

# All TSOs' proposal for the methodology for coordinating operational security analysis developed in accordance with Article 75(1) of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a Guideline on Electricity Transmission System Operation

## Response to public consultation comments received during the consultation held 26 February – 6 April 2018

### Remarks:

- (i) identical comments from different stakeholders have been grouped where possible, to improve the readability;
- (ii) the final proposal for the methodology includes a new article numbered 4, the references to the articles and paragraphs in "ENTSO-E response" column are based on the new numbering in the updated version of the methodology.

| No | Article | Stakeholder comment  | Reviewer affiliation  | ENTSO-E response   |
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| 1. | 3       | <p><b>Article 3.1.a:</b> Change proposed: "1. The influence computation method has the following characteristics:<br/>a) It is able to characterize the influence of the absence of one network element, being a grid element, a power generation module, a demand facility connected to a TSO or transmission-connected DSO/CDSO network on the power flow or voltage of another transmission grid element."<br/>Explanation: The methodology focuses on the security of the transmission system. The influence computation is therefore necessary for grid elements connected to the transmission system.</p> <p><b>Article 3.1.b:</b> It is not clear what is meant by "other similar network models in terms of needed data". Data provided by stakeholders to TSOs should be used to build the Common Grid Model (CGM). The data, to our understanding, is not allowed to be used for any other purpose.<br/>Change proposed: the use of data to cover only CGM.</p> <p><b>Article 3.2:</b> The article does not mention DSOs, but it seems that some of the DSOs assesses / SGUs could be irrelevant for its TSO (for outage and security analysis), but could be included in the data required by another TSO for outage coordination.<br/>We propose bilateral discussions with DSOs on this matter.</p> | innogy SE, Grid& Infrastructure, E.ON SE, eurelectric, BDEW German Association of Energy and Water Industries | <p>3.1.a: We agree with the remark. Following this remark, CSAM has been updated in Article 3.1.a.</p> <p>3.1.b: Computations for determination of observability area will be performed on CGMs established according to Article 67 of SO GL for horizontal/diagonal direction. For vertical direction, if TSO-DSO do not agree on qualitative approach, quantitative assessment shall be done either on CGMs established according to Article 67 of SO GL or on TSO model which may be an IGM or TSO model with representation of necessary parts of DSO grids which influence on the TSO grid elements has to be assessed. Data provided will be used for this task. However, if TSO identifies that DSO grid has influence on security of the interconnected system it will have right to model it in its IGM. The wording in CSAM in the Article. 3.1.b have been adopted to make it more clear which models will be considered in the assessment.</p> <p>3.2.: In diagonal assessment of influence factors, which will be performed on CGMs established according to Article 67 of SO GL and complemented as needed as requested by Article 3</p> |

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|    |         | <p><b>Article 3.3:</b> Change proposed: "Each TSO shall have the right to use voltage influence factors in the determination of its observability area, external contingency list and/or proposal of relevant asset list in case it is necessary to correctly assess the operational security of the control area compared to the assessment by power flow."<br/>Explanation: It is unclear to stakeholders under which circumstances and by which criteria a TSO decides to use voltage influence factors. As the use of voltage influence factors may lead to larger observability areas and thus to higher costs for stakeholders, they should only be used if necessary.</p> <p><b>Article 3.6:</b> Change proposed: "Each TSO may decide to use dynamic studies to assess influence of the grid elements, power generating modules, and demand facilities located in transmission-connected DSOs/CDSOs grids in case it is necessary to correctly assess the operational security of the control area compared to the assessment by power flow and voltage influence. In such a case, the TSO shall use models, studies and criteria, consistent with those developed in application of Articles 38 or 39 of SO GL, and in the case where one or more elements are identified as relevant, the concerned TSO shall inform its NRA of the elements identified with reasoning supporting this result."<br/>Explanation: It is unclear to stakeholders under which circumstances and by which criteria a TSO decides to use dynamic studies. As the use of dynamic studies lead to higher costs for stakeholders for providing dynamic models of their assets etc., they should only be used if necessary. Furthermore, we would very welcome if TSOs could harmonize thresholds for assessing the influence of assets for dynamic studies as well.</p> <p><b>Article 3.7:</b> Change proposed: "Each TSO shall inform the concerned transmission-connected DSOs/CDSOs about the decision to compute power flow and/or voltage influence factor of grid elements of their systems or of power generating modules and demand facilities connected to these DSO/CDSO systems, and shall be entitled to ask these DSOs/ CDSOs for technical parameters and data that can allow the inclusion of at least part of their grids in the TSO's grid models. If the DSOs compute power flow and/or voltage influence factor of grid elements connected to the distribution system themselves, the TSO computation shall base on the results."<br/>Explanation: Due to increased requirements for the integration of renewable energy sources DSOs start to compute power flow and/or voltage influence factor on their own. In order to avoid double calculation with possibly different result and with the aim to avoid additional costs, the TSO shall be entitled to use the results of the DSO computation.</p> |                      | <p>paragraph 11 of CSAM, data is necessary to run influence computations to identify potential assets, which would be relevant for later outage coordination process. Providing the data once to make the influence computation does not mean that these elements will be necessarily identified as subject to outage coordination. (DSO elements, which will be part of TSO IGM, are those for which TSO identifies influence on security of the interconnected system). Note also that based on the respective threshold ranges for defining thresholds for observability area and relevant assets, it is not possible that a DSO element would not be identified as part of the OA of its connecting TSO and would be identified as a relevant asset for another TSO.</p> <p>New paragraph has been added to CSAM to make more clear that TSOs shall have right to compute the influence factors in diagonal direction.</p> <p>3.3.: we agree to update CSAM to add the conditions where a TSO should use voltage influence factors.</p> <p>3.6.: We agree that more transparency should be provided in case TSOs choose to use dynamic studies to assess influence of the grid elements, power generating modules, and demand facilities in all three directions. CSAM has been updated and new Article 4, which describes use of dynamic studies, has been introduced.</p> <p>3.7.: We cannot follow this remark. SO GL requires from each TSO to define its observability area, external contingency list and to provide proposal of relevant assets for each outage coordination region it is part of. In line with this fact, they are responsible for ensuring security of the system, which depends on the quality of</p> |

