



European Network of  
Transmission System Operators  
for Electricity

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# CAPACITY MANAGEMENT MODULE IMPLEMENTATION GUIDE

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2025-03-20

VERSION 1.3

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18 The force of the following words is modified by the requirement level of the document in which  
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- 20 • SHALL: This word, or the terms “REQUIRED” or “MUST”, means that the definition is an  
21 absolute requirement of the specification.
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23 absolute prohibition of the specification.
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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

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41

**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	6.9.2022	Approved version for publishing on ENTSO-E website
1.0.1	1	TBD	Implementation guide for CMM Version 2: <ul style="list-style-type: none"> <li>• TABLE 12 -- New data flow for Affected TSO procedure added. New use cases added.</li> <li>• Incorporation of BTCC tool as a sender of NTC/AAC.</li> <li>• Incorporated remarks from SWISSGRID.</li> <li>• Incorporated remarks from Alexander Koistinen.</li> <li>• Incorporated remarks from AMPRION</li> </ul>
1.0.2	1		<ul style="list-style-type: none"> <li>• New table added -- TABLE 2.</li> <li>• Definition of Affected TSO added.</li> <li>• Single table for NTC/NPL submission was divided into two separate tables for better overview.</li> </ul>
1.1	1		Approved version for publishing on ENTSO-E website
1.2		20.6.2024	SfR
1.3	1	25.11.2024	Addition of version CMD to table 7

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102 **1 Scope**

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

105 **2 References**

106 **2.1 Normative references**

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

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

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

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

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

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

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

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

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

129 **2.1 Other references**

130 *Common Platform for Replacement Reserves Implementation Guide v1.1*

131 *Common Platform for manually activated restoration reserves Implementation Guide v1.4*

132 *ENTSO-E Automatic Frequency Restoration Reserve Process Implementation Guide v1.0*

133 *The Harmonised Electricity Market Role Model [Harmonised Role Model 2022-01.pdf](#)*  
134 *([entsoe.eu](http://entsoe.eu))*

135

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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**



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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.

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229

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

231 Implementation guide describes a set of file-based documents which exchange a 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.

236  
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**Table 2 Classification of dataflows**

USE CASE	CLASSIFICATION	REFERENCE
Receive NTC	Mandatory	<a href="#">Submission of NTC to CMM platform</a>
Receive AAC	Mandatory	<a href="#">Submission of AAC to CMM platform</a>
Send CZCL/NPL	Recommended	<a href="#">Submission of CZCL to RR platform and TSOs</a> <a href="#">Submission of CZCL/NPL to mFRR platform and TSOs</a> <a href="#">Submission of CZCL/NPL for PICASSO/IGCC to TSOs</a>

