



## ELECTRIFICATION X

# Network Fault Management

## Feature: Substation Fault Management

For fast and efficient fault handling

Protection relays sit at the heart of our power grids. They operate silently inside substations and listen to the heartbeat of the power lines. Once a fault occurs, they act within milliseconds, avert disaster, and alert the grid operator.

### Electrification X – Network Fault Management Feature: Substation Fault Management

Substation Fault Management is a feature that empowers power grid operators to efficiently monitor the operational status of their protection device and power quality device. By retrieving fault records and logs, the application enables quick analysis of the protection faults and the optimization of maintenance activities, ensuring improved reliability and performance of the power grid. Instead of waiting for information from the control center when a critical event occurs, the service team is informed within seconds on any mobile device. The feature provides direct, full, visibility into the incident and enables complete root cause analysis along with faster clearance of faults. This also provides real-time insights and analytics, helping operators to promptly address issues, reduce downtime, and enhance overall grid stability.

### Automatic onboarding – effortless Engineering

Once authenticated, the assets and signals of the station will be sent to Electrification X and automatically create a database. No typos, no false assignment during engineering, everything will be at your fingertips in a moment.

Additionally, the flexibility of Substation Fault Management feature under Electrification X – Network Fault Management feature set allows you to create your own screens in combination with the automated onboarding assets.

It's a way to combine secure automated onboarding with flexibility and **effortless configuration**.

### Two in one and top-notch cybersecurity

The highest priority for Electrification X and SICAM GridEdge is authentication and encryption, so your data are safe in transit and at rest. Thereby, with a Certificate Authority in the cloud and X.509 certificates per device, it is ensured that only authorized devices are onboarded.

### Your benefits

Substation fault management ensures that pre-fault and post-fault analysis is always feasible. By providing full visibility into the substation's status, it enables fault analysis for the entire installation. This data-driven approach supports informed decision-making by consolidating electric grid process data through a single access point.



Easier workflows for faster fault clearance



Availability of Fault Records and Logs helps quick decision making



Increase service quality and grid availability



Full visibility of substation status



Automatically retrieve relay and power quality device information, simplify data collection

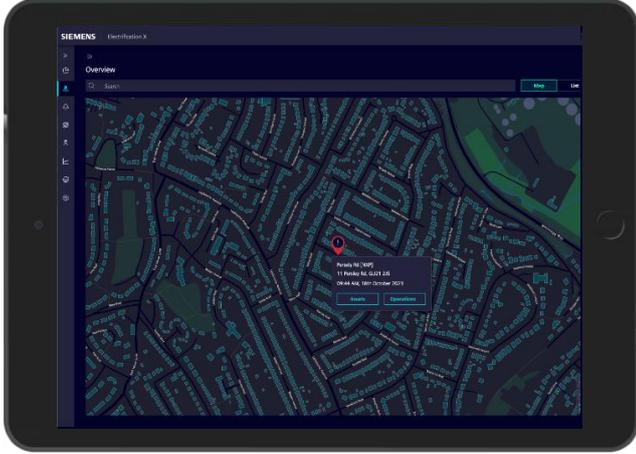


Substation Fault Management feature under Electrification X – Network Fault Management in combination with protection relays and power quality devices, provides cybersecurity at the highest level

**Functions at a glance**

**Fault Localization**

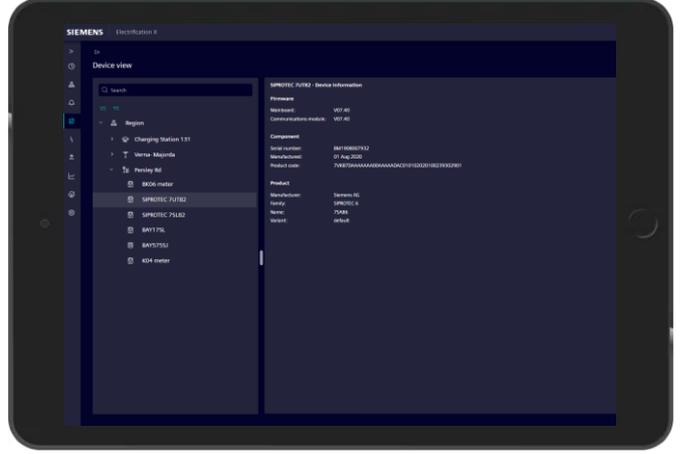
- Geographic view of fault localization and a color code indicating the Transparency Index, alarms, and local time. Additionally, latest unacknowledged alarms are shown in a list.
- Ability to drill down for each event
- Notifications via email



Fault Localization – Map view

**Basic Transparency of Protection Relays and power quality devices**

- Device-related information like manufacturer, device type, firmware versions, serial number and product code details are shown.



Device view

**File Transfer**

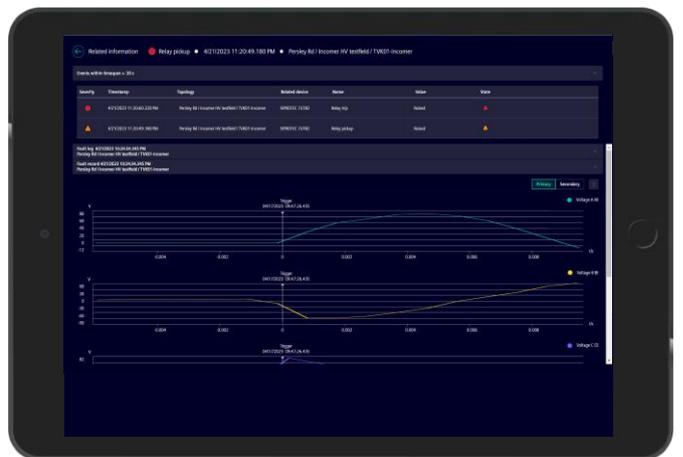
- COMTRADE File visualization and download
- COMFEDE File visualization and download
- PQDIF File download
- Support Large COMTRADE and PQDIF File

**Aggregated Information during Fault**

- With the help of Related Information of Protection Trip events, user can see all fault related information including fault records, logs, alarms of within +/- 30sec consolidate across AOR's level



File Transfer & Visualization



Aggregated Fault Information

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