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|    |         | <p><b>Article 3.8:</b> Change proposed: "Each TSO shall agree with the concerned transmission-connected DSOs/CDSOs about the decision to use dynamic studies to assess influence of the grid elements, power generating modules, and demand facilities located in transmission-connected DSOs/CDSOs grids and shall be entitled to ask these DSOs/ CDSOs for the corresponding technical parameters and data"</p> <p>Explanation: As far as dynamic studies are necessary both, the TSO and the DSO, are affected or at least face the same challenges in their network area. A joint decision is the best way to ensure a cooperation on equal footing.</p> <p><b>Article 3.9:</b> Change proposed: "When requested according to paragraphs 7 or 8, each transmission-connected DSO/CDSO shall provide a coherent set of data to enable the connecting TSO to incorporate the required part of their systems in its individual grid models established pursuant to paragraph 12."</p> <p>Explanation: National grid models are not defined in the methodology. Such national models constitute a source of legal uncertainty and intransparency to stakeholders. They cause higher costs to stakeholders, as they will have to provide at least two sets of data, one for the IGM and one for the national model.</p> <p><b>Article 3.11:</b> Change proposed: "When computing the influence of grid elements, power generating modules, and demand facilities located in transmission-connected DSOs/CDSOs which are connected to its control area, in order to determine whether they are part of its observability area, each TSO shall use the common grid models established according to Article 67 of the System Operation Guidelines; these models shall be complemented as needed pursuant to paragraph 7."</p> <p>Explanation: National grid models are not defined in the methodology. Such national models constitute a source of legal uncertainty and lack of transparency to stakeholders. They cause higher costs to stakeholders, as they will have to provide at least two sets of data, one for the IGM and one for the national model.</p> |                      | <p>this information. As such, only TSOs can make the relevant influence computations and select appropriate thresholds.</p> <p>3.8.: For the reasons mentioned in previous answer, the decision for using dynamic studies shall remain at the TSO but CSAM has been updated to provide more transparency in case TSOs choose to use dynamic studies to assess influence of the grid elements, power generating modules, and demand facilities in all three directions. In addition to that, a new Article 4, which describes conditions for a TSO to use dynamic studies for determining influencing elements, has been introduced.</p> <p>3.9. Computation of influence factors in vertical direction covers very different situations. In some cases, the vertical computation cannot be done on a pure IGM/CGM but needs to be done on a more detailed model (e.g. including part of TSO owned system which is below 220 kV). This computation is done on extended TSO model which may be an IGM or TSO grid model with representation of necessary parts of DSO grids which influence on the TSO grid elements has to be assessed. Data needed for this task have to be provided once, limited to the necessity of the computations (not all the DSO grid description is needed) and additional exchanges are not needed for those who will not be identified as part of the observability area. In that sense CSAM has been updated accordingly.</p> <p>3.11.: Please see previous answer on 3.1.b comment.</p> |
| 2. | 3       | <p><b>A3(6)</b></p> <p>Dynamic models are not necessary for the determination of the influencing factors in Appendix 1.</p> <p>What additional information is expected by using dynamic models in terms of network interference?</p>  | Axpo Power AG        | <p>3.6.: The Annex I in CSAM does not cover the case of dynamic studies used in particular cases to establish influence of a given network element. As mentioned in CSAM, this kind of evaluation is a "case by case" one, and cannot be defined in a general manner, nor can thresholds be provided.</p>  |

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| 3. | 3       | <p><b>Article 3.8</b><br/>This should not be a carte blanche to ask for new data. Only data that is allowed for in the national implementation of SOGL Articles 40-53 can be legally requested.<br/>"...and shall be entitled to ask these DSOs/ CDSOs for the corresponding technical parameters and data as prescribed in the national implementation of SOGL Articles 40 to 53..</p> <p><b>Article 3.9</b><br/>As 3.8 above.<br/>"When requested according to paragraphs 7 or 8, each transmission-connected DSO/CDSO shall provide a coherent set of data the relevant data, as provided for in the national implementation of SOGL Articles 40 to 53, to enable the connecting TSO to incorporate the required part of their DSO/CDSO systems in its national grid models or in its individual grid models established pursuant to paragraph 12."</p> | Energy Networks Association | <p>We cannot follow your proposal for the following reason:<br/>CSAM provides the method to identify the observability area, including in the vertical direction. This method requires to apply, where needed, an influence computation or a dynamic assessment, for which the TSO needs structural data .<br/>If the available structural data were limited to those defined pursuant to Article 40(5) of SO GL at national level, it is clear that any evaluation of potential influence of other elements would not be possible.</p> <p>Indeed, the global process can be seen as the following one:</p> <ol style="list-style-type: none"> <li>(1) Identify the components of the vertical/diagonal observability area using the needed data of the potential components of this observability area</li> <li>(2) Define on a national basis the scope of data to be exchanged pursuant to Article 40(5) (notably for real-time data exchange), to be applied on the components previously identified as part of the observability area.</li> </ol> |

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| 4. | 3       | <p>EDF wonders about the handling of uncertainties in the methodology. Indeed, the way (realistic) contingencies, remedial actions and margins are dealt with requires coherence and transparency.</p> <p>As regards the margins: the use of margins on results, similar to reliability margins used in capacity calculation is discussed only in the explanatory note, which has no legal value, and not in the methodology itself. In order to not introduce a discriminatory treatment between "limiting cross-border exchanges" (through capacity calculation or through security analysis) and "redispatching" (through security analysis), it is important that the same Common Grid Model (CGM) and margins are applied to both capacity calculation and coordinated security analysis.</p> <p>As regards contingencies and remedial actions: EDF would welcome more clarity on how the N-1 principle will be applied:</p> <ul style="list-style-type: none"> <li>- The fact that critical contingencies are listed ex-ante is welcome. They should be fully transparent for market participants.</li> <li>- EDF wonders whether (costly) remedial actions are considered in the face of possible contingencies before deciding that a situation should be corrected with (preventive) remedial actions. EDF also considers that before the operational window, and as long as the potential of remedial actions (costly or not) could be sufficient to restore secure operation, N-1 contingencies should always be disregarded.</li> </ul> <p>EDF proposes the following amendment:</p> <p>Include in TITLE 2 a subsection on how TSOs assess the potential for remedial actions so that Regional Security Coordinators (RSCs) can assess whether a contingency is effectively critical or not. In line with that, EDF considers that the proposed methodology for "influence computation" should be less conservative and not systematically take into account N-2 situations (simulation of the loss of both the asset analyzed and the outage of all elements).</p> | EDF                         | <p>The first part of the comment deals with various large topics which are not related to article 3. Answers are provided in the related comments, notably comments number 14, 18, 22, 23, 26.</p> <p>The second part of the comment refers to the process of influence factor computation and questions "n-2" approach. There is a confusion between "N-1" or "N-2" contingency analysis run in security analyses (run in day-ahead, intraday and real time) which simulates the system in case of the loss of one (or several) elements and the fact that the influence computation studies a situation derived from the full availability of all the assets of the system, in which a planned unavailability of one element (noted "i") is considered; then the influence of an element "r" is examined by checking the change of flows with and without this "r" element. It also represents a minimum approach as in reality usually more than one element is out of operation.</p> |
| 5. | 4       | <p><b>Article 4(6) a</b></p> <p>It is not clear what "one influence factor higher" means. 1%? Or something else? Also "correspondent" should probably be "corresponding".</p> <p><b>Article 4.12</b></p> <p>A five year refresh cycled seems far too long; particularly when DSOs and SGUs are updating the observability area structural data every six months. The refresh cycle should match the update cycle.</p>   | Energy Networks Association | <p>4.6.: It means as long as the influence factor computed is higher than the chosen threshold, the grid element is selected and will be part of corresponding list. Wording in Article 5.6 of CSAM has been changed.</p> <p>4.12.: The computation and process of identification of TSOs observability area is very time consuming process, which does not seem necessary to be run frequently. Between two mandatory calculations, an automatic inclusion requirement is defined in CSAM. Nevertheless, it makes sense to give the possibility to the owner of the element to request a computational evaluation. In</p>   |