Receive NPL	Optional	<a href="#">Submission of NPL to CMM platform</a>																																																																																				
Receive CZL C(max)	Optional	<a href="#">Submission of CZCLmax to CMM platform</a>																																																																																				
Receive CZCA	Optional	<p><a href="#">Submission of NPL to CMM platform</a></p> <p><b>Table 9 Capacity market document dependency table (submission of NPL to CMM platform)</b></p> <table border="1"> <thead> <tr> <th colspan="2"></th> <th>Use</th> <th>XSD requirements</th> </tr> </thead> <tbody> <tr> <td colspan="4"><b>Capacity_MarketDocument</b></td> </tr> <tr> <td>mRID</td> <td>Unique identification of the Capacity Document</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>revisionNumber</td> <td>Initial transmission should normally equal "1"</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>type</td> <td>A26 = Capacity document</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>process.processType</td> <td>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)</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>sender_MarketParticipant.mRID</td> <td>EIC of the Sender</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>sender_MarketParticipant.marketRole.type</td> <td>A04 = System operator</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>receiver_MarketParticipant.mRID</td> <td>EIC of the CMM platform</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>receiver_MarketParticipant.marketRole.type</td> <td>A36 = Capacity Coordinator</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>createdDateTime</td> <td>Date and time of document creation</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>Period.timeInterval</td> <td>Duration of MTU/delivery period (15 minutes)</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>domain.mRID</td> <td>EIC of the CMM region</td> <td>Used</td> <td>Mandatory</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="4"><b>TimeSeries</b></th> </tr> </thead> <tbody> <tr> <td>mRID</td> <td>The unique identification of the time series within the document</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>businessType</td> <td>A27 = NTC</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>product</td> <td>8716867000016 = active power</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>in_Domain.mRID</td> <td>Shall contain the TSO's area when submitting net position limits on import. Shall contain the region when submitting net position limits on export.</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>out_Domain.mRID</td> <td>Shall contain the region when submitting net position limits on import. Shall contain the TSO's area when submitting net position limits on export.</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>measure_Unit.name</td> <td>MAW = Megawatts</td> <td>Used</td> <td>Mandatory</td> </tr> <tr> <td>auction.mRID</td> <td>The identification of an auction specification</td> <td>Not used</td> <td>Conditional</td> </tr> </tbody> </table>			Use	XSD requirements	<b>Capacity_MarketDocument</b>				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	Period.timeInterval	Duration of MTU/delivery period (15 minutes)	Used	Mandatory	domain.mRID	EIC of the CMM region	Used	Mandatory	<b>TimeSeries</b>				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
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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
		<b>Series_Period</b>			
		timeInterval	A time interval of the same length as the Period.timeInterval	Used	Mandatory
		resolution	PT15M	Used	Mandatory
		<b>Point</b>			
		position	Position within the time interval	Used	Mandatory
		quantity	Quantity of limit with 0.1 MW precision	used	Mandatory
		<b>Reason (associated with time series)</b>			
		code	Exactly one instance of Reason class may be included to indicate adjustment due to operational security. B47 = Operational security constraints	May be used Used	Conditional
		text	May be populated to provide additional explanation or justification in free text format	May be used	
		<b>Reason (associated with point)</b>			
		code	Exactly one instance of Reason class may be included to indicate adjustment due to operational security. B47 = Operational security constraints	May be used Used	Conditional
		text	May be populated to provide additional explanation or justification in free text format	May be used	
		Submission of CZCA to CMM platform			
Receivable ATP CZCL	Optional	<a href="#">Submission of ATP CZCL to CMM platform</a>			

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

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247 **4.4 Roles and Use cases**

