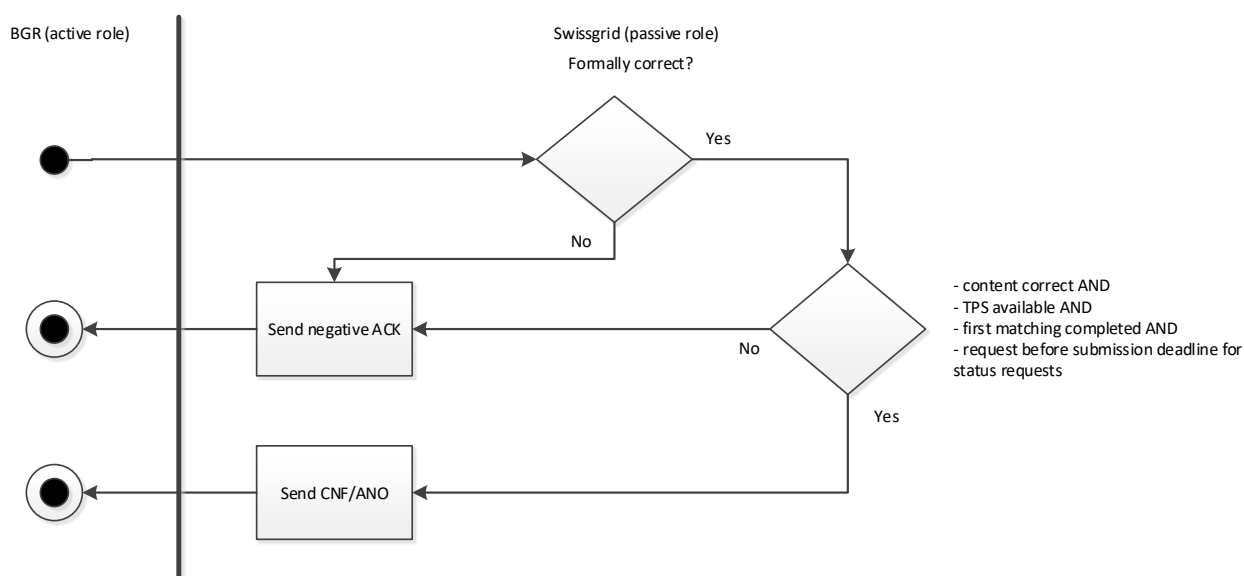


Fig. 15: Diagram of status request

The formal and content requirements of the incoming status request are checked. In case of an error, an acknowledgement («ENTSO-E Acknowledgement Document V5R1») is sent with the information that the status request is incorrect and therefore cannot be processed.

A status request will only be processed if schedule coordination has already taken place. The status request is possible until one day after the post-scheduling adjustment.

If the status request is correct, it will be answered with the current CNF and, if available, ANO message. The status request provides no information about the status of the capacity check.

17 Maintenance of grid security in case of congestion

17.1 Compliance with capacity rights

If electrical energy is delivered across a scheduling area border with limited capacity, the schedule messages must not under any circumstances exceed the capacity rights of the BGM, nor must they fall short of the long-term capacity rights that have already been nominated for use. Details can be found in the allocation rules for the corresponding allocation processes on the corresponding scheduling area border. The relevant allocation rules can be found on the Swissgrid website (www.swissgrid.ch) or corresponding links are provided.

In the case of external trade, the schedule time series must be identified with the codes specified in Section 20.1.2 below in compliance with the instructions issued by Swissgrid. The BGM is notified about the Capacity Agreement Identification when the capacity rights are allocated. If the schedule time series values exceed the relevant capacity rights, or if the values are below the capacity rights of the BGM that have already been nominated, the BGM will be notified by Swissgrid or the neighbouring TSO. In this case, the BGM must submit a corrected schedule message. If this is not submitted by the settlement deadline, Swissgrid will set the schedule values in accordance with the provisions of Section 6.

In the event of a violation of the capacity rights, Swissgrid reserves the right to reject the schedule message or modify it in accordance with the schedule difference rules, even after ACK and iCNF have been sent.

18 Limit monitoring

Swissgrid monitors the compliance of the open position of the BGM. If limits are exceeded within the meaning of Section 2.2 of the General Balance Group Regulations, Swissgrid can make the BGM concerned aware of compliance with its limits with an automatic telephone message (DAKS) and/or an e-mail.

Failure to send messages or delays in sending messages will not result in any rights for the contracting parties, nor will they be released from their contractual obligations.

19 Content and structure of individual documents

The five ESS documents and the status request described below are exchanged between Swissgrid and the BGM in the course of balance group management:

- A. Schedule message;
- B. acknowledgment message;
- C. anomaly report;
- D. Anomaly Report for Capacity Violations
- E. Intermediate or Final Confirmation Report;
- F. status request

The structure and content of each of these documents, with the exception of the status request, is stipulated by the ESS-IG. For detailed information, for instance concerning the combination of the codes to be used, please refer to the ESS-IG and the ENTSO-E Code List. The structure and content of the status request is defined by the ENTSO-E Status Request Document (ESRD) Implementation Guide V2R0.

Reason codes contained in the ENTSO-E Code List that are not mentioned in the following tables are not used in Switzerland.

19.1 Schedule message

The content and structure of the schedule message must comply with the rules specified in Clause 3.3 of the ESS-IG v2r3 as well as with the supplementary, specific, or contrary provisions described in Clause 3 above. A schedule message (XML document) and the schedule time series it contains are identified by specifying codes as well as other means of identification for their individual elements. The following tables describe the codes that must be used in accordance with the latest version of the ENTSO-E Code List.

