IEC PAS 62443-2-2

Edition 1.0 2025-03

PUBLICLY AVAILABLE SPECIFICATION

Security for industrial automation and control systems – Part 2-2: IACS security protection scheme

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 25.040.40; 35.100.05

ISBN 978-2-8327-0299-4

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

____

SECURITY FOR INDUSTRIAL AUTOMATION AND CONTROL SYSTEMS –

Part 2-2: IACS security protection scheme

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.

2) The formal decisions or agreements of 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 IEC National Committees.

3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.

4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.

5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.

6) All users should ensure that they have the latest edition of this publication.

7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.

8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.

9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 62443-2-2 has been prepared by IEC technical committee 65: Industrial-process measurement, control and automation. It is a Publicly Available Specification.

IEC PAS 62443-2-2 has been developed by IEC TC 65 and the liaison ISA99: ISA committee on Security for industrial automation and control systems.

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

Draft	Report on voting
65/1051/DPAS	65/1121/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.

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, and the ISO/IEC Directives, JTC 1 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 parts in the IEC 62443 series, published under the general title *Security for industrial automation and control systems*, can be found on the IEC website.

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.

NOTE In accordance with ISO/IEC Directives, Part 1, IEC PASs are automatically withdrawn after 4 years.

INTRODUCTION

This document is the part of the IEC 62443 series that provides guidance on the development and validation of a set of technical, physical, and process security measures to address risk associated with cyberthreats when operating IACS. In the context of this document, asset owner also includes the operator of the IACS.

The purpose of the document is to provide input to support asset owners, integration service providers, maintenance service providers as well as product suppliers in their activities to provide a combination of technical, physical, and organizational capabilities for protecting IACS against cyberthreat.

SECURITY FOR INDUSTRIAL AUTOMATION AND CONTROL SYSTEMS –

Part 2-2: IACS security protection scheme

1 Scope

This part of IEC 62443 provides guidance on the development, validation, operation, and maintenance of a set of technical, physical, and process security measures called Security Protection Scheme (SPS). The document's goal is to provide the asset owner implementing an IACS Security Program (SP) with mechanisms and procedures to ensure that the design, implementation and operation of an SPS manage the risks resulting from cyberthreats to each of the IACS included in its operating facility.

The document is based on contents specified in other documents of the IEC 62443 series and explains how these contents can be used to support the development of technical, physical, and process security measures addressing the risks to the IACS during the operation phase.

Figure 1 illustrates the content of this document using a simplified IACS life cycle.

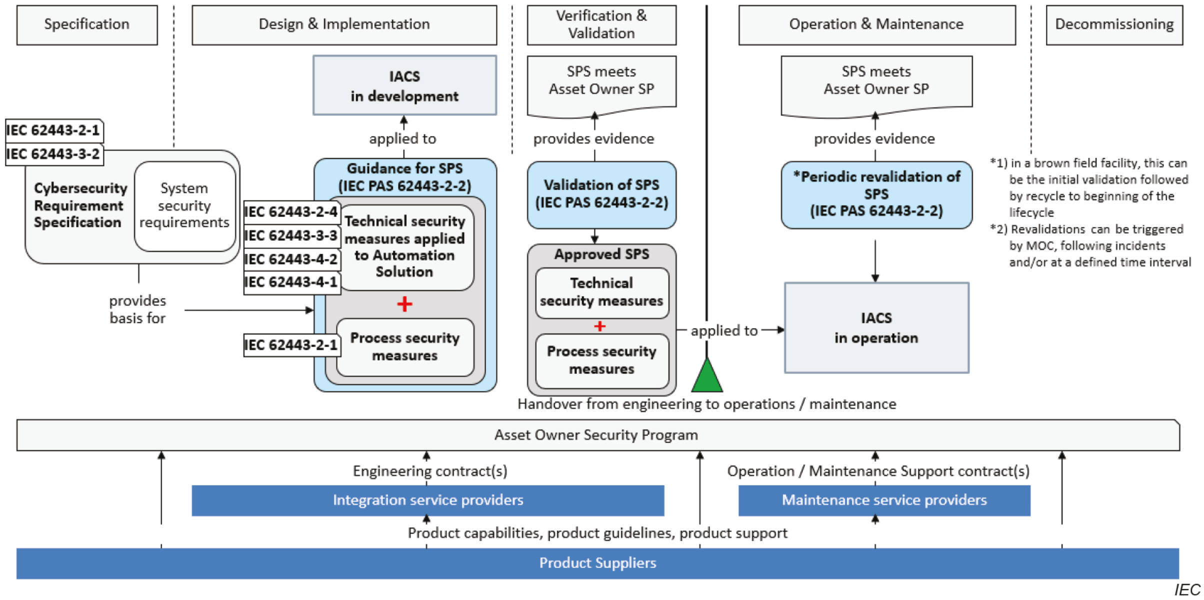
Specification
Design & Implementation
Verification & Validation
Operation & Maintenance
Decommissioning
IACS in development
SPS meets Asset Owner SP
SPS meets Asset Owner SP
applied to
provides evidence
provides evidence
IEC 62443-2-1
IEC 62443-3-2
Cybersecurity Requirement Specification
System security requirements
Guidance for SPS (IEC PAS 62443-2-2)
IEC 62443-2-4
IEC 62443-3-3
IEC 62443-4-2
IEC 62443-4-1
Technical security measures applied to Automation Solution
+
IEC 62443-2-1
Process security measures
provides basis for
Validation of SPS (IEC PAS 62443-2-2)
Approved SPS
Technical security measures
+
Process security measures
applied to
*Periodic revalidation of SPS (IEC PAS 62443-2-2)
IACS in operation
*1) in a brown field facility, this can be the initial validation followed by recycle to beginning of the lifecycle
*2) Revalidations can be triggered by MOC, following incidents and/or at a defined time interval
Handover from engineering to operations / maintenance
Asset Owner Security Program
Engineering contract(s)
Operation / Maintenance Support contract(s)
Integration service providers
Maintenance service providers
Product capabilities, product guidelines, product support
Product Suppliers
IEC

Figure 1 – Simplified asset owner security protection scheme (SPS) life cycle

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 TS 62443-1-1:2009, *Industrial communication networks – Network and system security – Part 1-1: Terminology, concepts and models*

IEC 62443-2-1:—[1], *Security for industrial automation and control systems – Part 2-1: Security program requirements for IACS asset owners*

IEC 62443-2-4:2023, *Security for industrial automation and control systems – Part 2-4: Security program requirements for IACS service providers*

IEC 62443-3-2:2020, *Security for industrial automation and control systems – Part 3-2: Security risk assessment for system design*

IEC 62443-3-3:2013, *Industrial communication networks – Network and system security – Part 3-3: System security requirements and security levels*

[1] Under preparation. Stage at the time of publication: IEC/FDIS 62443-2-1:2024.