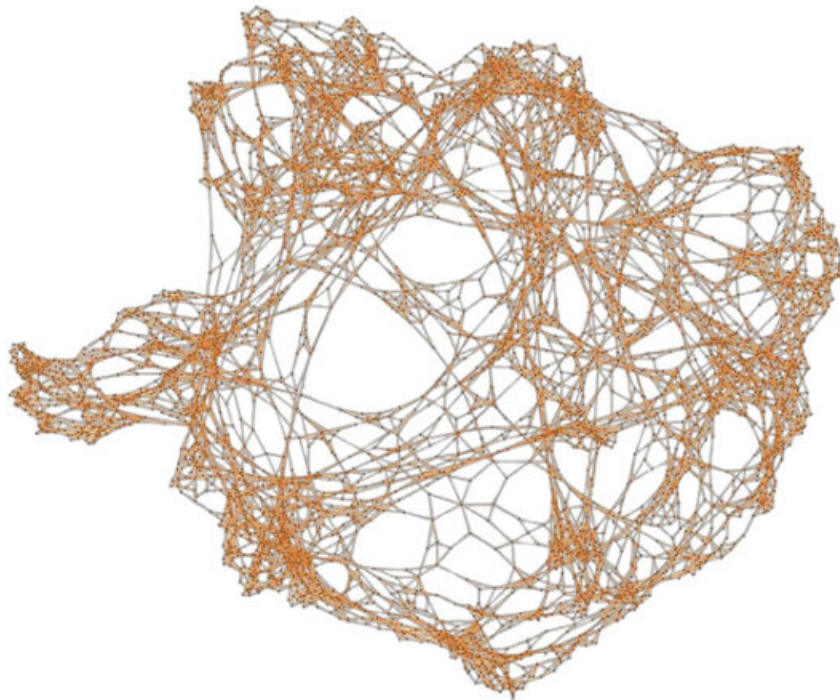


Infinigrid Pro Maps Realtime User Guide

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Pro Maps Realtime

Seeing through the grid complexity

Removing the blindfold, for a faster and safer energy transition, & billions in savings

Robert Nyiredy [robert@infinigrid.ai]

