



European Network of
Transmission System Operators
for Electricity

CAPACITY MANAGEMENT MODULE IMPLEMENTATION GUIDE

2023-02-02

VERSION 1.1

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33 because the vendor feels that it enhances the product while another vendor may omit the
34 same item. An implementation which does not include a particular option SHALL be
35 prepared to interoperate with another implementation which does include the option, though
36 perhaps with reduced functionality. In the same vein an implementation which does include
37 a particular option SHALL be prepared to interoperate with another implementation which
38 does not include the option (except, of course, for the feature the option provides.)

39

Revision History

40

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Table 1 Revision History

| Version | Release | Date | Comments |
|---------|---------|------------|---|
| 0.1 | 1 | 15.12.2021 | First draft |
| 0.2 | 1 | 07.01.2022 | Internal revision cycle |
| 0.3 | 1 | 10.01.2022 | Internal revision cycle |
| 0.4 | 1 | 12.01.2022 | Internal revision cycle |
| 0.5 | 1 | 17.01.2022 | Sent for Revision |
| 0.6 | 1 | 08.02.2022 | Sent for Revision |
| 0.7 | 1 | 23.02.2022 | Sent for Revision |
| 0.8 | 1 | 14.06.2022 | Incorporated MARI SC decisions on open issues |
| 0.9 | 1 | 16.07.2022 | Incorporated remarks from ENTSO-E WG ESMP |
| 0.9.1 | 1 | | Incorporated remarks from MARI SC revision 26/7 (SWISSGRID, ELES, PSE) |
| 0.9.2 | 1 | | Incorporated remarks from ESMP WG and CIM WG. |
| 1.0.0 | 1 | 19.10.2022 | Approved version for publishing on ENTSO-E website Approved by ICTC. |
| 1.0.1 | 1 | TBD | Implementation guide for CMM Version 2: <ul style="list-style-type: none"> TABLE 12 -- New data flow for Affected TSO procedure added. New use cases added. Incorporation of BTCC tool as a sender of NTC/AAC. Incorporated remarks from SWISSGRID. Incorporated remarks from Alexander Koistinen. Incorporated remarks from AMPRION |
| 1.0.2 | 1 | | <ul style="list-style-type: none"> New table added -- TABLE 2. Definition of Affected TSO added. Single table for NTC/NPL submission was divided into two separate tables for better overview. |
| 1.1 | 1 | 02.02.2023 | Proposed version for publishing on ENTSO-E website Approved by ICTC. |

CONTENTS

| | | |
|----|---|----|
| 42 | | |
| 43 | | |
| 44 | Copyright notice:..... | 2 |
| 45 | Revision History..... | 3 |
| 46 | CONTENTS | 4 |
| 47 | 1 Scope..... | 6 |
| 48 | 2 References..... | 6 |
| 49 | 2.1 Normative references..... | 6 |
| 50 | 2.2 Other references..... | 6 |
| 51 | 3 Terms and definitions | 7 |
| 52 | 4 The CMM business process..... | 9 |
| 53 | 4.1 General introduction to CMM process | 9 |
| 54 | 4.2 Minimum viable solution of CMM process..... | 9 |
| 55 | 4.3 Timeline of the CMM process..... | 11 |
| 56 | 4.4 Roles and Use cases | 12 |
| 57 | 4.4.1 Roles..... | 12 |
| 58 | 4.4.2 Use cases..... | 14 |
| 59 | 4.5 Document exchange processes..... | 17 |
| 60 | 4.6 General Overview | 18 |
| 61 | This Implementation Guide provides the means of exchanging data between the | |
| 62 | Capacity Coordinator and all concerned parties necessary to fulfill the | |
| 63 | CMM process outlined above. | 18 |
| 64 | 4.7 Document overview..... | 19 |
| 65 | 4.8 Capacity_MarketDocument | 21 |
| 66 | 4.9 Schedule_MarketDocument | 37 |
| 67 | 4.10 Unavailability_MarketDocument | 46 |
| 68 | 5 Communication channels..... | 50 |
| 69 | | |
| 70 | List of tables | |
| 71 | Table 1 Revision History | 3 |
| 72 | Table 2 Classification of dataflows | 9 |
| 73 | Table 3 Timeline of the process | 11 |
| 74 | Table 4 Roles | 12 |
| 75 | Table 5 Use cases | 14 |
| 76 | Table 6 Region codes* | 19 |
| 77 | Table 7 Applicable EDI documents..... | 20 |
| 78 | Table 8 Capacity market document dependency table (submission of NTC to CMM | |
| 79 | platform) | 21 |
| 80 | Table 9 Capacity market document dependency table (submission of NPL to CMM | |
| 81 | platform) | 23 |

| | | |
|-----|---|----|
| 82 | Table 10 Capacity market document dependency table (submission of CZCA to CMM | |
| 83 | platform) | 25 |
| 84 | Table 11 Capacity market document dependency table (submission of CZCLmax to | |
| 85 | CMM platform) | 27 |
| 86 | Table 12 Capacity market document dependency table (submission of ATP CZCL to | |
| 87 | CMM platform) | 29 |
| 88 | Table 13 Capacity market document dependency table (CZCL to RR Platform and | |
| 89 | TSOs) | 31 |
| 90 | Table 14 Capacity market document dependency table (CZCL/ NPL to mFRR Platform | |
| 91 | and TSOs) | 33 |
| 92 | Table 15 Capacity market document dependency table (CZCL/ NPL for PICASSO / | |
| 93 | IGCC to TSOs) | 35 |
| 94 | Table 16 Schedule market dependency table (submission of AAC to CMM platform) | 37 |
| 95 | Table 17 Schedule market dependency table (submission of RR XB Flows to CMM | |
| 96 | platform) | 40 |
| 97 | Table 18 Schedule market dependency table (submission of mFRR XB Flows to CMM | |
| 98 | platform) | 42 |
| 99 | Table 19 Schedule market dependency table (submission of PICASSO/IGCC XB Flows | |
| 100 | to CMM platform) | 44 |
| 101 | Table 20 Unavailability market document dependency table | 46 |

1 Scope

This implementation guide defines the data exchanges between the Capacity Management Module (CMM) and its participating parties.

2 References

2.1 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62325-301, *Framework for energy market communications – Part 301: Common information model (CIM) extensions for markets*

IEC 62325-351, *Framework for energy market communications – Part 351: CIM European market model exchange profile*

IEC 62325-450, *Framework for energy market communications – Part 450: Profile and context modeling rules*

IEC 62325-451-1, *Framework for energy market communications – Part 451-1: Acknowledgement business process and contextual model for CIM European market*

IEC 62325-451-2, *Framework for energy market communications – Part 451-2: Scheduling business process and contextual model for CIM European market*

IEC 62325-451-3, *Framework for energy market communications – Part 451-3: Transmission capacity allocation business process (explicit or implicit auction) and contextual model for CIM European market*

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

IEC 62325-451-6, *Framework for energy market communications – Part 451-6: Transparency business process and contextual model for CIM European market*

2.2 Other references

[*Common Platform for Replacement Reserves Implementation Guide v1.3*](#)

[*Common Platform for manually activated restoration reserves Implementation Guide v1.5*](#)

[*ENTSO-E Automatic Frequency Restoration Reserve Process Implementation Guide v1.1*](#)

The Harmonised Electricity Market Role Model [*Harmonised Role Model 2022-01.pdf \(entsoe.eu\)*](#)

136 **3 Terms and definitions**

137 **AOF**

138 Activation Optimization Function as defined by EB GL article 2(39)

139 **Area**

140 Unless explicitly specified, area may refer to either a scheduling area, LFC area,
141 control area, LFC block or an aggregation thereof.

142 **ATP**

143 Affected TSO procedure

144 **Affected TSO**

145 TSO that has declared itself as affected by the balancing energy interchange
146 between other LFC areas pursuant to Art. 150 SOGL. The affected TSOs have the
147 possibility to set additional limitations by sending the CZCLs – cross-border
148 capacity limits - to the balancing platforms for every border they are affected by.

149 **BTCC** (balancing timeframe capacity calculation)

150 The Commission Regulation (EU) 2017/2015 establishing a guideline on electricity
151 balancing (hereafter referred to as the 'EB Regulation') proposes the application
152 of a cross zonal capacity calculation methodology within the balancing timeframe
153 for the exchange of balancing energy and for operating the imbalance netting
154 process (hereafter referred to as 'BTCC').

155 **CCR**

156 Capacity Calculation Region (HANSA, CORE, NORDIC)

157
158 **CZCA**

159 Capacity allocated for sharing or exchange of balancing capacity between two or
160 more Areas for individual processes and direction. It means volumes of shared or
161 exchanged cross zonal balancing capacity allocated in advance; also as defined
162 by EBGL art. 38(1)(b) and art. 41.

163 **CMF**

164 Capacity Management Function is a function performed by Capacity Management
165 Module to determine cross-zonal capacity limit for the balancing cross-zonal
166 allocation.

167 **CZC**

168 Cross-zonal capacity

169 **CBCL**

170 Cross-border capacity limit (equal to CZCL)

171 **CZCL**

| | |
|-----|--|
| 172 | Cross-zonal capacity limit (equal to CBCL) |
| 173 | XB |
| 174 | Cross-border |
| 175 | RR Interconnector |
| 176 | Borders participating in RR process (possibly also in other processes) |
| 177 | Non-RR Interconnector |
| 178 | Borders not participating in RR process but participating in mFRR and/or PICASSO process |
| 179 | mFRR DA |
| 180 | Direct activation can be initiated at any point in time after scheduled optimization |
| 181 | has begun for given MTU period |
| 182 | mFRR SA |
| 183 | Scheduled activation can be initiated only at a specific point in time in relation to |
| 184 | given MTU |
| 185 | QH |
| 186 | Quarter hour |
| 187 | aFRR |
| 188 | Automatic frequency restoration reserves; the FRR that can be activated by an |
| 189 | automatic control device (load-frequency controller) designed to regulate the |
| 190 | Frequency Restoration Control Error (FRCE) to zero. |
| 191 | mFRR |
| 192 | Manual frequency restoration reserves; the FRR that can be activated by a |
| 193 | manual trigger, as required by TSO Control Centre. This tertiary control reserve |
| 194 | intervenes when there are longer lasting deviations in the power grid that cannot |
| 195 | be resolved solely by the other downstream balancing services (FCR or aFRR). |
| 196 | RR |
| 197 | Replacement reserves; the reserves used to restore/support the required level |
| 198 | of FRR to be prepared for additional system imbalances. This category includes |
| 199 | operating reserves with activation time from Time to Restore Frequency up to |
| 200 | hours. |
| 201 | System operator |
| 202 | A natural or legal person responsible for operating the transmission system in each |
| 203 | area, including the balancing of the generation and consumption, and, where |
| 204 | applicable, its interconnections with other systems. System operator is providing |
| 205 | the cross-zonal capacities to CMM and controlling allocation processes while |
| 206 | respecting all limitations. |
| 207 | IN |

208 Imbalance netting; the IN is a real-time process of netting of aFRR Demands
209 between the TSO in order to avoid aFRR activation in opposite direction in each
210 LFC area.

