The Siemens Smart Grid Communications Assessment Tool (SG-CAT)

Answers for developing a holistic Smart Grid communications strategy

The Siemens Smart Grid Communications Assessment Tool (SG-CAT) performs a comprehensive communications study that, in about 6-10 weeks, evaluates the utility’s existing communications solution and identifies and analyzes optimal communications strategies that will align with the utility’s Smart Grid roadmap and constraints.

SG-CAT is a powerful communications simulation, modeling and analysis platform that Siemens has developed to assess the performance of a given Smart Grid deployment as a function of underlying geographic, topological, and technological constraints unique to each utility.

A study typically begins with SG-CAT automatically importing the topology of all devices (such as cap banks, meters, reclosers, FCIs, voltage regulators, substation RTUs, distribution transformers, line sensors, protection relays, etc.) within the utility’s service area, along with terrain and elevation data.

![SG-CAT Network Creator (SNC)](image)

After importing terrain and asset information, SG-CAT simulates deployment of the most popular Smart Grid applications and communications technologies for each device in the utility’s service area. Siemens can configure the tool based on desired communications specifications (power levels, frequencies, modulations, etc.).

Answers for energy.
Individual statistics, such as latency, packet loss and Signal-to-Noise Ratio (SNR), from every device are collected and can be easily viewed for every combination of communication technology and Smart Grid application included in the study. Additionally, SG-CAT provides visualization of all communications links between devices in the service area, including link specific details, such as the terrain profile along the link. Among other things, this allows automatic detection of connectivity issues.

Global statistics are analyzed across the studied scenarios to allow recommendations on the most suitable communication technologies for each application.

Additional forms of global analysis provide insights into the number of devices a network can support for fixed application definitions, or the application definitions a network can support for a fixed number of devices.

For more information, please contact your local Siemens representative.