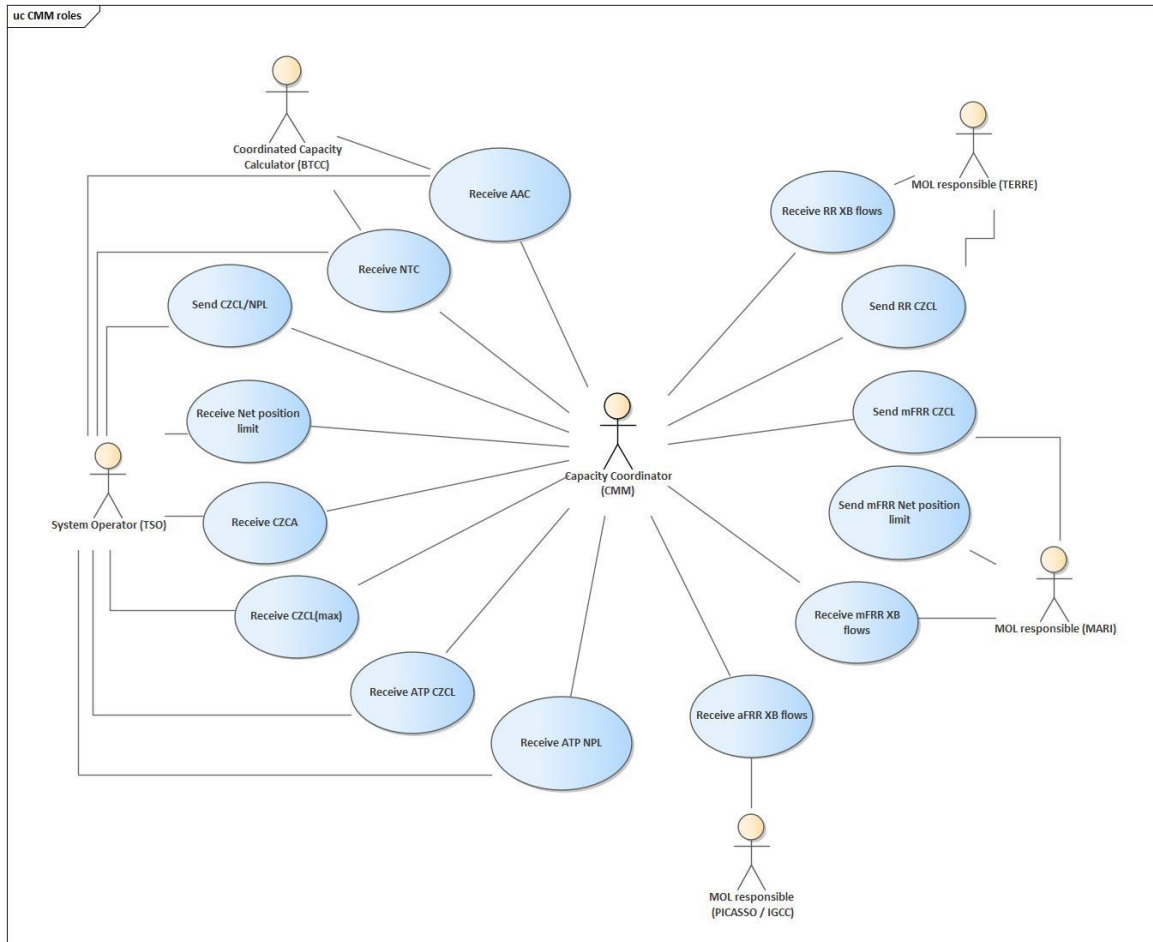


Figure 1 CMM Roles and use cases

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249

250 **4.4.1 Roles**

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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>

<p>Merit Order List Responsible</p>	<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 an 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>
<p>Capacity Coordinator</p>	<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>
<p>Coordinated Capacity Calculator</p>	<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>

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254 **4.4.2 Use cases**

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**Table 5 Use cases**

<b>Use case label</b>	<b>Roles involved</b>	<b>Action descriptions and assertions</b>
Receive NTC	<ul style="list-style-type: none"> <li>• System Operator</li> <li>• Capacity Coordinator</li> <li>• Coordinated Capacity calculator</li> </ul>	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"> <li>• System Operator</li> <li>• Capacity Coordinator</li> <li>• Coordinated Capacity calculator</li> </ul>	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"> <li>• System Operator</li> <li>• Capacity Coordinator</li> </ul>	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 an 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"> <li>• System Operator</li> <li>• Capacity Coordinator</li> </ul>	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"> <li>• System Operator</li> <li>• Capacity Coordinator</li> </ul>	Resulting CZCLs/NPLs are sent to the SOs after each change together with these use cases: <ul style="list-style-type: none"> <li>• Send RR CZCL</li> <li>• Send mFRR CZCL/NPL</li> </ul>

		<ul style="list-style-type: none"> <li>• Send aFRR CZCL/NPL</li> </ul>
Receive CZCL <sub>max</sub>	<ul style="list-style-type: none"> <li>• System Operator</li> <li>• Capacity Coordinator</li> </ul>	The participating SOs have the opportunity to provide the CZCL <sub>max</sub> value per process or one value for 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 <sub>max</sub> continuously within respective balancing processes windows.
Send RR CZCL	<ul style="list-style-type: none"> <li>• Capacity Coordinator</li> <li>• Merit Order List Responsible</li> </ul>	<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<sub>max</sub>, AAC or/and CZCA is submitted by SO).</p>
Receive RR XB flows	<ul style="list-style-type: none"> <li>• Capacity Coordinator</li> <li>• Merit Order List Responsible</li> </ul>	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"> <li>• Capacity Coordinator</li> <li>• Merit Order List Responsible</li> </ul>	<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<sub>max</sub>, AAC or/and CZCA is submitted by SO).</p>



