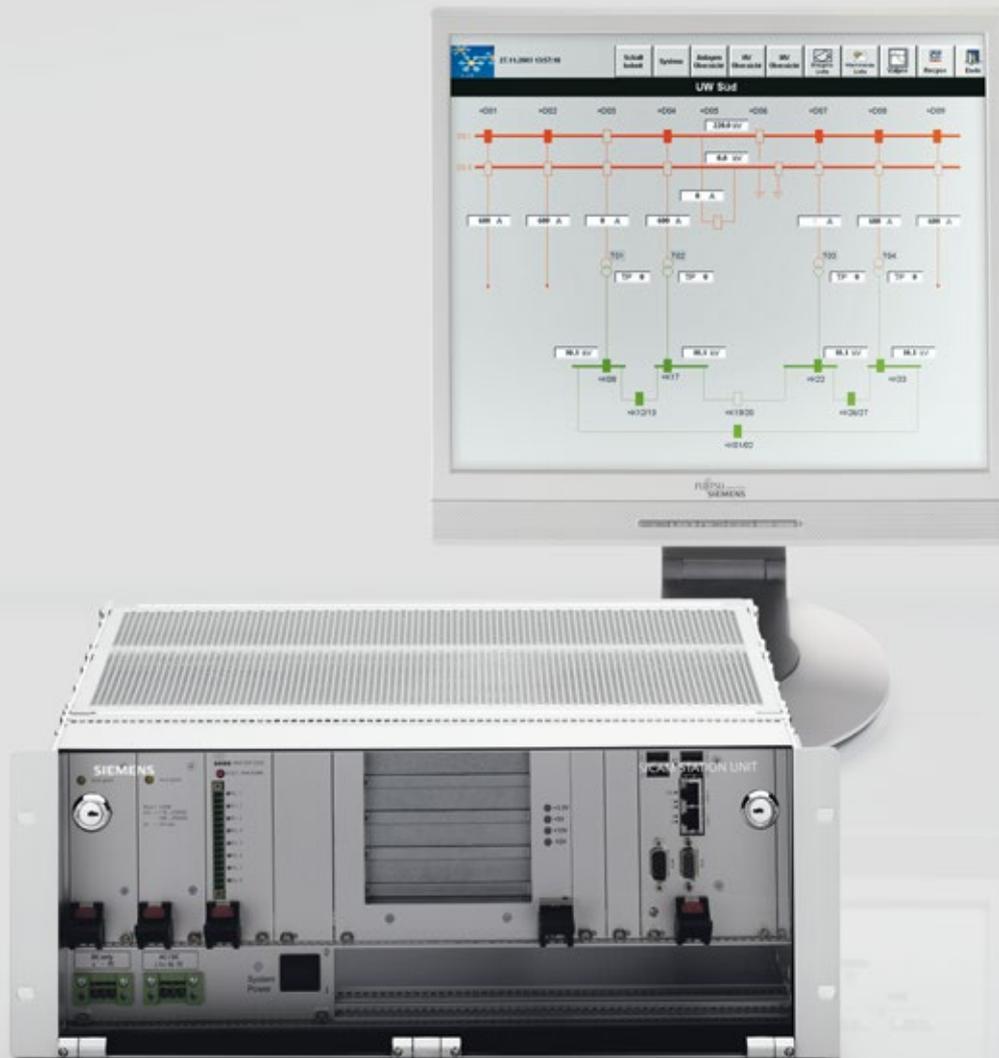


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SICAM PAS – the key to success

Energy automation fully compatible with IEC 61850 –
and with your existing system

Answers for infrastructure and cities.

