RESILIENT ENERGY DISTRIBUTION WITH OUR IOT AND CYBERSECURITY SUITE

Digital solutions for real challenges

Start

SIEMENS

Overview

Our mentioned portfolio is part of the curated modular Siemens Xcelerator portfolio.
Siemens Xcelerator is an open digital business platform that enables customers to accelerate their digital transformation easier, faster and at scale.

What’s at stake?

A good deal of future security!

Energy distribution, automation systems and networks are the fields where a good deal of future security is being shaped. Transmission system operators (TSO) and distribution system operators (DSO) are managing this on the grid side, while Industry & Infrastructure customers (I&I) operate distribution systems and assets for their own facilities.

Most important for all parties involved: Optimal transparency of all energy distribution procedures and processes in order to keep uptime and resilience as high as possible. The advent of digitalization also requires a precisely coordinated cybersecurity concept across all levels. Due to its modular character, our IoT and cybersecurity suite offers all possibilities to find the perfect answer for your individual challenge in terms of reliability, availability, sustainability, costs and cybersecurity.

Transmission system operators

TSOs are responsible for transporting electricity at high-voltage level over long distances. In their switching stations and substations, they provide the medium voltage for the DSOs, but also take care of the integration of large renewable energy sources such as offshore wind parks, for example.

TSO

Distribution system operators

These are usually energy suppliers who operate their own medium-voltage and low-voltage grids. They ensure that these two network levels are reliably supplied with power and that the network components used, such as transformers and switchgear, perform their tasks flawlessly.

DSO

Industry & Infrastructure customers

Their task is defined by the fact that they have to operate their own energy distribution systems at medium- and low-voltage level and supply them with energy, for example to keep high risk systems running. They therefore need security of supply on the grid side just as much as they need their own systems to function at lowest cost.

I&I

Efficiency and availability at your fingertips

The cloud-based application NXpower Monitor is the digital caretaker of your energy distribution, automation systems and networks. Starting and accompanying your digital journey in energy distribution, it helps you reduce operating costs and better manage risk: Identify potential asset breakdowns before they happen, calculate KPIs and monitor energy consumption – from anywhere in the world.

Highest operational transparency
Monitor key performance indicators to identify optimization potentials for availability, energy consumption, CO_2 emission, and realize cost savings based on the findings.

Alarming and monitoring
Visualize all alarms along with their status and details e.g. correlated to health status, exceeded energy budgets, and get an e-mail notification to your designated maintenance engineers with details on the alarms.

Condition monitoring
This option allows you to remotely monitor your asset's health status based on temperature, partial discharge and circuit breaker analysis. This improves risk management, operations and maintenance schedules based on the actual status of the asset.

NXpower Monitor – your benefits

- OPEX savings and CAPEX shifts
- Energy savings and improved sustainability
- Secured documentation
- Risk management
- Improved asset utilization

NXpower Monitor is your solution for DSO I&I

Learn more about NXpower Monitor on the website ›

Efficient protection relay and network fault monitoring

Optimize your maintenance activities and power grid fault management with digital transparency from the cloud-based IoT application SIPROTEC Dashboard. It will show you the operational status of your power grid and protection devices. The application is optimized for use on mobile devices to allow for a quick, on-the-fly overview of the status of your power grid using the data of protection relays in the field. It also reduces maintenance cost and increases uptime by instant fault notification and remote access to fault records.

Improved fault management
SIPROTEC Dashboard enables you to monitor the operational status of your SIPROTEC protection device fleet, increase data transparency of grid operation, and optimize maintenance activities.

Automatic fault record retrieval
SIPROTEC Dashboard can automatically retrieve fault records from protection relays, so that you can assess any problem while the maintenance team is already on its way to the substation.

Monitoring of relay setting
Full transparency of protection settings down to the individual relay: SIPROTEC Dashboard provides all information to pursue, predict, and prevent grid faults.

SIPROTEC Dashboard – your benefits

- Maintenance efficiency
- Fast and swift fault clearance
- Asset efficiency
- Safety

SIPROTEC Dashboard is your solution for TSO DSO I&I

Learn more about SIPROTEC Dashboard on the website

OT COMPANION – PART OF SIEMENS XCELERATOR

For better OT asset management

The OT Companion® Service helps TSOs, DSOs and I&I customers gain transparency across their installed energy automation products. This allows them to scale baseline management, vulnerability monitoring, and security patch management to support the required processes and recommended practices resulting from cyber regulatory requirements and international OT cybersecurity standards.

