



Procedure for Critical Grid Situation in SEE region

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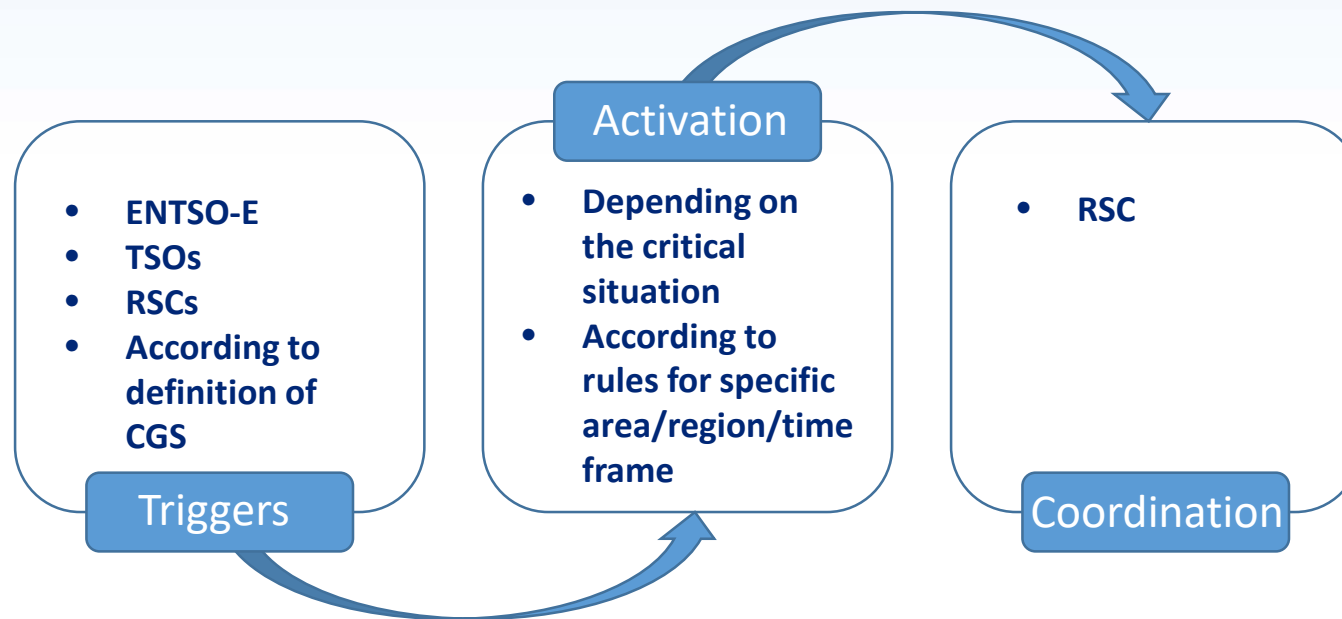
**Security of Supply Coordination Group -
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Definition of a critical grid situation

- ❖ A **Critical Grid Situation (CGS)** is a potential emergency state, c.f. SO GL article 18(3), identified in the operational planning phase. During a Critical Grid Situation the available regular countermeasures are exhausted and therefore TSO(s) are required to take regionally coordinated extraordinary countermeasures.
- ❖ Business process:

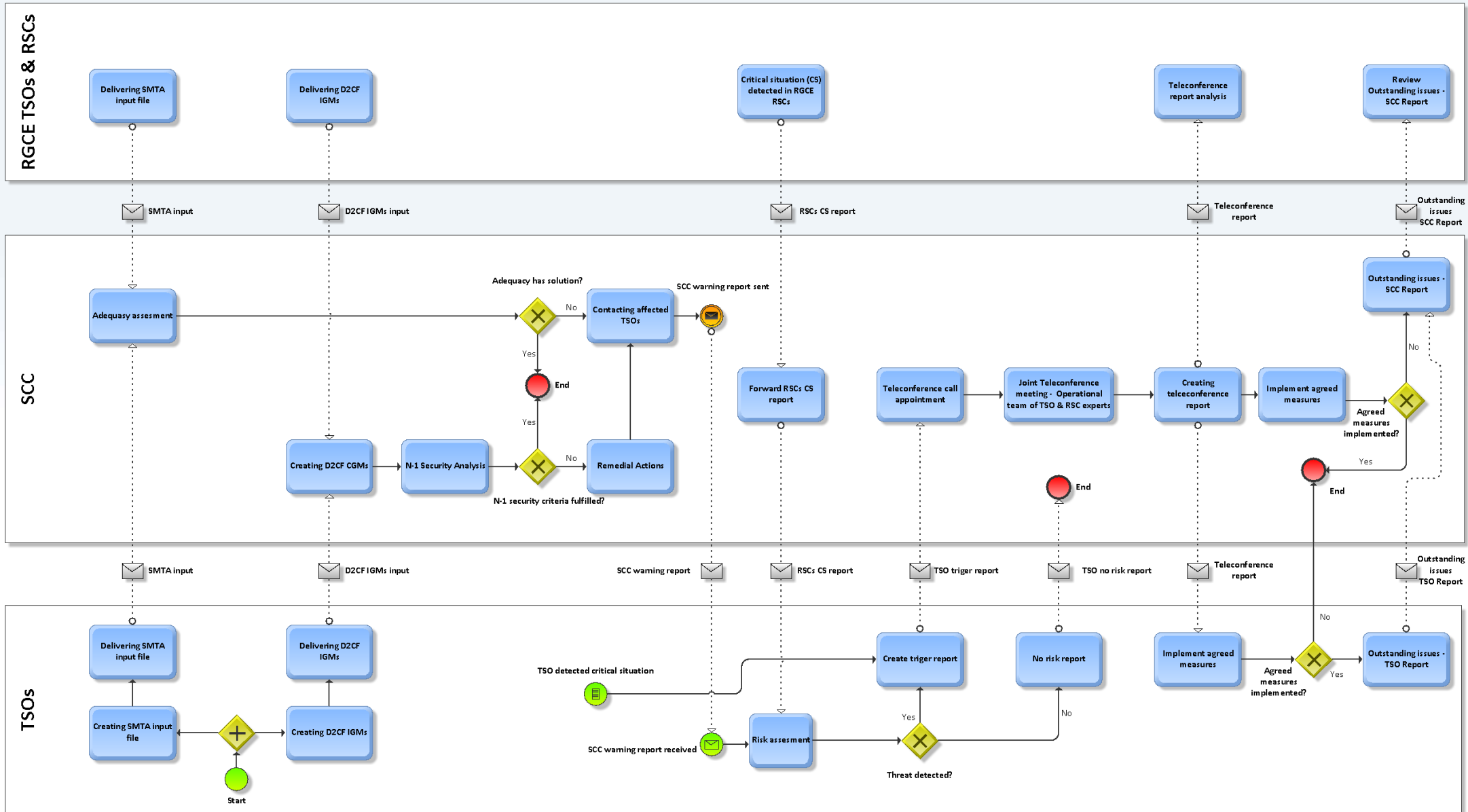


Procedure for Critical Grid Situations in SEE region

- ❖ **Main goal: definition of business activities and tasks of TSOs and RSCs in SEE region in case of CGS.**
- ❖ **Procedure applies to TSOs and RSCs that operate in SEE region as well as neighboring TSOs and RSCs.**
- ❖ **Responsibilities:**
 - **SEE TSOs**
 - **identification of CGS based on their own risk management;**
 - **input data delivery to SCC;**
 - **implementation of agreed measures;**
 - **SCC:**
 - **identification of CGS through regular SMTA process and security analysis performed on D-2 CGMs;**
 - **coordination during CGS.**



Business process diagram



Procedure for Critical Grid Situations in SEE region

❖ Detection of CGS and coordination process are according to Procedure:



Security analyses
on D-2 common
grid models



CGMA process



Daily rolling
process of week
ahead adequacy
assessment



Critical situation
identified by TSO



Process of
coordination and
information
exchange

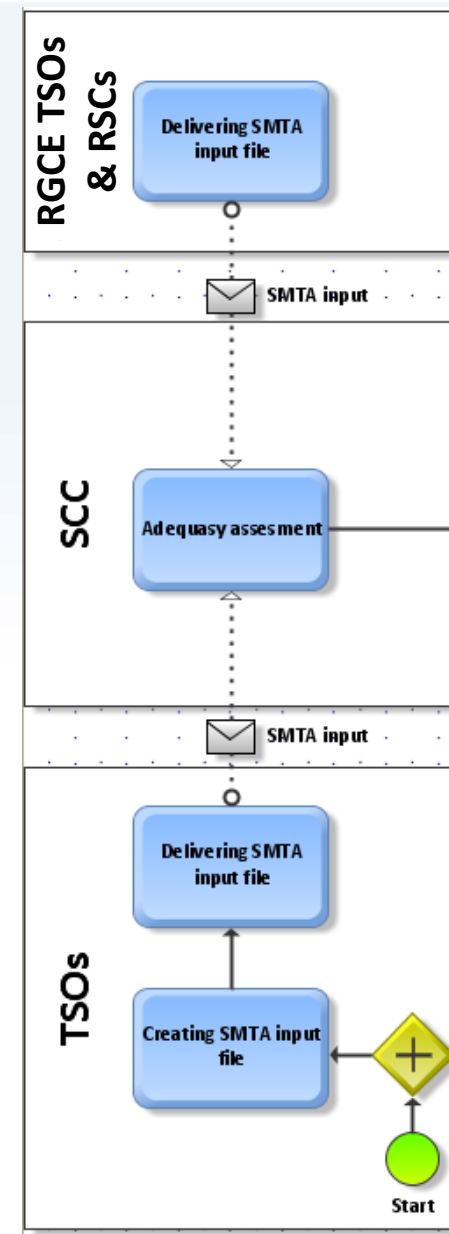


Analysis of critical
situation and
reporting

Triggers for CGS

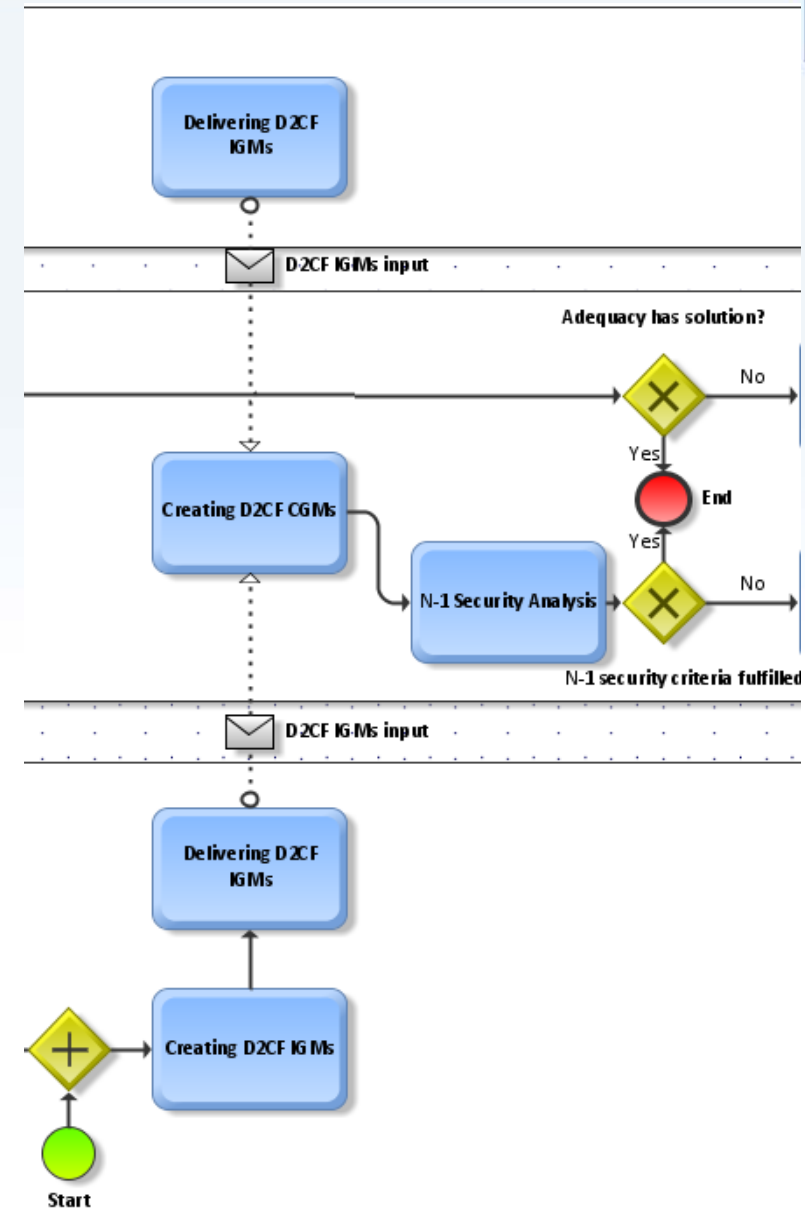
Triggering events – Adequacy assessments updating

