

**The 15th International Workshop on Electric Power Control Centers
Reykjavik, Iceland, May 12-15, 2019**

**Real time probabilistic risk assessment for power system operations and
operations planning**

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Promaps Technology AS

Promaps Technology AS has developed a probabilistic forecasting tools for decision support in operations and operations planning of a power system. The commercialized simulation tool is currently in use in Norway and Iceland with DSO and TSO on the customer list.

The methodology used in this product is based on previously presented theory and principles from PMAPS 2004. Each component of the power system is represented by a Markov model and a description of functionality in each state. Using the Kronecker product mathematical operator, many component models can be assembled into a branch model. Furthermore, all branch models are combined into a system model, which describes the likelihood that different states in the power system will occur. This reliability model is then combined with a flow model based on optimization technique.

In 2018, support of weather dependent failure rates was included in the software. Now, weather forecasts can be imported to calculate more accurate risk for short term planning. The probabilistic calculations have also been updated to be compliant with GARPUR framework for short term risk assessments.

The presentation will give a demonstration of the simulation tool together with use cases for real situations where the system is in use by the current customers.

Please send the Abstract to dsobajic@gridengineering.com by April 12