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**Explanatory document to “TSOs’ common methodology  
for regional operational security coordination in  
accordance with Article 76 and Article 77 of the  
Commission Regulation (EU) 2017/1485 of 2 August 2017  
establishing a guideline on electricity transmission  
system operation”**

**Version for NRA submission**

**19 December 2019**

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## 1. Introduction

The Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (hereafter referred to as “**SO Regulation**”) was published in the official Journal of the European Union on 25 August 2017 and entered into force on 14 September 2017. The SO Regulation sets out guidelines regarding requirements and principles concerning operational security, as well as rules and responsibilities for the coordination between TSOs in operational planning.

A major requirement of SO Regulation for Nordic CCR is the development of the methodology of Nordic regional operational security coordination (hereafter referred to as “**Nordic ROSC Methodology**” or “**NROSC**”) in accordance with article 76(1) of SO Regulation. Nordic ROSC Methodology also includes common provisions concerning the organisation of regional operational security coordination in accordance with article 77 of SO Regulation.

According to Article 6(3)(b) of SO Regulation, Nordic ROSC Methodology shall be submitted by the Nordic TSOs to the national regulatory authorities (hereinafter “**NRAs**”) latest by 21 December 2019. Nordic ROSC Methodology is subject to public consultation in accordance with Article 11 of SO Regulation. According to article 6(7) of SO Regulation the NRAs shall take a decision within 6 months after submission of Nordic ROSC Methodology.

This explanatory document has been developed in recognition of the fact that Nordic ROSC Methodology, which will become a legally binding document after NRAs’ approval, inevitably cannot provide the level of explanation, which some parties may desire. Therefore, this document aims to provide interested parties with background information and explanations for the requirements specified in Nordic ROSC Methodology.

Nordic ROSC Methodology provides reference to the following regulations and methodologies:

- Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (hereafter referred to as “**SO Regulation**”);
- Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (hereafter referred to as “**CACM**”);
- Common grid model methodology in accordance with articles 67(1) and 70(1) of SO Regulation (hereafter referred to as “**CGMM-v3**”);
- Methodology for coordinating operational security analysis in accordance with article 75(1) of SO Regulation (hereafter referred to as “**CSAM**”);
- Methodology for capacity calculation in accordance with article 20(2) of CACM Regulation (hereafter referred to as “**Nordic CCM**”);
- Methodology for coordinated redispatching and countertrading in accordance with article 35 of CACM. The respective methodology is the common Nordic TSOs’ methodology for coordinated redispatching and countertrading (hereafter referred to as “**Nordic CRC Methodology**”);
- Methodology for redispatching and countertrading cost sharing in accordance with article 74 of CACM. The respective methodology is the common Nordic TSOs’ methodology coordinated redispatching and countertrading cost sharing (hereafter referred to as “**Nordic CRCCS Methodology**”).

This explanatory document provides explanations developed in the following chapters:

- Chapter 1 - Introduction
- Chapter 2 - Legal requirements and interpretation
- Chapter 3 - The existing situation
- Chapter 4 - Proposal for regional operational security coordination
- Chapter 5 - Organisation for regional operational security coordination
- Chapter 6 - Impact assessment
- Chapter 7 - Implementation
- Chapter 8 - Public consultation
- Appendix: Responses to public consultations

## **2. Legal references and interpretation**

### **2.1 SO Regulation requirements**

Several articles in SO Regulation set out requirements which Nordic ROSC Methodology must consider. These are cited below.

