Communication networks and systems in substations –

Part 1: Introduction and overview

Réseaux et systèmes de communication dans les postes –

Partie 1: Introduction et vue d’ensemble
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMUNICATION NETWORKS AND SYSTEMS IN SUBSTATIONS –

Part 1: Introduction and overview

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example “state of the art”.

IEC 61850-1, which is a technical report, has been prepared by IEC technical committee 57: Power system control and associated communications

The text of this technical report is based on the following documents:

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

This publication 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 in substations*.

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 for substation and feeder equipment – Principles and models
Part 7-2: Basic communication structure for substation and feeder equipment – Abstract communication service interface (ACSI)
Part 7-3: Basic communication structure for substation and feeder equipment – Common data classes
Part 7-4: Basic communication structure for substation and feeder equipment – Compatible logical node classes and data classes
Part 8-1: Specific communication service mapping (SCSM) – Mappings to MMS (ISO/IEC 9506-1 and ISO/IEC 9506-2) and to ISO/IEC 8802-3
Part 9-1: Specific communication service mapping (SCSM) – Sampled values over serial unidirectional multidrop point to point link
Part 9-2: Specific communication service mapping (SCSM) – Sampled values over ISO/IEC 8802-3
Part 10: Conformance testing

This part is an introduction and overview of the IEC 61850 standard series. It describes the philosophy, the work approach, the contents of the other parts, and documents of other bodies which have been reviewed.

The committee has decided that the contents of this publication will remain unchanged until 2005. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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1 For more details, see Clause 10.
2 Under consideration.
3 To be published.
COMMUNICATION NETWORKS AND SYSTEMS
IN SUBSTATIONS –

Part 1: Introduction and overview

1 Scope

This technical report is applicable to substation automation systems (SAS). It defines the communication between intelligent electronic devices (IEDs) in the substation and the related system requirements.

This part gives an introduction and overview of the IEC 61850 standard series. It refers to and includes text and Figures from other parts of the IEC 61850 standard series.

2 Reference documents

IEC 60870-5-103:1997, Telecontrol equipment and systems – Part 5-103: Transmission protocols – Companion standard for the informative interface of protection equipment

IEC 61850-3: Communication networks and systems in substations – Part 3: General requirements

IEC 61850-5: Communication networks and systems in substations – Part 5: Communication requirements for functions and device models

IEC 61850-7-1: Communication networks and systems in substations – Part 7-1: Basic communication structure for substation and feeder equipment – Principles and models

IEC 61850-7-2: Communication networks and systems in substations – Part 7-2: Basic communication structure for substation and feeder equipment – Abstract communication service interface (ACSI)

IEC 61850-7-3: Communication networks and systems in substations – Part 7-3: Basic communication structure for substation and feeder equipment – Common data classes

IEC 61850-7-4: Communication networks and systems in substations – Part 7-4: Basic communication structure for substation and feeder equipment – Compatible logical node classes and data classes


IEEE 100, 1996, IEEE Standard Dictionary of Electrical and Electronic Terms