Receive mFRR XB flows	<ul style="list-style-type: none"> <li>Capacity Coordinator</li> <li>Merit Order List Responsible</li> </ul>	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"> <li>Capacity Coordinator</li> <li>Merit Order List Responsible</li> </ul>	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"> <li>Capacity Coordinator</li> <li>Merit Order List Responsible</li> </ul>	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"> <li>System Operator</li> <li>Capacity Coordinator</li> </ul>	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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259 **4.5 Document exchange processes**

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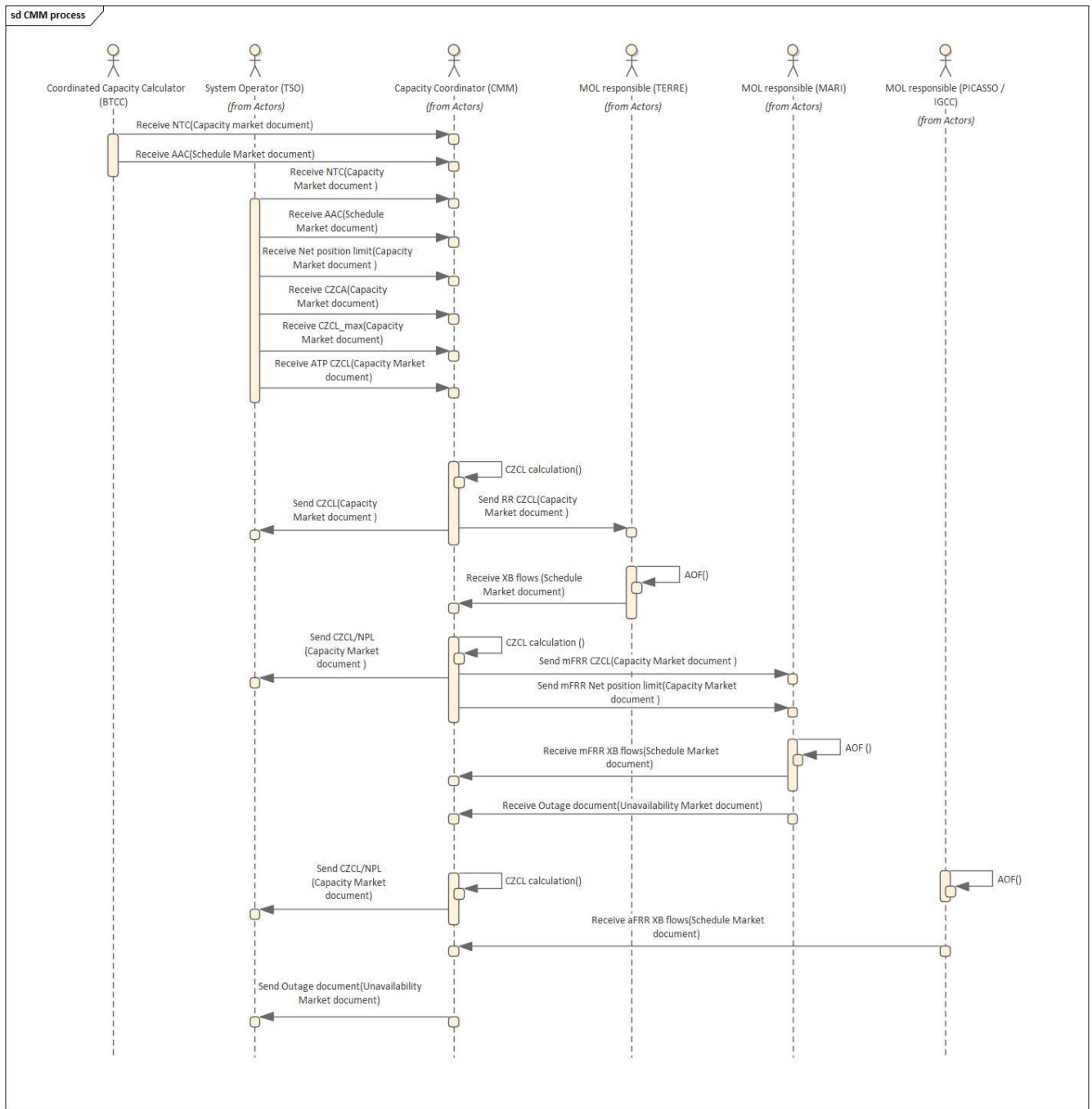


