

SIEMENS



Meet the standard
IEC 61850

Go beyond... IEC 61850

Leverage the full potential with leading-edge expertise

www.siemens.com/iec61850

HSR, PRP
integrated

Certified
according to
IEC 61850
Edition 2

Answers for infrastructure and cities.

Bank on the expertise of the technology leader

The IEC 61850 standard is more than just an Ethernet-based substation automation protocol. It comprehensively defines the engineering process, data and service models, the conformance test, and the entire communication within substations.

IEC 61850 has become firmly established in the field of substation automation. With Edition 2, its advantages now become available to other fields of the energy supply business.

Only a consistently designed implementation of the IEC 61850 standard makes it possible to reap its full benefits. This is where Siemens' applied technology leadership pays off: Siemens is the driving force behind this standard – no one knows its entire potential better.

Siemens participates in most standardization bodies and user groups on the international stage and has the largest installed base worldwide: More than 300,000 devices with IEC 61850 are in operation around the globe.

This advantage of experience is incorporated into all Siemens solutions and products. They set the benchmark when it comes to performance, interoperability, and availability. They make the entire workflow easier, deliver a safety and security advantage, and ultimately save real money.

Siemens offers users the possibility to draw maximum benefits from IEC 61850. Discover what it means to tap the full potential of the IEC 61850 standard.



Meet the standard

IEC 61850

Performance with a perspective

- Easier station engineering and operation
- Optimal support of individual operating requirements and system architectures
- Reliable and comprehensive protection of investment, even with migrations
- Ready for the Smart Grids of the future

Interaction without limits

- Targeted use of the various services in the IEC 61850 framework
- Compatibility of Editions 1 and 2
- Support of user profiles
- Seamless adaptation to existing systems
- Interoperability through Level A-certified implementation of IEC 61850 Editions 1 and 2

À la carte availability

- Scalable solutions enable individual adaptation of availability
- Comprehensive redundancies for reliable data transmission at any time
- Support of PRP, HSR, and RSTP protocols

There are plenty of benefits for you

Solutions from Siemens unleash untapped potential. They make the complex IEC 61850 data model easily manageable by translating it into your common user language. Individual operating requirements and system architectures are optimally supported.

Engineering

The Siemens experts ensure that the IEC 61850 standard representations always correspond to the actual function of the device. This makes possible integrated and consistent device and system

engineering from the single line of the station to device parameterization – comfortable to manage, time-saving, and reliable during engineering and station operation.

Security

Reliable performance requires the utmost security. The architecture of Siemens energy automation systems fulfills the strict security requirements of the BDEW (German Association of Energy and Water Industries) whitepaper and the NERC CIP (North

Solutions from Siemens increase your systems' integration capacity. Flexible object modeling and communication services, as well as degrees of freedom of object addressing, ensure the highest possible degree of interoperability as well as efficiency in daily operation, equipment replacement, and system expansions – independent from specific manufacturers and with little planning effort.

Protection of investment

Investments are reliably protected in the case of system and functional expansions and even

migrations. It goes without saying that all Siemens devices are KEMA-certified as Level A devices according to UCA (Utility Communication Architecture) and have passed the interoperability test of FGH (research association of the electricity supply industry and electrical industry).

Edition 2

Siemens has played an active role in the definition of the new Edition 2 and contributed its vast field experience. Both editions can be integrated

Solutions from Siemens make it possible to adapt the availability factor of a station individually. Redundancy protocols and functional redundancies implemented with SICAM and SIPROTEC devices ensure the safe transmission of all data – because reliable data communication is the basis of all automation tasks and, thus, for the operational safety of a substation.

Redundancy

Whether buffered or unbuffered reporting, or redundant uninterruptible and lossless data transmission with PRP (Parallel Redundancy Protocol) and HSR (High-availability Seamless Ring Redundancy), Siemens station control systems support all operating requirements and system architectures in an optimal manner.

American Electric Reliability Corporation Critical Infrastructure Protection) standard. The entire communication line between the parameterization tool and the terminal equipment is encrypted, and communication between station control and control center can be established according to the IEC 62351 standard. Moreover, all access attempts and critical actions to devices and systems are logged automatically. This multilayered concept of security ensures reliable operation and the highest possible availability at any time.

simultaneously in Siemens station control systems – fully adapted to your individual operating requirements.

Smart Grid-ready

IEC 61850 with Siemens means that your systems already fulfill the demands of future Smart Grids today: They enable the reliable and standardized data exchange among all grid elements – from the charging station for electric vehicles all the way to the high-voltage power transmission system.

Future-proof with PRP and HSR

All SIPROTEC and Reyrolle 7SR2 protection devices, as well as the SICAM PAS substation automation system, are already equipped with this technology for absolutely reliable redundancy solutions.

Most previously delivered devices and systems can be upgraded to redundancy via firmware update in a future-proof way.

Top: IEC 61850 certificate

Middle: experimental setup for interoperability test



The SICAM and SIPROTEC range of devices

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The required technical options should therefore
be specified in the contract.

