The User's Guide to Scheduling on the common border between SEPS and Ukrenergo

Trader's Manual Version 1.0

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# INTRODUCTION

## Purpose of this Document

The User’s Guide for Scheduling provides description of all scheduling processes and scheduling IT system’s requirements to be implemented by electricity trading companies on the common border between SEPS and Ukrenergo (participating TSOs).

## Scope of this Document

This document was developed by the representatives of the participating TSOs using state of the art technology and best business practices in the field of cross-border schedule nomination.

For the sake of clarification, the document provides general description of the functionalities of all scheduling processes; however its main target is exact definition of necessary requirements in the User’s IT systems as well as the description of possible responses/scenarios in case of mismatched nomination.

National requirements or internal matters of a single Trader, rules on borders with other regions, are not covered by this document.

## Definitions and abbreviations

|  |  |  |
| --- | --- | --- |
| Abbreviation | Description | Remark |
| AO | Allocation Office | Currently Joint Allocation Office S.A. (JAO)  |
| BRP | Balance Responsible Party | A Balance Responsible Party is responsible for its imbalances, meaning the difference between the energy volume physically injected to or withdrawn from the system and the final nominated energy volume, including any imbalance adjustment within a given imbalance settlement period. |
| CAI | Capacity Agreement Identification |  |
| CCT | Capacity Contract Type |  |
| COT | Cut off time |  |
| fCNF | Final CNF | Final CNF sent to the BRP/ITR. |
| GCT | Gate closure time |  |
| iCNF | Intermediate CNF | Intermediate CNF sent to the BRP/ITR. |
| ITR | Interconnection Trade Responsible | Balance Responsible Party which is known by the TSO as the entity entitled to use the capacity rights |
| JAO | Joint Allocation Office S.A. | An allocation service company that hosts Europe's platform for cross-border transmission capacity. On behalf of TSOs, JAO auctions the available long and short-term transmission capacity rights.  |
| LMR | Local market rules |  |
| PTR | Physical transmission right | PTRs entitle the rights holder to nominate parts or all of its PTRs at the TSO for physical delivery beyond the particular border. |
| RC | Reason code |  |
| RD | Rights document |  |
| TS | Time series |  |
| TSO, SO | Transmission System Operator |  |

# General Definitions

## Business processes

The business process between traders and TSOs is standardized. This especially applies to timings and communication.

The scheduling is done seven days a week without any regards to local public holidays within the related areas.

## Communication to TSOs and AO

The defined communication standards are

* ETSO Scheduling System (ESS) 2.3/3.3 – according to local market rules
* ETSO Capacity Allocation and Nomination System (ECAN) 4.0
* ENTSO-E General Code list For Data Interchange
* ENTSO-E Acknowledgement Document (EAD) 5.0
* ENTSO-E EIC Reference Manual 5.3

## Cross border Nomination

Schedules for nominations will be sent to the TSOs in accordance with local market rules in ESS 2.3. or ESS 3.3.

General rules for the format of nominations are defined in the local market rules, but content of used elements and the usage of some elements used for nomination may differ:

* InParty/OutParty: Beside the own EIC the EIC of the traders partner within a source-sink relation shall be used
* Business Type: Use of “A03” is mandatory
* CapacityAgreementIdentification: given by the AO in the Rights Document
* CapacityContractType: in accordance with the Allocation Rules, depending on auction type
* Local market rules can require resolutions of 15 Minutes for nominations. In this case, BRP/ITR has to send 4 equal values for each quarter within one hour and TSOs have to check the existence of 4 equal values for each quarter within the same hour. The violation of this condition results in the rejection of the nomination.

A nomination will be accepted under following conditions:

* The sender (ITR) has to have grid access in the area of the TSO-receiver
* The sender is responsible for the party in the area of the TSO-receiver

Any error regarding these conditions leads to a negative ACK.

A CAI and CCT of a nomination is valid if

* The combination of CCT and CAI exists in the RD
* At least one of InParty or OutParty of the nomination is the “RightsHolder” transmitted in the RD.

Any error regarding these conditions results in an Anomaly or ACK, depending on LMR.

Examples for invalid CAI:

* Time series with invalid combination of CAI and CCT;
* Unknown CAI;
* Rights holder is not given neither in the InParty nor in the OutParty.

Cross nominations (N:M) are allowed. That means that InParty and Outparty does not need to be the same. Anyway, 1:1 nomination is still possible. Moreover, the ITR which is owner of capacity rights can use allocated rights with more than one partner on other side of the border.