19.1.1 TPS message header codes

	TPS
MESSAGE ID	According to ESSIG
Message version	According to ESSIG
Message type	A01
Process type	Long term, day-ahead, intraday, post-scheduling adjustments: A17
Schedule classification type	A01
Sender identification, coding scheme	EIC of the balance group A01
Sender role	A01
Receiver identification, coding scheme	EIC of the TSO (10XCH-SWISSGRIDC) A01
Receiver role	A04
Message date and time	According to ESSIG
Schedule time interval	YYYY-MM-DDTHH:MMZ/YYYY-MM-DDTHH:MMZ in UTC

Table 7: TPS message header codes

Therefore, only the entry time stamp is relevant for categorising the TPS in the respective processes (e.g. day-ahead or intraday) at Swissgrid. The message ID and the subsequent sender time series identification do not change during the schedule day. The EIC of the corresponding ESS participant (BGM, TSO or Swissgrid) is used to identify the sender and the receiver.

19.1.2 Schedule time series codes

	In TPS ¹⁵
Sender TS identification	According to ESSIG
Sender TS version	According to ESSIG
Business type	A03
Product	8716867000016
Object aggregation	A01
In Area ¹⁶ Coding Scheme = A01	EIC importing control area (Area) ¹⁷
Out Area Coding Scheme = A01	EIC exporting control area (Area)
Metering Point ID ¹⁸ , Coding Scheme	— ¹⁹
In Party, Coding Scheme = A01	EIC importing party
Out Party, Coding Scheme = A01	EIC exporting party
CapacityContractType	A01 daily (AT, DE, FR, IT) A03 monthly (AT, DE, FR, IT) A04 yearly (AT, DE, FR, IT) A07 intraday contract (AT, DE, FR, IT) A11 intraday balancing mechanism (FR) A12 historical contract (FR, IT)
Capacity Agreement Identification ²⁰	A01, A03, A04, A07 ²¹ , Z06: CAI according to JAO A07, A11: CAI according to DB AG

¹⁵ External trade, cross-border capacity is limited

¹⁶ Area codes according to the EIC (with Y) and not party codes (with X).

¹⁷ EIC area code for Swissgrid: 10YCH-SWISSGRIDZ

¹⁸ Not currently used in the Swiss scheduling area

¹⁹ «--» means that the element concerned must not be contained in a schedule message

²⁰ In the case of schedule messages relating to a scheduling area border with limited capacity, the «capacity contract type» which matches the «capacity agreement identification» must be specified in the corresponding schedule time series. In the allocation process, these are specified in the rights document by the capacity platforms JAO S.A. and DB AG.

²¹ Only applicable at the CH-IT border

In TPS ¹⁵	
A12: CAI according to agreement between RTE and Swissgrid or TERNA and Swissgrid	
Measurement Unit	MAW

Table 8: Schedule time series codes for an external trade

	Internal TradeSekundärregelenergie Tertiärregelenergie, Regelpooling, Verlustenergie. Nationaler Redispatch Longterm Redispatch, Energy Reserve	Consumption Pump Power	Production
Sender TS Iden- tification	According to ESSIG		
Sender TS Ver- sion	According to ESSIG		
Business Type	A02, A10, A12, A14, A15, A85, A97, A98, C81, C89	A04 B27	A01
Product	8716867000016		
Object Aggrega- tion	A01		
In Area	EIC Swissgrid ²² Coding Scheme = A01	–	EIC Swissgrid
Out Area	EIC SwissgridCoding Scheme = A01	-	
Metering Point Coding Scheme			
In Party	EIC importierende Party, Coding Scheme = A01	-	EIC im- portierende Party
Out Party	EIC importierende Party, Coding Scheme = A01	-	
Capacity – Contract Type			
Capacity – Agree- ment Identifi- cation			

²² EIC Area Code für Swissgrid: 10YCH-SWISSGRIDZ

Internal Trade Tertiärregelenergie, Regelpooling, Verlustenergie. Nationaler Redispatch Longterm Redispatch, Energy Reserve	Consumption Pump Power	Production
Measure- ment Unit		

Table 9: Schedule time series codes for an internal trade

19.2 Acknowledgement message (ACK)

ESS-IG, version v2r3, applies for the structure of the ACK.

The formal validation is carried out after a schedule message is received. The BGM is notified of the result of this validation in the form of an acknowledgement message. This message also serves the BGM as confirmation of receipt. If there is a discrepancy in a schedule message, the schedule message is partially or fully rejected.

The BGM is notified of discrepancies in the schedule message by means of reason codes in the acknowledgement message. Acknowledgement that discrepancies have been identified is sent at several levels if necessary. Under certain circumstances, several reason codes may be used at each level. The reason codes enable any discrepancies ascertained to be specified in greater detail.

The acknowledgement message for an accepted schedule message contains reason code «A01».

The acknowledgement message for a rejected schedule message contains reason code «A02» and at least one other reason code.

The acknowledgement message for a partially rejected schedule message contains reason code «A03» and at least one other reason code for the rejected schedule time series.

It is the duty and obligation of the BGM to submit schedule messages punctually with the correct structure and content.

19.2.1 Reason codes message level (ACK)

Reason codes at the message level contain a global description of the result of the formal validation as well, as the classification of the schedule message by Swissgrid. They are as follows:

Reason code	Meaning
A01	The schedule message is formally fully accepted
A02	The schedule message is fully rejected (other codes are used to describe the reason for the rejection)
A03	Schedule time series are incorrect
A04	Either the time interval of the schedule message is incorrect or a schedule message is not allowed for this time interval at the time of the formal validation
A05	The sender is not an active balance group
A51	An identical or higher version of the schedule message has already been received
A51	This schedule message has already been received with a different message identification

Reason code	Meaning
A51	The message identification is not present
A51	The message identification is longer than the permitted 35 characters
A51	The message version is invalid
A52	One or more schedule time series are missing (reduced information content of the documents)
A53	Receiver identification is incorrect
A53	The receiver role is incorrect
A53	The receiver coding scheme is invalid
A57	The permissible submission time period has been exceeded
A57	Message received before permitted submission time period
A59	XML DTD version/release different than expected
A59	Invalid message type
A59	Invalid request component/attribute
A59	Sender identification does not correspond with the sender identification in the file name
A59	Receiver identification does not correspond with the receiver identification in the file name
A59	Does not conform with local market rules
A59	File name does not conform with the market rules
A59	Schedule classification type is invalid
A59	Message date and time not present
A59	Message date and time format invalid
A59	Prod, Pump, Cons timeseries are not allowed
A59	Prod, Pump, Cons timeseries are required
A59	Increase of open position not allowed
A69	Compulsory attributes missing
A78	The sender identification is invalid
A78	The sender role is invalid
A78	The sender coding scheme is invalid
A78	The sender does not have a valid contract
A79	The process type is invalid
A94	Initial version of schedule message not yet received
A94	Matching not yet started
A94	The document cannot be processed by the receiving system
A94	Requested time interval exceeded

