

Substations IEC 61850 Networks and substations area



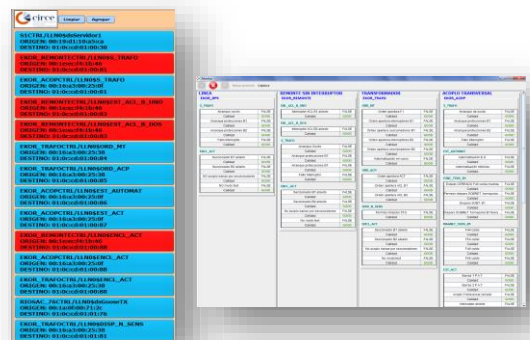
CIRCE has more than 10 years of experience in the complete life cycle of substation automation systems based on IEC 61850, as an evolution and complement to substation engineering services and protection homologation. Our capabilities range from design and functional adaptation to the configuration and validation of equipment and have been developed in strategic projects of leading companies in the electrical distribution.

Offer of services

- ✓ Adaptation of wired functions to IEC 61850 communications. Design and test.
- ✓ Use of new network data to enable new control and protection functions
 - ✓ False differential, oscillography, regulation, etc.
- ✓ Definition and configuration of data and protocols for communications in the substation.
- ✓ IEC 61850 communications test in the laboratory with commercial and self-developed clients.
- ✓ Validation of IEDs 61850 and multifactor integration.
- ✓ Specifications and interoperability and interchangeability tests
- ✓ Specification and generation of SCD, ICD and CID configuration files for substations and equipment.
- ✓ Support to manufacturers in the development and functional homologation of their equipment.
- ✓ Design and testing of LAN network and cybersecurity.
- ✓ Adaptation of detailed engineering projects of substations to functions and communications IEC 61850.
- ✓ Configuration and testing of remote, gateways and SCADA.
- ✓ Development of own libraries for capture and simulation of GOOSE and MMS traffic.
- ✓ Preparation of technical specifications.

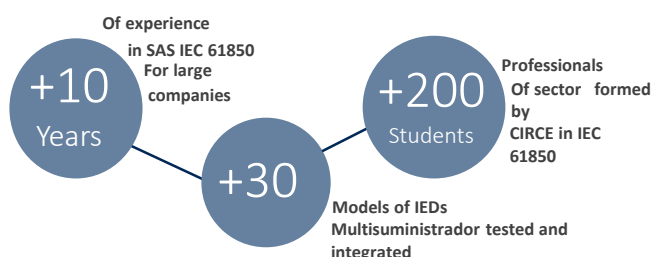
Benefits

- 1 CIRCE provides expert knowledge and capacity on all fronts linked by the standard: protection and control systems, communications and equipment.
- 2 Unification of engineering processes and system documentation.
- 3 Reduction of the wiring and improvements in the scalability and maintenance of the systems.
- 4 New functions based on the communications network, remote access and cybersecurity.



Interfaces interpreted by CIRCE for GOOSE analysis

KEY FIGURES



FOCUSED ON

System operators, manufacturers of protection and control equipment and other IEDs, engineering companies, electrical companies, integrators and contractors, etc.



Resources and tools

LABORATORY equipped with specific solutions and integrated with the works of homologation of protections:

- ✓ Protection and control equipment AT and MT multisuministrador.
- ✓ RTDS with communications card IEC 61850.
- ✓ Injection equipment for testing with IEC 61850 interfaces.
- ✓ UCS IEC 61850.
- ✓ Substation switches.
- ✓ Customers and traffic analyzers IEC 61850: commercial and own.
- ✓ GOOSEmeter One: GOOSE visualization equipment.
- ✓ SCADA and HMI substation software.
- ✓ Staff formed by leading multinational manufacturers in their specific tools

Formation



CIRCE offers the most extensive online course in Spanish on the contents of the standard..

- ✓ 9 editions online
- ✓ 3 editions presentials in customer facilities.
- ✓ 2 blended editions in Madrid
- ✓ More than 200 international students formed.


The professionals trained by CIRCE belong to the most important companies in the sector and other industrial areas:



Success stories

- ✓ Technical coordination of the first IEC 61850 pilot installation in a SAS MT of Endesa.
- ✓ Support to manufacturers for updating and validating equipment.
 - ✓ Identification of necessities.
 - ✓ Functional Specification.
 - ✓ Laboratory test and feedback of results.
 - ✓ Integration in engineering.
 - ✓ Field tests
- ✓ Grouping of data GOOSE messages for MT parks, validated in the laboratory with real equipment.
- ✓ Complete data model (translation and organization in logical nodes) for the Endesa remote control dictionary.
- ✓ Integration and debugging tests of the remote and engineering tool IEC 61850 of Endesa.
- ✓ Complete migration for interchangeability of a line position to a new manufacturer.
- ✓ FAT IEC 61850 tests of MT cabinets with own tools.
- ✓ Design of new SAS functionalities based on the exchange of IEC 61850 messages.
 - ✓ False differential of MT bars
 - ✓ Selective isolation and replacement of bars
- ✓ Own simulation and supervision tools GOOSE.
- ✓ Design and engineering of hybrid cabins..
 - ✓ Sectional terminals for selection of IEC 61850 mode vs wired configuration.
- ✓ Integration of GOOSE communication in process of automation test with injection suitcase.
- ✓ Homologation of profiles of IEC 61850 remote control for leading manufacturers:
 - ✓ ABB, Schneider, SEL, Siemens.

Projects of I+D+i:

-  EAS – Collaborative Challenges Project for an interoperable multi-supplier substation bus with engineering processes integrated in the distributor's standards.



EMPIR project of the official European metrology laboratories. PQ applications with capture of digital measurements with SV IEC 61850 protocol.

CONTACT

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