Irish Standard
I.S. EN 62628:2012

Guidance on software aspects of dependability (IEC 62628:2012 (EQV))

I.S. EN 62628:2012

Incorporating amendments/corrigenda issued since publication:

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NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie

W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62628

September 2012

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English version

Guidance on software aspects of dependability
(IEC 62628:2012)

Lignes directrices concernant la sûreté de fonctionnement du logiciel
(CEI 62628:2012)

Leitlinien zu Softwareaspekten der Zuverlässigkeit
(IEC 62628:2012)

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

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Foreword

The text of document 56/1469/FDIS, future edition 1 of IEC 62628, prepared by IEC/TC 56, "Dependability" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62628:2012.

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)	2013-06-12
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-09-12

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The text of the International Standard IEC 62628:2012 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:

IEC 62508	NOTE	Harmonized as EN 62508.
IEC 60300-1	NOTE	Harmonized as EN 60300-1.
IEC 60300-2	NOTE	Harmonized as EN 60300-2.
IEC 60300-3-3	NOTE	Harmonized as EN 60300-3-3.
IEC 62347	NOTE	Harmonized as EN 62347.
IEC 61160	NOTE	Harmonized as EN 61160.
IEC 61078	NOTE	Harmonized as EN 61078.
IEC 61025	NOTE	Harmonized as EN 61025.
IEC 61165	NOTE	Harmonized as EN 61165.
IEC 62551[1)]	NOTE	Harmonized as EN 62551[1)].
IEC 60812	NOTE	Harmonized as EN 60812.
IEC 60300-3-1	NOTE	Harmonized as EN 60300-3-1.
IEC 61508-3	NOTE	Harmonized as EN 61508-3.
IEC 62429	NOTE	Harmonized as EN 62429.
IEC 61014	NOTE	Harmonized as EN 61014.
IEC 61164	NOTE	Harmonized as EN 61164.
IEC 62506[1)]	NOTE	Harmonized as EN 62506[1)].

[1)] To be published.

Annex ZA
(normative)
Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 60050-191	-	International Electrotechnical Vocabulary (IEV) - Chapter 191: Dependability and quality of service	-	-
IEC 60300-3-15	-	Dependability management - Part 3-15: Application guide - Engineering of system dependability	EN 60300-3-15	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

GUIDANCE ON SOFTWARE ASPECTS OF DEPENDABILITY

FOREWORD

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International Standard IEC 62628 has been prepared by IEC technical committee 56: Dependability.

The text of this standard is based on the following documents:

FDIS	Report on voting
56/1469/FDIS	56/1480/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

Software has widespread applications in today's products and systems. Examples include software applications in programmable control equipment, computer systems and communication networks. Over the years, many standards have been developed for software engineering, software process management, software quality and reliability assurance, but only a few standards have addressed the software issues from a dependability perspective.

Dependability is the ability of a system to perform as and when required to meet specific objectives under given conditions of use. The dependability of a system infers that the system is trustworthy and capable of performing the desired service upon demand to satisfy user needs. The increasing trends in software applications in the service industry have permeated in the rapid growth of Internet services and Web development. Standardized interfaces and protocols have enabled the use of third-party software functionality over the Internet to permit cross-platform, cross-provider, and cross-domain applications. Software has become a driving mechanism to realize complex system operations and enable the achievement of viable e-businesses for seamless integration and enterprise process management. Software design has assumed the primary function in data processing, safety monitoring, security protection and communication links in network services. This paradigm shift has put the global business communities in trust of a situation relying heavily on the software systems to sustain business operations. Software dependability plays a dominant role to influence the success in system performance and data integrity.

This International Standard provides current industry best practices and presents relevant methodology to facilitate the achievement of software dependability. It identifies the influence of management on software aspects of dependability and provides relevant technical processes to engineer software dependability into systems. The evolution of software technology and rapid adaptation of software applications in industry practices have created the need for practical software dependability standard for the global business environment. A structured approach is provided for guidance on the use of this standard.

The generic software dependability requirements and processes are presented in this standard. They form the basis for dependability applications for most software product development and software system implementation. Additional requirements are needed for mission critical, safety and security applications. Industry specific software qualification issues for reliability and quality conformance are not addressed in this standard.

This standard can also serve as guidance for dependability design of firmware. It does not however, address the implementation aspects of firmware with software contained or embedded in the hardware chips to realize their dedicated functions. Examples include application specific integrated circuit (ASIC) chips and microprocessor driven controller devices. These products are often designed and integrated as part of the physical hardware features to minimize their size and weight and facilitate real time applications such as those used in cell phones. Although the general dependability principles and practices described in this standard can be used to guide design and application of firmware, specific requirements are needed for their physical construction, device fabrication and embedded software product implementation. The physics of failure of application specific devices behaves differently as compared to software system failures.

This International Standard is not intended for conformity assessment or certification purposes.