Design and Evaluation of XMPP based on IEC 61850 for Smart Grid Application

Keywords: IEC 61850, XMPP, Communication, Cloud-based, Smart Grid

Context:

Power system has become more complicated with restructuring and executing power demands. It has increased more than ever with newly integrated net metering systems, electric vehicles and smart devices. A single fault can result in massive cascading effects, affecting the power supply as well as the power quality. The IEC 61850 standard permits for a structured grid automation system acute task like grid protections, renewable energy sources management, synchronized measurements and monitoring applications share the communication network. The idea is to develop an interface into the field, which support XMPP, and is based on IEC 61850. Test the development on the already existing cloud-based Service Restoration application. By considering of the existing knowledge, system can detect fault location in the environment and disconnect grids that are close to the fault location. As a final step, system should find the best power feeder to those grids, which already are disconnected.

Your Tasks:

Extension of already existing infrastructure and evaluate the result of extension. Useful links:


Profile:

- Programming skills: Node.js and knowledge about OSI layer, protocol development,

Contact:

Maliheh Haghgoo, M.Sc.
Research Associate
RWTH Aachen University
E.ON Energy Research Center, Institute for Automation of Complex Power Systems
Mathieustraße 10, 52074 Aachen, Germany, Room 10.11
Phone: +49 241 80 49587
MHaghgoo@eonerc.rwth-aachen.de