The User's Guide to Scheduling on the common borders between 50Hertz, APG, ČEPS, ELES, MAVIR, PSE, SEPS and TenneT

Trader's Manual Version 3.0

TABLE OF CONTENTS

1 INTRODUCTION

1.1 Purpose of the 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 borders between 50Hertz, APG, ČEPS, ELES, MAVIR, PSE, SEPS and TenneT (participating TSOs).

1.2 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, intraday scheduling and cross border balancing are not covered by this document.

1.3 Definitions and abbreviations

Abbreviation	Description	Remark
TSO	Transmission System Operator	
AO	Allocation Office	Currently Joint Allocation Office S.A. (JAO)
CA	Control Area	
ITR	Interconnection Trade Responsible	Balance Responsible Party which is known by the Nomination validator as the entity entitled to use the capacity rights
BZB	Bidding Zone Border	
ICP	Interim Coupling Project	
CZC	Cross Zonal Capacity	
PTR	Physical transmission right	
FTR	Financial transmission right	
BRP	Balance responsible Party	Market participant with a balancing contract for one or more control areas. In the context of this guide, this is the counterpart of the ITR if the ITR doesn't act in both (source and sink) areas.
CCT	Capacity Contract Type	
CAI	Contract Identification	
COT	Cut off time	

GCT	Gate closure time	
SO	System Operator	SO is used referring to the ECAN document. In the context of this guide, TSO is meant.
iCNF	Intermediate CNF	Intermediate CNF sent to the BRP/ITR/SC, Intermediate CAS-CNF sent to the Initiating TSO
fCNF	Final CNF	Final CNF sent to the BRP/ITR/SC, Final CAS-CNF sent to the Initiating TSO
RC	Reason code	
RD	Rights document	
LMR	Local market rules	
TS	Time series	
Shadow auction		Daily explicit auction for allocation of cross-border capacities which is evaluated in case of decoupling of the BZB. Shadow auction is performed by JAO.

2 GENERAL DEFINITIONS

2.1 Business process

The business process between traders and TSOs is standardized. This especially regards the timeline and the communication.

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

2.2 Communication to TSOs and AO

The defined communication standards are

- /1/ ETSO ESS 2.3/ESS 3.3 - according to local market rules
- /2/ ETSO ECAN 4.0
- /3/ ENTSO-E ESS Code list
- /4/ ENTSO-E acknowledgement

2.3 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 within the CEE-region 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 (SC, ITR or BRP) 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.

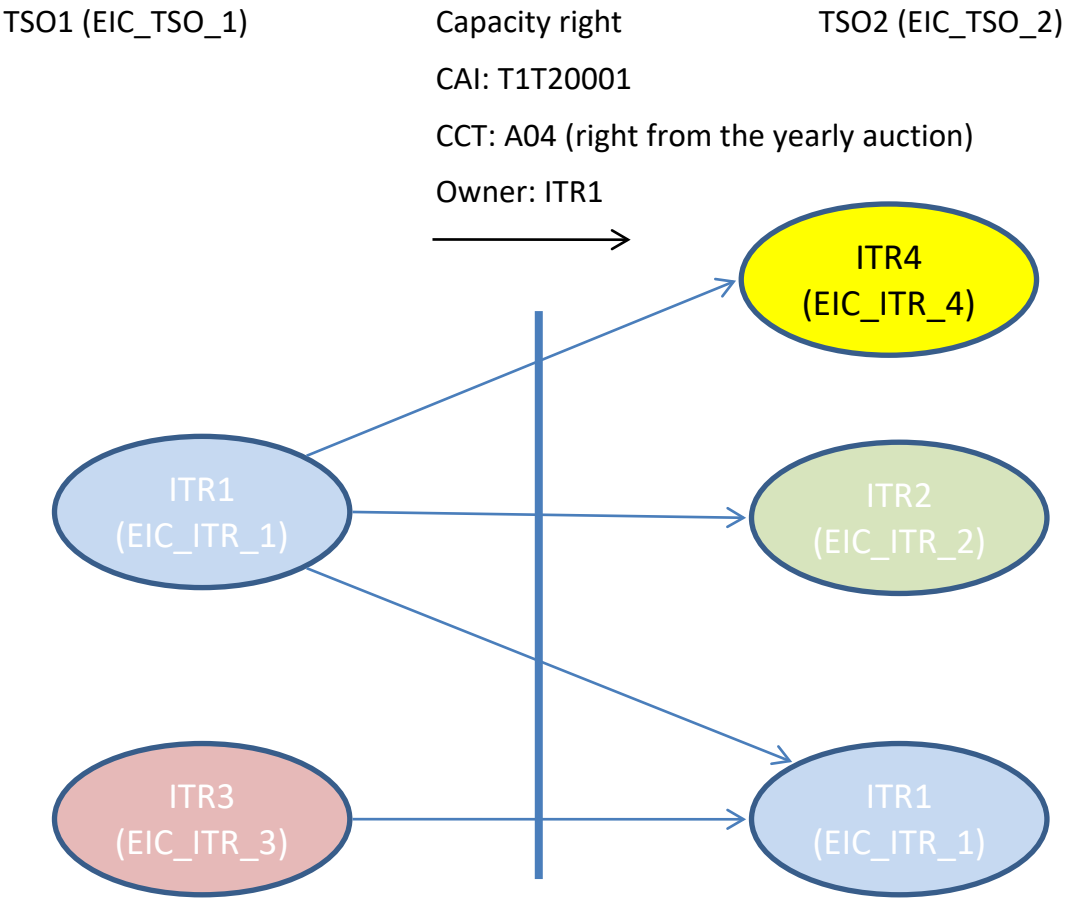
Any error regarding these conditions results in an Anomaly or ACK, depending on LMR.

