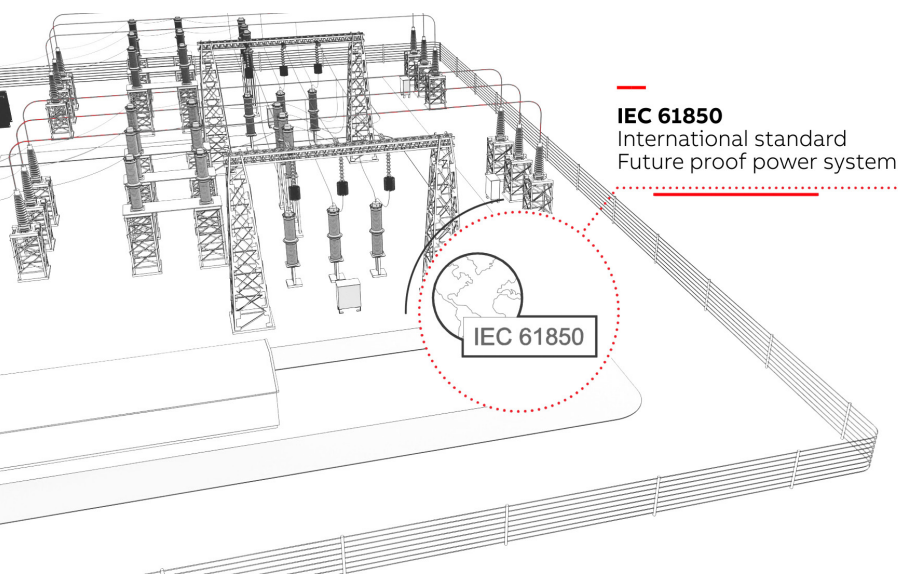


IEC 61850 edition 2 and beyond

The standard evolves and so do we



IEC 61850 communication stack now integrated in all of ABB's grid automation offering. We believe in the standard, we work with the standard and we support designing it for the sake of a digital future.

From revolution to evolution

Since its publication in 2004, the global IEC 61850 standard has been accepted at an unexpectedly fast rate. Developed with the support of ABB it is the first truly global standard in the electric utility field. But the evolution didn't stop there. Since the advent of the IEC 61850 edition 2 in 2011 that now also takes the standard outside the substation, ABB invested tremendous efforts in implementing this standard in its systems, tools and products, as ABB is truly believing that IEC 61850 is the basis for a successful and modern digital grid.

IEC 61850 Highlights

ABB's own system verification center

When the IEC 61850 standard was introduced, ABB not only implemented it in its product portfolio, but also established a system verification and validation center (SVC), to verify correct implementation. In this test center, products, system component, applications and tools are tested in a real-life system environment to demonstrate its specified functionality and performance.

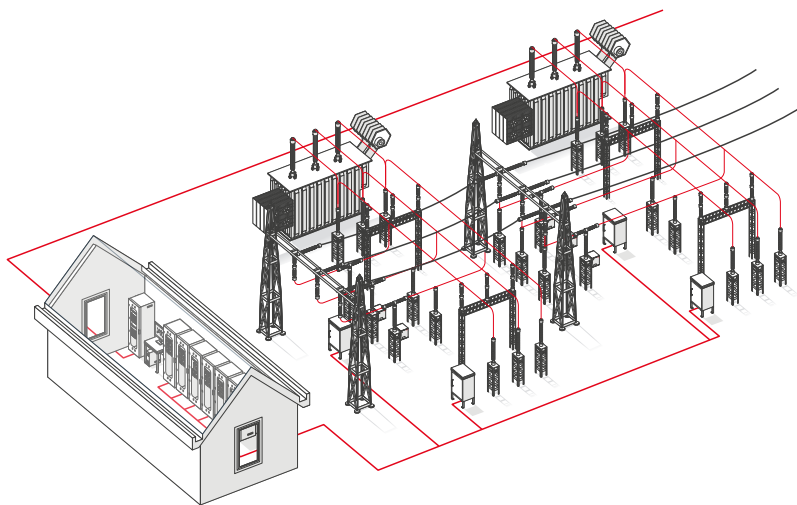
Complete systems are verified to ensure that they fully meet the requirements in terms of communication, integration, functionality and performance.