OT asset transparency
This includes the automated inspection, management and maintenance of data describing your substations, OT assets, and deployed OT components.

Baseline management
Allows to define baseline configurations for the deployed software/firmware versions in the OT components and tracks the adherence of the installed versions to these defined versions.

Vulnerability monitoring
OT Companion automatically provides detailed information on security vulnerabilities and sends notifications directly related to your deployed OT components, to speed up remediation activities.

Security patch management enablement
Integrated patch management workflow tracking and reporting – set SLAs to centrally track the prioritization, compatibility validation, and field deployment of relevant security patches and/or other mitigation measures

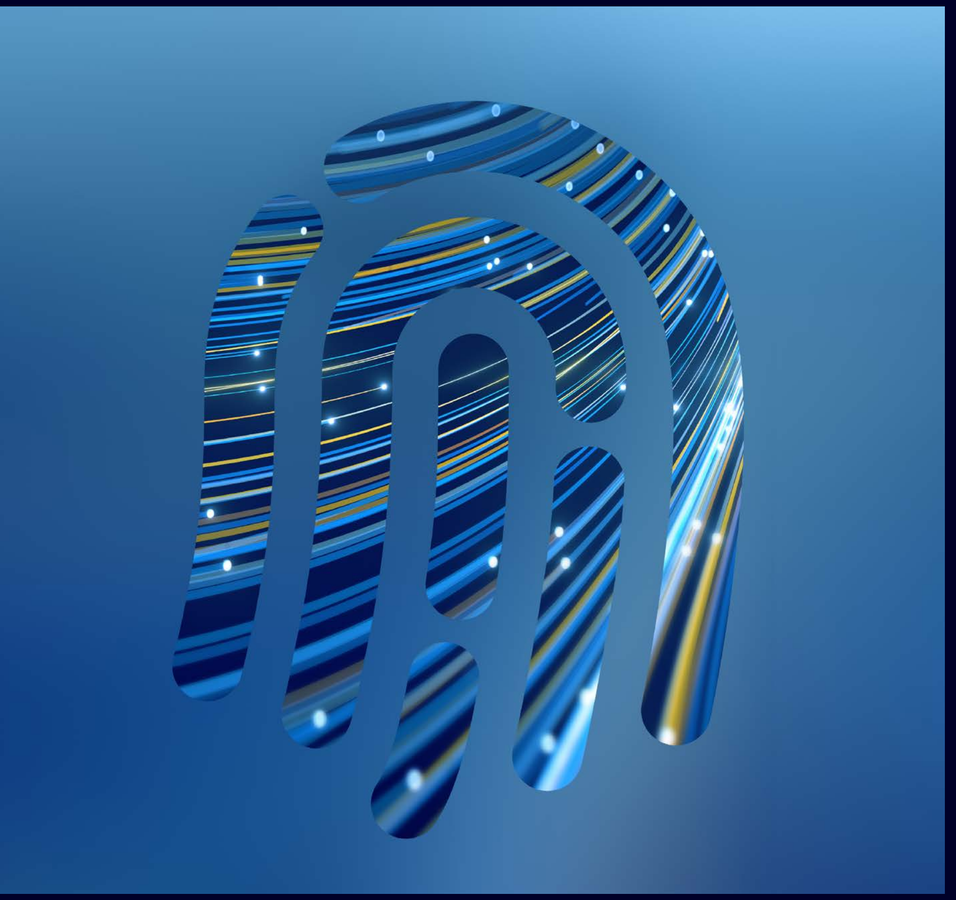
OT Companion – your benefits

- **High reliability and uptime**
- **Reliable protection from cyber-attacks and incidents**
- **Compliance with cyber regulatory requirements**
- **OPEX savings**

OT Companion
is your solution for TSO DSO I&I

Learn more about OT Companion on the website ›

OT cybersecurity incident detection and response for energy automation systems



Security Information & Event Management (SIEM) system is a solution that enables the monitoring, detection and alerting of security events or incidents within an OT environment. It provides a comprehensive and centralized overview of the security situation of an OT infrastructure. SIEM systems collect, aggregate and evaluate log data generated throughout a whole organization's OT infrastructure.