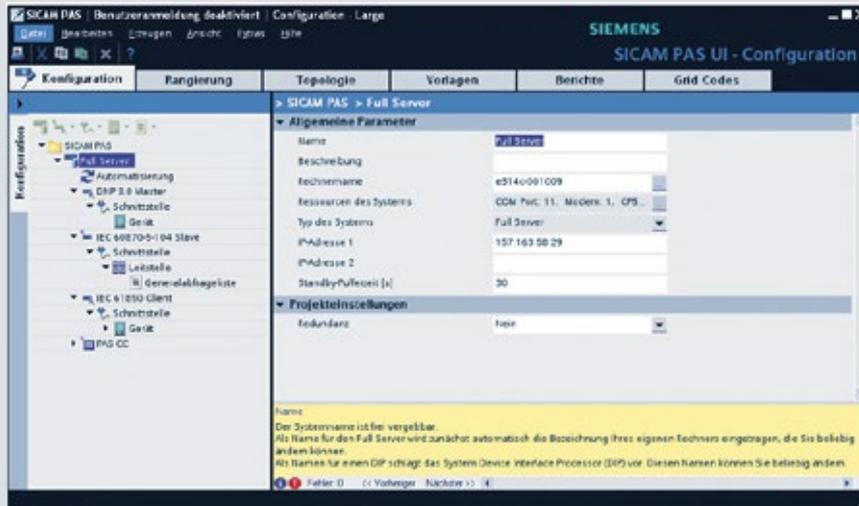


SICAM PAS – Energy automation up to date

Innovation that benefits customers is an important factor for the energy automation area within Siemens. The energy automation business is actively involved in drafting international standards, and committed to implementing them promptly.

The SICAM PAS station control system is a highly modern system that complies with the standards of IEC 61850. In its station control application, SICAM PAS features secure communication as well as wide-ranging redundancy concepts – in addition to its trademark networkability and IT compatibility, interoperable system design, and integration of existing systems. Through the integration of power quality recorders and fault recorders, a power quality system (SICAM PQS) can be set up separately or as an integrated system solution. With all these features, SICAM PAS offers a future-oriented concept that protects your investment.

SICAM PAS also assists you with fast, simple project planning and start-up as well as cost-effective operations management. Your substations will exhibit more reliability and increased availability, resulting in a stable power supply. This in turn ensures your operational efficiency – now and in the future.



SICAM PAS – sets and adheres to new standards

IEC 61850

Interoperability and integration capability facilitate vendor-neutral substation construction while at the same time reducing planning expenditures.

Future-proofing your investment

Standardized protocols guarantee interoperability without the need for expensive gateways. Networkability and remote access are also made possible through new cost-optimized operating concepts.

Systematic security

SICAM PAS is developed in accordance with emerging security standards.

Straightforward system structure with optimum expandability

Thanks to the high degree of scalability, functionality can be adapted to the requirements of every application. As the requirements increase, the system can simply expand to meet them – without the need for a new installation.

One-time input is all that is needed

Regardless of how many different functions are used, a central database ensures that every piece of information only needs to be entered in the system once. This safeguards data consistency and reduces expenditure to a minimum.

Straightforward engineering

Ease of handling – using the Windows™ platform – cuts learning times, enables high productivity, and provides maximum operating reliability. Graphical configuration and automation make for extremely easy parameterization while also cutting development times.

Distributed intelligence for rapid processing

Decentralized system structure with compact bay controllers reduces the amount of wiring and cabling work needed. At the same time, distributed processing of switching interlockings increases data throughput, cuts reaction time, and thus improves system security.