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|    |         |  |   | <p>that sense, Article 5 of CSAM has been changed in order to give this possibility to the owner of the asset.</p> <p>The requirement to update structural data every six months is a requirement of SO GL which aims at ensuring the use of updated data on the elements of the observability area. As explained before, there is no need to align the frequency of updates of the observability area definition with this update of the data, these are two different processes with different aims.</p>  |
| 6. | 4       | <p><b>Article 4.2:</b> Change proposed: "2. Each TSO shall have the right to agree with each transmission-connected DSO/CDSO of its control area what are their grid elements and power generating modules and demand facilities connected to this DSO/CDSO which will be part of its observability area based on qualitative assessment."</p> <p>Explanation: The DSO knows best which grid elements should be included in the observability area. If the TSO decides alone about the grid elements connected to the DSO/CDSO it will cause data exchanges that are not necessary and consequently cause additional costs. An agreement between TSO and DSO ensures an efficient amount of data exchange. The clear threshold values listed in Annex 1 enable both parties to agree on the necessary grid elements. 'Agreement' is clearer in its meaning from a legal point of view, while 'coordination' tends to be interpreted differently, depending on the interests of the interpreting party.</p> <p><b>Article 4.3:</b> Change proposed: "Where deemed necessary by the TSO, this TSO shall agree with each non-transmission-connected DSO/CDSO of its control area and its connecting DSO what are their grid elements and power generating modules and demand facilities connected to this DSO/CDSO which will be part of its observability area based on qualitative assessment."</p> <p>Explanation: The methodology should state a clear way to determine the grid elements belonging to the observability area. With this Article the TSO shall decide after all. Hence, the cooperation tried to implement in the former article is hypocritical. The DSOs favor a clear statement of cooperation and support an agreement. There is no reason, why an agreement should not be possible. An agreement between TSO and DSO ensures an efficient amount of data exchange. The clear threshold values listed in Annex 1 enable both parties to agree on the necessary grid elements. 'Agreement' is clearer in its meaning from a legal point of view, while 'coordination' tends to be interpreted differently, depending on the interests of the interpreting party.</p> | innogy SE, Grid& Infrastructure, E.ON SE, eurelectric, BDEW German Association of Energy and Water Industries | <p>4.2. : We agree with your comment. Article 5.2 of CSAM has been updated accordingly. However, if no agreement between TSO-DSO is found on qualitative approach, TSO will still need to perform quantitative assessment of DSO elements.</p> <p>4.3: we also agree with your proposal, and it has lead us to align the cases of transmission-connected DSO/CDSO and non transmission connected, in the sense that, in all cases, if there is no agreement, a computation of the influence factors will be applied.</p> <p>4.4. : We cannot accept the proposal. The qualitative approach based on a common agreement is a simple practical solution we believe fits for the majority of TSOs and DSOs. But, in case of disagreement for a qualitative definition of the observability area, in line with SO GL Article 75.2, the TSO has to determine by computation the relevant part of the observability area, using</p> |

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|    |         | <p><b>Article 4.4:</b> Change proposed: Delete: "If the TSO and the concerned transmission-connected DSO/CDSO do not agree, the identification of elements will be done in accordance to Article 3."</p> <p>Explanation: As explained in the comments to Art. 4 Number 2 and 3 the DSO support a cooperation on equal footing. Art. 4 Number 4 is unnecessary. It also represents an extreme burden and cost to DSOs, as they would have to revise their whole network model to make it compatible to TSO's (IT-)processes. It is inappropriate, as the model is only used for one single computation of influence. It would be much more cost-efficient if the DSO would compute these influence values on its own. Such an approach does not need any conversion to different formats etc.</p> <p><b>Article 4.5:</b> Change proposed: "Each TSO shall select threshold values inside the range of observability thresholds listed in Annex 1 that it shall use to determine its observability area in application of paragraph 6 and 7. The threshold values shall be identical regardless of the grid element of which the influence is assessed. The TSO shall publish on its web site those threshold values in time with the application of paragraph 1."</p> <p>Explanation: Thresholds should be the same regardless which grid element is assessed to provide non-discrimination and transparency.</p> <p><b>Article 4.7:</b> Change proposed: Delete: "A TSO shall have the right to discard some grid elements identified in accordance with paragraph 6.a, provided their influence factor is not higher than the maximum value of the range of thresholds defined in Annex 1."</p> <p>Explanation: It is unclear to stakeholders why certain grid elements are discarded while others are not. From our perception such a provision is a source of legal uncertainty, lack of transparency and discrimination. There should be at least a unique condition to be met before this right is used.</p> <p><b>Article 4.8:</b> Change proposed: "In addition, each TSO shall include in its observability area all power generating modules and demand facilities which are SGUs and connected to the busbars identified in paragraph 6, provided that the demand facilities and SGUs have an influence factor higher than the correspondent observability influence threshold values selected pursuant to paragraph 5."</p> <p>Explanation: The article refers to all SGUs connected to busbars identified in paragraph 6. SGUs can include generation units with installed capacity down to 0.8 kW. Those generation</p> |                      | <p>same formulas and same thresholds, which were used for definition of the observability area in the in case of TSO-TSO assessment. With your proposal, there would be no solution found to define the observability area in vertical direction. Based on the results, DSOs will have to provide data on the observability area elements, not a "whole network model".</p> <p>4.5.: We agree with your remark. The Article 5.5 of CSAM has been changed accordingly.</p> <p>4.7. : This possibility is needed to avoid bias effects of the imperfections of the computation method: e.g. a far element could be selected "alone" and if we cannot discard it, then all the elements between it and the rest of the observability area will be automatically added to the observability area. Therefore, to avoid unnecessary exchange of data and relevant costs, we think that it is in the interest of all parties (TSOs, DSOs, SGUs) to give this flexibility.</p> <p>4.8.: Article 5.8 has been deleted as the provision of real time data for the busbars identified as part of TSO's observability area according to Article 5.7.h is described in Articles 42.(2) and 44 of SO GL.</p> <p>In your example we do not expect that any busbar with so small connected generator will be identified as part of the OA.</p> |

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|    |         | hardly significantly influence power flows in the transmission system. Costs will exceed the benefits. |                      |                  |



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| 7. | 4       | <p>In EDF's view, in case of inclusion of an asset in their observability area on a qualitative basis, TSOs should be fully transparent about the information and the method used. Paragraph 5 states that the TSOs shall select threshold values inside the range of observability thresholds. EDF wonders if whether the use of different threshold values by each TSO does not lead to unequal treatment of assets. In any case, EDF considers that the selection of the threshold values should be approved by NRA.</p> <p>EDF would like to add the following sentence at the end of the 2nd paragraph: "The threshold values selected by the TSO shall be approved by NRA".</p> <p>Finally, the influence factor computation is very sensitive to the assumptions used. Therefore EDF considers that TSO shall describe the main assumptions used for the influence computation method. In particular, the Generation Shift Key used by the model could be very important. Indeed, when simulating the loss of a given production asset, the model seeks to compensate the same amount of production by means of other production units. An assumption on this topic is then needed (e.g. whether all the groups in the control increase their production or only a given asset increases its production based on the merit order). The first option (all the groups increase their production) should take into account the physical limit of each asset i.e. the maximal active power. EDF's point of view is that this assumption should be written explicitly in the method and be subject to justification by TSOs. The other input is the set of scenarios/contingencies to be taken into account (see Article 14).</p> | EDF                  | <p>We agree to add in the Annex I of RAOCM the description of how the generation provided by an "r" generator is replaced for computing the influence factors. As we analyse the influence factor of a generator as a future "relevant asset" which planned outage consequences are evaluated (with respect to other simultaneous planned outages), this compensation is done inside the control area.</p> <p>In addition to that, chapter 3.5 of the supporting document has been updated with reasons why flexibility in the selection of the threshold is needed.</p> <p>Note that Annex I of CSAM was updated and now provides only the method for computing influence factors of grid elements.</p> |
| 8. | 4       | <p><b>Article 4.12:</b> A five year refresh cycle seems far too long; particularly when DSOs and SGUs are updating the observability area structural data every six months.</p> <p>Change proposed: The refresh cycle to match the update cycle.</p>  | eurelectric          | Please see answer to comment 5.  |

