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# Southeast Electricity Network Coordination Center

## The RCC for the SEE Europe

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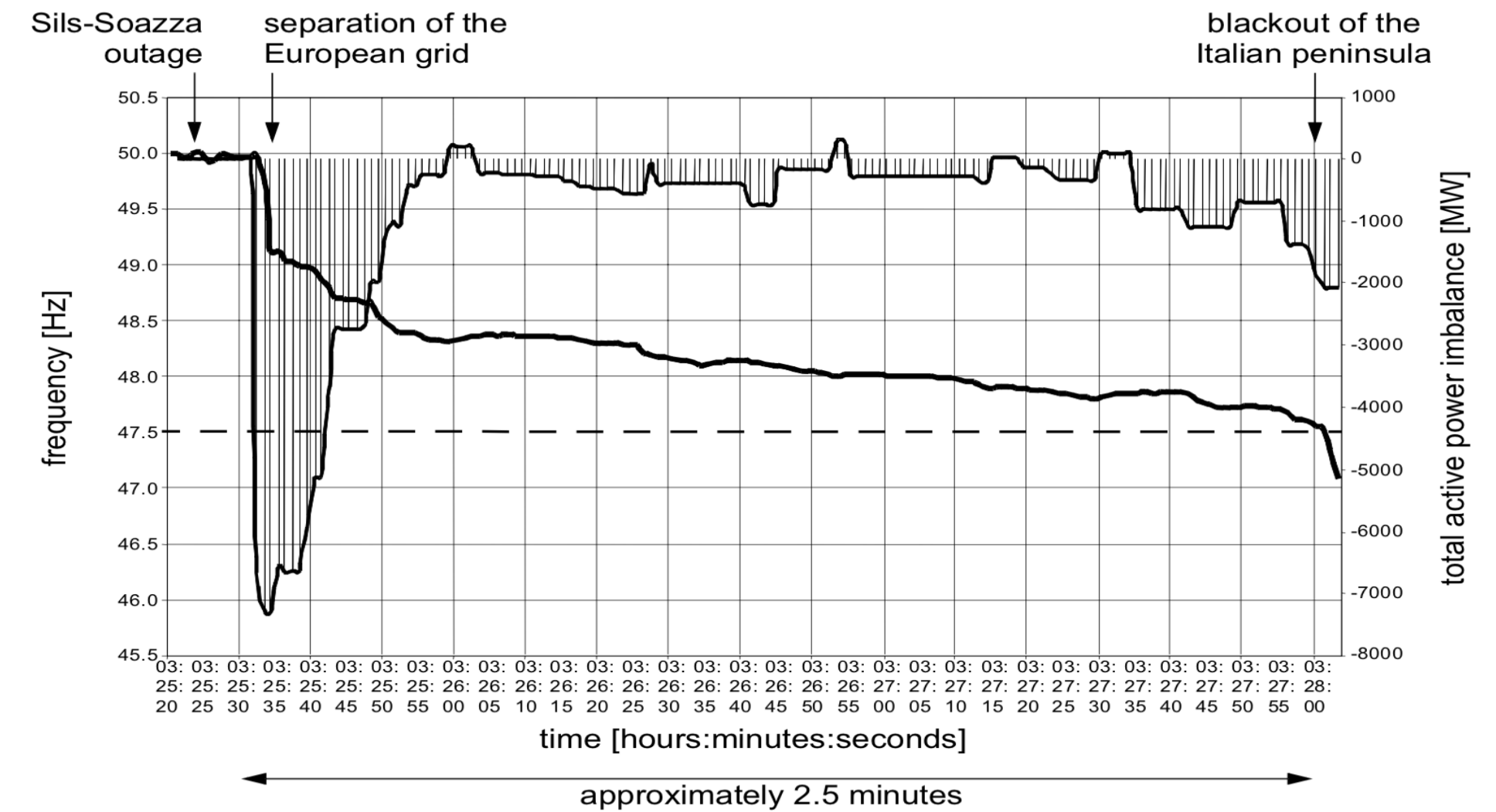