On the cybersecure side
"Attack detection systems" are a requirement of the new IT security laws that have been implemented in many countries.

Improved interaction of security systems and functions
A SIEM system collects all security relevant notifications from all components of the system, detects abnormal activities, and sends an alarm notification to the operator.

Tailored for monitoring energy automation & SCADA systems
All collected logs are evaluated in the SIEM via rulesets that are curated for energy automation and SCADA systems in order to reduce noise in the logs, correlate them and detect abnormal behavior of/in the systems.

Towards better cyber incident response
Timely detection is a prerequisite for response and reporting. In SIEM, any suspicious activity is checked against more than 200 alarm rules.

SIEM – your benefits

- Comprehensive detection of cybersecurity threats from a trusted partner
- Reduced downtime in the face of cyber threats
- Improved operational security for energy automation systems
- Swift and secure incident response and recovery

SIEM
is your solution for TSO DSO I&I

Learn more about SIEM on the website ›

SICAM NAVIGATOR – PART OF SIEMENS XCELERATOR

Monitoring of distribution transformer stations and eCar-charging stations

With SICAM Navigator you quickly get an overview of the operational status of substations in your cable networks. Optimized for desktop applications and mobile devices, the cloud-based IoT application SICAM Navigator monitors your secondary transformer stations and eCar-charging stations to optimize maintenance activities and reduce downtime and operating costs (OPEX).

LV grid monitoring
Have the right information at hand! Grid status, grid faults in medium-voltage or low-voltage distribution – you name it and notify your service engineers any time.

Grid evaluation
Network evaluation goes one step further than monitoring. SICAM Navigator helps you to analyze the network behavior in order to operate it smarter and to avoid future faults.

Optimized asset utilization
SICAM Navigator evaluates the actual grid capacity, for example, to facilitate the connection of new charging stations for e-vehicles. Also, with a specific setup SICAM Navigator allows charging station operators to control their substation, for example, in power limitations.

SICAM Navigator – your benefits

- Fast fault localization in distribution grids
- Higher resilience
- Increased asset efficiency
- Reliable revenue streams
- Management of EV charging hubs

SICAM Navigator is your solution for DSO I&I

Learn more about SICAM Navigator on the website ›

Monitoring of overhead line distribution networks

Discover the power of SICAM Localizer by quickly gaining an overview of your overhead distribution network. Designed for both desktop and mobile devices, SICAM Localizer monitors your medium-voltage overhead lines using SICAM FSI sensors & SICAM FCG gateway to optimize maintenance activities, and reduce downtime and operating costs (OPEX).

Saving maintenance costs
The instant notification of a faulty section with SICAM Localizer helps to reduce downtime and labor by typically 30 percent.

Cutting on downtime
Once a fault in an overhead line occurs, quick detection and localization is required. On average, SICAM Localizer has cut localization time from 60 to 3 minutes.

OPEX & CAPEX reduction
Thanks to the quick response to overhead line failures, SICAM Localizer contributes to a quick restoration of power supply and reduced costs.

SICAM Localizer – your benefits

- Improved SAIDI[1] & SAIFI[2] metrics
- Improved safety and resilience
- Increased asset efficiency
- More user efficiency
- Reliable revenue streams

1) System Average Interruption Duration Index
2) System Average Interruption Frequency Index

SICAM Localizer is your solution for DSO

Learn more about SICAM Localizer on the website ›

SIMARIS CONTROL – PART OF SIEMENS XCELERATOR

Digital intelligence for your electrical distribution systems

SIMARIS control – a state-of-the-art on-premise monitoring and diagnostics station for electrical power distribution assets, from medium-voltage switchgear to low-voltage switchboards, transformers, and peripheral devices. Thanks to the modular architecture, SIMARIS control can provide the solution based on the actual market requirements from asset monitoring & control, simple threshold-based temperature monitoring to condition-based health status monitoring, energy monitoring, digital documentation, remote visualization, and cloud gateway functionality.