211 **DP**

212 Delivery period

213 **MTU**

214 Market time Unit

215 **SO**

216 System operator as defined in ENTSO-E Harmonised Role Model

217 **4 The CMM business process**

218 **4.1 General introduction to CMM process**

219 The CMM process is based on continuous update and provision of capacity to balancing
220 platforms. The process for one quarter hour for non-RR and one hour for RR is chronologically
221 described in the table below. The continuity of the process is pictured in the process timeline
222 Table 3 below.

223
224 NTC, AAC, CZCA and CZCL data shall be exchanged with 15-minute resolution and during a
225 transitory period (RR works with 60-minute gates), until full harmonization of XB scheduling steps
226 at 15 minutes, CMM will transform input Tso's data provided with 30- or 60-minute resolution into
227 15-minute resolution.

230 **4.2 Minimum viable solution of CMM process**

231 The implementation guide describes a set of file-based documents which exchange data to cover
232 all requirements described in Technical Specification. TSO might experience not all requirements
233 listed in the catalog are needed to be implemented in their local IT modules. To limit additional
234 implementation effort on TSO side and, in parallel, have certainty TSO-CMM operation is viable,
235 the table describes a classification of the dataflows.

Table 2 Classification of dataflows

| USECASE | CLASSIFICATION | REFERENCE |
|-------------------|----------------|---|
| Receive NTC | Mandatory | Submission of NTC to CMM platform |
| Receive AAC | Mandatory | Submission of AAC to CMM platform |
| Send CZCL/NPL | Recommended | Submission of CZCL to RR platform and TSOs Submission of CZCL/NPL to mFRR platform and TSOs Submission of CZCL/NPL for PICASSO/IGCC to TSOs |
| Receive NPL | Optional | Submission of NPL to CMM platform |
| Receive CZLC(max) | Optional | Submission of CZCLmax to CMM platform |

| | | |
|------------------|----------|--|
| Receive CZCA | Optional | Submission of CZCA to CMM platform |
| Receive ATP CZCL | Optional | Submission of ATP CZCL to CMM platform |

*In table are listed use cases applied for CMM-TSO interface only.

4.3 Timeline of the CMM process

Table 3 Timeline of the process

| Flow number | From | Action | Information | To | Time of receiving |
|-------------|---|------------|---|------------------|--------------------|
| 1a | RR TSOs* | submits | NTC, AAC, CZCL(max), ATP CZCL | CMM | at the latest T-42 |
| 1b | BCCO or TSO | submits | CZCA for RR | CMM | at the latest T-42 |
| 1c | CMM | sends | Problem document if the data is missing | TSOs | T-42 |
| 1d | Non-RR TSOs | submits | NTC, AAC, NPL, CZCL (max), ATP CZCL | CMM | at the latest T-30 |
| 1e | BCCO or TSO | submits | CZCA for mFRR and aFRR | CMM | at the latest T-30 |
| 1f | Fingrid, Elering, possibly also other Nordic TSOs | submits | NTC, AAC, NPL, CZCL (max), ATP CZCL | CMM | T-28 |
| 1g | CMM | sends | Problem document if the data is missing | TSO | T-30 |
| 1h | CMM | sends | Problem document if the data is missing | Fingrid, Elering | T-28 |
| 2 | CMM | Calculates | RR CZCL | - | <T-42; T-41> |
| 3a | CMM | submits | RR CZCL | TERRE, TSOs | T-40 |
| 3b | RR | submits | XB flows for entire hour | CMM | At the latest T-30 |
| 4 | CMM | calculates | mFRR CZCL | | T-25 |
| 5a | CMM | submits | CZCL, NPL | MARI, TSOs | T-24 |
| 5b | MARI | submits | XB flows of MARI SA | CMM | T-8 |
| 5c | MARI | submits | XB flows of MARI DA** | CMM | <T-7; T+6> |
| 6 | CMM | calculates | aFRR CZCL | | <T-8; T+15> |
| 7a | CMM | submits | CZCL, NPL | PICASSO, TSOs | <T-8; T+15> |
| 7b | PICASSO | submits | XB flows | CMM | T+15 |
| update | TSO | submits | Correction of data | CMM | <T-120; T+15> |
| 8a | CMM | archives | Data | database | T+20 |

4.4 Roles and Use cases

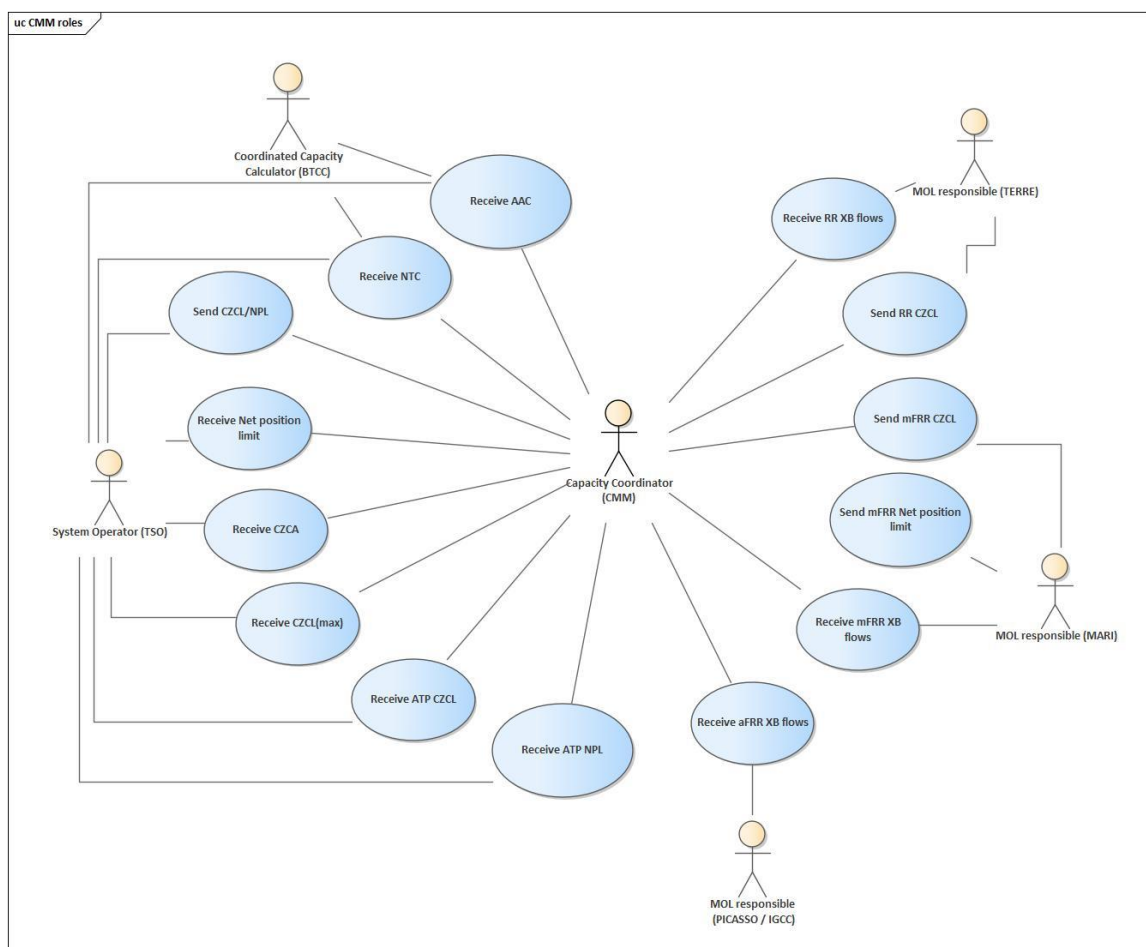


Figure 1 CMM Roles and use cases

4.4.1 Roles

Table 4 Roles

| Role Label | Role Description |
|-----------------|---|
| System Operator | <p>A natural or legal person responsible for operating the transmission system in each area, including the balancing of the generation and consumption, and, where applicable, its interconnections with other systems. System operator is providing the cross-zonal capacities to CMM and controlling allocation processes while respecting all limitations.</p> <p>In CMM process, TSO submitting CZC data act as System operator role.</p> |

| | |
|---------------------------------|---|
| Merit Order List Responsible | <p>TERRE is a European platform for the replacement reserve exchange in accordance with Article 19 of Commission Regulation (EU) 2017/2195 establishing a guideline on electricity balancing (RR implementation framework).</p> <p>MARI is a European platform for the exchange of balancing energy from frequency restoration reserves with manual activation in accordance with Article 20 of Commission Regulation (EU) 2017/2195 establishing a guideline on electricity balancing (mFRR Implementation framework).</p> <p>PICASSO is a European platform for the exchange of balancing energy from frequency restoration reserves with automatic activation in accordance with Article 21 of Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing (aFRR Implementation framework).</p> <p>IGCC is a European platform for the imbalance netting process in accordance with Article 22 of Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing (IN Implementation framework).</p> |
| Capacity Coordinator | <p>CMM is an IT system for management of CZCL among all European platforms (TERRE, MARI, PICASSO) and SOs for the exchange of balancing energy developed in line with the requirements of the European platforms (respecting relevant implementation frameworks and their legal deadline), while respecting availability and performance requirements.</p> <p>In CMM process, CMM platform providing service act as Capacity coordinator role.</p> |
| Coordinated Capacity Calculator | <p>The CCC calculates the transmission capacity between the bidding zones of his CCR based on the inputs received from SOs. The CCC submit CZC to the SO within its CCR for validation and delivery for allocating capacity.</p> <p>In CMM process, Coordinated Capacity Calculator role might be played by the BTCC tool. The purpose of BTCC process is to calculate CZC for balancing timeframe market.</p> |

