

Draft proposals for regional coordinated security analysis according to Art. 76 SOGL

Workshop with TSOs, ACER, NRAs, EC
Brussels 2 October 2019

Topics covered

- **Draft status and Planning**
- **Technical Aspects**
 - Criteria of selection for XNE and XRA
 - Process overview in day-ahead and intraday
 - Optimisation principles
- **Consistency between SOGL 76 and CACM 35/74**
- **Principle of allocation of tasks to RSCs**

Draft status and Planning

- 50 Hertz
- Amprion
- APG
- CEPS
- CREOS
- ELES
- ELIA
- HOPS
- MAVIR
- PSE
- RTE
- SEPS
- Tennet GE
- Tennet NL
- Transelectrica
- Transnet BW

Period of Public Consultation

- From 23rd of September 2019 to 24th of October 2019

Submission to NRAs

- Expected by 21st of December 2019

List of TSOs

[Italy North]

- APG
- ELES
- RTE
- TERNA

Period of Public Consultation

- From 10/2019 to 11/2019 (exact dates to be confirmed)

Submission to NRAs

- Expected on 12/2019

- 50 Hertz
- Energinet
- PSE
- Svenska kraftnät
- Tennet Germany
- Tennet Netherlands
- Statnett – Are foreseen to be included in CCR Hansa during 2020 as EES has adopted Commission Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009

