SLOVENSKI STANDARD
SIST EN 61850-6:2010/A2:2025

01-marec-2025

Komunikacijska omrežja in sistemi v postajah - 6. del: Jezik za opisovanje konfiguracije za komunikacijo v postajah z inteligentnimi elektronskimi napravami (IED) - Dopolnila A2

Communication networks and systems for power utility automation - Part 6: Configuration description language for communication in in power utility automation systems related to IEDs

Kommunikationsnetze und -systeme für die Automatisierung in der elektrischen Energieversorgung - Teil 6: Sprache für die Beschreibung der Konfiguration für die Kommunikation in Stationen mit intelligenten elektronischen Geräten (IED)

Réseaux et systèmes de communication pour l'automatisation des systèmes électriques - Partie 6: Langage de description de configuration pour la communication dans les systèmes d'automatisation des systèmes électriques, entre les dispositifs électroniques intelligents (IED)

Ta slovenski standard je istoveten z: **EN 61850-6:2010/A2:2025**

ICS:

29.240.30	Krmilna oprema za elektroenergetske sisteme	Control equipment for electric power systems
33.200	Daljinsko krmiljenje, daljinske meritve (telemetrija)	Telecontrol. Telemetering

SIST EN 61850-6:2010/A2:2025 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61850-6:2010/A2

January 2025

ICS 33.200

English Version

Communication networks and systems for power utility automation - Part 6: Configuration description language for communication in in power utility automation systems related to IEDs (IEC 61850-6:2009/AMD2:2024)

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This amendment A2 modifies the European Standard EN 61850-6:2010; it was approved by CENELEC on 2025-01-01. 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.

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

This amendment 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 57/2711/FDIS, future edition 2 of IEC 61850-6/AMD2, prepared by TC 57 "Power systems management and associated information exchange" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61850-6:2010/A2:2025.

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) 2026-01-31
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2028-01-31

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

This document has been prepared under a standardization request addressed to CENELEC by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 61850-6:2009/AMD2:2024 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cencenelec.eu.

Add the following references:

Publication	Year	Title	EN/HD	Year
IEC 62351-4	-	Power systems management and associated information exchange - Data and communications security - Part 4: Profiles including MMS and derivatives	EN IEC 62351-4	-
IEC 62351-6	-	Power systems management and associated information exchange - Data and communications security - Part 6: Security for IEC 61850	EN IEC 62351-6	-
IEC 62351-9	-	Power systems management and associated information exchange - Data and communications security - Part 9: Cyber security key management for power system equipment	EN IEC 62351-9	-
ISO/IEC 9834-8	-	Information technology - Procedures for the operation of object identifier registration authorities - Part 8: Generation of universally unique identifiers (UUIDs) and their use in object identifiers	-	-

IEC 61850-6

Edition 2.0 2024-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

AMENDMENT 2
AMENDEMENT 2

Communication networks and systems for power utility automation – Part 6: Configuration description language for communication in power utility automation systems related to IEDs

Réseaux et systèmes de communication pour l'automatisation des systèmes électriques – Partie 6: Langage de description de configuration pour la communication dans les systèmes d'automatisation des systèmes électriques, entre les dispositifs électroniques intelligents (IED)

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COMMUNICATION NETWORKS AND SYSTEMS FOR POWER UTILITY AUTOMATION –

Part 6: Configuration description language for communication in power utility automation systems related to IEDs

AMENDMENT 2

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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Amendment 2 to IEC 61850-6:2009 has been prepared by IEC technical committee 57: Power systems management and associated information exchange.

This second amendment constitutes a technical revision.

The main changes with respect to IEC 61850-6:2009+AMD1:2018 are as follows:

a) functional extensions concerning the engineering process to improve files exchange followup, SCL elements identification and control configuration handling, added;

b) provision of clarifications and corrections. Issues that require clarification are published in a database available at https://iec61850.tissue-db.com/. Arising incompatibilities are listed in 8.2.3.

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

Draft	Report on voting
57/2711/FDIS	57/2733/RVD

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

The language used for the development of this Amendment is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications/.

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

This IEC standard includes Code Components i.e. components that are intended to be directly processed by a computer. Such content is any text found between the markers <CODE BEGINS> and <CODE ENDS>, or otherwise is clearly labelled in this standard as a Code Component. In the current version of this document, such indication is made at the beginning of Annex A which identifies the list of XSD files and refers to the code component definition in section 1.3.

The purchase of this IEC standard carries a copyright license for the purchaser to sell software containing Code Components from this standard directly to end users and to end users via distributors, subject to IEC software licensing conditions, which can be found at: http://www.iec.ch/CCv1.

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

- reconfirmed,
- withdrawn, or
- revised.

IMPORTANT – The "colour inside" logo on the cover page of this document 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.