Figure 2 CMM process in sequence diagram

261 **4.6 General Overview**

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

264 Input data sent from SO to Capacity Coordinator cannot contain values for RR and non-RR  
265 interconnectors in one document. Values must be submitted separately. For RR interconnector  
266 60-minute time interval is expected, for non-RR interconnectors 15-minute time interval is  
267 expected.  
268

269 **4.6.1.1 Receive NTC**

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

271 **4.6.1.2 Receive AAC**

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

278 **4.6.1.3 Receive Net position limit**

279 Net position limit does not apply in RR.

280 **4.6.1.4 Problem Statement document**

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

285 **4.6.1.5 Send CZCL/NPL**

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

289

290 **4.6.1.6 Outage document**

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

295 **4.6.1.7 Acknowledgement – Acknowledgement Market Document**

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

299 **4.6.1.8 Regions**

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

302

303

**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

304

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

305

\*\* 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.

306

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

309

#### 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

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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 :tc 57wg16 :451-3 :capacitydocument :8 :0 urn :iec62325.351 :tc 57wg16 :451-3 :capacitydocument :8 :3
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

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

328 **4.8 Capacity\_MarketDocument**

329 The capacity market document is used to provide the Net Transfer Capacity (NTC) and Net Position Limit (NPL) for borders, interconnectors and  
330 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  
331 by SOs. The Capacity\_MarketDocument is then used to provide cross-zonal capacity limits and net position limits when applicable during exactly one  
332 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,  
333 values must be provided for both directions in the same file.

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

337 **4.8.1.1 Submission of NTC to CMM platform**

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

		Use	XSD requirements
<b>Capacity_MarketDocument</b>			
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
<b>TimeSeries</b>			

		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

<b>Series_Period</b>			
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

<b>Point</b>			
position	Position within the time interval	Used	Mandatory
quantity	Quantity of limit with 0.1 MW precision	used	Mandatory

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

<b>Reason (associated with point)</b>	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	

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#### 340 4.8.1.1 Submission of NPL to CMM platform

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

		Use	XSD requirements
<b>Capacity_MarketDocument</b>			
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

<b>TimeSeries</b>			
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

<b>Series_Period</b>			
timeInterval	A time interval of the same length as the Period.timeInterval	Used	Mandatory
resolution	PT15M	Used	Mandatory

<b>Point</b>			
position	Position within the time interval	Used	Mandatory

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		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	

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343 **4.8.1.2 Submission of CZCA to CMM platform**

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

		Use	XSD requirements
<b>Capacity_MarketDocument</b>			
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

<b>TimeSeries</b>			
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

<b>Series_Period</b>			
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

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		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

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347 **4.8.1.3 Submission of CZCLmax to CMM platform**

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

		Use	XSD requirements
<b>Capacity_MarketDocument</b>			
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

<b>TimeSeries</b>			
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

<b>Series_Period</b>			
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

<b>Point</b>			

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

350

<b>Reason (associated with time series)</b>		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	

<b>Reason (associated with point)</b>		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	

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352 **4.8.1.4 Submission of ATP CZCL to CMM platform**