## Example of nomination

TSO1 (EIC\_TSO\_1)

TSO2 (EIC\_TSO\_2)

Capacity right

CAI: T1T20001

CCT: A01 (right from the daily auction)

Owner: ITR1

Basic Rules:

* The direction of nominations and the direction of the relevant capacity right must be the same
* One of the ITRs on either side must be the owner of the capacity right. In case of 1:1 nomination as special case of cross border nomination the ITRs on both sides and the owner are the same
* The total of the volume in the nominated time series using the same CAI must not exceed the volume of the respective capacity right

Headers of nomination schedules of ITR1 to TSO1:

 <InArea codingScheme="A01" v="EIC\_TSO\_2"/>

 <OutArea codingScheme="A01" v="EIC\_TSO\_1"/>

 <InParty codingScheme="A01" v="EIC\_ITR\_2"/>

 <OutParty codingScheme="A01" v="EIC\_ITR\_1"/>

 <CapacityContractType v="A01"/>

 <CapacityAgreementIdentification v="T1T20001"/>

 <InArea codingScheme="A01" v="EIC\_TSO\_2"/>

 <OutArea codingScheme="A01" v="EIC\_TSO\_1"/>

 <InParty codingScheme="A01" v="EIC\_ITR\_1"/>

 <OutParty codingScheme="A01" v="EIC\_ITR\_1"/>

 <CapacityContractType v="A01"/>

 <CapacityAgreementIdentification v="T1T20001"/>

 <InArea codingScheme="A01" v="EIC\_TSO\_2"/>

 <OutArea codingScheme="A01" v="EIC\_TSO\_1"/>

 <InParty codingScheme="A01" v="EIC\_ITR\_4"/>

 <OutParty codingScheme="A01" v="EIC\_ITR\_1"/>

 <CapacityContractType v="A01"/>

 <CapacityAgreementIdentification v="T1T20001"/>

Header of nomination schedule of ITR3 to TSO1:

 <InArea codingScheme="A01" v="EIC\_TSO\_2"/>

 <OutArea codingScheme="A01" v="EIC\_TSO\_1"/>

 <InParty codingScheme="A01" v="EIC\_ITR\_1"/>

 <OutParty codingScheme="A01" v="EIC\_ITR\_3"/>

 <CapacityContractType v="A01"/>

 <CapacityAgreementIdentification v="T1T20001"/>

Nomination schedules to TSO 2 will be generated analogically.

## TSOs reactions

When a document with a schedule nomination is received by the TSO it will be formally checked immediately. If the result of the formal check is OK, the trader gets an ACK-report with the reason code A01. In case of formal errors TSO doesn’t accept the document.

Nomination without RD: This type of nomination depends on local market rules.

If a validation against the rights document couldn’t be executed during the formal check because of non-availability of the Capacity Rights Document the ITR will be informed by an additional reason Code A75 within the ACK-report. If the Capacity Rights Document is available to the TSO at the time of receiving the nomination, trader will be informed by the TSO about any exceeded capacity rights within an ANO-report. If the Capacity Rights Document is received later on or a nomination from another ITR leads to an exceeding of capacity rights, the trader will be informed by an ANO-report after the indication was detected.

In case of nomination rejection reason codes and reason texts are given in the Acknowledgement message.

Besides the exceeding of capacity rights the ANO-report can contain detected mismatches depending on the process step.

An Anomaly Report will always contain the original values of the sender and, if available, the original values of the partner.

Table of ACK/Anomaly Report Reason Codes (TimeSeries Level):

|  |  |  |  |
| --- | --- | --- | --- |
| RC | Reason Text | Document Type | ITRs Action |
| A62 | BusinessType is not “A03” | ACK (rejection) | Correct the BusinessType to “A03” and send again |
| A76 | BusinessType is “A03” but CAI and/or CCT doesn’t exist in the schedule-header | ACK (rejection) | Add CCT and/or CAI and send again |
| A59 | Quarterly-hour values in one hour not equal | ACK (rejection) | Correct the values so that all 4 quarterly-hour values of one hour are equal. |
| A22 | Invalid Party at the own side | ACK (rejection) | Correct own EIC and send it again |
| A57 | Deadline limit exceeded | ACK (rejection) | The document contains changed nominations and/or added nominations for which the deadline was exceeded. Correct to the last confirmed nominated values and send the document again if necessary |
| A76 | CAI inconsistency | ANO \*) or ACK (rejection) | Correct the nomination in accordance with the RD and local market rules and send it once again. If the time series is a zero time series no ANO will be sent. |
| A22 | InParty or OutParty must be rights holder (ITR) | ANO \*) orACK (rejection) | Correct InParty or OutParty or delete the time series from the document or set the values of the wrong time series to zero. The precise proceeding depends on local market rules |
| A27 | Cross Border Capacity exceeded | ANO \*\*) or ACK (rejection) | Correct time series or contact rights owner, error can be a result of other traders nomination  |
| A28 | Counterpart time series missing  | ANO \*) | Contact counterpart in other area and correct time series |
| A22 | Invalid Party on counterpart’s side | ANO \*)  | Correct nomination and send it again |
| A09 | Counterpart time series quantity differences | ANO \*\*) | Contact counterpart in other area or correct values in time series |
| A63 | TS modified. | ACK rejection | Correct to the last confirmed nominated values and send the document again if necessary. |
| A09 | Time series quantity differences in one of the TS using the same CAI | ANO \*\*) | Contact ITR and correct values in time series |

\*) Anomaly Report after SO-SO matching contains the own time series of the ITR.