Our power grid – Perfect harmony – Immensely complex



This is the foundation of our society



This foundation is now being threatened






Need to utilize the power grid closer to its limits



Freeing the needed capacity in a safe way

Manual grid operation is being challenged

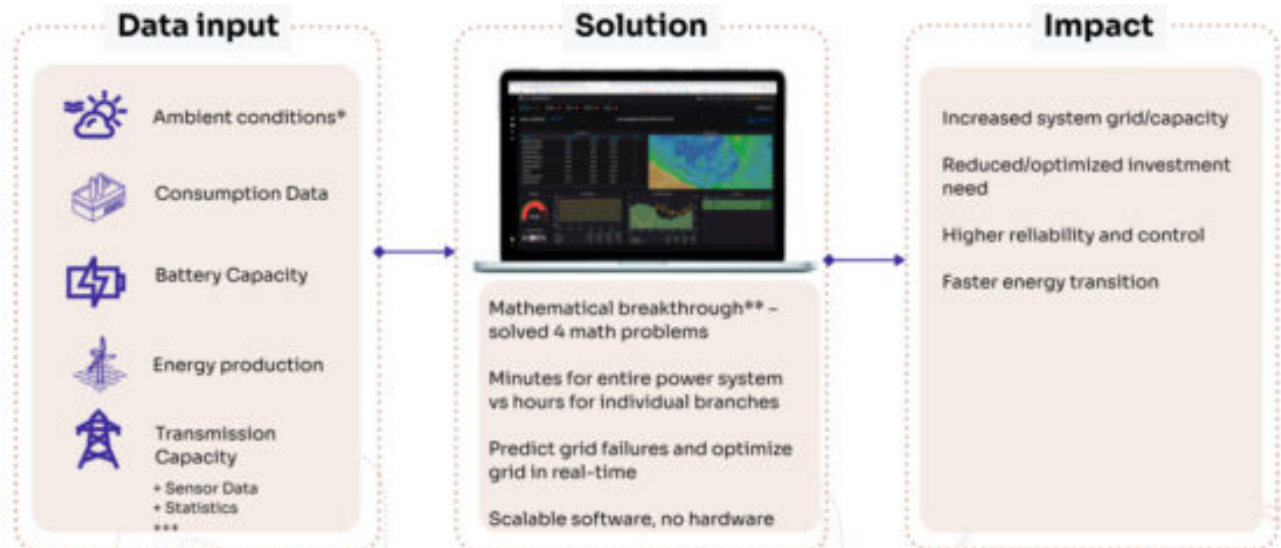
OPPORTUNITY

	Need to use some of the spare grid capacity
	By tapping into the existing security constraint in a safe way
	Give grid operators more road to handle the increasing traffic

This can only be achieved by analyzing the security of supply in near real-time, understanding the risk and mitigate when needed

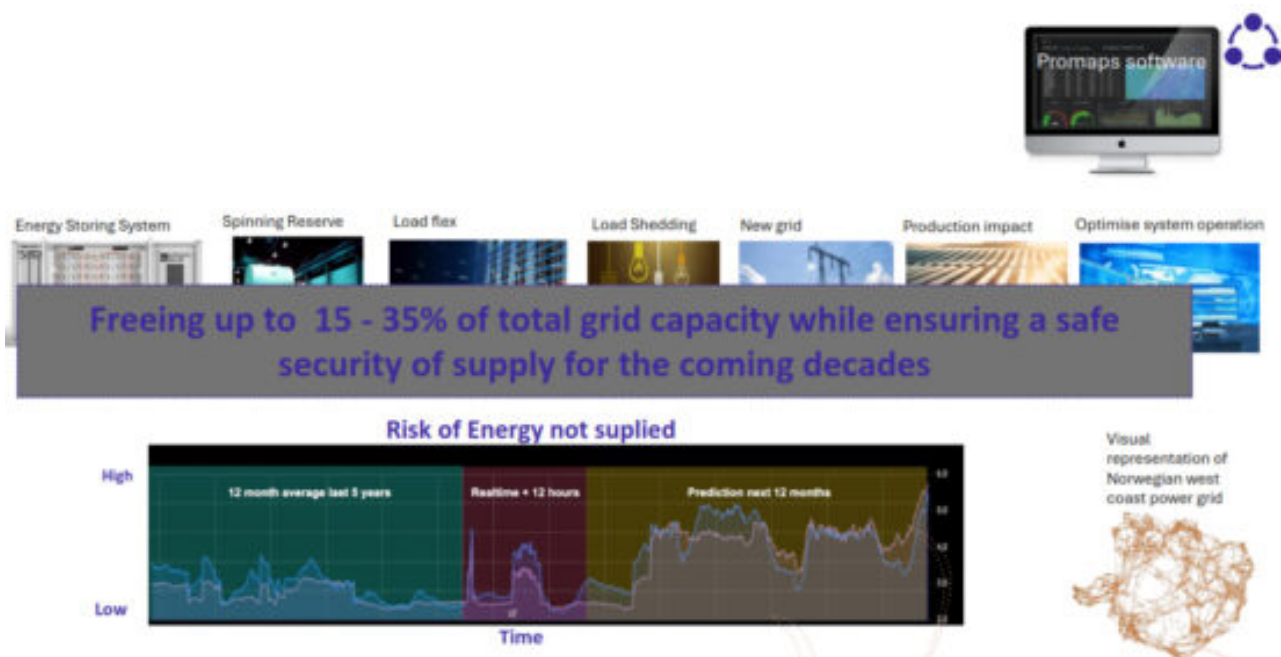
Proprietary mathematical breakthrough, building on team's 20+ years of power grid risk experience

Introducing the solution: Promaps Realtime – probabilistic risk analysis in near Realtime



Promaps Realtime “the solution”

