# Guidance on human aspects of dependability



EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

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|---|---|
| Käesolev Eesti standard EVS-EN 62508:2010 sisaldab Euroopa standardi EN 62508:2010 ingliskeelset teksti. | This Estonian standard EVS-EN 62508:2010 consists of the English text of the European standard EN 62508:2010. |
| Standard on kinnitatud Eesti Standardikeskuse 31.10.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas. | This standard is ratified with the order of Estonian Centre for Standardisation dated 31.10.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation. |
| Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 08.10.2010. | Date of Availability of the European standard text 08.10.2010. |
| Standard on kättesaadav Eesti standardiorganisatsioonist. | The standard is available from Estonian standardisation organisation. |



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EUROPEAN STANDARD

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EUROPÄISCHE NORM

# EN 62508

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English version

## Guidance on human aspects of dependability
(IEC 62508:2010)

Lignes directrices relatives aux facteurs humains dans la sûreté de fonctionnement
(CEI 62508:2010)

Leitlinien zu den menschlichen Aspekten der Zuverlässigkeit
(IEC 62508:2010)



CENELEC

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

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**



Ref. No. EN 62508:2010 E

## Foreword

The text of document 56/1365/FDIS, future edition 1 of IEC 62508, prepared by IEC TC 56, Dependability, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62508 on 2010-10-01.

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

The following dates were fixed:

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|---|---|---|
| – latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2011-07-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2013-10-01 |

Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 62508:2010 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 standards indicated:

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| IEC 60812:2006 | NOTE Harmonized as EN 60812:2006 (not modified). |
| ISO 6385:2004 | NOTE Harmonized as EN ISO 6385:2004 (not modified). |
| ISO 9000:2005 | NOTE Harmonized as EN ISO 9000:2005 (not modified). |
| ISO 9241-1:1997 | NOTE Harmonized as EN ISO 9241-1:1997 (not modified). |
| ISO 9241-2:1992 | NOTE Harmonized as EN ISO 9241-2:1993 (not modified). |
| ISO 9241-3:1992 | NOTE Harmonized as EN 29241-3:1993 (not modified). |
| ISO 9241-4:1998 | NOTE Harmonized as EN ISO 9241-4:1998 (not modified). |
| ISO 9241-5:1998 | NOTE Harmonized as EN ISO 9241-5:1999 (not modified). |
| ISO 9241-6:1999 | NOTE Harmonized as EN ISO 9241-6:1999 (not modified). |
| ISO 9241-7:1998 | NOTE Harmonized as EN ISO 9241-7:1998 (not modified). |
| ISO 9241-8:1997 | NOTE Harmonized as EN ISO 9241-8:1997 (not modified). |
| ISO 9241-9:2000 | NOTE Harmonized as EN ISO 9241-9:2000 (not modified). |
| ISO 9241-11:1998 | NOTE Harmonized as EN ISO 9241-11:1998 (not modified). |
| ISO 9241-12:1998 | NOTE Harmonized as EN ISO 9241-12:1998 (not modified). |
| ISO 9241-13:1998 | NOTE Harmonized as EN ISO 9241-13:1998 (not modified). |
| ISO 9241-15:1997 | NOTE Harmonized as EN ISO 9241-15:1997 (not modified). |
| ISO 9241-16:1999 | NOTE Harmonized as EN ISO 9241-16:1999 (not modified). |
| ISO 9241-17:1998 | NOTE Harmonized as EN ISO 9241-17:1998 (not modified). |

