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BSI Standards Publication

Communication networks and systems for power utility automation

Part 2: Glossary

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National foreword

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A list of organizations represented on this committee can be obtained on request to its secretary.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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- the required support cannot be obtained for the publication of an International Standard, despite repeated efforts, or
- the subject is still under technical development or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

Technical Specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC 61850-2, which is a technical specification, has been prepared by IEC technical committee 57: Power system management and associated information exchange.

This second edition cancels and replaces the first edition, published in 2003. This edition constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

a) definition of new definitions used in the new edition of the IEC 61850 standard series (abstract data model for communication; application function; backward compatible; common data class; communication system; composition; configuration compatibility list; configured IED description CID; conformance; data object class; decomposition; documentation; domain; forward compatible; function-related naming; granularity; IED configuration tool; IED parameters; instantiated IED description IID; intelligent electronic device capability description ICD; language; local function; logical device; mandatory data attribute; mandatory data object; meta model; namespace; object reference; optional data attribute; optional data object; performance; power system; power utility automation system; PUAS installation; PUAS parameter set; PUAS product family; product-related naming; secondary system; semantic name; system configuration description SCD; system configuration language SCL; system configuration language implementation conformance statement SICS; system configuration language version; system master; system configuration tool SCT; system design specification; system extension description SED; system related test; system requirement specification; system specification description SSD; system specification tool; technical issued conformance test TICS; tool; virtualisation; extensible mark-up language schema XSD);
b) updating of existing definitions to the new domain power utility automation of the IEC 61850 standard series and to provide homogeneity (abstract communication service interface ACSI; bay; client; data; data attribute; data object; device; distributed function; engineering tools; expandability; factory acceptance test FAT; flexibility; function; gateway; generic object-oriented system event GOOSE; generic system event model; IED parameter set; information model; instance; intelligent electronic device IED; interchangeability; logical connection; logical node; logical system; manufacturer; merging unit; model implementation conformance statement MICS; physical connection; physical device; physical system; piece of information for communication PICOM; process level functions; process related station level functions; protocol; protocol implementation conformance statement PICS; protocol implementation extra information for testing PIXIT; redundancy; scalability; server; site acceptance test SAT; specific communication service mapping SCSM; station level functions; supporting tools; system; system integrator; system life cycle; system parameters; system test; test equipment; type test);
c) removal of deprecated definitions (logical device class; generic system state event; substation automation system);
d) provision of clarifications and corrections to the first edition of IEC 61850-2.

The text of this Technical Specification is based on the following documents:

Draft TS	Report on voting
57/1970/DTS	57/2024/RVDTS

Full information on the voting for the approval of this Technical Specification can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

IEC 61850 consists of the following parts, under the general title *Communication networks and systems for power utility automation*.

Part 1: Introduction and overview

Part 2: Glossary

Part 3: General requirements

Part 4: System and project management

Part 5: Communication requirements for functions and device models

Part 6: Configuration description language for communication in electrical substations related to IEDs

Part 7-1: Basic communication structure – Principles and models

Part 7-2: Basic information and communication – Abstract communication service interface (ACSI)

Part 7-3: Basic communication structure – Common data classes

Part 7-4: Basic communication structure – Compatible logical node classes and data object classes

Part 8-1: Specific communication service mapping (SCSM) – Mappings to MMS (ISO/IEC 9506-1 and ISO/IEC 9506-2) over ISO/IEC 8802-3

Part 9-2: Specific communication service mapping (SCSM) – Sampled values over ISO/IEC 8802-3

Part 9-3: Precision time protocol profile for power utility automation

Part 10: Conformance testing

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

COMMUNICATION NETWORKS AND SYSTEMS FOR POWER UTILITY AUTOMATION –

Part 2: Glossary

1 Scope

This part of IEC 61850, which is a Technical Specification, applies to power utility automation systems (PUAS). It defines the communication between intelligent electronic devices (IEDs) in the power utility automation system and the related system requirements.

This document contains the glossary of specific terminology and definitions used in the context of Power Utility Automation Systems within the various parts of the standard.

This document is, by its nature, a living part since new definitions and abbreviations will be created continuously in the standard documents that are being written inside the IEC related to IEC 61850.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

The following terms and definitions apply to all parts of the IEC 61850 series.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
abstract communication service interface
ACSI
virtual interface inside an IED between the data model (objects, services) and the mapping to the communication stack

3.2
abstract data model for communication
data standardized with their semantic meaning exchanged between the functions by the IEDs

Note 1 to entry: All application functions shall trust these data and perform their algorithm using this data. The formal description of the automation system by SCL is also based on this standardized data.

[SOURCE: IEC 61850-5:2013, 3.1.14]

3.3
access point
communication access point to an IED

Note 1 to entry: This may be a serial port, an Ethernet connection, or a client or server address dependent on the stack being used. Each access point of an IED to a communication bus is uniquely identified. Each server has at