# Outline

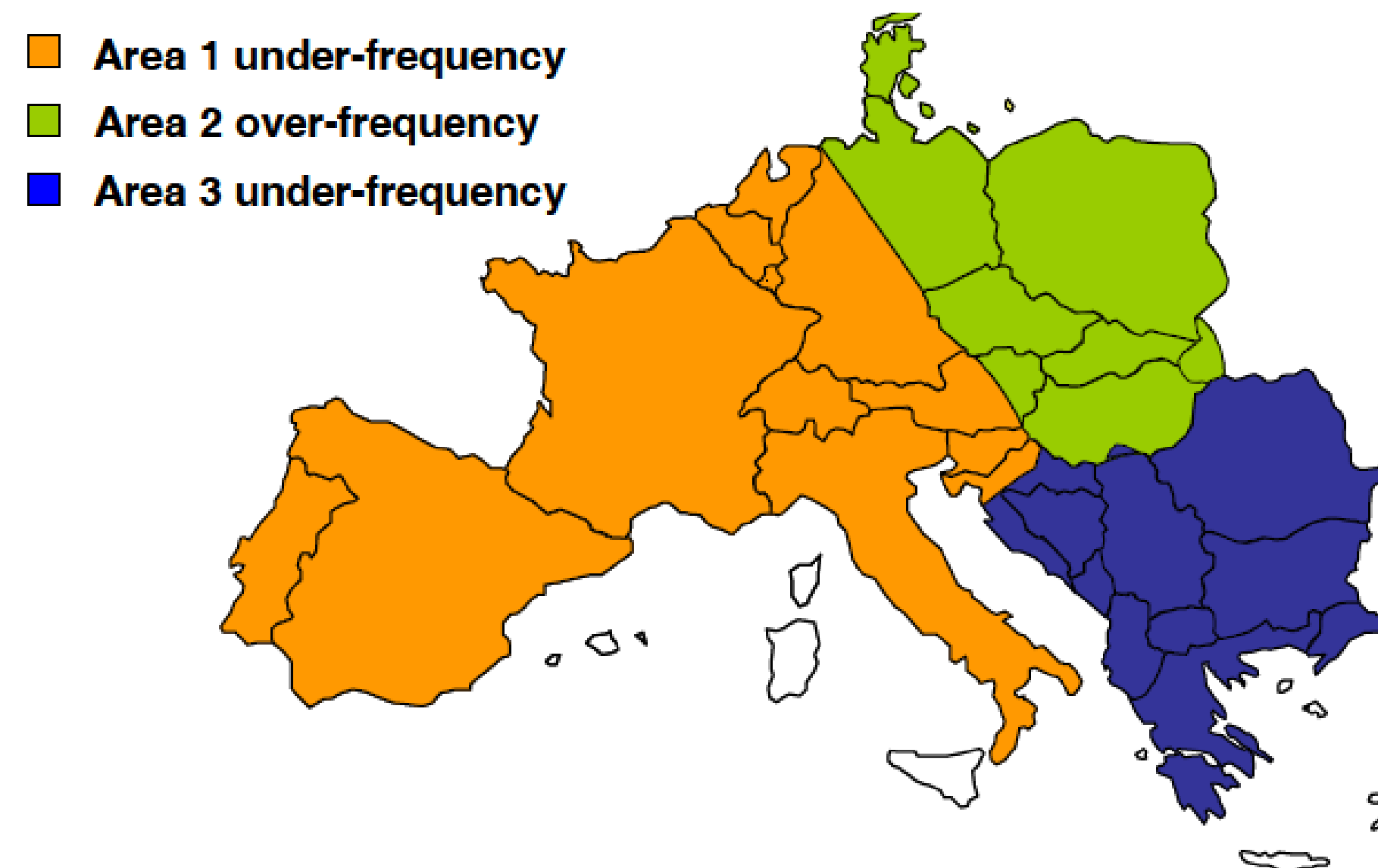
- TSOs' coordination- Benefits- Evolution
- Establishment of the Regional Coordination Centers (RCCs)
- RCC actions
- Provided Services
- Southeast Electricity Network Coordination Center (SEleNe CC)
- A look into the future

# Main triggering events

- **28<sup>th</sup> September 2003: Black-out in Italy**
- at 03:01 Italy imports bulk power (mainly from Switzerland)
- Cascading disconnection north interconnectors due to a SC (loading was 85%)



- **4<sup>th</sup> November 2006: The worst incident in Europe**
- at 21:38 a series of unfortunate events led to the separation of the European network into 3 parts
- The event led TSOs to closer cooperation and relevant measures



# Evolution of TSOs coordination

- Late 2015 → the TSOs approve and sign an **all-TSO Multilateral Agreement** for Regional Security Coordination Initiative (RSCI)-based TSO cooperation in the ENTSO-e Assembly. With this mandatory contractual framework, TSOs have committed to establishing regional coordination services **Regional Security Coordinators (RSCs)**.
- Mid-2016 → the System Operation Guideline **registered the RSCs** into EU law, while the European network codes and guidelines **reinforced the role of RSCs** (formalization under regulatory and contractual framework).
- 1<sup>st</sup> July, 2022 → **RSCs** evolved into **RCCs**, as foreseen by the Clean Energy Package (CEP).
- **Additional tasks** have been added to the RCC tasks portfolio to strengthen the RCC key coordination role and further enhance regional cooperation in Europe, leading to a series of evolutions regarding organisation, governance rules and procedures.

# The Benefits of TSOs coordination

- TSOs coordination:
  - ✓ Increases operational **security** and **efficiency** of power system operation;
  - ✓ minimises risks of wide area events such as brownouts or blackouts (**security**); and
  - ✓ provides for lower costs through **transparency** and **maximised availability** of transmission capacity to market participants.
  
- A much deeper coordination between TSOs close to real-time is required to:
  - ✓ integrate more renewables into the grid;
  - ✓ increase cross-border exchanges; and
  - ✓ reduce carbon emissions in a cost-effectively and secure manner.