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.

2.4 Example of nomination



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="A04"/>
<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="A04"/>
<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="A04"/>
<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="A04"/>
<CapacityAgreementIdentification v="T1T20001"/>
```

Nomination schedules to TSO 2 will be generated analogically

2.5 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 *) or ACK (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 BRP.

**) 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.

2.6 Description of processes – Timeline

2.6.1 Long-term timeframe

Process	**Start of the process (CET)**	**End of the process (CET)**
LT PTRs nomination	D-2 12:00 or earlier according to LMR	D-2 17:00
Correction cycle LT PTRs	D-2 17:00	D-2 18:00
LT PTRs matching cycle at COT	D-2 18:00	D-2 18:15
In case of curtailment: JAO applies the reduction factor to the non-nominated LT PTRs		asap (no dedicated timeslot foreseen)
In case of curtailment: TSOs applies the reduction factor to the nominated LT PTRs		asap (no dedicated timeslot foreseen)
In case of curtailment: additional matching after LT curtailment		asap (no dedicated timeslot foreseen)

2.6.2 Day-ahead timeframe (standard Market coupling procedure – implicit allocation)

Process	**Start of the process (CET)**	**End of the process (CET)**
Daily nomination		D-1 14:30
Correction cycle Daily	D-1 14:30	D-1 15:30
Daily nomination – Delay 1		D-1 15:00
Correction cycle Daily – Delay 1	D-1 15:00	D-1 15:30
Daily nomination – Delay 2		D-1 15:30
Daily matching cycle at COT	D-1 15:30	D-1 15:45

2.6.3 Day-ahead timeframe (in case of Full or Partial decoupling – explicit allocation via Shadow auction)

Process	Start of the process (CET)	End of the process (CET)
FD2, PD1, PD3: Daily nomination		D-1 14:30
FD2, PD1, PD3: Correction cycle Daily	D-1 14:30	D-1 15:30
PD2, delayed FD2, PD1, PD3: Daily nomination		D-1 15:00
PD2, delayed FD2, PD1, PD3: Correction cycle Daily	D-1 15:00	D-1 15:30
FD1, delayed FD2, PD3: Daily nomination		D-1 15:30
FD1, delayed FD2, PD3: Correction cycle Daily: Correction cycle Daily	Only HU-SK, SK-CZ: D-1 15:30	Only HU-SK, SK-CZ: D-1 15:45
Daily matching cycle at COT	D-1 15:30 Only HU-SK, SK-CZ: D-1 15:45	D-1 15:45 Only HU-SK, SK-CZ: D-1 15:50
In case of curtailment: Deadline for curtailment of LT and ST nominations after Daily GCT		D-1 18:00**
In case of curtailment: Matching after curtailment of LT and ST nominations after Daily GCT		asap (no dedicated timeslot foreseen)

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

Firmness of the allocated daily rights in the event of Force Majeure or Emergency Situation is governed by the Article 72 of COMMISSION REGULATION (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (CACM).

Delays: specific market situations when ICP is delayed or decoupled and daily nomination deadline is postponed, all ordinary TSO schedule matching correction cycles affected by the delay is cancelled on relevant borders and market parties still have possibility to nominate their shadow capacity rights. "Delay 1" happens in case of delayed Market Coupling calculation (e.g. due to Partial decoupling), "Delay 2" happens when the Rights Documents cannot be generated in target time.

List of abbreviations:

FD1 – Full decoupling
FD2 – Full decoupling known in advance
PD1 – Partial decoupling for CZC-related reasons
PD2 – Partial decoupling for reasons not related to the CZCs
PD3 – Partial decoupling known in advance

2.6.4 Long Term nomination

Article 2.6.4 only applies to explicitly allocated long-term Physical transmission rights (LT PTRs). In the case of allocation of long- term Financial transmission rights (LT FTRs), the process of nomination and matching of the LT FTRs does not apply.

During this period the ITR may send schedules. According to local market rules at this stage of the process the TSO may send

- Information that the schedule was received
- Positive or negative Acknowledgement Documents
- Anomaly Report

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

2.6.5 Correction Cycle Long Term

During the correction cycle the ITRs may send corrected nominations. Only mismatched time series or time series with exceeded capacity rights can be re-nominated at this stage of the process. Already matched time series must not be changed.

The correction cycle ends with the long term cut off time.

During correction cycle a new matching process between the TSOs will be started every 15 minutes until COT. As a result of every matching process traders will be informed about confirmation and errors of nominated 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. Depending on local market rules the result of the matching process is an intermediate or a final confirmation report sent to the ITR.

