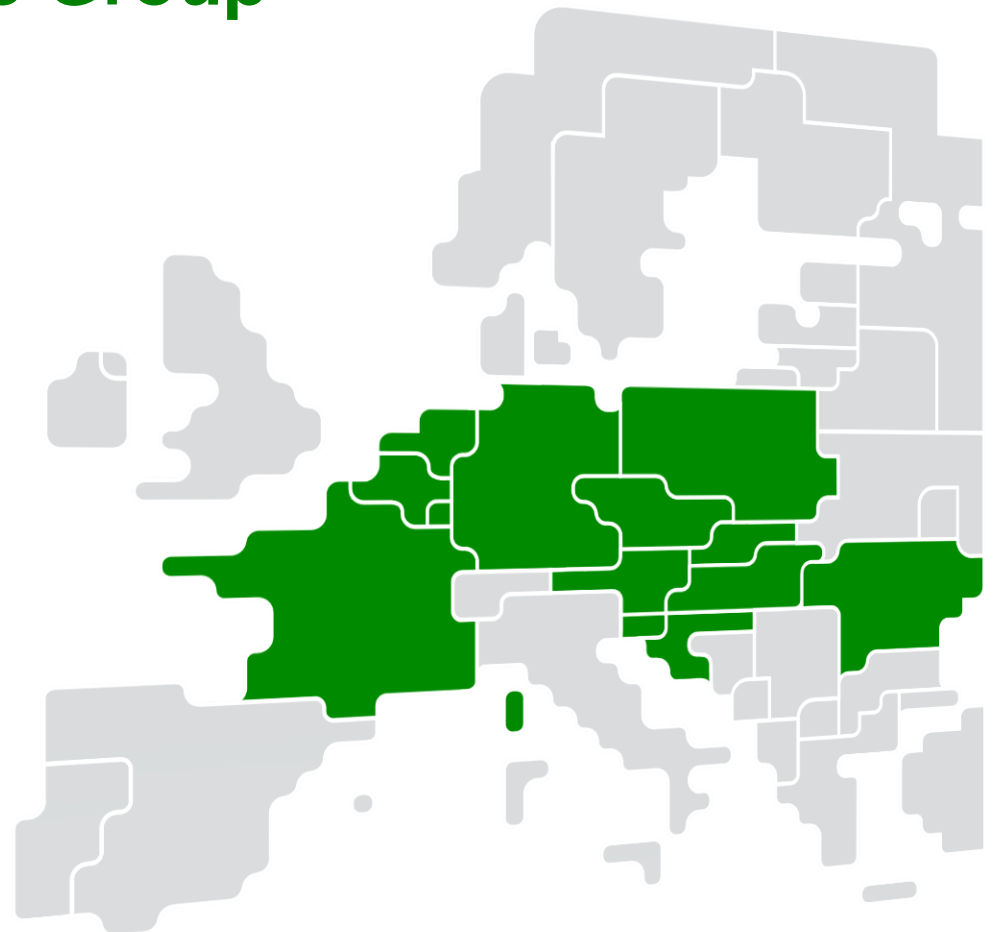


# Core Consultative Group

12/03/2024

09:00 – 17:00h (CET)

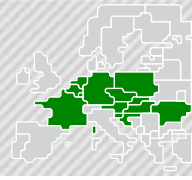
Microsoft Teams meeting



# 1. Welcome and Introduction

Practicalities, announcements and reminders

R.OTTER/S. VAN CAMPENHOUT  
Z.GAUTIER



## Co-chairs



**Zélie Gautier**  
Market Participants, Engie



**Ruud OTTER**  
Core TSOs, Tennet BV



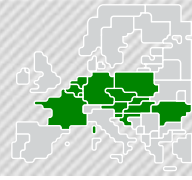
**Steve Van Campenhout**  
Core TSOs, ELIA

## Practicalities

- During meeting
  - Please use the **chat** in Teams to address questions. If you have a specific question on the slide, include the slide number in your question.
  - After each topic there will be a short Q&A section to see if all key questions have been addressed
- Follow up
  - Minutes and final meeting documents will be shared with CCG distribution list
  - JAO Q&A forum

# 1. Welcome and introduction

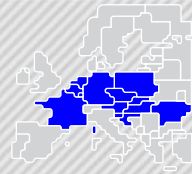
Z.GAUTIER



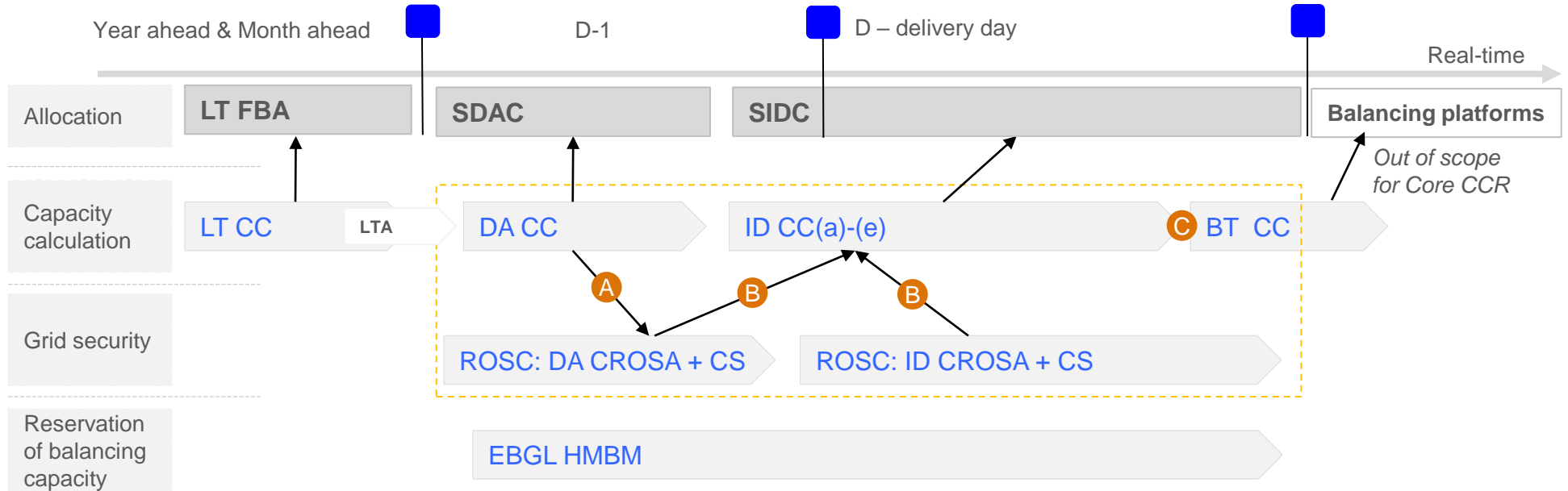
## Agenda

	SUBJECT	WHO	TIMING
1	<b>Welcome and introduction</b> <ul style="list-style-type: none"> <li>Announcements</li> <li>Agenda for today</li> </ul>	Z. GAUTIER	09:00 – 09:15
2	<b>Core CCR Program Management</b> <ul style="list-style-type: none"> <li>Update on Core CCR Roadmap replanning</li> <li>Prioritisation exercise</li> </ul>	STK managers;	09:15 – 09:30
3	<b>Intraday Capacity Calculation</b> <ul style="list-style-type: none"> <li>Update on 2nd and 3rd amendment referral</li> <li>IDCC roadmap                             <ul style="list-style-type: none"> <li>Go-live plan IDCC_A &amp; IDCC_B</li> <li>How does this go-live fit within the target model (benefits, challenges)</li> </ul> </li> <li>IDCC_A: process, KPI results, mitigation measures</li> <li>IDCC_B: process, KPI results, mitigation measures</li> </ul>	Z.VUJASINOVIC (ACER) B.MALFLIET	09:30 – 13:00
			LUNCH: 13:00 – 14:00
4	<b>Day-Ahead Capacity Calculation</b> <ul style="list-style-type: none"> <li>NRA update on 2<sup>nd</sup> &amp; 3<sup>rd</sup> amendment</li> <li>Update on AHC implementation</li> <li>SPAICC update</li> <li>(No) Impact 15min MTU on DA CC</li> </ul>	NRA R.KAISNGER P.BAUMANN STK managers	14:00 – 15:15
5	<b>ROSC &amp; CS</b> <ul style="list-style-type: none"> <li>Project explanation and status</li> </ul>	P.SCHÄFER/B.VANDERVEKEN, CorNet	15:15 – 15:45
			BREAK: 15:45 – 16:00
6	<b>Core CCR Geographical extensions</b> <ul style="list-style-type: none"> <li>Swiss consideration</li> <li>CE CCR</li> </ul>	Core Sponsors	16:00 – 16:40
7	<b>AOB &amp; closure</b> <ul style="list-style-type: none"> <li>Next Core CG meeting</li> </ul>	STK managers	16:40 – 17:00
	<b>APPENDIX</b> <ul style="list-style-type: none"> <li>Glossary of common abbreviations</li> </ul>		

## 2. Core CCR Program Management



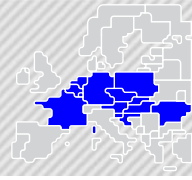
High-level overview of dependencies between processes



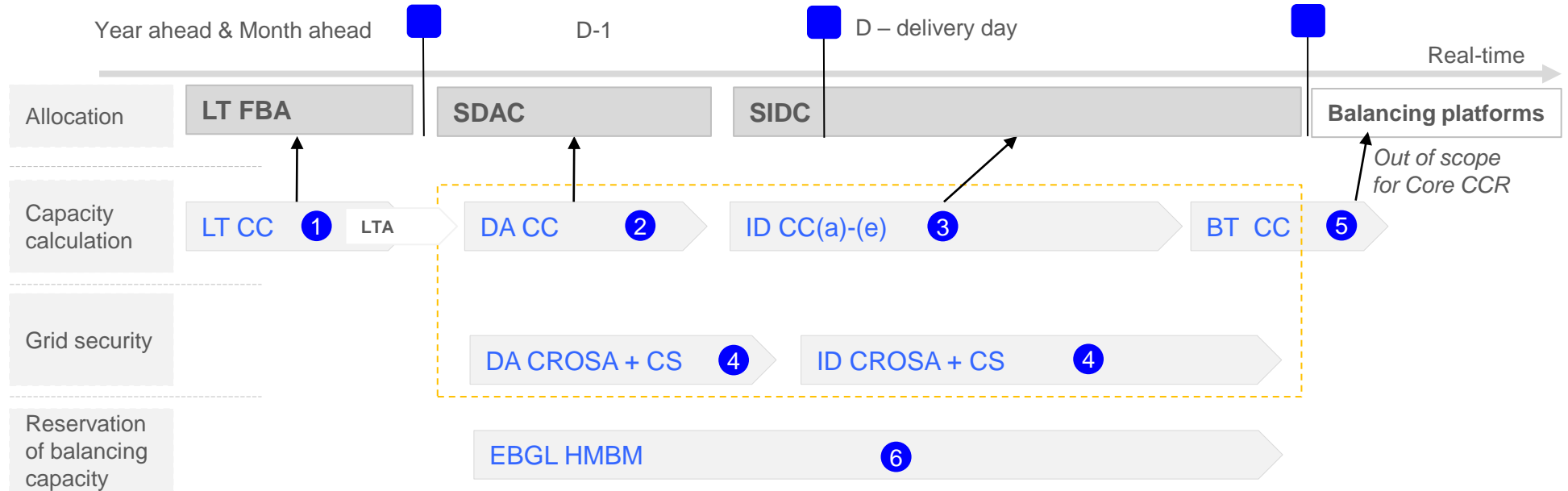
- A** Coordinated Validation in DACC relies on cross-border coordination of RAs in the DA operational security analysis. Maximizing capacities for the DA market.
- B** The outcome of the DA/ID coordination regional operational security analysis (ROSC DA/ID CROSA) delivers a congestion-free grid model as optimal starting point for a re-calculation of capacities in ID. Offering updated capacities to the intraday market by increasing the number of FB computations to 4.
- C** Afterwards, when the ID market has closed, the capacities will be updated within BTCC. Offering optimal capacities considering the latest market allocations within the balancing timeframe by better utilizing former calculated FB Domains



## 2. Core CCR Program Management

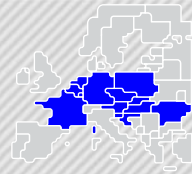


### Key considerations for the different capacity calculation timeframes

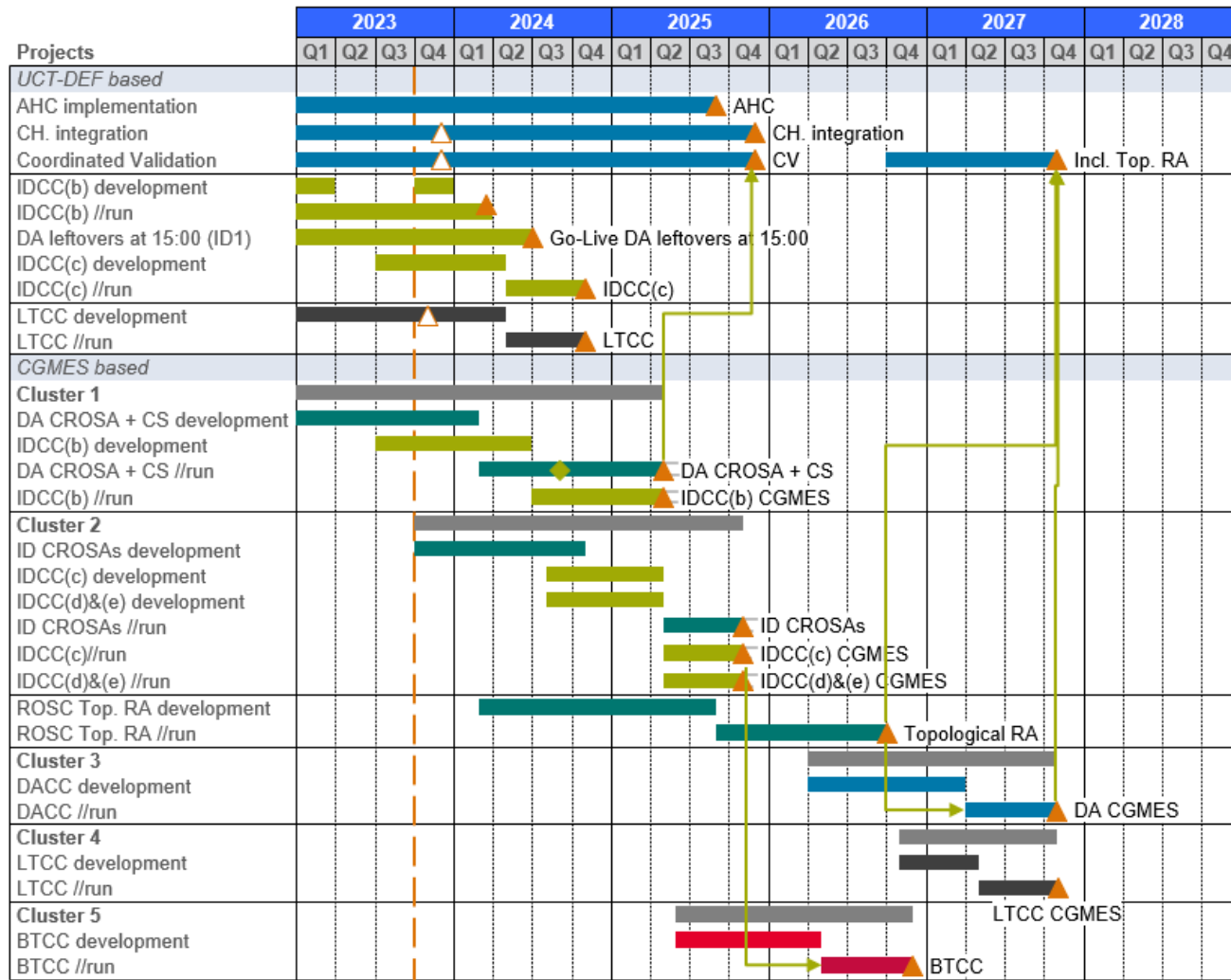


- 1 Long-Term CC: Market model to be elaborated. Re-assessment on way forward ongoing.
- 2 Day-Ahead CC: Operational market since 2022; Improvements to make more efficient use of capacities ongoing, e.g. Advanced Hybrid Coupling, Coordinated Validation and CH integration.
- 3 Intraday CC: Implementation of market model ongoing with first go-lives expected by May/June 2024 and more to come in 2025/2026. Pending ACER decision on two amendments critical for go-live.
- 4 ROSC & Cost sharing: design and implementation ongoing, yet also re-planning exercise to (partially) mitigate delays
- 4 BT CC: pending regulatory approval. Implementation expected after full ROSC and IDCC implementation.
- 5 EGBL HMBM is about reserving cross-zonal capacity for the exchange of balancing capacity. Once triggered, it will require to update DACC, IDCC, ROSC processes (both the legal framework, as well as IT tools and processes)..
- 6

## 2. Core CCR Program Management



### Update on Core CCR Roadmap replanning – overview of interdependencies



Key priorities have been extensively discussed the past year within Core and concluded as:

- DACC evolutions: Coordinated Validation, AHC and Swiss integration.
- IDCC
- ROSC

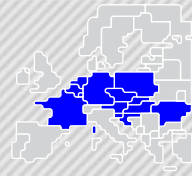
Roadmap status as of Nov 2023. An update is planned for IDCC & ROSC with LTCC being assessed

- IDCC: after ACER decision TSOs to re-assess and adjust
- ROSC: planning is currently undergoing replanning, with impact on other processes as reflected.
- LTCC: planning and way forward under assessment with LTFBA having been put on hold

Not yet detailed in the roadmap

- CCR Central
- Accession of Eirgrid
- Harmonized Market-Based Methodology

▲ Go-live milestone    △ Submission of amendment    ■ Long-term    ■ Intra-day    ■ Day-ahead    ■ ROSC & CS    ■ BTCC    ■ Cluster indication



[Link with ACER's initiative on prioritization](#)

### Background

- ACER initiated a prioritisation exercise aimed at prioritising Core, Nordic, SDAC and SIDC implementation projects as a whole.
- Core TSOs has exchanged with ACER on this in a dedicated call and the MESC. Further discussion will take place in MESC (on the prioritisation framework) and Core IG (on the content/planning of projects).

**Core TSOs consider the Core roadmap as a sound basis. The roadmap is built upon:**

- Already taken regulatory decisions, that reflect how priorities have been set in the past
- Functional dependencies, which in a natural way include priorities. Example: by implementing IDCC we are improving the balancing timeframe, and by implementing ROSC we are improving the ID capacities.

**Core TSOs take note that ACER does not have the intention to create a feedback loop between the outcome of the prioritisation exercise and the existing regulatory deadlines.**

- In other words, the projects in implementation are not impacted by this prioritisation exercise. This implies the Core roadmap is to some degree already fixed beyond the mid-2025 cut-off point ACER adopted for its exercise.
- The room to manoeuvre is on the projects that are to be planned / are in regulatory phase, examples being CCR Central and EGBL HMBM. The outcome of the prioritisation exercise is one input, whilst dependencies remain a second input – these form the basis to discuss trade-offs within Core.





European Union Agency for the Cooperation  
of Energy Regulators

# Core intraday capacity calculation methodology

update on 2nd and 3rd amendment referral

**Core Consultative Group meeting**  
**12 March 2024**



- The referral process on the Core ID CCM took almost 11 months
- Major compromises have been achieved, also regarding the ID70% topic
- Board of Regulators (BoR), 7 March: provided the favourable opinion
- Implementation of IDCC(b) (22h D-1) expected by May 2024

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## Methodology changes

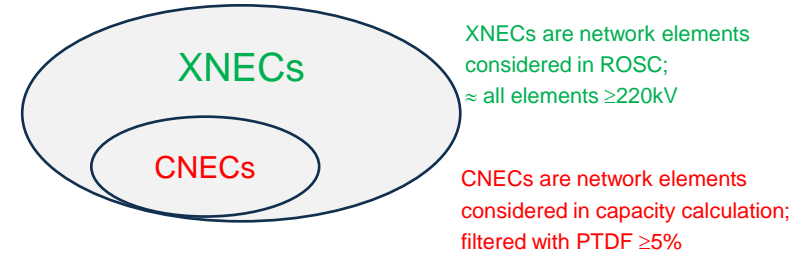
- **Removal of optimisation of non-costly remedial actions (nRAO)**
  - as there is no time to perform nRAO in the intraday capacity calculation window
  
- **Lowering Flow reliability margin (FRM)**
  - to be  $\leq$  than the FRM at day-ahead level
  - if 10% universally applied at day-ahead  $\Rightarrow$  5% at intraday
  
- **ATC-based validation**
  - Agreed to be implemented as temporary procedure, besides the CNEC-based validation
  
- **Additional intraday capacity calculation rounds**
  - IDCC(c): between 02:00 and 03:45 at day D
  - IDCC(e): between 14:00 and 15:45 at day D

**The treatment of 70% requirement in intraday:**

- Minimum capacity requirement from ER Article 16(8), in principle applies to intraday
  - but no AMR (minRAM) in the methodology as a tool to reach the 70% threshold
  - ACER considers it acceptable in the current state of the electricity market that the Core TSOs do not immediately implement the 70% requirement, and do not seek annual derogations for this purpose
  - additional data required for monitoring of ID capacities and ID70%
- **TSOs' analyses** – to be provided **by 1 April 2025**
  - both common and individual analyses
  - how to increase ID capacities in general & how to reach 70% through time, at each CNEC
  - ACER & Core NRAs to provide guideline and template for the analyses
- **TSO amendment** to the ID CCM – **by 1 October 2025**; as a backstop
  - based on the results of their analyses

- **XNEC to CNEC conversion**

- allowed without PTFD threshold for 1-year testing period after ROSC implementation
- XNECs can exceptionally be added to the CNEC list, if loaded 100% or more before the latest CROSA run



- Application of **Individual Validation Adjustment (IVA)** on CNECs, for congestions on non-CNECs:

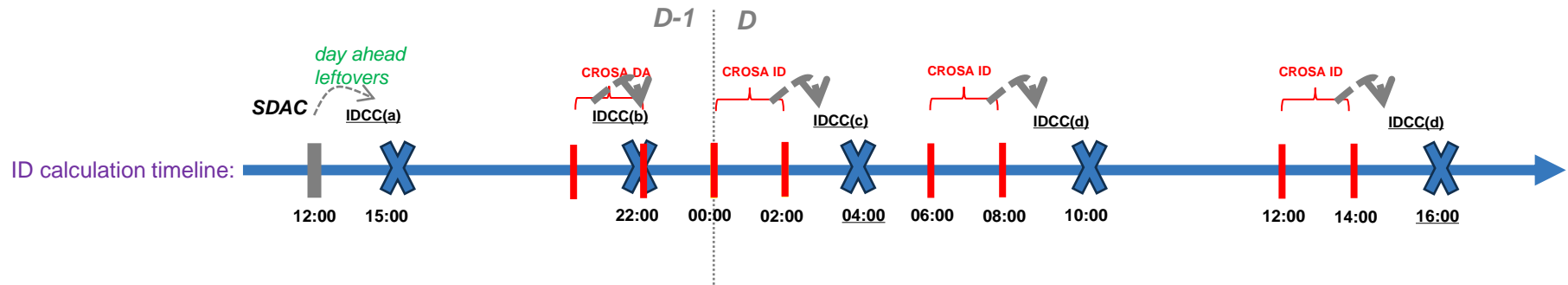
- allowed as a last resort measure, after all remedial actions from Article 20 SOGL are considered
- expected to be triggered very rarely

- XNEC cross-border relevant network elements with contingency (considered in ROSC)
- CNEC critical network elements with contingency (considered in capacity calculation)
- IVA Individual Validation Adjustment



# ID calculation timeline | Implementation phases

ROSC/CROSA outputs as inputs to Intraday Capacity Calculation (IDCC)



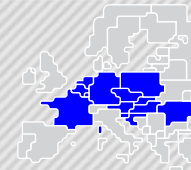
Implementation timeline per IDCC phases:

*Decision: early March 2024*

Phase:	Preceding CROSA ends:	ID capacity allocation:	For MTUs:	Implementation:
IDCC(a)	/ (DA, leftovers)	15h D-1	00-24h	with IDA1: Jun'24
IDCC(b)	22h (⇒ intermediate results)	22h D-1	00-24h	by 4M after the Decision expected May'24
IDCC(c)	02h	04h D	06-24h	by 9M after IDCC(b) exp. Feb'25
IDCC(d)	08h	10h D	12-24h	by 22M after IDCC(b) exp. Mar'26
IDCC(e)	14h	16h D	18-24h	by 3M after the corresp. CROSA exp. 1st half'26

- IDCC: Intraday capacity calculation
- ROSC: Regional Operational Security Coordination
- CROSA: Coordinated Regional Operational Security Assessment

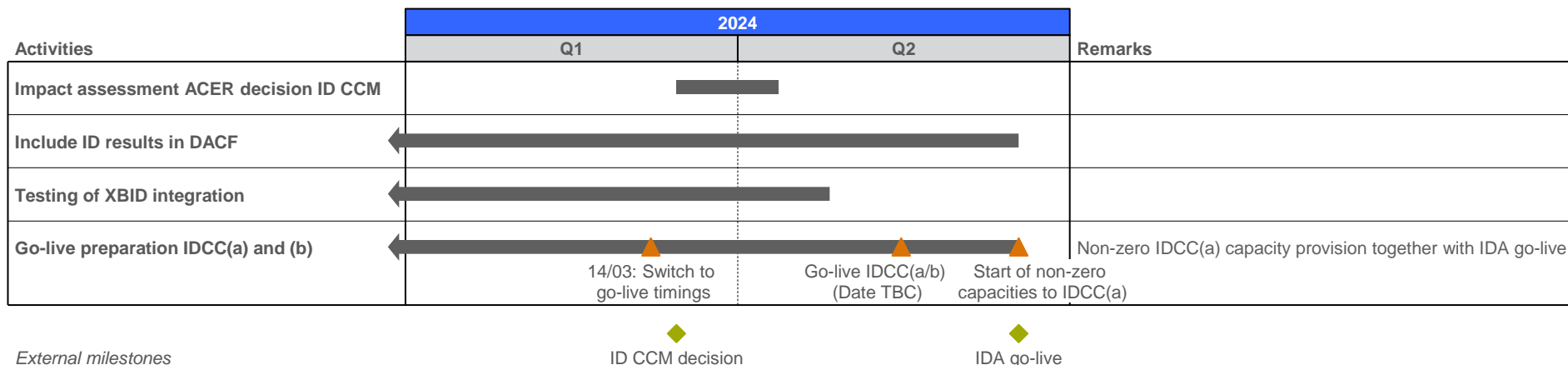
### 3. Intraday Capacity Calculation



#### Roadmap of IDCC(a/b)

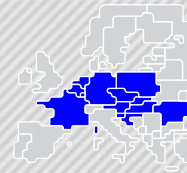
Objective today's meeting is to provide an overview of the ongoing preparations for go-live of IDCC(a) and (b)

- Core TSOs intend to go-live with IDCC(a) and IDCC(b) by May 2024.
  - Although the technical go-live of IDCC(a) will happen in May 2024, Core TSOs will start providing non-zero capacities at 15:00 from the go-live of IDA, according to the derogation as provided in ACER's proposals for the ID CCM.
- Core TSOs stress the need to have a decision on the ID CCM by March 2024 without new elements prior to the go-live.
- On 25/04, Core TSOs will have a go/no-go decision on the go-live of IDCC(a) and (b).



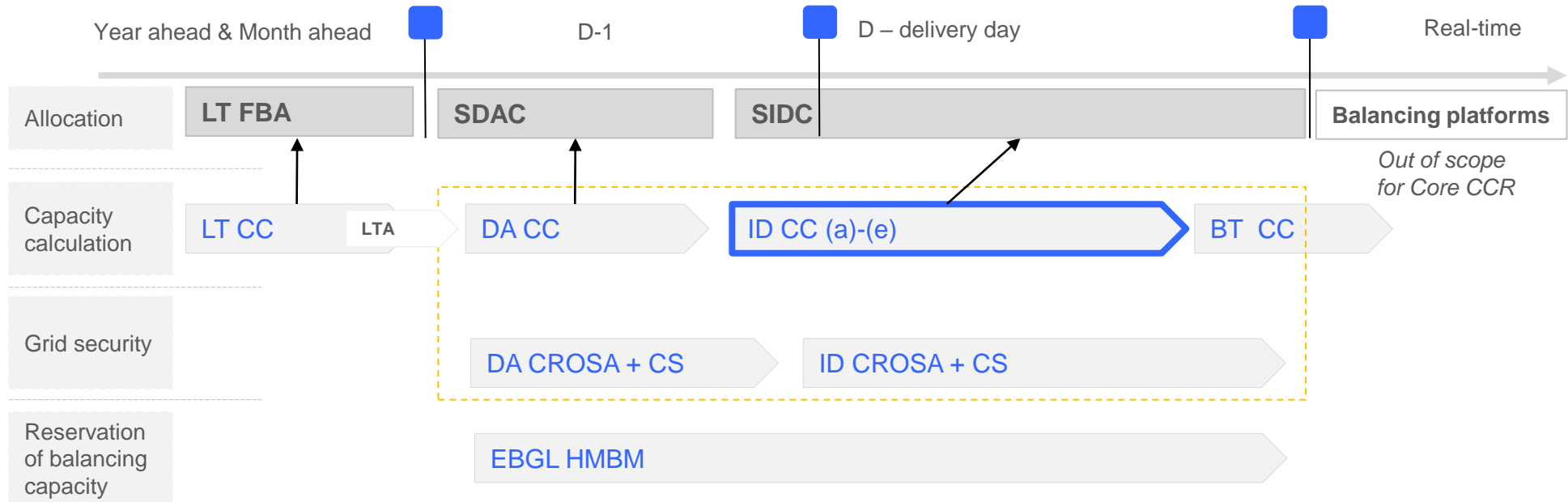
The next slides describe where this IDCC implementation fits within the bigger picture of the target model for the Core region

### 3. Intraday Capacity Calculation



The bigger picture – Link between IDCC and other processes

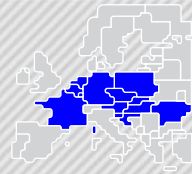
#### Overview of the processes within the Core region and the associated allocation processes



#### Five separate processes can be distinguished in the ID capacity calculation timeframe

Process	Time of allocation	MTUs covered	Source CGM	Preceding ROSC process	Associated SIDC process	Legal implementation deadline (pending ACER decision)
<b>IDCC(a)</b>	D-1 15:00	0-24	D2CF	(-)	IDA1	Together with IDA implementation
<b>IDCC(b)</b>	D-1 22:00	0-24	DACF	DA CROSA	IDA2	July 2024
<b>IDCC(c)</b>	D 04:00	6-24	IDCF	ID CROSA 1	Continuous trade	9 months after IDCC(b)
<b>IDCC(d)</b>	D 10:00	12-24	IDCF	ID CROSA 2	IDA3	22 months after IDCC(b)
<b>IDCC(e)</b>	D 16:00	18-24	IDCF	ID CROSA 3	Continuous trade	3 months after corresponding CROSA

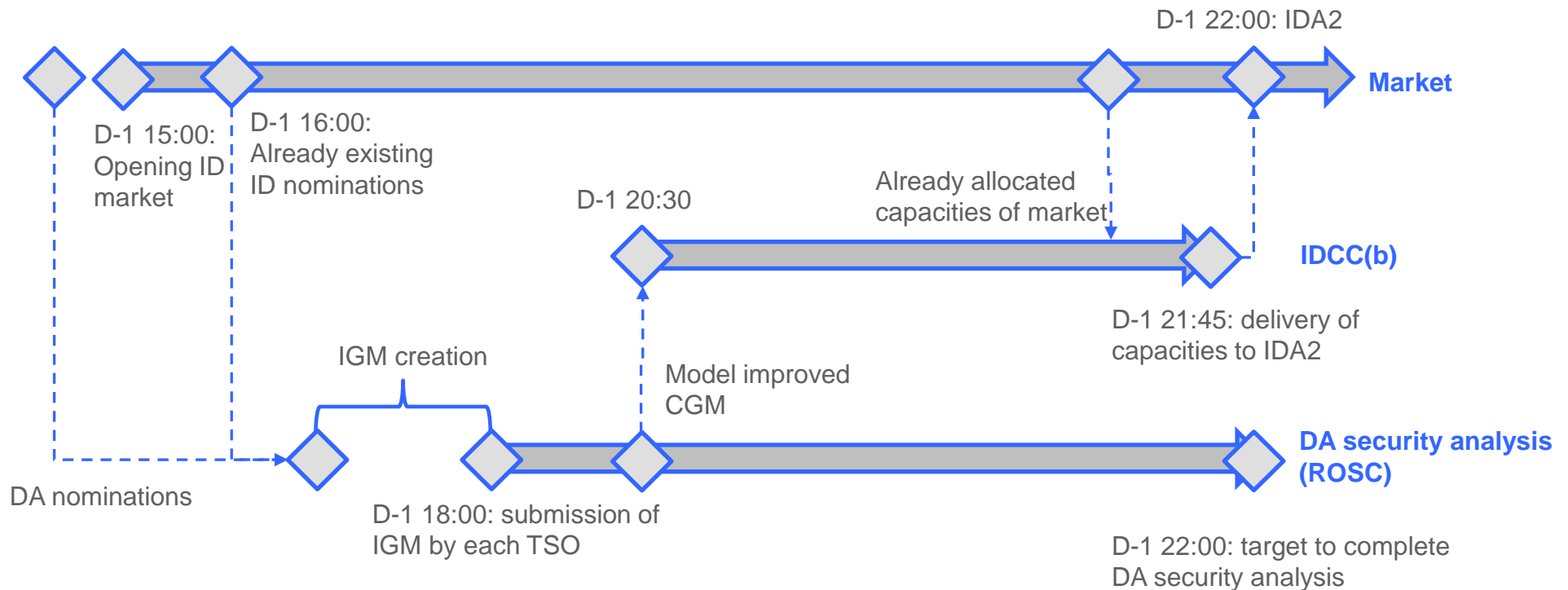
### 3. Intraday Capacity Calculation



Intrinsic challenge: Managing the parallel processes

It is the role of ROSC to coordinate the application of RAs. Hence it is key that as much as possible the non-costly and costly RA's from ROSC are integrated into the starting point of IDCC(b)

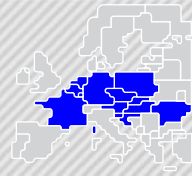
- By skipping the NRAO (non-costly remedial action optimizer) in IDCC(b), TSOs minimize the time needed to perform IDCC(b), which in turn allows to integrate the (partial) outcome of the DA security analysis.



**NB:** Similar parallel processes are foreseen for ID CROSAs 1-3 in parallel to IDCC(c)-(e)



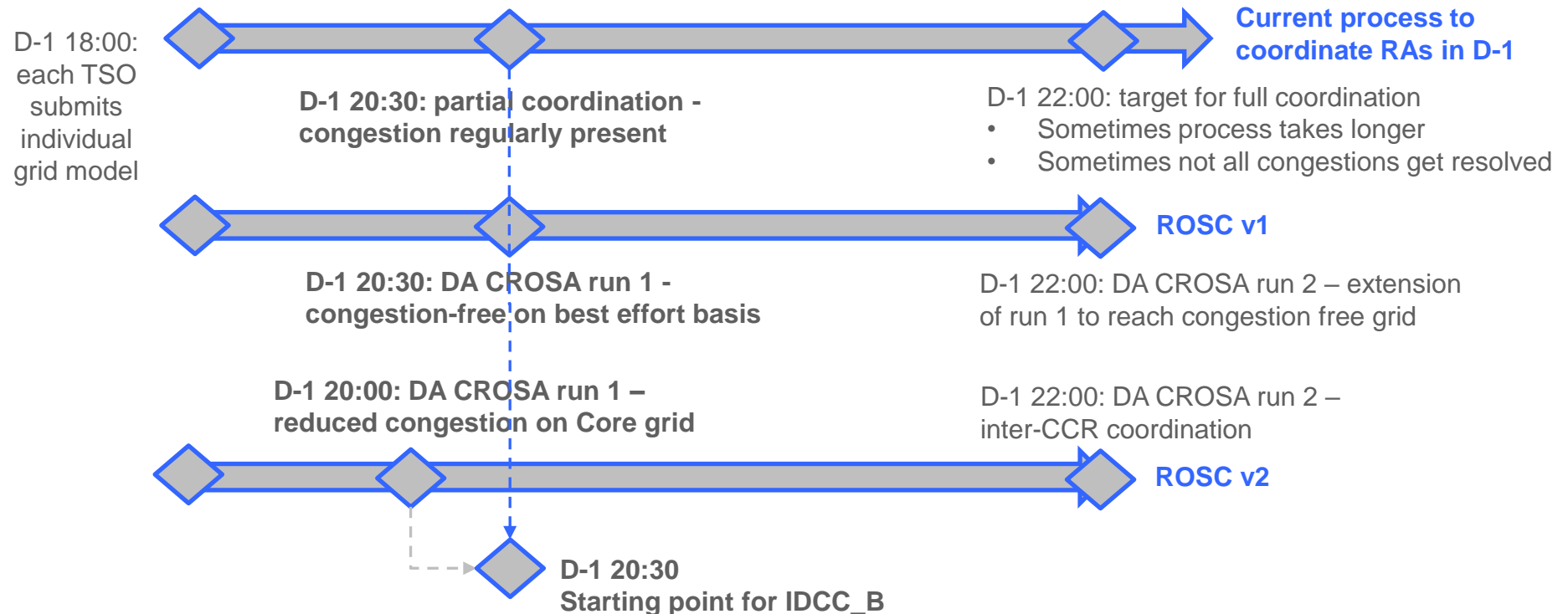
### 3. Intraday Capacity Calculation



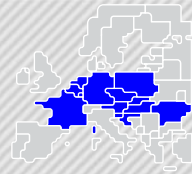
#### Step-wise improvement to the process with ROSC implementation

#### Core TSOs foresee stepwise improvements in the ROSC/IDCC process

- Current process:** 'glue' together Coreso's CGM and TSCNET's CGM, limited automation, more "rough" approach to solve congestion thus sometimes margin is created by reducing loading < 100%
- ROSC v1** with possible phased approach for DA & ID
  - DA CROSA:** optimization of PST, HVDC & RD&CT, topological RAs are manually determined by TSOs, aim to reduce loading to 100%
  - ID CROSAs:** same description as DA CROSA
- ROSC v2:** integration of topological RAs into global optimization, introduction of inter-CCR coordination latest 18 months after ROSC v2



### 3. Intraday Capacity Calculation



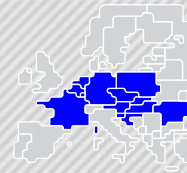
#### Overview of the IDCC processes

Core TSOs are preparing the go-live for the first step towards the target model with the expected go-live of IDCC(a) and (b) in May – June 2024

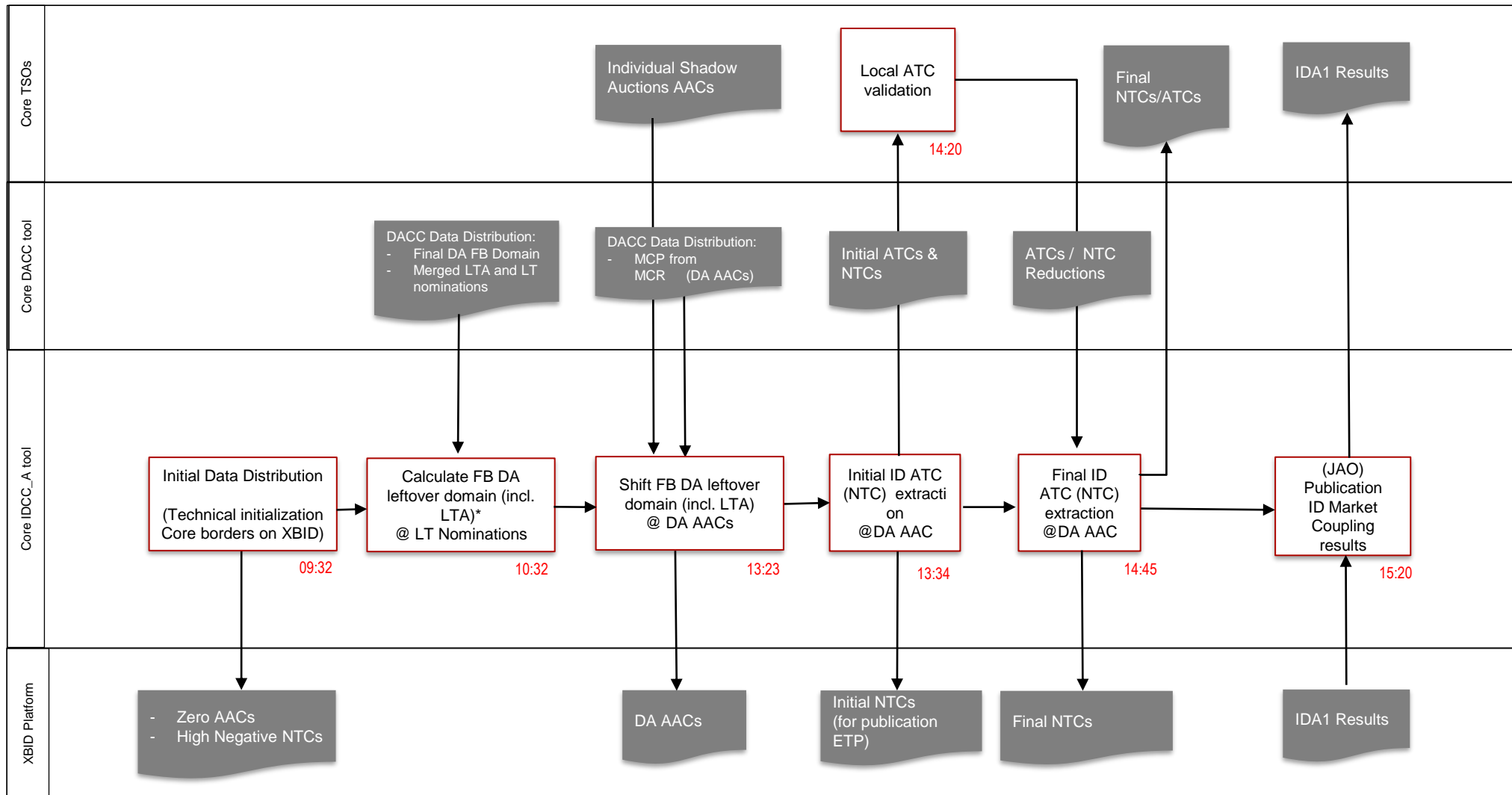
- With the go-live of IDAs, capacities of IDCC(a) will be provided to the ID market as of D-1 15:00.
- With the go-live of IDCC(b), the quality of the grid models for the ID capacities will improve due to re-calculation for the 22:00 D-1 release of capacity.

Topic	D-1 15:00	D-1 22:00	
	NEW- IDCC(a)	Today in operation: operational DA leftovers + increase/decrease	NEW - IDCC(b)
<b>FB domain (Input)</b>	DA leftover FB domain – Shifted to DA MCP + Updated TSO preferences for virtual capacity (based on D-2 grid model)  LTA capped to 1500MW	DA leftover FB domain – Shifted to DA MCP + Updated TSO preferences for virtual capacity (based on D-2 grid model)  LTA capped to 1500MW	New ID FB domain (based on D-1 grid model)
<b>FRM</b>	10%	10%	5%
<b>ATC extraction algorithm</b>	Iterative approach PTDF threshold 0,5% RAM_ID threshold 10MW	Iterative approach PTDF threshold 0,5% RAM_ID threshold 10MW	Iterative approach PTDF threshold 3% RAM_ID threshold 50MW
<b>Other</b>	Decrease with justification possible via ATC validation as decretionary action of a TSO	+ 300 MW increases possible if both TSOs confirm Decrease with justification possible via ATC validation as decretionary action of a TSO	Decrease with justification possible via ATC validation as decretionary action of a TSO

# 3. Intraday Capacity Calculation

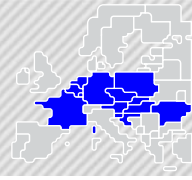


## IDCC(a) pre-coupling process



\*DA (leftover) domain is reshaped, based on TSO settings for rLTAincl & rAMRid

### 3. Intraday Capacity Calculation



#### IDCC(b) - HLBP at Go-live

#### IDCC(b) process description

On the next slides, the specifics of the validation process for IDCC(b) are explained.

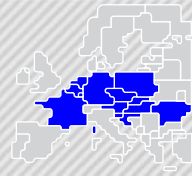


For explanation on the initial and final flow-based computation processes, Core TSOs refer to the existing explanations for the DA CC process:

- Detailed description of FB DACC process on the ENTSO-E website: [LINK](#)
- Webinar on the FB DACC process: [LINK](#)

Same method as for IDCC(a) but negative ATCs can occur in case negative RAMs are calculated.





