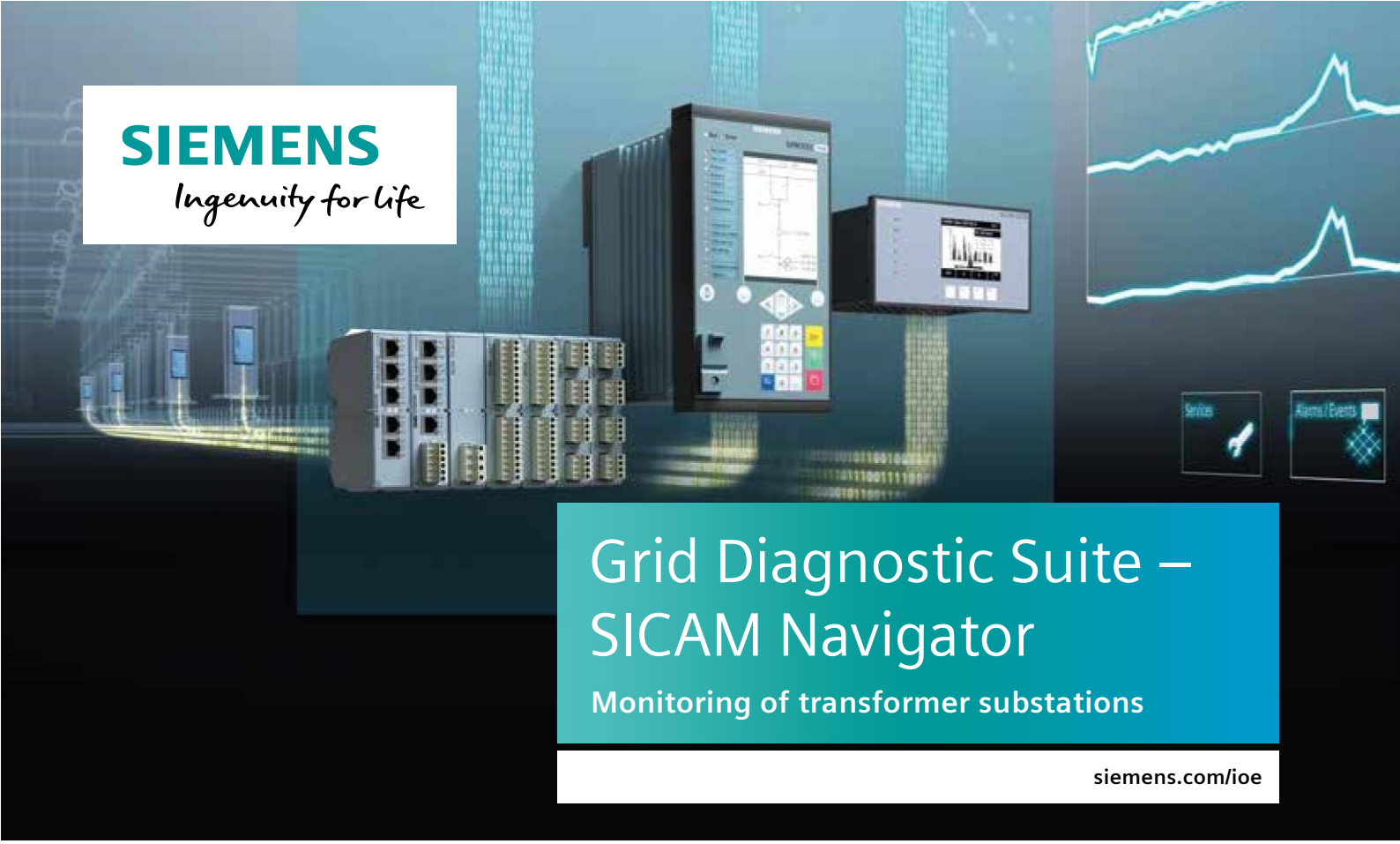


Grid Diagnostic Suite – SICAM Navigator

Monitoring of transformer substations

siemens.com/ioe

New challenges for older grids

Siemens enables distribution power grids that have been in use for decades to manage changes like the integration of renewable energy producers and the increasing adoption of electric vehicles. Until now, transparency was lacking for cable grids, which need to be monitored and analyzed in order to identify their weak points. These include power quality problems caused by system disturbances due to photovoltaic plants and overloads from uncontrolled e-vehicle charging, which can increase the risk of outages.

