

## **SO network codes**

Reflection on the list of topics to be followed in SO-ESC

2nd SO -ESC meeting

Ljubljana, 6th June 2017

# Outline

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1. Context of EURELECTRIC's proposal
2. Analysis and decision requested

**ANNEX : list of articles**

# 1. Context of EURELECTRIC's contribution

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- During the kick-off (14/03/2017), ENTSO-E presented very important work in progress and work expected during coming months.
- Nevertheless, this work is mainly focused on IT applications (data & services), whereas SO GL evokes other aspects of the coordination between TSOs.
  - What should be the scope of monitoring by SO ESC?
- To contribute to the reflection, EURELECTRIC proposes, in this working document, a list of topics in SO GL satisfying the two conditions bellow:
  - ✓ Concern implementation (something to be established for application of SO GL)
  - ✓ Concern cooperation between TSOs

# 1. Context of EURELECTRIC's contribution

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- 2 limits in this contribution
  - Monitoring of the topics to be implemented **at national level** (without recommended or mandatory cooperation between TSOs) could also be discussed, but these topics are not listed here.
  - The same analysis for **Emergency & Restoration code** could be interesting, but it has not been done here.

## 2. Analysis and decision requested

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- The list of requirements/articles 'open' and transverse to several TSOs is provided in the ANNEX
- We note some typology of topics:
  - Agreement => **A**
  - Methodology => **M**
  - Specification of technical requirements => **S**
  - Other (reporting, list, studies etc.) => **O**
- These actions are requested for TSOs and ENTSO-E.
- Nevertheless, some parameters/values/engagements can have an impact for some grid users, in particular DSOs and Generators.
- This is why EURELECTRIC suggests that the SO ESC follows these actions with at least a regular information from ENTSO-E on:
  - ✓ The organization (geographical scope) for each coordination/cooperation expected
  - ✓ The preparation of these actions with main principles foreseen

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# Thank you

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# Annex

List of requirements/articles with actions  
transverse to several TSOs

# Annex – List of requirements/articles

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- **GENERAL PROVISIONS**

- ☐ **A** Agreements with TSOs not bound by SO GL, within 18 months - 13
- ☐ **O** Monitoring by ENTSO-E, according to list of relevant information to be communicated to ACER within 12 months - 14

- **OPERATIONAL SECURITY**

- ☐ **O** Additional remedial actions, report on activations and justifications - 22.2
- ☐ **A** Agreement on operational security limits for each interconnector – 25.4
- ☐ **S** Specification of confidential security plan with organization and means to mitigate risks with potential impacts on interconnected transmission systems - 26 (also linked to E&R code)
- ☐ **O** Contingency list – 33 & analysis – 34
- ☐ **S** Coordination on special protection scheme – 37.e
- ☐ **O** Dynamic stability, common study within 2 years – 39.1 & 3



# Annex – List of requirements/articles

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- **OPERATIONAL PLANNING**

- ☐ **M** Common grid models – 64 + methodology – 67, 69 & 70
- ☐ **O** Common list of year-ahead scenarios – 65
- ☐ (**O** Common list of week-ahead scenarios, if necessary – 69)
- ☐ **M** Quality control for grid models – 71
- ☐ **M** Methodology for standardization of operational security analysis, within 12 months – 75
- ☐ **O** Common provisions for regional operational security coordination – 76
- ☐ **O** Outage coordination (operational procedure) for each region – 83.1
- ☐ **O** Forecast for adequacy analysis available between TSOs (through ENSTO-E data environment) – 104
- ☐ **O** Contribution to summer/winter generation adequacy outlooks – 106.1& 2
- ☐ **O** Coordination between TSOs, if appropriate, for ancillary services (active power and reactive power)
- ☐ **M** Harmonised data format for data exchange – 114.2

# Annex – List of requirements/articles

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- **LOAD-FREQUENCY CONTROL and RESERVES**

- ☐ **A** Different operational agreements – 118 to 126
- ☐ **S** Specification of Frequency Restoration Control Error (FRCE) parameters for CE and Nordic synchronous areas – 128.1&4
- ☐ Common methodology to assess the risk of FRC exhaustion – 131.2
- ☐ **S** Common ramping period for different LFC areas in the same synchronous area – 136
- ☐ **S** Specification of LFC structure - 139 to 141
- ☐ **A** Agreement on roles & responsibilities for cross-border control processes – 149.2
- ☐ **S** Requirements for infrastructure – 151
- ☐ **A** Agreement for the operation of LFC (normal and alert states) – 152
- ☐ **S** FCR dimensioning and prequalification process – 153, 155.1
- ☐ **S** Assumptions, methodology and CBA for FCR minimum period - 156.11

# Annex – List of requirements/articles

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- **LOAD-FREQUENCY CONTROL and RESERVES**

- ☐ **S** Frequency Restoration Reserve (FRR): dimensionning – 157.1, requirements – 158.2, prequalification 159.1
- ☐ **S** Replacement Reserve (RR): dimensioning – 160, requirements – 161.2, prequalification – 162.1
- ☐ **A** Agreement for the exchange of FRR and RR – 165
- ☐ **A** Agreement for sharing FRR and RR – 166
- ☐ **A** Agreement on roles & responsibilities about reserve – 171.2
- ☐ Organization of exchange of reserve between synchronous areas – 173.2
- ☐ **A** Agreement for sharing the reserve between synchronous areas – 174
- ☐ **A** Agreement for LFC blocks on sharing FRR and RR between synchronous areas – 175
- ☐ **M** Methodology to determine the limits for the exchange of FRR with other synchronous areas – 176

# Annex – List of requirements/articles

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- **LOAD-FREQUENCY CONTROL and RESERVES**

- ☐ **M** Methodology to determine the limits for the sharing of FRR with other synchronous areas – 177
- ☐ **M** Methodology to determine the limits for the exchange of RR with other synchronous areas – 178
- ☐ **M** Methodology to determine the limits for the sharing of RR with other synchronous areas – 179
- ☐ **M** Methodology to correct the electrical time deviation 181.2

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