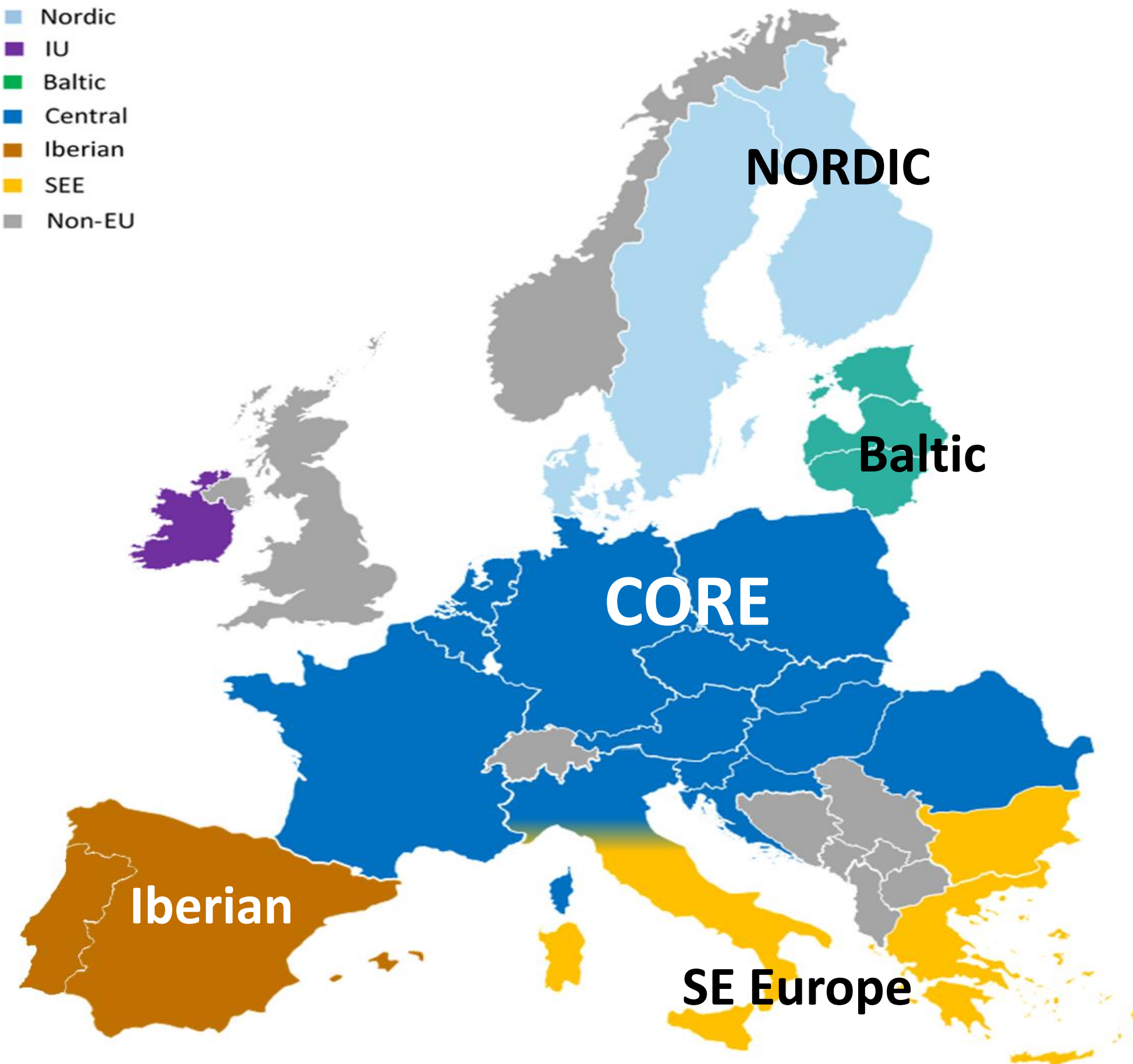
# Establishment of the RCCs under the Regulation (EU) 2019/943

- The Regulation (EU) 2019/943 introduced a new entity, the RCC, with the aim to improve the cooperation among TSOs and to replace the RSC starting from 1st July 2022.
- Each RCC operates within a System Operation Region (SOR).
- Each SOR encompasses one or more CCRs and includes a number of TSOs. *(according to Article 36 of the Regulation 2019/943, the SOR configuration is proposed by ENTSO-E and approved by ACER).*
- In accordance with Article 35 of the Regulation 2019/943, the TSOs of a SOR shall develop a proposal to establish the competent RCC ("*RCC Establishment Provisions*").
- The proposal is subject to the approval of the competent regulatory authorities, i.e., the regulatory authorities competent for the TSOs included in the SOR.