Table 10: Reason codes message level (ACK)

19.2.2 Reason code time series level (ACK)

Reason codes at the time series level describe discrepancies in the schedule time series identified by a time series rejection element. These reason codes are mandatory in combination with reason codes A02 and A03 at the message level. They are as follows:

Reason code	Meaning
A04	The time interval of the schedule message (schedule time interval) and the schedule time series (time interval of the period class) are not identical
A20	The schedule time series is fully rejected (other codes are used to describe the reason for the rejection)
A22	«In party» or «out party» error (e.g. the balance group is not allowed or unknown)
A22	Coding scheme for in party or out party is invalid
A23	Error in the designation of the control areas (e.g. incorrect EIC, control area not known or schedule time series not allowed)
A23	Coding scheme for in area or out area is invalid
A27	The capacity rights have not been taken into account
A41	The time resolution is inconsistent or invalid
A42	The quantity is inconsistent or invalid
A50	There is a version conflict concerning a schedule time series (e.g. power value(s) changed or new schedule time series and version are not equal to the message version, the version is lower than the version already submitted, or the version is higher than the message version, version not valid)
A55	Error in the schedule time series identification (e.g. schedule time series occurs more than once)
A55	Schedule time series identification is not present
A55	The schedule time series identification is longer than the permitted 35 characters
A56	The schedule time series has not been netted
A57	The permissible submission time period has been exceeded (either a day-ahead schedule message is late or an intraday schedule message has been changed in the past)
A59	The unit is not MW (MAW)
A59	The entry under «Product» is not 8716867000016
A59	The entry under «Object aggregation» is invalid
A59	Capacity contract type missing
A59	Capacity contract type invalid
A59	Capacity agreement identification missing
A59	Capacity agreement identification invalid
A59	Submission too early, day-ahead schedule message not allowed
A59	Post-scheduling adjustment process does not allow this adjustment
A59	BusinessType does not fit to Process

Reason code	Meaning
A62	The business type is invalid
A76	The capacity agreement identification exceeds the permitted 35 characters
A77	The capacity contract type and capacity agreement identification are required

Table 11: Reason codes time series level (ACK)

19.2.3 Reason code time interval level (ACK)

Reason codes at the time interval level describe discrepancies relating to power values in the schedule time units of a schedule time series. The schedule time unit concerned is identified by a time interval error element. Reason codes at time interval level are mandatory in combination with reason codes A02 and A03 at message level. They are as follows:

Reason code	Meaning
A42	The power value is invalid (e.g. more than three decimal digits, decimal separator is not a full stop)
A46	The power value is negative
A49	Error in the item number of the power value (e.g. the number is missing or outside the power value range)

Table 12: Reason codes time interval level (ACK)

19.3 Anomaly report

One or more Anomaly Reports (ANO) are used to notify the BGM of any schedule differences. An Anomaly Report generally only contains those schedule time series that have been identified as incorrect. Please note that an Anomaly Report does not necessarily contain all incorrect schedule time series (the required information may not yet be available because, for instance, a counterpart schedule message does not yet exist). This means there could be several Anomaly Reports for a single schedule time series.

Reason code	Meaning
A09	Schedule time series do not correspond (the Anomaly Report contains both schedule time series)
A28	Time series expects that the counterpart has sent a schedule that is now also expected from the BGM
A28	The counterpart schedule message is missing. The values in the schedule time series are set according to the schedule difference rules. (The Anomaly Report contains the received schedule time series.)
A59	Schedule time series match. However, cannot be adopted as the schedule time series in the opposite direction do not coincide

Table 13: Reason codes in the Anomaly Report

19.4 Anomaly Report for Capacity Violations

The BGM is informed about the violation of capacity rights with one or more Anomaly Reports for Capacity Violations (ANC).

Reason code	Meaning
A59	Invalid CAI
A59	Invalid combination of CCT/CAI
A59	Invalid combination of in/out party to CAI
A59	Invalid combination of in/out area to CAI
A59	Time series expected (Only in ID: Rights are an obligation and the BGM has not yet provided the TPS time series according to Rights time series from the latest Rights Document.)
A27	Cross-border capacity violated

Table 14: Reason codes in Anomaly Reports for Capacity Violations

19.5 Intermediate and Final Confirmation Report

The Intermediate Confirmation Report iCNF (message type A07) is a message used by Swissgrid to inform the BGM which schedule time series have been classified as «matched» following the settlement deadline and the application of the schedule difference rules in the case of schedule differences. If Swissgrid has applied the schedule difference rules and changed any values, this is indicated by specifying the appropriate reason codes.

Schedule time series that were rejected following the formal validation are no longer contained in the Intermediate Confirmation Report or, alternatively, the originally matched schedule time series are shown. Please note that several Intermediate Confirmation Reports may, under certain circumstances, be written for one schedule message. An Intermediate Confirmation Report with a more recent message date and time replaces all previous Intermediate Confirmation Reports. The message date and time of the Intermediate Confirmation Report are decisive, not the time at which the BGM receives the Intermediate Confirmation Report. The iCNF always contains the complete position currently matched with Swissgrid. If additional counterpart schedules are received or the schedule difference rules are applied, this situation could still change. A new iCNF is sent in this case.

If a time series is modified, the modification always refers to the last agreed values, not to the version most recently sent by the BGM.

At the end of the day, Swissgrid sends the BGM a Final Confirmation Report (message type A08) indicating all confirmed, matched and executed schedule time series.

