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Riktlinjer avseende aspekter på mänsklig tillförlitlighet

Guidance on human aspects of dependability

Som svensk standard gäller europastandarden EN IEC 62508:2025. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 62508:2025.

Nationellt förord

Europastandarden EN IEC 62508:2025

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– **IEC 62508, Second edition, 2025 - Guidance on human aspects of dependability**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 62508, utg 1:2011 med eventuella tillägg, ändringar och rättelser gäller ej fr o m 2028-08-31.

ICS 03.120.01

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62508

August 2025

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Supersedes EN 62508:2010

English Version

Guidance on human aspects of dependability (IEC 62508:2025)

Lignes directrices relatives aux facteurs humains dans la sûreté de fonctionnement (IEC 62508:2025)

Leitlinien zu den menschlichen Aspekten der Zuverlässigkeit (IEC 62508:2025)

This European Standard was approved by CENELEC on 2025-07-24. 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.

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

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SS-EN IEC 62508, utg 2:2025

European foreword

The text of document 56/2074/FDIS, future edition 2 of IEC 62508, prepared by TC 56 "Dependability" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62508:2025.

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) 2026-08-31
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2028-08-31

This document supersedes EN 62508:2010 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 62508:2025 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 60300-1	NOTE	Approved as EN IEC 60300-1
IEC 60812	NOTE	Approved as EN IEC 60812
IEC 61025	NOTE	Approved as EN 61025
IEC 62402	NOTE	Approved as EN IEC 62402
IEC 62502	NOTE	Approved as EN 62502
IEC 62740	NOTE	Approved as EN 62740
IEC 62960	NOTE	Approved as EN IEC 62960
ISO 6385:2016	NOTE	Approved as EN ISO 6385:2016 (not modified)
ISO 9000	NOTE	Approved as EN ISO 9000
ISO 9241-1:1997	NOTE	Approved as EN ISO 9241-1:1997 (not modified)
ISO 9241-2	NOTE	Approved as EN 29241-2
ISO 9241-5	NOTE	Approved as EN ISO 9241-5
ISO 9241-6	NOTE	Approved as EN ISO 9241-6
ISO 9241-11	NOTE	Approved as EN ISO 9241-11
ISO 9241-13	NOTE	Approved as EN ISO 9241-13
ISO 9241-14	NOTE	Approved as EN ISO 9241-14
ISO 9241-20	NOTE	Approved as EN ISO 9241-20
ISO 9241-110	NOTE	Approved as EN ISO 9241-110
ISO 9241-125	NOTE	Approved as EN ISO 9241-125

ISO 9241-143	NOTE	Approved as EN ISO 9241-143
ISO 9241-171	NOTE	Approved as EN ISO 9241-171
ISO 9241-210:2019	NOTE	Approved as EN ISO 9241-210:2019 (not modified)
ISO 9241-220	NOTE	Approved as EN ISO 9241-220
ISO 9241-300	NOTE	Approved as EN ISO 9241-300
ISO 9241-302	NOTE	Approved as EN ISO 9241-302
ISO 9241-303	NOTE	Approved as EN ISO 9241-303
ISO 9241-304	NOTE	Approved as EN ISO 9241-304
ISO 9241-305	NOTE	Approved as EN ISO 9241-305
ISO 9241-306	NOTE	Approved as EN ISO 9241-306
ISO 9241-307	NOTE	Approved as EN ISO 9241-307
ISO/TR 9241-309	NOTE	Approved as CEN ISO/TR 9241-309
ISO/TR 9241-311	NOTE	Approved as CEN ISO/TR 9241-311
ISO 9241-400	NOTE	Approved as EN ISO 9241-400
ISO 9241-410	NOTE	Approved as EN ISO 9241-410
ISO/TS 9241-411	NOTE	Approved as CEN ISO/TS 9241-411
ISO/TR 9241-810	NOTE	Approved as CEN ISO/TR 9241-810
ISO 9241-920	NOTE	Approved as EN ISO 9241-920
ISO 11064-1	NOTE	Approved as EN ISO 11064-1
ISO 11064-2	NOTE	Approved as EN ISO 11064-2
ISO 11064-3	NOTE	Approved as EN ISO 11064-3
ISO 11064-4	NOTE	Approved as EN ISO 11064-4
ISO 11064-5	NOTE	Approved as EN ISO 11064-5
ISO 11064-6	NOTE	Approved as EN ISO 11064-6
ISO 11064-7	NOTE	Approved as EN ISO 11064-7
ISO/IEC/TR 25060	NOTE	Approved as CEN ISO/TR 25060

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 60050-192	2015	International electrotechnical vocabulary - Part 192: Dependability	-	-

IEC 62508

Edition 2.0 2025-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Guidance on human aspects of dependability

Lignes directrices relatives aux facteurs humains dans la sûreté de fonctionnement

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Guidance on human aspects of dependability

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 62508 has been prepared by IEC Technical Committee 56: Dependability. It is an International Standard.