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|---|---|
| ISO 9241-20:2008 | NOTE Harmonized as EN ISO 9241-20:2009 (not modified). |
| ISO 9241-110:2006 | NOTE Harmonized as EN ISO 9241-110:2006 (not modified). |
| ISO 9241-151:2008 | NOTE Harmonized as EN ISO 9241-151:2008 (not modified). |
| ISO 9241-171:2008 | NOTE Harmonized as EN ISO 9241-171:2008 (not modified). |
| ISO 9241-210:2010 | NOTE Harmonized as EN ISO 9241-210:2010 (not modified). |
| ISO 9241-300:2008 | NOTE Harmonized as EN ISO 9241-300:2008 (not modified). |
| ISO 9241-302:2008 | NOTE Harmonized as EN ISO 9241-302:2008 (not modified). |
| ISO 9241-303:2008 | NOTE Harmonized as EN ISO 9241-303:2008 (not modified). |
| ISO 9241-304:2008 | NOTE Harmonized as EN ISO 9241-304:2008 (not modified). |
| ISO 9241-305:2008 | NOTE Harmonized as EN ISO 9241-305:2008 (not modified). |
| ISO 9241-306:2008 | NOTE Harmonized as EN ISO 9241-306:2008 (not modified). |
| ISO 9241-307:2008 | NOTE Harmonized as EN ISO 9241-307:2008 (not modified). |
| ISO 9241-400:2007 | NOTE Harmonized as EN ISO 9241-400:2007 (not modified). |
| ISO 9241-410:2008 | NOTE Harmonized as EN ISO 9241-410:2008 (not modified). |
| ISO 11064-1 | NOTE Harmonized as EN ISO 11064-1. |
| ISO 11064-2 | NOTE Harmonized as EN ISO 11064-2. |
| ISO 11064-3 | NOTE Harmonized as EN ISO 11064-3. |
| ISO 11064-4 | NOTE Harmonized as EN ISO 11064-4. |
| ISO 11064-5 | NOTE Harmonized as EN ISO 11064-5. |
| ISO 11064-6 | NOTE Harmonized as EN ISO 11064-6. |
| ISO 11064-7 | NOTE Harmonized as EN ISO 11064-7. |

# Annex ZA
(normative)

## Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| IEC 60300-1 | 2003 | Dependability management - Part 1: Dependability management systems | EN 60300-1 | 2003 |
| IEC 60300-2 | - | Dependability management - Part 2: Guidelines for dependability management | EN 60300-2 | - |
| IEC 60300-3-15 | - | Dependability management - Part 3-15: Application guide - Engineering of system dependability | EN 60300-3-15 | - |

# CONTENTS

# INTRODUCTION

This International Standard provides guidelines on human aspects of dependability of systems. It fills the need for a standard to address the dependability of human/machine systems.

It gives guidance on how the human aspects of dependability can be considered at all the system life cycle stages, including ergonomic principles during design and human reliability understanding for system applications.

This standard provides an overview of the principles with some examples of the types of methods that can be used.

It is intended that a supporting standard, which describes more detailed methods that include quantification of human reliability will follow the issue of this standard in due course.

This standard contains recommendations, and does not include any requirements. Attention is drawn to the possibility of the existence of regulatory requirements for systems covered by the scope of this standard.

# GUIDANCE ON HUMAN ASPECTS OF DEPENDABILITY



## 1 Scope

This International Standard provides guidance on the human aspects of dependability, and the human-centred design methods and practices that can be used throughout the whole system life cycle to improve dependability performance. This standard describes qualitative approaches. Examples of quantitative methods are given in Annex A.

This International Standard is applicable to any area of industry where human/machine relationships exist, and is intended for use by technical personnel and their managers.

This International standard is not intended to be used for certification, regulatory or contractual use.

## 2 Normative references

The following referenced documents are indispensable for the application 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 60300-1:2003, *Dependability management – Part 1: Dependability management systems*

IEC 60300-2, *Dependability management – Part 2: Guidelines for dependability management*

IEC 60300-3-15, *Dependability management – Part 3-15: Application guide – Engineering of system dependability*

## 3 Terms, definitions and abbreviations

For the purposes of this document, the following terms, definitions and abbreviations apply.

NOTE Certain terms have been taken from the draft text of the second edition of IEC 60050-191, *International Electrotechnical Vocabulary – Part 191: Dependability*, currently under consideration.

### 3.1 Terms and definitions

**3.1.1**
**dependability**
ability to perform as and when required [1]

NOTE 1 Dependability characteristics include availability and its inherent or external influencing factors, such as reliability, fault tolerance, recoverability, integrity, security, maintainability, durability and maintenance support.

NOTE 2 Dependability is also used descriptively as an umbrella term for time-related quality characteristics of a product or service, and it can also be expressed as a grade, degree, confidence or probability of fulfilling a defined set of characteristics.

NOTE 3 Specifications for dependability characteristics typically include: the function the product is to perform; the time for which that performance is to be sustained; and the conditions of storage, use and maintenance. Requirements for safety, efficiency and economy throughout the life cycle can also be included.

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[1] Future IEC 60050-191, definition 191-41-26, second edition, under consideration.