A time series will be imposed if it was not included in the schedule but was expected by Swissgrid. In this case, the identification of the relevant time series, which was generated by Swissgrid and added to the BGM schedule, will be named «ET3K» (to be recognised in the CNF by the identifier «Imposed Time Series Identification»). This time series identification can be changed once by the BGM. After this change, the time series ID must remain the same for all subsequent schedule messages during the schedule day concerned.

If the BGM has not sent a schedule for this schedule day by the time the imposed time series is generated by Swissgrid, the message identification will also be «ET3K». This ID can then be changed once by the BGM but must subsequently remain the same for the rest of the schedule day.

19.5.1 Reason codes message level (CNF)

Reason code	Meaning
A06	All submitted schedule time series in the schedule message have been fully accepted.
A07	The submitted schedule time series in the schedule message have been partially accepted.
A08	The schedule message that was previously accepted as structurally correct is rejected (e.g. because the counterpart schedule message is missing).

Table 15: Reason codes message level (CNF)

19.5.2 Reason codes time series Level (CNF)

Reason code	Meaning
A20	The schedule time series is fully rejected. The power values are set to zero and identified with code A45 at time series interval level.
A26	The schedule time series have been changed according to the schedule difference rules because no settlement was reached (counterpart schedule message missing, error in the schedule message). The changed power values are identified with code A45 (default value in accordance with schedule difference rule) at time series interval level
A30	The schedule time series was imposed by Swissgrid. The schedule time series is identified as an imposed time series.
A63	The schedule time series was manually changed by Swissgrid (copy from counterpart schedule time series, manual value entry). The changed power values are identified with codes A43 (power values increased) and A44 (power values reduced) at time series interval level.

Table 16: Reason codes time series level (CNF)

19.5.3 Reason codes time interval level (CNF)

Reason code	Meaning
A43	The power value of the schedule time unit has been increased.
A44	The power value of the schedule time unit has been reduced.
A45	The default value for the schedule time unit has been used (if the schedule difference rules are applied).

Table 17: Reason codes time interval level (CNF)

19.6 Status request

The structure and content of the status request relates to «ENTSO-E STATUS REQUEST DOCUMENT (ESRD) IMPLEMENTATION GUIDE (V2R0)».

The following requested attributes must be used:

Subject party: use the EIC of the party for which the status is to be requested. In addition to the attribute, the coding scheme must also be used (A01 = EIC).

Subject role: use the role of the party for which the status is requested. According to the ENTSO-E code list, code A01 (= trade responsible party) must be used.

Process type: use the process type A17 (=schedule day).

Time interval: use the time interval for which the status is requested. The specification according to Clause 8 must be used.

19.7 Power Reserve (PR)

This chapter contains the technical specifications for the PR.

19.7.1 Information Schedule (INS)

The format of the INS, which contains information about the activation of the power reserves (PR), is described below. Swissgrid sends this INS to the BGs that call the reserve, to inform them about the covered demand from the PR. The INS serves as the basis for the post-scheduling process.

The INS data have a 15-min resolution and is sent by Swissgrid on the working day (D+1) by 11:00.

INS messages are sent in the direction from Swissgrid to BGV

Name	EIC Receiver	EIC Area
SWISSGRID	EIC Standard BG	10YCH-SWISSGRIDZ

Legend:

green:	Freely selectable text field (length and character set limited)
blue:	Selectable under certain guidelines
red:	Mandatory field, no deviation allowed

INS format header

ScheduleMessage	Value	Meaning
DtdVersion	2	ESS Version
DtdRelease	3	
MessageIdentification	Freely selectable	Distinct message identification, max 35 alphanumeric characters
MessageVersion	nnn	Message version, max. 3 digits
MessageType	A01	Balance Responsible Schedule
ProcessType	A17	Schedule Day

ScheduleClassification Type	A01	Detail Type
SenderIdentification	12X-0000001861-Q A01	EIC of the Swissgrid BG ETSO Code
SenderRole	A01	Trade Responsible Party ETSO Code
ReceiverIdentification	12X-StandaBG- Example A01	EIC of Standard BG ETSO Code
ReceiverRole	A01	Trade Responsible Party
MessageDateTime	YYYY-MM-DDTHH:MM:SSZ	Date of creation of the document according to UTC
ScheduleTimeInterval	YYYY-MM-[DD-1]THH:00Z/ YYYY-MM-DDTHH:00Z	Time period 1 day Sommer time HH = 22:00 Winter time HH = 23:00

INS format time series

ScheduleTimeSeries	Value	Meaning
SendersTimeSeriesIdentification	Name_nnn	Distinct time series identification
SendersTimeSeriesVersion	nnn	Time series version, max. 3 digits
BusinessType	C89	C89 - Energy reserves
Product	8716867000016	Active Power
ObjectAggregation	A01	Area
InArea	10YCH-SWISSGRIDZ A01	EIC of the control area Switzerland ETSO Code
OutArea	10YCH-SWISSGRIDZ A01	EIC of the control area Switzerland ETSO Code
InParty	12X-StandaBG- Example A01	EIC of Standard BG ETSO Code
OutParty	12X-0000001861-Q A01	EIC of the Swissgrid BG ETSO Code
MeasurementUnit	MAW	Megawatt

Period	Value	Meaning
TimeInterval	YYYY-MM-[DD-1]THH:00Z/ YYYY-MM-DDTHH:00Z	Time period 1 day Summer time HH = 22:00 Winter time HH = 23:00
Resolution	PT15M	15 Minutes

Interval	Value	Meaning
----------	-------	---------

Pos	92 – 100	92 values by winter-summer time change 96 values by normal days 100 values by summer-winter time change
Qty	nnn.nnn	Power value per Pos in MW with 3 decimal places

INS File name sent to BGV

The file name of the INS is chosen according to the following pattern:

[YYYYMMDD]_INS_[senderStandard-BG-EIC]_[receiver-Standard-BG-EIC]_[VVV].xml

Explanation:

[YYYYMMDD]: Date

INS: Information Schedule – Describes the process name

[senderStandard-BG-EIC]: Swissgrid Standard BG EIC

[receiver-Standard-BG-EIC]: EIC Standard BG of the receiver

[VVV]: File version limited to 3 digits. Versioning 000 is not allowed.