# System Operation Regions (SORs) under ACER Decision 5/2022

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- Nordic
- IU
- Baltic
- Central
- Iberian
- SEE
- Non-EU



5 SORs +1

# RCC actions

- RCC issues **coordinated actions** (both in the short and long term) to the TSOs in respect of coordinated capacity calculation (CCC) and security analysis (CSA).
- The TSOs should comply with them except where the implementation of the coordinated actions would result in a violation of the operational security limits defined by each TSO in accordance with the system operation guideline adopted on the basis of Article 18(5) of Regulation (EC) No 714/2009.
- RCC issues **recommendations** to the TSOs in relation to the tasks assumed under Article 37(1) or assigned in accordance with Article 37(2).
- RCC also performs **analyses** in a pan European level.
- RCC services are divided into 2 categories:

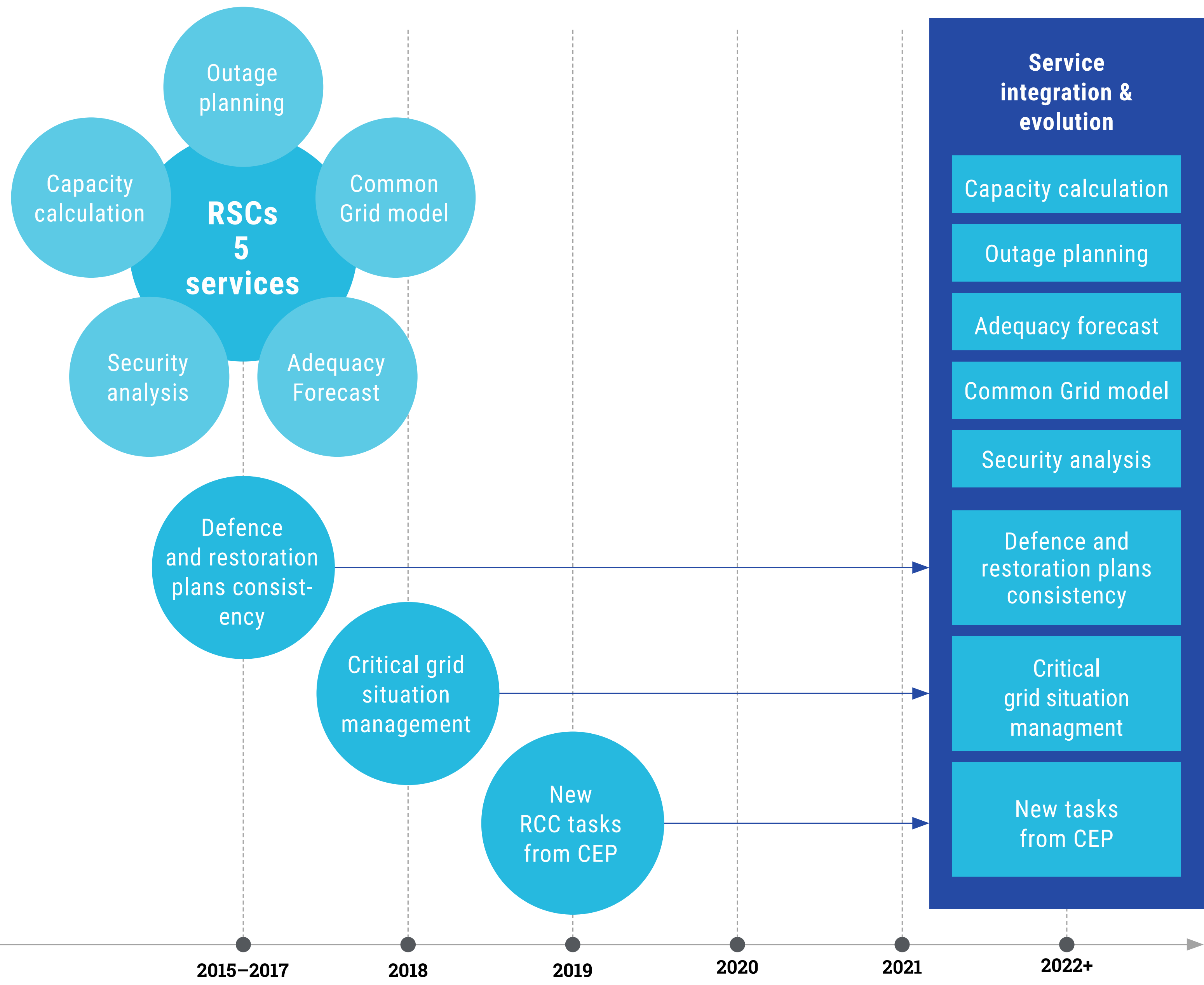
necessary for regional coordination – part of the mandatory RCCs' portfolio (Article 37(1) Regulation 943/2019)

if delegated by the TSOs (Article 37(2) Regulation 943/2019)