Increase flexibility by knowing what to do and when



Quantified security of power supply

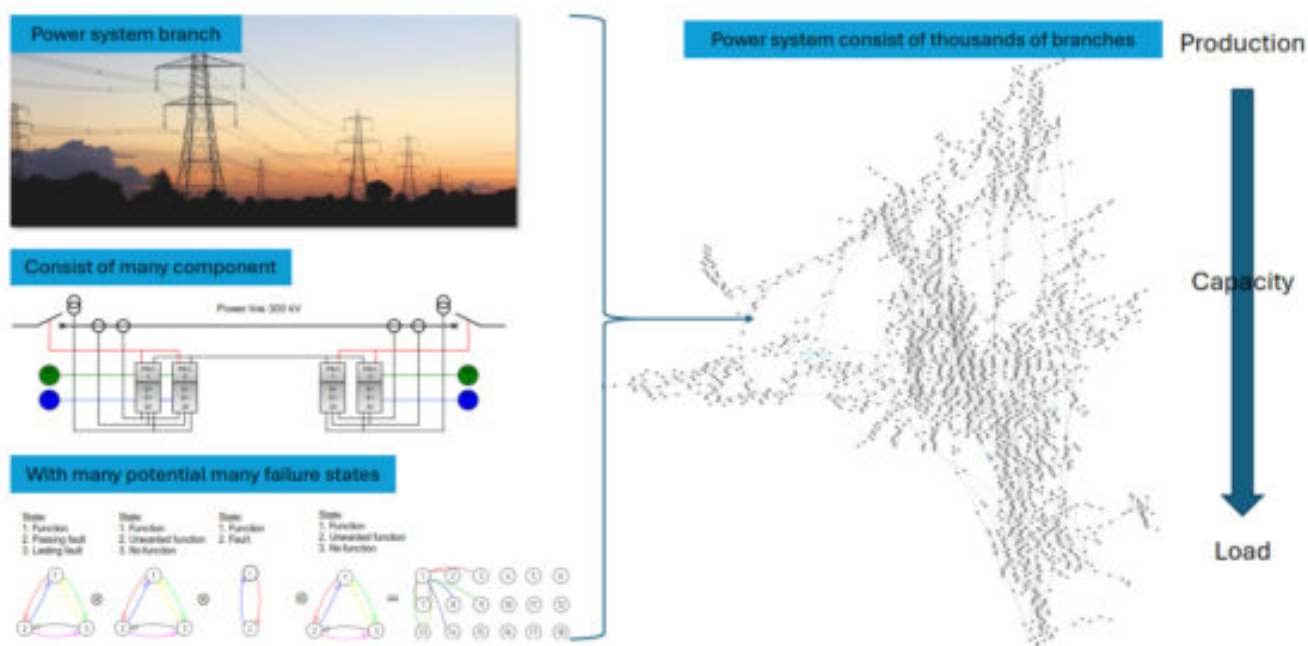
The solution

Deterministic & Probabilistic Reliability Criteria

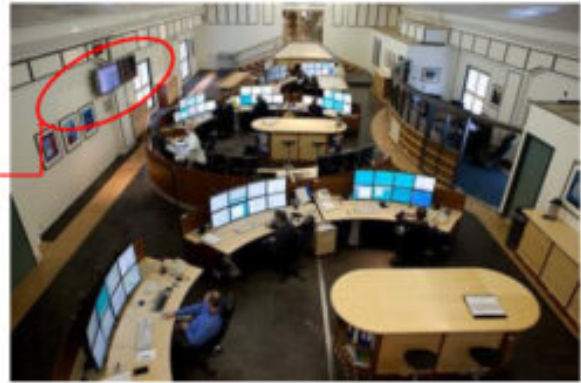
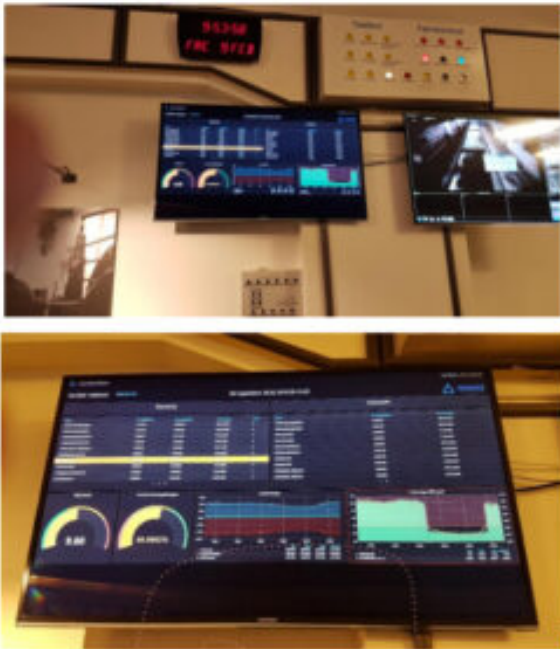
By use of probabilistic quantification of the security of supply – a lot of new tools for gaining flexibility are available

