



## Method for cybersecurity risk analysis customized to smart grids

*Smart power grids are complex cyber-physical systems. Digital transformation of the power grids has significantly changed the risk picture, thus challenging the state-of-the-art.*

### Challenge

- Smart grids are characterized by complexity, interdisciplinarity, and dynamics, introducing new risks that have previously not been dealt with.
- A need is identified for risk analysis of such socio-technical systems, that are efficient and useful in the context of decision making.
- There is a very limited experience with the effects of digitalization of the power grids, implying a high degree of uncertainty to deal with in the analysis.

### Solution

- A customized approach to identification and modelling of cybersecurity risks in the context of smart power grids. The approach is based on parts of the "CORAS" method for risk analysis.
- Relevant, correct and sufficiently detailed information is collected, presented, and maintained throughout the risk analysis. The process aims to be engaging and cost-efficient. An easy-to-understand risk picture is established.

### Potential

- Improved understanding of the effects of power grid digitalization on cybersecurity, as well as impacts of cybersecurity on reliability of supply.
- Provides decision support for management of reliability of power supply and cybersecurity – enabled through domain-customized risk management.
- Improved security of supply enabled by improved risk understanding and management.
- Demonstrated by trial and evaluation of the approach through comprehensive real-life case studies of cyber security risks with three CINELDI DSO partners, as well as a post-mortem evaluation.

### References in CINELDI

- Omerovic, A. et Al.: "[An Industrial Trial of an Approach to Identification and Modelling of Cybersecurity Risks in the Context of Digital Secondary Substations](#)". CRISIS 2019
- Omerovic, A. et Al.: "[A Feasibility Study of a Method for Identification and Modelling of Cybersecurity Risks in the Context of Smart Power Grids](#)". COMPLEXIS 2019

Innovation type:  
Methods and tools

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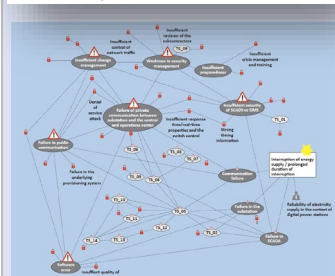
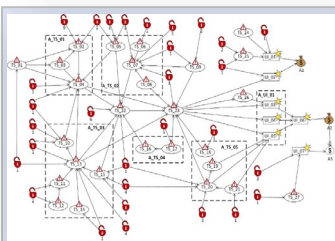
Contact:

Oddbjørn Gjerde

[Oddbjorn.Gjerde@sintef.no](mailto:Oddbjorn.Gjerde@sintef.no)

Target group:

Actor/ purpose	X
DSO, TSO	X
Technology provider	X
Member organisation	X
Market operator	
Research/ Consultancy	X
Teaching	X



The graphical risk models presented in the two referenced publications.