Example of a file name:

20130408_INS_12X-0000001861-Q_12XSDV-STANDA--O_001.xml

Example INS to BGV

This example shows an INS for an power reserve call. Here 100 MW energy reserve were required from 00:00 to 01:00. The resolution for all time series is 15 minutes, resulting in 92, 96 or 100 positions for the values. For a better overview not all 96 positions are shown.

```
<?xml version="1.0" encoding="UTF-8"?><!DOCTYPE ScheduleMessage SYSTEM "../schedule-ulev2r3/dtd/schedule-xml.dtd">
<ScheduleMessage DtdRelease="3" DtdVersion="2">
  <MessageIdentification v="TPS12X-StandradBG-220121212"/>
  <MessageVersion v="1"/>
  <MessageType v="A01"/>
  <ProcessType v="A17"/>
  <ScheduleClassificationType v="A01"/>
  <SenderIdentification codingScheme="A01" v="12X-0000001861-Q"/>
  <SenderRole v="A01"/>
  <ReceiverIdentification codingScheme="A01" v="12X-StandaBG- Example"/>
  <ReceiverRole v="A01"/>
  <MessageDateTime v="2012-12-13T07:03:00Z"/>
  <ScheduleTimeInterval v="2012-12-11T23:00Z/2012-12-12T23:00Z"/>
  <ScheduleTimeSeries>
    <SendersTimeSeriesIdentification v="13544"/>
```

```

<SendersTimeSeriesVersion v="1"/>
<BusinessType v="C89"/>
<Product v="8716867000016"/>
<ObjectAggregation v="A01"/>
<InArea codingScheme="A01" v="10YCH-SWISSGRIDZ"/>
<OutArea codingScheme="A01" v="10YCH-SWISSGRIDZ"/>
<InParty codingScheme="A01" v=" 12X-StandaBG- Example "/>
<OutParty codingScheme="A01" v=" 12X-0000001861-Q"/>
<MeasurementUnit v="MAW"/>
<Period>
  <TimeInterval v="2012-12-11T23:00Z/2012-12-12T23:00Z"/>
  <Resolution v="PT15M"/>
  <Interval>
    <Pos v="1"/>
    <Qty v="100.000"/>
  </Interval>
  <Interval>
    <Pos v="2"/>
    <Qty v="100.000"/>
  </Interval>
  <Interval>
    <Pos v="3"/>
    <Qty v="100.000"/>
  </Interval>
  <Interval>
    <Pos v="4"/>
    <Qty v="100.000"/>
  </Interval>
  ...
  ...
  <Interval>
    <Pos v="96"/>
    <Qty v="0.000"/>
  </Interval>
</Period>
</ScheduleTimeSeries>
</ScheduleMessage>

```

19.7.2 Demand Input PR

The PR demand for the following day is transmitted by means of a csv file. The file has the following format: In the first column is the time. The other column contain the demand in MW for each 15 minutes of the following day. Each BG is identified by the EIC code.

The example shows a demand input for October 20, 2022. The time must be in UTC format.

Timestamp	12X-BG1-----0
2022-10-19T22:00Z	0
2022-10-19T22:15Z	0
2022-10-19T22:30Z	0
2022-10-19T22:45Z	100

2022-10-19T23:00Z	130
2022-10-19T23:15Z	132
2022-10-19T23:30Z	145
2022-10-19T23:45Z	100
2022-10-20T00:00Z	100
2022-10-20T00:15Z	100
2022-10-20T00:30Z	100
2022-10-20T00:45Z	100
2022-10-20T01:00Z	150
2022-10-20T01:15Z	150
2022-10-20T01:30Z	150
2022-10-20T01:45Z	150
2022-10-20T02:00Z	150
2022-10-20T02:15Z	150
2022-10-20T02:30Z	150
2022-10-20T02:45Z	150
2022-10-20T03:00Z	150
2022-10-20T03:15Z	150
2022-10-20T03:30Z	150
2022-10-20T03:45Z	150
2022-10-20T04:00Z	150
2022-10-20T04:15Z	100
2022-10-20T04:30Z	100
2022-10-20T04:45Z	100
2022-10-20T05:00Z	100
2022-10-20T05:15Z	100
2022-10-20T05:30Z	100
2022-10-20T05:45Z	100
2022-10-20T06:00Z	100
2022-10-20T06:15Z	100
2022-10-20T06:30Z	100
2022-10-20T06:45Z	100
2022-10-20T07:00Z	100
2022-10-20T07:15Z	100
2022-10-20T07:30Z	100
2022-10-20T07:45Z	100
2022-10-20T08:00Z	100
2022-10-20T08:15Z	100
2022-10-20T08:30Z	100
2022-10-20T08:45Z	100
2022-10-20T09:00Z	100
2022-10-20T09:15Z	100
2022-10-20T09:30Z	100
2022-10-20T09:45Z	100
2022-10-20T10:00Z	100

2022-10-20T10:15Z	100
2022-10-20T10:30Z	100
2022-10-20T10:45Z	100
2022-10-20T11:00Z	100
2022-10-20T11:15Z	100
2022-10-20T11:30Z	100
2022-10-20T11:45Z	100
2022-10-20T12:00Z	100
2022-10-20T12:15Z	100
2022-10-20T12:30Z	100
2022-10-20T12:45Z	100
2022-10-20T13:00Z	100
2022-10-20T13:15Z	100
2022-10-20T13:30Z	100
2022-10-20T13:45Z	100
2022-10-20T14:00Z	100
2022-10-20T14:15Z	100
2022-10-20T14:30Z	100
2022-10-20T14:45Z	100
2022-10-20T15:00Z	100
2022-10-20T15:15Z	100
2022-10-20T15:30Z	100
2022-10-20T15:45Z	100
2022-10-20T16:00Z	100
2022-10-20T16:15Z	0
2022-10-20T16:30Z	0
2022-10-20T16:45Z	0
2022-10-20T17:00Z	0
2022-10-20T17:15Z	0
2022-10-20T17:30Z	0
2022-10-20T17:45Z	0
2022-10-20T18:00Z	0
2022-10-20T18:15Z	0
2022-10-20T18:30Z	0
2022-10-20T18:45Z	0
2022-10-20T19:00Z	0
2022-10-20T19:15Z	0
2022-10-20T19:30Z	0
2022-10-20T19:45Z	0
2022-10-20T20:00Z	0
2022-10-20T20:15Z	0
2022-10-20T20:30Z	0
2022-10-20T20:45Z	0
2022-10-20T21:00Z	0
2022-10-20T21:15Z	0