4.4.2 Use cases

Table 5 Use cases

| Use case label | Roles involved | Action descriptions and assertions |
|----------------------------|--|---|
| Receive NTC | <ul style="list-style-type: none"> System Operator Capacity Coordinator Coordinated Capacity calculator | The participating SOs or CCC shall provide Net Transfer Capacity (NTC) to the CMM. This information will be used in calculating Cross-zonal Capacity Limits (CZCL). SO / CCC may submit updates to NTC continuously within respective balancing processes windows. In contrary to the rest of the values send by SOs, NTC can be negative. |
| Receive AAC | <ul style="list-style-type: none"> System Operator Capacity Coordinator Coordinated Capacity calculator | The participating SOs shall provide Already Allocated Capacity (AAC) to the CMM platform after the relevant Energy market Gate Closure Time. This information will be used in calculating Cross-zonal Capacity Limits (CZCL). SOs may submit updates to AAC continuously within respective balancing processes windows. CCC may send AAC value as well. |
| Receive Net Position Limit | <ul style="list-style-type: none"> System Operator Capacity Coordinator | The participating SOs have the opportunity to provide Net Position Limit value per process or provide a single value applicable to both mFRR and aFRR processes with consideration to RR XB flows, if desired by the TSO. This information will serve as additional information for balancing platforms in order to limit the exchanges within areas. SOs may submit updates to Net position limit continuously within respective balancing processes windows |
| Receive CZCA | <ul style="list-style-type: none"> System Operator Capacity Coordinator | The participating SOs have the opportunity to provide Cross-zonal capacity allocations (CZCA) per process to the CMM platform. This information will be used in calculating Cross-zonal Capacity Limits (CZCL). SOs may submit updates to CZCA continuously within respective balancing processes windows. |
| Send CZCL/NPL | <ul style="list-style-type: none"> System Operator Capacity Coordinator | <p>Resulting CZCLs/NPLs are sent to the SOs after each change together with these use cases:</p> <ul style="list-style-type: none"> Send RR CZCL Send mFRR CZCL/NPL |

| | | |
|-----------------------------|--|--|
| | | <ul style="list-style-type: none"> • Send aFRR CZCL/NPL |
| Receive CZCL _{max} | <ul style="list-style-type: none"> • System Operator • Capacity Coordinator | The participating SOs have the opportunity to provide the CZCL _{max} value per process or one value for the whole balancing timeframe. This limits the maximum possible value for the CZCL determined by the CMM for the given balancing process. SOs may submit updates to CZCL _{max} continuously within respective balancing processes windows. |
| Send RR CZCL | <ul style="list-style-type: none"> • Capacity Coordinator • Merit Order List Responsible | <p>The CMM provides to the TERRE platform the CZCLs (TERRE refers –available transmission capacity ATC).</p> <p>CMM submits updates of CZCL for the current MTU during the corresponding RR process (if update of NTC, CZCL_{max}, AAC or/and CZCA is submitted by SO).</p> |
| Receive RR XB flows | <ul style="list-style-type: none"> • Capacity Coordinator • Merit Order List Responsible | The RR platform informs the CMM of the XB flows resulting from RR process (refer to Cross border schedules in RR). |
| Send mFRR CZCL | <ul style="list-style-type: none"> • Capacity Coordinator • Merit Order List Responsible | <p>The CMM provides to the MARI platform the CZCLs (MARI refers to cross-border capacity limits - CBCLs).</p> <p>CMM submits updates of CZCL for the current MTU during the corresponding mFRR process (if update of NTC, CZCL_{max}, AAC or/and CZCA is submitted by SO).</p> |

| | | |
|------------------------------|--|--|
| Receive mFRR XB flows | <ul style="list-style-type: none"> Capacity Coordinator Merit Order List Responsible | The MARI platform informs the CMM of the XB flows (in MARI referred as cross-border flows) resulting from scheduled and direct activations, respectively. |
| Send mFRR Net position limit | <ul style="list-style-type: none"> Capacity Coordinator Merit Order List Responsible | CMM shall provide mFRR platform with the Net position limit, if a SO desires to use this kind of limitation. This information serves as an additional information for balancing platforms in order to limit the net position within areas. |
| Receive aFRR XB flows | <ul style="list-style-type: none"> Capacity Coordinator Merit Order List Responsible | aFRR platform provides after each finished QH to the CMM the aFRR XB-flows (quarter-hour average, for the whole QH) via Schedule market document. |
| Receive ATP CZCL | <ul style="list-style-type: none"> System Operator Capacity Coordinator | The affected TSOs have the opportunity to provide the ATP CZCL value per process or one value for the whole balancing timeframe. This limits the maximum possible value for the CZCL determined by the CMM for the given balancing process. SOs may submit updates to ATP CZCL continuously within respective balancing processes windows. |

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257

258 4.5 Document exchange processes

259

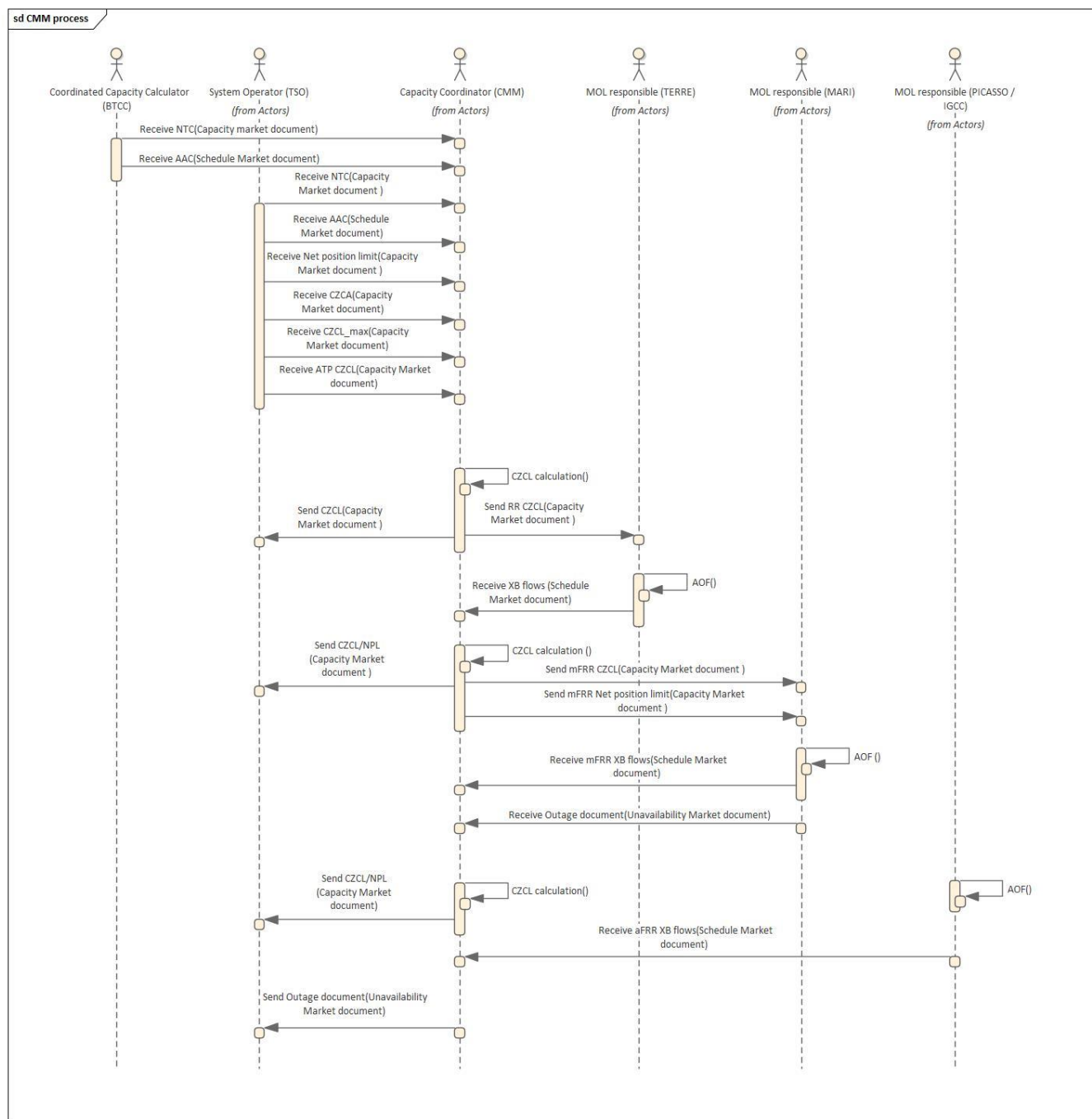


Figure 2 CMM process in sequence diagram

4.6 General Overview

This Implementation Guide provides the means of exchanging data between the Capacity Coordinator and all concerned parties necessary to fulfill the CMM process outlined above.

Input data sent from SO to Capacity Coordinator cannot contain values for RR and non-RR interconnectors in one document. Values must be submitted separately. For RR interconnector 60-minute time interval is expected, for non-RR interconnectors 15-minute time interval is expected.

4.6.1.1 Receive NTC

NTC can be received for technical profile as well (Technical profile does not apply in RR).

4.6.1.2 Receive AAC

AAC is received separately for RR and non-RR interconnectors. For RR interconnector 60-minute MTU is expected, for non-RR interconnectors 15-minute MTU is expected. AAC can be received for technical profile as well. In that case, SO can submit AAC as aggregated value of LT, DA and ID market or use specific approach when individual files are expected: 1) intraday AAC for each interconnector participating in technical profile, and 2) day ahead and long-term AAC for technical profile.

4.6.1.3 Receive Net position limit

Net position limit does not apply in RR.