# Services Provided by RCCs

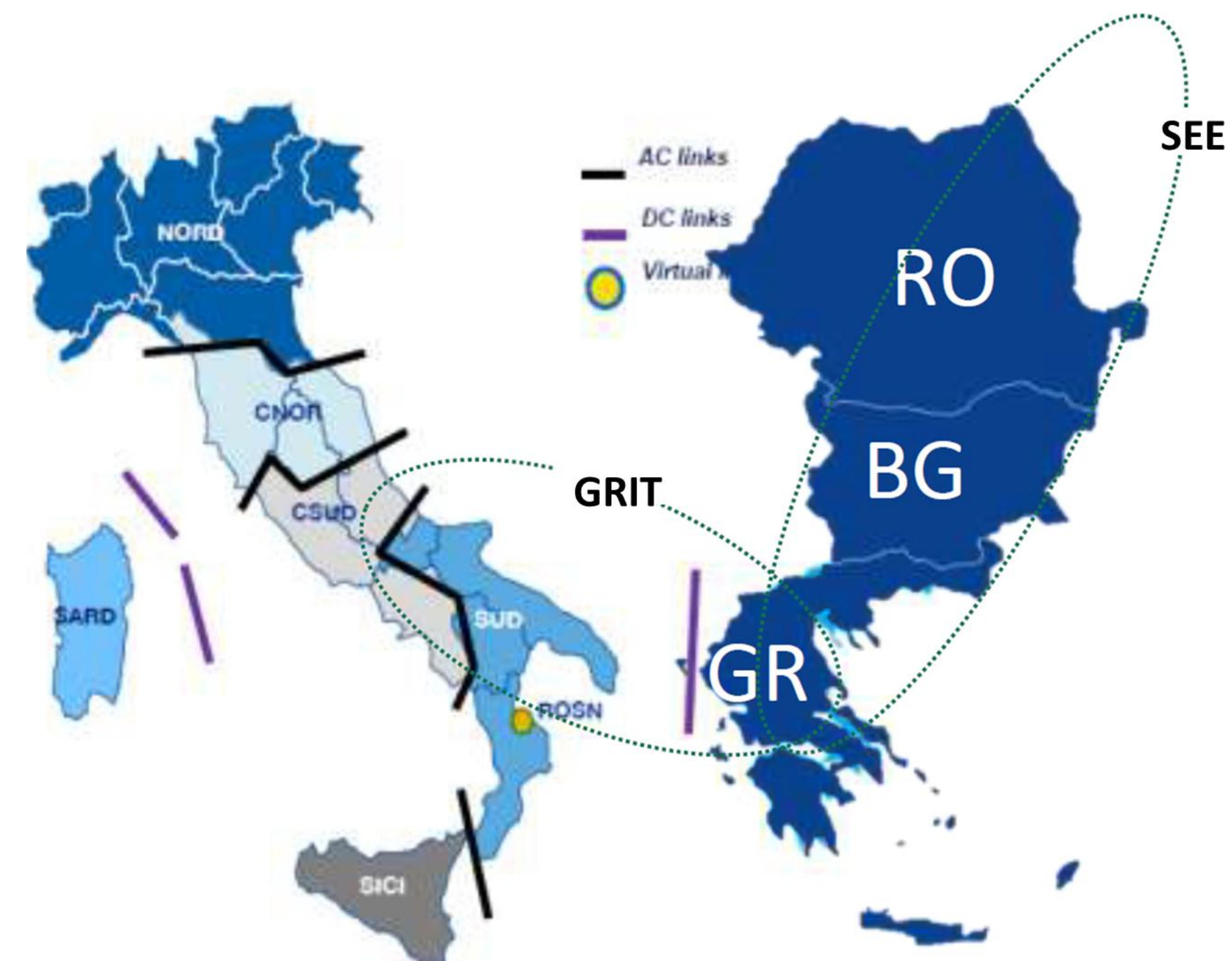
1. **Common European grid model delivery** (Individual Grid Models from TSOs → Common Grid Model)
2. **Coordinated Security Analysis** (focus: flows)
3. **Coordinated Capacity Calculation** (input for the day ahead markets),
4. **Short-term Adequacy** (short term matching of generation-load for one week ahead; link with balancing)
5. **Outage planning coordination** (optimized use of assets, incl PST (Phase Shifter Transfo) and HVDC coordination)
6. **Critical grid situations management** (facilitation of TSOs in handling of rare but very severe events) – **Started on March 2003**