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

		Use	XSD requirements
<b>Capacity_MarketDocument</b>			
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

<b>TimeSeries</b>			
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

<b>Series_Period</b>			
timeInterval	A time interval of the same length as the Period.timeInterval	Used	Mandatory

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		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)			
	Exactly one instance of Reason class may be included to indicate adjustment due to operational security.	Used	Mandatory
code	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)			
	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	

**4.8.1.5 Submission of CZCL to RR platform and TSOs**

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

		Use	XSD requirements



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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

364

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

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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
--	--	-------------	-------------

365

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

366

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

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#### 4.8.1.6 Submission of CZCL/NPL to mFRR platform and TSOs

369

370

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

		Use	XSD requirements
<b>Capacity_MarketDocument</b>			
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

<b>TimeSeries</b>			
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

<b>Series_Period</b>			

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

<b>Point</b>			
position	Position within the time interval	Used	Mandatory
quantity	Quantity limit with 1 MW precision.	Used	Mandatory

<b>Reason (associated with time series)</b>		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	

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#### 373 4.8.1.7 Submission of CZCL/NPL for PICASSO/IGCC to TSOs

374

375

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

		Use	XSD requirements
<b>Capacity_MarketDocument</b>			
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

<b>TimeSeries</b>			
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

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	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

376

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	

377

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379

#### 380 4.9 Schedule\_MarketDocument

381 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  
382 used by the TSOs to provide AAC values to the CMM platform.

##### 383 4.9.1.1 Submission of AAC to CMM platform

384 **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 <sub>LT+DA+ID</sub> or in specific case of gross technical profile for which ID AAC is submitted separately, then the value represents AAC <sub>LT+DA</sub> ) A49 = Intraday capacity determination (used to only send AAC <sub>ID</sub> 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

385

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

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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

386

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



388 **4.9.1.2 Submission of RR XB Flows to CMM platform**

389

390

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

		Use	XSD requirements
<b>Schedule_MarketDocument</b>			
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

391

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<b>TimeSeries</b>			
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

392

393

<b>Series_Period</b>			

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

394

<b>Point</b>			
position	Position within the time interval	Used	Mandatory
quantity	Quantity scheduled with 0.1 MW precision	Used	Mandatory

395

<b>Reason (Associated with time series and point)</b>		Not used	<b>Conditional</b>
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396

#### 397 4.9.1.3 Submission of mFRR XB Flows to CMM platform

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

		Use	XSD requirements
<b>Schedule_MarketDocument</b>			
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

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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

399

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

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curveType	A03 = Variable sized Block	Used	Mandatory
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400

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

401

402

403

#### 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
<b>Schedule_MarketDocument</b>			
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

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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

404

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

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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

405

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

406

#### 407 4.10 Unavailability\_MarketDocument

408 The CMM platform uses the unavailability document to inform all participating TSOs that the capacity management process itself has stopped or  
409 started, balancing platform disconnected or reconnected from/to the capacity management process, TSO is disconnected or reconnected from/to the  
410 capacity management process, a future dated start/stop or disconnection/reconnection is recorded and/or any subsequent updates to the  
411 corresponding start and end times. Each document will describe a single instance of a disconnection, unavailability or failure. Hence the document  
412 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  
413 TSOs.

#### 414 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 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 control area when businessType = C47 EIC code of region when businessType = A53 or A54	Used	Conditional



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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

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416  
417

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

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

419 Series\_Period and consequently Point classes are not used.

420

## 422 **5 Communication channels**

423 The following protocols are supported:

- 424 - File based exchange
  - 425 ○ Web services (IEC 62325-504)
  - 426 ○ MADES 2 (IEC 62325-503)
- 427 - Signal based exchange (Description of signal-based communication is outside of the scope of IG)
  - 428 ○ IEC 60870-5-101

429 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  
430 seconds. The signal at any given second will be linearly interpolated between the two surrounding points. During ramping, each four second value will  
431 follow the gradient and not have the same value for a whole minute.