How can operators avoid additional investments and growing maintenance costs?

Digitalization provides new solutions for comprehensively analyzing power grid data in the cloud.
The Grid Diagnostic Suite reduces outage time in medium- and low-voltage grids. The SICAM Navigator detects risky states of cable networks and locates the affected medium-voltage grid segment and/or the low-voltage branch.

Avoiding outages in medium- and low-voltage grids

The SICAM Navigator notifies operators about grid components at risk. Overloads or unbalanced loads are identified based on measured values, such as voltage, current and reactive power, using recorded load profiles. The network capacity is also made transparent and assessable in order to, for example, facilitate the connection of new charging stations for e-vehicles.

"Zero Touch" onboarding – Minimized engineering

Since the devices communicate to MindSphere via the SICAM A8000 using the standardized OPC UA PubSub protocol, no further hardware extensions or complex engineering processes are necessary. After successful onboarding, continuous distribution grid supervision combined with data analytics facilitates the location of patterns that indicate critical grid sections and future incidents.

SICAM Navigator

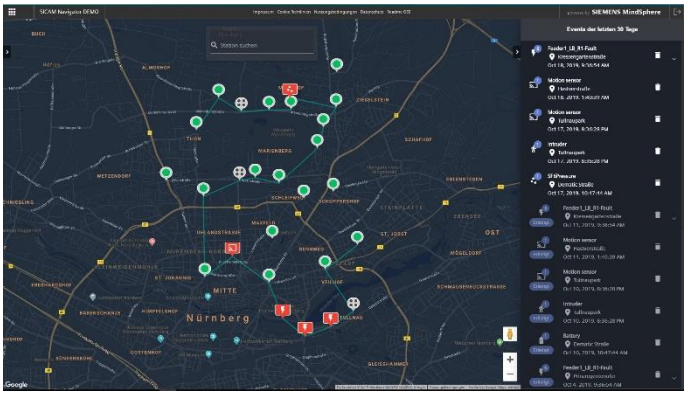
A MindSphere application which enables power grid operators to monitor the operational status of transformer stations for cable networks to optimize maintenance activities and reduce outage time

Customer benefits

- Reduces investment and operating costs
- Increases grid availability and service quality
- Easy to integrate, seamless data availability
- Meets highest security standards
- No vendor lock-in by using standardized IoT protocols

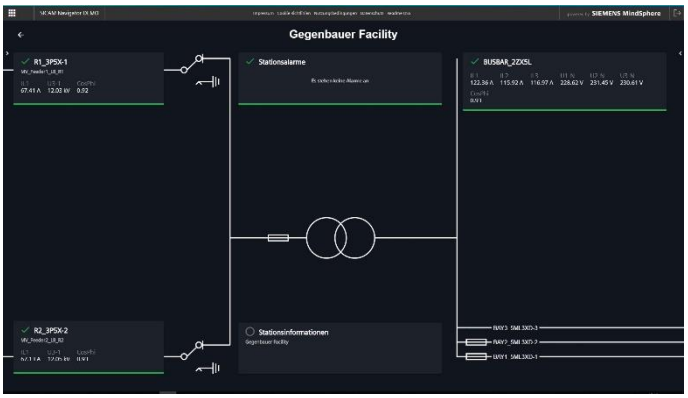
Grid view

- Geolocation view of transformer substations
- Context-aware substation markers
- List view of grid-wide active fault indications
- Notification via e-mail



Station view

- Station topology view
- Fault direction indications as reported by SICAM-FCMs and SICAMFPIs
- Blown-fuse alarming



Data view

- Visualization of measurement values and data points as available on SICAM A8000 for medium- and low-voltage side
- Adaptable time series data view

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