1. Article 76(1) of SO Regulation constitutes the legal basis of Nordic ROSC Methodology. Article 76(1) has the following content:
  1. *By 3 months after the approval of the methodology for coordinating operational security analysis in Article 75(1)<sup>1</sup>, all TSOs of each capacity calculation region shall jointly develop a proposal for common provisions for regional operational security coordination, to be applied by the regional security coordinators and the TSOs of the capacity calculation region. The proposal shall respect the methodologies for coordinating operational security analysis developed in accordance with Article 75(1) and complement where necessary the methodologies developed in accordance with Articles 35 and 74 of Regulation (EU) 2015/1222. The proposal shall determine:*
    - (a) *conditions and frequency of intraday coordination of operational security analysis and updates to the common grid model by the regional security coordinator;*
    - (b) *the methodology for the preparation of remedial actions managed in a coordinated way, considering their cross- border relevance as determined in accordance with Article 35 of Regulation (EU) 2015/1222, taking into account the requirements in Articles 20 to 23 and determining at least:*
      - (i) *the procedure for exchanging the information of the available remedial actions, between relevant TSOs and the regional security coordinator;*
      - (ii) *the classification of constraints and the remedial actions in accordance with Article 22;*
      - (iii) *the identification of the most effective and economically efficient remedial actions in case of operational security violations referred to in Article 22;*
      - (iv) *the preparation and activation of remedial actions in accordance with Article 23(2);*
      - (v) *the sharing of the costs of remedial actions referred to in Article 22, complementing where necessary the common methodology developed in accordance with Article 74 of Regulation (EU) 2015/1222. As a general principle, costs of non-cross-border relevant congestions shall be borne by the TSO responsible for the given control area and costs of relieving cross-*

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<sup>1</sup> Methodology for coordinating operational security analysis in accordance with article 75 of CSAM.

*border-relevant congestions shall be covered by TSOs responsible for the control areas in proportion to the aggravating impact of energy exchange between given control areas on the congested grid element.*

2. Article 76(2) of SO Regulation constitutes the following:
  1. *In determining whether congestion have cross-border relevance, the TSOs shall take into account the congestion that would appear in the absence of energy exchanges between control areas.*
  
3. Nordic ROSC Methodology shall also provide common provisions concerning the organisation of regional operational security coordination. Article 77 of SO Regulation has the following content:
  1. *The proposal of all TSOs of a capacity calculation region for common provisions for regional operational security coordination pursuant to Article 76(1) shall also include common provisions concerning the organisation of regional operational security coordination, including at least:*
    - (a) the appointment of the regional security coordinator(s) that will perform the tasks in paragraph 3 for that capacity calculation region;*
    - (b) rules concerning the governance and operation of regional security coordinator(s), ensuring equitable treatment of all member TSOs;*
    - (c) where the TSOs propose to appoint more than one regional security coordinator in accordance with subparagraph (a):*
      - (i) a proposal for a coherent allocation of the tasks between the regional security coordinators who will be active in that capacity calculation region. The proposal shall take full account of the need to coordinate the different tasks allocated to the regional security coordinators;*
      - (ii) an assessment demonstrating that the proposed setup of regional security coordinators and allocation of tasks is efficient, effective and consistent with the regional coordinated capacity calculation established pursuant to Articles 20 and 21 of Regulation (EU) 2015/1222;*
      - (iii) an effective coordination and decision making process to resolve conflicting positions between regional security coordinators within the capacity calculation region.*
  2. *When developing the proposal for common provisions concerning the organisation of regional operational security coordination in paragraph 1, the following requirements shall be met:*
    - (a) each TSO shall be covered by at least one regional security coordinator;*
    - (b) all TSOs shall ensure that the total number of regional security coordinators across the Union is not higher than six.*
  3. *The TSOs of each capacity calculation region shall propose the delegation of the following tasks in accordance with paragraph 1:*
    - (a) regional operational security coordination in accordance with Article 78 [of SO Regulation] in order to support TSOs fulfil their obligations for the year-ahead, day-ahead and intraday time-frames in Article 34(3) and Articles 72 and 74 [of SO Regulation];*
    - (b) building of common grid model in accordance with Article 79 [of SO Regulation];*

- (c) *regional outage coordination in accordance with Article 80 [of SO Regulation], in order to support TSOs fulfil their obligations in Articles 98 [of SO Regulation] and 100 [of SO Regulation];*
  - (d) *regional adequacy assessment in accordance with Article 81 [of SO Regulation] in order to support TSOs fulfil their obligations under Article 107 [of SO Regulation].*
4. *In executing its tasks, a regional security coordinator shall take account of data covering at least all capacity calculation regions for which it has been allocated tasks, including the observability areas of all TSOs in those capacity calculation regions.*
  5. *All regional security coordinators shall coordinate the execution of their tasks in order to facilitate the fulfilment of the objectives of this Regulation. All regional security coordinators shall ensure the harmonization of processes and, where duplication is not justified by reasons of efficiency or by the need to ensure continuity of service, the creation of joint tools to ensure efficient cooperation and coordination between the regional security coordinators.*