# Southeast Electricity Network Coordination Center (Selene CC) (1/4)

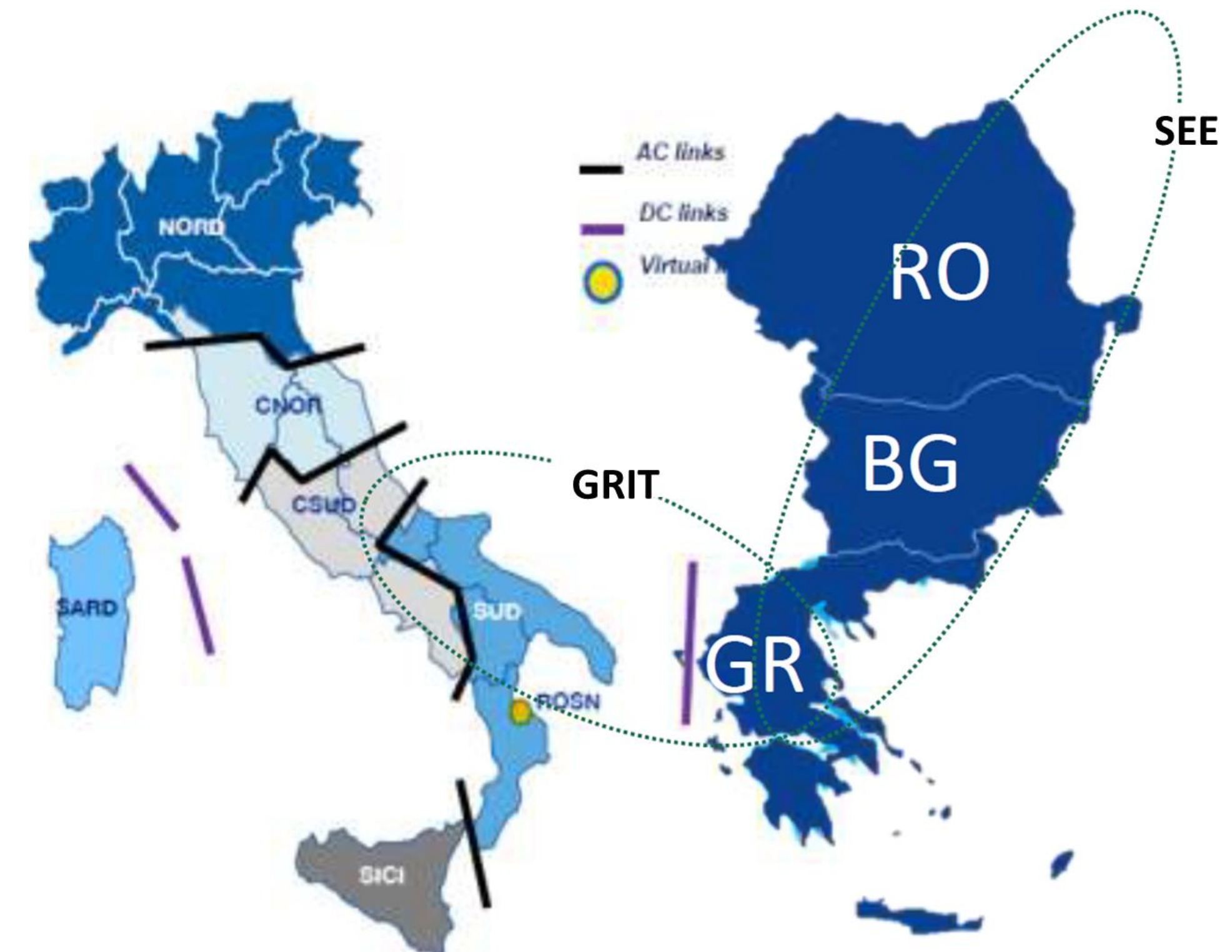
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- SEleNe CC was established on May 2020 as the RSC for GRIT and SEE CCRs, appointed by the relevant TSOs in accordance with Article 76 and 77 of the Regulation (EU) 2017/1485.
- ACER SOR Decision 10/2020 established the SEE SOR encompassing only the SEE CCR.
- The TSOs developed the SEE RCC Establishment Provisions establishing the existing RSC SEleNe CC as the SEE RCC.
- ACER SOR Decision 5/2022 repeals ACER Decision 10/2020 proposing a new SOR configuration. In particular SEE SOR encompasses GRIT and SEE CCRs involving the TSOs ESO EAD, IPTO and Terna (**participating TSOs and current shareholders of the legal entity**).