Period of Public Consultation

- Public consultation is planned from October 10:th until November 7:th

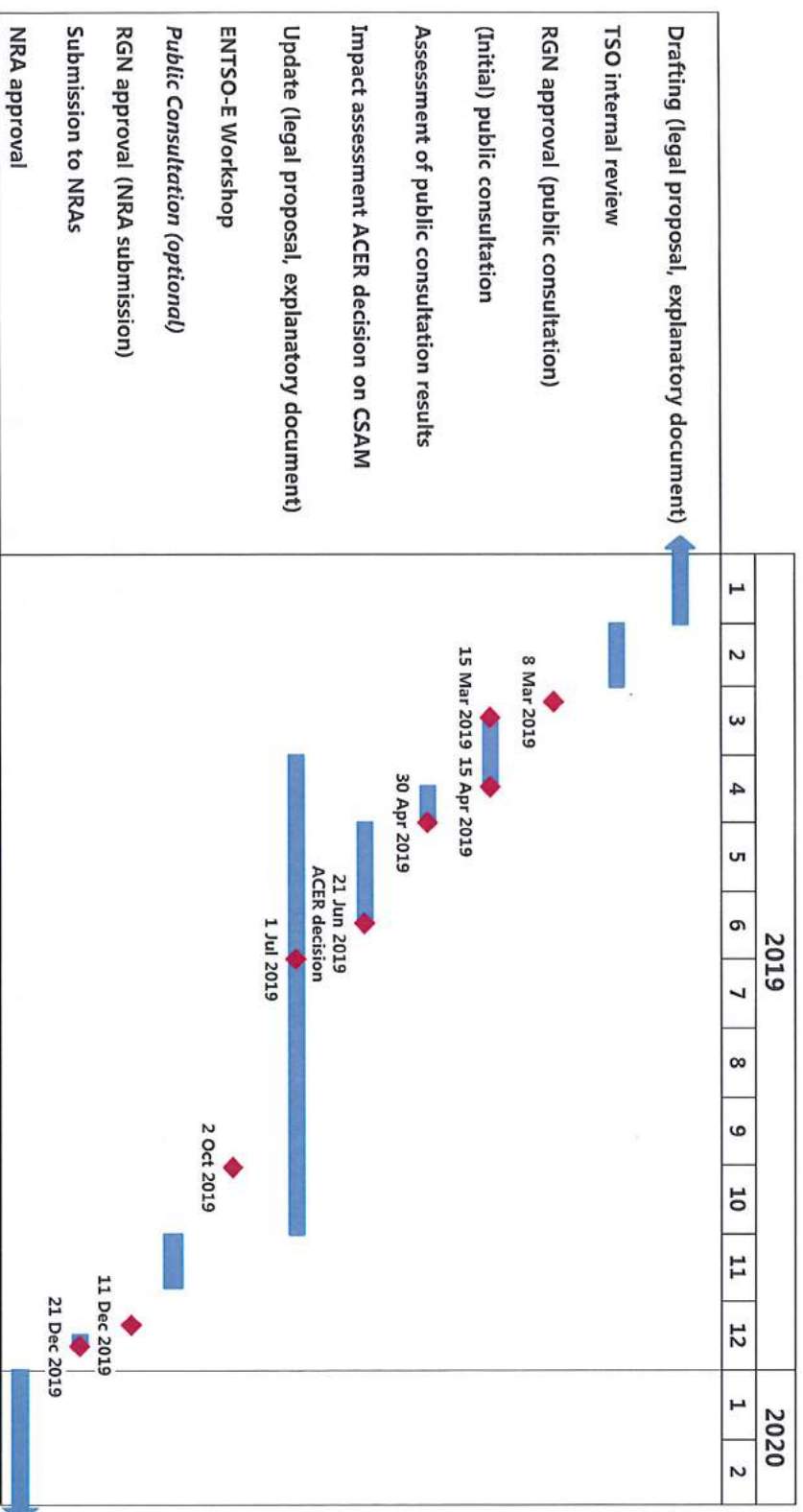
Submission to NRAs

- Expected to be submitted to the NRAs of CCR Hansa on 21:th of December 2019

Status of the Proposal

- The proposal is the common Nordic TSOs' proposal for **N**ordic **R**egional **O**perational **S**ecurity **C**oordination (NROSC).
- Public consultation of the proposal was from 15 March 2019 till 15 April 2019. Only minor feedback was received.
- The feedback was especially related to CSAm and compliance of NROSC with CSAm.
- Based on the final ACER decision to CSAm and the feedback of public consultation the Proposal was/will be further developed.

Time Plan for NROSC



CCR Nordic Coordination activities

With NordREG (Nordic NRAs)

- Regular Information exchange
- Nordic NRAs were asked for a shadow opinion on NROSC during public consultation → feedback was received (Compliance with ACER decision as major point).

Next steps

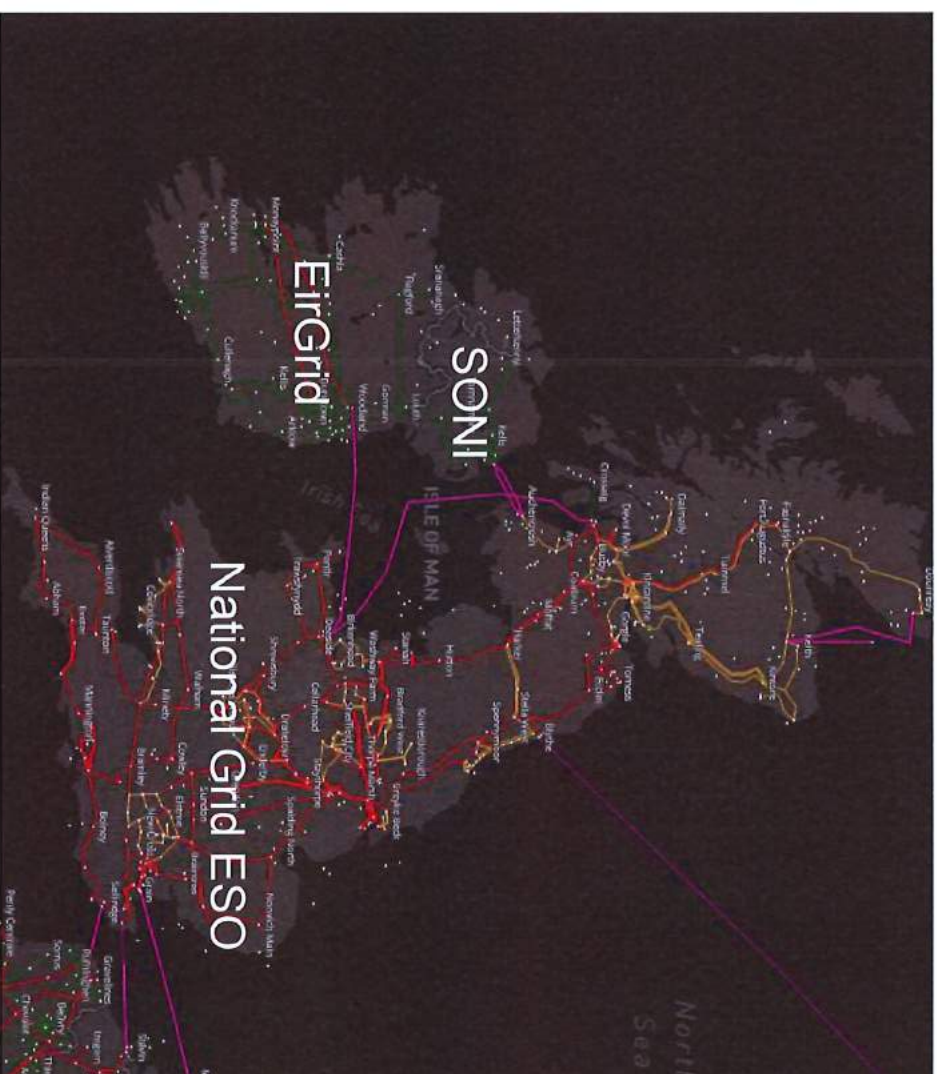
- Finalization of all open points in the upcoming weeks (also based on the discussions and alignments in the meeting today).
- Submission to the NRAs on 21st December.