## 2.2 Interpretation and scope of Nordic ROSC Methodology

Article 76 of SO Regulation defines the main requirements for the regional operational security coordination. Article 76(1)(a) of SO Regulation requires the definition of conditions and frequency for intraday coordination including updates of the common grid model. Article 76(1)(b)(i)-(v) of SO Regulation requires a methodology for the coordinated preparation of remedial actions. Article 77 of SO Regulation defines requirements about the organisation of regional operational security coordination such as appointment of regional security coordinator (hereafter referred to as “RSC”) and delegation of tasks to RSC.

In addition to SO Regulation requirements, CSAM defines several requirements which need to be considered by Nordic ROSC Methodology, such as:

- Identifying which remedial actions need to be coordinated, i.e. remedial actions which cannot be decided alone by a TSO but need to be agreed upon by other affected TSOs;
- Identifying which congestions on which network elements need to be solved at regional level under the coordination task delegated to an RSC, in accordance with article 78 of SO Regulation;
- Identifying which rules need to be applied to ensure inter-RSC coordination when RSCs provide their tasks to the TSOs;
- Requesting a minimum number of intraday security analyses to be done by a TSO (or delegated to its RSC).

According to article 76(1)(a) of SO Regulation, Nordic ROSC Methodology shall determine the conditions and frequency of intraday coordination of operational security analysis and updated common grid model to be published by Nordic RSC. This requirement would basically leave the Nordic TSOs the necessary freedom to determine their needs in terms of frequency and hours of intraday regional operational security coordination.

In order to ensure a minimal common pan-European approach, article 24 of CSAM includes a request for each TSO to run at least three coordinated operational security analyses for its control area in intraday. The minimum obligation of three updates of security analyses in intraday is consistent with the requirements set forth in the common grid model methodology, Version 3 dated 12 February 2018; (hereafter referred to as “CGMM-v3”). Article 4(3) of CGMM-v3 requests the TSOs to build individual grid models (hereafter referred to as “IGMs”) at least three times in intraday at the reference times 00:00h (CET), 08:00 (CET) and 16:00 (CET) covering the upcoming 8 hours. RSC is obliged to build corresponding common grid models

(hereafter referred to as “**CGMs**”). At regional level, additional frequency of IGM/CGM updates can be agreed upon in the methodology.

In day-ahead regional operational security coordination, the synchronisation and respective timings for the different steps of the coordination process are defined in article 33 of CSAM. The process described in article 33 of CSAM is primarily inspired by the existing processes performed by several TSOs and RSCs in Continental Europe considering several improvements enhancing the inter-RSC coordination. Nordic ROSC Methodology defines the Nordic day-ahead regional operational security coordination in accordance with article 33 of CSAM.

The methodology for the preparation of remedial actions managed in a coordinated way in accordance with article 76(1)(b)(i)-(iv) of SO Regulation shall define a procedure for exchanging information of the available remedial actions as well as the classification of constraints and remedial actions. The methodology shall also define the process for identification of the most effective and economically efficient remedial actions to resolve operational security violations efficiently and shall describe a process for preparation and activation of remedial actions. Finally, the methodology shall define provisions for sharing of costs for activation of remedial actions. The cost sharing methodology in accordance with article 76(1)(b)(v) of SO Regulation shall complement the Nordic CRCCS Methodology.

Nordic ROSC Methodology provides common provisions concerning the organisation of regional operational security coordination. The provisions define the appointment of the regional security coordinator (Nordic RSC) that will perform tasks for Nordic CCR, a framework for the organisation of the coordination between Nordic TSOs and Nordic RSC, the delegation of tasks to Nordic RSC and the coordination between Nordic CCR and adjacent CCRs such as Core, Hansa and Baltic and the coordination between Nordic RSC and other regional security coordinators.