# Southeast Electricity Network Coordination Center (Selene CC) (2/4)

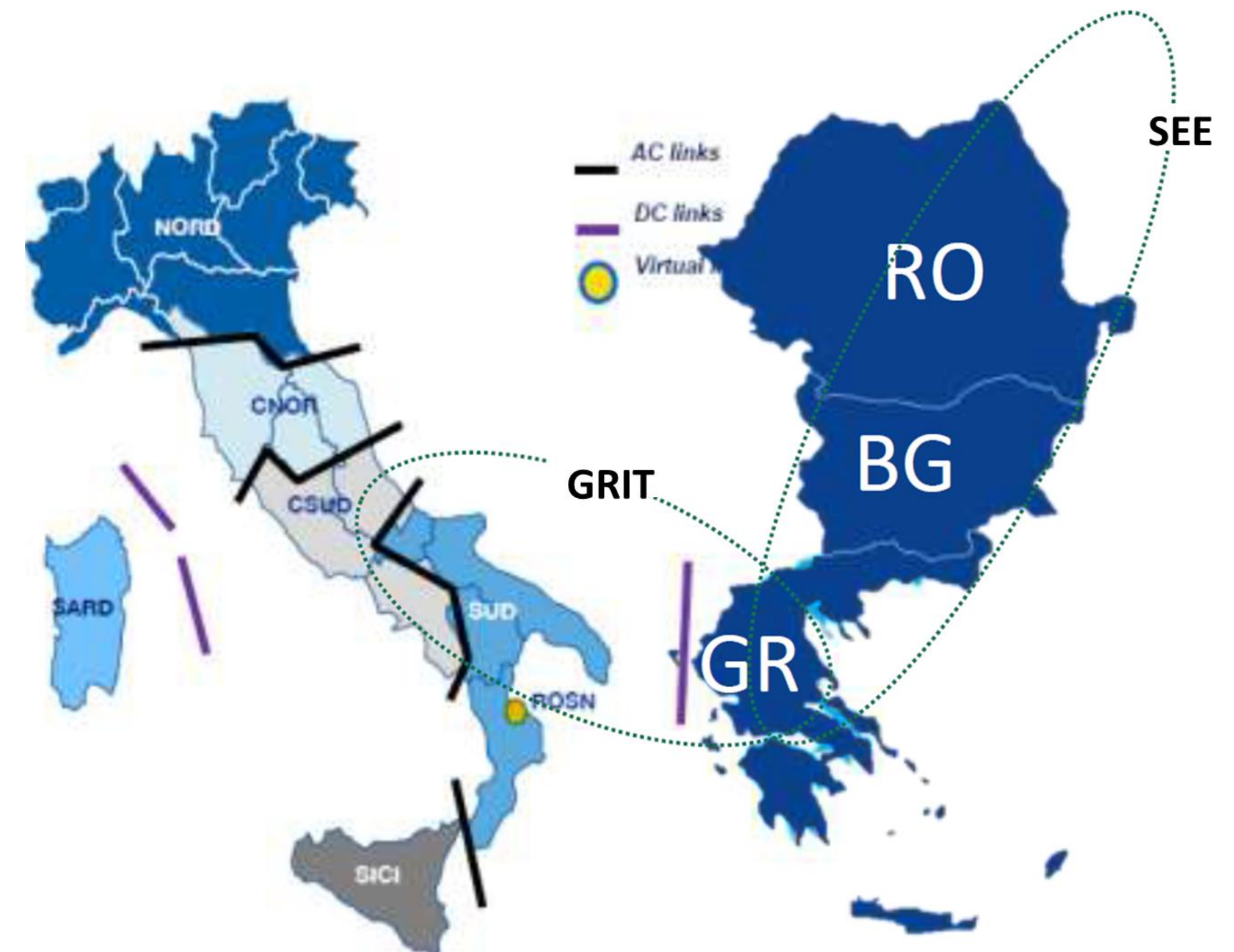
- Following the adoption of the ACER SOR Decision 5/2022, the TSOs of the SEE SOR developed a new version of the SEE RCC Establishment Provisions in order to confirm the establishment of SEleNe CC as the RCC for SEE SOR but including Terna among SEE SOR Participating TSOs.
- The RCC **coordinates the BG-RO bidding zone** border in accordance with the applicable terms, conditions and methodologies and performs the tasks of regional relevance among the tasks listed in Article 37(1) of Regulation 2019/943 **in cooperation with Transelectrica**, which has a contractual relationship with the RCC and the tasks of cross regional relevance together with TSCNet.



# Southeast Electricity Network Coordination Center (Selene CC) (3/4)

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- SEleNe CC coordinates cross-regional aspects of the tasks listed in Article 37(1) of Regulation 2019/943 for the IT NORD – IT CNOR bidding zone border with Coreso;
- where the tasks listed in Article 37(1) of the Regulation 2019/943 are relevant to the entire control area of Terna, Coreso or SEleNe CC coordinate with Terna the execution of these tasks.
- SEleNe CC established a subsidiary company in Rome, **Esperia CC Srl**, to perform functions which are relevant for the RSC tasks on the GRIT CCR and the Italian bidding zones encompassed by the GRIT CCR.