Greater performance in the network

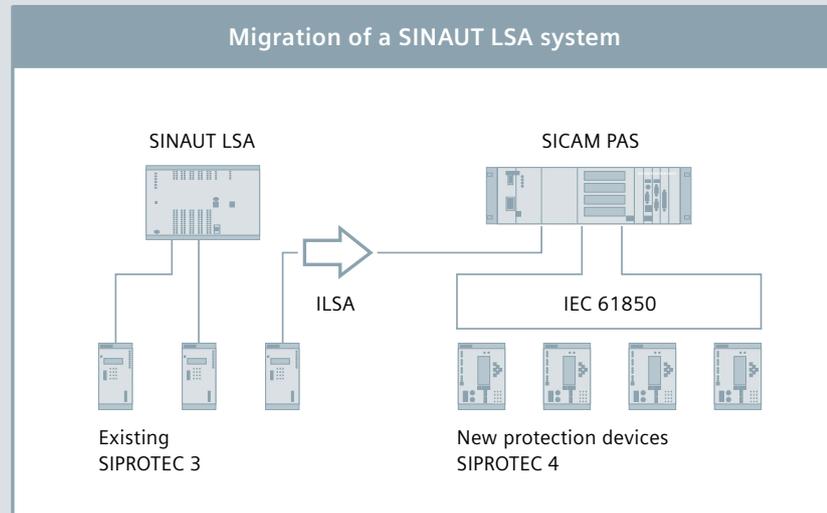
Existing TCP/IP networks can be used cost-effectively to achieve high transmission rates. In addition, information can be transferred to the office environment and easily analyzed.

Information everywhere at all times

Optimized diagnostics tools provide detailed process and system information locally and remotely at any time. A simple, transparent display keeps you optimally informed, enabling you to make the right decisions quickly and reliably when the need arises.

Innovation and decades of experience

More than 25 years of energy automation and more than 75 years of experience in telecontrol, combined with the proven IEC 61850 – that is SICAM PAS, a successful symbiosis from the long-established SICAM family. Benefit from our experience, and invest in a secure future.



SICAM PAS – customized flexibility

Energy supply companies and industries worldwide face the challenge of providing an economical electric power supply that is available at all times. In addition, they must monitor and verify the quality of the supply. A wide variety of different concepts are employed, depending on the application area. SICAM PAS, with its extremely high degree of scalability, can adapt perfectly to these concepts, and its modern architecture allows room for further expansion. With SICAM PAS, we have not only successfully put the world's first IEC 61850-compliant system into operation but have now installed more than 2,000 systems (as of October 2010). Benefit from our experience with the world's largest installed base.

IEC 61850 – the standard for success

IEC 61850 was published as an international standard in the spring of 2004, following joint definition by users and manufacturers. Performance and interoperability, direct data exchange between the IEDs, and the first-ever standardized exchange of planning data have contributed to the steady growth in use and to the success of the IEC 61850 standard. Systematic, ongoing work in the standardization committees – in which Siemens is directly involved – resulted in the publication of Edition 2 in 2011, which will further increase the acceptance and use of the standard. SICAM PAS has supported IEC 61850 from the beginning and will also provide an ideal solution platform for Edition 2.

SICAM PAS – interoperable energy automation

The station unit of the SICAM PAS leads to a future-proof interoperable system design, thanks to the application of IEC 61850. SICAM PAS is suitable, for example, for integrating bay controllers of all manufacturers with IEC 61850. Concept and parameterization of the SICAM PAS support direct data exchange at bay level so that bottlenecks, for example in communications, are eliminated. Owing to the high-speed Ethernet connections and a station unit optimized for data transfer and processing, SICAM PAS is a ground-breaking, modern energy automation system.

SICAM PAS – simple integration

For more than 25 years, station control technology with SINAUT LSA has been using a distributed concept. In order to integrate these existing systems into today's environment at low cost, the LSA structure is integrated in SICAM PAS. Existing systems of the SICAM family can also be integrated into a concept with IEC 61850 at any time through Profibus FMS or IEC 60870-5-103. The IEC 60870-5-101/-104 protocols, as well as DNP 3 and Modbus, can be used for communication with control centers as well as substations and bay controllers. Involvement in the standards project STA (Seamless Telecommunication Architecture) – with the goal of achieving end-to-end use of IEC 61850 in all equipment up to and including the power system control center – ensures that SICAM PAS is integration-capable.



SICAM PAS – integrated IT security

With the increasing use of IP-based communication for connection to control centers and substations, communications security issues are becoming more and more relevant. SICAM PAS fulfills product requirements resulting from the corresponding rules and regulations (including NERC Cip, BDEW whitepaper), for example through secure data transmission using techniques such as encryption and authentication (DNPI, IEC60870-5-104). The use of standard IEC 62351 for this guarantees a high degree of interoperability.

