
Irish Standard
I.S. EN 61850-7-3:2011

# Communication networks and systems for power utility automation -- Part 7-3: Basic communication structure - Common data classes (IEC 61850-7 -3:2010 (EQV))

# I.S. EN 61850-7-3:2011

*Incorporating amendments/corrigenda issued since publication:*

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English version

# Communication networks and systems for power utility automation - Part 7-3: Basic communication structure - Common data classes

(IEC 61850-7-3:2010)

Réseaux et systèmes de communication pour l'automatisation des systèmes électriques -
Partie 7-3: Structure de communication de base -
Classes de données communes
(CEI 61850-7-3:2010)

Kommunikationsnetze und -systeme für die Automatisierung in der elektrischen Energieversorgung -
Teil 7-3: Grundlegende Kommunikationsstruktur -
Gemeinsame Datenklassen
(IEC 61850-7-3:2010)



CENELEC

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

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Ref. No. EN 61850-7-3:2011 E

## Foreword

The text of document 57/1087/FDIS, future edition 2 of IEC 61850-7-3, prepared by IEC TC 57, Power systems management and associated information exchange, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61850-7-3 on 2010-12-07.

This European Standard supersedes EN 61850-7-3:2003.

Compared to EN 61850-7-3:2003, this edition:

– defines new common data classes used for new standards defining object models for other domains based on EN 61850 and for the representation of statistical and historical data;

– provides clarifications and corrections to EN 61850-7-3:2003.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

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) | 2011-09-07 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2013-12-07 |

Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 61850-7-3:2010 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

| | | |
|---|---|---|
| IEC 61850-8 series | NOTE | Harmonized in EN 61850-8 series (not modified). |
| IEC 61850-9 series | NOTE | Harmonized EN 61850-9 series (not modified). |

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# Annex ZA
(normative)

## Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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/TS 61850-2 | - | Communication networks and systems in substations - Part 2: Glossary | - | - |
| IEC 61850-7-1 | - | Communication networks and systems in substations - Part 7-1: Basic communication structure for substation and feeder equipment - Principles and models | EN 61850-7-1 | - |
| IEC 61850-7-2 | - | Communication networks and systems for power utility automation - Part 7-2: Basic information and communication structure - Abstract communication service interface (ACSI) | EN 61850-7-2 | - |
| IEC 61850-7-4 | - | Communication networks and systems for power utility automation - Part 7-4: Basic communication structure - Compatible logical node classes and data object classes | EN 61850-7-4 | - |
| ISO 4217 | - | Codes for the representation of currencies and funds | - | - |
| IEEE C37.118 | 2005 | IEEE Standard for Synchrophasors for Power Systems | - | - |

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# CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

# COMMUNICATION NETWORKS AND SYSTEMS FOR POWER UTILITY AUTOMATION –

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

## FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. 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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9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61850-7-3 has been prepared by IEC technical committee 57: Power systems management and associated information exchange.

This second edition cancels and replaces the first edition, published in 2003.

Compared to the first edition, this second edition:

- defines new common data classes used for new standards defining object models for other domains based on IEC 61850 and for the representation of statistical and historical data,
- provides clarifications and corrections to the first edition of IEC 61850-7-3.

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

| FDIS | RVD |
|---|---|
| 57/1087/FDIS | 57/1095/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.

A list of all parts in the IEC 61850 series, published under the general title: *Communication networks and systems for power utility automation*, can be found on the IEC website.

The general title of the series was *Communication networks and systems in substations.* To address the extension of the scope of IEC 61850, it has been changed to *Communication networks and systems for power utility automation.*

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

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

**IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

# INTRODUCTION

This document is part of a set of specifications, which details layered substation communication architecture. This architecture has been chosen to provide abstract definitions of classes and services such that the specifications are independent of specific protocol stacks and objects. The mapping of these abstract classes and services to communication stacks is outside the scope of IEC 61850-7-x and may be found in IEC 61850-8-x (station bus) and IEC 61850-9-x (process bus).

IEC 61850-7-1 gives an overview of this communication architecture. This part of IEC 61850 defines constructed attributed classes and common data classes related to applications in the power system using IEC 61850 modeling concepts like substations, hydro power or distributed energy resources. These common data classes are used in IEC 61850-7-4 to define compatible dataObject classes. The SubDataObjects, DataAttributes or SubAttributes of the instances of dataObject are accessed using services defined in IEC 61850-7-2.

This part of IEC 61850 is used to specify the abstract common data class and constructed attribute class definitions. These abstract definitions are mapped into concrete object definitions that are to be used for a particular protocol (for example MMS, ISO 9506 series).

Note that there are common data classes used for service tracking, that are defined in IEC 61850-7-2.

# COMMUNICATION NETWORKS AND SYSTEMS FOR POWER UTILITY AUTOMATION –

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

## 1 Scope

This part of IEC 61850 specifies constructed attribute classes and common data classes related to substation applications. In particular, it specifies:

- common data classes for status information,
- common data classes for measured information,
- common data classes for control,
- common data classes for status settings,
- common data classes for analogue settings and
- attribute types used in these common data classes.

This International Standard is applicable to the description of device models and functions of substations and feeder equipment.

This International Standard may also be applied, for example, to describe device models and functions for:

- substation to substation information exchange,
- substation to control centre information exchange,
- power plant to control centre information exchange,
- information exchange for distributed generation, or
- information exchange for metering.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC/TS 61850-2, *Communication networks and systems in substations – Part 2: Glossary*

IEC 61850-7-1, *Communication networks and systems for power utility automation – Part 7-1: Basic communication structure – Principles and models*[1]

IEC 61850-7-2, *Communication networks and systems for power utility automation – Part 7-2: Basic information and communication structure – Abstract communication service interface (ACSI)*

IEC 61850-7-4, *Communication networks and systems for power utility automation – Part 7-4: Basic communication structure – Compatible logical node classes and data object classes*

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1 To be published.