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Automatic functions for coordinated power flow control

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The use of advanced power flow control functions opens up new possibilities for increasing the capacity of existing grids but also calls for a coordination of different control options enabling effective congestion management. Algorithms for distributed control have been shown to be potentially powerful and efficient in theory and simulations, but many considerations for actual implementation in real grids have been neglected in the past. To fill this gap in current research this paper proposes a concept for an agent-based power flow control system, considering a holistic view including necessary hardware components, the control algorithm, monitoring of underlying distribution grids, communication technology and protocols, as well as the interface with the grid operator's control center. The presented system utilizes distributed power flow controllers and flexible power from underlying grids.

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