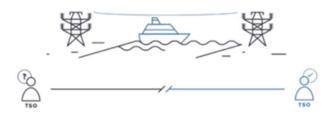




Evolution of Regional Coordination Centers in System Operation Region Central

6 July 2023

System disturbance on 4 November 2006



Contributing factors

- Insufficient upfront coordination between TSO's
- Insufficient cross-border data exchange
- No common security analysis

Consequences

- European system split triggered by automatic network protection operation
- More than 15 million clients with no access to electricity
- Duration 1,5 h



From RSC(i) towards RCC



2008

RSC(i)

- In 2008, Coreso was born as Regional Security Coordinator Initiative (RSC(i))
- In 2008 the TSO Security Cooperation (TSC) was founded, followed by the launch of TSCNET Services in 2014
- Coreso and TSC/TSCNET provided security services for their shareholders

2015 & 2017

RSC/CCC

- CACM guideline obliged TSOs to appoint Coordinated Capacity Calculators (CCC)
- SOGL guideline obliged
 TSOs to appoint Regional
 Security Coordinators
 (RSC)
- RSCs shall integrate the roles of CCCs and perform 5 mandatory tasks: capacity calculation, coordinated security analysis, common grid model merging, outage planning coordination, adequacy assessment.

2022

RCC

- CEP requests the establishment of Regional Coordination Centre (RCC)
- RCCs replace the RSCs since 01 July 2022.
- RCC is a **regulated** entity.





Establishment of RCCs





Article 36: ENTSO-E proposes SOR definition to ACER

ACER issues a decision on SOR definition

Article 35:

TSOs of each SOR shall establish the RCC

"RCC Establishment Provisions" SOR NRAs approve the

"RCC Establishment Provisions" RCC enters into operation on 1 July 2022

SORs:

- Central SOR
- SWE SOR
- Baltic SOR
- Nordic SOR
- SEE SOR

Describing:

- RCC seat and legal form
- Participating TSOs
- Organisational and operational arrangement
- Financial arrangement
- Implementation plan
- Statutes
- Cooperative process
- Liability
- Rotational basis

RCCs:

- Coreso
- TSCNET
- Baltic RCC
- Nordic RCC
- SEleNe CC

RCCs and SOR





Shareholders of Coreso and TSCNET



5 System Operation Regions in EU



The advantage to have 2 RCCs in a SOR



- Coreso and TSCNET were already active and operational when the Capacity Calculation Regions and Central SOR were sequentially established, so we built on a legacy framework.
- The establishment of more than one RCC in Central Europe reflects the need for increased cooperation and coordination among transmission system operators (TSOs) in the region with diverse market and transmission structures and technical requirements.
- Having two RCCs allows for a more tailored approach to regional coordination and can better address specific challenges and needs in different parts of the large region Central SOR, comprising an area of 20 TSOs.
- Overall, the establishment of two RCCs in Central Europe SOR allows for a more comprehensive and effective approach to system operation and management, reflecting the complexity and diversity of the regional electricity system.

Principles of Cooperation between Coreso and TSCNET



- In implementation of SOGL Art 77 and the CEP, Coreso and TSCNET as RCCs have common tasks to be performed for Core and Italy North CCRs as well as for "Central SOR".
- Development, hosting, maintenance and operation of a common "RCC Service Platform" as tools which will support the individual run of the 5 operational services
 - Interoperability & Modularity
 - Security and Redundancy
 - Transparency & Regulatory Compliance
 - In respect of EC recommendation to use open-source solutions when possible
- Governed collaboration established to implement common practices and tooling ("CorNet Programme")
- Openness for collaboration with others RCCs and the TSO community for common sharing of best practices, knowledge and experience as well as solutions & tooling.

Principles of Cooperation between Coreso and TSCNET



CorNet Programme*

Common IT Development

RCC Service Platform

Common Readiness Non-Common Development

Service Operations Maintenance & Upgrade

- Mutual regulatory need
- Formal
 governance
 framework
 (C&CCA, see next
 slides)
- Limited to design & development of joint solution
- Joint procurement
- Equal liability & cost sharing

- Modular architecture based on microservices...
- Shared hosting environment
- Full software ownership by both RCCs (& vendors)
- Not a 'black box' solution – avoids vendor lock-in
- Licence model for software preagreed with vendors

 Business transformation to ensure seamless

service operations

- Tooling for noncommon Regions based on joint solution& procurement (independent of CorNet)
- Costs borne by each RCC

- Rotational & split services
- Operational framework to be developed
- Opgrade
- Common & independent approaches viable

• To be developed



Cooperation Objectives

- Timely compliance with network codes, guidelines & relevant regulations
- Delivering high quality services enabled by common solutions
- Achieving optimal costs by identifying & optimizing synergies
 - * CorNet Programme has no legal identity and is based on framework of cooperation with joint responsibility and liability between Coreso and TSCNET