2022-10-20T21:30Z	0
2022-10-20T21:45Z	0

20 Naming conventions

The letters «A-Z» in the English character set, the numbers «0-9» and the special characters underscore «_» and hyphen «-» may be used in file names. All XML files have the «xml» extension. Both upper- and lower-case letters are permitted in file names; extensions are always in lower case.

Files with names that do not correspond to the conventions will not be read into the Swissgrid scheduling system.

20.1 File names for schedule messages

YYYYMMDD_type_EICofsender_EICofreceiver_VVV.xml

JJJJMMTT	Validity date of the schedule message
Typ	«Type» of the schedule message (3 characters, e.g. TPS)
VVV	Version of the schedule message. The version number has three digits with leading zeros. Only decimals may be used in the version number. The version numbers start with «001» every day and are continued consecutively at the transition from day-ahead to intraday schedule messages.

Table 18: File names for schedule messages

TPS	Trade-responsible Party Schedule	Schedule message (BGM to TSO or Swissgrid)
SRQ	Status request	Request for status (BGM to Swissgrid)

Table 19: Schedule message types

20.2 File names for acknowledgments

The file names for acknowledgments are generated as follows:

- A. Acknowledgement Message
YYYYMMDD_type_EICsenderoriginalmessage_EICrecipientoriginalmessage_VVV_ACK.xml
- B. Anomaly Report for Schedule Differences
YYYYMMDD_type_EICsenderoriginalmessage_EICrecipientoriginalmessage_VVV_ANO_YYYY-MM-DDThh-mm-ssZ.xml
- C. Anomaly Report for Capacity Violations
YYYYMMTT_type_EICsenderoriginalmessage_EICreceiveroriginalmessag_VVV_ANC_YYYY-MM-DDThh-mm-ssZ.xml
- D. Intermediate and Final Confirmation Report
YYYYMMDD_type_EICsenderoriginalmessage_EICrecipientoriginalmessage_VVV_CNF_YYYY-MM-DDThh-mm-ssZ.xml

YYYYMMDD	Validity date of the schedule message
Type	Type of schedule message (3 characters, e.g. ACK)
VVV	Version of the schedule message. The version number has three digits with leading zeros. Only decimals may be used in the version number.
YYYY-MM-DDThh-mm-ssZ	Time at which the Anomaly Report or the Intermediate or Final Confirmation Report was created (in UTC). The time stamp serves to differentiate several Anomaly Reports (and possibly also Intermediate Confirmation Reports) for the same schedule message.

Table 20: File names for acknowledgements

ACK	Acknowledgment message
ANC	Anomaly Report for Capacity Violations
ANO	Anomaly Report
CNF	Intermediate and Final Confirmation Report
SRD	Status Request Document

Table 21: Acknowledgement types

20.3 File names for status request

The file names for status requests are generated as follows:

YYYYMMDD_TPS_EICsender_EICreceiver_SRQ_YYYY-MM-DDThh-mm-ssZ.xml

YYYYMMDD	date of the schedule day for which the status is requested
TPS	constant value
EIC Sender	EIC of the sending party
EIC Receiver	EIC of the receiving party (Swissgrid)
SRQ	EIC of the receiving party (Swissgrid)
YYYY-MM-DDThh-mm-ssZ	current time stamp in UTC

Table 22: File names for status request

21 Submission of data

21.1 Principle

Two secure communication channels are available for data exchange between Swissgrid and the BGM (cf. clause 21.3 below).

The primary communication channel is ECP. If communication via ECP is disrupted, the secure connection via sFTP is recommended as the backup channel.

21.2 Notification time

For the long-term, day-ahead and intraday procedures as well as the post-scheduling adjustment process, the notification time is the moment at which the schedule message arrives at the Swissgrid ECP endpoint, or sFTP sever.

21.3 Transmitting of data

The following principles apply for the transmission of schedule messages between Swissgrid and the BGM:

- ECP: bring principle for Swissgrid and the BGM
- sFTP: bring and collect principle for the BGM

The bring principle means that the BGM transmits the schedule message to Swissgrid and Swissgrid also transmits messages to the BGM.

The bring and collect principle means that the BGM transmits the schedule message to Swissgrid and collects messages from Swissgrid.

Two communication channels are essentially recommended for the connection so that the communication can be maintained if one communication channel is disrupted.

21.3.1 Energy Communication Platform (ECP)

The following description relates to the documentation provided by the manufacturer Unicorn a.s. Please refer to the manufacturer's website for further information: <http://www.unicornsistemas.eu>.

The purpose of ECP is to provide the various market participants with a secure channel for data exchange and it can also be operated irrespective of which hardware or operating system is used. In the narrower sense, this relates to the secure connection of the BGMs to Swissgrid for the transmission of schedules (TPS) and for receiving messages in connection with the processing of the TPS in the form of ACK, ANO and CNF.

The ECP platform consists of the following three main components: ECP endpoint, ECP broker and ECP component directory.

- The ECP endpoint enables messages to be sent and received via a standardised interface (API) or a GUI. It also provides information on the status of the message transmission and checks the connection to the ECP component directory.
- The ECP broker is used for communication between the endpoints and is operated by Swissgrid. All market participants in Switzerland are therefore connected to the ECP broker via the ECP endpoint. The TPS messages are transmitted via the ECP broker.
- The ECP component directory registers every endpoint and broker in the ECP network and is operated by Swissgrid. Every ECP component must successfully register, otherwise communication is not possible.