This second edition cancels and replaces the first edition published in 2010. This edition constitutes a technical revision.

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

a) The emphasis on user-centred design in the previous edition was reduced in favour of a greater emphasis on human dependability in an existing operational environment.
b) The emphasis on human error and error-rate determination methods was reduced in favour of a greater emphasis on means of providing organizational support for the workforce in their execution of required tasks.
c) Where appropriate, discussions of human factors in an operational environment were aligned with current theory, terminology and practice.

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

Draft	Report on voting
56/2074/FDIS	56/2096A/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

This document is intended as a basic guide for managers, engineers and other professionals. It concerns good practice for improving dependability of humans in an operational environment, as well as optimizing the interactions between humans and equipment, software, and organizational systems. Modern workplaces often involve the integration of humans with complex technologies and production systems. This document is intended to assist management to:

- understand the basis for human dependability, including designing equipment and systems to minimize human error rather than overly relying on the workforce to act correctly,
- assess the risks related to human performance in an operational environment, and
- implement changes in an operational environment in order to improve the effectiveness of personnel in relation to the technology and systems with which they interact.

One objective in implementing the guidelines in this document is to facilitate the optimization of interactions between humans and equipment, software, facilities, services and organizational systems. A second objective is to reduce the potential for failures to occur that can adversely affect production, equipment maintenance, safety or the well-being of the workforce. Towards this end, guidance on applicable methods and metrics are included for assessing the risks associated with human dependability.

This document is not intended as a handbook or theoretical guide to the fields of human factors or human-systems interactions. These are available elsewhere, and some useful references are listed in the bibliography. Rather, it is intended as a tool for managers and engineers who are tasked with designing, assessing or controlling the human and technical elements of their area of responsibility.

Rather than being a review of human "undependability", the aim is to describe the elements of operational systems that positively contribute to human performance. This document provides an awareness of the relative importance of these elements to dependability, and the tools for assessing how well they are functioning in the organization, and how they can be enhanced.

In accordance with other dependability standards (cf. IEC 60300-1), the term ‘human reliability’ will refer to qualitative and, when appropriate, quantitative measures of human performance. The term "human dependability" will be applied more broadly to the ability of humans to conduct a task or job as-required and when-required, with an outcome that satisfies agreed stakeholder expectations. The concepts of "maintainability" and "supportability" will still apply, but in the broader context of the organizational factors required for maintaining and supporting human performance.

Although knowledge of the field of human factors in the workplace and principles of human-centred design would be useful, this document will help managers, engineers and other professionals to identify the areas of their responsibility that would benefit from improvement in terms of human dependability, and to put in place interventions designed to optimize human performance.

This document primarily addresses complex technical systems, but some parts are also applicable to manufacturing of mass-produced industrial and consumer products. Principles for the design of the human-machine interface (usability) are described, and further information can be found in technical literature and in relevant product standards.

1 Scope

This document provides guidance on current knowledge and practice concerning dependability in an operational environment, in terms of the humans, teams and organizations involved in conducting the work. It is part of a suite of IEC standards that are intended to address the dependability of both the technical and human elements of equipment and organizations.

This document describes the human elements of a typical operational system, and the importance of those elements to overall dependability. It also describes the means of assessing how well these elements are functioning, and general concepts on how the reliability of humans can be improved. These elements typically include the individual workers, the groups or teams into which they are organized, the interfaces between humans and technical systems, and the overall organization.

The following guidance is applicable to any industry that depends on human-systems interactions involving the technology, software, or systems of work required to support the production and safety objectives of an organization. This document primarily addresses complex technical systems, but some parts are also applicable to the manufacturing of industrial and consumer products. Principles for design of the human-machine interface (usability) are described, and further information can be found in the technical literature and in relevant product standards. Although this document does not specifically cover worker health or safety, the application of this document can raise related issues, particularly in process safety, which is closely associated with system reliability.

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 60050-192:2015, *International Electrotechnical Vocabulary (IEV) – Part 192: Dependability,* available at www.electropedia.org