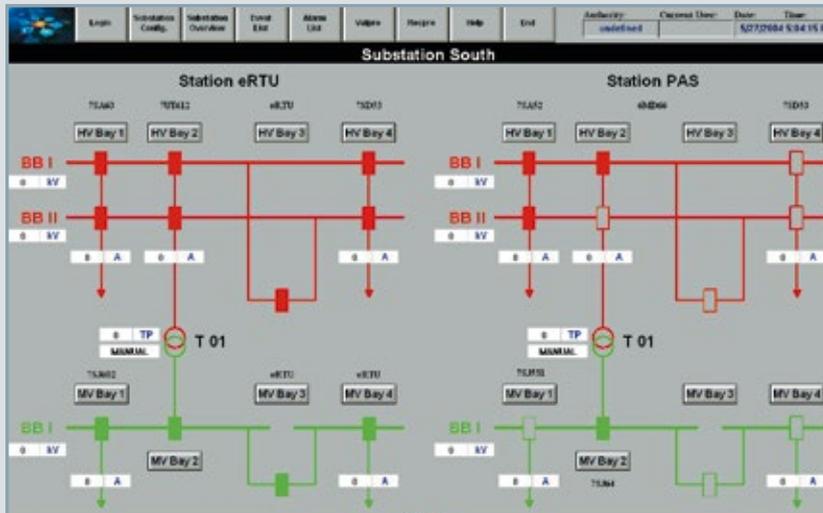
SICAM PAS assists companies with remote maintenance through the use of firewall-friendly protocols for communication between individual components.

Thanks to the complete logging of security-relevant actions, SICAM PAS helps operators to fulfill the requirements described in rules and regulations such as NERC CIP or BDEW whitepaper as well as in-house IT security regulations.

The Security Guideline, which is an integral part of the product documentation, provides assistance with the integration of SICAM PAS into the corporate IT infrastructure. Integrated user management makes it possible to restrict access to the applications to authorized personnel only.

SICAM PAS – maximum transparency at all levels

New standards from the IT and office environment are applied. Networkability and open data interfaces such as OPC (Object Link and Embedding for Process Control) facilitate the transfer of information to the office and industrial environment. Analyses or straightforward display of energy data of the kind that production managers in industry frequently need can be easily implemented in this way.



SICAM PAS – for high availability

Particularly in high and extra-high voltage applications, the demands for availability of secondary systems are high. With its integrated and modern redundancy features, SICAM PAS offers appropriate solutions. It supports every aspect – from redundant communication with bay controllers and RTUs, to built-in redundancy for station control units and support of duplicated bay controllers, with minimum planning effort. Depending on the failure scenario, a redundancy switchover impacts only the system components affected. The rest of the system continues to function normally. Local operation with SICAM SCC, archiving of fault records and power quality data, and analysis of this data with SICAM PQ analyzer can of course also be implemented with built-in redundancy.

SICAM PQS – power quality system

The protection of power distribution equipment is a crucial function in ensuring a reliable power supply. Customers expect maximum availability of the power supply, with voltage and current at a constantly high quality level. Apart from its actual function as a station control system, SICAM PAS also meets this quality standard in its function as a power quality system (SICAM PQS). For the first time, it is now possible to analyze and archive all power quality data centrally from bay level, irrespective of the vendor, with an integrated software solution. The SICAM PQ analyzer software gives you a fast and simple overview of the quality of your network. With SICAM PQS, you can keep an eye on all relevant data, including fault reports as well as all power quality measurement data. For example, the transmitted fault reports can be used for determining the fault location. The actual power quality analysis is based on the applicable standards EN 50160 and IEC 61000 or on user-defined grid codes, using a powerful reporting tool. All analyses and reports can also be carried out cyclically and automatically by SICAM PQS, thereby providing a fast and effective means of reconstructing fault histories. This facilitates the precise definition of effective improvement measures in the network.

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