

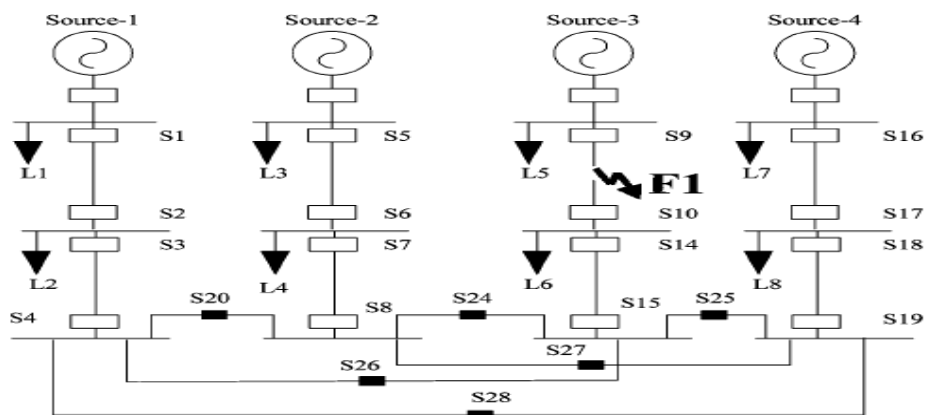
Master Thesis

Autonomous Self-healing in Smart Distribution Grids

Keywords: Multi-agent based system, Service restoration, Self-healing

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. Intelligent distribution automation will be required by means of decentralized power management as well as information and communication technologies to actualize smart grid modernization. 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. Literatures related to IEC61850 and MAS (Multi-Agent based System) clearly describe how MAS can be used in the distribution system automation in accordance with IEC 61499. By considering of 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:

MAS based application for service restoration of power systems/ smart grids based on optimized decision-making.

Profile:

Programming skills in Python/C/C++. Knowledge about AI, Multi-agent system.

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