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| 9. | 4       | <p><b>Art. 4 Number 1</b><br/>           "By 3 months after the approval of this methodology, each TSO shall define its observability area in accordance with Article 3 and the following paragraphs. "</p> <p><b>Art. 4 Number 2</b><br/>           "2. Each TSO jointly agrees with each transmission-connected DSO/CDSO of its control area what are their grid elements and power generating modules and demand facilities connected to this DSO/CDSO which will be part of its observability area based on qualitative assessment. "</p> <p>Explanation<br/>           The DSO knows best which grid elements should be included in the observability area. If the TSO decides alone about the grid elements connected to the DSO/CDSO it will cause data exchanges that are not necessary and consequently additional costs. An agreement between TSO and DSO ensures an efficient amount of data exchange. The clear threshold values listed in Annex 1 enable both parties to agree on the necessary grid elements. 'Agreement' is clearer in its meaning from a legal point of view, while 'coordination' tends to be interpreted differently, depending on the interests of the interpreting party.</p> | BDEW German Association of Energy and Water Industries | Please see answer to comment 6.   |
| 10 | 5       | <p>Article 5.4<br/>           Lack of clarity:<br/>           "Each TSO shall have the right to complement its external contingency list with transmission connected generating modules and transmission connected demand facilities identified in accordance with Article 4(8)".</p>   | Energy Networks Association                            | We mean that an external contingency list established by a TSO is mainly a list of grid elements, in general deemed as sufficient to capture risks on its control area. But this requirement provides a possibility to increase the list to assess impacts of contingencies affecting external injections. We have slightly updated the requirement of Article 6(4) to make it clearer: "...list with <i>any of</i> the generating modules and demand facilities identified in accordance with Article 5(8)". |
| 11 | 5       | <p>Article 5.4: Change proposed: Each TSO shall have the right to complement its external contingency list with transmission connected generating modules and transmission connected demand facilities identified in accordance with Article 4(8).</p>  | eurelectric  | Thank you for your remark. The wording "transmission connected" has been deleted in this paragraph because we do not want to limit the external contingency only to transmission connected generating modules and transmission connected demand facilities, since it cannot be excluded that the TSO needs to assess the impact of the system security of an injection connected to   |

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|    |         |  |                       | DSO systems. However, an element being part of external contingency list does not affect the respective owner in any way, as only elements of observability area shall be selected. That means that no additional data exchange is needed.  |
| 12 | 7       | Article 7 should be clarified. This article should give some examples about the criteria to determine whether an increasing factor is to be taken into account.  | EDF                   | Exceptional contingencies are defined by the fact that a common cause leads to the simultaneous outage of several branches. Examples are provided in the supporting document. CSAM Article 8(2) and 8(3) have been included to provide clarity on which basis TSOs shall perform this assessment of relevance and criteria.   |
| 13 | 8       | EDF considers that TSOs should provide the data and method used to determine the maximum cost of remedial actions above which the cost of fulfilment of the operational security limits is deemed disproportionate to the risk. Since this cost could be related to regulatory aspects (ex: value of lost load), an NRA approval seems justified.  | EDF                   | When assessing the exceptional contingencies, TSOs shall take into consideration whether the cost of remedial actions needed to maintain the consequences acceptable is deemed proportional to the risk in respect with its national legislation or, if no national legislation exists, in respect with its internal rules. Usually, this legislation or those rules do not provide guidance for contingencies with cross-control area consequences and such guidance has to be devised. CSAM Article 9 has been updated to provide a requirement for this cost to be consistent with the one used at national or internal level by each TSO.                                   |
| 14 | 9       | Article 9.5: The principle proposed in Art 9.5., i.e. contingencie may be discarded from the contingency list if the cost of remedial actions to manage their consequences are proportionate to the risk, should apply systematically to all types of contingencies and not only to exceptional contingencies, and for every market time unit. It can be highly inefficient to constrain the system systematically (through Capacity Calculation or through Remedial actions activation) because of very infrequent events that could be managed at resasonable cost.<br>Change proposed: Apply the principle of 9.5 systematically to all types of contingencies and not only to exceptional contingencies, and for every market time unit. | E.ON SE & eurelectric | TSOs are required by SOGL to ensure an N-1 safe interconnected system unconditionally, irrespective of probability for ordinary contingencies. However, SOGL already provides flexibility for TSOs not to comply with the (N-1) criterion if the consequences do not affect the whole interconnected system. CSAM provides flexibility for TSOs not to comply with the (N-1) criterion if the consequences are limited to several agreeing TSOs' control areas. Besides, Article 10.5 shall only apply to very low probability events (like exceptional contingencies) because it allows TSOs not to apply remedial action for these contingencies whatever their consequences. |
| 15 | 9       | EDF would like to add the following paragraph :<br>" 6. The contingency list shall be approved by the NRAs concerned by the agreement"   | EDF                   | SOGL provides TSOs responsibility to establish their contingency list pursuant to Article 33(1). CSAM cannot legally provide additional approval powers to NRAs. Moreover, your proposal would not be operational, as the contingency list can change every day.  |

| No | Article | Stakeholder comment   | Reviewer affiliation  | ENTSO-E response   |
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| 16 | 10      | EDF would like to add the following paragraph :<br>" 8. The contingency list shall be approved by the NRAs concerned by the agreement"  | EDF   | See previous answer  |
| 17 | 13-19   | These articles should be moved to the proposal following from Article 76 of SOGL.<br>Explanation: The article of chapter 3 of title 3 refer to the coordination of remedial actions. Remedial actions are not subject of the methodology pursuant to article 75 of SOGL, but of the methodology pursuant to article 76 of SOGL. It should therefore be moved to this methodology. | innogy SE, Grid& Infrastructure,<br>E.ON SE,<br>eurelectric | All TSOs are entitled to introduced topics in their proposal developed pursuant to Art 75 of SOGL as this article provides in §1 a list of topics that the methodology shall "at least " cover. TSOs have deemed necessary to provide pan-EU common rules on some important principles applicable to and by all TSOs and RSCs. Nevertheless, TSOs remain entitled to develop proposals based on Article 76 to define how remedial actions will be managed in a coordinated way at CCR level to achieve Article 76 objectives. When doing so, all TSOs in each CCR will have to be compliant with the common rules established in CSAM as it is explicitly required in Article 76(1). |
| 18 | 18      | EDF considers that TSOs should provide transparency to grid users when a remedial action is activated (contingency to resolve, reason, choice between possible RAs).<br>EDF would like to add the following paragraph:<br>"A summary of the preventive remedial action activated will be released every year by the TSOs".  | EDF   | CSAM's scope is provided by Article 75 and does not cover publication of information. This latter topic is already covered by transparency regulation (EI Regulation 543/2013) or SO GL itself. For example, information on activated redispatching is published by TSOs on ENTSO-E's Transparency Platform and Article 17 of SOGL requires ENTSO-E to publish a yearly report on the regional coordination.   |
| 19 | 20      | Article 20 refers to the inclusion of remedial actions in IGM. This is already covered by the requirements laid down in article 70(4) of SOGL and should therefore be covered by the methodology following from article 70.<br>Change proposed: This article should be moved to the proposal following from Article 70 of SOGL.   | Eurelectric<br>innogy SE, Grid& Infrastructure,<br>E.ON SE  | The methodology developed pursuant to Article 70 (CGMM) only provides the process on how to build IGMs and CGMs. However it does not define which remedial actions are to be taken into account and when. This article thus provides common pan-EU rules for that. There is no redundancy but consistency between CGMM and CSAM. Moreover, as CGMM proposal has already been approved by NRAs, it would no longer be possible to move requirements from Article 21 in it.  |