The primary objectives of the Nordic day-ahead and intraday regional operational security coordination are the identification of violations of operational security limits on cross-border relevant network elements (XNEs) within Nordic CCR and the required cross-border relevant remedial actions (XRAs) to relieve these violations. Nordic ROSC Methodology defines the requirements for determination, preparation, assessment, coordination and activation of remedial actions.

### **3. The existing situation**

Nordic TSOs in coordination with Nordic RSC have defined several operational routines. The operational routines are driven by needs of Nordic TSOs’ for certain inputs for market hours and daily planning, but also by the commonly agreed activities at ENTSO-E level. The operational routines define a set of rules for yearly, monthly, weekly, D-2, day-ahead and intraday activities. Some of the operational routines require coordination with TSOs and RSCs of adjacent CCRs (e.g. CORESO, TSCNET, Baltic RSC) The main objective of the joint operational routines is to give a clear overview of the commonly performed coordinated business processes within Nordic CCR including descriptions of tasks and responsibilities of Nordic TSOs and Nordic RSC as well as timelines.

Nordic RSC is the service provider to the Nordic TSOs and provides services in accordance with the Multilateral Agreement (MLA) and Nordic ROSC Methodology.

Common Grid Model Exchange Standard (referred to as “**CGMES**”) Version 2.5 requires the inclusion of network element properties making dynamic simulations possible on the CGM. Furthermore, Power Transfer Corridors (PTCs) and System Integrity Protection Schemes (SIPs) will be part of the new standard.

This will widen the possible range for studies at the Nordic RSC regarding coordinated security analysis. But further extensions are required in order to fully cover the Nordic needs.

## **4. Methodology for regional operational security coordination**

### **4.1 Introduction**

In the mid-long-term perspective (year-ahead up to week-ahead), operational security analyses are mainly focused on the outage planning process to ensure that these outages will be compatible with a secure system operation. If necessary, operational security analysis is performed as part of the week-ahead adequacy assessment. SO Regulation provides requirements to perform these activities in a coordinated way. In the short-term perspective, i.e. day-ahead and intraday, operational security analyses mainly deal with the identification of violations of operational security limits, determine the appropriate remedial actions and ensuring the coordination of these remedial actions.

A very important step to assess security of supply is at the end of the day-ahead regional operational security coordination process. The process includes regional coordination within Nordic CCR, but also inter-CRR coordination through RSC coordination (Nordic RSC with RSCs of adjacent CCRs). The process allows the determination and preparation of remedial actions in a coordinated way at regional level and to identify and to elaborate on inter-CCR impacts of remedial actions and ensure agreement by all affected TSOs. The results of the regional operational security coordination process are to identify violations of operational security limits and agree on remedial actions which will be considered in subsequent regional operational security coordination.

### **4.2 Day-ahead and intraday regional operational security coordination**

Articles 23 and 33 of CSAM define requirements for a cross-regional day-ahead coordinated operational security assessment. The principles of articles 23 and 33 of CSAM are considered in the Nordic day-ahead regional operational security coordination. It was agreed amongst the Nordic TSOs to include the day-ahead regional operational security coordination in Nordic ROSC Methodology in order to provide a complete picture of the Nordic regional operational security coordination.

Nordic TSOs consider critical network elements (CNE) as the minimum set of cross-border relevant network elements within Nordic CCR on which violations of operational security limits will be identified and managed in a coordinated way amongst Nordic TSOs in coordination with Nordic RSC. The power transfer corridors (PTC), which are a set of several transmission lines or other network elements imposing a MW limit for operational security reasons, are classified as CNEs and therefore a subset of cross-border relevant network elements.

An important pre-requisite of Nordic day-ahead and intraday regional operational security coordination is the generation and exchange of day-ahead and intraday individual grid models in CGMES format. The individual grid models will be merged by Nordic RSC to the Nordic day-ahead common grid model.

Articles 24 and 34 of CSAM define requirements for a cross-regional intraday coordinated operational security assessment. The principles of articles 24 and 34 of CSAM are considered in the Nordic intraday regional operational security coordination.