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INTRODUCTION

This amendment and consolidated edition bring two distinct sets of changes:

1) Resolved Interop Issues (covered by the table below) which have already followed the technical issues (Tissues) process as described in IEC 61850-1 and have reached the green "status".
2) Resolved Editorial Tissues which may have led to interoperability issues.

The resolutions of these issues which led to these changes are described in greater detail in the Tissue database hosted at https://iec61850.tissue-db.com/.

The only new features compared to the previous IEC 61850-6:2009+AMD1:2018 are the introduction of the UUID to identify elements and files, the modelling of controls binding from a client perspective, and the definition of translated labels for elements which may be represented in any user interface. Apart from this, this amendment strictly respects the scope of the original edition.

Technical issues summary

N°, Subject, Clause and Paragraph are as they appear on the Tissue database hosted at https://iec61850.tissue-db.com/ where all technical issues have been stored from the origin of IEC 61850.

"Subject" defines very briefly the topic under focus.

The Tissues which have been considered are:

N°	Subject	Clause	Paragraph
1590	RCB: Offline changes increment ConfRev by 10000?	9.3.8	Table 23
1647	SDO@count definition inconsistent	9.5.3	Table 44
1648	DA@count definition needs restriction	9.5.4.1	Table 47
1669	Incorrect example of header	9.1	1
1672	Allow connection Server and ServerAt to the same SCL.Subnetwork	9.3.2	Below Table 50
1674	Harmonization with 62351-6	9.3.2	Services Element
1675	SCSM support capability - Harmonization with 62351-6	9.3.2	Services
1683	ICD file for IED functionality spanning for multiple VL and BAY	9.2.1	The name value is also a global identification of
1708	Presence of Sample Mode field not controllable through SmvOpts	9.3.11	Smv Options element
1729	Incorrect SCL example in (informative) Annex	D.2	2
1734	Improved schema validation	A.5	1
1740	Exceptions of enumeration types for IEC 61850-7-4	9.5.6	last in 9.5.6
1745	Definition of type and id in DataTypeTemplates not consistent	9.5.6	Table 49
1768	Server associate-request has no SCL parameters	9.3.2	Table 11
1771	SCL Services ReportControl max vs. Indexed	9.3.8	8
1774	Missing description of KDC	9.3.2	4
1786	Downgrade of SCD Exports not Mandatory	Annex G	Table G.2
1787	There is no clear mapping of all 7-2 ACSI type to SCL basic types	9.5.4.2	1
1808	Please clarify if ix first index is 0 or 1	9.3.6 Data object (DOI) definition	Table 19 and Table 20
1813	Typo "Valkind"	9.5.4.1	Table 46
1816	Add SICS statement for xsi:type usage in P elements	9.4.3 Annex G	7 Table G.1 and G.2
1818	Clarification of ExtRef attributes usage	9.3.13	Table 51
1823	Clarify iedType attribute usage in DataTypeTemplates	9.5.1	2
1831	ldInst reference should concretized	9.3.7	Table 22
1832	SICS I45 not clear enough	Annex G	Table G.1
1833	Service SettingGroups.ConfSG clarification	9.3.2	Table 11
1834	SICS I211 text not inline with Service section	Annex G	Table G.1
1839	Not clear definition of lnInst to LN0 type elements	9.3.5	5
1843	SCT handle different OriginalSclXxx and SCL version/revision/release	9.3.2 I.4.3.3	G.1
1854	SupSubscription	9.3.2	Table 11
1885	sAddr length	I.5.3.5	1
1886	Part 6 – Typo in Abbreviation	4	ICT

1 Scope

Replace the existing text of Subclauses 1.2 and 1.3 of IEC 61850-6:2009+AMD1:2018 with the following new Subclauses 1.2, 1.3 and 1.4:

1.2 Published versions of the standard and related namespace names

The table below provides a reference between all published editions, amendments or corrigenda of this document and the full name of the namespace.

Edition	Publication date	Webstore	Namespace
Edition 1.0	2004-03	IEC 61850-6:2004	IEC 61850-6:2003
Edition 2.0	2009-12	IEC 61850-6:2009	IEC 61850-6:2007B
Amendment 1 of Edition 2.0	2018	IEC 61850-6:2009/AMD1:2018	IEC 61850-6:2007B4
Edition 2.1	2018	IEC 61850-6:2009+AMD1:2018 CSV	IEC 61850-6:2007B4
Amendment 2 of Edition 2.0	2024	IEC 61850-6:2009/AMD2:2023	IEC 61850-6:2007C5
Edition 2.2	2024	IEC 61850-6:2009+AMD2:2023 CSV	IEC 61850-6:2007C5

1.3 Identification of the namespace

The namespace associated with this document is an XML schema (XSD) for the System Configuration Language (SCL). The parameters which are identifying the namespace are provided in Table 53:

Table 53 – Attributes of the IEC 61850-6 XML namespace

Attribute	Content
Namespace nameplate	
Namespace Identifier (xmlns)	http://www.iec.ch/61850/2003/SCL
Version	2007
Revision	C
Release	5
XSD version header attribute	2007C5
Code Component Name	IEC_61850-6.SCL.2007C5.Full

1.4 Code Component distribution

Each Code Component is a ZIP package containing the electronic representation of the Code Component itself, with a file describing the content of the package (IECManifest.xml).