 \*\*) Anomaly Report after SO-SO matching contains own original time series and counterpart’s original time series in case of mismatches. In case of exceeding capacity only the own time series will be transmitted.

Please note that the rules concerning global (scheduling) positions depend on the local market rules. This means that in some market areas in the corrected nomination an ITR must skip the time series with invalid CAI+CCT, while in other areas an ITR must provide the time series with the invalid header information and set the values to zero.

All these problems can be solved bilaterally between the ITRs and it is not necessary to contact the TSO.

## Description of processes

### Timeline

One of the preconditions for a smooth operation of the scheduling process is harmonization of the timeline. The table below describes the main activities that are relevant for scheduling. The listed timeline was agreed among the participating TSOs. The timeline of the scheduling process is specified as follows:

#### Day-ahead timeframe

Daily physical transmission rights shall be allocated on the UA/SK border via the course of explicit bilateral auctions performed by JAO.

The following timings shall be applicable:

|  |  |  |  |
| --- | --- | --- | --- |
| **Process** | **Border** | **Start of the process (CET)** | **End of the process (CET)** |
| Receiving of RD with PTRs allocated within Daily Auction procedure |  **SK-UA** | D-2 10:50 | D-2 10:55 |
| Daily nomination |  **SK-UA** | D-2 10:55 | D-1 14:30 |
| Correction cycle Daily |  **SK-UA** | D-1 14:30 | D-1 15:30 |
| Daily matching cycle at COT |  **SK-UA** | D-1 15:30 | D-1 15:45 |
| **Curtailment** |
| In case of curtailment: TSOs applies the reduction factor to the nominated Short term PTRs |  | asap (no dedicated timeslot foreseen) |
| In case of curtailment: Deadline for curtailment of ST nominations after Daily GCT |  | D-1 18:00\* |
| In case of curtailment: Matching after curtailment of ST nominations after Daily GCT |  | asap (no dedicated timeslot foreseen) |

\* in case of Force Majeure or Emergency Situation, curtailment can be performed even later

Parties reserve the right to amend the timing of the Day-ahead process and are obliged to inform about any changes to market participants in case of such amendment.

### Daily Nomination

After the publication of daily auction results only nominations of short term rights can be sent or modified. During this period the ITR may send schedules. According to local market rules and stage of the process the TSO may send

* Information that the schedule was received
* Positive or negative Acknowledgement Document
* Anomaly Report

In case of errors the ITR should correct the nominations as soon as possible.

### Correction Cycle Daily

During the correction cycle the ITRs may send corrected nominations. Only mismatched timeseries or timeseries with exceeded rights can be renominated at this stage of the process. Already matched timeseries must not be changed.

The correction cycle ends with the daily cut off time (COT).

During correction cycle a new matching process between the TSO will be started every 15 minutes until COT. As result of every matching process traders will be informed about confirmation and errors of nomination schedules by a CNF and ANO-reports. A CNF-report confirming all traders nominations is sent only once. Sending will not be repeated after further matching processes during correction cycle.

If the Daily nominations do not match at COT, the nominations are modified in accordance with following principles and in following order:

1. In case of mismatch the values are modified to the lower of both values
2. If there are no more mismatches and a right is still exceeded, the relevant nominations are curtailed pro rata. Value with decimals is modified to the next lower integer value.

## Curtailment of nominations

In rare cases of emergency situation or Force Majeure it is necessary that TSOs have to curtail the matched nominations on the border. In such cases as soon as respective TSOs perform curtailment of concerned nominations, relevant ITRs will be informed immediately.

Curtailment process:

* respective TSOs calculate curtailed nominations and round curtailed values down to nearest integer
* extraordinary matching of curtailed nominations is performed
* updated Confirmation Reports are sent to BRPs/ITRs

Curtailed nominations = matched nominations \* reduction factor

Reduction factor is specified separately for each direction for each hour of the respective day when the curtailment is applied.

The reduction factor is the percentage of Already Allocated Capacity (AAC) remaining after a reduction is applied, e.g. if capacity is reduced by 40%, reduction factor = 0,6.

