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AS IEC 60300.3.3—2005

Australian Standard™

Dependability management

Part 3.3: Application guide—Life cycle costing

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PREFACE

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

This Standard is identical with, and has been reproduced from, IEC 60300-3-3, Ed.2.0 (2004), *Dependability management,* Part 3-3*: Application guide —Life cycle costing*.

'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 system 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.

The objective of this Standard is to provide an introduction to life cycle costing (LCC) as a process for analysis of the total cost of development, acquisition, ownership, operation, maintenance and disposal of a product. LCC highlights the costs associated with dependability of the product, and can be used as a basis for the evaluation of various strategies for operation, support and maintenance, particularly during the conceptual and design phases. [This Part of the AS IEC 60300 series of Dependability application guides is similar in scope to AS/NZS 4536, *Life cycle costing—An application guide*, which provides an application guide for life cycle costing in a more general context.]

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(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

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

Reference to International Standard		*Australian/New Zealand Standard*	
IEC		AS IEC	
60300	Dependability management	60300	Dependability management
60300-3-12	Part 3-12: Application guide—Integrated logistic support	60300.3.12	Part 3.12: Application guide—Integrated logistic support

Only international references identical to Australian or Australian/New Zealand Standards have been listed.

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.

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INTRODUCTION

Products today are required to be reliable. They have to perform their functions safely with no undue impact on the environment and be easily maintainable throughout their useful lives. The decision to purchase is not only influenced by the product's initial cost (acquisition cost) but also by the product's expected operating and maintenance cost over its life (ownership cost) and disposal cost. In order to achieve customer satisfaction, the challenge for suppliers is to design products that meet requirements and are reliable and cost competitive by optimizing acquisition, ownership and disposal costs. This optimization process should ideally start at the product's inception and should be expanded to take into account all the costs that will be incurred throughout its lifetime. All decisions made concerning a product's design and manufacture may affect its performance, safety, reliability, maintainability, maintenance support requirements, etc., and ultimately determine its price and ownership and disposal costs.

Life cycle costing is the process of economic analysis to assess the total cost of acquisition, ownership and disposal of a product. This analysis provides important inputs in the decision-making process in the product design, development, use and disposal. Product suppliers can optimize their designs by evaluation of alternatives and by performing trade-off studies. They can evaluate various operating, maintenance and disposal strategies (to assist product users) to optimize life cycle cost (LCC). Life cycle costing can also be effectively applied to evaluate the costs associated with a specific activity, for example, the effect of different maintenance concepts/approaches, to cover a specific part of a product, or to cover only selected phase or phases of a product's life cycle.

Life cycle costing is most effectively applied in the product's early design phase to optimize the basic design approach. However, it should also be updated and used during the subsequent phases of the life cycle to identify areas of significant cost uncertainty and risk.

The necessity for formal application of the life cycle costing process to a product will normally depend on contractual requirements. However, life cycle costing provides a useful input to any design decision-making process. Therefore, it should be integrated with the design process, to the extent feasible, to optimize product characteristics and costs.

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STANDARDS AUSTRALIA

Australian Standard

Dependability management
Part 3.3: Application guide—Life cycle costing

1 Scope

This part of IEC 60300 provides a general introduction to the concept of life cycle costing and covers all applications. Although the life cycle costs consist of many contributing elements, this standard particularly highlights the costs associated with dependability of the product.

This standard is intended for general application by both customers (users) and suppliers of products. It explains the purpose and value of life cycle costing and outlines the general approaches involved. It also identifies typical life cycle cost elements to facilitate project and programme planning.

General guidance is provided for conducting a life cycle cost analysis, including life cycle cost model development. Illustrative examples are provided to explain the concepts.

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 60050-191:1990, *International Electrotechnical Vocabulary (IEV) – Chapter 191: Dependability and quality of service*

IEC 60300-3-12, *Dependability management – Part 3-12: Application guide – Integrated logistic support*

IEC 61703, *Mathematical expressions for reliability, maintainability and maintenance support terms*

IEC 62198, *Project risk management – Application guidelines*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-191 and IEC 61703, together with the following definitions, apply.

3.1
life cycle
time interval between a product's conception and its disposal

3.2
life cycle costing
process of economic analysis to assess the life cycle cost of a product over its life cycle or a portion thereof

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