The business process design of the Nordic intraday regional operational security coordination was driven by several considerations:

- Nordic business process design and operational routines for generating day-ahead individual grid models and building day-ahead common grid models;
- Nordic business process design and operational routines for day-ahead regional operational security coordination;
- Nordic intraday regional operational security coordination requires business process development and implementation of intraday individual grid model (ID IGM) and common grid model (ID CGM);

The following regulatory framework for the intraday regional operational security coordination is described in the following:

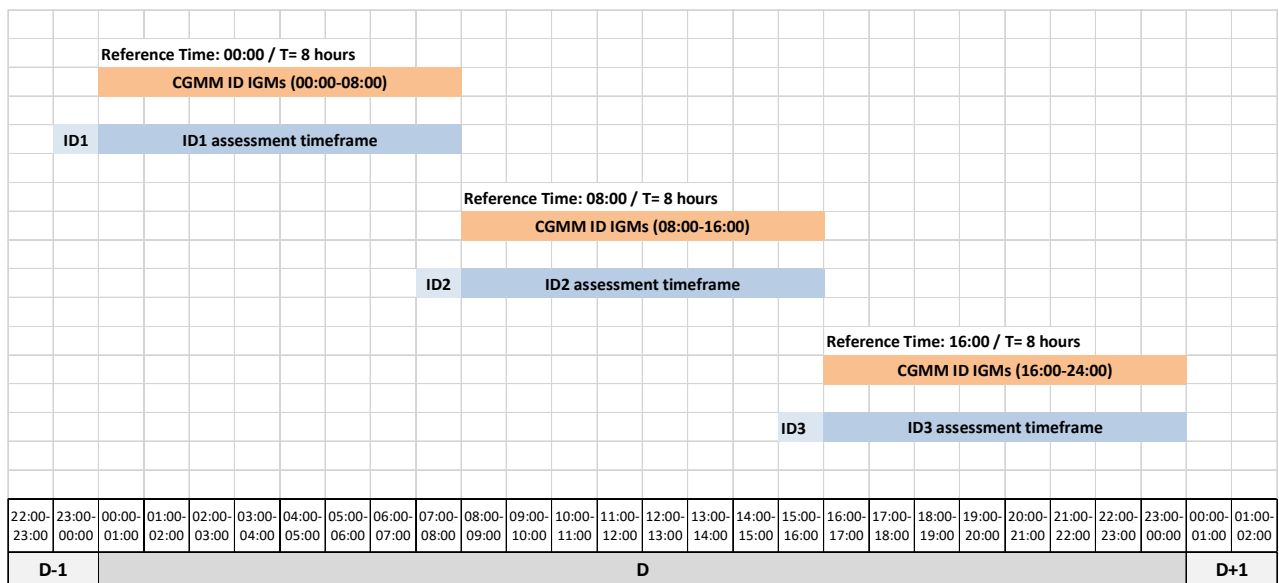
- Article 76(1)(a) of SO Regulation: Determination of conditions and frequency of intraday coordination;
- Article 24(1)(a) of CSAM: Determination of minimum number and hours of assessment runs in intraday timeframe;
- Article 24(2)(a) of CSAM: Minimum number shall be greater or equal to 3;
- Article 4(3) of CGMM\_v3: Build intraday IGM for each market time unit between the reference times (00:00h, 08:00h, and 16:00h) and the time eight hours later than the reference time;
- Article 4(4) of CGMM\_v3: CCR TSOs can define additional reference times and time T;
- Article 22(6) of CGMM\_v3: By 1 hour before the reference time IGM for each market time unit shall be made available via ENTSO-E OPDE;

In accordance with article 24(2)(a) of CSAM, Nordic TSOs have agreed upon to perform intraday regional operational security coordination three times a day at the reference times 00:00 (CET), 08:00 (CET) and 16:00 (CET). Article 4(3) of CGMM-v3 defines the minimum requirements for building individual grid models in intraday. NROSC Methodology has adopted this minimum requirement for the hours to be analysed during the three intraday coordinated regional operational security assessments:

- for reference time 00:00 (CET) all hours between 00:00 (CET) and 08:00 (CET);
- for reference time 08:00 (CET) all hours between 08:00 (CET) and 16:00 (CET);
- for reference time 16:00 (CET) all hours between 16:00 (CET) and 24:00 (CET).