	Deterministic N-1 criterion	Probabilistic criterion
Contingency list	Single outages	-All contingencies up to N-k system states -All contingencies up to a certain cumulative probability of occurrence
Probabilities	Not considered	Failure probability for each component
Consequences	Not considered	Interruptions are valued at Value of loss of load

Power system complexity



Promaps Realtime Dashboard installed in the control room



Promaps realtime- The software



Analysis & calculation result

1. Reliability results:

- Probability of failure per component
- Probability of failure per network segment
- Probability of system failure

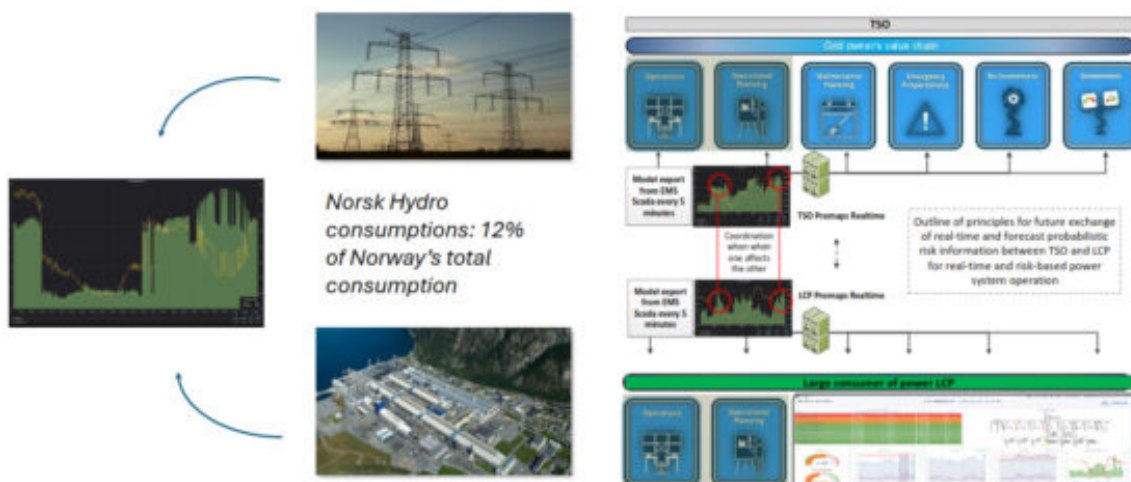
2. Power system risk

- Expected energy not delivered EENS
- Contingency list (risk adjusted)

- Black out list
- Cascade list
- Risk indicator in near real time
- Dynamic risk colour indication
- Risk graph



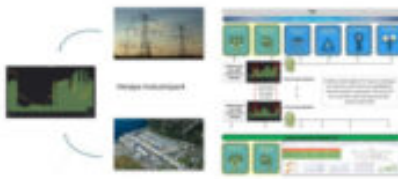
Use case 01 for increase capacity: TSO/DSO – Large prosumer of power



Use case 02 for increase internal capacity: Industry park

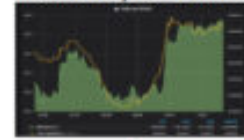
Use case 02: Internal Grid

Use case 01: External grid

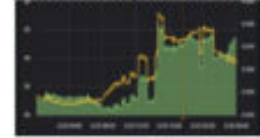


Monitor the security of supply of the power supply within HIP and to the external surrounding power system