#### IDCC(b) - HLBP at Go-live

The intraday capacity calculation (b) process consists of four main stages:

- the creation of capacity calculation inputs by the Core TSOs and RSCs;
- the capacity calculation process by the CCC;
- the capacity validation by the Core TSOs (IVA based or ATC based)
- the conversion of the results of the flowbased capacity calculation into ATC results, during the time SIDC project is not able to take into consideration flowbased data. This will be the case for several years.

#### Main differences between Day-Ahead and Intraday

##### Day-Ahead



##### Intraday



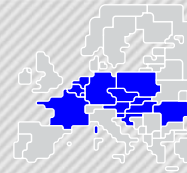
#### Unique to IDCC (b)

- No virtual capacity (minRAM or LTA inclusion)
- No specific NRAO (use of DA CROSA RAs)
- Merge of the Initial & Intermediate computation and Merge of the Pre-final & Final computation
- Previous FB domains can be used for fallback
- No coordinated validation

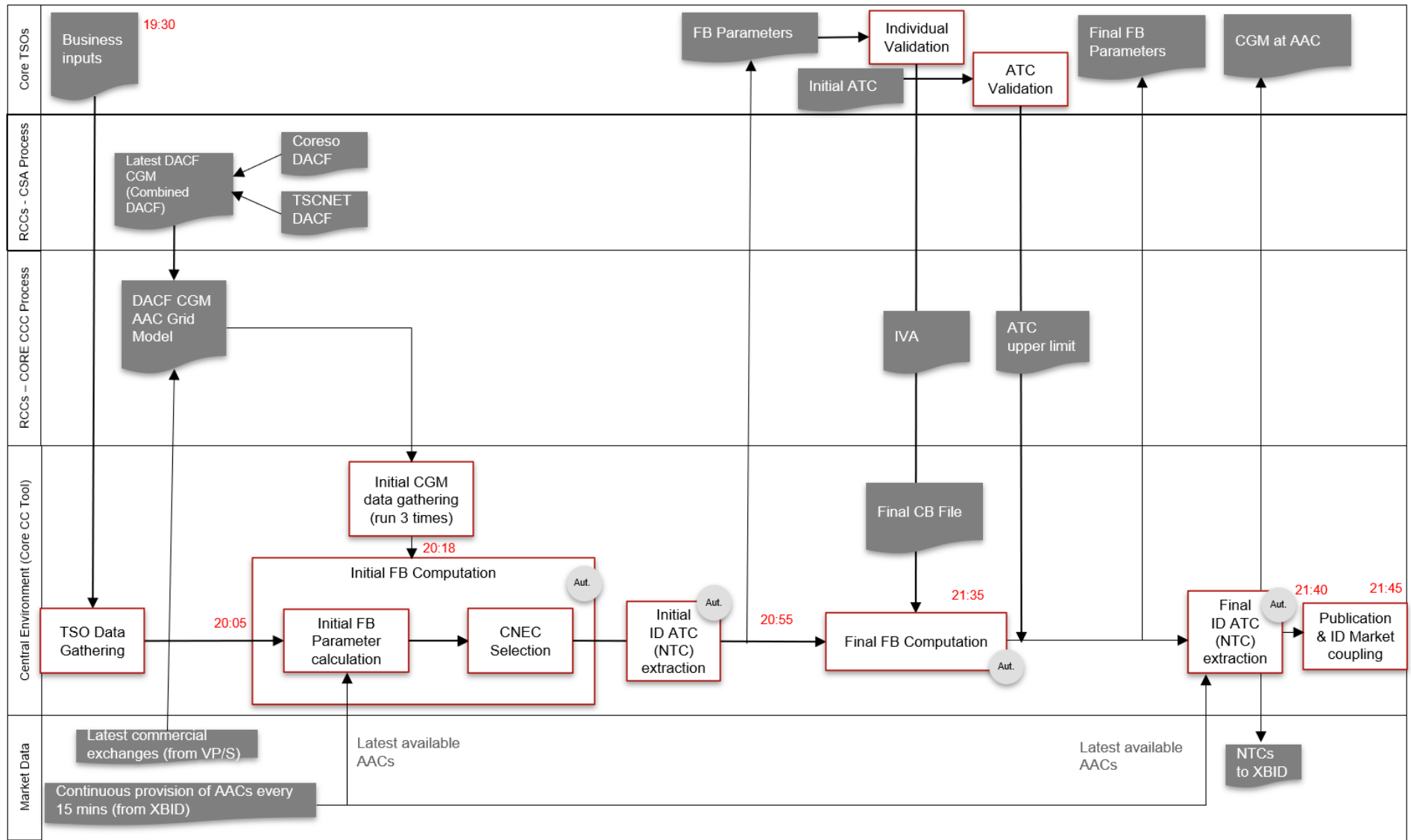
#### Similar processes in DA and ID

- Provision of most input data
- FB computation module & CNEC selection
- Publication obligations and procedures
- Development of individual validation

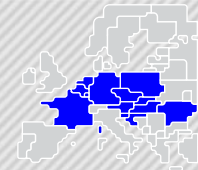
# 3. Intraday Capacity Calculation



## IDCC(b) - Process flowchart



### 3. Intraday Capacity Calculation



#### IDCC(a/b) - ID ATC extraction in Core IDCC (a) and (b)

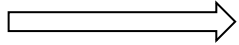
##### Introduction

- In line with the ID CCM Art. 20. Calculation of ATCs for SIDC fallback procedure, in case the SIDC is unable to accommodate FB parameters, the CCC shall convert them into ATCs for each Core oriented bidding zone border.
- This will be the case for the next years.

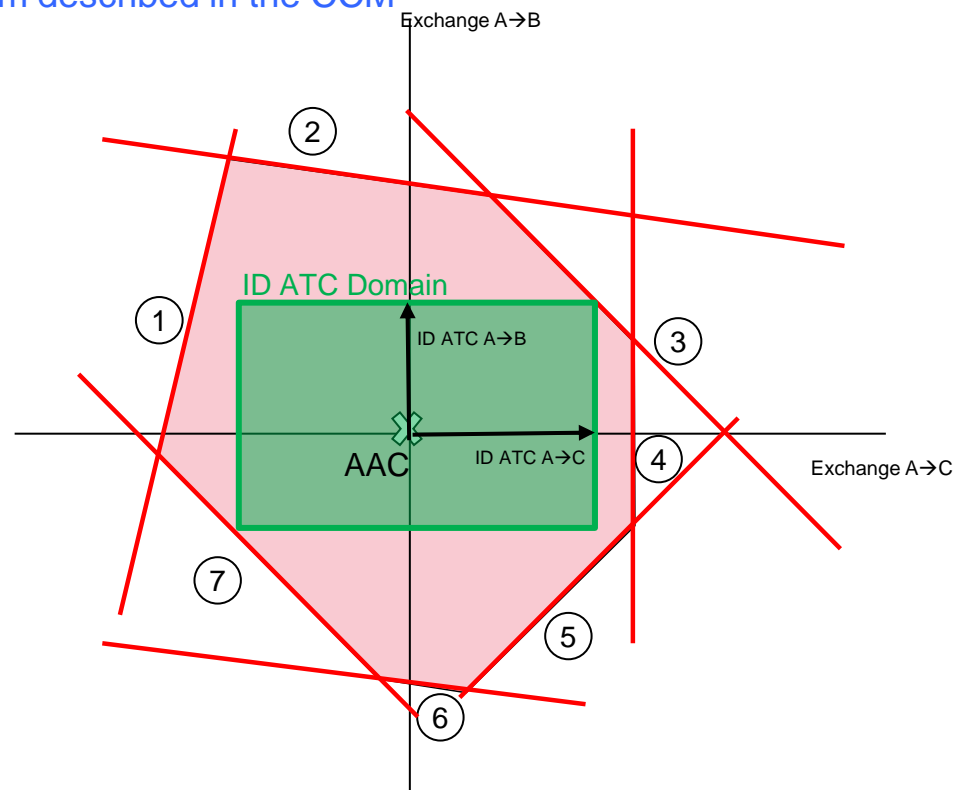
ATCs are extracted by the iterative ATC extraction algorithm described in the CCM

CNEC	Final RAM
1	750
2	650
3	600
4	550
5	450
6	650
7	700

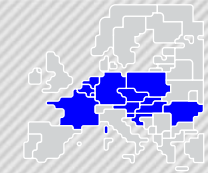
ID ATC Extraction



Border	ID ATC
A→B	400
B→A	450
A→C	300
C→A	350



### 3. Intraday Capacity Calculation



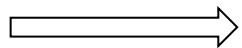
#### IDCC(a/b) - ID ATC extraction - with AAC outside the FB Domain

The below example shows what happens when the market clearing point is outside of the ID FB domain

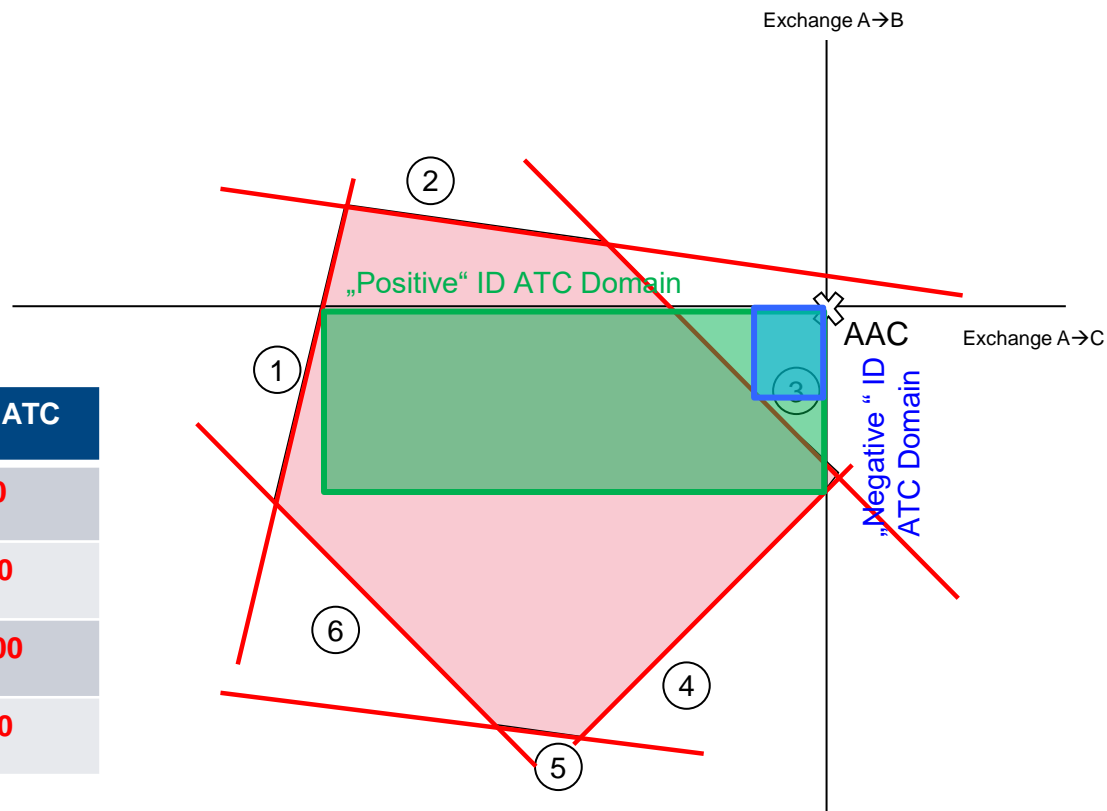
- ID ATC will be set to zero in case it comes out negative of the extraction

CNEC	Final RAM
1	550
2	450
3	-300
4	250
5	850
6	900

ID ATC Extraction

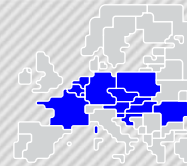


Border	ID ATC
A→B	-80
B→A	200
A→C	-100
C→A	500



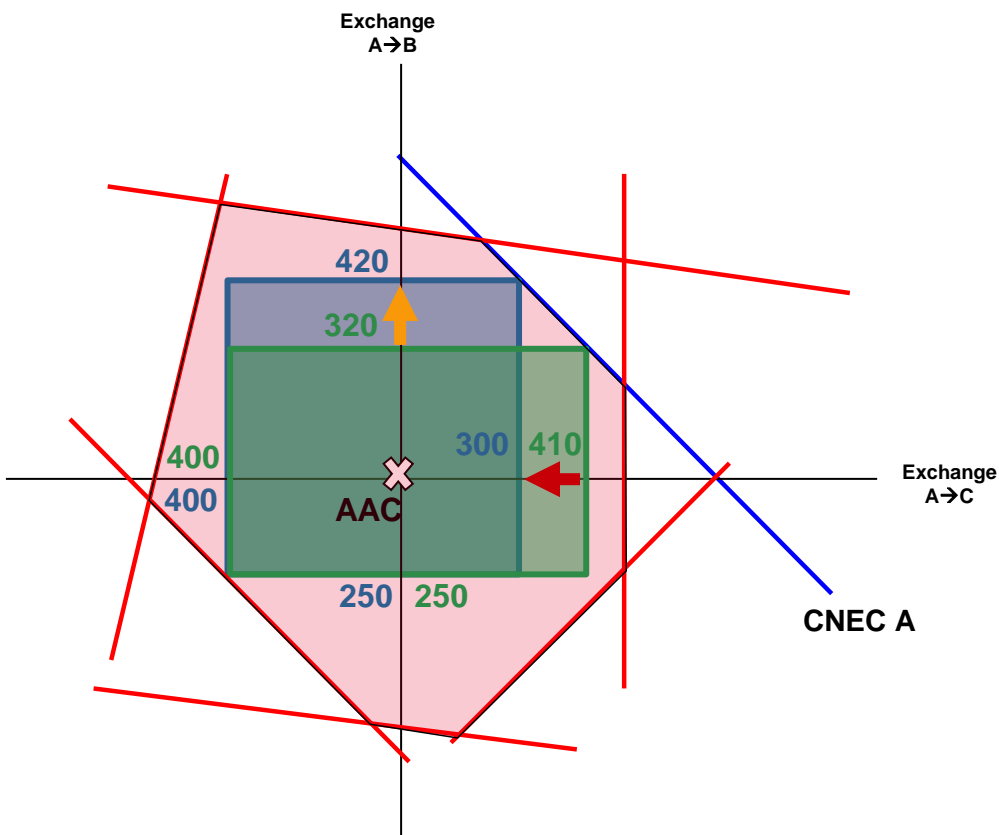


### 3. Intraday Capacity Calculation



#### IDCC(a/b) - ID ATC-based validation

The below example shows what happens if after ATC validation RAMs from ATC limiting CNECs can be redistributed on other Core borders.



- AAC: Already Allocated Capacity
- Initial ID ATC domain - Before ATC-based validation
- A to C ATC reduction after validation from TSO A
- Final ID ATC domain - After ATC-based validation
- A to B ATC increase after RAM redistribution (from CNEC A)

**AAC: Already Allocated Capacity – 0 MW**

**Initial ID ATC domain before ATC-based validation:**

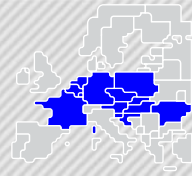
- A to B = 320 MW
- B to A = 250 MW
- A to C = 410 MW
- C to A = 400 MW

**ATC-based validation from TSO A:**

**A to C = 300 MW**

**Final ID ATC domain after ATC-based validation:**

- A to B = 420 MW – increased after RAM distribution
- B to A = 250 MW
- A to C = 300 MW – reduced after validation TSO A
- C to A = 400 MW



### IDCC(a/b) - ID ATC-based validation

#### A new way for validation – complementary to IVA

- During the validation step, a Core validating TSO will have the possibility to set ATC limit per border direction in order to prevent too high ATC from jeopardizing grid security. During final ATC extraction step, this limit could lead to reduce initial ATC extracted from the flow-based domain.
- This simple validation is complementary to IVA (CNEC-based validation).
- Simplicity equals better performance: it helps handling the challenge of the 40-minutes deadline to perform Individual validation within the context of constraints timing of ID CC. In case of validation fallback, an ATC based validation only impacts the own borders of a TSOs whereas a high IVA fallback impacts the full Flow-Based domain.
- After the local validation phase, a final FB domain is calculated and/or final ATC extraction is performed. In case a TSO has applied ATC validation, CNEC RAMs previously used for the respective ATC border become available again for other ATC borders.

#### Limited Usage

- The application of ATC-based validation is restricted to exceptional situations (significant unexpected outage, IT fallback).
- Some TSOs plan to use it as IDCC fallback validation method in case classic IVA fails. Some TSOs plan to use ATC validation as main IDCC validation method.

#### Transparency

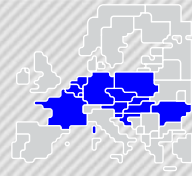
- ATC-based validation will have the same level of transparency as it is described for classic IVA in Article 19(10).

#### Duration

- Core TSOs could use ATC-based validation for 24 months\* after Go-Live of IDCC(b)

*\*based on the latest IDCCM ACER proposal*

### 3. Intraday Capacity Calculation

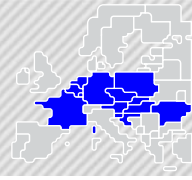


#### IDCC(a) - Overview of which TSOs apply ATC-based validation

Core CG is informed on the TSOs which are planning to perform ATC validation in IDCC(a) to, if necessary, limit the ID ATCs and the way in which these TSOs are planning to perform ATC validation

- APG
  - Mainly as long as the inclusion of ID trades until 16:00 in the DACF is not implemented
  - In the long run for cases of major issue (e.g. IT issue, unexpected outage after DA capacity calculation,...) to prevent potential critical grid situations.
- 50Hertz, Amprion, TNG, RTE, MAVIR and Elia
  - These TSOs do not foresee to perform ATC validation on a daily basis. ATC validation might only be used in case of major issue (e.g. IT issue, unexpected outage after DA capacity calculation,...) to prevent potential critical grid situations.
- PSE
  - TSO want to perform ATC validation on a daily basis.

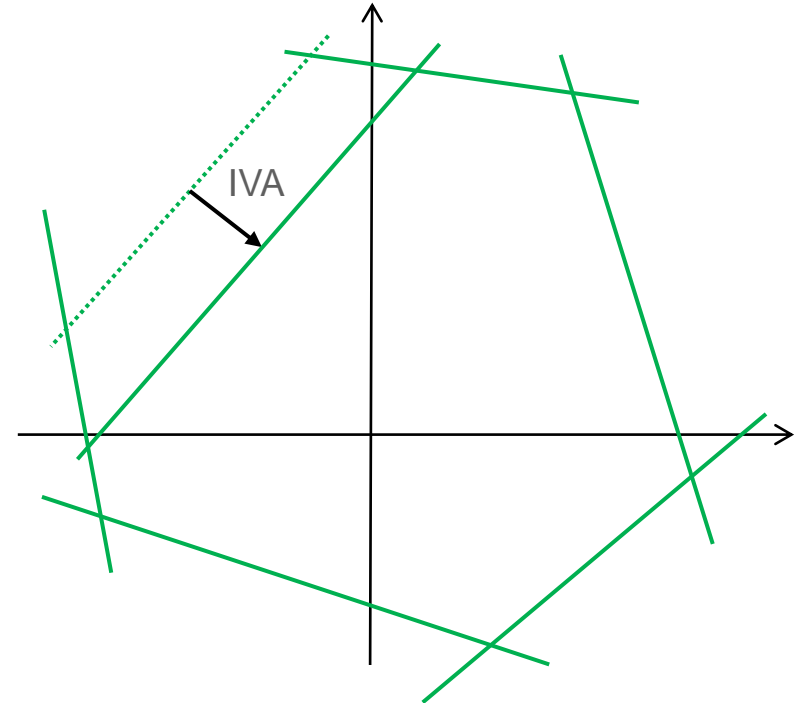
### 3. Intraday Capacity Calculation



#### IDCC(b) - Local validation using IVAs

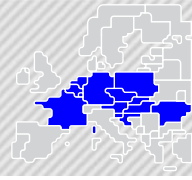
IVAs are calculated by local validation tools and act directly on the ID FB Domain

- An IVA reduces the RAM of a CNEC.
- IVAs can be applied according to article 19(2) of the ID CCM in the following cases:
  - (a) an occurrence of an exceptional contingency or forced outage as defined in Article 3(39) and Article 3(77) of the SO Regulation;
  - (b) when all available costly and non-costly RAs are not sufficient to ensure operational security;
  - (c) a mistake in input data, that leads to an overestimation of cross-zonal capacity from an operational security perspective; and/or
  - (d) a potential need to cover reactive power flows on certain CNECs.



For IDCC(b) also ATC based validation can be used to reduce directly the extracted ID ATCs instead of the FB Domain, as explained before in the context of IDCC(a).

### 3. Intraday Capacity Calculation



#### IDCC(b) - Overview of which TSOs apply IVA based validation respectively ATC-based validation

##### Core CG is informed on the status per TSO of providing IVAs for IDCC(b)

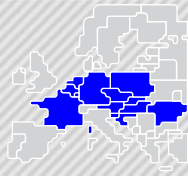
- The following TSOs are planning to apply IVAs if necessary
  - CEPS, HOPS, SEPS, MAVIR, ELES, TEL, PSE, 50Hertz, Amprion, TTG, TNG, APG, TTN
- RTE & ELIA are both not planning to apply IVAs

##### Core CG is informed on the TSOs which are planning to perform ATC validation in IDCC(b) to, if necessary, limit the ID ATCs and the way in which these TSOs are planning to perform ATC validation

- RTE, APG, MAVIR and Elia
  - These TSOs do not foresee to perform ATC validation on a daily basis. ATC validation might only be used in case of major issue (IT issue, unexpected outage during the capacity calculation,...) to prevent potential critical grid situations.
- 50Hertz, Amprion, TTG, TNG, APG, TTN
  - ATC validation will be used as a backup in case the common iDaVinCy process of those six TSOs fails. In case of this fallback, predefined max ATC values will be provided to the CCCt.
- PSE
  - TSO want to perform ATC validation on a daily basis.



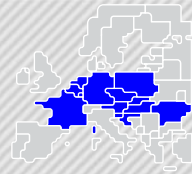
### 3. Intraday Capacity Calculation



#### IDCC(a/b) – KPIs – Interaction between IDCC(a) and (b)

##### General disclaimer on EXT//runs of IDCC(a) and (b)

- On the next slides, the KPI results of the EXT//runs are presented.
- Core TSOs stress that these EXT//run are executed independently, without taking into account the influence of IDCC(a) //run on IDCC(b).
- In reality, the capacities allocated until 16:00 after IDCC(a) capacities have been offered to the market at 15:00 will have an impact on the IDCC(b) capacities.



#### IDCC(a) - KPIs - Background and summary

#### Background on IDCC(a) EXT//run results from BD20231208 – BD20240225 (70 BDs)

- The KPIs on the next slides are based on the final ID ATCs from the IDCC(a) process, as published on the JAO publication tool.
- The IDCC(a) capacities will be provided to IDA1 for allocation at 15:00. Currently, the Core capacities at 15:00 are zero.

