Aperçu des différents outils de contrôle-commande et d'automatisation du réseau

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Optimal Integration of Distributed Energy Resources is key for the Distribution Network

Distributed Energy Resources
- Transmission is meshed and monitored
- Huge grow on DER (PV, Wind, CHP, EV, storage,..) at distribution level

Impacts:
- Voltage profile along the network
- Stability due to bi-directional energy flow
- Energy Efficiency
- Real time balance supply & Demand

Need and optimal system, control and monitoring
- Monitoring of MV & LV
- Distributed control (protection, reconfiguration, voltage regulation,..)
- Bi-directional data communication
- Advance functions at control center
- Real time interaction between all IT/OT applications

Management of the flexibility of all resources to reduce OPEX & CAPEX

Schneider Electric - Division - Name – Date
1 - Observability of the Network

Utility: I want to have a real-time monitoring of my LV network.

Utility: I want to minimize losses on the grid to save energy.

Utility: I want to localize precisely the DER on my network.

Utility: I want to minimize EV impact on my grid & offer the best service to my customers.

Self powered remote sensors

Algorithm data processing

Smart Utility
2 - Control of the Network

Utility: I want to be compliant with the grid code

Utility: I want to facilitate REN integration on the LV & MV grid at optimal cost

Minera Sgrid with Voltage regulation

Self Healing reconfiguration

Residential customer: I want to reduce my electricity consumption with the same comfort & participate to demand response programs

Producer: I want to be compliant with the grid code

Power plan controller

Smart Utility
3 - Global system optimization of the Network

Utility: I want to optimize my operation CAPEX & OPEX

Utility: I use the flexibility of all distributed resources for grid stability

Weather load & production forecast

Renewable Control Center
Storage management

State estimator & load flow
Volt Var optimization
Optimal reconfiguration for losses reduction

Producer: I want to maximize my production and valuate the Ancillary services

Facility manager: I want to optimize my consumption internally and to monetize flexibility to aggregators externally

Smart Utility
Conclusion

Lot of Solutions available at end user, producer and Distribution Operator side for a global management of the flexibility
Thank You!