ABB recognized for the world's first IED and System configuration tools certified for IEC 61850

With the certification of the protection and control manager PCM600, ABB is strengthening its leading position in the development of IEC 61850 substation automation tools. ABB's system configuration tool IET600 was also awarded the world's first IEC 61850 tool conformance certification. ABB now have certified conformance with IEC 61850 edition 2 across the Relion family of protection and control IEDs, the substation HMI, as well as the device and system configuration tools.

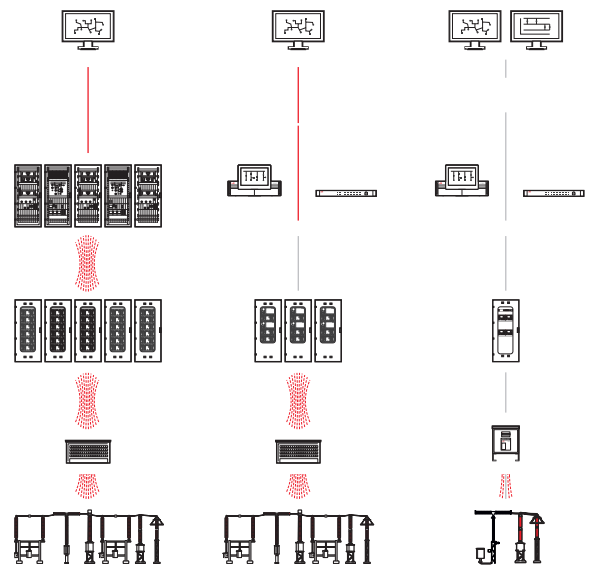
Flexible product naming

The flexible product naming concept allows the user to use their own utility specific IEC 61850 models and then map the data to different vendor IEC 61850 models. This utility specific model will then be exposed in all IEC 61850 communication without affecting the vendor specific models or any other aspects of the IEDs. This allows a standardized way that utilities can engineer their substation automation systems with a model that they are familiar with.



01 Modern digital substation based on IEC 61850

02 The evolution of the IEC 61850 standard across the power grid



Communication Multiservice Platform based on IEC 61850

FOX615 integrates teleprotection interfaces for distance as well as for differential protection simultaneously within state-of-the-art SDH networks and MPLS-TP networks; ensuring an easy and flexible way to migrate technology in a utility network. With its latest IEC 61850 interface the FOX615 also acts as a substation IED and enables GOOSE based protection applications of digital substations.

FOX615 multiservice communication platform: For demanding network synchronization tasks FOX615 supports PTP/IEEE1588v2 combined with Synchronous Ethernet functionality.

Relion® 670 and 650 series for protection and control: Allowing significant cost saving when using PTP's time synchronization, as no additional hardware modules are required. With PTP one single clock is sufficient.

SAM600 process bus I/O system - Enabling the digital substation

SAM600 integrates conventional instrument transformers into modern, IEC 61850-9-2 process bus substation automation, protection and control systems. The modular design of SAM600 enables safe, efficient, and extendible retrofit of any substation. In order to maximize the benefits of IEC 61850 process bus, SAM600 modules can be placed in the switchyard close to the primary apparatus in marshalling kiosks.

Benefits from filed to operations center

More and more data are being collected thanks to the standard being extended and implemented across the whole power grid. The huge amount of data allows for a much more precise analysis of the status of the network allowing the operator to take the right decision at the right time.

The new ABB Ability Ellipse solution offers utilities a proactive approach for predictive maintenance that combines an asset management system with collection and analysis of performance data and a comprehensive digital grid.

PTP Network synchronization according to IEC/IEEE 61850-9-3

Reliable distribution of timing information across a network is essential and helps reduce dependence on GPS-time that is a security risk especially for mission critical applications. Our protection relays as well as our communication portfolio offer the latest technology for network synchronization.