SLOVENSKI STANDARD
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Communication networks and systems in substations - Part 9-1: Specific communication system mapping (SCSM) - Sampled values over serial unidirectional multidrop point to point link (IEC 61850-9-1:2003)

Communication networks and systems in substations -- Part 9-1: Specific Communication Service Mapping (SCSM) - Sampled values over serial unidirectional multidrop point to point link

Kommunikationsnetze und -systeme in Stationen -- Teil 9-1: Spezifische Abbildung von Kommunikationsdiensten (SCSM) - Abgetastete Werte über serielle Simplex-Mehrfach-Punkt-zu-Punkt-Verbindung

Réseaux et systèmes de communication dans les postes -- Partie 9-1: Implémentation spécifique des services de communication - Transmission de valeurs numérisées par une liaison série unidirectionnelle point à point multi brins

Ta slovenski standard je istoveten z: **EN 61850-9-1:2003**

ICS:

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33.200	Daljinsko krmiljenje, daljinske meritve (telemetrija)	Telecontrol. Telemetering

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EUROPEAN STANDARD **EN 61850-9-1**

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Communication networks and systems in substations Part 9-1: Specific Communication Service Mapping (SCSM) – Sampled values over serial unidirectional multidrop point to point link

(IEC 61850-9-1:2003)

Réseaux et systèmes de communication dans les postes
Partie 9-1: Implémentation spécifique des services de communication - Transmission de valeurs numérisées par une liaison série unidirectionnelle point à point multi brins
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(IEC 61850-9-1:2003)

This European Standard was approved by CENELEC on 2003-05-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC
European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

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Foreword

The text of document 57/619/FDIS, future edition 1 of IEC 61850-9-1, prepared by IEC TC 57, Power system control and associated communications, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61850-9-1 on 2003-05-01.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2004-02-01

– latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-05-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annexes A and ZA are normative and annexes B, C and D are informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61850-9-1:2003 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60044-7	- [1)]	Instrument transformers Part 7: Electronic voltage transformers	EN 60044-7	2000 [2)]
IEC 60044-8	- [1)]	Part 8: Electronic current transformers	EN 60044-8	2002 [2)]
IEC 60874-10-1	1997	Connectors for optical fibres and cables Part 10-1: Detail specification for fibre optic connector type BFOC/2,5 terminated to multimode fibre type A1	-	-
IEC 61850-7-2	- [1)]	Communication networks and systems in substations Part 7-2: Basic communication structure for substation and feeder equipment - Abstract communication service interface (ACSI)	EN 61850-7-2	2003 [2)]
IEC 61850-7-3	- [1)]	Part 7-3: Basic communication structure for substation and feeder equipment - Common data classes	EN 61850-7-3	2003 [2)]
ISO/IEC 8802-3	- [1)]	Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications	-	-
ISO/IEC 8825-1	- [1)]	Information technology - ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)	-	-

1) Undated reference.

2) Valid edition at date of issue.

Publication	Year	Title	EN/HD	Year
IEEE 802.1Q	1998	IEEE Standards for local and metropolitan area networks: Virtual bridged local area networks	-	-
IEEE 802.3	- [1)]	Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications	-	-

INTERNATIONAL STANDARD

IEC 61850-9-1

First edition
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Communication networks and systems in substations –

Part 9-1: Specific Communication Service Mapping (SCSM) – Sampled values over serial unidirectional multidrop point to point link

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMUNICATION NETWORKS AND SYSTEMS IN SUBSTATIONS –

Part 9-1: Specific Communication Service Mapping (SCSM) – Sampled values over serial unidirectional multidrop point to point link

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organisation for standardisation comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardisation 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 organisations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organisation for Standardisation (ISO) in accordance with conditions determined by agreement between the two organisations.
2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
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6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61850-9-1 has been prepared by IEC technical committee 57: Power system control and associated communications.

The text of this standard is based on the following documents:

FDIS	Report on voting
57/619/FDIS	57/636/RVD

Full information on the voting for the approval of this standard 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 [1]

Part 3: General requirements

Part 4: System and project management

Part 5: Communication requirements for functions and devices models [2]

Part 6: Configuration description language for communication in electrical substations related to IEDs [1]

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 [1]

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 [1]

Part 10: Conformance testing [1]

The relationship between IEC 60044-8 and this standard is as follows:

IEC 60044-8 defines a merging unit as interface to electronic current and voltage transformers. Data objects provided by that merging unit are specified in IEC 60044-8. This standard specifies a serial communication interface between the merging unit and equipment using the digital output of the merging unit like protection or metering equipment. For the specification of that serial interface, a subset of the abstract communication services defined in IEC 61850-7-2 are mapped on an ISO/IEC 8802-3 based communication link.

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.

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

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1 Under consideration.

2 To be published.

INTRODUCTION

This part of IEC 61850 applies to electronic current and voltage transformers (ECT and EVT) with a digital output via a merging unit, for use with electronic measuring instruments and electronic protective devices.

The transformer technology can be based on optical arrangements equipped with electronic components, on air core coils (with or without a built-in integrator) or, on iron core coils with integrated burden and used as a current to voltage converter, alone or equipped with electronic components.

For digital output, this standard takes into account a point to point connection from the merging unit to electronic measuring instruments and electronic devices.

This mapping allows interoperability between devices from different manufacturers.

This standard does not specify individual implementations or products, nor does it constrain the implementation of entities and interfaces within a computer system. This standard specifies the externally visible functionality of implementations.

Reading Guide

- The point to point transformer interface as defined here is based on the concepts described in IEC 60044-8. This standard extends this concept and proposes an alternative link layer to provide a solution for transmitting sampled measured values via Ethernet based interfaces. For the definition and measurement of the accuracy, synchronisation methods, data rates etc. of the transformers, refer to IEC 60044-8.

- This document can best be understood if the reader is thoroughly familiar with Parts 7-1, 7-2, 7-3 and 7-4 of this Standard.

- No explanations to the ACSI services are given in this part of the standard. For detailed information about the use of the ACSI services, refer to IEC 61850-7-2.