List of TSOs

EirGrid
(Ireland)

SONI
(Northern Ireland)

National Grid ESO
(Great Britain)



Application of CSAm in Ireland & Northern Ireland

- The TSOs on Ireland and Northern Ireland, EirGrid and SONI, form a synchronous 'all-island' system.
- **EirGrid and SONI operate this synchronous island in a fully coordinated and integrated way:**
 - All operational data and control room tools are shared between the two TSOs.
 - EirGrid and SONI already have full visibility each others transmission network elements, generation and HVDC interconnection to National Grid ESO.
 - The generation scheduling and dispatching roles are carried out on an all-island basis.
 - EirGrid and SONI operate within one market or bidding zone.
- **The need to operate in this coordinated way is driven by our need to integrate large volumes of renewable generation on the island. We regularly operate the all-island system at 65% System Non-synchronous Penetration (SNSP) and are targeting 95% SNSP by 2030.**
- **Already, the current organization of the all-island operation delivers all the objectives of coordination and efficiency in finding the best RAs, which are targeted by CSAm.**
- **As such, there is no need to modify the current internal processes between SONI and EirGrid.**
- **The main added value should come from CSAm implementation for coordination with NGEESO. Thus flexibility in the appreciation of the compliance with the letter of CSAm, now and as the codes evolve, is expected for SONI and EirGrid.**

Period of Public Consultation

- From 11 October to 11 November 2019.

Submission to NRAs

- Expected by 19 December 2019.

Note

- Draft version shared with NRAs 25 September.
- Consultation responses will be review and methodology finalised between 12 November and 19 December.

IU CCR Next Steps

Next Steps

- Comments & **feedback from NRAs** to be received by the **4 October**.
- **Public consultation** from **11 October to 11 November**.
- NGENSO, SONI & EirGrid to **upload the consultation version** on respective websites for public consultation on **10 October**.
- SONI, EirGrid, NGENSO & CORESO to have a telco on **12 November** afternoon to **discuss any comments received from NRAs and public consultation**.
- Telco on morning **14 November** to discuss any **comments received from NRAs and public consultation**.
- **Submission of final IU CSAm on 19 December 2019**.

List of TSOs

[SWE]

- REE
- REN
- RTE

Period of Public Consultation

- From 14th October to 14th November

Submission to NRAs

- Expected by 20th December 2019

List of TSOs

SEE CCR

- ADMIE
- ESO
- Transelectrica

Period of Public Consultation

- From 1st November 2019 to 2nd of December 2019 (exact dates to be confirmed)

Submission to NRAs

- Expected by 20th of December 2019

List of TSOs

[GRIT]

- IPTO
- TERNA

Period of Public Consultation

- From 10/2019 to 11/2019 (exact dates to be confirmed)

Submission to NRAs

- Expected on 12/2019

List of TSOs

Channel

- NGESO
- RTE
- Tennet NL
- ELIA
- BritNed
- Nemolink
- Eieclink
- NGIC

Period of Public Consultation

- From 04/10/2019 to 04/11/2019 (exact dates to be confirmed)