Curtailment is performed simultaneously by both TSOs. After successful matching procedure a new CNF document shall be sent to all ITRs. This CNF will contain *A70 Curtailment* reason code in the header and for all affected time series *A86 Confirmation with adjustment* on time series level.

# Appendix

## ETSO ESS 2.3/ESS 3.3

### Definitions

DtdVersion=2

DtdRelease=3

or

DtdVersion=3

DtdRelease=x

(according to local market rules)

Message Level

* MessageIdentification: provided by sender, unique per day
* MessageVersion: new content means new version
* MessageType: A01
* ProcessType: A01
* ScheduleClassificationType: A01
* Sender Identification: Party Code of ITR
* Sender Role: A01 (ITR)
* Receiver Identification: Party code of TSO
* Receiver Role: A04 (TSO)
* MessageDateTime: Current time
* ScheduleTimeInterval: Calendar day

Timeseries Level

* SendersTimeSeriesIdentification: provided by sender, constant per message and header of timeseries, unique in the message, and all following versions with the same message id and the same day.
* SendersTimeSeriesVersion:
versioning according to local market rules
* BusinessType: A03
* Product: 8716867000016
* ObjectAggregation: A01
* In Area: The (control)area where the energy will be delivered (= sink area)
* Out Area: The (control)area where the energy is coming from (= source area)
* InParty: ITR responsible for the nomination for the InArea
* OutParty: ITR responsible for the nomination for the OutArea
* CapacityContractType: A04 = yearly, A03 = monthly, A01= Daily, additional codes (A05, A06 according to local market rules)
* CapacityAgreementIdentification: <retrieved from AO>
* MeasurementUnit: MAW

Period + Interval Level

* TimeInterval: equal to Scheduletimeinterval
* According to market rules in area
* Pos: According to market rules in area
* Qty: value in MW, 3 decimals can be used depending on local market rules, all decimals have to be in accordance with the current auction rules

Reason Level: not used

### Example

X and y for DtdRelease and DtdVersion according to local market rules

<?xml version="1.0" encoding="UTF-8"?>

<?xml-stylesheet type="text/xsl" href="schedule-document.xsl"?>

<ScheduleMessage DtdRelease="x" DtdVersion="y">

 <MessageIdentification v="C\_20071119"/>

 <MessageVersion v="1"/>

 <MessageType v="A01"/>

 <ProcessType v="A01"/>

 <ScheduleClassificationType v="A01"/>

 <SenderIdentification codingScheme="A01" v="<EIC of ITR>"/>

 <SenderRole v="A01"/>

 <ReceiverIdentification codingScheme="A01" v="10XSK-SEPS-GRIDB"/>

 <ReceiverRole v="A04"/>

 <MessageDateTime v="2024-01-19T10:22:25Z"/>

 <ScheduleTimeInterval v="2024-01-18T23:00Z/2024-01-19T23:00Z"/>

 <ScheduleTimeSeries>

 <SendersTimeSeriesIdentification v="SCHEDULE\_35240"/>

 <SendersTimeSeriesVersion v="1"/>

 <BusinessType v="A03"/>

 <Product v="8716867000016"/>

 <ObjectAggregation v="A01"/>

 <InArea codingScheme="A01" v="10Y1001C--000182"/>

 <OutArea codingScheme="A01" v="10YSK-SEPS-----K"/>

 <InParty codingScheme="A01" v="<EIC of ITR>"/>

 <OutParty codingScheme="A01" v="<EIC of ITR>"/>

 <CapacityContractType v="A01"/>

 <CapacityAgreementIdentification v="XXXXXXXX-SK-UA-XXXX"/>

 <MeasurementUnit v="MAW"/>

 <Period>

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 <ObjectAggregation v="A01"/>

 <InArea codingScheme="A01" v="10YSK-SEPS-----K"/>

 <OutArea codingScheme="A01" v="10Y1001C--000182"/>

 <InParty codingScheme="A01" v="<EIC of ITR>"/>

 <OutParty codingScheme="A01" v="<EIC of ITR>"/>

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 </Period>

 </ScheduleTimeSeries>

</ScheduleMessage>

## Referenced documents

1. ETSO ESS 2.3

ETSO Scheduling System (ESS) Implementation Guide 2.3

1. ETSO ECAN 4.0

ETSO Capacity Allocation and Nomination System (ECAN) Implementation Guide 4.0

1. ENTSO-E Code list

ENTSO-E General Code List For Data Interchange

1. ENTSO-E Acknowledgement Document (EAD) 5.0

Implementation guide for the ESS (Acknowledgement Document)

1. ETSO ESS 3.3

ETSO Scheduling System (ESS) Implementation Guide 3.3