- ❖ Currently Adequacy assessments are performed by RSCs on pan-European level every Friday for the following week.
- ❖ According to CGS Procedure TSOs update their adequacy assessments every day for the next seven days, according to the last available information (“moving window”), and deliver it to SCC, latest until 17h.
- ❖ SCC uses updated adequacy assessments delivered by TSOs to perform pan-European adequacy assessments with special emphasis on D-2.
- ❖ SCC delivers updated adequacy assessments to SEE TSOs until 22h for next seven days.



Triggering events – Security analysis performed on D-2 CGMs

- ❖ SEE TSOs are obliged to create D-2 IGMs, on daily basis for all 24 hours.
- ❖ It is necessary to agree upon daily download (before 18h) of all RG CE D-2 IGMs (created by Coreso and TSCNET TSOs).
- ❖ SCC creates CE D-2 CGMs in order to perform security analysis. Security analysis results are used for detection of possible CGS.
- ❖ SCC delivers security analysis results for all 24 hours before 22h. If some of RAs were used for resolving of detected violations, SCC will inform TSOs accordingly.



Additional criteria for identification of critical grid situation

- ❖ In accordance with risk management policies and specifically developed procedures of TSOs, additional criteria for identification of possible CGS are related with:
 - ❖ threatened security of supply (energy crisis);
 - ❖ potential emergency in transmission grid (due to forecasted extreme meteorological conditions, warnings from transmission system elements condition monitoring, etc.)
 - ❖ forecasted extreme operating conditions (e.g. extremely high or low load, etc.),
 - ❖ etc.
- ❖ In such situations, TSOs immediately inform SCC and deliver all available/relevant information.

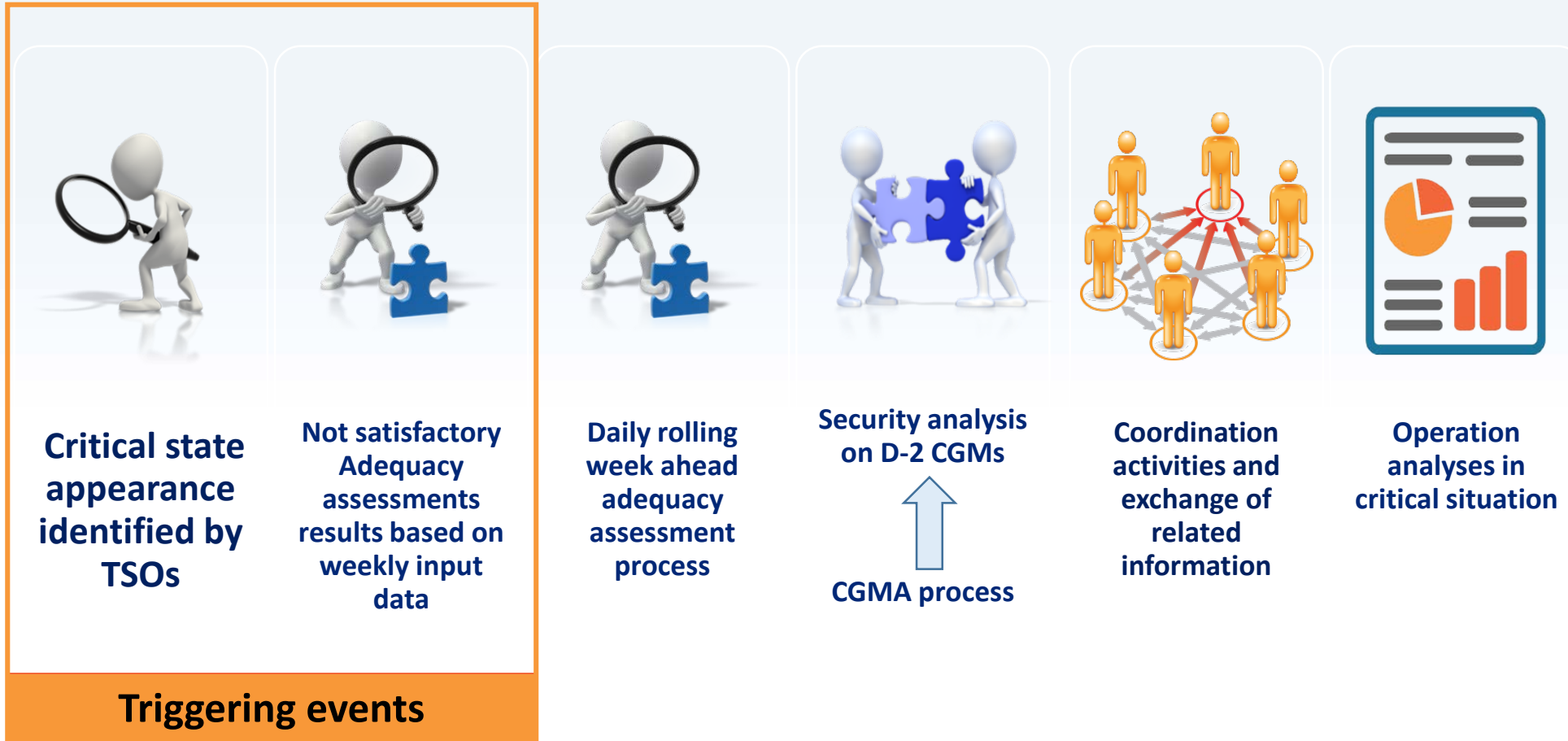
Implementation – from December 2017 (1)