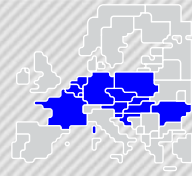
#### Parameter settings of TSOs for IDCC(a)

- Due to the fact that allocations from IDA1 can currently not be included in the DACF models used to assess operational security, APG sees no other possibility than to provide zero capacities at 3 p.m. in order to not risk operational security.
  - The non-inclusion of IDA1 and continuous trade results might result in additional restrictions in provided capacities from other Core TSOs.
- According to the ID CCM (Annex 3(3)), each TSO may adjust the ATC extraction parameters (rLTAincl & rAMRid):
  - rLTAincl & rAMRid parameters are implemented according to Art. 11 (2) for the calculation of AMR\_DA and LTAmargin\_DA

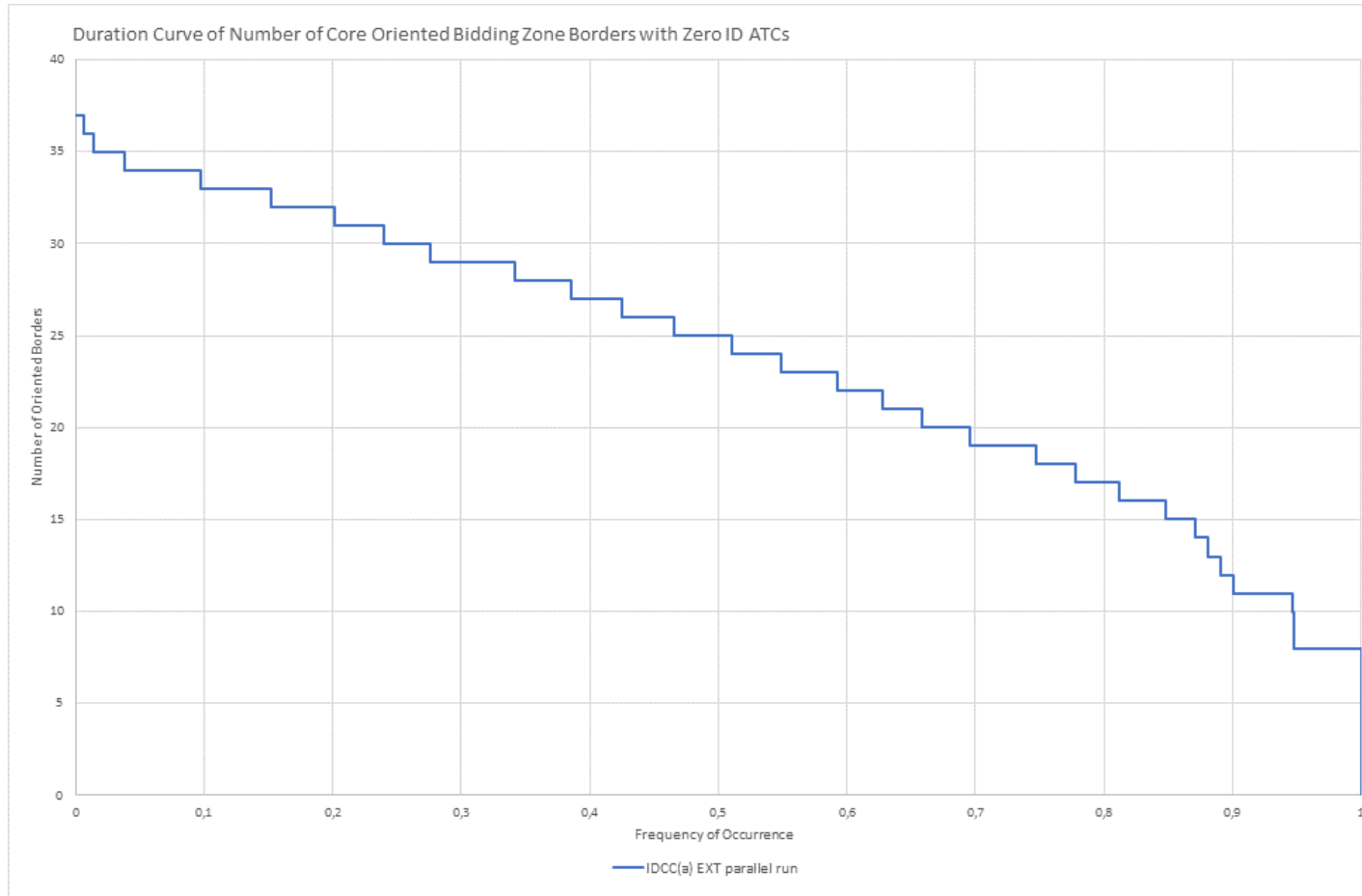
Parameter setting EXT//run	50 Hertz	Amprion	APG	CEPS	ELES	ELIA	HOPS	MAVIR	PSE	RTE	SEPS	TTG	TTN	TEL	TNG
rLTAincl	0,2	0,2	0	1	1	1	1	0,2	0	1	0,2	0,2	0,2	0,2	0,2
rAMRid	0,2	0,2	0	0,7	0,7	0,2	0,2	0,2	0,2	0,2	0,5	0,2	0,2	0,2	0,2

- The LTA threshold is set to 1500 MW in IDCC(a)
  - For LTAmargin\_DA calculation in IDCC (a), the LTA is set between 0.001 MW and 1500 MW according to Art. 11 (4).
- For both scenarios (IDCC(a) and DA leftover capacities from production):
  - PTDF threshold = 0.5% and RAM\_ID threshold = 10 MW
    - PTDFs of CNECs with RAM below the RAM\_ID threshold of 10 MW will be set to zero for ID ATC extraction if they are below the PTDF threshold of 0.5%.

### 3. Intraday Capacity Calculation

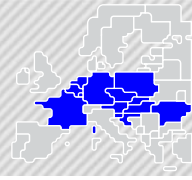


#### IDCC(a) - Zero ATC values – EXT//run results (08/12/23 – 25/02/24)

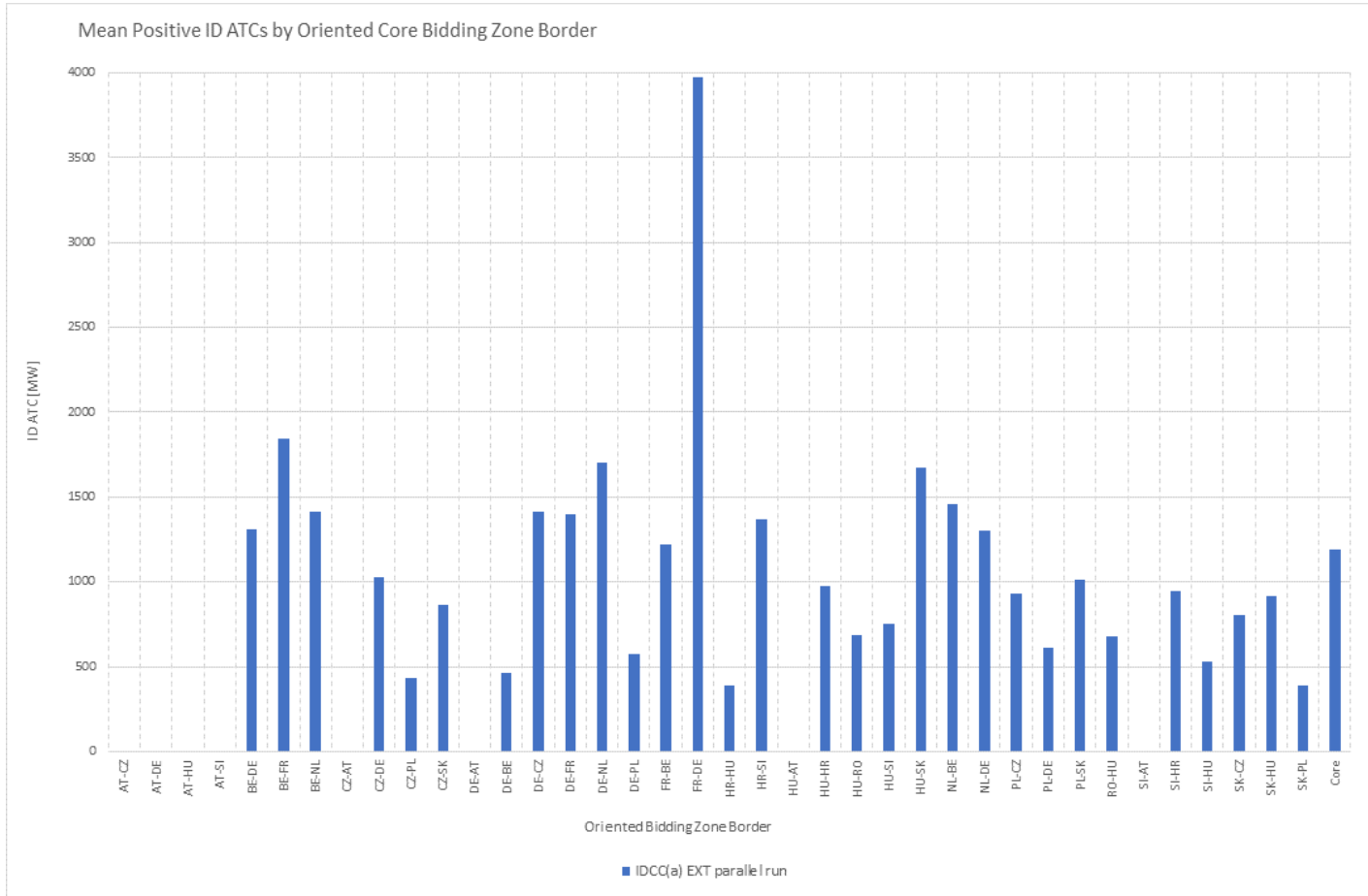


- Plot shows the frequency of time with specific number of borders with simultaneous zero ATC in IDCC(a) //run.
- In IDCC(a) it happens 24% of the time that there are more than 30 borders with zero ATC at the same time.
- The situation with 10 or less borders having zero ATC values occurs only 5% of the time.

### 3. Intraday Capacity Calculation

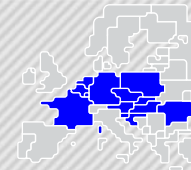


#### IDCC(a) - Mean positive ID ATCs – EXT//run results (08/12/23 – 25/02/24)

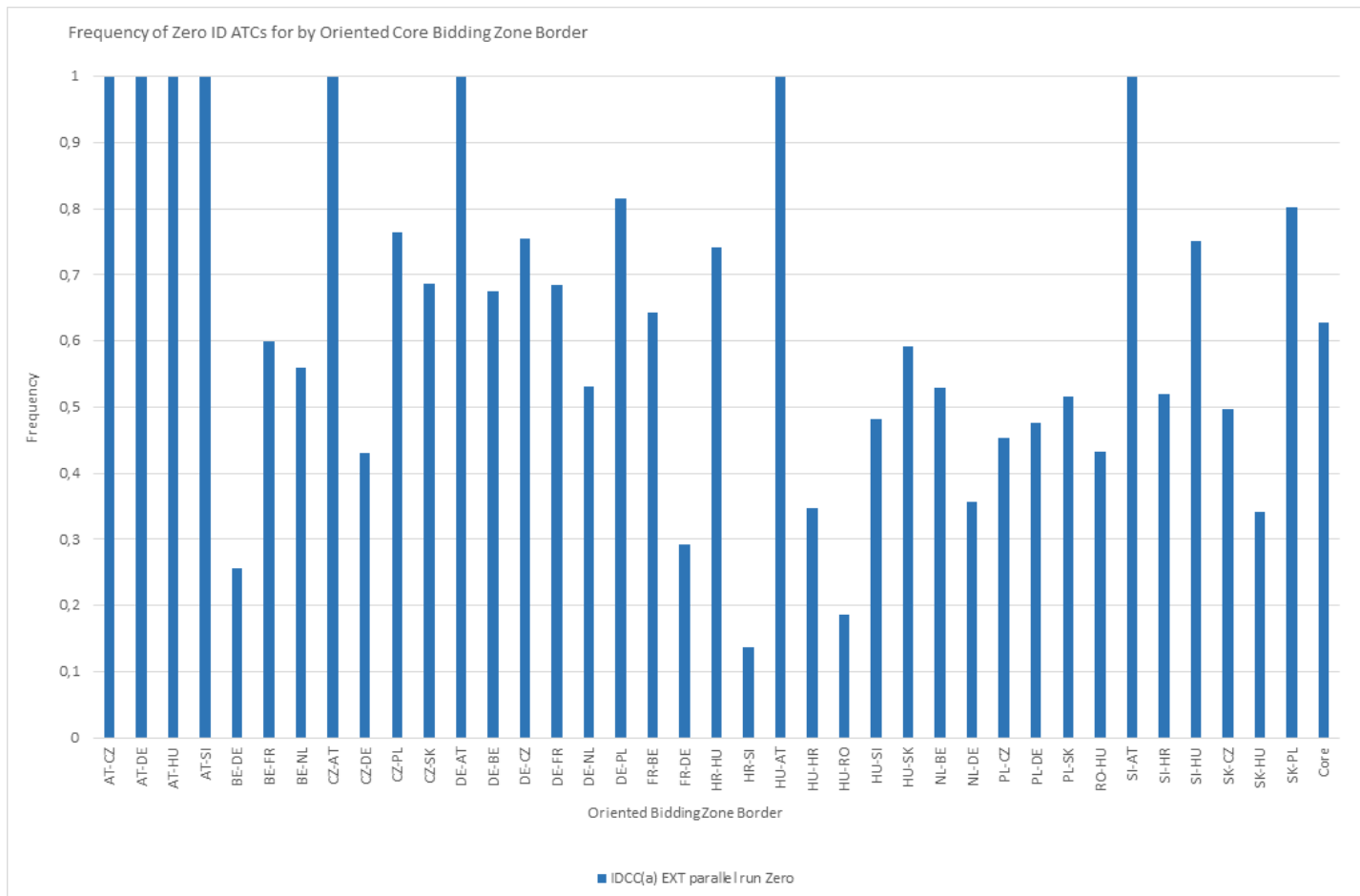


- On all AT borders there are zero ATCs from IDCC(a) //run due to APG’s decision to provide zero capacities for IDA1 as long as there is no common DACF including possible trades from IDA1 in place, which is seen as risk for operational security.
- Various results per BZ border but on Core level average positive ATCs from IDCC(a) //run are over 1200 MW.
- It’s important to focus on most relevant borders/directions.

### 3. Intraday Capacity Calculation

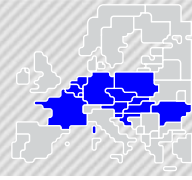


#### IDCC(a) - Frequency of zero ID ATCs – EXT//run results (08/12/23 – 25/02/24)

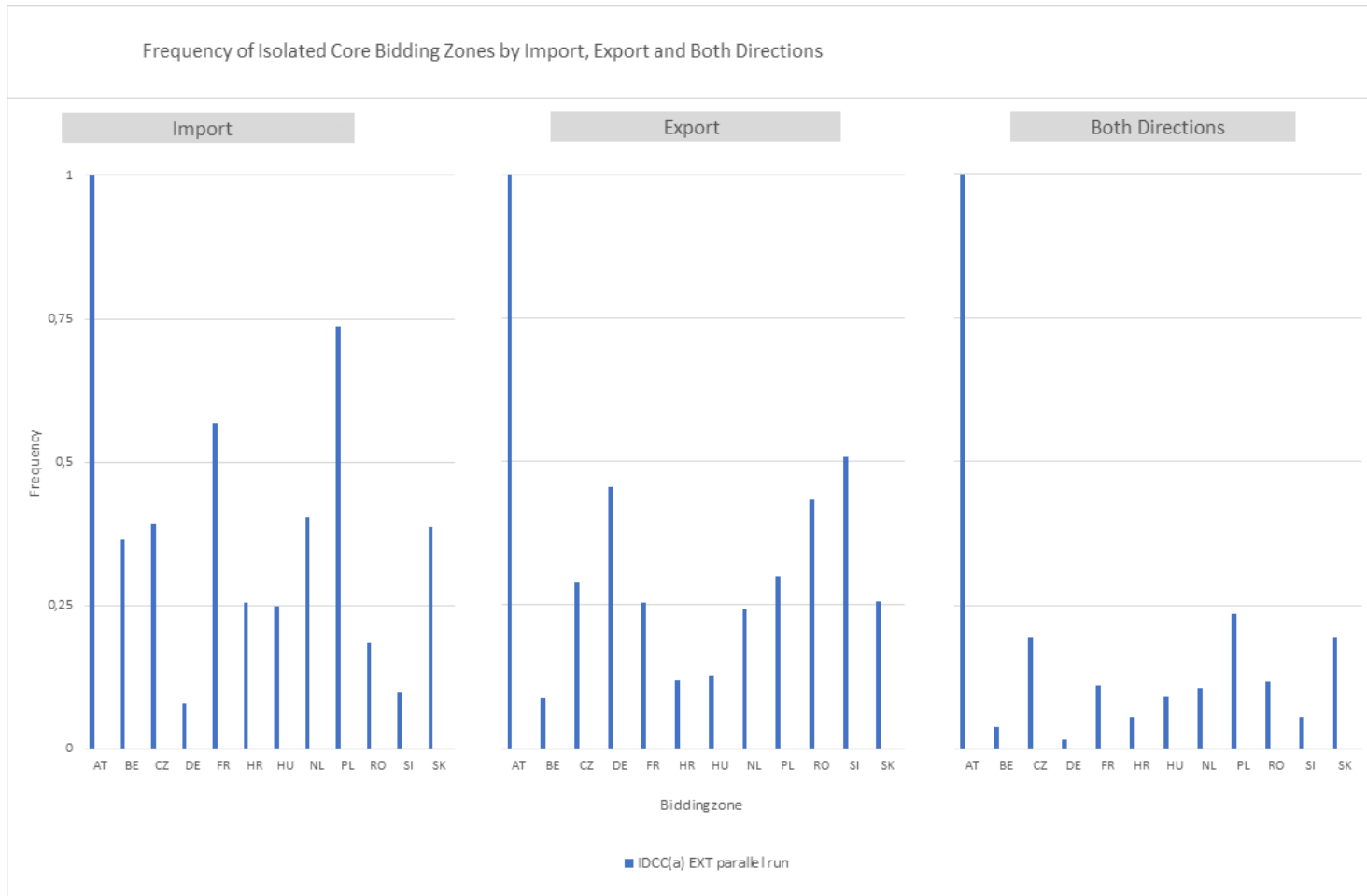


- On all AT borders the frequency of zero ATCs from IDCC(a) //run is 100% due to APG’s decision to provide zero capacities for IDA1 as long as there is no common DACF including possible trades from IDA1 in place, which is seen as risk for operational security.
- On the other borders, the frequency of zero ATC is in a range from 14% to 82%.

### 3. Intraday Capacity Calculation



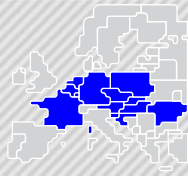
#### IDCC(a) - Frequency of Isolated Core BZs – EXT//run results (08/12/23 – 25/02/24)



- Frequency of total isolation in both directions (meaning no import nor export possible) is below 25% for all bidding zones (except for AT, where it is a consequence of APG’s decision).



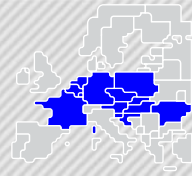
### 3. Intraday Capacity Calculation



IDCC(a) – ATC validation – last 3 months of //run (Dec '23 – Feb '24)

The only ATC-based validation applied for IDCC(a) are the ones on the Austrian borders, applied by APG as explained on the slide on IDCC(a) validation application

- No ATC-based validation has been applied during the IDCC(a) EXT//run on other borders.



### IDCC(b) – Background and summary

#### Background on EXT//run results from last 3 months (December 2023 – February 2024)

- DA leftovers represent ID ATCs after increase/decrease as submitted to XBID at 22:00
- **Note:** Due to issues in EXT//Run, BD 20240215 was excluded from the ATC comparison.

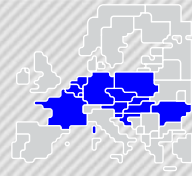
#### Parameter settings of TSOs for IDCC(b)

- $\approx 5\%$  FRM for all CNECs
  - As long as there is no central implementation of 5% FRM, the value is approximate.
- 3% PTDF Threshold and 50MW RAM\_ID threshold
  - PTDFs of CNECs with RAM below the RAM\_ID threshold of 50 MW will be set to zero for ID ATC extraction if they are below the PTDF threshold of 3%.