4.6.1.4 Problem Statement document

The balancing platform shall send out a Problem Statement document in case a problem (such as missing data) occurred during the process or the balancing platform becomes unavailable or experiences a failure, the balancing platform sends a Problem Statement document to the Capacity Coordinator and SOs participating in the process.

4.6.1.5 Send CZCL/NPL

Capacity Coordinator sends CZCL/NPL after end of every calculation to SSOs as well to balancing platforms with the exception of aFRR which is only sent to SOs (aFRR CZCL/NPL is sent via signals and not with EDI document). Net position limit does not apply in RR.

4.6.1.6 Outage document

Capacity Coordinator shall send out Outage document in case capacity management process itself has stopped or started, balancing platform or SO has been disconnected or reconnected from/to the capacity management process, a future dated disconnection/reconnection is recorded or any subsequent updates to the corresponding start and end times.

4.6.1.7 Acknowledgement – Acknowledgement Market Document

For each file-based electronic data interchange defined in this document, an acknowledgement document, as defined in IEC 62325-451-1, should be generated either accepting the whole received document or rejecting it completely.

4.6.1.8 Regions

The RR, mFRR and aFRR processes described in this chapter will be executed separately for each region as defined below in *Table 6*.

301

302

Table 6 Region codes*

| Process | Region | Geographical scope |
|---------|---------------------------------------|--|
| RR | Western Europe | UK-FR-CH-IT-ES-PT |
| RR | Central Europe | PL-CZ |
| RR | Eastern Europe | HU-RO |
| mFRR | virtual scheduling area | **scheduling areas of all TSOs participating in the mFRR process |
| aFRR | virtual scheduling area | scheduling areas of all TSOs participating in the aFRR process |
| CMF | Balancing Capacity Calculation Region | Area participating in CMM |

303

*See [Approved EIC CODES \(entsoe.eu\)](#) for EIC codes of above regions.

304

** By default, the data exchanged with System Operators describe scheduling areas. However, data exchanged with Amprion in its role as System Operator will always refer to the LFC area covering the control areas of Amprion and Creos.

305

306

In all documents the single applicable coding scheme shall be A01 = EIC coding scheme.

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4.6.1.9 Versioning

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For all business documents, higher versions must contain the same number of time series and cover the same time interval. If platform for a given border, interconnector, technical profile or area and time interval already has received and successfully validated data (NTC, AAC, CZCA, NPL, CZCLmax) from given data provider, any data subsequently received from same data provider for the same border, interconnector, technical profile or area and time interval but with a different document ID shall be rejected.

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4.6.1.10 Validation

The CMM platform will as far as technically feasible validate that submitted data complies with the business rules and permitted combinations of attributes as articulated by this implementation guide. Any data submission that fails such validation will be rejected by the platform.

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4.7 Document overview

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This implementation guide assumes the use of the following EDI documents and contextual and assembly models (also referred to as XSD or schema versions):

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Table 7 Applicable EDI documents

| EDI document | version |
|--------------------------------|---|
| Capacity Market document | urn:iec62325.351:tc57wg16:451-3:capacitydocument:8:0 |
| Schedule market document | urn:iec62325.351:tc57wg16:451-2:scheduledocument:5:1. |
| Acknowledgement document | urn:iec62325.351:tc57wg16:451-1:acknowledgementdocument:8:0 for RR urn:iec62325.351:tc57wg16:451-1:acknowledgementdocument:8:1 |
| Problem Statement document | urn:iec62325.351:tc57wg16:451-5:problemdocument:3:0 |
| Unavailability market document | urn:iec62325.351:tc57wg16:451-6:outagedocument:4:0 |

326 All schemas are available for download from the ENTSO-E website.

327 4.8 Capacity_MarketDocument

The capacity market document is used to provide the Net Transfer Capacity (NTC) and Net Position Limit (NPL) for borders, interconnectors and technical profiles to the CMM platform by the SOs and/or CCC. It is also used to provide Cross-Zonal Capacity Allocations (CZCA) to CMM platform by SOs. The Capacity_MarketDocument is then used to provide cross-zonal capacity limits and net position limits when applicable during exactly one DP to LIBRA platform for the RR and one MTU period for the mFRR processes by the CMM platform. For a given border, interconnector or area, values must be provided for both directions in the same file.

SOs shall send one Capacity Market Document with one value per each quarter-hour for non-RR interconnectors. For RR interconnectors separate Capacity Market Document with four values for each hour is expected. RR and non-RR interconnectors cannot be sent in one Capacity Market Document.

4.8.1.1 Submission of NTC to CMM platform

Table 8 Capacity market document dependency table (submission of NTC to CMM platform)

| | | Use | XSD requirements |
|--|---|------|------------------|
| Capacity_MarketDocument | | | |
| mRID | Unique identification of the Capacity Document | Used | Mandatory |
| revisionNumber | Initial transmission should normally equal "1" | Used | Mandatory |
| type | A26 = Capacity document | Used | Mandatory |
| process.processType | A15 = Capacity determination | Used | Mandatory |
| sender_MarketParticipant.mRID | EIC of the Sender | Used | Mandatory |
| sender_MarketParticipant.marketRole.type | A04 = System operator A55 = Coordinated Capacity Calculator | Used | Mandatory |
| receiver_MarketParticipant.mRID | EIC of the CMM platform | Used | Mandatory |
| receiver_MarketParticipant.marketRole.type | A36 = Capacity Coordinator | Used | Mandatory |
| createdDateTime | Date and time of document creation | Used | Mandatory |
| Period.timeInterval | Duration of delivery period (initially 1 hour) for RR interconnectors Duration of MTU/delivery period (15 minutes) otherwise | Used | Mandatory |
| domain.mRID | EIC of the CMM region | Used | Mandatory |
| TimeSeries | | | |

| | | Use | XSD requirements |
|--|---|-------------|------------------|
| mRID | The unique identification of the time series within the document | Used | Mandatory |
| businessType | A27 = NTC | Used | Mandatory |
| product | 8716867000016 = active power | Used | Mandatory |
| in_Domain.mRID | EIC identification of the area (either of interconnector or technical profile) where the power is being put. | Used | Mandatory |
| out_Domain.mRID | EIC identification of the area (either of interconnector or technical profile) where the power is coming from. | Used | Mandatory |
| measure_Unit.name | MAW = Megawatts | Used | Mandatory |
| auction.mRID | The identification of an auction specification | Not used | Conditional |
| auction.category | The category under which capacity is classified | Not used | Conditional |
| curveType | A01 = Sequential fixed size block | Used | Mandatory |
| connectingLine_RegisteredResource.mRID | The identification of a set of lines that connect two areas together. This is only used when specific tie lines have to be identified. | May be used | Conditional |

| Series_Period | | | |
|---------------|---|------|-----------|
| timeInterval | A time interval of the same length as the Period.timeInterval | Used | Mandatory |
| resolution | Shall coincide with the scheduling step of the border. For RR following scheduling steps are supported: PT60M PT30M PT15M Otherwise PT15M | Used | Mandatory |

| Point | | | |
|----------|---|------|-----------|
| position | Position within the time interval | Used | Mandatory |
| quantity | Quantity of limit with 0.1 MW precision | used | Mandatory |

| | | Use | XSD requirements |
|---|--|-------------|--------------------|
| Reason (associated with time series) | Exactly one instance of Reason class may be included to indicate adjustment due to operational security. | May be used | Conditional |
| code | B47 = Operational security constraints | Used | |
| text | May be populated to provide additional explanation or justification in free text format | May be used | |

| | | | |
|---------------------------------------|---|-------------|-------------|
| Reason (associated with point) | Exactly one instance of Reason class may be included o indicate adjustment due to operational security. | May be used | Conditional |
| code | B47 = Operational security constraints | Used | |
| text | May be populated to provide additional explanation or justification in free text format | May be used | |

4.8.1.1 Submission of NPL to CMM platform

Table 9 Capacity market document dependency table (submission of NPL to CMM platform)

| | | Use | XSD requirements |
|--|--|------|------------------|
| Capacity_MarketDocument | | | |
| mRID | Unique identification of the Capacity Document | Used | Mandatory |
| revisionNumber | Initial transmission should normally equal "1" | Used | Mandatory |
| type | A26 = Capacity document | Used | Mandatory |
| process.processType | A47 = Manual frequency restoration reserve A51 = Automatic frequency restoration reserve A56 = Frequency restoration reserve (used for aggregated Net position limit for mFRR and aFRR which takes RR XB flows into consideration) | Used | Mandatory |
| sender_MarketParticipant.mRID | EIC of the Sender | Used | Mandatory |
| sender_MarketParticipant.marketRole.type | A04 = System operator | Used | Mandatory |
| receiver_MarketParticipant.mRID | EIC of the CMM platform | Used | Mandatory |
| receiver_MarketParticipant.marketRole.type | A36 = Capacity Coordinator | Used | Mandatory |
| createdDateTime | Date and time of document creation | Used | Mandatory |

| | | Use | XSD requirements |
|---------------------|--|------|------------------|
| Period.timeInterval | Duration of MTU/delivery period (15 minutes) | Used | Mandatory |
| domain.mRID | EIC of the CMM region | Used | Mandatory |

| TimeSeries | | | |
|--|--|-------------|-------------|
| mRID | The unique identification of the time series within the document | Used | Mandatory |
| businessType | A27 = NTC | Used | Mandatory |
| product | 8716867000016 = active power | Used | Mandatory |
| in_Domain.mRID | Shall contain the TSO's area when submitting net position limits on import. Shall contain the region when submitting net position limits on export. | Used | Mandatory |
| out_Domain.mRID | Shall contain the region when submitting net position limits on import. Shall contain the TSO's area when submitting net position limits on export. | Used | Mandatory |
| measure_Unit.name | MAW = Megawatts | Used | Mandatory |
| auction.mRID | The identification of an auction specification | Not used | Conditional |
| auction.category | The category under which capacity is classified | Not used | Conditional |
| curveType | A01 = Sequential fixed size block | Used | Mandatory |
| connectingLine_RegisteredResource.mRID | The identification of a set of lines that connect two areas together. This is only used when specific tie lines have to be identified. | May be used | Conditional |

| Series_Period | | | |
|---------------|---|------|-----------|
| timeInterval | A time interval of the same length as the Period.timeInterval | Used | Mandatory |
| resolution | PT15M | Used | Mandatory |

| Point | | | |
|----------|-----------------------------------|------|-----------|
| position | Position within the time interval | Used | Mandatory |

| | | Use | XSD requirements |
|----------|---|------|------------------|
| quantity | Quantity of limit with 0.1 MW precision | used | Mandatory |

| Reason (associated with time series) | Exactly one instance of Reason class may be included to indicate adjustment due to operational security. | May be used | Conditional |
|--------------------------------------|--|-------------|-------------|
| code | B47 = Operational security constraints | Used | |
| text | May be populated to provide additional explanation or justification in free text format | May be used | |

| Reason (associated with point) | Exactly one instance of Reason class may be included to indicate adjustment due to operational security. | May be used | Conditional |
|--------------------------------|--|-------------|-------------|
| code | B47 = Operational security constraints | Used | |
| text | May be populated to provide additional explanation or justification in free text format | May be used | |