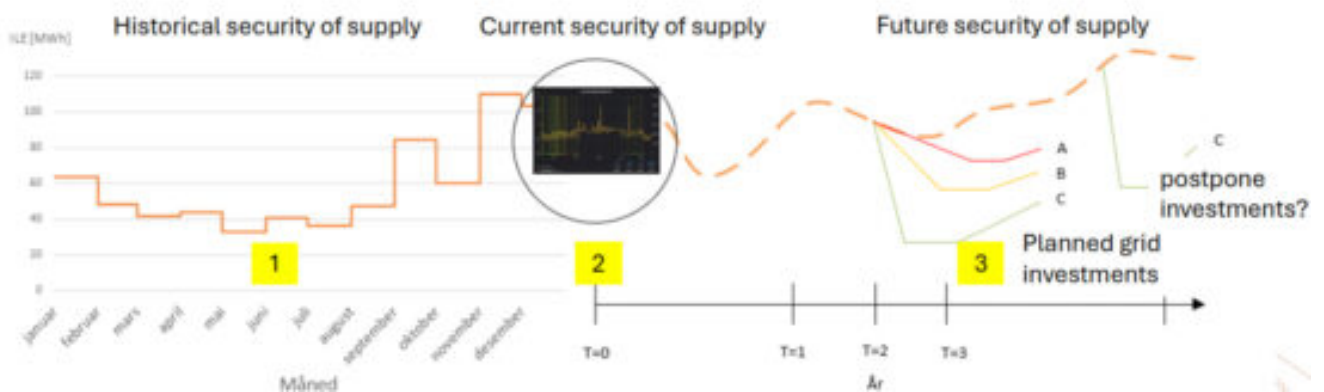
Company 01
Realtime predictions of load



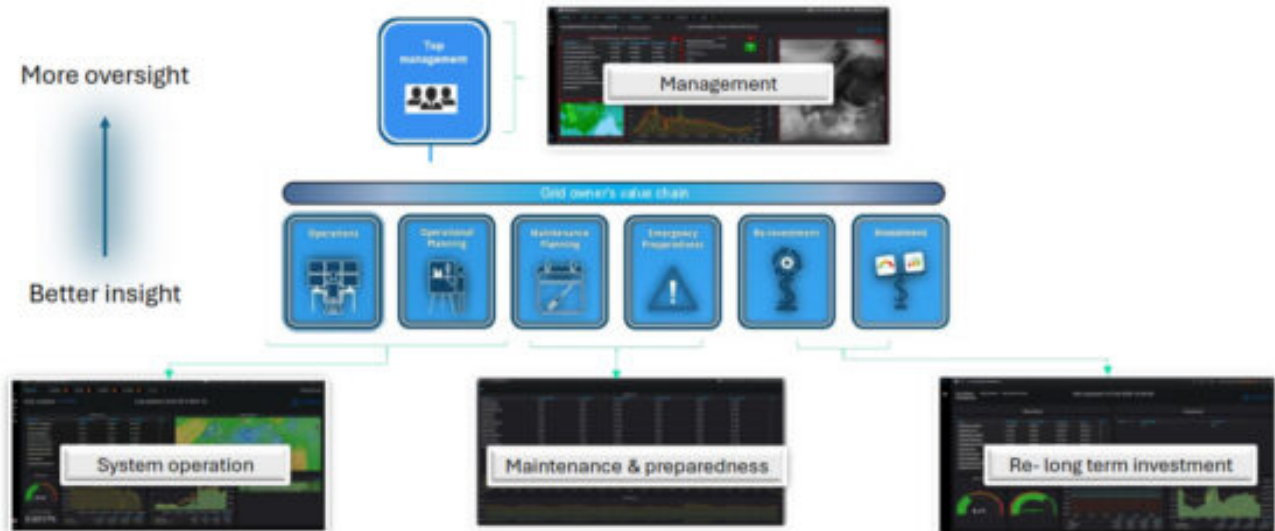
Company 80
Realtime predictions of load



Use case 03 for increase capacity: Investment analysis



Use cases 04 probabilistic analysis in the value chain



Documents / Resources



[Infinigrd Pro Maps Realtime](#) [pdf] User Guide
Pro Maps Realtime, Maps Realtime, Realtime

References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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