Submission to NRAs

- Expected on 21/12/2019

- Litgrid AB
- AST
- Elering AS
- SVK
- Fingrid
- PSE

Period of Public Consultation

- From October 28 to November 28

Submission to NRAs

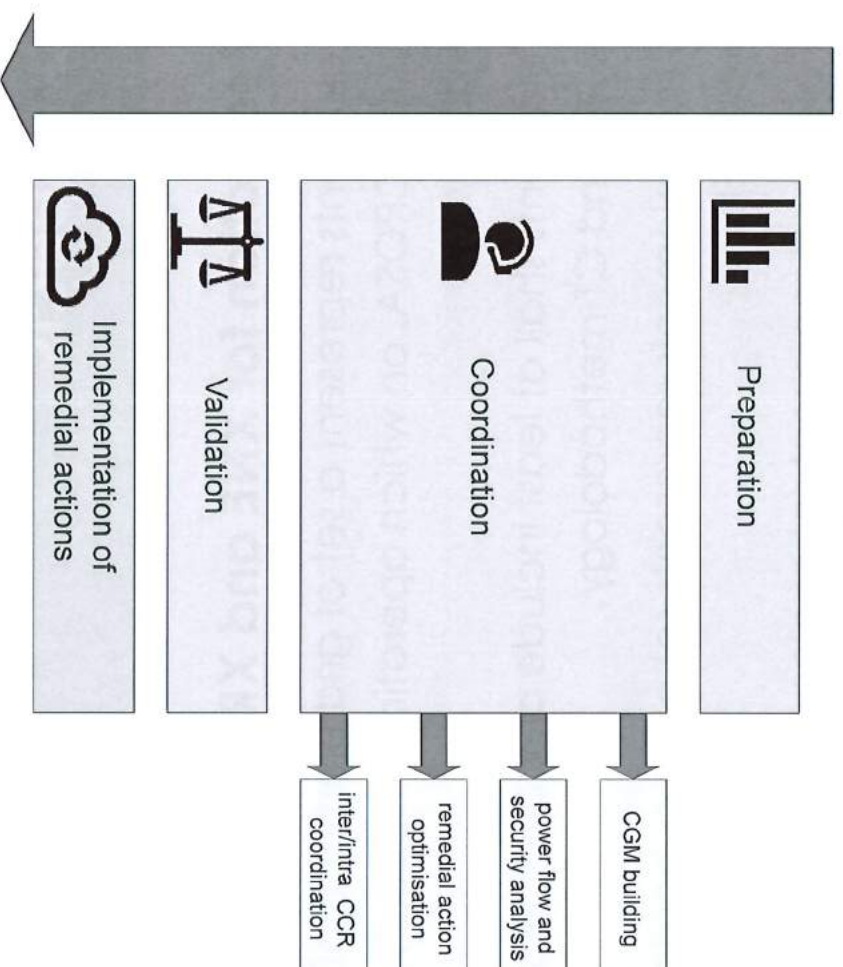
- Expected by 21 of December 2019

Technical Aspects

Criteria of selection for XNE and XRA

- Secured elements represent a set of grid elements of Core TSOs of voltage level ≥ 220 kV subject to the CROSA, on which operational security limits violations have to be identified and solved.
- Secured elements shall at least include all Core CNEs and XBRNEs defined in accordance with Core RD and CT methodology.
- Set of secured elements represents set of cross-border relevant network elements of Core CCR (Core XNE).
- Scanned elements represent set of elements on which CROSA shall not create new operational security limits violations or worsen any existing violation.
- XRA selection is based on a qualitative approach. If Core TSOs cannot agree on a qualitative approach for a certain RA, a quantitative shall be used for this RA (in accordance with article 15 (4) of CSAM)

Process overview of the Regional Coordination Process in Day Ahead



Process overview of the Regional Coordination Process

- day-ahead and intraday process follows the ENTSO-E process design
- at least three Intraday-CROSA are foreseen (0.00, 8.00, 16.00), further ID-CROSA has to be aligned with pan-European-process
- A Core TSO shall trigger the fast activation process to relieve operational security limit violation(s) in case the detection of the physical congestion occurs:
 - a) Between CROSA cycles and a fast activation of a XRAs is required because it cannot wait for the next CROSA;
 - b) After the last CROSA.

Optimisation principles

- The optimisation of RAs shall be performed with consideration of all available RAs;
- The optimisation is time-coupled
- The optimisation of remedial actions shall aim at relieving operational security limit violations on secured elements
- The optimisation shall not create additional operational security limit violations on secured and scanned elements
- The optimisation shall aim at minimising direct costs
- The optimisation shall consider constraints of the RAs
- The optimisation shall propose balanced RAs
- The optimisation shall ensure the remedial action effectivity
- The optimisation shall take into account the impact of variations in forecasts and market activities

Criteria of selection for XNE and XRA

- XRA : Qualitative approach on annual basis (or if significant change on the grid). JW3
In case of disagreement, quantitative approach is used (influence factor 5%).
For New RA identified prior to DA or ID operation planning period, quantitative approach is used
- XNE : at least CNEs of Italy North Region.
Each TSO can add further XNEs as long as it is included in its IGM.