The life cycle of a code component is not restricted to the life cycle of the related publication. The publication life cycle goes through two stages, Version (corresponding to an edition) and Revision (corresponding to an amendment). A third publication stage (Release) allow publication of Code Component in case of urgent fixes of InterOp Tissues, thus without need to publish an amendment.

Consequently, new releases of the Code Component may be released, which supersedes the previous release, and will be distributed through the IEC TC57 web site at: https://www.iec.ch/tc57/supportdocuments

The latest version/release of the code component will be found by selecting the file for the code component with the highest value for VersionStateInfo, e.g. IEC_61850-6.SCL.{VersionStateInfo}.full.zip.

The code component associated to this document is an XML schema file (XSD). It is available as a full version only. It is freely accessible on the IEC website for download at https://www.iec.ch/tc57/supportdocuments, but the usage remains under the licensing conditions.

In case of any differences between the downloadable code component and the IEC pdf published content, the downloadable code component is the valid one; it may be subject to updates. See included history files.

2 Normative references

Add the following new normative references:

IEC 62351-4, *Power systems management and associated information exchange – Data and communications security – Part 4: Profiles including MMS and derivatives*

IEC 62351-6, *Power systems management and associated information exchange – Data and communications security – Part 6: Security for IEC 61850*

IEC 62351-9, *Power systems management and associated information exchange – Data and communications security – Part 9: Cyber security key management for power system equipment*

ISO/IEC 9834-8, *Information technology – Procedures for the operation of object identifier registration authorities – Part 8: Generation of universally unique identifiers (UUIDs) and their use in object identifiers*

4 Abbreviations

Replace the following existing abbreviation:

ICT IED Configuration Tool

Add the following new abbreviations:

SST System Specification Tool

UUID Universally Unique Identifier

5 Intended engineering process with SCL

5.3 Use of SCL in the engineering process

Add the following new text before Figure 1:

The **System Specification Tool (SST)** is an implementation independent system level tool that shall be able to create a full system topology without the need to integrate real devices. It produces a System specification file to be used by the System Configurator as a base for a new system or as a template.

6 The SCL object model

6.1 General

Add the following new text after the twelfth paragraph of Subclause 6.1:

In addition to the full path used to identify any object in the SCL by its name, the SCL introduces the UUID (Universal Unique Identifier) which can be used to identify objects independently of their name which can evolve all along the lifecycle of a system. The reference to a UUID can be inside the SCL file itself or outside to be used during the external process, not only dealing with SCL files (e.g. as per requirement from IEC 61850-6-2 for human machine interface engineering).

7 SCL description file types

Replace the first bullet of the second paragraph with the following new text:

- Data exchange from the IED configurator to the system configurator (corresponding to items b) and c) of 5.1). This file describes the functional and engineering capabilities of an IED type. It shall contain exactly one IED section for the IED type whose capabilities are described. The IED name shall be **TEMPLATE**. Furthermore, the file shall contain the needed data type templates inclusive logical node type definitions, and may contain an optional process, line or substation section, where the highest-level name shall be **TEMPLATE**. When importing the file into an SCT, the hierarchy of elements named TEMPLATE is used to identify the first named element to be instantiate in the project, and all elements with a name different than TEMPLATE are considered to be instantiable, based on the name. If a process TEMPLATE is defined, the binding of logical node instances to primary equipment indicates a predefined functionality. Any process in which this IED shall be used must match an appropriate process topology part (example: a CSWI LN bound to an equipment of type CBR is only allowed to control a circuit breaker; a CILO bound to a line disconnector implements the interlocking logic for a line disconnector). There might be an optional Communication section defining possible default addresses of the IED. A specific SCSM might make this mandatory for some address parts.

  The file extension shall be ICD for IED Capability Description.

Replace the third bullet of the second paragraph with the following new text:

- Data exchange from a system specification tool to the system configurator. This file describes the single line diagram and functions of the substation and the required logical nodes. It shall contain a process section which may be composed of Substation, Process and/or Line elements, and may contain the needed data type templates and logical node type definitions. If logical nodes allocated to the Substation section are not already allocated to an IED, the IED name reference (value of *iedName* attribute of the *LNode* element) shall be **None**. If an LN in the substation section is not bound to an IED and also has no logical node type defined, then only the mandatory part of this LN according to IEC 61850-7-4 is specified. If part of the SA system is already known, this might optionally be contained in IED and Communication sections.

  The file extension shall be SSD for System Specification Description.