4.8.1.2 Submission of CZCA to CMM platform

Table 10 Capacity market document dependency table (submission of CZCA to CMM platform)

| | | Use | XSD requirements |
|--|---|------|------------------|
| Capacity_MarketDocument | | | |
| mRID | Unique identification of the Capacity Document | Used | Mandatory |
| revisionNumber | Initial transmission should normally equal "1" | Used | Mandatory |
| type | A13 = interconnection capacity | Used | Mandatory |
| process.processType | A46 = Replacement reserve (RR) A47 = Manual frequency restoration reserve (mFRR) A51 = Automatic frequency restoration reserve (aFRR) | Used | Mandatory |
| sender_MarketParticipant.mRID | EIC of the Transmission System Operator or Balancing capacity cooperation operator | Used | Mandatory |
| sender_MarketParticipant.marketRole.type | A04 = System operator | Used | Mandatory |

| | | Use | XSD requirements |
|--|---|------|------------------|
| receiver_MarketParticipant.mRID | EIC of the CMM platform Operator | Used | Mandatory |
| receiver_MarketParticipant.marketRole.type | A36 = Capacity Coordinator | Used | Mandatory |
| createdDateTime | Date and time of document creation | Used | Mandatory |
| Period.timeInterval | Duration of delivery period (initially 1 hour) when processType = A46 Duration of MTU/delivery period (15 minutes) otherwise | Used | Mandatory |
| domain.mRID | EIC of the CMM region | Used | Mandatory |

| TimeSeries | | | |
|--|---|-------------|-------------|
| mRID | The unique identification of the time series within the document | Used | Mandatory |
| businessType | C88 = Reserved cross zonal capacity | Used | Mandatory |
| product | 8716867000016 = active power | Used | Mandatory |
| in_Domain.mRID | EIC identification of the area where the power is being put. | Used | Mandatory |
| out_Domain.mRID | EIC identification of the area where the power is coming from. | Used | Mandatory |
| measure_Unit.name | MAW = Megawatts | Used | Mandatory |
| auction.mRID | The identification of an auction specification | Not used | Conditional |
| auction.category | The category under which capacity is classified | Not used | Conditional |
| curveType | A01 = Sequential fixed size block. | Used | Mandatory |
| connectingLine_RegisteredResource.mRID | The identification of a set of lines that connect two areas together. This is only used when specific tie lines have to be identified. | May be used | Conditional |

| Series_Period | | | |
|---------------|--|------|-----------|
| timeInterval | A time interval of the same length as the Period.timeInterval | Used | Mandatory |
| resolution | Shall coincide with the scheduling step of the border. For RR following scheduling steps are supported: PT60M PT30M PT15M | Used | Mandatory |

| | | Use | XSD requirements |
|--|------------------|-----|------------------|
| | Otherwise PT15M. | | |

| Point | | | |
|----------|---|------|-----------|
| position | Position within the time interval | Used | Mandatory |
| quantity | Quantity of limit with 0.1 MW precision | used | Mandatory |

4.8.1.3 Submission of CZCLmax to CMM platform

Table 11 Capacity market document dependency table (submission of CZCLmax to CMM platform)

| | | Use | XSD requirements |
|--|--|------|------------------|
| Capacity_MarketDocument | | | |
| mRID | Unique identification of the Capacity Document | Used | Mandatory |
| revisionNumber | Initial transmission should normally equal "1" | Used | Mandatory |
| type | B31 = Additional Constraint document | Used | Mandatory |
| process.processType | A15 = Capacity determination (for entire balancing timeframe) A46 = Replacement reserve (RR) A47 = Manual frequency restoration reserve (mFRR) A51 = Automatic frequency restoration reserve (aFRR) | Used | Mandatory |
| sender_MarketParticipant.mRID | EIC of the Transmission System Operator | Used | Mandatory |
| sender_MarketParticipant.marketRole.type | A04 = System operator | Used | Mandatory |
| receiver_MarketParticipant.mRID | EIC of the CMM platform Operator | Used | Mandatory |
| receiver_MarketParticipant.marketRole.type | A36 = Capacity Coordinator | Used | Mandatory |
| createdDateTime | Date and time of document creation | Used | Mandatory |

| | | Use | XSD requirements |
|---------------------|--|------|------------------|
| Period.timeInterval | Duration of delivery period (initially 1 hour) for RR interconnectors. . Duration of MTU/delivery period (15 minutes) otherwise | Used | Mandatory |
| domain.mRID | EIC of the CMM region | Used | Mandatory |

| TimeSeries | | | |
|--|---|-------------|-------------|
| mRID | The unique identification of the time series within the document | Used | Mandatory |
| businessType | C79 = Maximum available capacity | Used | Mandatory |
| product | 8716867000016 = active power | Used | Mandatory |
| in_Domain.mRID | EIC identification of the area where the power is being put. | Used | Mandatory |
| out_Domain.mRID | EIC identification of the area where the power is coming from. | Used | Mandatory |
| measure_Unit.name | MAW = Megawatts | Used | Mandatory |
| auction.mRID | The identification of an auction specification | Not used | Conditional |
| auction.category | The category under which capacity is classified | Not used | Conditional |
| curveType | A01 = Sequential fixed size block. | Used | Mandatory |
| connectingLine_RegisteredResource.mRID | The identification of a set of lines that connect two areas together. This is only used when specific tie lines have to be identified. | May be used | Conditional |

| Series_Period | | | |
|---------------|--|------|-----------|
| timeInterval | A time interval of the same length as the Period.timeInterval | Used | Mandatory |
| resolution | Shall coincide with the scheduling step of the border. For RR following scheduling steps are supported: PT60M PT30M PT15M Otherwise PT15M. | Used | Mandatory |

| Point | | | |
|-------|--|--|--|
|-------|--|--|--|

| | | Use | XSD requirements |
|----------|---|------|------------------|
| position | Position within the time interval | Used | Mandatory |
| quantity | Quantity of limit with 0.1 MW precision | used | Mandatory |

| Reason (associated with time series) | Exactly one instance of Reason class may be included to indicate adjustment due to operational security. | May be used | Conditional |
|--------------------------------------|--|-------------|-------------|
| code | B47 = Operational security constraints | Used | |
| text | May be populated to provide additional explanation or justification in free text format | May be used | |

| Reason (associated with point) | Exactly one instance of Reason class may be included to indicate adjustment due to operational security. | May be used | Conditional |
|--------------------------------|--|-------------|-------------|
| code | B47 = Operational security constraints | Used | |
| text | May be populated to provide additional explanation or justification in free text format | May be used | |

4.8.1.4 Submission of ATP CZCL to CMM platform

Table 12 Capacity market document dependency table (submission of ATP CZCL to CMM platform)

| | | Use | XSD requirements |
|--------------------------------|--|------|------------------|
| Capacity_MarketDocument | | | |
| mRID | Unique identification of the Capacity Document | Used | Mandatory |
| revisionNumber | Initial transmission should normally equal "1" | Used | Mandatory |
| type | B49 = Requested Capacity | Used | Mandatory |
| process.processType | A15 = Capacity determination (for entire balancing timeframe) A46 = Replacement reserve (RR) A47 = Manual frequency restoration reserve (mFRR) A51 = Automatic frequency restoration reserve (aFRR) | Used | Mandatory |
| sender_MarketParticipant.mRID | EIC of the Transmission System Operator | Used | Mandatory |

| | | Use | XSD requirements |
|--|---|------|------------------|
| sender_MarketParticipant.marketRole.type | A04 = System operator | Used | Mandatory |
| receiver_MarketParticipant.mRID | EIC of the CMM platform Operator | Used | Mandatory |
| receiver_MarketParticipant.marketRole.type | A36 = Capacity Coordinator | Used | Mandatory |
| createdDateTime | Date and time of document creation | Used | Mandatory |
| Period.timeInterval | The MTU period(s) affected by the ATP (maximum 2-hour interval) | Used | Mandatory |
| domain.mRID | EIC of the CMM region | Used | Mandatory |

| TimeSeries | | | |
|--|--|-------------|-------------|
| mRID | The unique identification of the time series within the document | Used | Mandatory |
| businessType | C79 = Maximum available capacity | Used | Mandatory |
| product | 8716867000016 = active power | Used | Mandatory |
| in_Domain.mRID | EIC identification of the area where the power is being put. | Used | Mandatory |
| out_Domain.mRID | EIC identification of the area where the power is coming from. | Used | Mandatory |
| measure_Unit.name | MAW = Megawatts | Used | Mandatory |
| auction.mRID | The identification of an auction specification | Not used | Conditional |
| auction.category | The category under which capacity is classified | Not used | Conditional |
| curveType | A01 = Sequential fixed size block. | Used | Mandatory |
| connectingLine_RegisteredResource.mRID | The identification of a set of lines that connect two areas together. This is only used when specific tie lines have to be identified. | May be used | Conditional |

| Series_Period | | | |
|---------------|---|------|-----------|
| timeInterval | A time interval of the same length as the Period.timeInterval | Used | Mandatory |

| | | Use | XSD requirements |
|------------|--|------|------------------|
| resolution | Shall coincide with the scheduling step of the border. For RR following scheduling steps are supported: PT60M PT30M PT15M Otherwise PT15M. | Used | Mandatory |

| Point | | | |
|----------|---|------|-----------|
| position | Position within the time interval | Used | Mandatory |
| quantity | Quantity of limit with 0.1 MW precision | Used | Mandatory |

| Reason (associated with time series) | | Used | Mandatory |
|--------------------------------------|--|-------------|-------------|
| code | Exactly one instance of Reason class may be included to indicate adjustment due to operational security. B47 = Operational security constraints | Used | Mandatory |
| text | May be populated to provide additional explanation or justification in free text format | May be used | Conditional |

| Reason (associated with point) | | May be used | Conditional |
|--------------------------------|--|-------------|-------------|
| code | Exactly one instance of Reason class may be included to indicate adjustment due to operational security. B47 = Operational security constraints | Used | |
| text | May be populated to provide additional explanation or justification in free text format | May be used | |