| No | Article | Stakeholder comment  | Reviewer affiliation  | ENTSO-E response   |
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| 20 | 21      | <p><b>Change proposed: Delete the paragraphs:</b> "1. In order to apply requirements of Article 72(1)(a) or (b) or Articles 98(3), 100(3) and (4) of SO GL, each TSO shall have the right to decide to apply local scenarios for its control area in addition to the scenarios required according to Article 65 of SO GL, in order to improve robustness of the analyses against uncertainties.</p> <p>2. Where the need for local scenarios is identified, the TSO shall determine for which operational planning activities those local scenarios are to be considered and shall inform the TSOs of its capacity calculation region or of its outage coordination region and the relevant RSCs about the content of those local scenarios and their usage purpose.</p> <p>3. Where a TSO defines local scenarios for security analysis in accordance with Article 72(1)(a) or (b) or Articles 98(3), 100(3) and (4) of SO GL, and these scenarios differ from the scenarios defined by all TSOs according to Article 65 of SO GL, other TSOs shall not be obliged to build their individual grid models for the local scenarios.</p> <p>4. Where a TSO defines local scenarios for security analysis in accordance with Article 72(1)(a) or (b) of SO GL, this TSO shall define, in coordination with other TSOs of the concerned capacity calculation region, which grid models shall be used to study these local scenarios. These grid models shall be derived from the common grid models established pursuant to Article 67 of SO GL, using appropriate substitutes or derived models where appropriate.</p> <p>5. Where a TSO defines local scenarios for security analysis in accordance with Articles 98(3), 100(3) and (4) of SO GL, this TSO shall define, in coordination with other TSOs of the outage coordination region, which grid models shall be used to study these local scenarios. These grid models shall be derived from the common grid models established pursuant to Article 67 of SO GL, using appropriate substitutes or derived models where appropriate."</p> <p><b>Explanation:</b> It is unclear to stakeholders why local scenarios should be necessary and subject of SOGL or any methodology following from that. If scenarios are necessary to correctly assess operational security, they should be covered by article 65. If they are not necessary, they shouldn't be carried out, as the results won't contain added value. Costs will exceed the benefits by far.</p> | innogy SE, Grid& Infrastructure, E.ON SE, eurelectric, BDEW German Association of Energy and Water Industries | <p>This Article is aimed at providing practical approach to handle uncertainties in the long term, in answer to Art 75(1)(c) requirement.</p> <p>Scenarios agreed by all TSOs (in application of Art 65 of SOGL) are necessarily limited in number and cannot cover the diversity of situations to be analysed in the long term in each different control area with specific weather/operational/gen mix conditions. Taking into account these conditions may become indispensable for checking outage planning or for assessing TSO control area expected security in the long-term studies. This is the reason for this Article.</p> <p>This practice of checking the system security and outage incompatibilities on the basis of local scenarios is very common and SOGL does not require TSOs to limit their analysis to yearly common scenarios (which are not sufficiently precise eg for a weekly assessment)</p> <p>It is deemed proportionate and not unnecessarily costly because it does not require all TSOs to study all local scenarios, neither does it require them to provide all corresponding IGMs.</p> <p>This CSAM article is a development of the approach already identified in SOGL for Outage coordination task performed by RSCs, in Art 80.3.c</p> |

| No | Article | Stakeholder comment  | Reviewer affiliation                                  | ENTSO-E response  |
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| 21 | 21      | <p>The construction of the scenarios/contingencies used should be detailed. During the workshop held by Entso-e on 21st March, TSOs explained that there were two sets of scenarios: one set for the specific purpose of security coordination (i.e contingencies) and another set for the determination of relevant assets (influence factor computation). However, TSOs' proposal seems to consider the same set of scenarios both for security coordination and for relevant assets. Therefore, if two sets of scenarios are actually used, it is important that article 21 describes each of them. Besides, as transparency is essential on such points, these scenarios should be transparent with regard to stakeholders and notably provide details on the "stressed" scenarios (and their related "stressed values") as well as on "best case" scenarios.</p> <p>In EDF's view, the need for local scenarios should be transparently justified by TSOs. An approval given to the NRA is needed.</p> <p>EDF would like to implement the following paragraph:<br/>         "6. Every local scenario is to be approved by the concerned NRA".</p>   | EDF   | <p>It seems there is a confusion in this comment between two different usages of yearly scenarios established by TSOs (in application of Art 65 of SOGL):</p> <p>One usage is to run the influence computations, in order to identify the observability area components of each TSO, its external contingency list components and the assets relevant for regional outage coordination. These identifications are done only eg every 5 years (with yearly updates based on simplified approaches as defined in relevant articles of CSAM and RAOCM)</p> <p>Another usage is the regular use of such scenarios in the operational planning studies done by TSOs (and RSCs support where defined in SOGL) every year and updated as necessary eg in month/week ahead. For those activities, CSAM provide additional possibilities (see answer to previous comment on same article 21)</p>   |
| 22 | 22-23   | <p>Innogy, E.ON and eurelectric does not understand why the setting of reliability margins is discussed only in the explanatory note, which has no legal value, and not in the methodology itself. In particular, innogy, E.ON and eurelectric disagrees that reliability margins are used only for capacity calculation (which is also based on the best available forecast) and not for coordinated security analysis. As long as all costly remedial actions available for security analysis are not considered on an equal footing in capacity calculation, introducing reliability margins in capacity calculation only introduces a discrimination between "limiting cross-border exchanges" (through capacity calculation or through security analysis) and "redispatching" (through security analysis). innogy, E.ON and eurelectric is strongly opposed to this difference of treatment between national and cross-border exchanges. In our view, the same CGM and margins should apply to both capacity calculation and coordinated security analysis. We would agree then, that no additional margin on the top of the reliability margin determined in line with Article 22 of Regulation (EU) 2015/1222 should be applied in CSA.</p> | innogy SE, Grid& Infrastructure, E.ON SE, eurelectric | <p>Using reliability margins on flow evaluation for security analysis would lead to increase costs of security, born by all network users, without increasing the capacity offered to the market. Indeed these activities are fully different.</p> <p>For capacity calculations, TSOs define a domain which is offered firmly to market participants. This computation is made with a lot of uncertainties: no knowledge of the market outcome, use of simplified DC approximation and of GSK values to adapt the generation pattern to a given net position.</p> <p>On the other hand, coordinated security analysis is aimed at assessing (via the study and preparation of remedial actions) the ability to make secure in real time a particular forecasted point in the system, at the lowest cost. The decision for a need of a remedial action is regularly reviewed in D-1/Intraday, until it's time to apply it in order to ensure its effectiveness in real time.</p> |
| 23 | 23      | <p>Remedial actions consisting in modifying production/consumption output and whose activation is well ahead of the real-time could influence intraday markets as well as balancing markets. Therefore EDF advocates for full transparency on the use of costly remedial actions and their cause.</p>  | EDF   | <p>CSAM Article 19 requires TSOs to apply preventive remedial actions at the latest possible (compatible with the time needed to activate it) before the hour where they are necessary, in order to avoid activate remedial actions, designed in an operational planning phase (eg D-1), which would appear unnecessary in later operational planning phases (eg Intraday). The method for</p>  |