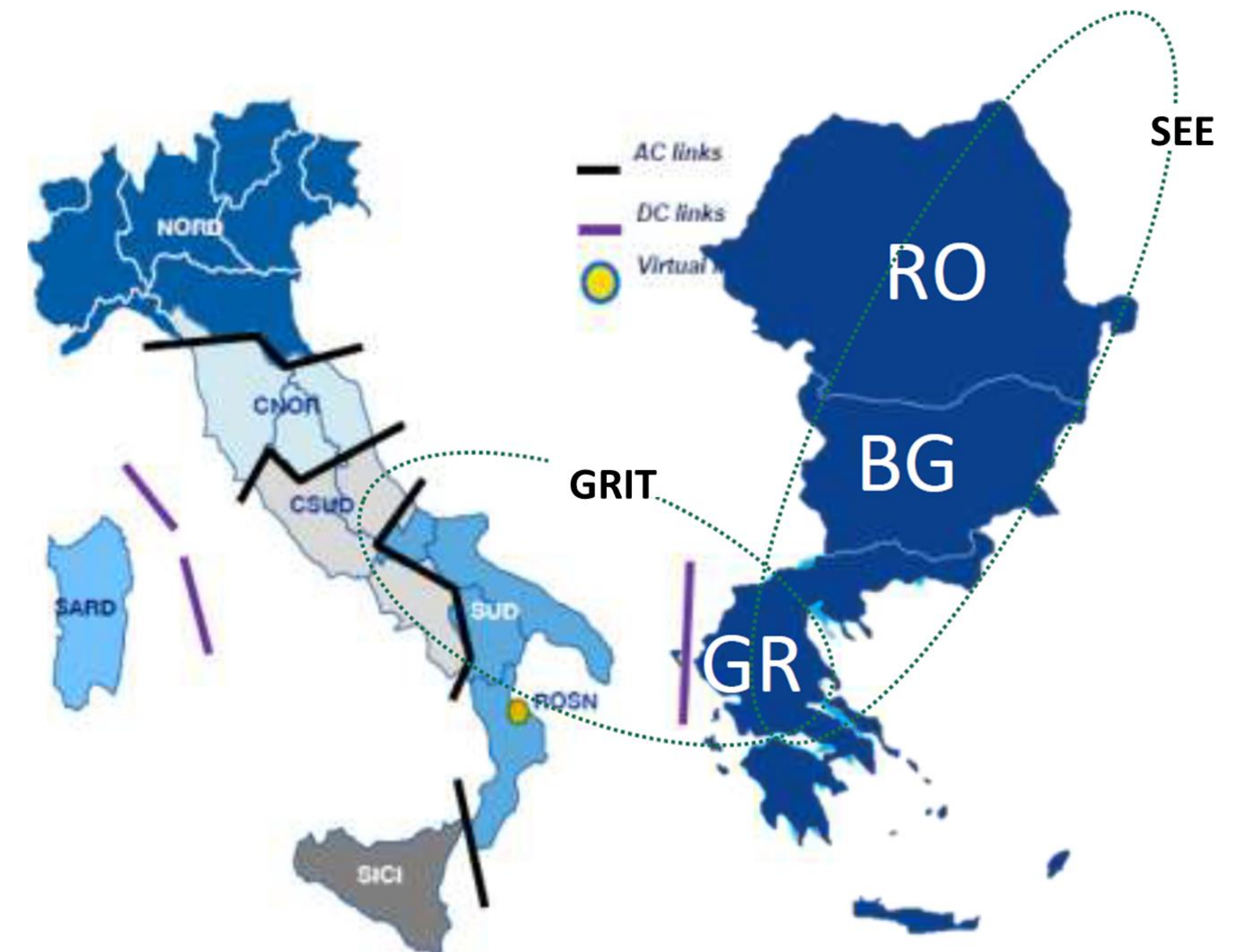


# Southeast Electricity Network Coordination Center (Selene CC) (4/4)

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## ➤ Services provided by SEleNe CC:

- ✓ Coordinated Security Assessment: For RO, BG, GR
- ✓ Coordinated Capacity Calculation: For SEE (RO, BG, GR) and GRIT (GR,IT)
- ✓ Outage Planning Coordination: For RO, BG, GR
- ✓ Short-term Adequacy Assessment: For BG, GR
- ✓ Critical Grid Situation: For RO, BG, GR



# Future RCC services | Status

## Status

- 14 of 16 legal RCC tasks to be implemented, 2 remain optional
- For 8 existing ● tasks & obligations knowhow and capabilities are established at RCCs
- Basis for 8 new ● tasks & obligations has to be newly created – feasibility is key
- Complexity of operational tasks can become a challenge for human interaction & business continuity
- Strong focus on transparency & reporting



# Most challenging new Services

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- ROSC (Regional Operational Security Coordination) methodology
- Remedial Actions Optimization (RAO) and cost sharing among TSOs in the SOR
- Regional sizing of reserve capacity requirements for balancing
- Sharing reserve capacities among TSOs of each SOR
- Facilitation of regional procurement of balancing capacity
- Contribution to Ten Year Network Development Plan (TYNDP) – (*gradual creation of a database on the transmission needs*)
- Identification of regional electricity crisis scenarios

# Future coordination

## ➤ Regional Coordination Centre for the Shadow SEE SOR

- SEleNe CC along with TSCNet have been appointed by the Regulation 943/2019 (EnC) to assume the role of the Shadow SEE RCCs for the bidding zone borders between Member States and Contracting Parties (*unless all concerned neighbouring EU TSOs agree to a RCC located in a Contracting Party*)
- The Shadow SEE RCC shall be established either under the proposal of the TSOs (*article 35(1) of Regulation (EU) 2019/1943*) or by applying directly the rule as stipulated in the Annex of the Regulation 943/2019 (EnC).
- Equal treatment, collaboration and coordination among the stakeholders is required to reach the most efficient and viable solution for all TSOs.



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# Thank you for your attention!

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