SVENSK STANDARD

SS-EN IEC 62381, utg 3:2025

Fastställd	Sida	Ansvarig kommitté
2025-05-07	1 (44)	SEK TK 65

Industriell processtyrning − Acceptansprovning inför leverans (FAT), acceptansprovning efter leverans (SAT) och integrationsprovning (SIT)

Automation systems in the process industry − Factory acceptance test (FAT), site acceptance test (SAT), and site integration test (SIT)

Som svensk standard gäller europastandarden EN IEC 62381:2024. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 62381:2024.

Nationellt förord

Europastandarden EN IEC 62381:2024

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 62381, Third edition, 2024 - Automation systems in the process industry − Factory acceptance test (FAT), site acceptance test (SAT), and site integration test (SIT)**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 62381, utg 2:2012 med eventuella tillägg, ändringar och rättelser gäller ej fr o m 2027-09-03.

ICS 25.040.40

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62381

September 2024

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Supersedes EN 62381:2012

English Version

Automation systems in the process industry - Factory acceptance test (FAT), site acceptance test (SAT), and site integration test (SIT) (IEC 62381:2024)

Systèmes d'automatisation dans l'industrie de transformation - Essais d'acceptation en usine (FAT), essais d'acceptation sur site (SAT) et essais d'intégration sur site (SIT) (IEC 62381:2024)

Automatisierungssysteme in der verfahrenstechnischen Industrie - Werksabnahme (FAT), Abnahme der installierten Anlage (SAT) und Integrationstest (SIT) (IEC 62381:2024)

This European Standard was approved by CENELEC on 2024-09-03. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard 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 European Standard 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

Ref. No. EN IEC 62381:2024 E

SEK Svensk Elstandard SS-EN IEC 62381, utg 3:2025

European foreword

The text of document 65E/1080/FDIS, future edition 3 of IEC 62381, prepared by SC 65E "Devices and integration in enterprise systems" of IEC/TC 65 "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62381:2024.

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) 2025-06-03
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2027-09-03

This document supersedes EN 62381:2012 and all of its amendments and corrigenda (if any).

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.

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 62381:2024 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 standard indicated:

IEC 61511 series	NOTE	Approved as EN 61511 series
IEC 62443 series	NOTE	Approved as EN IEC 62443 series
IEC 62708	NOTE	Approved as EN 62708
IEC 62881	NOTE	Approved as EN IEC 62881

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.

Publication	Year	Title	EN/HD	Year
IEC 62382	-	Control systems in the process industry Electrical and instrumentation loop check	-EN IEC 62382	-

IEC 62381

Edition 3.0 2024-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Automation systems in the process industry – Factory acceptance test (FAT), site acceptance test (SAT), and site integration test (SIT)

Systèmes d'automatisation dans l'industrie de transformation – Essais d'acceptation en usine (FAT), essais d'acceptation sur site (SAT) et essais d'intégration sur site (SIT)

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AUTOMATION SYSTEMS IN THE PROCESS INDUSTRY – FACTORY ACCEPTANCE TEST (FAT), SITE ACCEPTANCE TEST (SAT), AND SITE INTEGRATION TEST (SIT)

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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IEC 62381 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation. It is an International Standard.

This third edition cancels and replaces the second edition published in 2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) General re-organization of the standard;
b) Current technology incorporated;
c) Optional factory integration test (FIT) added;

d) Replaced the forms in the annexes with detailed checklists of activities which can be used to develop project-specific test plans; and

e) Provided additional references to other applicable standards.

The text of this International Standard is based on the following documents:

Draft	Report on voting
65E/1080/FDIS	65E/1092/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 International Standard 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.

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.

INTRODUCTION

There is an increasing trend in the process industry to shorten the time period for project execution. At the same time, the complexity of automation systems is being increased due to the number of connected systems and the use of new technologies, for example, wired and wireless field sensor networks.

Experience has shown that the owner, the buyer and the vendor have long and extensive discussions to unambiguously establish the scope of activities and responsibilities in order to achieve timely delivery and acceptance of automation systems.

This document provides requirements and guidance on acceptance testing of control system installations, which can lead to a mutual understanding about the scope of activities of each party.

AUTOMATION SYSTEMS IN THE PROCESS INDUSTRY – FACTORY ACCEPTANCE TEST (FAT), SITE ACCEPTANCE TEST (SAT), AND SITE INTEGRATION TEST (SIT)

1 Scope

1.1 General applicability

This International Standard defines requirements and checklists for the factory acceptance test (FAT), the factory integration test (FIT), the site acceptance test (SAT), and the site integration test (SIT). These tests are carried out to demonstrate that the automation system meets the requirements of the applicable specification.

This document provides a means for all parties, including the owner, the buyer, and the vendor, to clearly establish and agree on the scope of activities and responsibilities involved in performing these tests in order to achieve a timely delivery and acceptance of the automation system. The activities specified in this document can be used to develop test plans adapted to the specific requirements of the process/plant/equipment.

The annexes of this document contain checklists which are available for consideration when preparing specific test procedures and documentation for a specific automation system.

1.2 Exclusions

1.2.1 Prior- and post-test activities

Engineering and manufacturing activities prior to or after the FAT, FIT, SAT and SIT, such as loop checks and commissioning, are not covered by this document.

1.2.2 Regulated industries

For applications in the pharmaceutical or other highly specialized industries, additional guidelines (for example, good automated manufacturing practice (GAMP)), definitions and stipulations apply in accordance with other applicable existing standards.

1.2.3 Safety instrumented systems

The user can utilize this document to develop necessary testing for basic checks of a safety system, however, this document does not cover validation of a safety system. IEC 61511 provides requirements for checks and validation of safety instrumented systems.

1.2.4 Manufacturing execution systems

Testing and verification of manufacturing execution systems (MES) is not covered by this document.

1.2.5 Advanced process control

Testing and verification of advanced process control (APC) is not covered by this document.

1.2.6 Security for industrial automation and control systems

Although this document includes a limited number of network checks, it does not cover complete network and system security. IEC 62443 provides requirements for automation and control systems cyber security.

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 62382, *Control systems in the process industry – Electrical and instrumentation loop check*