| No | Article | Stakeholder comment  | Reviewer affiliation                                  | ENTSO-E response   |
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|    |         |  |   | optimizing the use of remedial actions (costly and non-costly) at regional level will be developed by TSOs pursuant to SOGL Art 76 and submitted to NRAs approval, hence ensuring transparency. Transparency will also come from reports on operational application at regional level required in Art 17 of SOGL.  |
| 24 | 24-35   | This article should be moved to the proposal following from Article 76 of SOGL.<br>Explanation: The article of chapter 5 of title 3 refers to inter-RSC coordination. inter-RSC coordination is not subject of the methodology pursuant to article 75 of SOGL, but of the methodology pursuant to article 76 of SOGL, as can be taken from article 77 of SOGL. It should therefore be moved to this methodology.   | innogy SE, Grid& Infrastructure, E.ON SE, eurelectric | All TSOs are explicitly required by Art 75(1)(d) of SOGL to provide common pan-EU requirements for "coordination and information exchange between RSCs", to ensure proper coordination between them; such a principle of coordination is required from each RSC when it delivers its tasks defined in SOGL Art 78 to 81. CSAM Art 26 -to36is the answer to Art 75(1)(d) of SOGL. These CSAM requirements have to be taken into account by TSOs when developing their proposal at regional level pursuant to Art 76 of SOGL, as mentioned in §1 of Art 76.  |
| 25 | 30      | The terms "efficient remedial action" and "costly remedial action" need to be defined. Stakeholders should be provided the means to check this.<br>Remedial actions consisting in modifying production/consumption output and whose activation is well ahead of the real-time could influence intraday markets as well as balancing markets. Therefore EDF advocates full transparency on the use of costly remedial actions and their cause.<br>EDF proposes to add the following paragraph:<br>"Every year a summary of the remedial actions used by TSOs will be publicly released".  | EDF   | The term "cost of remedial action" is used in SOGL Art 76 (or eg Art 78), as well as the notion of "effective and economically efficient remedial actions". We follow your comment by updating the Article 31 to use the SOGL vocabulary.<br>As regards the second part of your comment, please refer to answer provided to your comment 23 on Art 23  |
| 26 | 36      | Article 36.1: Change proposed: "The forecasts established in application of paragraphs 2 to 6 below shall be used as the basis of the security analysis to be performed according to Article 22 and Article 23. Taking into account that a margin in line with Article 22 of Regulation (EU) 2015/1222 will be established for capacity calculation processes, and that this margin as well as security analysis results will be affected by the accuracy of forecasts, each TSO shall consider the following criteria in establishing forecasts of intermittent generation:<br>a. The forecasts established shall cover at least the control area of the TSO;<br>b. The forecasts established shall be of a granularity necessary for the TSO to create IGMs compliant with the requirements of CGM methodology developed according to Article 70 of SO GL.<br>TSOs shall use the best forecast available."<br>Explanation: Stakeholders miss a clear commitment of TSOs to use the best forecast | innogy SE, Grid& Infrastructure, E.ON SE              | We take note of your remark and we have complemented Articles 23 and 24 to explicitly define the best forecast approach, on which security analyses should be run.<br><br>Additionally we would like to point out that Art 23 and 24 provide clear requirements to TSOs to not use reliability margins when assessing the results of the security analysis based on forecasts.<br><br>For the second part of the comment, related to the N-1 principle, we believe this remark is not directly linked to (old numbered) Article 36 in the context of Article 75 of SOGL. Indeed, the way TSOs and RSCs shall, in an efficient way, use the different kinds of available remedial actions (costly/non costly; |

| No | Article | Stakeholder comment   | Reviewer affiliation | ENTSO-E response   |
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|    |         | <p>available.</p> <p>We would welcome more clarity on how the N-1 principle will be applied:</p> <ul style="list-style-type: none"> <li>o It is welcome that critical contingencies are listed ex-ante. They should be fully transparent for market participants.</li> <li>o We wonder if (costly) curative actions are considered in the face of possible contingencies before deciding that a situation should be corrected with (preventive) remedial actions. In our view, when dealing with system operation before the operational window, and as long as the potential of curative actions (costly or not) is sufficient to restore secure operation if needed, N-1 contingencies should always be disregarded.</li> </ul> <p>Proposal for change: To include a subsection to the section on forecasts on forecasting the potential for curative actions so that RSCs can assess whether a contingency is effectively critical or not.</p>   |                      | <p>preventive/curative...) shall be addressed in the proposal of all TSOs of a CCR based on Art 76. This method will aim at selecting the most efficient remedial actions; this means that if a curative remedial action is available and is more efficient than a preventive one, it will be selected; nevertheless, the availability of a curative remedial action, given by the TSO to its RSC to be taken as possible solution to solve congestions at regional level in accordance to Art 78(1) of SOGL, has to be determined by each TSO, since it depends on number of local factors such as: equipment design, national rules on transitory admissible load possibilities, technical capabilities for fast action on generation...</p> |
| 27 | 36      | <p>Article 36.1: Stakeholders miss a clear commitment of TSOs to use the best forecast available.</p> <p>We would welcome more clarity on how the N-1 principle will be applied:</p> <ul style="list-style-type: none"> <li>o It is welcome that critical contingencies are listed ex-ante. They should be fully transparent for market participants.</li> <li>o We wonder if (costly) curative actions are considered in the face of possible contingencies before deciding that a situation should be corrected with (preventive) remedial actions. In our view, when dealing with system operation before the operational window, and as long as the potential of curative actions (costly or not) is sufficient to restore secure operation if needed, N-1 contingencies should always be disregarded.</li> </ul> <p>Changes proposed:</p> <ul style="list-style-type: none"> <li>- To include a subsection to the section on forecasts on forecasting the potential for curative actions so that RSCs can assess whether a contingency is effectively critical or not.</li> <li>- "The forecasts established in application of paragraphs 2 to 6 below shall be used as the basis of the security analysis to be performed according to Article 22 and Article 23. (...), each TSO shall consider the following criteria in establishing forecasts of intermittent generation:             <ul style="list-style-type: none"> <li>a. The forecasts established shall cover at least the control area of the TSO;</li> <li>b. The forecasts established shall be of a granularity necessary for the TSO to create IGMs compliant with the requirements of CGM methodology developed according to Article 70 of SO GL.</li> </ul> </li> </ul> <p>TSO shall use the best forecast available."</p> | eurelectric          | <p>Please see the answer to comment 26.</p>  |