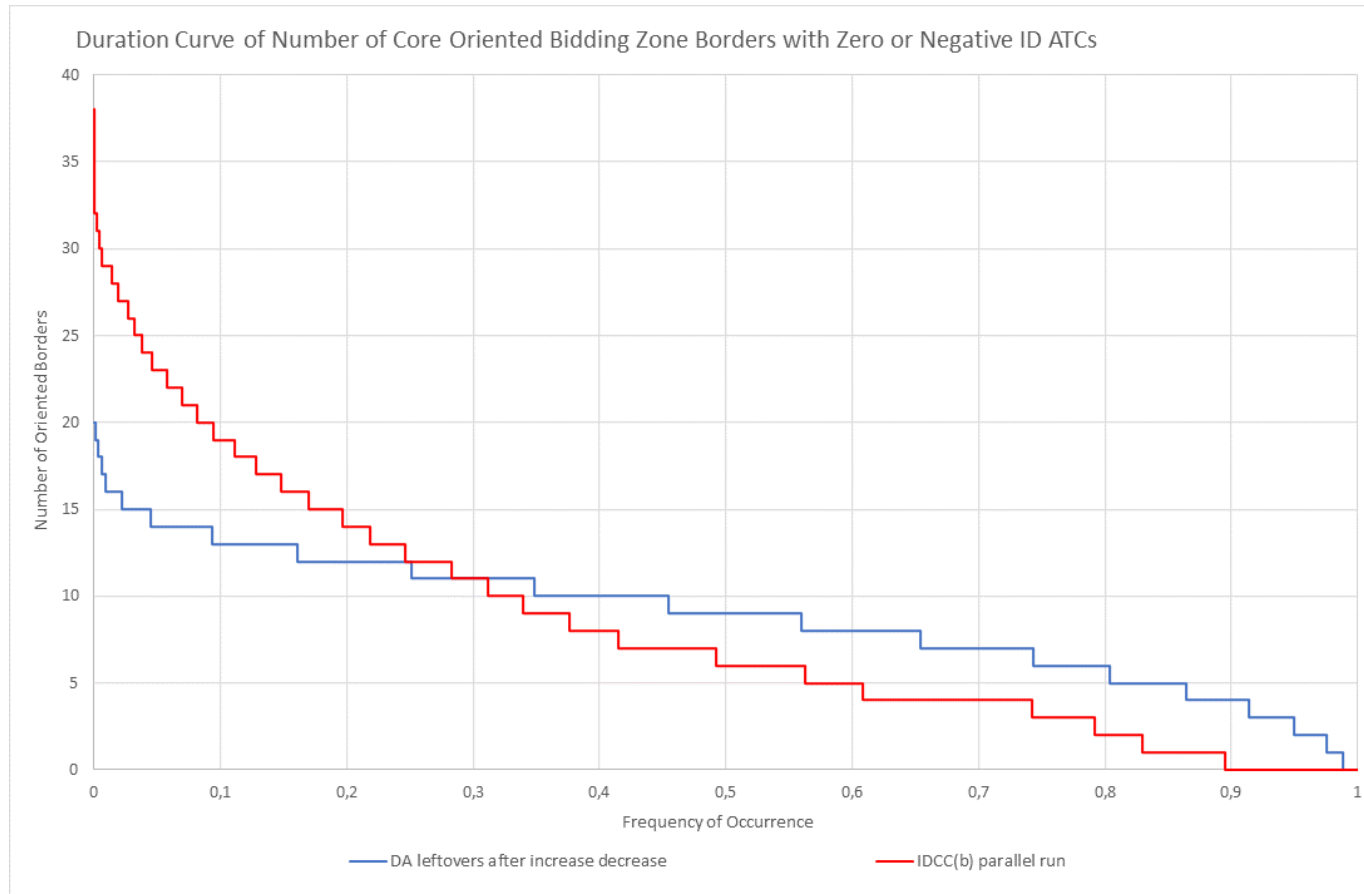
#### Summary of the observed results

- Stable results are observed in the past months.
- When comparing the IDCC EXT//Run results with the current operational ID ATCs (DA leftovers after increase / decrease) the following is observed:
  - Number of occurrences of BZ borders with zero or negative ATCs in //run is lower compared to DA leftovers.
  - On average positive ATCs from IDCC//run are lower than DA leftovers. When observing the results, it is important to focus on most relevant borders/directions (e.g., some of the reductions are in directions which are not often used by the market).
  - Frequency of isolation is significantly increased especially for NL. Few other BZs (BE, CZ, RO export) have also increased isolation compared to DA leftovers.
- When evaluating the results of the last 3 months, only few BDs with high number of TS with empty domains and a high percentage of  $ATC < 0$  are observed.

### 3. Intraday Capacity Calculation

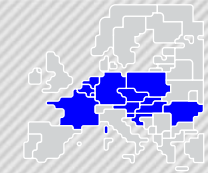


IDCC(b) – Negative or zero ATC values – last 3 months of //run (Dec '23 – Feb '24)

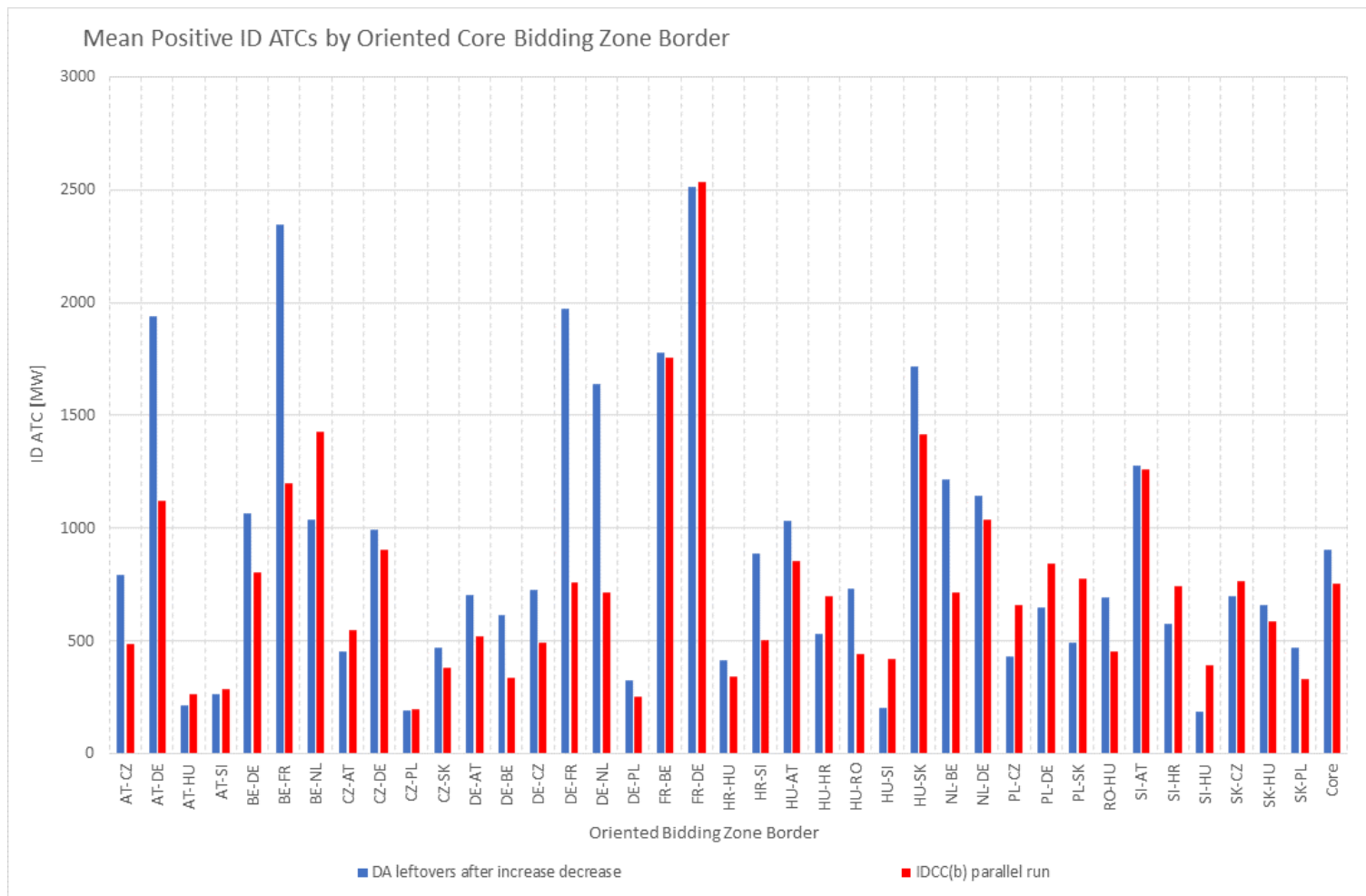


- Situations with only few borders with zero or negative ATCs are more frequent in IDCC(b) //run. For example, 5 or less borders with zero or negative ATC occur 44% of the time in IDCC(b) //run; in DA leftovers after inc./dec. process it's only 20%.
- In IDCC(b) //run, 10% of the time all the borders have positive ATC; in DA leftovers after inc./dec. process it's only 2%.
- On the other hand, 8% of the time there are more than 20 borders with zero or negative ATC in IDCC(b) //run. For DA leftovers, this situation has not occurred in the last 3 months.

### 3. Intraday Capacity Calculation

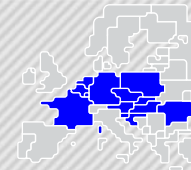


IDCC(b) – Mean positive ID ATCs – last 3 months of //run (Dec '23 – Feb '24)

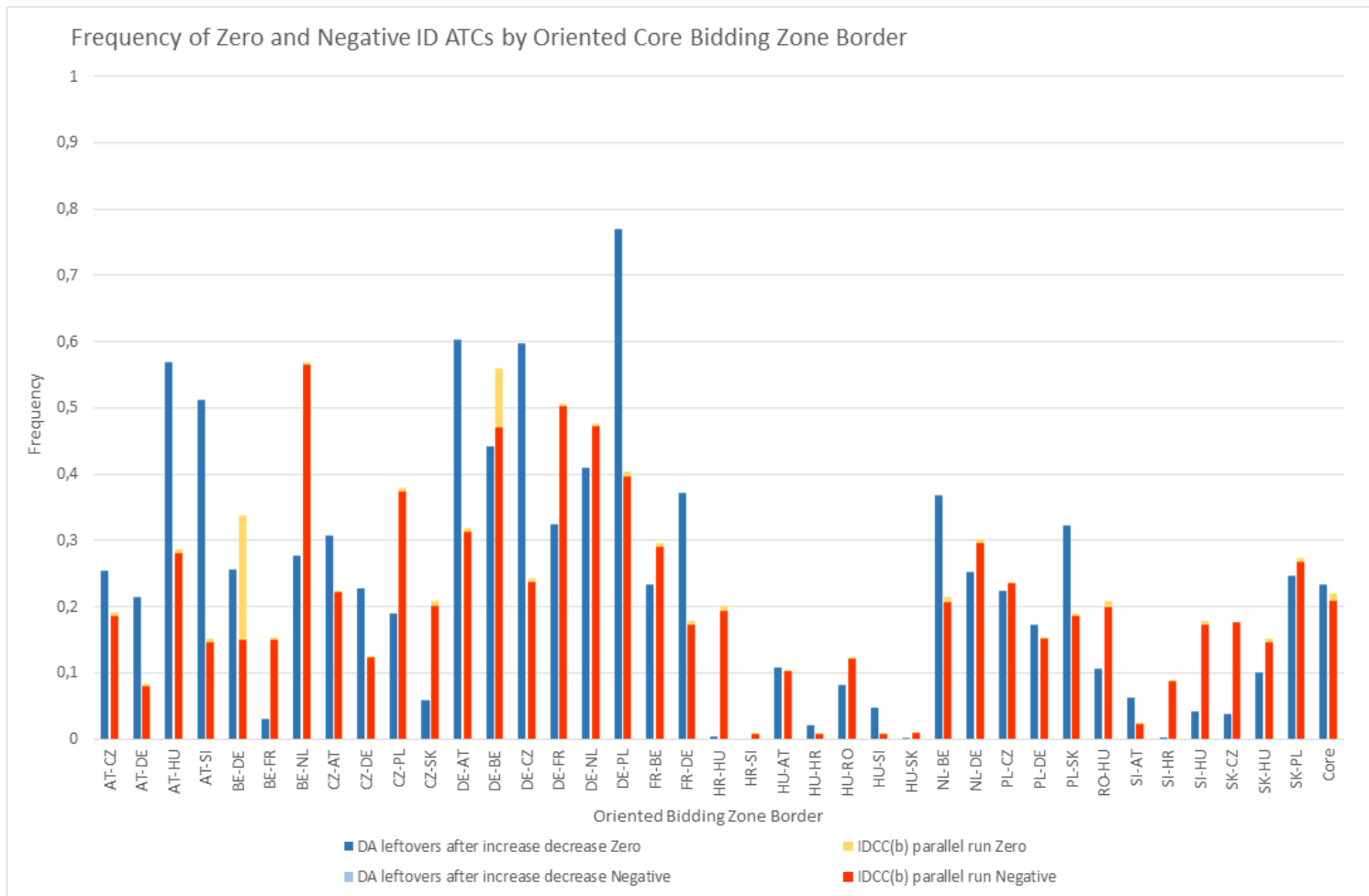


- Various results per BZ border but on average positive ATCs from IDCC(b) //run are slightly lower than DA leftovers.
- It's important to focus on most relevant borders/directions (some of the reductions are in directions which are not often used by the market).

### 3. Intraday Capacity Calculation

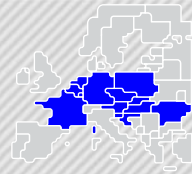


IDCC(b) – Frequency of zero or negative ID ATCs – last 3 months of //run (Dec '23 – Feb '24)

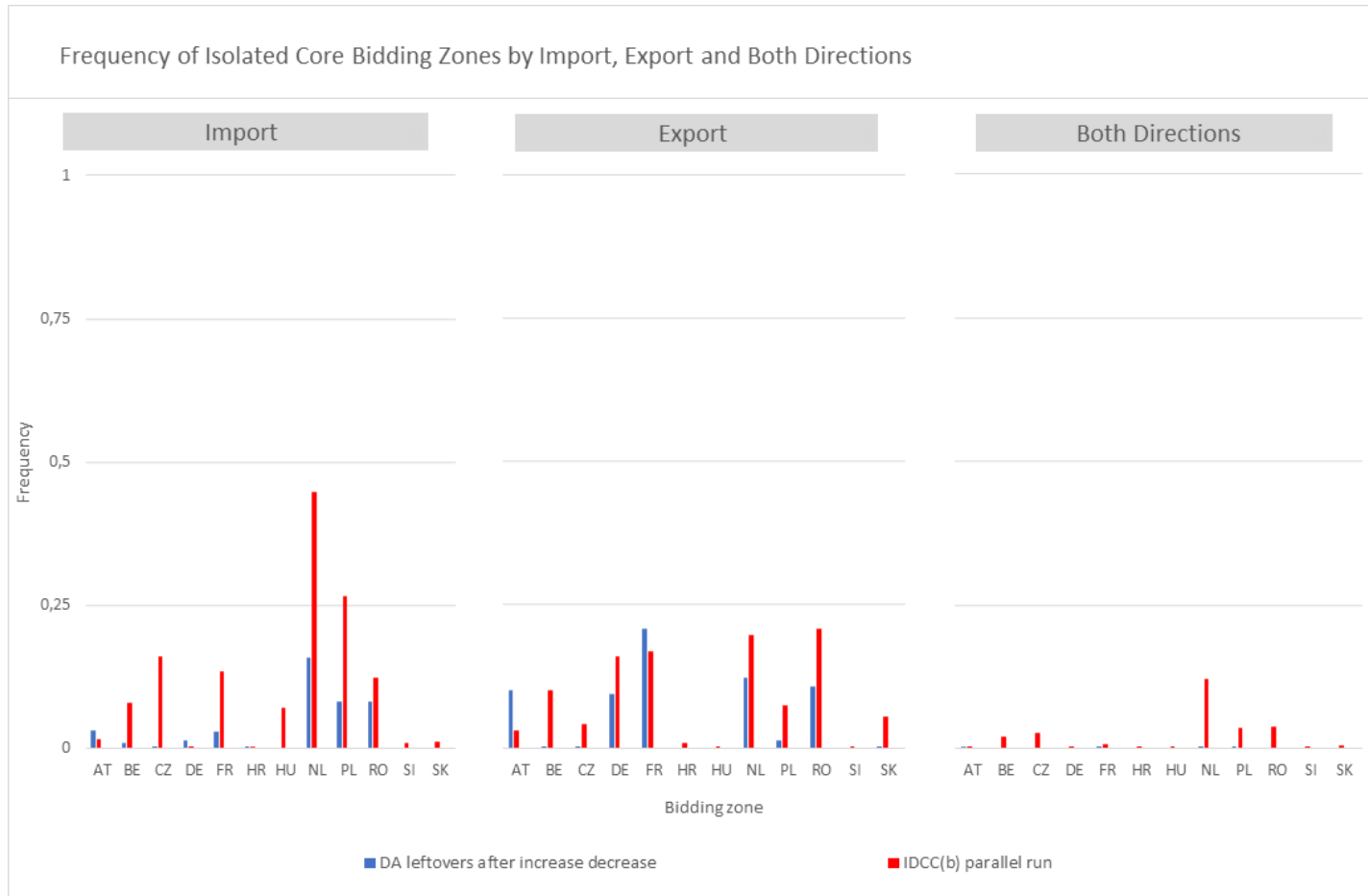


- There are mixed results in terms of the frequency of zero or negative ATCs in IDCC(b) //run. Number of borders with higher frequency in IDCC(b) //run is similar to the number of borders where frequency of zero or negative ATC in IDCC(b) decreased.
- On Core level, the frequency of non-positive ATCs in IDCC(b) //run is lower by 2 percentage points compared to DA leftovers.

### 3. Intraday Capacity Calculation



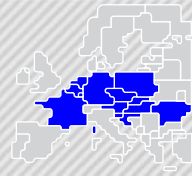
#### IDCC(b) – Frequency of Isolated Core BZs – last 3 months of //run (Dec '23 – Feb '24)



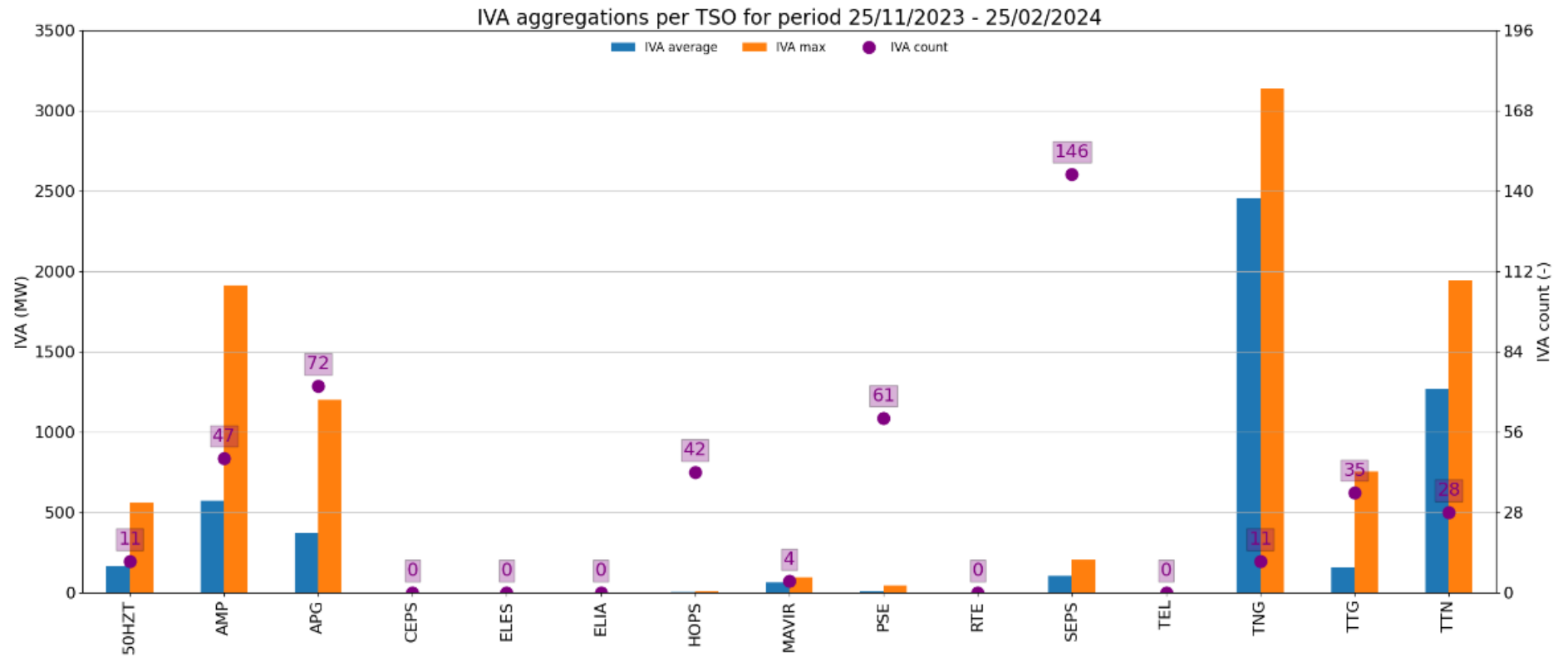
- Frequency of isolation is increased for several bidding zones / directions compared to DA leftovers.
- In general, frequency of total isolation in both directions (with no possibility to import nor export) is quite rare – no more than 15% for any of the bidding zones.