4.8.1.5 Submission of CZCL to RR platform and TSOs

Table 13 Capacity market document dependency table (CZCL to RR Platform and TSOs)

| | Use | XSD requirements |
|--|-----|------------------|
|--|-----|------------------|

| Capacity_MarketDocument | | | |
|--|---|------|-----------|
| mRID | Unique identification of the Capacity Document | Used | Mandatory |
| revisionNumber | Initial transmission shall equal "1" | Used | Mandatory |
| type | A31 = Agreed capacity | Used | Mandatory |
| process.processType | A15 = Capacity determination | Used | Mandatory |
| sender_MarketParticipant.mRID | EIC of the CMM platform Operator | Used | Mandatory |
| sender_MarketParticipant.marketRole.type | A36 = Capacity Coordinator | Used | Mandatory |
| receiver_MarketParticipant.mRID | EIC of the balancing platform Operator or TSO | Used | Mandatory |
| receiver_MarketParticipant.marketRole.type | A35 = MOL responsible Operator A04 = System Operator | Used | Mandatory |
| createdDateTime | Date and time of document creation | Used | Mandatory |
| Period.timeInterval | The duration of the delivery period (initially 1 hour) | Used | Mandatory |
| domain.mRID | EIC of the balancing region | Used | Mandatory |

| TimeSeries | | | |
|-----------------------|--|----------|-------------|
| mRID | The unique identification of the time series within the document | Used | Mandatory |
| businessType | A26 = ATC | Used | Mandatory |
| product | 8716867000016 = active power | Used | Mandatory |
| in_Domain.mRID | EIC identification of the scheduling area where the power is being put | Used | Mandatory |
| out_Domain.mRID | EIC identification of the scheduling area where the power is coming from | Used | Mandatory |
| measurement_Unit.name | MAW = Megawatts | Used | Mandatory |
| auction.mRID | The identification of an auction specification | Not used | Conditional |
| auction.category | The category under which capacity is classified | Not used | Conditional |
| curveType | A01 = Sequential fixed size block | Used | Mandatory |

VERSION 1.1

| | | | |
|--|--|-------------|-------------|
| connectingLine_RegisteredResource.mRID | The identification of a set of lines that connect two areas together. This is only used when specific tie lines have to be identified. | May be used | Conditional |
|--|--|-------------|-------------|

| Series_Period | | | |
|---------------|--|------|-----------|
| timeInterval | A time interval of the same length as the delivery period (initially 1 hour) | Used | Mandatory |
| resolution | PT15M | Used | Mandatory |

| Point | | | |
|----------|---------------------------------------|------|-----------|
| position | Position within the time interval | Used | Mandatory |
| quantity | Quantity of ATC with 0.1 MW precision | used | Mandatory |

4.8.1.6 Submission of CZCL/NPL to mFRR platform and TSOs

Table 14 Capacity market document dependency table (CZCL/ NPL to mFRR Platform and TSOs)

| | | Use | XSD requirements |
|--|--|------|------------------|
| Capacity_MarketDocument | | | |
| mRID | Unique identification of the Capacity Document | Used | Mandatory |
| revisionNumber | Initial transmission should normally equal "1" | Used | Mandatory |
| type | A31 = Agreed capacity | Used | Mandatory |
| process.processType | A47 = Manual frequency restoration reserve | Used | Mandatory |
| sender_MarketParticipant.mRID | EIC of the CMM platform Operator | Used | Mandatory |
| sender_MarketParticipant.marketRole.type | A36 = Capacity Coordinator | Used | Mandatory |
| receiver_MarketParticipant.mRID | EIC of the balancing platform Operator or TSO | Used | Mandatory |

| | | Use | XSD requirements |
|--|---|------|------------------|
| receiver_MarketParticipant.marketRole.type | A35 = MOL responsible Operator A04 = System Operator | Used | Mandatory |
| createdDateTime | Date and time of document creation | Used | Mandatory |
| Period.timeInterval | The period of the affected MTU (15 minutes) | Used | Mandatory |
| domain.mRID | EIC of the balancing region | Used | Mandatory |

| TimeSeries | | | |
|--|--|---|-------------|
| mRID | The unique identification of the time series within the document | Used | Mandatory |
| businessType | A26 = ATC | Used | Mandatory |
| product | 8716867000016 = active power | Used | Mandatory |
| in_Domain.mRID | EIC identification of the area where the power is being put. Shall contain the TSO's area when submitting net position limits on import. Shall contain the region when submitting net position limits on export. | Used | Mandatory |
| out_Domain.mRID | EIC identification of the area where the power is coming from. Shall contain the region when submitting net position limits on import. Shall contain the TSO's area when submitting net position limits on export. | Used | Mandatory |
| measure_Unit.name | MAW = Megawatts | Used | Mandatory |
| auction.mRID | The identification of an auction specification | Not used | Conditional |
| auction.category | The category under which capacity is classified | Not used | Conditional |
| curveType | A01 = Sequential fixed size block. | Used | Mandatory |
| connectingLine_RegisteredResource.mRID | The identification of a set of lines that connect two areas together. This is only used when specific tie lines have to be identified. | May be used | Conditional |
| requesting_MarketParticipant.mRID | EIC of party requesting an adjustment to the limit | May be used | Conditional |
| requesting_MarketParticipant.marketRole.type | A04 = System Operator | Used if requesting market participant populated | Conditional |

| Series_Period | | | |
|---------------|--|--|--|
|---------------|--|--|--|

| | | Use | XSD requirements |
|--------------|---|------|------------------|
| timeInterval | A time interval of the same length as the Period.timeInterval | Used | Mandatory |
| resolution | PT15M | Used | Mandatory |

| Point | | | |
|----------|-------------------------------------|------|-----------|
| position | Position within the time interval | Used | Mandatory |
| quantity | Quantity limit with 1 MW precision. | Used | Mandatory |

| Reason (associated with time series) | Exactly one instance of Reason class may be included to indicate adjustment due to operational security. | May be used | Conditional |
|--------------------------------------|--|-------------|-------------|
| code | B47 = Operational security constraints | Used | |
| text | May be populated to provide additional explanation or justification in free text format | May be used | |

4.8.1.7 Submission of CZCL/NPL for PICASSO/IGCC to TSOs

Table 15 Capacity market document dependency table (CZCL/ NPL for PICASSO / IGCC to TSOs)

| | | Use | XSD requirements |
|-------------------------|--|------|------------------|
| Capacity_MarketDocument | | | |
| mRID | Unique identification of the Capacity Document | Used | Mandatory |
| revisionNumber | Initial transmission should normally equal "1" | Used | Mandatory |
| type | A31 = Agreed capacity | Used | Mandatory |
| process.processType | A51 = Automatic frequency restoration reserve | Used | Mandatory |

| | | Use | XSD requirements |
|--|--|------|------------------|
| sender_MarketParticipant.mRID | EIC of the CMM platform Operator | Used | Mandatory |
| sender_MarketParticipant.marketRole.type | A36 = Capacity Coordinator | Used | Mandatory |
| receiver_MarketParticipant.mRID | EIC of the Transmission System Operator | Used | Mandatory |
| receiver_MarketParticipant.marketRole.type | A04 = System Operator | Used | Mandatory |
| createdDateTime | Date and time of document creation | Used | Mandatory |
| Period.timeInterval | The MTU period(s) described (15 minutes) | Used | Mandatory |
| domain.mRID | EIC of the balancing region | Used | Mandatory |

| TimeSeries | | | |
|--|--|---------------------------|-------------|
| mRID | The unique identification of the time series within the document | Used | Mandatory |
| businessType | A26 = ATC | Used | Mandatory |
| product | 8716867000016 = active power | Used | Mandatory |
| in_Domain.mRID | EIC identification of the area where the power is being put. Shall contain the TSO's area when submitting net position limits on import. Shall contain the region when submitting net position limits on export. | Used | Mandatory |
| out_Domain.mRID | EIC identification of the area where the power is coming from. Shall contain the region when submitting net position limits on import. Shall contain the TSO's area when submitting net position limits on export. | Used | Mandatory |
| measure_Unit.name | MAW = Megawatts | Used | Mandatory |
| auction.mRID | The identification of an auction specification | Not used | Conditional |
| auction.category | The category under which capacity is classified | Not used | Conditional |
| curveType | A03 = variable sized block | Used | Mandatory |
| connectingLine_RegisteredResource.mRID | The identification of a set of lines that connect two areas together. This is only used when specific tie lines have to be identified. | May be used | Conditional |
| requesting_MarketParticipant.mRID | EIC of party requesting an adjustment to the limit | May be used | Conditional |
| requesting_MarketParticipant.marketRole.type | A04 = System Operator | Used if requesting market | Conditional |

| | | Use | XSD requirements |
|--|--|-----------------------|------------------|
| | | participant populated | |

| Series_Period | | | |
|---------------|---|------|-----------|
| timeInterval | A time interval of the same length as the Period.timeInterval | Used | Mandatory |
| resolution | PT1M | Used | Mandatory |

| Point | | | |
|----------|---|------|-----------|
| position | Position within the time interval | Used | Mandatory |
| quantity | Quantity of remaining capacity with 1 MW precision. | Used | Mandatory |

| Reason (associated with time series) | Exactly one instance of Reason class may be included to indicate adjustment due to operational security. | May be used | Conditional |
|--------------------------------------|--|-------------|-------------|
| code | B47 = Operational security constraints | Used | |
| text | May be populated to provide additional explanation or justification in free text format | May be used | |

4.9 Schedule_MarketDocument

The schedule document is used by the Balancing platforms to provide all the resulting cross-border flows to the CMM platform. This document is also used by the TSOs to provide AAC values to the CMM platform.