| No | Article | Stakeholder comment   | Reviewer affiliation  | ENTSO-E response  |
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| 28 | 36      | <p>Art. 36 Number 1</p> <p>"The forecasts established in application of paragraphs 2 to 6 below shall be used as the basis of the security analysis to be performed according to Article 22 and Article 23. Taking into account that a margin in line with Article 22 of Regulation (EU) 2015/1222 will be established for capacity calculation processes, and that this margin as well as security analysis results will be affected by the accuracy of forecasts, each TSO shall consider the following criteria in establishing forecasts of intermittent generation:</p> <p>a. The forecasts established shall cover at least the control area of the TSO;</p> <p>b. The forecasts established shall be of a granularity necessary for the TSO to create IGMs compliant with the requirements of CGM methodology developed according to Article 70 of SO GL.</p> <p>TSOs shall use the best forecast available."</p> <p>Explanation</p> <p>Stakeholders miss a clear commitment of TSOs to use the best forecast available.</p> | BDEW German Association of Energy and Water Industries  | Please see the answer to comment 26.  |
| 29 | 37      | <p>We would welcome more clarity on how the N-1 principle will be applied:</p> <ul style="list-style-type: none"> <li>o It is welcome that critical contingencies are listed ex-ante. They should be fully transparent for market participants.</li> <li>o We wonder if (costly) curative actions are considered in the face of possible contingencies before deciding that a situation should be corrected with (preventive) remedial actions. In our view, when dealing with system operation before the operational window, and as long as the potential of curative actions (costly or not) is sufficient to restore secure operation if needed, N-1 contingencies should always be disregarded.</li> </ul> <p>Proposal for change: To include a subsection to the section on forecasts on forecasting the potential for curative actions so that RSCs can assess whether a contingency is effectively critical or not.</p>   | innogy SE, Grid& Infrastructure, E.ON SE, eurelectric   | Please see the answer to comment 26.  |
| 30 | 38      | <p>Article 38.1: Change proposed: DELETE: "By 1st January 2023, and then at least every five years, all TSOs shall assess the need to review the IGM intraday update frequency as defined in CGM methodology developed according to Article 70 of SO GL, taking into account the expected evolution of volatile parameters, such as market positions, intermittent generation, load."</p> <p>Explanation: Stakeholders would expect such a requirement to be included in the methodology following from 70 of SOGL. Please move it there.</p>   | innogy SE, Grid& Infrastructure, E.ON SE, eurelectric, BDEW German Association of Energy and Water Industries | The proposal of the CGMM does not include a revision process, and is already submitted for approval. This Art 39.1 is introduced here as part of the global answer of the CSAM to the Art 75(1) on Uncertainties management. It aims at ensuring that the minimum pan-EU frequency of updates will remain sufficient with respect to the needs of regional and cross-regional security analyses. These analyses needs to be performed on sufficiently recent forecasts, taking into account that the increase of RES in all countries could lead to increase the minimum frequency in the future. SOGL only |

| No | Article | Stakeholder comment   | Reviewer affiliation  | ENTSO-E response   |
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|    |         |   |   | provides the possibility for defining more frequent updates at CCR level (Art 76).   |
| 31 | 43      | <p>Article 43.3: Change proposed: ""Each TSO shall apply the requirements of Article 37 within DELETED[12] NEW[6] months and of Article 36 within DELETED[24] NEW[6] months after approval of this methodology.""</p> <p>Explanation: Forecasts for load and intermittent generation are state-of-the-art and commonly used across DSOs and TSOs. Stakeholders do not understand why such long transitory periods are necessary for the implementation at TSOs' systems.</p>  | innogy SE, Grid& Infrastructure, E.ON SE, eurelectric, BDEW German Association of Energy and Water Industries | We acknowledge that TSOs in general already use/receive forecasts for intermittent generation and load. But this does not mean that each TSO is already compliant with the requirements set out for its particular control area in Article 37-38. Indeed our survey shows that roughly 50% of TSOs are not compliant today with these requirements. Therefore, developing the new process/tools/supplier contracts/data acquisition which are necessary to reach this compliance needs really more than 6 months. 12 and 24 months are relatively already challenging targets.   |
| 32 | Annex   | <p>We ask ENTSO-E/TSOs to limit the influence computation method to n-1-scenarios. From our point of view, its current version considers a n-2-scenario by realising two contingencies (one at TSO A (element i) and one at TSO B (element r)). This is out of the scope of SOGL and obviously contradicting article 3 (1) of CSAM ("It is able to characterize the influence of the absence of one network element..."). Using such an approach leads to overestimation of the influence of element r, as its influence on a weaken grid is assessed, instead of its influence on an undisturbed grid. This leads to larger observability areas and thus higher costs to all parties involved.</p> <p>AI.2: Change proposed: "AI.2 Influence Computation Method<br/>In order to compute influence of elements located outside TSOs control area on a given control area following definitions have to be introduced (Figure 1):</p> <ul style="list-style-type: none"> <li>▪ Element t is an element located in TSOs control area and which is influenced by an element located outside TSOs control area;</li> <li>▪ Element r is an element located outside TSOs control area whose influence is assessed;</li> </ul> <p>"</p> <p>AI.2.1.1: Change proposed:"Delete: "i: Element located either in TSOs control area or outside TSOs control area (different from elements r and t) considered disconnected from the network when assessing the formula; I: Set of elements, located either in TSOs control area</p> | innogy SE, Grid& Infrastructure, E.ON SE, eurelectric   | <p>AI.2 : The scenarios, which are used for horizontal and diagonal influence assessment, are ones required by Article 65 of SO GL. In these scenarios all modelled elements shall be in operation as required by CGMM. However, Article 75.3 of SO GL requires TSOs to consider asset outages when determining their observability area. To fulfil this requirement, outages of single elements are considered (represented in the formulas as element i). This is a minimum approach as in reality usually more than one element is out of operation.</p> <p>Based on these scenarios with all elements except one element in operation, n-1 computations are performed. This is the absolute minimum needed to consider assets outages as required by Article 75.3 of SO GL. Therefore, the proposed change must be refused.</p> <p>AI2.1.2 : The TSOs individually select thresholds from the ranges provided. This selection is based on the conditions under which the respective TSO operates its grid. Given the diversity of conditions across Europe, fixed criteria for the selection cannot be</p> |

| No | Article | Stakeholder comment   | Reviewer affiliation | ENTSO-E response   |
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|    |         | <p>or outside TSOs control area, modelled in the grid model whose possible outage should be taken into account in the assessment.";[...]</p> <p><math>P^t_{(n-i)}</math>: Active power through the element t with the element r disconnected from the network;[...]</p> <p>The formulas must be applied, for each element r which belongs to the set R, assessing its influence on every element t of the TSO's control area for which the assessment is performed (Figure 1)."</p> <p>AI.2.1.2: Change proposed: "<math>P^t_{(n-i)}</math>: Active power through the element t with the generating module or demand facility r disconnected from the network;"</p> <p>We would welcome further clarity on the criteria used to define the thresholds.</p>  |                      | <p>defined. However, transparency for different stakeholders is guaranteed as each TSO has to provide ENTSOE with the selected thresholds and ENTSOE will publish all this information in one place. Equal treatment is guaranteed as each TSO must use the same thresholds for horizontal, vertical and diagonal assessment. Please see also chapter 3.5 of the Supporting Document.</p>  |
| 33 | Annex   | <p>Regarding Formulas:</p> <p>To assess the influence of a specific element r the Annex proposes to calculate the maximum percentage of the power flow on this element is flowing after the outage in any element of TSO A.</p> <p>For TSO A this ratio is not as relevant as if any element in its control area is heavily loaded after the outage (e. g. &gt; 80 % PATL).</p> <p>Hence, instead of calculating the ratio we propose to assess the loading increase</p> $IF_r = \text{MAX}_{\text{forall } i,s,t} ((P^t_{(s,n-i-r)} - P^t_{(s,n-i)}) / \text{PATL}^t(s,t))$ <p>for all elements with a high loading after the outage</p> $\text{Loading}_t = \text{MAX}_{\text{forall } i,s,t} (P^t_{(s,n-i-r)} / \text{PATL}^t(s,t)).$ <p>The PATL of the element r is not relevant. The worst case power flow is selected with the scenarios. If the element is in any case loaded with max. 50 %, it is not reasonable to assume that it is loaded with 100 % in the same grid topology as the ratios are calculated.</p> <p>Regarding Thresholds:</p> <p>The evaluation of the thresholds should be transparent and comprehensible. TSO connected DSOs should participate in the threshold evaluation as they are directly affected.</p> | Axpo Power AG        | <p>The scenarios, which are used for horizontal and diagonal influence assessment, are ones required by Article 65 of SO GL. They represent typical seasonal situations and do not represent particularly stressed situations. However, for (real time) security assessment, stressed situations (not only globally but also locally) are most relevant. Therefore, considering only the post contingency flows in the scenarios used as suggested in the comment is insufficient as higher loadings can be expected in reality. To consider this, the PATL of element r is used for normalization which is equal to element r being loaded at 100% before the contingency. The fact that elements will usually never be loaded at 100% before a contingency has been considered in the definition of the ranges of thresholds (there is no difference if the PATL(r) is multiplied with a factor or the threshold is reduced by the same factor).</p> <p>Transparency is guaranteed as TSOs are obliged to provide ENTSOE with the selected thresholds and ENTSOE will publish all this information in one place. Equal treatment is guaranteed as each TSO must use the same thresholds for horizontal, vertical and diagonal assessment. Neither DSOs nor other TSOs can participate in the selection of thresholds as only the respective TSO has the knowledge to assess what it needs to guarantee security of supply in its control area for which it is responsible.</p> |