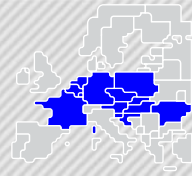
### 3. Intraday Capacity Calculation



IDCC(b) – IVA interventions – last 3 months of //run (Dec '23 – Feb '24)



### 3. Intraday Capacity Calculation

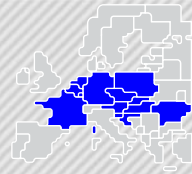


IDCC(b) – ATC validation – last 3 months of //run (Dec '23 – Feb '24)

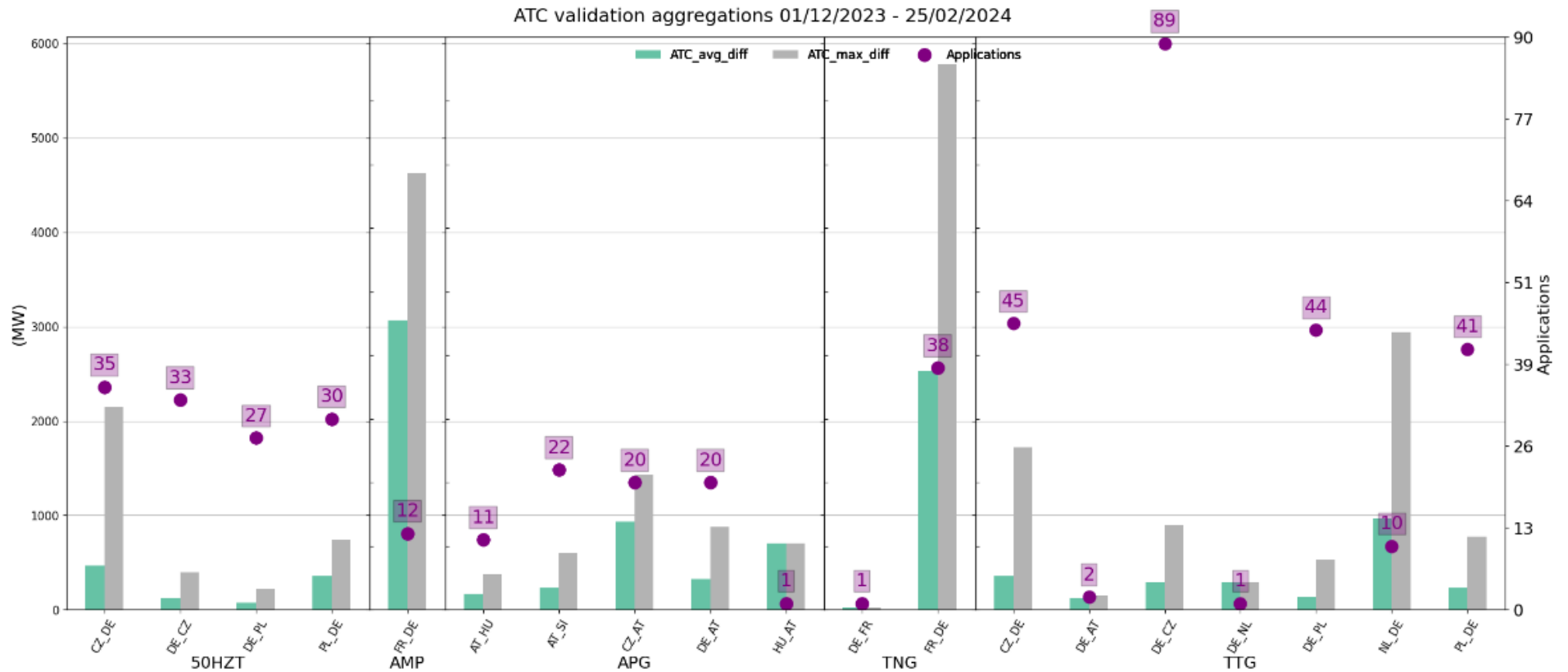
TSO	From_to	ATC_avg_diff	ATC_max_diff	ATC_reduction_%_avg	Applications
50HZT	CZ_DE	470.7	2143.0	43.5	35.0
	DE_CZ	123.8	394.0	69.4	33.0
	DE_PL	71.2	222.0	72.4	27.0
	PL_DE	354.8	745.0	40.0	30.0
AMP	FR_DE	3071.8	4626.0	99.6	12.0
APG	AT_HU	171.7	370.0	57.1	11.0
	AT_SI	229.8	604.0	60.3	22.0
	CZ_AT	933.6	1431.0	98.0	20.0
	DE_AT	328.4	876.0	88.4	20.0
	HU_AT	701.0	701.0	87.5	1.0
TNG	DE_FR	29.0	29.0	74.4	1.0
	FR_DE	2531.5	5778.0	99.4	38.0
TTG	CZ_DE	356.0	1723.0	33.7	45.0
	DE_AT	118.0	149.0	53.2	2.0
	DE_CZ	295.3	891.0	84.2	89.0
	DE_NL	295.0	295.0	74.7	1.0
	DE_PL	138.9	534.0	66.8	44.0
	NL_DE	966.5	2939.0	79.8	10.0
	PL_DE	228.3	777.0	30.5	41.0

- Based on condition: ATC validation value is equal to final ATC (ATC validation actually reduced the capacities)
- avg\_diff and max\_diff is the difference between Final ATC and Initial ATC in case the previous condition is met
- Applications are the numbers of ATC validations which actually reduced the final capacities

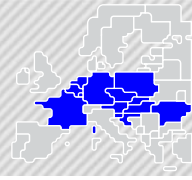
### 3. Intraday Capacity Calculation



IDCC(b) – ATC validation – last 3 months of //run (Dec '23 – Feb '24)



### 3. Intraday Capacity Calculation



#### IDCC(b) – BE/DE/NL bidding zone isolations and mitigations measures

##### Observations

- Bidding zone isolations occur mainly for NL (15,6% on average) and BE (1,6% on average) since the start of the external parallel run.
- Almost no biddingzone isolations for Germany (borders sharing a coordinated increase/decrease process - CWE process)

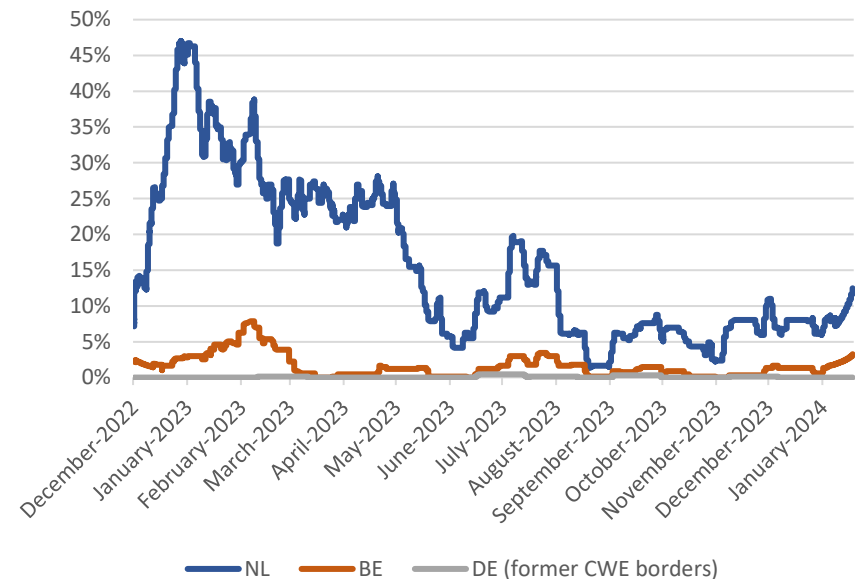
On the next slides, further explanation on the reason for these bidding zone isolations can be found

##### Applied mitigation measures during the EXT//run

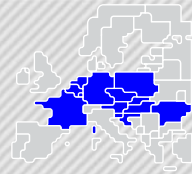
- The reduced FRM ( $\approx 5\%$ ) for all Core CNECs was implemented to mitigate bidding zone isolation.
- Improved local TSO processes for IGM creation, i.e. updated PST tap optimisation for Elia PSTs in DACF beginning of August 2023.

Moreover, several grid reinforcement within the BE/NL/DE region were introduced, that could aided ID capacities

Biddingzone Isolations (Ext //run) – 4 weeks moving average



### 3. Intraday Capacity Calculation



#### IDCC(b) – BE/DE/NL bidding zone isolations – Further explanation

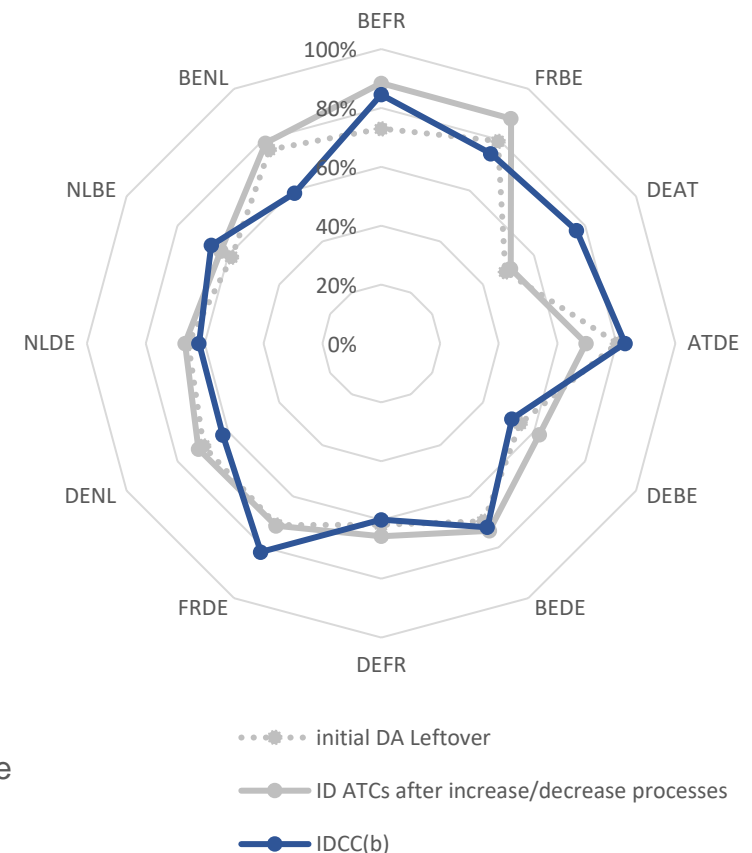
##### Deep dive – border to border isolations

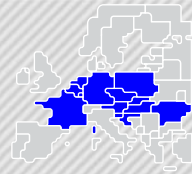
- The frequency of positive ID ATCs increases for the directions NLBE and FRDE while for DENL, NLDE and BENL (minus 20%) the frequency decreases in IDCC(b) compared to the current process. This leads to more bidding zone isolations
- The positive impact for FRBE and DEBE after the current increase/decrease process does not transfer to IDCC(b)

##### Reasons for differences between IDCC(b) and today

- Multiple overloaded lines (loading  $\geq 100\%$  - FRM) with opposed sensitivities (positive zone2zone PTDFs in one direction and negative ones in the other) e.g. in different bidding zones can lead to a “blocking” situation for both directions in a fully coordinated capacity calculation approach
  - IDCC (b) cannot use final DACF or IDCF information while today’s process allows a re-assessment based on updated information incl. additional RAs during the Intra-day
  - Potential loadflow deviations between AC and DC results in security analysis and IDCC can lead to less accuracy for flows between bidding zones (DC Rebalancing)
- Current regional increase/decrease processes are not fully coordinated
  - TSOs can increase ID capacities on bilateral basis without considering potential issues in neighboring grids
- DA Leftover computation guarantees exchanges up to “zero balance” by an obligatory minimum LTA leading to ID trading for the opposite direction more often (i.e. no physical capacities)
  - Curtailment processes are rarely used for the opposite DA market direction today

Frequency ID ATCs > 0 MW per border (Ext // -run)





## IDCC(b) – BE/DE/NL bidding zone isolations – Further explanation

### Interaction between pre-congestions in the DACF and the bidding zone isolation cases and mitigation measures

Precongested in DACF

**Mitigation:** Updated Remedial Action application reducing Fref of later DACF/IDCF, better „loss compensation“ (PoC) or grid reinforcement allowing higher Fmax for CNECs

Example: BE bidding zone isolated on 27.8.2023 H17

NE_Name	Contingency_Name	F_max	FRM	F_ref	loading	loading with FRM	RAM	PTDF_BE	PTDF_DE	PTDF_FR	PTDF_NL	PTDF_BE_AL	PTDF_DE_AL	zone2zone PTDF for Belgium Import/Export used in ATC extraction		
														BEDE	BENL	BEFR
[NL-D7] Maasbracht - Siersdorf SELFK SW	N-1 ALEGRO DC	1732	135	1867	108%	117%	-270	11,5%	-6,3%	0,7%	15,0%	0,0%	0,0%	17,8%	-3,5%	10,8%
[SK-SK] V.Dur - Levice 1	N-1 V.Dur - Levice 2	1386	69	1382	100%	105%	-65	0,3%	0,5%	0,1%	0,4%	0,3%	0,5%	-0,1%	-0,1%	0,2%
[FR-D7] Vigy - Ensdorf VIGY2 S	N-1 Ensdorf - Vigy VIGY1 N	1884	112	1824	97%	103%	-52	-4,8%	-17,2%	2,0%	-13,5%	-5,7%	-22,5%	-4,4%	8,7%	-6,8%
[NL-D7] Maasbracht - Siersdorf SELFK SW	N-1 Doetinchem - Niederrhein SW/Z	1732	135	1604	93%	100%	-7	11,8%	-6,8%	0,7%	15,8%	14,1%	-22,1%	-17,6%	-3,9%	11,1%

Precongested in IDCC after FRM application

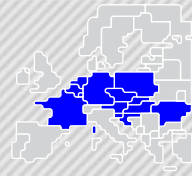
**Mitigation:** reduced FRM

Opposed zone2zone PTDFs (examples in red) for multiple lines with negative RAM lead to no capacities for both directions of a border in ATC extraction

**Mitigation:** „PTDF filtering“ - small zone2zone PTDF (<3%) are set to zero e.g. Vdur – Levice 2

### Reasons for bidding zone isolations

- Negative RAMs are caused by precongestions in DACF or FRM application in IDCC
- Opposed PTDFs for the same direction of a border block capacities for both directions
- More CNECs with negative RAM increase chances of bidding zone isolations



#### IDCC(b) – BE/DE/NL bidding zone isolations and mitigations measures

The increased number of bidding zone isolation in IDCC(b) //run compared to the operational processes is related to a fully coordinated recomputation of almost physical ID capacities based on updated forecasts and agreed RAs but partially congested grid models before 22:00

- Improvements could be reached by IDCC computation parametrization (e.g. risk management for FRM or level of neglected flows) and updated IDCC inputs (e.g. improvements in congestion management processes) as well as general grid reinforcements, the latter ones are out of scope of the IDCC process.

#### Next steps and planned mitigations (which could lead to broader improvements than only BE/DE/NL BZ isolation case mitigation)

- Implement DC Rebalancing logic for loss compensation
  - Previous logic: DC imbalance (loss) is calculated at synchronous area level and the compensation is proportionally done by loads within the main island
  - New logic (as of 23/02): Recalculate the DC imbalance at bidding zone level, using RefProg as input for interchange, and the compensation is done by both generation and load within the bidding zone
- Continue monitoring of bidding zone isolations based on updated conditions
  - Assess impact of using the effect of using an earlier DACF due to computational performance of the process (negative impact)
  - Assess impact of newly introduced grid reinforcements in 2024 (positive impact)
- Implementation of additional IDCC computations – IDCC(c), IDCC(d) and IDCC(e)
  - Update of capacities based on improved forecasts for congestion management including additional agreed RAs (positive impact)
- Continue investigations in improvements in IGM creation by individual TSOs

#### Core TSOs propose to organise a follow-up session on 06/05 on final go-live status (incl. planning on capacity improvements)

- Meanwhile, market parties are invited to pose questions on the ID section of the Q&A forum: [LINK](#).





- 
- Core NRAs feedback on
    - Core Day Ahead Capacity Calculation Methodology 2nd Amendment
    - Core Day Ahead Capacity Calculation Methodology 3rd Amendment

12 March 2024

Core CG meeting

# Core Day Ahead Capacity Calculation Methodology 2nd Amendment – for Core CG

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## Core NRAs feedback

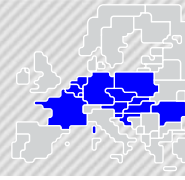
- Core NRAs reached an agreement on Core DA CCM 2nd Amendment on 28 November 2023
  - All AHC-related changes incorporated in the specific articles
  - Explicitly exclude the following borders from the scope of AHC implementation: Italy-North border, given the expected merger with FBMC; South-West European border FR-ES, given low benefits
  - Ensure a future-proof determination of External Virtual Hubs (EVH)
    - Allow multiple HVDCs at a single AHC border to be assigned to separate EVHs
  - Include a specific and more ambitious implementation date (instead of ‘until 2025’)
    - Readiness at Core TSO level by 31 March 2025
    - Implementation in SDAC by 30 June 2025, subject to the readiness of SDAC
  - Include explicit minimum requirements to ensure market parties can prepare for the go-live
    - An update of the explanatory note by 31 March 2025
    - An analysis of the impact of AHC by 31 March 2025 (~ ‘SPAIC analysis’)
    - At least 1 month of external parallel run
- Latest national decision: 1 March 2024

# Core Day Ahead Capacity Calculation Methodology 3rd Amendment – for Core CG

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## Core NRAs feedback

- Core NRAs received the submitted proposal on Core DA CCM 3rd Amendment
  - deadline for decision is expected till mid-August
- Core NRAs are in the stage of assessment and discussion of the submitted content
- Core NRAs submitted their Shadow Opinion (SO) for Core TSOs at the end of the consultation period back in November 2023 where the most challenging topics were the followings:
  - Use on XNEs and scanned elements in CV
  - PL AC
  - NRA oversight over parametrization and selection criteria after experimentation
- The submitted 3rd Am slightly improved compared to the consulted draft (on which the SO were given)
  - Discussion is currently ongoing on the most challenging topics among NRAs and between NRAs and TSOs in order to reconcile all positions to move forward with the approval process
- Core NRAs aim to speed up the approval process and stay ready to provide update on the direction of the coordinated approval at next Core CG as available



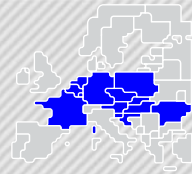
### AHC: Introduction and background

#### Reminder

- Core TSOs to apply Advanced Hybrid Coupling (AHC) starting mid 2025, subject to readiness of SDAC/EUPHEMIA
- Core AHC will comprise SDAC bidding zone borders to other CCRs except for borders to ITN and SWE
- During last Core CG meeting on 23/11/2023, MPs asked for alignment and further clarification of testing procedure
- A second amendment to DA CCM (which contains method for AHC) has been approved 20/12/2023
- Core TSOs are currently implementing AHC in central and local tools

#### Implementation requirements taken from approved CCM amendment

- Readiness of Core TSOs by 31 March 2025 is deemed to be necessary by NRAs as to ensure Core TSOs are not on the critical path of the foreseen go-live date of 30 June 2025
  - Testing and implementation for 15 min MTU and AHC implementation interfere
6. **By 31 March 2025, Core TSOs shall have developed AHC. By the same deadline they shall update the explanatory note and publish an analysis that allows market participants to understand the impact of AHC.**
  7. **By 30 June 2025, Core TSOs shall implement AHC for borders to bidding zones outside of the Core CCR insofar these bidding zones are part of SDAC, excluding common borders with Italy North CCR and with SWE CCR. The implementation is subject to the readiness of SDAC. Before the implementation of AHC, Core TSOs shall involve Core NEMOs to test the implementation of AHC within SDAC and market participants to adapt to the effects of applying AHC via an external parallel run which shall last at least one (1) month. Core TSOs shall publish the results of this parallel run, including the resulting monitoring and performance criteria established pursuant to paragraph (4).**



### AHC: testing concept

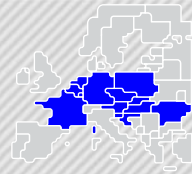
#### Testing concept for AHC (as supported by CCM)

- Core TSOs will test AHC with
  - An offline testing period (using a “SPAICC-like approach)” starting mid 2024 and lasting at least 6 months
  - A 1-month EXT//RUN shortly before AHC go-live
- Purpose offline testing: assess the impact on the AHC on FB domain and capacities following
  - Based on analyses of selected time stamps
  - Can be done offline (means: not in real time)
- Purpose EXT// run: test the performance & stability of the full process chain, including the market coupling and publication tool
  - Must be done upon right reference → thus after the go-live of 15' MTU
  - Places high demands on IT resources and operator involvement → should be kept as short as possible

Offline testing as alternative to an EXT//run to perform the impact assessment of a change is a case-by-case evaluation. It may not be ideal, yet it can be designed to provide sufficient information. Both TSOs and market parties face many operational challenges with the upcoming implementations, and we need to balance the use of resources and time to market.

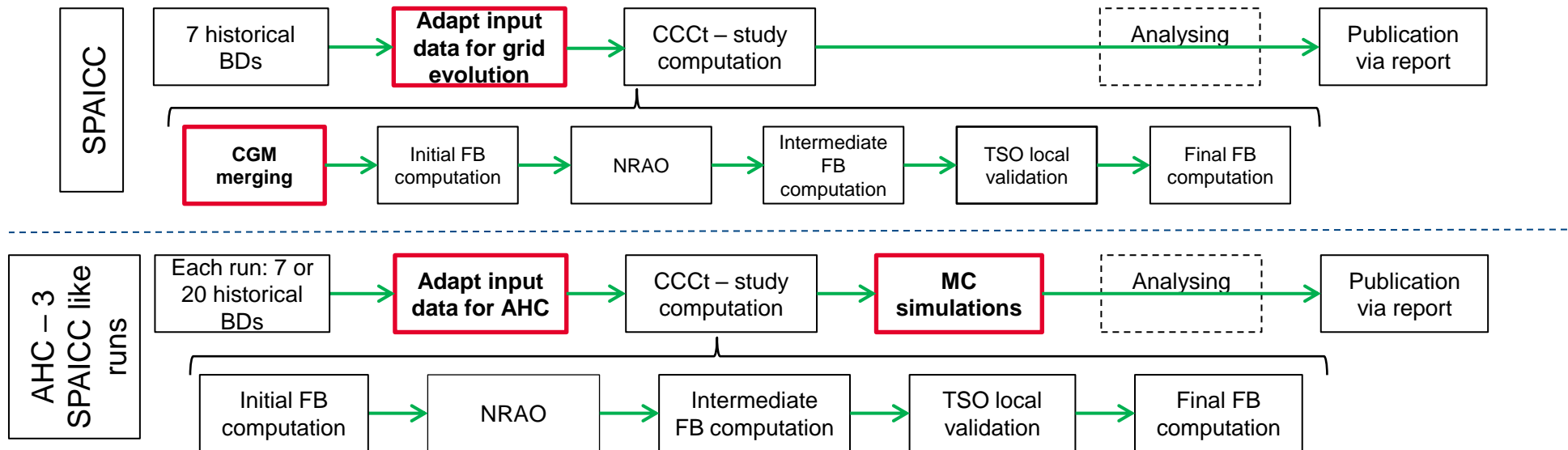
#### Rationale to apply it for the AHC use case:

- Ambitious deadline: Core TSOs need to work in parallel to update the tooling (besides the individual validation step, the whole capacity calculation tool chain needs to be adapted to handle AHC) and to do the impact assessment study. A six month EXT//run would have implied a longer timeline to implement and put live AHC.
- Representativeness: can be ensured by aligning on the criteria to select business days



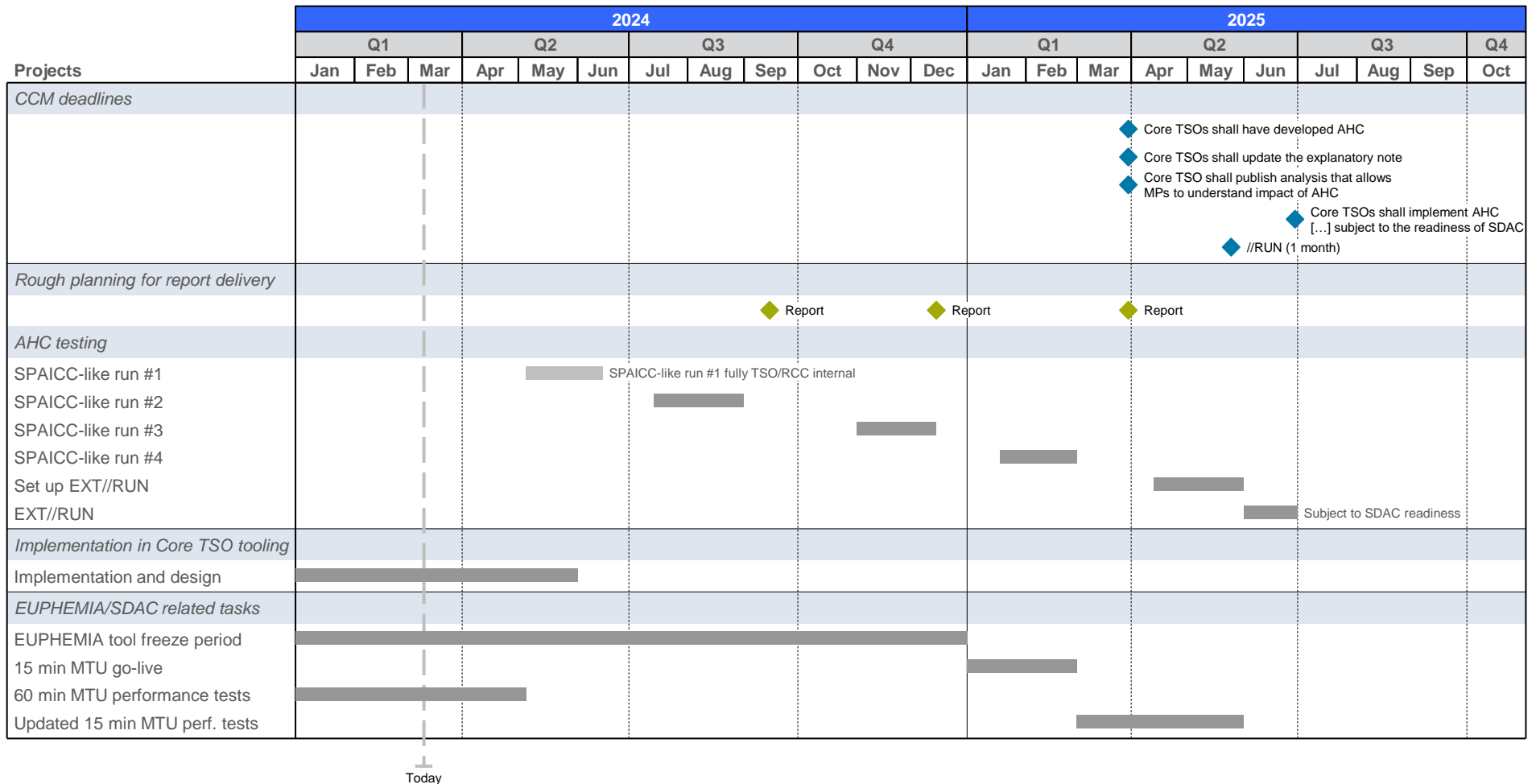
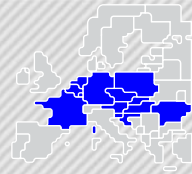
## AHC: “SPAICC-like” approach

- Offline testing with SPAICC-like approach is specific use case of applying the SPAICC concept.
  - *Reminder: the SPAICC concept in itself is the approach TSOs foresee to test on half-yearly basis the impact of the evolution of the grid on the capacities. See further slide for the status on this initiative.*
- For the AHC use case Core TSOs are re-using the principle of the SPAICC concept (= running the full process chain to obtain representative results), and are extending it to the needs of the AHC use case:
  - A significant higher number of BDs is used to perform the study, compared to the 7 BDs of the SPAICC concept
  - Market coupling simulations are performed, which are not part of the SPAICC concept



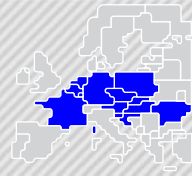
# 4. DACC

## AHC: Roadmap



- SPAICC-like run: Recompute representative, historical data with AHC and running full process chain “offline”
- Milestones shown above are dependent on the progress of development and AHC implementation on IT side
- SPAICC-like run #1 serves for TSO internal testing only

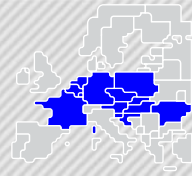




### AHC: Criteria for BD selection for SPAICC-like runs (1/2)

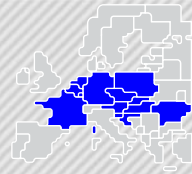
Core TSOs plan to assess 47 BDs through an iterative approach. This is deemed sufficient to be representative.

