Irish Standard
I.S. EN 61850-7-410:2013&A1:2016

Communication networks and systems for power utility automation - Part 7-410: Basic communication structure - Hydroelectric power plants - Communication for monitoring and control

I.S. EN 61850-7-410:2013&A1:2016

Incorporating amendments/corrigenda/National Annexes issued since publication:

EN 61850-7-410:2013/A1:2016

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National Foreword

I.S. EN 61850-7-410:2013&A1:2016 is the adopted Irish version of the European Document EN 61850-7-410:2013, Communication networks and systems for power utility automation - Part 7-410: Basic communication structure - Hydroelectric power plants - Communication for monitoring and control

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61850-7-410:2013/A1

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Communication networks and systems for power utility automation - Part 7-410: Basic communication structure - Hydroelectric power plants - Communication for monitoring and control (IEC 61850-7-410:2012/A1:2015)

Réseaux et systèmes de communication pour l'automatisation des systèmes électriques - Partie 7-410: Structure de communication de base - Centrales hydroélectriques - Communication pour le contrôle-commande (IEC 61850-7-410:2012/A1:2015)

Kommunikationsnetze und -systeme für die Automatisierung in der elektrischen Energieversorgung - Teil 7-410: Grundlegende Kommunikationsstruktur - Wasserkraftwerke - Kommunikation für Überwachung, Regelung und Steuerung (IEC 61850-7-410:2012/A1:2015)

This amendment A1 modifies the European Standard EN 61850-7-410:2013; it was approved by CENELEC on 2015-12-17. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

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European foreword

The text of document 57/1607/FDIS, future IEC 61850-7-410:2012/A1, prepared by IEC/TC 57 "Power systems management and associated information exchange" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61850-7-410:2013/A1:2016.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-09-17
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-12-17

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This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

Endorsement notice

The text of the International Standard IEC 61850-7-410:2012/A1:2015 was approved by CENELEC as a European Standard without any modification.

EUROPEAN STANDARD

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Communication networks and systems for power utility automation - Part 7-410: Basic communication structure - Hydroelectric power plants - Communication for monitoring and control

(IEC 61850-7-410:2012)

Réseaux et systèmes de communication pour l'automatisation des systèmes électriques - Partie 7-410: Structure de communication de base - Centrales hydroélectriques - Communication pour le contrôle-commande
(CEI 61850-7-410:2012)

Kommunikationsnetze und -systeme für die Automatisierung in der elektrischen Energieversorgung - Teil 7-410: Wasserkraftwerke - Kommunikation für Überwachung, Regelung und Steuerung
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Ref. No. EN 61850-7-410:2013 E

Foreword

The text of document 57/1274/FDIS, future edition 2 of IEC 61850-7-410, prepared by IEC TC 57 "Power systems management and associated information exchange" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61850-7-410:2013.

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• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2013-09-04
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-12-04

This document supersedes EN 61850-7-410:2007.

EN 61850-7-410:2013 includes the following significant technical changes with respect to EN 61850-7-410:2007:

a) The logical nodes in EN 61850-7-410:2007 that were not specific to hydropower plants have been transferred to EN 61850-7-4:2010 and have been removed from this edition of EN 61850-7-410.

b) The definitions of logical nodes in this edition of EN 61850-7-410 have been updated using the format introduced in EN 61850-7-4:2010.

c) Most of the modelling examples and background information that was included in EN 61850-7-410:2007 has been transferred to IEC/TR 61850-7-510.

d) However, this edition of EN 61850-7-410 includes additional general-purpose logical nodes that were not included in EN 61850-7-4:2010, but are required in order to represent the complete control and monitoring system of a hydropower plant.

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The text of the International Standard IEC 61850-7-410:2012 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 61362	NOTE	Harmonized as EN 61362.
IEC 61850-10	NOTE	Harmonized as EN 61850-10.
IEC 61970-301	NOTE	Harmonized as EN 61970-301.
IEC 62270	NOTE	Harmonized as EN 62270.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 for power utility automation - Part 7-1: Basic communication structure - Principles and models	EN 61850-7-1	-
IEC 61850-7-2	2010	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	2010
IEC 61850-7-3	2010	Communication networks and systems for power utility automation - Part 7-3: Basic communication structure - Common data classes	EN 61850-7-3	2011
IEC 61850-7-4	2010	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	2010

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IEC 61850-7-410

Edition 2.0 2012-10

INTERNATIONAL STANDARD

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Communication networks and systems for power utility automation – Part 7-410: Basic communication structure – Hydroelectric power plants – Communication for monitoring and control

Réseaux et systèmes de communication pour l'automatisation des systèmes électriques – Partie 7-410: Structure de communication de base – Centrales hydroélectriques – Communication pour le contrôle-commande

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMUNICATION NETWORKS AND SYSTEMS FOR POWER UTILITY AUTOMATION –

Part 7-410: Basic communication structure – Hydroelectric power plants – Communication for monitoring and control

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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International Standard IEC 61850-7-410 has been prepared by technical committee 57: Power systems management and associated information exchange.

This second edition cancels and replaces the first edition published in 2007, and constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

a) The logical nodes in IEC 61850-7-410:2007 that were not specific to hydropower plants have been transferred to IEC 61850-7-4:2010 and have been removed from this edition of IEC 61850-7-410.
b) The definitions of logical nodes in this edition of IEC 61850-7-410 have been updated using the format introduced in IEC 61850-7-4:2010.
c) Most of the modelling examples and background information that was included in IEC 61850-7-410:2007 has been transferred to IEC/TR 61850-7-510.

d) However, this edition of IEC 61850-7-410 includes additional general-purpose logical nodes that were not included in IEC 61850-7-4:2010, but are required in order to represent the complete control and monitoring system of a hydropower plant.

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

FDIS	Report on voting
57/1274/FDIS	57/1289/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 the 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 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.

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COMMUNICATION NETWORKS AND SYSTEMS FOR POWER UTILITY AUTOMATION –

Part 7-410: Basic communication structure – Hydroelectric power plants – Communication for monitoring and control

1 Scope

This part of IEC 61850 specifies the additional common data classes, logical nodes and data objects required for the use of IEC 61850 in a hydropower plant.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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*

IEC 61850-7-2:2010, *Communication networks and systems for power utility automation – Part 7-2: Basic information and communication structure – Abstract communication service interface (ACSI)*

IEC 61850-7-3:2010, *Communication networks and systems for power utility automation – Part 7-3: Basic communication structure for substations and feeder equipment – Common data classes*

IEC 61850-7-4:2010, *Communication networks and systems for power utility automation – Part 7-4: Basic communication structure – Compatible logical node classes and data object classes*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in IEC 61850-2 apply.

4 Abbreviated terms

The terms listed in Table 1 are used to build concatenated Data Object Names in this document. IEC 61850-7-410 inherits all the abbreviated terms described in Clause 4 of IEC 61850-7-4:2010.

NOTE Data Object Names in the logical nodes representing PSS filter functions follow names in IEEE 421.5 as closely as possible. These names are not included in Table 1.