The principles of the Nordic intraday coordinated regional operational security assessments are illustrated in the figure below:





In addition to the three intraday coordinated regional operational security assessments, Nordic TSOs and Nordic RSC may perform on request coordinated regional operational security assessments (e.g. in case of an unplanned outage of a relevant asset).

The business process workflow for Nordic intraday regional operational security coordination in Article 6 of NROSC is inspired by the Nordic day-ahead regional operational security coordination and follows basically the same design. Intraday regional operational security coordination will be implemented in all CCRs in accordance with the regional methodologies for the common provisions for regional operational security coordination. Nordic TSOs in coordination with Nordic RSC will aim at synchronising the business process workflow and timings of Nordic intraday regional operational security coordination at least with TSOs and RSCs of adjacent CCRs (such as Core CCR, Hansa CCR and Baltic CCR).

Article 4(4) of CGMM-v3 allows for additional reference times and a different time T. In the long-term perspective all remaining hours until the end of the day (different T) shall be analysed during the three intraday coordinated regional operational security assessments. In addition to intraday coordinated regional operational security assessments, Nordic TSOs in coordination with Nordic RSCs may also perform in the long-term perspective intraday regional security analysis at each hour (additional reference times) of the day for all remaining hours until the end of the day. The objective of such an intraday regional security analysis would be to provide Nordic TSOs each hour of the day with the latest information about the loading of the grid and previously undetected violations of operational security limits.

### 4.3 Individual and common grid model

A main pre-requisite for the regional operational security coordination processes is the preparation of IGMs and building of the Nordic CGM.

The IGMs will be prepared by each Nordic TSO. Nordic TSOs may include remedial actions in the IGM as a result of the local preliminary assessment and shall include remedial actions as a result of previous regional operational security coordination. The IGMs will be provided by each Nordic TSO to Nordic RSC. Nordic RSC has several obligations concerning the processing of the IGMs such as checking the consistency of the individual grid models and contact the concerned Nordic TSO in case of detected issues. Nordic RSC responsible for merging the IGMs and building the Nordic CGM.

#### **4.4 Remedial actions**

For assessing the cross-border relevance of remedial actions, Nordic TSOs will apply by default the qualitative approach. In case Nordic TSOs cannot agree on a qualitative approach, a quantitative approach in accordance with article 15(4) and article 15(5) of CSAM shall be applied.

The remedial actions to be considered in regional operational security coordination will be exchanged between the Nordic TSOs and Nordic RSC. If necessary, data and information on remedial actions will also be shared with TSOs and RSCs of adjacent CCRs.

In case of detected violations of operational security limits, Nordic RSC will propose, based on the coordinated regional operational security assessment, remedial actions to Nordic TSOs. Nordic TSOs have the possibility to reject a proposed remedial action. Nordic TSOs are obliged to provide an explanation for the rejection to the other affected TSOs and Nordic RSC.

Nordic TSOs will provide relevant information on technical effectiveness and costs of remedial actions to Nordic RSC. Nordic TSOs in coordination with Nordic RSC will optimize remedial actions in order to identify in a coordinated way the most effective and economically efficient remedial actions. The optimisation will aim at minimising costs for remedial actions and maximising the effectivity of a remedial action e.g. by computation of the flow sensitivity of a remedial action, localizing any remaining operational security limits violations, balancing the costs in order to ensure the selection of the most economically efficient and technically effective remedial action. Costly remedial actions will only be chosen to relieve operational security limits violations. The outcome of such an optimisation will be a merit order of the most effective and economically efficient remedial actions.

The agreed remedial actions will be activated in real-time operation or at the latest time compatible with their activation lead-time. It is possible to decline the activation of an agreed remedial action, if such a remedial action becomes unnecessary. In that case the declining TSO must provide an explanation for its decision.

Besides the coordination of Nordic TSOs and Nordic RSC, the coordination with TSOs and RSCs of adjacent CCRs is an important step of the inter-CCR coordination process. Nordic RSC is mandated by the TSOs to coordinate with RSCs of adjacent CCRs, when necessary. Since the scope of Nordic ROSC Methodology is primarily on the coordination within Nordic CCR, details of inter-CCR coordination could be defined in operational procedures between Nordic TSOs and TSOs of adjacent CCRs.