- SPAICC-like run #1 (only TSO and RCC internal) and #2 to cover 7 BDs
- SPAICC-like run #3 and #4 to cover 20 BDs.
- BDs used for testing need to be representative to demonstrate effects of AHC introduction
- MPs expect BDs to cover
  - Weekdays and weekends
  - High and low wind feed-in
  - Summer and winter
  - Days considering the thermal limit of the lines, therefore winter days to represent it (and also represent the wind conditions)
  - Ideally more seasons
  - Different combinations of DE wind and FR load (e.g. high DE wind, low FR load)
  - Days with high TSO interventions (high IVA, fallback mode, default settings, etc.)
  - Some other precise dates were also suggested such as 04/04/22; 02/07/23; 28/05/23; 11/09/23
- In a first way forward, TSOs propose to select BDs for SPAICC-like run #1 and #2 **applying the criteria marked in green:**
  1. Winter weekday BD with high wind feed-in
  2. Winter weekday BD with low wind feed-in
  3. Summer weekday BD with high wind feed-in
  4. Summer weekday BD with low wind feed-in
  5. Winter weekend BD with high wind feed-in
  6. Winter weekend BD with low wind feed-in
  7. Summer weekend BD with high wind feed-in

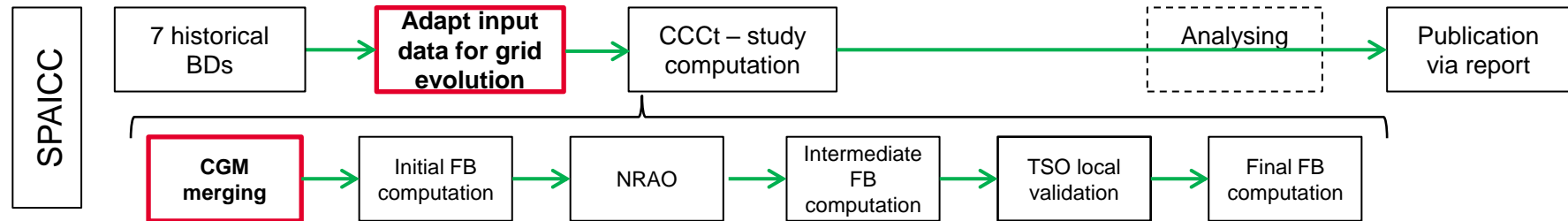


### AHC: Criteria for BD selection for SPAICC-like runs (2/2)

- For SPAICC-like run #3 and #4, additional BDs will be selected based on findings of SPAICC-like run #1 and #2 and suggestions by MPs to cover:
  - Transitional seasons
  - Different combinations of DE wind and FR load (e.g., high DE wind, low FR load).
  - Days with high TSO interventions (high IVA, fallback). Core TSOs consider high IVA a good enough proxy for a fallback in local validation. There is more flexibility to choose days with high IVA than days with fallback (as the latter are rare).
  - Highest/Lowest exchanges in Core
  - BDs with average wind in Core
- Core TSOs do not consider it relevant to apply the following criteria
  - Default settings (DFPs) – AHC has no impact on these capacities as they are determined based on the LTA values
  - 04/04/22 – Core was not yet live
- Core TSOs invite market parties to elaborate on the reasoning for proposing the following specific business days
  - 24/01/2023: Export situation to DE with many different zonal prices.
  - 02/07/23
  - 28/05/23
  - 11/09/23
  - 05/01/2024: Finnish peak giving a very specific distribution of flows.



### SPAICC: On half-yearly SPAICCs for grid evolutions



#### Key principles:

- **SPAICC** = Standard Process for Assessing Impact of Changes in Core
- **Core half-yearly SPAICC**: To assess the impact of future grid evolutions, every 6 months the future full grid situation is calculated and compared with the full grid situation of the period before.

#### Essential steps:

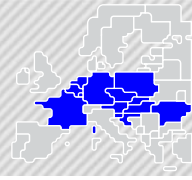
- Update IGM to include grid evolutions and consequently new CGM merging, these tasks are the most time consuming (estimation time: two weeks need for executing 7 BDs)
- NRAO, TSO local validation need to be included in order to have the study calculation in line with normal operation process and hence having relevant study results. Those process also are time consuming (estimation time: for NRAO computation >2 days for 7 BDs; for local validation 1-2 days for 7 BDs)

#### Reason of why half-yearly SPAICC will be calculated for 7 BDs

- 7 BDs selection: 7 BDs need to be representative in a first way forward, the selection of BD will be done as indicated in the Annex. Adaptations based on MP suggestion might be feasible

#### Next steps:

- In parallel with AHC offline testing, half-yearly SPAICC tools and processes will be developed to execute the first half-yearly SPAICC ~end of 2024.



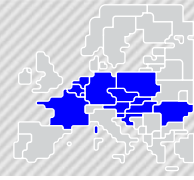
### (No) Impact 15min MTU on DA CC

#### Background

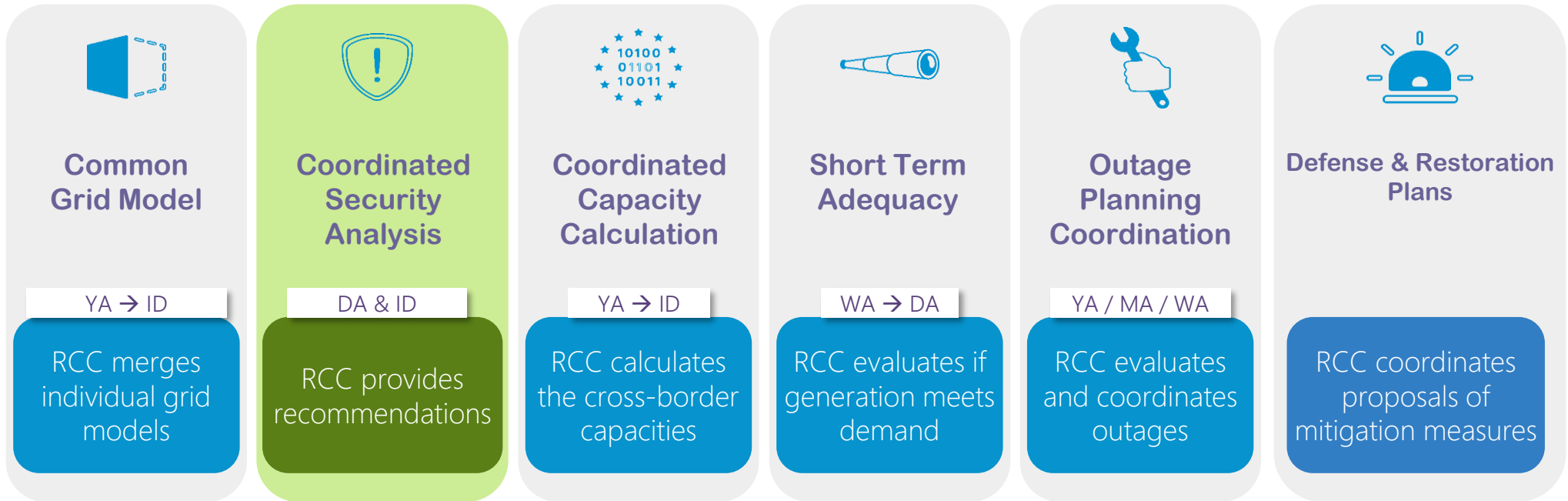
- 15min MTU is planned to go live early 2025. Market Parties have asked what, if any, the impact is of this on DA CC.

#### Explanation

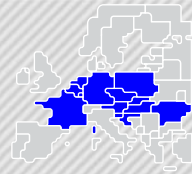
- The switch to 15min MTU resolution in SDAC has the following impact on Core DA CC process:
  - Core CC tool will deliver FB domains for 96 periods (instead of 24)
    - There will be very limited impact on CC process since the FB domain will still be calculated on an hourly basis
    - Core CC tool will need to be able to copy the FB domain of each hour to the 4 quarters of that same hour
  - Publication will be provided per each quarter hour



**Coordinated Security Analysis** service will be provided by RCCs following SOGL Art.76 and Core Regional Operational Security Coordinated (ROSC) Methodology established under ROSC Process. RCCs will issue coordinated actions as outcome of ROSC Process.

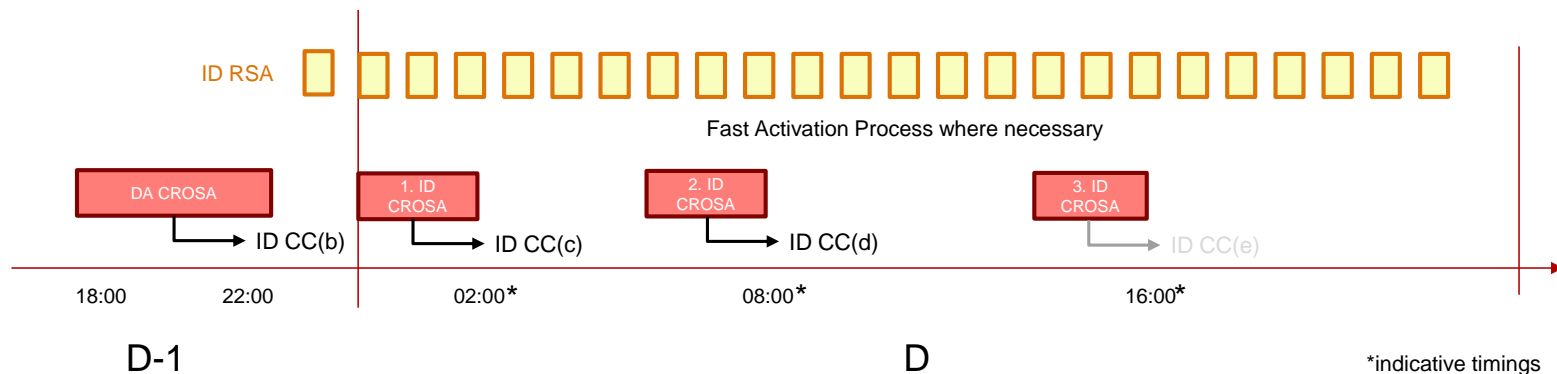


**ROSC Process Objectives:** Ensure operational security of European Transmission System at the most cost efficient and effective means. ROSC will steer the activation of remedial actions via a global optimisation by pooling the congestions and available remedial actions.

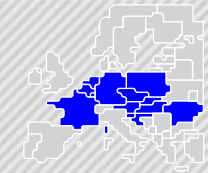


### ROSC Timeframes (Before Real-time):

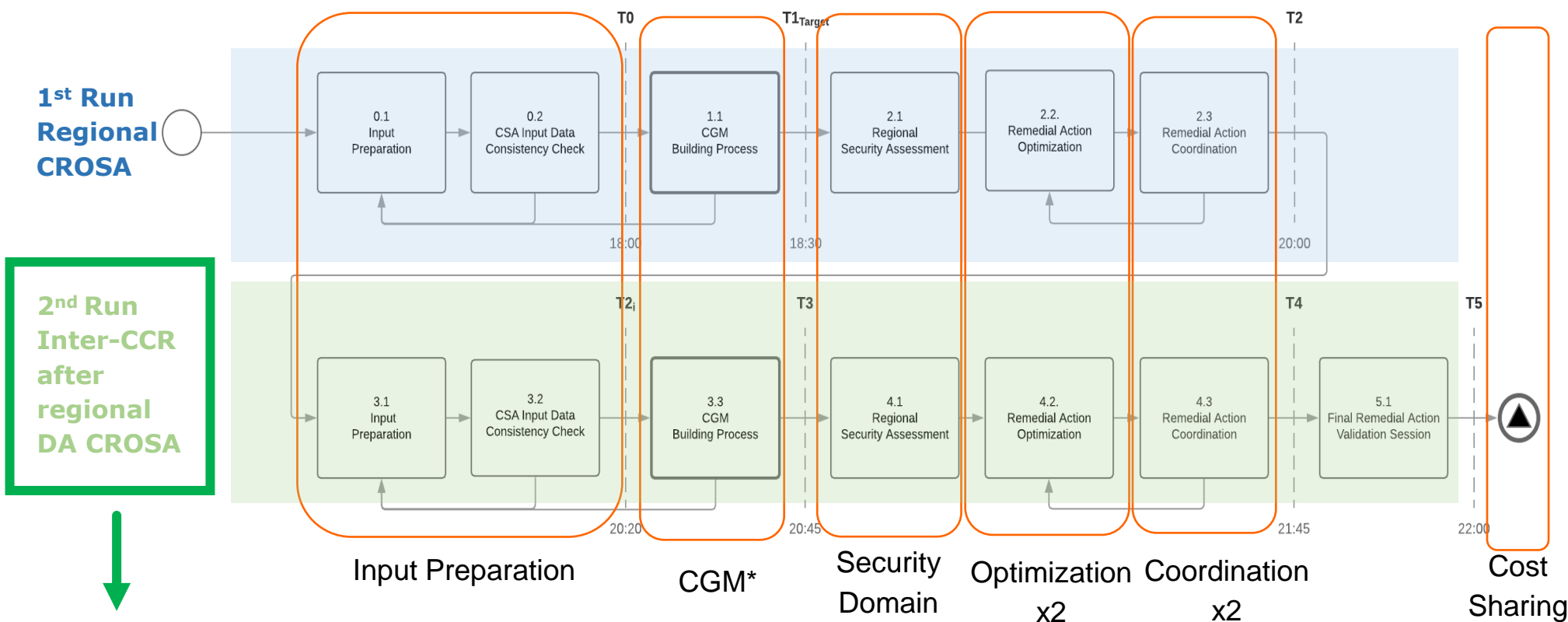
- The methodology for regional operational security coordination (ROSC) is defined for each capacity calculation region (CCR) pursuant to Article 76(1) of the SO Regulation
- The ROSC Methodology defines two types of coordination processes which aim to resolve operational security violations with Remedial Actions (RAs) and one Regional Security Assessment (RSA) analysis:
  - **CROSA:** Common regular coordination processes to identify most efficient and effective RAs in Day-Ahead and Intraday
    - 1 x Day-Ahead at 18:00 in D-1; 3 x Intraday for all remaining timestamps of the day
  - **Fast Activation Process (Currently bi/tri/xx-activation process):** if adjustment are necessary in between CROSAs, after the last CROSA or as fallback of CROSA
    - No Core-wide process, but only between impacted TSOs (and potentially RCCs)
    - No common, automated determination of Remedial Actions, but based on local TSO assessment
  - **ID RSA (Currently IDCF):** Regional Security Analysis in Intraday
    - Hourly execution of security analysis (N-1), but no determination of Remedial Actions in this process



\*Indicative timings under assessment, in alignment with IDCC



### CROSA -> Target Solution



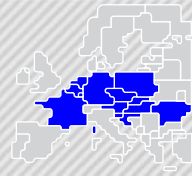
To be implemented 18 months after last CCR among the impacted CCRs implement Regional CROSA.

- ROSC process implemented using CGMES standard and NC profiles -> First process to be implemented with this type of inputs combined.

\*CGM building process is independent from ROSC process.



## 5. Core Cost-Sharing



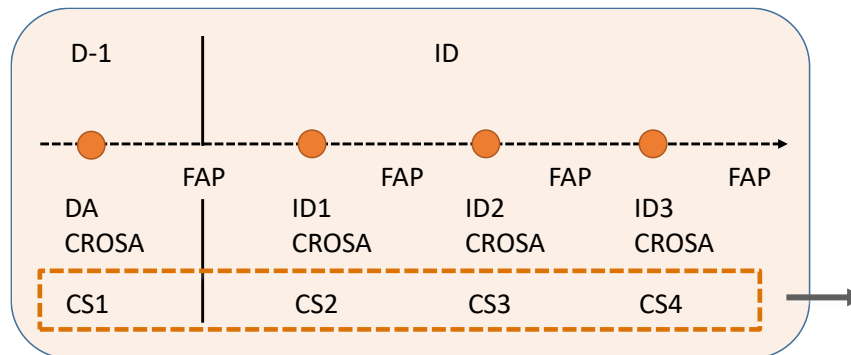
### Links with ROSC

The objective of Cost-Sharing (CS) is to assign the costs of the ORAs to the Core TSOs

- The allocation of costs is done following the Polluter Pays principle.
- The CS process follows the breakdown into CROSA, enabling an identification of the reason why each ORA was selected.

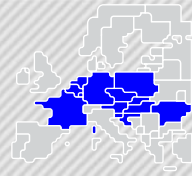
The costs of FAP activations are assigned with the Requester Pays principle.

- The only exception is the specific case where an ORA was replaced due to unexpected technical unavailability. In this scenario the FAP costs are also subject to Cost-Sharing.



For each CROSA a separate CS process is performed.

## 5. Core Cost-Sharing



### Key principles

The following key principles are included in the Core Cost-Sharing Methodology (approved 30/11/2020):

#### Polluter pays principle

Polluter-pays principle targets the excessive Loop Flows, meaning that the **loop flows above the threshold** are considered as pollution.

#### LF threshold

Methodology contains a common LF threshold of **10%**.

#### Elements subject to cost-sharing

Methodology contains the fact that **all XNECs** from Core ROSC are subject to cost-sharing.

#### Flow decomposition

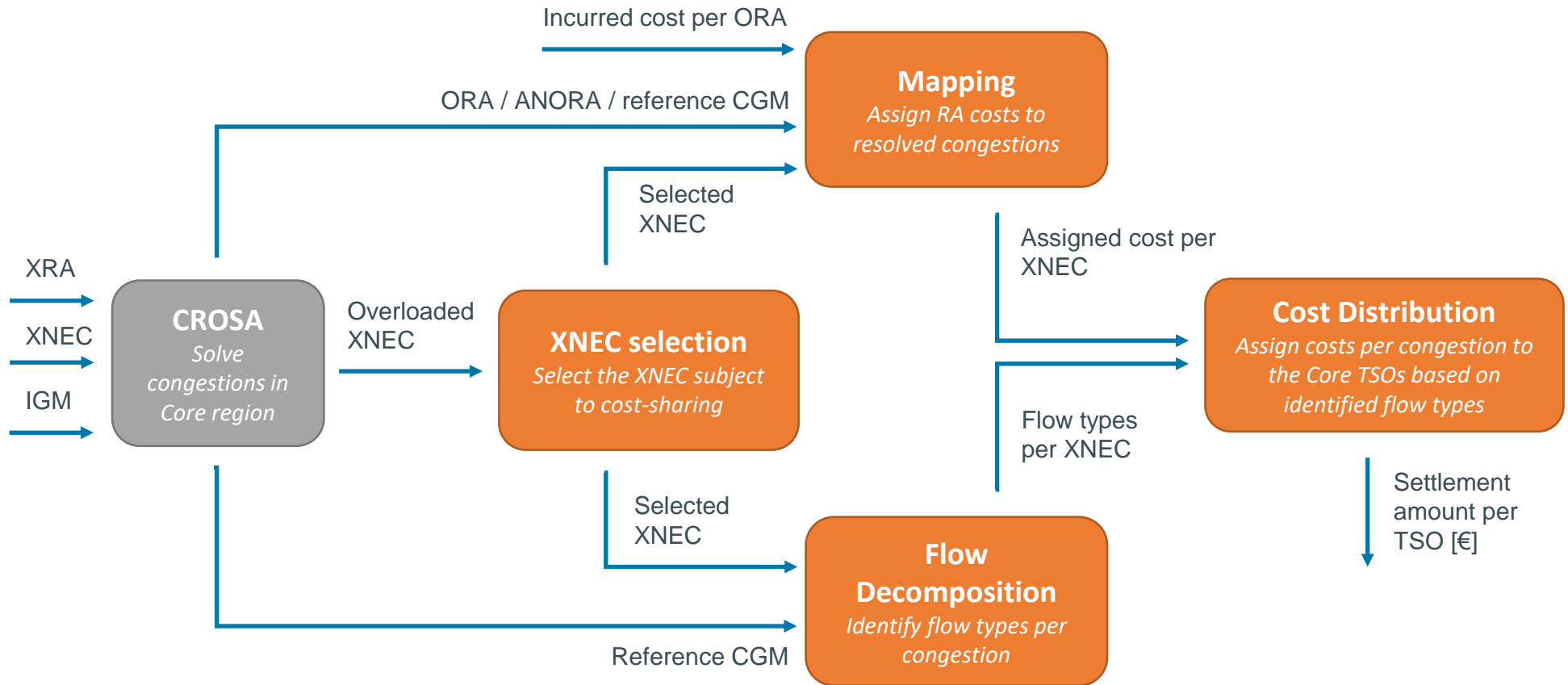
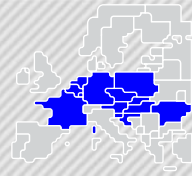
In this step the different flow types on the overloaded XNEC are identified, making a distinction between Allocated Flows, Internal Flows, Loop Flows and PST Flows. The **PFC** (Power Flow Colouring) approach was selected, using the GLSK from Core CC, to ensure consistency with the preceding market processes when calculating the market flows ('allocated flows').