JW3

remains a bit vague. can we explain how RAs are proposed to be XRAs?
Jacques Warichei, 30/09/2019

Process overview of the Regional Coordination Process in Day Ahead

- Appointed RSC(s) run the process to secure the grid while minimizing the costs
- TSOs coordinate on RA selection and application

Process overview of the Regional Coordination Process in Intraday

JM4

- Similar to Day Ahead process without coordinated cross-regional operational security assessment
- An assessment on the effectiveness and efficiency of previously agreed RA not yet activated is performed by the RSCs.

Process overview of the Regional Coordination Process after the last RSC-supported Intraday coordination (if necessary)

- Fast Activation Process can be triggered

Intraday timings and frequency

- 3 runs a day: reference times are 00:00, 08:00 and 16:00

JW4

could we rephrase to avoid it to be misinterpreted as 'there is no inter-CCR coordination'?

Jacques Warichev, 30/09/2019

Optimisation principles

- Minimization of costs using all available remedial actions and respecting the following constraints :
 - balance of the activated redispatching and countertrading resources;
 - lead time for activation of a remedial action;
 - only RAs that have an influence on the respective active constraints higher than a certain threshold can be used by the Remedial Actions Optimiser;
 - maximum number of preventive and curative Remedial Actions per TSO, Region and timestamp;
 - PSTs' tap positions, PST flow and HVDC set point inside the available range.
- intertemporal constraints may be considered to ensure consistency of results.

Criteria of selection for XNE and XRA

- XNE for CCR Hansa are selected according to the same process as defined in CCR Hansa CCM for DA and ID
- In CCR Hansa all RA are XRA, RA are designed as defined in CSAM article 14 JW/5
- CCR Hansa TSOs propose the relevant RA for CCR Hansa to the RSCs
- The RSCs and TSOs design relevant RA first and foremost based on the list of provided RA
- As Hansa CROSA is carried out in parallel with Core and Nordic CROSA by Core and Nordic RSC
- RAs are managed by CCR Core or by CCR Nordic (with respect to future inter-CCR rules of amendment to Art 27)
- CCR Hansa specific RA are related to the inherent features of the interconnectors

JWS How are RAs proposed? Could this be made more specific?

Jacques Warchet, 30/09/2019

Process overview of the Regional Coordination Process in Day Ahead

- The inter-CCR coordination process will be updated and tuned according to the amendment of CSAM art 27
- Current features of the inter-CCR process in CCR Hansa:
 - The Hansa ROSC process is to be integrated with Core and Nordic ROSC as Hansa is the bridge between these regions
 - Hansa ROSC is conducted by two RSC, TSCNET also RSC in Core and Nordic RSC also RSC Nordic, by taking Hansa XNE into account in parallel to Core and Nordic process.
 - Hansa TSO also apart of Core are to communicate with TSCNET and Hansa TSO also apart of Nordic with Nordic RSC
 - Updating and coordination is performed according to art 33 of CSAM and when RSC or TSO require

Process overview of the Regional Coordination Process in Intraday

- Process is inline with that described for Day Ahead

Process overview of the Regional Coordination Process after the last RSC-supported Intraday coordination (if necessary)

- Where security violations remain unsolved at the end of each coordination process, the concerned TSOs shall agree on the necessary remedial actions in real-time operation in order to coordinate the management of these remaining operational security limit violations.

Intraday timings and frequency

- TSOs with support of relevant RSCs jointly define the timings, frequency is at least three, in line with art 24 of CSAM.

Optimisation principles

- Remedial actions identified for relieving operational security limit violations:
 - shall not lead to additional violations of operational security limits on other network elements.
 - should not worsen existing operational security limits violations on other network elements.
- 1. First non-costly remedial actions are considered.
- 2. If there are no non-costly remedial actions which relieve operational security limit violations or their efficiency is insufficient
 - the RSC shall take into account also costly remedial actions
- The RSC define a merit order of the
 1. most effective
 2. economically efficient remedial actions

ID regional operational security coordination

Considerations for design and implementation of Nordic intraday regional operational security coordination process

- Go-Live of Nordic day-ahead Common Grid Model (D-1 CGM) is planned for end of December 2019.
- Go-Live of Nordic day-ahead regional operational security coordination is planned in January 2020.
- Hourly intraday regional operational security coordination requires a **fully automatized business process and security analysis.**