#### **4.5 Cost sharing**

The cost sharing principles of Nordic ROSC Methodology complement the Nordic CRCCS Methodology. Activated costly redispatching and countertrading measures shall be subject to Nordic CRCCS Methodology. Activated remedial actions which are not covered by Nordic CRCCS Methodology shall be subject to Nordic ROSC Methodology. Nordic ROSC Methodology provides rationales how activated costly redispatching and countertrading for secured elements are interpreted in Nordic CRCCS Methodology.

For cost sharing of activated costly overlapping cross-border relevant remedial actions between Nordic CCR and adjacent CCRs, Nordic TSOs may enter into separate cost sharing agreements with concerned TSOs of adjacent TSOs.

## **5. Organisation for regional operational security coordination**

### **5.1 Introduction**

In 2016, Nordic TSOs have entered into the “Cooperation Agreement regarding Regional Security Coordination in the Nordic region, Nordic RSC” (hereafter referred to as “**Nordic RSC Agreement**”) to establish the Nordic RSC. The Nordic RSC Agreement defines rules concerning the governance and operation of Nordic RSC in accordance with article 77(1)(b).

Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity defines the role and responsibilities of a regional coordination centre. If necessary, NROSC Methodology would need to be amended regarding governance and operation of a possible Nordic RCC.

### **5.2 Appointment and governance of the regional security coordinator**

In Nordic ROSC Methodology, Nordic TSOs appoint Nordic RSC as regional security coordinator of Nordic CCR in accordance with article 77(1)(a) of SO Regulation. Nordic RSC is the service provider of all Nordic TSOs and shall support the coordination with TSOs and RSC of adjacent CCRs. The Nordic RSC is located in Copenhagen.

### **5.3 Delegation of tasks**

Nordic TSOs delegate several tasks to Nordic RSC regarding building of common grid model, regional operational security coordination, regional outage coordination and regional adequacy assessment coordination.

Nordic TSOs in cooperation with Nordic RSC have already developed operational routines related to the tasks delegated to Nordic RSC.

### **5.4 Coordination with adjacent CCRs and RSCs**

Nordic RSC is mandated by Nordic TSOs to coordinate with RSCs of adjacent CCRs, when necessary. Since the scope of Nordic ROSC Methodology is primarily on the coordination within Nordic CCR, details of inter-CCR coordination related to the tasks delegated to Nordic RSC could be defined in operational procedures between Nordic TSOs and TSOs of adjacent CCRs.

## **6. Impact assessment**

Nordic TSOs in coordination with Nordic RSC will develop operational procedures and instructions related to the tasks delegated to Nordic RSC. Such procedures and instructions also define the relevant data to be exchanged and the frequency of the data exchange.

Some of the data to be exchanged according to NROSC may be subject to the Swedish Public Access to Information and Secrecy Act (2009:400). This may restrict the ability of Svenska kraftnät to exchange such data, and that such data may only be exchanged with the Nordic RSC or other TSOs once certain conditions are met.

## 7. Implementation

The implementation of Nordic ROSC Methodology considers the following steps:

1. Definition of the high-level business solution consisting, among others, specification and drafting of the business processes, performing gap analysis with the current situation, specification of functional and technical IT requirements to support the business processes;
2. Development of IT functions, functional acceptance test, site acceptance test and user acceptance test;
3. Implementation of business processes and IT functions and experimentation of the solution by Nordic TSOs and Nordic RSC experts and key users aiming at tuning the different parameters to ensure accuracy and robustness of the solution towards the acceptance criteria;
4. Parallel operational run where Nordic TSOs and Nordic RSC will train their operators and perform operational runs in parallel with the existing operational processes to assess the accuracy and robustness of the solution towards the acceptance criteria.

## 8. Public consultation

Article 11(1) of SO Regulation states that: *“TSOs responsible for submitting proposals for terms and conditions or methodologies or their amendments in accordance with this Regulation shall consult stakeholders, including the relevant authorities of each Member State, on the draft proposals for terms and conditions or methodologies listed in Article 6(2) and (3). The consultation shall last for a period of not less than one month.”*

Nordic ROSC Methodology was consulted the first time between 15 March 2019 and 15 April 2019. By the end of the first public consultation period, Nordic TSOs received only one response. The responses of the first public consultation are documented in the Appendix to this document.