4.9.1.1 Submission of AAC to CMM platform

Table 16 Schedule market dependency table (submission of AAC to CMM platform)

| | | Use | XSD requirements |
|--|--|-----|------------------|
| | | | |

| Schedule_MarketDocument | | | |
|--|---|----------|-------------|
| mRID | Unique identification of the Schedule Document | Used | Mandatory |
| revisionNumber | Initial transmission should normally equal "1" | Used | Mandatory |
| type | A30 = Cross border schedule (for cross-border flows) | Used | Mandatory |
| process.processType | A15 = Capacity determination (used to send total aggregated AAC _{LT+DA+ID} or in specific case of gross technical profile for which ID AAC is submitted separately, then the value represents AAC _{LT+DA}) A49 = Intraday capacity determination (used to only send AAC _{ID} for interconnectors separately, which participate in gross technical profile) | Used | Mandatory |
| process.ClassificationType | A02 = Summary type | Used | Mandatory |
| sender_MarketParticipant.mRID | EIC of the System Operator EIC of the CCC | Used | Mandatory |
| sender_MarketParticipant.marketRole.type | A04 = System Operator A55 = Coordinated Capacity Calculator | Used | Mandatory |
| receiver_MarketParticipant.mRID | EIC of the CMM platform Operator: | Used | Mandatory |
| receiver_MarketParticipant.marketRole.type | A36 = Capacity Coordinator | Used | Mandatory |
| createdDateTime | Date and time of document creation | Used | Mandatory |
| schedule_Time_Period.timeInterval | Duration of delivery period (initially 1 hour) for RR interconnectors Duration of MTU/delivery period (15 minutes) otherwise | Used | Mandatory |
| domain.mRID | EIC of the CMM region | Used | Mandatory |
| subject_MarketParticipant.mRID | EIC of the System Operator | Used | Mandatory |
| subject_MarketParticipant.marketRole.type | A04 = System Operator | Used | Mandatory |
| matching_Time_Period.timeInterval | Matching period for the schedule document | Not used | Conditional |

| TimeSeries | | | |
|--------------|---|------|-----------|
| mRID | The unique identification of the time series within the document | Used | Mandatory |
| version | The version of the time series. It must always be the same as the version of the document | Used | Mandatory |
| businessType | A29 = Already allocated capacity (AAC) | Used | Mandatory |

VERSION 1.1

| | | | |
|--|---|-------------|-------------|
| product | 8716867000016 = active power | Used | Mandatory |
| objectAggregation | A01 = Area | Used | Mandatory |
| in_Domain.mRID | EIC identification of the area where the power is being put | Used | Conditional |
| out_Domain.mRID | EIC identification of the area where the power is coming from | Used | Conditional |
| marketEvaluationPoint.mRID | Identification of a resource | Not used | Conditional |
| in_MarketParticipant.mRID | identification of a market participant putting the power into the area | Not used | Conditional |
| out_MarketParticipant.mRID | Identification of a market participant that is taking the power from the area | Not used | Conditional |
| marketAgreement.type | Identification of the type of agreement | Not used | Conditional |
| marketAgreement.mRID | Identification of the reserve contract | Not used | Conditional |
| connectingLine_RegisteredResource.mRID | Provided in case there are multiple interconnectors | May be used | Conditional |
| measurement_Unit.name | MAW = Megawatts | Used | Mandatory |
| curveType | A01 = Sequential fixed size block | Used | Mandatory |

385

| Series_Period | | | |
|---------------|--|------|-----------|
| timeInterval | A time interval within the schedule_Time_Period.timeInterval | Used | Mandatory |
| resolution | PT60M PT30M PT15M | Used | Mandatory |

| Point | | | |
|----------|--|------|-----------|
| position | Position within the time interval | Used | Mandatory |
| quantity | Quantity scheduled with 0.1 MW precision | Used | Mandatory |

| | | | |
|---|--|----------|-------------|
| Reason (Associated with time series and point) | | Not used | Conditional |
|---|--|----------|-------------|

4.9.1.2 Submission of RR XB Flows to CMM platform

Table 17 Schedule market dependency table (submission of RR XB Flows to CMM platform)

| | | Use | XSD requirements |
|--|--|----------|------------------|
| Schedule_MarketDocument | | | |
| mRID | Unique identification of the Schedule Document | Used | Mandatory |
| revisionNumber | Initial transmission shall equal "1" | Used | Mandatory |
| type | A30 = Cross border schedule | Used | Mandatory |
| process.processType | A46 = Replacement reserve (RR) | Used | Mandatory |
| process.ClassificationType | A01 = Detail type | Used | Mandatory |
| sender_MarketParticipant.mRID | EIC of the balancing platform Operator: 10X1001C--00006N | Used | Mandatory |
| sender_MarketParticipant.marketRole.type | A35 = MOL responsible Operator | Used | Mandatory |
| receiver_MarketParticipant.mRID | EIC of the CMM platform Operator | Used | Mandatory |
| receiver_MarketParticipant.marketRole.type | A36 = Capacity Coordinator | Used | Mandatory |
| createdDateTime | Date and time of document creation | Used | Mandatory |
| schedule_Time_Period.timeInterval | The duration of the delivery period (initially 1 hour) | Used | Mandatory |
| domain.mRID | EIC of the balancing region | Used | Mandatory |
| subject_MarketParticipant.mRID | EIC of the CMM platform Operator | Used | Mandatory |
| subject_MarketParticipant.markRole.type | A36 = Capacity Coordinator | Used | Mandatory |
| matching_Time_Period.timeInterval | Matching period for the schedule document | Not used | Conditional |

| TimeSeries | | | |
|--|---|----------|-------------|
| mRID | The unique identification of the time series within the document | Used | Mandatory |
| version | The version of the time series. It must always be the same as the version of the document | Used | Mandatory |
| businessType | A05 = External trade total | Used | Mandatory |
| product | 8716867000016 = active power | Used | Mandatory |
| objectAggregation | A01 = Area | Used | Mandatory |
| curveType | A01 = Sequential fixed size block | Used | Mandatory |
| marketAgreement.type | Identification of the type of agreement | Not used | Conditional |
| marketAgreement.mRID | Identification of the reserve contract | Not used | Conditional |
| out_Domain.mRID | EIC identification of the scheduling area where the power is coming from | Used | Conditional |
| measurement_Unit.name | MAW = Megawatts | Used | Mandatory |
| in_Domain.mRID | EIC identification of the scheduling area where the power is being put | Used | Conditional |
| marketEvaluationPoint.mRID | Identification of a resource | Not used | Conditional |
| out_MarketParticipant.mRID | Identification of a market participant that is taking the power from the area | Not used | Conditional |
| in_MarketParticipant.mRID | identification of a market participant putting the power into the area | Not used | Conditional |
| connectingLine_RegisteredResource.mRID | Provided in case there are multiple interconnectors | Used | Conditional |

| Series_Period | | | |
|---------------|--|--|--|
|---------------|--|--|--|

VERSION 1.1

| | | | |
|--------------|---|------|-----------|
| timeInterval | A time interval of the length of the delivery period (initially 1 hour) | Used | Mandatory |
| resolution | PT15M | Used | Mandatory |

| | | | |
|--------------|--|------|-----------|
| Point | | | |
| position | Position within the time interval | Used | Mandatory |
| quantity | Quantity scheduled with 0.1 MW precision | Used | Mandatory |

| | | | |
|---|--|----------|--------------------|
| Reason (Associated with time series and point) | | Not used | Conditional |
|---|--|----------|--------------------|

4.9.1.3 Submission of mFRR XB Flows to CMM platform

Table 18 Schedule market dependency table (submission of mFRR XB Flows to CMM platform)

| | | Use | XSD requirements |
|--|--|------|------------------|
| Schedule_MarketDocument | | | |
| mRID | Unique identification of the Schedule Document | Used | Mandatory |
| revisionNumber | Initial transmission should normally equal "1" | Used | Mandatory |
| type | A30 = Cross border schedule (for cross-border flows) | Used | Mandatory |
| process.processType | A47 = Manual frequency restoration reserve | Used | Mandatory |
| process.ClassificationType | A01 = Detail type | Used | Mandatory |
| sender_MarketParticipant.mRID | EIC of the balancing platform Operator: 10X1001C--00009H | Used | Mandatory |
| sender_MarketParticipant.marketRole.type | A35 = MOL responsible Operator | Used | Mandatory |
| receiver_MarketParticipant.mRID | EIC of the CMM platform Operator: | Used | Mandatory |

VERSION 1.1

| | | | |
|--|---|----------|-------------|
| receiver_MarketParticipant.marketRole.type | A36 = Capacity Coordinator | Used | Mandatory |
| createdDateTime | Date and time of document creation | Used | Mandatory |
| schedule_Time_Period.timeInterval | The MTU period(s) described (15 minutes for SA and 30 minutes for DA) | Used | Mandatory |
| domain.mRID | EIC of the balancing region | Used | Mandatory |
| subject_MarketParticipant.mRID | EIC of the CMM platform Operator | Used | Mandatory |
| subject_MarketParticipant.marketRole.type | A36 = Capacity Coordinator | Used | Mandatory |
| matching_Time_Period.timeInterval | Matching period for the schedule document | Not used | Conditional |

398

| TimeSeries | | | |
|--|---|-------------|-------------|
| mRID | The unique identification of the time series within the document | Used | Mandatory |
| version | The version of the time series. It must always be the same as the version of the document | Used | Mandatory |
| businessType | A45 = Scheduled activated reserves | Used | Mandatory |
| product | 8716867000016 = active power | Used | Mandatory |
| objectAggregation | A01 = Area | Used | Mandatory |
| in_Domain.mRID | EIC identification of the area where the power is being put | Used | Conditional |
| out_Domain.mRID | EIC identification of the area where the power is coming from | Used | Conditional |
| marketEvaluationPoint.mRID | Identification of a resource | Not used | Conditional |
| in_MarketParticipant.mRID | identification of a market participant putting the power into the area | Not used | Conditional |
| out_MarketParticipant.mRID | Identification of a market participant that is taking the power from the area | Not used | Conditional |
| marketAgreement.type | Identification of the type of agreement | Not used | Conditional |
| marketAgreement.mRID | Identification of the reserve contract | Not used | Conditional |
| connectingLine_RegisteredResource.mRID | Provided in case there are multiple interconnectors | May be used | Conditional |
| measurement_Unit.name | MAW = Megawatts | Used | Mandatory |