If the nominations do not match at COT the nominations are modified in accordance with the following principles and in the 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 the capacity rights are still exceeded the relevant nominations are curtailed pro rata. Value with decimals is rounded down to the next lower integer value.

2.6.6 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.

2.6.7 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 using the rights allocated explicitly via Shadow auction 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.

2.7 Curtailment of nominations

In rarely cases of emergency situation or Force Majeure it is necessary that TSOs have to curtail the matched nominations on one or more borders. In such cases as soon as respective TSOs perform curtailment of concerned nominations and 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 Confirmations 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.

In case of LT Capacity Curtailment after the LT nomination GCT, relevant TSOs apply the reduction factor to all already matched LT nominations. Curtailment is performed simultaneously by all involved 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.

In case of curtailment after daily nomination deadline relevant TSOs apply the same reduction factor to all LT and Daily nominations. Curtailment is performed simultaneously by all involved TSOs.

3 APPENDIX

3.1 ETSO ESS 2.3/ESS 3.3

3.1.1 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

3.1.2 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="10XCZ-CEPS-GRIDE"/>
    <ReceiverRole v="A04"/>
    <MessageDateTime v="2007-11-19T10:22:25Z"/>
    <ScheduleTimeInterval v="2007-11-18T23:00Z/2007-11-19T23:00Z"/>
    <ScheduleTimeSeries>
        <SendersTimeSeriesIdentification v="SCHEDULE_35240"/>
        <SendersTimeSeriesVersion v="1"/>
        <BusinessType v="A03"/>
        <Product v="8716867000016"/>
        <ObjectAggregation v="A01"/>
        <InArea codingScheme="A01" v="10YCZ-CEPS-----N"/>
        <OutArea codingScheme="A01" v="10YAT-APG------L"/>
        <InParty codingScheme="A01" v="11XCEZ-CZ------1"/>
        <OutParty codingScheme="A01" v="11XEDFTRADING--G"/>
        <CapacityContractType v="A04"/>
        <CapacityAgreementIdentification v="ATCZ001122"/>
        <MeasurementUnit v="MAW"/>
        <Period>
            <TimeInterval v="2007-11-18T23:00Z/2007-11-19T23:00Z"/>
            <Resolution v="PT15M"/>
            <Interval>
                <Pos v="1"/>
                <Qty v="0.000"/>
            </Interval>
            <Interval>
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        </Interval>
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            <Qty v="0.000"/>
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</ScheduleTimeSeries>
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    <SendersTimeSeriesVersion v="1"/>
    <BusinessType v="A03"/>
    <Product v="8716867000016"/>
    <ObjectAggregation v="A01"/>
    <InArea codingScheme="A01" v="10YAT-APG------L"/>
    <OutArea codingScheme="A01" v="10YCZ-CEPS-----N"/>
    <InParty codingScheme="A01" v="11XEDFTRADING--G"/>
    <OutParty codingScheme="A01" v="11XCEZ-CZ------1"/>
    <CapacityContractType v="A04"/>
    <CapacityAgreementIdentification v="ATCZ001123"/>
    <MeasurementUnit v="MAW"/>
    <Period>
        <TimeInterval v="2007-11-18T23:00Z/2007-11-19T23:00Z"/>
        <Resolution v="PT15M"/>
        <Interval>
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        </Interval>
        <Interval>
            <Pos v="2"/>
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        <Interval>
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        </Interval>
        <Interval>
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            <Qty v="0.000"/>
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        </Interval>
        <Interval>
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            <Qty v="0.000"/>
        </Interval>
    </Period>
  </ScheduleTimeSeries>
</ScheduleMessage>
```

3.2 Referenced documents

/1/ ETSO ESS 2.3

ETSO Scheduling System (ESS) Implementation Guide 2.3

/2/ ETSO ECAN 4.0

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

/3/ ENTSO-E Code list

ENTSO-E General Code List For Data Interchange

/4/ ENTSO-E Acknowledgement Document (EAD) 5.0

Implementation guide for the ESS (Acknowledgement Document)

/5/ ETSO ESS 3.3

ETSO Scheduling System (ESS) Implementation Guide 3.3