On the sender side, the message is first assigned an electronic signature by the ECP endpoint before it is encrypted and transmitted to the recipient via the ECP broker. The ECP broker therefore guarantees the secure transmission of data from the sender to the recipient, even if the recipient is not available at that moment. A message within ECP provides the sender with the confirmation that the message has reached the recipient and whether the recipient has read the message.

Further information on ECP is provided on the ENTSO-E website <https://www.entsoe.eu/data/transparency-platform/data-providers/#ecp-4-documentation>

On Swissgrid side there are two different ECP Environments for the BGMs:

- a. Integration-Environment for the Scheduling Management System (PreProduction / Test)
- b. Production-Environment for the Scheduling Management System (Live-System)

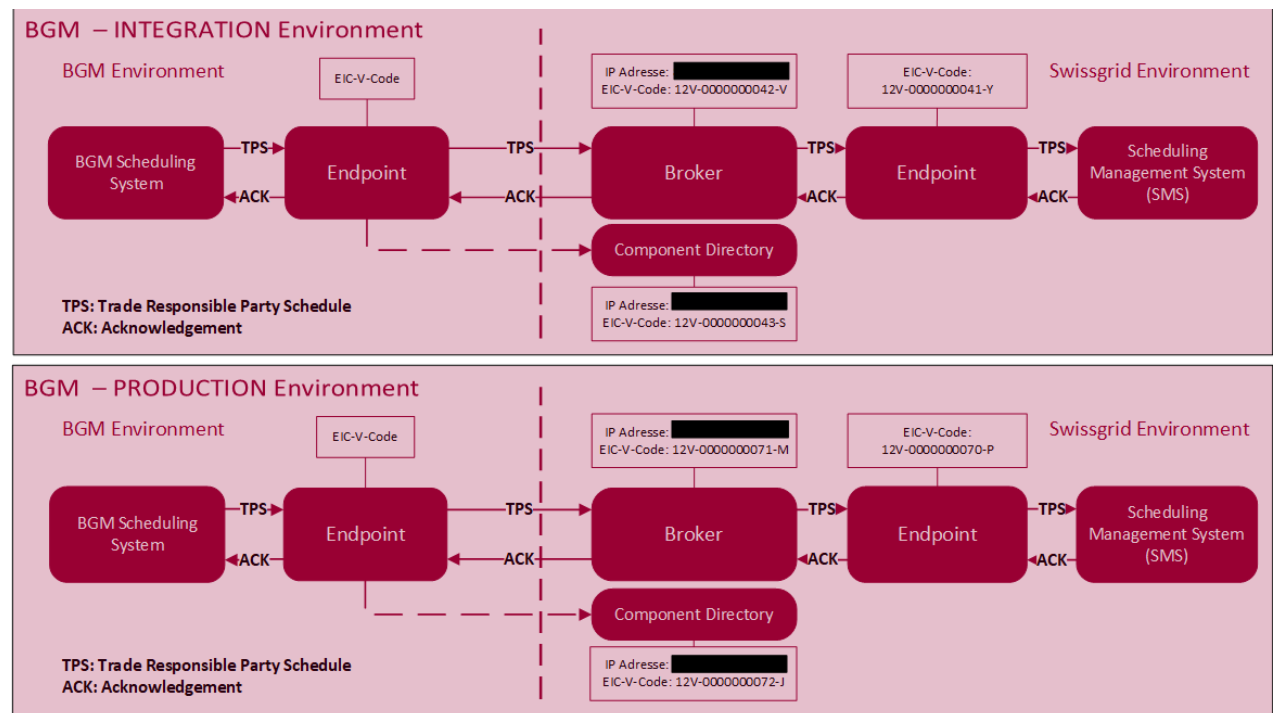


Fig. 16: ECP Infrastructure Swissgrid for BGMs

21.3.2 sFTP

The sFTP (Secure File Transfer Protocol) ensures the secure and confidential transmission of files. The sFTP protocol uses an encrypted channel so that no sensitive information such as passwords or file contents are transferred in plain text. This helps to ensure the confidentiality and integrity of the transmitted data.

sFTP over the internet, for the delivery and return path, operates according to the bring and collect principle. Swissgrid's sFTP server assumes the role of the transfer and collection point for the BGM's data.

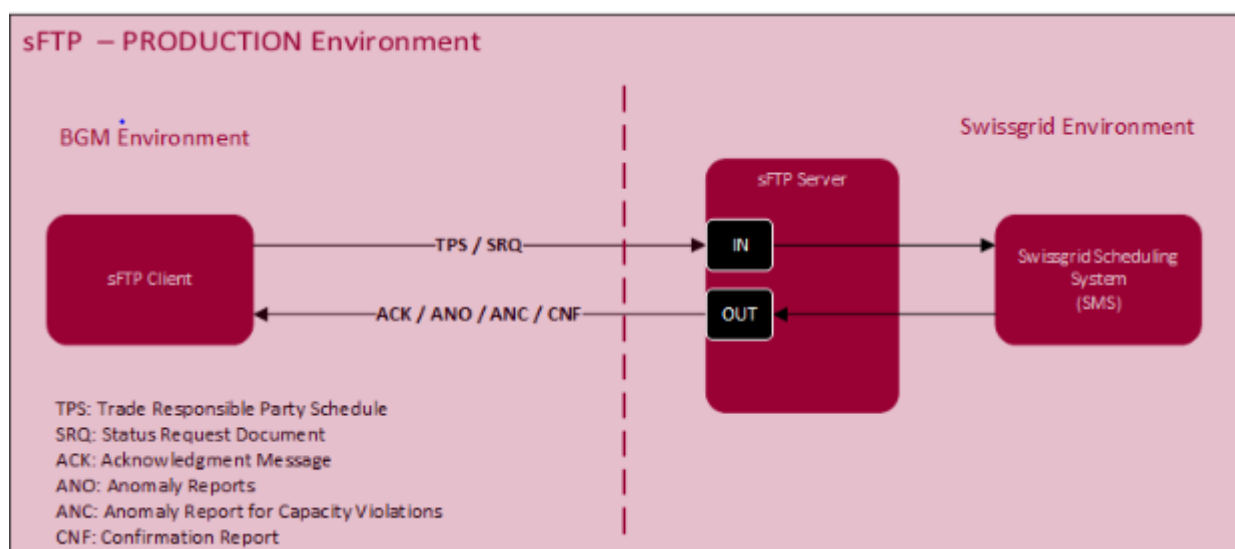


Fig. 17: sFTP Infrastructure Swissgrid for BGMs

Swissgrid provides the BGM with a corresponding IN and OUT directory on a Swissgrid sFTP server. Schedule messages are then transmitted and acknowledgements collected from this directory by the BGM.