VERSION 1.1

| | | | |
|-----------|----------------------------|------|-----------|
| curveType | A03 = Variable sized Block | Used | Mandatory |
|-----------|----------------------------|------|-----------|

399

| Series_Period | | | |
|---------------|--|------|-----------|
| timeInterval | A time interval within the schedule_Time_Period.timeInterval | Used | Mandatory |
| resolution | PT1M | Used | Mandatory |

| Point | | | |
|----------|--|------|-----------|
| position | Position within the time interval | Used | Mandatory |
| quantity | Quantity scheduled with 1 MW precision | Used | Mandatory |

| | | | |
|---|--|----------|-------------|
| Reason (Associated with time series and point) | | Not used | Conditional |
|---|--|----------|-------------|

400

4.9.1.4 Submission of PICASSO/IGCC XB Flows to CMM platform

Table 19 Schedule market dependency table (submission of PICASSO/IGCC XB Flows to CMM platform)

| | | Use | XSD requirements |
|-------------------------------|--|------|------------------|
| Schedule_MarketDocument | | | |
| mRID | Unique identification of the Schedule Document | Used | Mandatory |
| revisionNumber | Initial transmission should normally equal "1" | Used | Mandatory |
| type | A30 = Cross border schedule (for cross-border flows) | Used | Mandatory |
| process.processType | A51 = Automatic frequency restoration reserve (aFRR) | Used | Mandatory |
| process.ClassificationType | A01 = Detail type | Used | Mandatory |
| sender_MarketParticipant.mRID | EIC of the balancing platform Operator: 10X1001C--00010W | Used | Mandatory |

VERSION 1.1

| | | | |
|--|---|----------|-------------|
| sender_MarketParticipant.marketRole.type | A35 = MOL responsible Operator | Used | Mandatory |
| receiver_MarketParticipant.mRID | EIC of the CMM platform Operator: | Used | Mandatory |
| receiver_MarketParticipant.marketRole.type | A36 = Capacity Coordinator | Used | Mandatory |
| createdDateTime | Date and time of document creation | Used | Mandatory |
| schedule_Time_Period.timeInterval | The MTU period described (15 minutes) | Used | Mandatory |
| domain.mRID | EIC of the balancing region | Used | Mandatory |
| subject_MarketParticipant.mRID | EIC of the CMM platform Operator | Used | Mandatory |
| subject_MarketParticipant.marketRole.type | A36 = Capacity Coordinator | Used | Mandatory |
| matching_Time_Period.timeInterval | Matching period for the schedule document | Not used | Conditional |

| TimeSeries | | | |
|----------------------------|---|----------|-------------|
| mRID | The unique identification of the time series within the document | Used | Mandatory |
| version | The version of the time series. It must always be the same as the version of the document | Used | Mandatory |
| businessType | A45=Scheduled activated reserves | Used | Mandatory |
| product | 8716867000016 = active power | Used | Mandatory |
| objectAggregation | A01 = Area | Used | Mandatory |
| in_Domain.mRID | EIC identification of the area where the power is being put | Used | Conditional |
| out_Domain.mRID | EIC identification of the area where the power is coming from | Used | Conditional |
| marketEvaluationPoint.mRID | Identification of a resource | Not used | Conditional |
| in_MarketParticipant.mRID | identification of a market participant putting the power into the area | Not used | Conditional |
| out_MarketParticipant.mRID | Identification of a market participant that is taking the power from the area | Not used | Conditional |
| marketAgreement.type | Identification of the type of agreement | Not used | Conditional |
| marketAgreement.mRID | Identification of the reserve contract | Not used | Conditional |

VERSION 1.1

| | | | |
|--|---|-------------|-------------|
| connectingLine_RegisteredResource.mRID | Provided in case there are multiple interconnectors | May be used | Conditional |
| measurement_Unit.name | MAW = Megawatts | Used | Mandatory |
| curveType | A03 = Variable sized Block | Used | Mandatory |

404

| Series_Period | | | |
|---------------|--|------|-----------|
| timeInterval | A time interval within the schedule_Time_Period.timeInterval | Used | Mandatory |
| resolution | PT1M | Used | Mandatory |

| Point | | | |
|----------|--|------|-----------|
| position | Position within the time interval | Used | Mandatory |
| quantity | Quantity scheduled with 1 MW precision | Used | Mandatory |

| Reason (Associated with time series and point) | | Not used | Conditional |
|---|--|----------|-------------|
|---|--|----------|-------------|

405

4.10 Unavailability_MarketDocument

The CMM platform uses the unavailability document to inform all participating TSOs that the capacity management process itself has stopped or started, balancing platform disconnected or reconnected from/to the capacity management process, TSO is disconnected or reconnected from/to the capacity management process, a future dated start/stop or disconnection/reconnection is recorded and/or any subsequent updates to the corresponding start and end times. Each document will describe a single instance of a disconnection, unavailability or failure. Hence the document shall contain exactly one time series. No Series_Period shall be included. Unavailability documents can be sent by mFRR to CMM and/or CMM to TSOs.

Table 20 Unavailability market document dependency table

| | Use | XSD requirements |
|--|-----|------------------|
|--|-----|------------------|

| Unavailability_MarketDocument | | | |
|--|---|------|-------------|
| mRID | Unique identification of the unavailability market document | Used | Mandatory |
| revisionNumber | Initial transmission should normally equal "1" | Used | Mandatory |
| type | A53 = Outage publication document | Used | Mandatory |
| process.processType | A15 = Capacity determination A46 = Replacement reserve A47 = Manual frequency restoration reserve A51 = Automatic frequency restoration reserves | Used | Mandatory |
| createdDateTime | Date and time of document creation | Used | Mandatory |
| sender_MarketParticipant.mRID | EIC of the Transmission System Operator or Balancing platform operator or CMM platform operator | Used | Mandatory |
| sender_MarketParticipant.marketRole.type | A35 = MOL responsible operator A36 = Capacity Coordinator A04 = System Operator | Used | Mandatory |
| receiver_MarketParticipant.mRID | EIC of the Transmission System Operator or CMM platform operator | Used | Mandatory |
| receiver_MarketParticipant.marketRole.type | A04 = System Operator A36 = Capacity Coordinator | Used | Mandatory |
| unavailability_Time_Period.timeInterval | The MTU period(s) affected by the unavailability. | Used | Mandatory |
| docStatus | A01 = Intermediate A02 = Final A09 = Cancelled A09 is used when a future dated outage or disconnection is cancelled. A13 may be used to withdraw erroneously communicated outage | Used | Conditional |

| TimeSeries | | | |
|-------------------------|---|------|-------------|
| mRID | identification of the time series | Used | Mandatory |
| businessType | C47 = Disconnection when sender_MarketParticipant.marketRole.type = A04 or A36 A83 = Auction cancellation when sender_MarketParticipant.marketRole.type = A35 (used in case no solution found or algorithm failure) A53 = Planned maintenance when sender_MarketParticipant.marketRole.type = A35 or A36 A54 = Unplanned outage when sender_MarketParticipant.marketRole.type = A35 or A36 | Used | Mandatory |
| biddingZone_Domain.mRID | EIC code of disconnected organization when businessType = C47 EIC code of region when businessType = A53 or A54 | Used | Conditional |

VERSION 1.1

| | | | |
|---|---|----------|-------------|
| in_Domain.mRID | | Not used | Conditional |
| out_Domain.mRID | | Not used | Conditional |
| start_DateAndOrTime.Date | start date of the first affected MTU period as defined in unavailability_Time_Period.timeInterval | Used | Mandatory |
| start_DateAndOrTime.Time | start time of the first affected MTU period as defined in unavailability_Time_Period.timeInterval | Used | Mandatory |
| end_DateAndOrTime.Date | start date of the first MTU period no longer affected by unavailability_Time_Period.timeInterval | Used | Mandatory |
| end_DateAndOrTime.Time | start time of the first MTU period no longer affected by unavailability_Time_Period.timeInterval | Used | Mandatory |
| quantity_Measure_Unit.name | MAW | Used | Mandatory |
| curveType | A03 | Used | Mandatory |
| production_RegisteredResource.mRID | | Not used | Conditional |
| production_RegisteredResource.name | | Not used | Conditional |
| production_RegisteredResource.location.name | | Not used | Conditional |
| production_RegisteredResource.pSRTYPE.psrType | | Not used | Conditional |
| production_RegisteredResource.pSRTYPE.powerSystemResources.mRID | | Not used | Conditional |
| production_RegisteredResource.pSRTYPE.powerSystemResources.name | | Not used | Conditional |
| production_RegisteredResource.pSRTYPE.powerSystemResources.nominalP | | Not used | Conditional |

| Reason (associated with time series) | | | |
|--------------------------------------|--|-------------|-------------|
| code | B13 = Communication status currently inactive (when TSO or Balancing platform disconnects) B18 = Failure (in platform) B19 = Foreseen Maintenance B27 = Calculation process failed when sender_MarketParticipant.marketRole.type = A35 (algorithm failed) A99 = Auction cancelled when sender_MarketParticipant.marketRole.type = A35 (no solution found by algorithm) | Used | Mandatory |
| text | May be populated to provide additional explanation in free text format | May be used | Conditional |

VERSION 1.1

417 Exactly one Reason shall be associated with the time series.

418 Series_Period and consequently Point classes are not used.

419

5 Communication channels

The following protocols are supported:

- File based exchange
 - o Web services (IEC 62325-504)
 - o MADES 2 (IEC 62325-503)
- Signal based exchange (Description of signal-based communication is outside of the scope of IG)
 - o IEC 60870-5-101

As indicated in chapter 4.4.1.5 the CZCLs and position limits will be communicated as a real-time signal to PICASSO platform with intervals of four seconds. The signal at any given second will be linearly interpolated between the two surrounding points. During ramping, each four second value will follow the gradient and not have the same value for a whole minute.