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Subject: Challenges of the changing power system and the role of automation and control in solving them – Fingrid's perspective

Abstract:

The role of grid automation and control technology in managing the electricity system is becoming more prominent. The operation of inverter-based resources (IBRs), such as wind and solar power, is based on manufacturer-specific programmable technology and is not described by physical equations like synchronous machines used in traditional power generation. This causes phenomena and interactions between plants that have not been seen before and need to be anticipated at the system level. For example, new kind of converter-driven or oscillatory stability problems can endanger the stability of the power system at times. However, the change also opens up new opportunities: with appropriate plant level control design and system level automation, these devices can be used efficiently to stabilize the power system, for example, in disturbance situations. This presentation will share Fingrid's view and future perspective as the TSO (transmission system operator) of Finland on the current status and challenges on the topic.