- ❖ Based on TSOs response regarding required input data (majority of TSOs have not responded yet) it is obvious that provision of requested data (as per actual procedure) is not possible by majority of TSOs at this stage.
- ❖ In order to find viable solution at this stage, an adaptation of agreed procedure was necessary.

VIABLE SOLUTION

- ❖ Regular triggering events could be any of the following:
 - ❖ Critical state appearance identified by TSOs;
 - ❖ Not satisfactory adequacy assessments results based on weekly input data.
- ❖ In case any one of the above mentioned triggering events have occurred, SCC shall request TSOs to start providing daily input data as per the agreed procedure.
- ❖ The agreed procedure shall be followed until the end of CGS.

Implementation from December 2017 (2) – Summary



CGS test – December 2017

- ❖ Procedure is tested the first time in December 2017, target day 13th December.
- ❖ Trigger - simulation of outage of 400kV OHL Niš 2 – Sofia Zapad and 400kV OHL Niš 2 – Bor 2 in EMS and ESO IGMs.
- ❖ Potentially endangered TSOs: EMS, ESO, IPTO, MEPSO and TRANSELECTRICA.
- ❖ SEE TSOs delivered D-2 IGMs and SMTA input files on SCC request.
- ❖ SCC delivered calculation results to SEE TSOs.
- ❖ SCC organized teleconference with SEE TSOs where possible measures were discussed.
- ❖ The test was successful!

CGS test – December 2018

- ❖ **Procedure is going to be tested in December 2018, target day 20th December.**
- ❖ **Triggers - unsatisfied N-1 security analysis criteria in Serbian transmission system and high import in Albanian transmission system combined with some unplanned outages.**
- ❖ **Potentially endangered TSOs: EMS, OST, IPTO, CGES, TRANSELECTRICA and KOSTT.**
- ❖ **Coordination activities after simulated triggers by EMS and OST are going to be performed in the same way as in December 2017.**
- ❖ **Before test, contact list is reviewed, updated and shared among all TSOs.**

Conclusion

- ❖ **Procedure for CGS in SEE is active from December 2017, after successfully performed test in 2017.**
- ❖ **From December 2017 there was no need for Procedure activation.**
- ❖ **Procedure is tested periodically.**
- ❖ **The 2nd test is in progress.**

Thank you for your attention!

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