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## SIPROTEC and SICAM

Easy IoT connection with the standardized protocol OPC UA PubSub

Powered by  
MindSphere

[siemens.com/iot-energy-automation](https://www.siemens.com/iot-energy-automation)

### The IoT brings real added value to the power supply

The Internet of Things (IoT) is poised to be a driver of growth in many business sectors in the coming years, including the energy industry. In simple terms, IoT is about networking electronic devices over the Internet.

For power supply systems, connecting to the IoT enables all components within a station to make their data available in a cloud-based platform. Applications can then be used to consolidate, link, evaluate, and visualize this information for application-specific purposes. You can utilize the resulting benefits to:

- Enhance the transparency of plant and equipment status and conditions (such as electrical operating values and equipment availability)
- Plan predictive maintenance and optimize services and resources
- Increase the availability of the power supply system

### MindSphere – the IoT operating system from Siemens

MindSphere is the open, cloud-based IoT operating system from Siemens offering data analysis, versatile connectivity, tools for developers, applications, and services.

With all these functions, however, data security always takes highest priority. MindSphere fulfills the basic rules of

the industry-relevant security standards as well as recommendations from regulatory authorities for handling data in cloud environments.

### Connecting SIPROTEC and SICAM to MindSphere

SIPROTEC and SICAM – our products and solutions for protection engineering, station automation, power quality, and measurement – can be connected directly and easily to MindSphere and other cloud-based platforms.

The connectivity is enabled by updating its communication firmware with the standardized OPC UA PubSub protocol (to IEC 62541 requirements) – no hardware extension is required. Devices from other manufacturers can also be connected to MindSphere via an IoT gateway such as SICAM A8000.

### Upgrading existing installations is simple

Using the IoT standard OPC UA PubSub and applying the highest security standards makes IoT connection of existing legacy installations a lucrative prospect:

- Continue using existing infrastructure and hardware
- It is easy to upgrade the IoT protocol in existing hardware with no impact on running applications
- No system changes are needed to the configuration of devices in substations and grids, etc.

# Transparency increases efficiency

## Visualize and analyze data with the applications of our Grid Diagnostics Suite

All relevant data are transmitted via the OPC UA PubSub protocol to the cloud in encrypted form, where they are available to the various MindSphere applications. These are two examples among many applications offered by “Grid Diagnostic Suite – Powered by MindSphere”:

1. “SIPROTEC Dashboard” is an application that allows transparent processing of grid data in the cloud. It provides, for example, information from the SIPROTEC devices in a map view on a smartphone or tablet computer (iOS or Android) with notification function.

This enables grid operators to analyze status and condition messages, protection trips, and safety or security events, and to optimize their maintenance activities – from anywhere, at any time.



2. “SICAM PQ Advisor” is a powerful application for analyzing grid quality, enabling operators to monitor and track anomalies and trends in the grid, among other things.



## Develop your own apps

The IoT solutions from Siemens also let you develop your own applications based on the data available centrally in the cloud.

## Advantages at a glance

- Simplifies processes
- Increases grid availability and service quality
- Reduces investment and operating costs
- Enables predictive maintenance
- Enables new business models
- Easy to integrate and seamless data availability
- Meets industry-relevant security standards
- No vendor lock-in due to use of IoT standard protocols

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