| No | Article | Stakeholder comment  | Reviewer affiliation                                   | ENTSO-E response  |
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| 34 | Annex   | In EDF's view, TSOs should in general be transparent and provide justifications for their choices. In particular the margins and assumptions used on power generation should be provided. Indeed, a "stressed" scenario, with very low probability to happen, can nevertheless influence the calculation thus showing important factors. That is why EDF would prefer a quantile (95% for instance) to be implemented in order to filter the "stressed" scenarios if used.   | EDF  | We agree that TSOs shall be transparent in choosing their thresholds. Therefore for example, TSOs are obliged to publish their selected thresholds via ENTSOE. The scenarios, which are used for horizontal and diagonal influence assessment, are ones required by Article 65 of SO GL. They represent typical seasonal situations and do not represent particularly stressed situations. Furthermore, each TSO will use the same scenarios. |
| 35 | Annex   | <p>Annex I</p> <p>AI.2:</p> <p>AI.2 Influence Computation Method</p> <p>In order to compute influence of elements located outside TSOs control area on a given control area following definitions have to be introduced (Figure 1):</p> <ul style="list-style-type: none"> <li>▪ Element t is an element located in TSOs control area and which is influenced by an element located outside TSOs control area;</li> <li>▪ Element r is an element located outside TSOs control area whose influence is assessed;</li> </ul> <p>AI.2.1.1:</p> <p><math>P_{t(n-i)}^t</math>: Active power through the element t with the element r and the element i disconnected from the network; [...]</p> <p>The formulas must be applied, for each element r which belongs to the set R, assessing its influence on every element t of the TSO's control area for which the assessment is performed (element i) (Figure 1).</p> <p>AI.2.1.2:</p> <p><math>P_{(n-1)}^t</math>: Active power through the element t with the generating module or demand facility r disconnected from the network;</p> <p>Explanation</p> <p>We ask ENTSO-E/TSOs to limit the influence computation method to n-1-scenarios. From our point of view, its current version considers a n-2-scenario (at least n-1-1) by realising two contingencies (one at TSO A (element i) and one at TSO B (element r)). This is out of the scope of SOGL (cf. article 72(3) of SOGL) and obviously contradicting article 3 (1) of CSAM ("It is able to characterize the influence of the absence of one network element...").</p> | BDEW German Association of Energy and Water Industries | Please see answer to question 32.   |

| No | Article          | Stakeholder comment  | Reviewer affiliation            | ENTSO-E response  |
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| 36 | General feedback | We welcome the longer consultation period introduced by ENTSO-E. On the other hand, the draft contains larger parts of another proposal and should be reconsolidated. We would have also welcomed more clarity and an open discussion on the n-2-principle ENTSO-E intends to use. We Need an open and transparent discussion on European Level to agree on n-2 before it is introduced!   | innogy SE, Grid& Infrastructure | The extension of the consultation period has been decided following the request of stakeholders in the SO European Stakeholder Committee meeting in 12/2017.<br>The proposal draft does not "contain larger parts of another proposal", we do not understand this part of the comment.<br>The reasoning for the definition of the Influence computation method is provided in the Supporting document, as well as in the answers to stakeholder comments, eg question 32. |
| 37 | General feedback | In addition to article specific comments, we welcome the main principles on using remedial actions to restore secure operation, and we recommend the methodology: <ul style="list-style-type: none"> <li>o To mandate full transparency on the use of costly remedial actions (e.g. combinations of countertrading and redispatching actions) and their cause.</li> <li>o To be more specific on the margins considered together with the best forecast CGM. We take note in the explanatory document that TSOs consider they do not need to include margins in DA and ID coordinated security assessment. We recall that such margins are calculated anyway for coordinated capacity calculation. Therefore it would be practical to include them.</li> </ul> Furthermore, as long as capacity calculation does not consider fully (costly) redispatching as an alternative to cross-zonal capacity limitation (equivalent to countertrading for the market), considering reliability margins only for capacity calculation and not for coordinated security analysis leads to prioritising CZ capacity reduction against redispatching, whereas regulation requests equal treatment. | E.ON SE; eurelectric            | Please refer to answers to comments 22 and 23   |

| No | Article          | Stakeholder comment   | Reviewer affiliation                                   | ENTSO-E response   |
|----|------------------|---|--|--|
| 38 | General feedback | <p>Over 90 % of all renewable energy resources in Germany are connected to distribution systems. The distribution systems increasingly influence the operation of transmission systems. DSOs play an important role in the energy system.</p> <p>BDEW is therefore convinced that a close cooperation on equal footing between DSOs and TSOs is essential for secure network operations. Nonetheless, the CSA methodology does not reflect this necessity of close cooperation between TSO and DSO.</p> <p>Furthermore, BDEW strongly emphasizes that Generators shall be involved in any consultation/agreement between TSO and DSO that affects the generator's data delivery obligations.</p> <p>General remarks with regard to Chapter 3 and chapter 5 of title 3:</p> <p>Chapter 3 "Coordination of remedial actions" (Articles 13-20) and Chapter 5 "Inter-RSC Coordination (Articles 25-35) of title 3 should be moved to the proposal following from Article 76 of SOGL.</p> <p>Explanation</p> <p>The articles in title 3, chapter 3 refer to the coordination of remedial actions. Remedial actions are not subject of the methodology pursuant to article 75 of SOGL, but of the methodology pursuant to article 76 of SOGL. It should therefore be moved to this methodology.</p> <p>The same is true for chapter 5 of title 3, which refers to inter-RSC coordination. This is clearly the scope of the methodology pursuant to article 76 of SOGL, as can be taken from article 77 of SOGL.</p> | BDEW German Association of Energy and Water Industries | <p>Coordination between TSO and DSOs for Operation purpose and ensuring safe operation is dealt with in the SOGL articles, when deemed relevant. It is not part of the CSAM (see Article 75 of SOGL).</p> <p>As regards day-to-day roles and obligations regarding data delivery and their exchange between TSOs and DSOs, they are defined in the articles 40 to 53 of SO GL and in the "KORRR" proposal developed by all TSOs pursuant to Article 40(6) of SOGL. About request for dynamic data to be provided by SGUs connected to DSO systems, we have updated CSAM (Article 4) to include SGUs and connecting DSOs when a TSO requests needed data.</p> <p>On the general remark with regards to chapter 3 of Title 3, all TSOs are entitled to introduced topics in their proposal developed pursuant to Art 75 of SOGL as this article provides in §1 a list of topics that the methodology shall "at least " cover. TSOs believe that pan-EU common rules regarding the identification and acceptance of the impacts of a given remedial action considered by one TSO on other control areas are essential to ensure safe and efficient operational planning at the synchronous area level. On the general remark with regards to chapter 5 of Title 3, please refer to answer to comment 24</p> |