ACER decision from 19 June 2019 on CSAM was the trigger for a major amendment of Nordic ROSC Methodology. This major amendment of Nordic ROSC Methodology has also considered, where relevant, the results of the first public consultation.

According article 11(1) of SO Regulation, Nordic TSOs were obliged to conduct a second public consultation to consult the major amendment of Nordic ROSC Methodology. The second public consultation of Nordic ROSC Methodology took place between 25 October and 25 November 2019. By the end of the second public consultation period, Nordic TSOs received no official response, however Nordic NRAs provided a shadow opinion though.

## Appendix: Official responses to public consultation

**Fehler! Verweisquelle konnte nicht gefunden werden.** summarises the responses received during first public consultation. In second public consultation no official responses were received.

No.	Company/Organisation	Responses	Response of Nordic TSOs
1	Martin Schröder (Dansk Energi)	<p>Article 5 All TSOs shall deliver the day-ahead individual grid model for building the common grid model. Why not in addition / instead all relevant information for the calculation of common grid model?</p> <p>Article 7 How are the unexpected events to be handled? How would the SE4 situation been handled, was this methodology applicable?</p> <p>Article 15-17 The process of preparing, identifying, and activating remedial actions outlined in article 15-17 is not clear. When and how should remedial actions be implemented? Article 17 is vague; "Each TSO shall activate the cross-border impacting remedial actions agreed in day-ahead and intraday regional operational security coordination processes in due time."</p> <p>Article 31 The purpose and content of the Impact Assessment is unclear and should be described in further detail.</p> <p>We consider the proposal for a counter trading to be very positive. The proposal refers to Article 13 of "COMMISSION REGULATION (EU) No 543/2013" regarding the publication of data: <a href="https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:163:0001:0012:EN:PDF">https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:163:0001:0012:EN:PDF</a></p>	<p>Regarding Article 5: Only the IGM is merged in the Common Grid Model.</p> <p>Regarding Article 7: Handled usual n-1 (planning phase) and unexpected events are handled in the operational phase (real-time), NROSC is related to the planning Phase, so that unexpected events are not part of NROSC.</p> <p>Regarding Article 15-17: The identification, preparation and activation of remedial actions has been revised in the final version of NROSC.</p> <p>Regarding Article 31: The impact assessment has been performed in accordance with SO Regulation.</p> <p>The context of the reference is not clear.</p>

No.	Company/Organisation	Responses	Response of Nordic TSOs
		<p>Even more transparency is desired with regards to the method itself and the choice between quantitative and qualitative analysis of operational reliability. In general, there is a danger that TSOs act too conservatively in values and therefore the requirement for transparency is vital. One example is the experiences from 23-24 Jan I SE4.</p> <p>On ID market. we think that the requirement for at least 3 updates of security analysis during the ID period is a good starting point. The risk we see with too few analyses per day is that the TSOs activate preventive measures too far into the future. Thus, a risk for contracted counter trade several hours in advance (as of January 23-24). While TSOs may decide to deactivate an action, or wait to activate, the risk is still high that the TSOs are too defensive. Consequences can be that market participants are shut out of the market or that they are bound up with restrictions. The TSOs should generally wait for measures to be as close to operating hours as possible.</p> <p>We note that the proposal does not seem to deal with the more urgent issue for the market - How and how often intraday capacity should be updated? That question should either be added alternative that the Regulators should monitor that it is handled in other parts of the regulations.</p>	<p>Nordic TSOs apply by default qualitative approach. If TSOs cannot agree, quantitative approach is applied. 5% threshold is applied in accordance with article 15(5) of CSAM.</p> <p>Minimum requirement of CSAM is three times a day.</p> <p>The agreed remedial actions will be activated in real-time operation or at the latest time compatible with their activation lead-time.</p> <p>Not a requirement of article 76/77 of SO Regulation.</p>

**Table 1: Responses received during first public consultation**