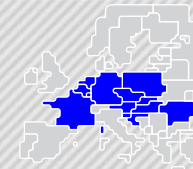
#### Mapping

The aim of Mapping is to assign the costly ORA to the overloaded XNEC which were resolved by the CROSA. The Least-Cost Based Mapping (**LCBM**) was selected, meaning that each individual congestion is re-optimized to verify which remedial actions were needed to solve it.

# 5. Core Cost-Sharing

## High-level process diagram





### Status update on Implementation

Go-live for full ROSC & CS with manual topological RA determination is expected between Q42026 -Q42028

- This implies a 1–3 year delay compared to the current roadmap

Core TSOs & CorNet are now in the process of implementing mitigation measures to minimize the delay. With support of mitigation measures, confidence in reaching the lower end of the Go-live range, should be higher. Mitigation measures under investigation:

- Improved vendor management approach (RCC cooperation named CorNet)
- Apply a step-wise implementation (TSOs + CorNet+ NRAs)

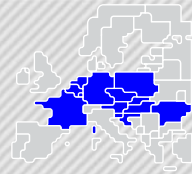
### Purpose of step-wise implementation:

- Deliver an end2end product for TSOs to test the ROSC+CS process chain. Thus, gaining experience how input assumptions (scope of XNECs, scope of RAs, cost of RAs) and the parametrization of the RAO play out and refining these inputs
  - Parametrization requires realistic and precise input data on RD availabilities and RD offers from market parties
- Prioritize requirements and identify simplifications to reduce the time to a first go-live

### Key considerations for simplification:

- DA CROSA vs. DA + ID CROSA: going live first with DA CROSA is allowed by the methodology and gains time, yet leads to ordering of more RD more ahead of RT → higher impact on market and higher costs
- It is not a silver bullet to enable a go-live by end 2025 (important timing from CEP70 perspective). At some point we cannot further simply without compromising
  - The spirit of the methodology (Core-wide coordination of RAs, least cost optimization) and thus the basis to apply fair cost sharing
  - The need for quality of the new tool and process at least at the level of the (national or RCC-wide) legacy tools

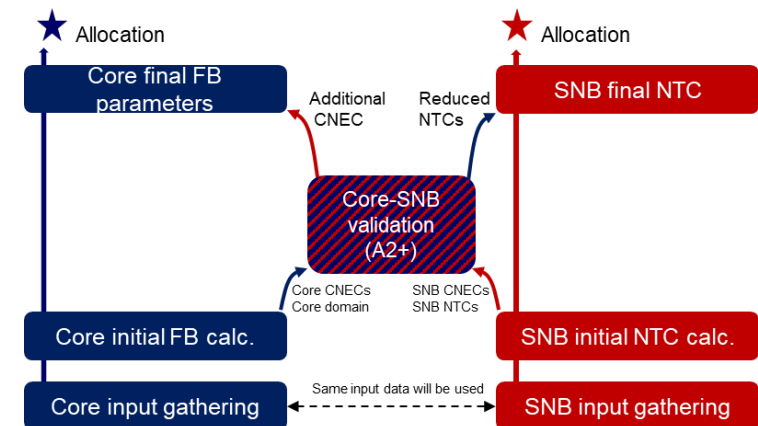
## 6. Core CCR Program Management



### Geographical Extensions – Swiss consideration

#### Reminder on the Swiss consideration process

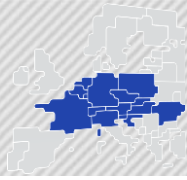
- In the last CG, the high-level CH consideration process was presented
- The Swiss consideration methodology package consists of:
  - a new process for Swiss Northern Borders Net Transfer Capacity calculation (**SNB NTC calculation**), shown in the red boxes, and
  - a new capacity validation schema (**Core-SNB cross-regional validation**), in which the capacities from the Core and SNB region are cross-validated, shown in the blue/red box.
- The new process interacts with the Core DACC, shown in the blue boxes.



#### Updated Status and next steps

- Core TSOs and Swissgrid finalised the methodologies for SNB NTC calculation and cross-regional validation and submitted the methodologies to Core and Swiss NRAs by the beginning of February.
- The national validation processes are currently ongoing.
- The TSOs kicked-off the preparation of the implementation in terms of:
  - Business process documentation
  - Tooling design
  - Governance and contractual framework
- The TSOs aim to implement the processes by the end of 2025.
- If requested, an educational session can be prepared for the next CG (assuming NRA validation of the methodologies)

## 6. Core CCR Program Management

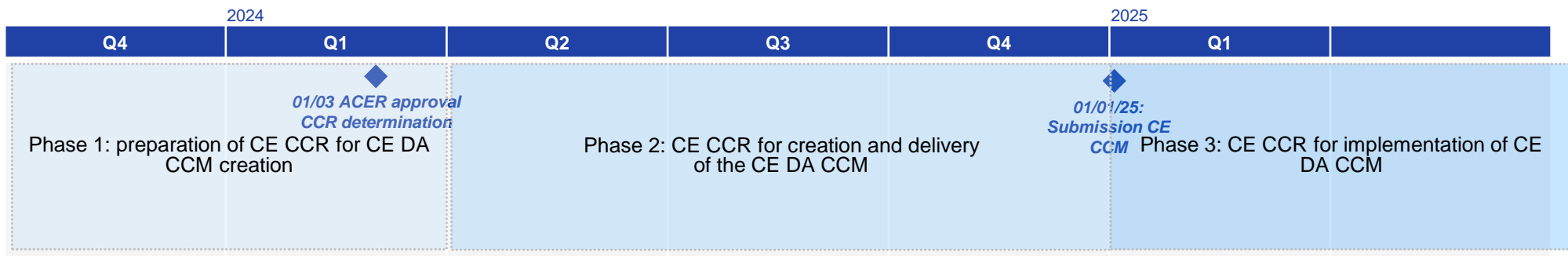


### Central Europe CCR

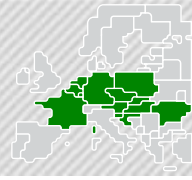
In preparation of the Central Europe CCR focused on the merger of Core and IN DA CC, Core and IN TSOs are working on the preparations for the organisation of activities anticipating the new Central CCR.

In order to make progress towards starting the CE DA CCM activities timely, Core and IN TSOs identified below phases.

- Phase 1: preparation of CE CCR set-up focused on delivery of the CE DA CCM
- Phase 2: CE CCR set-up for creation and delivery of CE DA CCM
  - Deliverables
    - CE DA CCM
    - Note: no simulations are not foreseen as first the conceptual discussions need to be held
- Phase 3: CE CCR for implementation of CE DA CCM
  - Deliverables
    - CE DA CC process, tools, operational contracts, etc



## 6. AOB & closure



### Next meeting and communication channels

#### Next Core Consultative Group in 2024

- 06/05/2024 15:00 – 17:00 - IDCC go-live CG call. The invitation will send out after today's meeting.
- 17/10/2024 – regular CG call

#### Existing Core communication channels

##### Core Consultative Group mailing list

- Register for future updates by subscribing to <https://magnusenergypmo.hosted.phplist.com/lists/?p=subscribe>

##### Core section on ENTSO-E website

- Upload of methodologies and reports on public consultations, current status of the Core CCR program, CG minutes
- Link: [https://www.entsoe.eu/network\\_codes/ccr-regions/#core](https://www.entsoe.eu/network_codes/ccr-regions/#core)

##### ENTSO-E newsletter

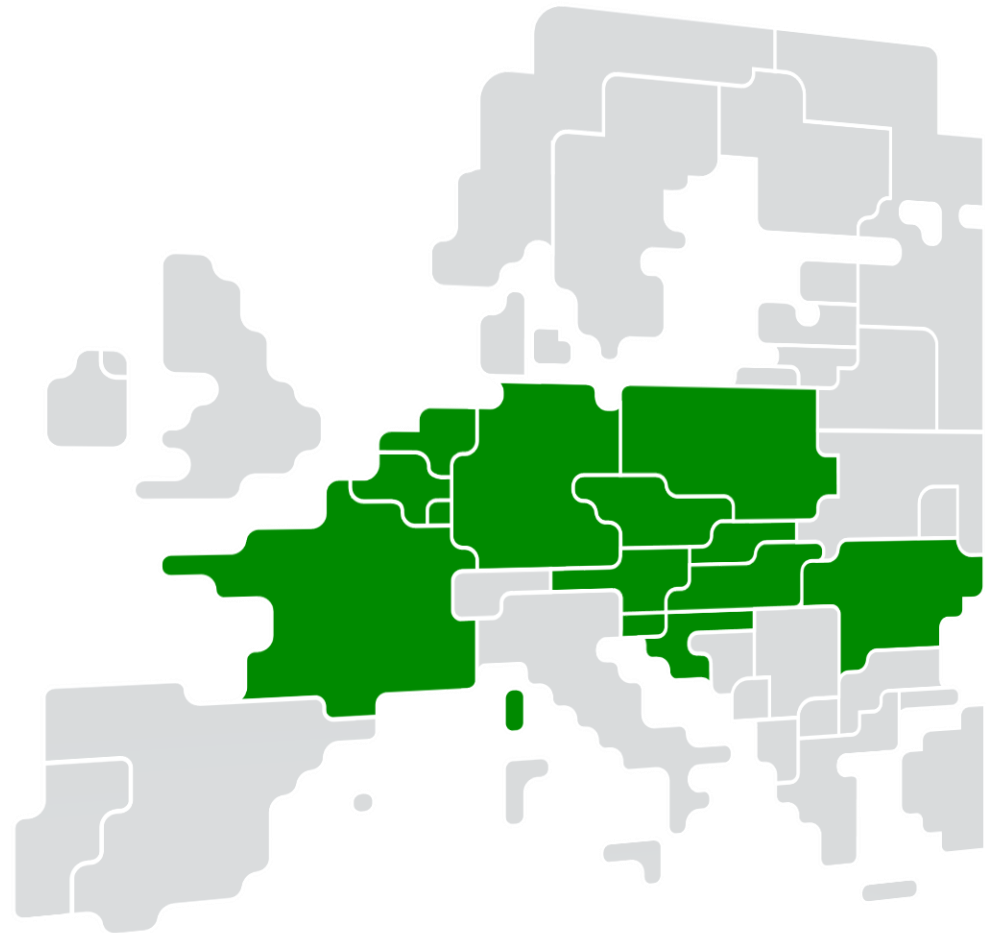
- Regular updates on the different CCRs (e.g., submitted methodologies, launch of public consultations)
- Subscription via <https://www.entsoe.eu/contact/>

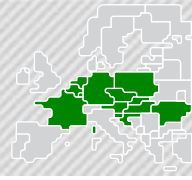
#### Q&A forum on JAO website

- Provides space to Market Participants to ask questions about the External Parallel Run and other relevant topics:
- Link: <http://coreforum.my-ems.net/>



# APPENDIX



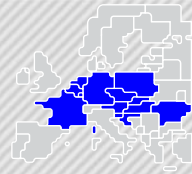


## Scope of discussions

### Scope of discussions Consultative Group/Core CCR vs. MCCG/MCSC

- As to ensure clear alignment, the following table aims to clarify which topics and discussions fall within the scope of CG/Core versus MCCG/MCSC. Only the main/overlying topics currently discussed in the respective projects are listed.
- The stakeholder managers of the respective projects and fora are in direct alignment to ensure any questions outside “their” scope can be redirected accordingly.

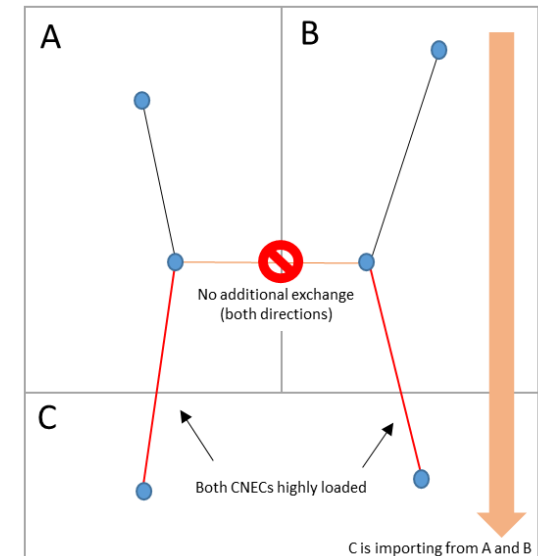
	Core CCR	MCSC
General Scope	<ul style="list-style-type: none"> <li>• Capacity calculation</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity allocation</li> </ul>
Intraday Auctions (IDA)	<ul style="list-style-type: none"> <li>• Capacity calculation (IDCC)</li> </ul>	<ul style="list-style-type: none"> <li>• Timings</li> <li>• Products &amp; user interfaces</li> <li>• Central testing</li> </ul>
Advanced Hybrid Coupling	<ul style="list-style-type: none"> <li>• Design &amp; Implementation into DACC</li> <li>• Impact assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Testing allocation algorithm</li> <li>• Central testing</li> </ul>
15 min MTU	<ul style="list-style-type: none"> <li>• Regional testing</li> </ul>	<ul style="list-style-type: none"> <li>• Timings</li> <li>• Products &amp; user interfaces</li> <li>• Central testing</li> </ul>



## IDCC(b) – BE/DE/NL bidding zone isolations – Further explanation

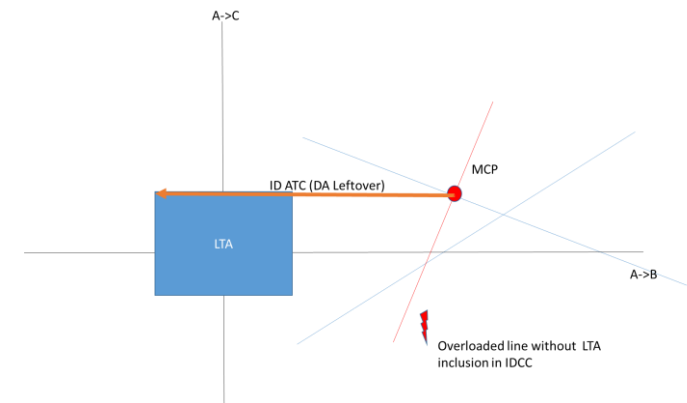
### “Blocking” situation for both directions in a fully coordinated capacity calculation approach

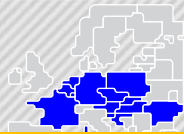
- With a coordinated flowbased approach that simultaneously checks the forecasted loadings of all CNECs within multiple bidding zones, it cannot be guaranteed that capacities for the opposite market are offered all the time
  - CNECs with opposite zone2zone sensitivities can block both directions, therefore biddingzone isolations can occur
- Example: When a bidding zone in the south is importing from the north, an exchange from West to East and from East to West would lead to additional loadings of already highly or overloaded lines
- Capacities are blocked for both directions to prevent grid security issues for different TSOs.



### Effect of LTA inclusion for DA leftover computation

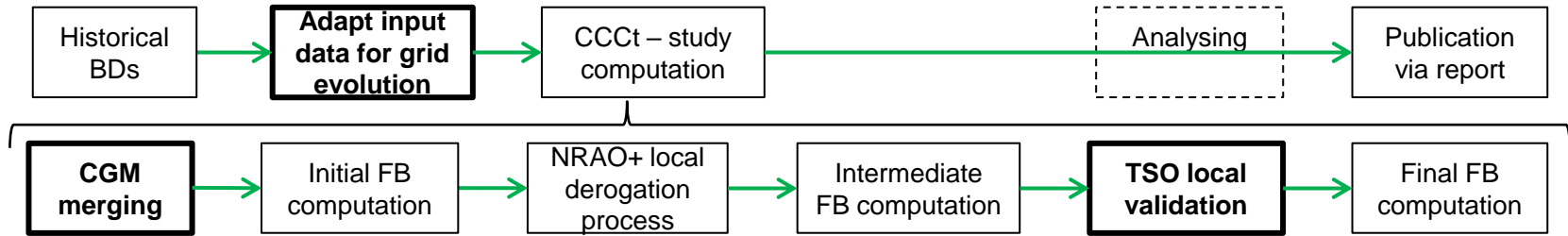
- Effect of LTA inclusion during ID ATC computation for IDCC(a) or DA Leftover computation creates additional capacities for the direction opposed the DA market
  - A „small“ LTA domain allows ID ATCs for the DA leftovers beyond the physical capabilities of the grid by including „zerobalance“ exchange from DA FB Domains.
  - This can cause grid security issues.



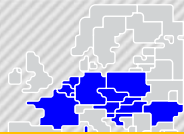


SPAICC: Half-yearly “SPAICC” for grid evolution - BD selection (1/2)

Updates made in green on 12/03 requiring final confirmation by Core TSOs

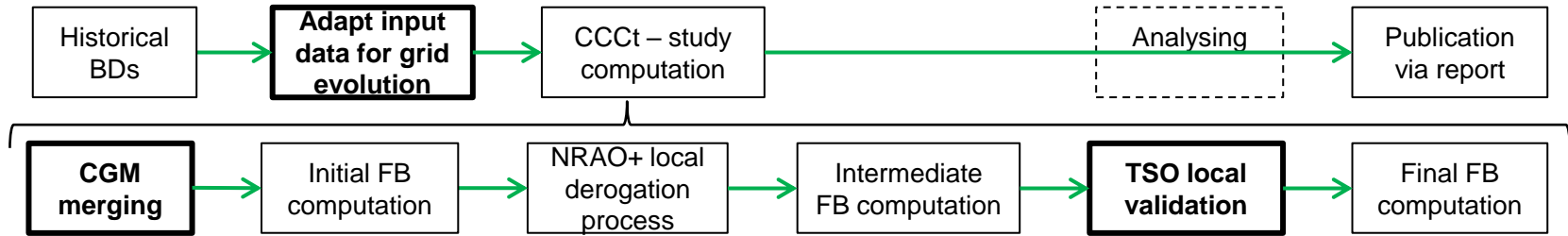


- 7 BDs need to be representative in a first way forward, the selection of BD will be done as:
  - Day 1: Sunday in the available period with the lowest wind infeed in CORE
  - Day 2: Workday in the available period with the highest wind infeed in CORE & high load in FR
  - Day 3: Any Workday in the available period with average wind
  - Day 4: ~~Lowest exchanges in CORE~~ Any Workday in the available period with highest PV
  - Day 5: Highest exchanges in CORE
  - Based on Day 3: extra variant containing long duration outages in the first ½ of the period of interest
  - Based on Day 3: extra variant containing long duration outages in the last ½ of the period of interest
  - The future evolution can be to have more intelligent selection method for BDs. At this moment focus is on the getting merging step ready



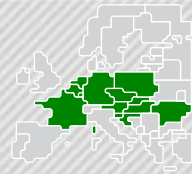
SPAICC: Half-yearly “SPAICC” for grid evolution - BD selection (2/2)

Updates made in green on 12/03 requiring final confirmation by Core TSOs



The following criteria were suggested by MPs that Core TSOs believe are relevant for AHC SPAICC-like and not for our SPAICC but we wanted to accommodate them if possible in our criteria:

- days covering different combinations of DE wind and FR load, hence days covering different combinations of these variables (e.g. high DE wind, low FR load, vice versa, medium, etc.). → Wind is considered in Day 1 and 2, high load in FR is added to Day 2. Also, high PV instead of lowest exchanges for Day 4 is proposed following the request of some of TSOs.
- days considering the thermal limit of the lines, therefore winter days to represent it (and also represent the wind conditions). → This point is already included in our proposal as we are going to run the SPAICC every 6 months including winter days.
- ~~days with high TSO interventions (high IVA), fallback mode, default settings, etc.).~~ → These specific situations are not relevant for grid evolution study.
- ~~Some other precises dates were also suggested such as 04/04/22; 02/07/23; 28/05/23; 11/09/23; 5/1/2024; 24/01/223.~~ → Specific dates are not applicable for a half yearly SPAICC, therefore we will not consider these specific BDs.



ACER	Agency for the Cooperation of Energy Regulators	IGM	Individual Grid Model
AHC	Advanced Hybrid Coupling	IVA	Individual Validation Adjustment
BZ	Bidding Zone	KPI	Key Performance Indicator
CACM	Capacity Allocation and Congestion Management	LF-SA	Load Flow Security Analysis
CC	Capacity Calculation	NRA	National Regulatory Authority
CCR	Capacity Calculation Region	NRAO	Non-costly Remedial Action Optimization
CGM	Common Grid Model	RA	Remedial Action
CGMES	Common Grid Model Exchange Standard	RAO	Remedial Action Optimizer
CNEC	Critical Network Element with a Contingency	RFI	Request for Information
CS	Cost Sharing	RFP	Request for Proposal
CSA	Coordinated Security Analysis	ROSC	Regional Operational Security Coordination
CSAM	Coordinated Security Analysis Methodology	RD&CT	Redispatching and Countertrading
CROSA	Coordinated Regional Operational Security Assessment	RSC	Regional System Operator
DA	Day-Ahead	TSO	Transmission System Operator
ENTSO-E	European Network of Transmission System Operators for Electricity	SHC	Simple Hybrid Coupling
FAT	Final Acceptance Test	SO GL	System Operation Guideline
FIT	Functional Integration Test	SAT	Site Acceptance Testing
FB	Flow Based	SIT	System Integration Testing
GSK	Generation Shift Key	V1/V2	Version 1/ Version 2
GLSK	Generation Load Shift Key	XNE	Cross-border element
IDCC	Intraday Capacity Calculation		