Connection setup and authentication:

The Swissgrid sFTP server identifies itself with a certificate when establishing a secure connection. To verify the authenticity of this certificate, Swissgrid provides the BGM with the certificate and a fingerprint (cryptographic hash value of the certificate) biennially via a second, secure channel (e.g. Salesforce). This ensures that the BGM client can check the authenticity of the certificate.

The username, password and directory name for establishing a connection to the Swissgrid sFTP server are case sensitive. The login information to the sFTP server for a BGM is provided by Swissgrid.

The recipient of the data immediately removes the data in its directory after processing (acknowledgement of receipt delivered or sent to the sender). If an XML file is transferred and a file with the same name already exists on the sFTP server, it is overwritten. The date of the file is not checked. File types that are clearly not created in line with the specifications (e.g. Excel, CSV-ASCII) must be deleted by the recipient. Compressed files (e.g. zip) are not loaded. After the query has been made, the connection must be closed immediately.

In view of possible cyber-attacks, Swissgrid has increased the process security for schedule management. The username and password are checked as soon as the server receives a request. If these do not match, the request is rejected. A maximum of 5 failed attempts in 30 minutes are possible; after this the IP address is blocked for 10 days. Swissgrid must be contacted to provide a release before the expiration of these 10 days.

The maximum polling frequency on the Swissgrid sFTP server is restricted to once a minute.

Regularly check of the sFTP accounts:

All sFTP accounts must be checked once a year by means of a connection test to ensure that access to the sFTP server continues to work. This is for proactive maintenance and error prevention to ensure that no connection problems affect data transfer. The connection test should ensure that both the user name and password are correct and that access to the corresponding directories is still possible.

21.4 Combination of standard and backup connection

The table below shows the available combination of standard connection and backup connection.

Combination	Standard connection	Backup connection	Cyber security/availability
1	ECP	sFTP	Secure connection/redundant
2	ECP	None	Secure connection/no redundancy

Table 23: Combination of standard and backup connection

The BGM must inform Swissgrid via the balance group customer portal if he wishes to add the sFTP as backup channel

21.5 Data protection and security

Swissgrid and the BGM are responsible for their own data security. The other party must be informed of a suspected breach of data security without delay. In this case, the passwords must immediately be changed at a coordinated, agreed time.

. Encryption and a signature are used for ECP. Encryption is used for sFTP..

22 Suspension of schedule message management

If the processing of schedule messages is suspended by Swissgrid owing to a failure, Swissgrid will notify the BGM without delay. This notification will be sent by e-mail and/or by telephone. The BGM will be notified about the reason for the suspension of schedule message processing. The BGM will be notified by Swissgrid as soon as it becomes possible to resume the processing of schedule messages.

If essential work needs to be carried out on the schedule system that will result in a foreseeable interruption of schedule message processing, Swissgrid will notify the BGM in advance and in good time by e-mail. Shortly before the start of the interruption, the BGM will be reminded of the impending suspension of schedule message processing. The BGM will be notified by Swissgrid as soon as it becomes possible to resume the processing of schedule messages.

To synchronise the schedule system, the BGMs must be able to send Swissgrid the latest version of the schedules for all the days since the schedule system failed and the latest schedule for the current and next day.

23 Energy data and imbalance data

The imbalance data (message type C01) is sent by e-mail to the BGM by Swissgrid in accordance with the implementation document «Standardised Data Interchange for the Swiss Electricity Market», which is published on the Swissgrid website (www.swissgrid.ch), by no later than the 15th working day after the end of the month.

On the 15th to the 28th working day after the end of the month, Swissgrid sends updated imbalance data from 3.30 p.m. onwards if it receives new or corrected energy data from the DSO. The 28th working day is also the invoice date for the settlement of the balance group.

If amended energy data arrives between 28 working days and six months after the end of the month, the updated imbalance data will be forwarded weekly (every Tuesday, where this is a working day). This ensures that metering data is continuously compared and matched between Swissgrid and the BGM.

24 BG Acceptance-Test of schedule management

The BG Acceptance-Test is a prerequisite for the activation of a balance group. Testing a schedule message serves to ensure that the balance group is productive before going online. The following tests are performed:

- A. Formal validation: the schedule messages are examined for compliance with requirements (day-ahead, intraday and post-scheduling adjustment). Objective: the schedule messages can be read in and processed by the scheduling systems.
- B. Communication: submission and processing of the schedule message is tested. Objective: the submitted schedule messages are available to the relevant receiver for further processing.
- C. Checking the correct trade configuration: all schedule time series that are submitted by a BGM are processed. Objective: all schedule time series are correctly identified.

The BG acceptance test will be carried out by Swissgrid using Swissgrid's internal schedule test system. If the test is successfully completed, the applicant proves that it has the technical basis for processing schedule messages.

Swissgrid contacts the applicant to carry out the BG Acceptance-Test.

More detailed information about the trial registration, process and test cases can be found in the BG Acceptance Test document on the Swissgrid website ²³

25 Supplementary provisions

These Technical Balance Group Regulations are supplemented by the provisions described in the ESS-IG v2r3. Should any of the provisions contained in the ESS-IG v2r3 conflict with these Technical Balance Group Regulations, the provisions of these Technical Balance Group Regulations shall take precedence.

²³ <https://www.swissgrid.ch/en/home/customers/topics/bgm.html> (operational documents)