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Australian Standard®

Guidance on human aspects of dependability

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- Asset Management Council
- Australian Industry Group
- Australian Organisation for Quality
- CSIRO Information and Communication Technologies Centre
- Department of Defence (Australia)
- Energy Networks Association
- Engineers Australia
- Independent Transport Safety & Reliability Regulator
- Risk Management Association of Australia
- Risk Management Institution of Australasia
- The University of New South Wales
- University of Wollongong

This Standard was issued in draft form for comment as DR AS IEC 62508.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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PREFACE

This Standard was prepared by the Standards Australia Committee QR-005, Dependability.

The objective of this Standard is to provide guidance on human aspects of dependability and the application of human centred design methods throughout the system lifecycle to improve dependability performance. The standard applies to any industry where human machines relationships exist and is intended for technical personnel and their managers.

This Standard is identical with, and has been reproduced from IEC 62508, Ed.1.0 (2010), *Guidance on human aspects of dependability*.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

(b) In the source text 'this International Standard' should read 'this Australian Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian Standard*	
IEC		AS IEC	
60300	Dependability management	60300	Dependability management
60300-1	Part 1: Dependability management systems	60300.1	Part 1: Dependability management systems
60300-2	Part 2: Guidance for dependability programme management	60300.2	Part 2: Guidance for dependability programme management
60300-3-15	Part 3-15: Application guide—Engineering of system dependability	60300.3.15	Part 3.15: Application guide—Engineering of system dependability

The term 'informative' has been used in this Standard to define the application of the annex to which it applies. An 'informative' annex is only for information and guidance.

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.

AUSTRALIAN 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.