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Australian Standard™

Dependability management

Part 3.10: Application guide—Maintainability

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PREFACE

This Standard was prepared by the Standards Australia Committee QR-005, Dependability. This Standard is identical with, and has been reproduced from, IEC 60300-3-10:2001, *Dependability management,* Part 3-10: *Application guide – Maintainability*.

'Dependability' is a collective term for performance characteristics (reliability, availability, maintainability) of simple or complex products and systems. The AS IEC 60300 series of dependability management Standards provide general guidelines for establishing a dependability management system to meet most organizational or project needs, supported by a 'tool kit' of non-prescriptive standards on a range of dependability application guidelines and methods.

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.

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

Reference to International Standard		*Australian or Australian/New Zealand Standard*	
IEC		AS IEC	
60300	Dependability management	60300	Dependability management
60300-1	Part 1: Dependability programme management	60300.1	Part 1: Dependability programme management
60300-2	Part 2: Dependability programme elements and tasks	60300.2	Part 2: Dependability programme elements and tasks (in preparation)
60300-3-3	Part 3: Application guide – Section 3: Life cycle costing	60300.3.3	Part 3.3: Application guide—Life cycle costing
		AS/NZS	
60300-3-9	Part 3: Application guide – Section 9: Risk analysis of technological equipment	3931	Risk analysis of technological systems—Application guide
		AS IEC	
60300-3-11	Dependability management – Part 3-11: Application guide – Reliability centred maintenance	60300.3.11	Dependability management Part 3.11: Application guide—Reliability centred maintenance

Only International Standard referenced documents identical to Australian Standards have been listed.

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INTRODUCTION

0.1 Purpose

The IEC 60300[1)] series of standards and guides explain the procedures for implementing a Dependability Programme during the design and development of a product in order to achieve specified levels of dependability.

IEC 60300-1 is the top-level standard which provides guidance on dependability programme management.

IEC 60300-2 is the next level down which defines the tasks that need to be carried out and gives guidance on how they should be undertaken.

IEC 60300-3 encompasses a series of application guides which develop the tasks in IEC 60300-2 into specific areas. These then lead to further documents which describe the "tools" to be used when applying a guide.

IEC 60300-1 and IEC 60300-2 are written to provide a guide on dependability, and are predominantly centred on the reliability aspects. It was considered that a guide was required to link IEC 60300-2 to the existing standards on maintainability, that is the IEC 60706 series of guides on maintainability of equipment and other standards covering specific procedures used in maintainability programmes. The original IEC 60706 series is being updated to ensure that there is no undue duplication with this guide, and IEC 60706 is intended to provide the tools for the procedures specified here. The relevant parts of IEC 60706 are referenced where they will provide further guidance.

0.2 Concept of maintainability

Maintainability refers to the ease with which maintenance work can be done. It involves the process of ensuring that products can be easily and safely maintained and that the maintenance support requirement is minimized.

When a product has a reasonably long life, the cost of operation and support during that life can greatly exceed the initial capital cost. The value to the customer of optimizing maintainability should be evident. Some effort and expense applied to achieving a product which can be easily and cheaply maintained will make very significant savings in the life cycle costs.

The maintenance costs of a product are also dependent on the quantity in use. For a large fleet of equipment, such as trucks, even a small improvement in maintainability can render significant cost savings in the long term.

When a product is to be sold on the open market, the concept of easy maintenance at low cost is an important consideration in the selection by the customer of equipment with low operating costs.

[1)] IEC 60300 (all parts), *Dependability management*.

NOTES

AUSTRALIAN STANDARD

Dependability management

Part 3.10:
Application guide—Maintainability

1 Scope

This International Standard, which forms part of the series of standards in the IEC 60300-3 series, is the application guide for maintainability. It can be used to implement a maintainability programme covering the initiation, development and in-service phases of a product, which form part of the tasks described in IEC 60300-2.

It provides guidance on how the maintenance aspects of the tasks should be considered in order to achieve optimum maintainability. It should be noted that the full programme described in this standard would only be applied to a major complex product with the potential for long-term usage.

For less complex maintainable products, a simpler programme should be adopted by tailoring the programme to suit the degree of complexity and the requirements of the customer. The standard uses other IEC standards and guides, notably IEC 60706, as reference documents or tools to provide more detail as to how a task should be undertaken.

Contracts between customer and supplier will vary widely according to conditions and circumstances in different industries. This standard is written on the premise that a product is to be developed by a contractor from a basic concept for the particular requirements of a user when the product is considered to be a development item (DI). However, in many instances, where a product already exists and needs little or no development effort; it is a Non-development item (NDI) and the full maintainability programme as described in this standard will not be required. However, the principles laid down in the standard can be applied as required, by tailoring the maintainability programme to suit the needs of the project.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60300. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this this part of IEC 60300 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

IEC 60050(191), *International Electrotechnical Vocabulary (IEV) – Chapter 191: Dependability and quality of service*

IEC 60300-1, *Dependability management – Part 1: Dependability programme management*

IEC 60300-2:1995, *Dependability management – Part 2: Dependability programme elements and tasks*

IEC 60300-3 (all sections), *Dependability management – Part 3: Application guide*