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Communication networks and systems for power utility automation - Part 90-19: Use of Role-Based Access Control (RBAC) with IEC 61850

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Communication networks and systems for power utility automation - Part 90-19: Use of Role Based Access Control (RBAC) with IEC 61850

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The text of this Publicly Available Specification is based on the following documents:

Draft	Report on voting
57/2888/DPAS	57/2946/RVDPAS

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 Publicly Available Specification is English.

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– reconfirmed,

– withdrawn, or

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1 Scope

1.1 General

The general requirements for Role-Based Access Control (RBAC) are defined in IEC 62351-8. This part of IEC 61850, which is a Publicly Available Specification, applies those requirements to the IEC 61850 environment, including the RBAC modelling considerations, the impacts on IEC 61850 models and protocols, and the resulting engineering process requirements.

This document takes over the IEC 61850 data model specific definitions such as the definition of permissions and their assignment to roles from IEC 62351-8.

Additionally, the binding of permissions to objects is defined to allow an interoperable implementation regarding the semantic of roles. This is achieved by an assignment to unique data objects based on the SCL description. Note that for this, IEC 61850-6:2009+AMD1:2018+AMD2:2024 is a prerequisite as it defined a unique identification of objects in SCL.

1.2 Published versions of the standard and related namespace names

Table 1 provides a reference between all published editions, amendments or corrigenda of this document and the full name of the namespace.

Table 1 – Published versions and related namespace names

Edition	Publication date	Webstore	Namespace
Edition 1.0	2026-07	IEC 61850-90-19:2026	IEC 61850-90-19-O2OS:2024A4
Edition 1.0	2026-07	IEC 61850-90-19:2026	IEC 61850-90-19-SCLSig:2024A2

1.3 Identification of the Code Components

1.3.1 IEC 61850-90-19 XML namespace for O2OS

The namespace associated with this document for O2OS structure is an XML schema (XSD). The parameters which identify the namespace are provided in Table 2:

Table 2 – Attributes of the O2OS XML namespace

Attribute	Content
Namespace nameplate	
Namespace Identifier (xmlns)	http://www.iec.ch/61850/2024/O2OS/90-19
Version	2024
Revision	A
Release	4
XSD version header attribute	2024A4
Mandatory reference name	eIEC61850-90-19
Code Component Name	IEC_61850-90-19.O2OS.2024A4.DPAS
Namespace dependencies	
includes	

1.3.2 IEC 61850-90-19 XML namespace for SCLSig

The namespace associated with this document for signing SCL files is an XML schema (XSD). The parameters which identify the namespace are provided in Table 2:

Table 3 – Attributes of the IEC 61850-6 Signature XML namespace

Attribute	Content
Namespace nameplate	
Namespace Identifier (xmlns)	http://www.iec.ch/61850/2024/SCLSig/90-19
Version	2024
Revision	A
Release	2
XSD version header attribute	2024A2
Mandatory reference name	eIEC61850-90-19-SCLSig
Code Component Name	IEC_61850-90-19.SCLSig.2024A2.DPAS
Namespace dependencies	
includes	

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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_61850-90-19.XSD.{VersionStateInfo}.full.zip.

The code component associated to this PAS 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

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.

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

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 TR 61850-90-30, *Communication networks and systems for power utility automation – Part 90-30: IEC 61850 Function Modelling in SCL*

IEC TS 62351-1, *Power systems management and associated information exchange - Data and communications security - Part 1: Communication network and system security - Introduction to security issues*

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

IEC 62351-8, *Power systems management and associated information exchange - Data and communications security - Part 8: Role-based access control for power system management*

IEC 62351-11, *Power systems management and associated information exchange - Data and communications security - Part 11: Security for XML documents*

IEC 62351-14, *Power systems management and associated information exchange - Data and communications security - Part 14: Cyber security event logging1*

RFC 6960, *X.509 Internet Public Key Infrastructure Online Certificate Status Protocol - OCSP*

XACML, *eXtensible Access Control Markup Language (XACML) Version 3.0 [OASIS]*

W3C Canonical XML Version 2.0
https://www.w3.org/TR/xml-c14n2/

3 Terms, definitions and abbreviated terms

For the purposes of this document, the terms and definitions given in IEC 62351-2 and the following definitions, which are taken from IEC 62351-8:2025 and enhanced with further information, apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

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