All-in-one system
SIMARIS control supports wide range of industry protocols to integrate the field devices in your electrical power distribution system to turn many individual devices into one integrated system. With the local touchscreen display, you will have all-in-one monitoring and diagnostic station for complete substation or E-House.

Local data storage
The operational or statistical data will not leave the customer premise as the data collected from all the field devices and sensors will be stored and processed on-site giving you peace of mind in terms of data security. However, as per the requirement, the relevant data can be transferred to higher-level automation or cloud-based analysis systems.

Condition monitoring
With the on-premise condition monitoring option, you can monitor your asset's health status based on temperature, humidity, partial discharge and circuit breaker analysis. This improves risk management, operations and maintenance schedules based on the actual status of the asset.

SIMARIS control – your benefits

- One integrated system for all assets
- Easier & faster identification of incidents with in-app alarm & email notifications
- Local data processing and storage
- Higher system availability with condition monitoring-based health index functionality
- Ease of maintenance with digital documentation and maintenance logbook

SIMARIS control is your solution for TSO DSO I&I

Learn more about SIMARIS control on the website

Secure and efficient infrastructures

The IoT gateway software SICAM GridEdge collects, processes, compresses and translates data from protective relays and other OT equipment in the field and forwards it to both our and other 3rd party cloud applications. This makes SICAM GridEdge the ideal basis for fault management, asset management, maintenance and diagnostics as well as special data analyses, for new plants or for retrofitting existing plants.

Secure link to the cloud
SICAM GridEdge is your data gateway to cloud solutions. Still, you decide which data leave your premises and where they are transferred to, integrated in a comprehensive cybersecurity solution.

Secure data link to OT Companion and SIPROTEC Dashboard
A SICAM GridEdge installation collects and transfers data from protection devices, RTUs, PQ devices, sensors, etc. to cloud applications such as OT Companion or SIPROTEC Dashboard for handling a diverse set of use cases in the cloud, ranging from fault monitoring to asset & cybersecurity management.

Quick onboarding in the cloud
SICAM GridEdge automatically creates certificates for each device during the onboarding process to save you time and effort, minimizing engineering of the IoT system and protecting your data and assets using certificate-based authentication and encryption.

SICAM GridEdge – your benefits

- **Unlocks potential for gaining full transparency on critical power systems for efficient operations, maintenance, and cybersecurity**
- **Easy and secured IoT onboarding of sites with minimal installation & commissioning efforts**
- **Single IoT gateway and asset data collector for simultaneously powering a wide range of cloud applications**

SICAM GridEdge is your solution for TSO DSO I&I

Learn more about SICAM GridEdge on the website

Virtual testing of SIPROTEC 5 protection devices

Save time and increase system quality with SIPROTEC DigitalTwin, the real time digital replica of a physical SIPROTEC 5 device including algorithm, functionality, and communication interfaces. It offers a comprehensive test of your energy automation system within minutes, without hardware, and supports all SIPROTEC 5 firmware versions. The cloud-based SIPROTEC DigitalTwin is available anywhere, anytime, 24/7.

Shortest commissioning times
SIPROTEC DigitalTwin fast feedback loops help you continuously deliver precisely fitting solutions. You no longer have to wait for the fixed time window of the physical FAT.
Non conformance costs are even better managed, increasing SAT confidence and reducing the time required for on-site commissioning.

Efficient testing of SIPROTEC 5 devices
Virtual remote testing across different locations saves you not only travel costs and time but also logistics for setting up the system. Perform comprehensive tests of the SIPROTEC 5 devices in your energy automation system with high efficiency, performance, security, and availability – without any hardware.

Fewer and shorter outages
Better pre-testing of the entire functionality of the SIPROTEC 5 devices results in higher availability of the energy automation system, with fewer and shorter outages, and lower operating costs.

Efficient and scalable training of operation teams further reduces the risk of human errors.

SIPROTEC DigitalTwin – your benefits

- **Fast and realistic fault analysis**
- **Faster system energization**
- **Virtual testing for fast commissioning**
- **OPEX reduction, shorter outages and higher availability**
- **Simulation and validation of product properties**
- **Efficient, scalable trainings on the job**

SIPROTEC DigitalTwin is your solution for TSO DSO I&I

Learn more about SIPROTEC DigitalTwin on the website ›

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