

INTERNATIONAL  
STANDARD  
NORME  
INTERNATIONALE

IEC  
CEI

62402

First edition  
Première édition  
2007-06

---

---

**Obsolescence management –  
Application guide**

**Gestion de l'obsolescence –  
Guide d'application**

ITeC Standards  
(<https://standards.iteh.ai>)  
Document Preview

IEC 62402:2007

<https://standards.iteh.ai/catalog/standards/iec/28449ca-6520-4b52-8722-83711dabf90c/iec-62402-2007>



Reference number  
Numéro de référence  
IEC/CEI 62402:2007



## THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2007 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester.

If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de la CEI ou du Comité national de la CEI du pays du demandeur.

Si vous avez des questions sur le copyright de la CEI ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de la CEI de votre pays de résidence.

IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland  
Email: [inmail@iec.ch](mailto:inmail@iec.ch)  
Web: [www.iec.ch](http://www.iec.ch)

### About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

### About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

- Catalogue of IEC publications: [www.iec.ch/searchpub](http://www.iec.ch/searchpub)

The IEC on-line Catalogue enables you to search by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, withdrawn and replaced publications.

- IEC Just Published: [www.iec.ch/online\\_news/justpub](http://www.iec.ch/online_news/justpub)

Stay up to date on all new IEC publications. Just Published details twice a month all new publications released. Available on-line and also by email.

- Customer Service Centre: [www.iec.ch/webstore/custserv](http://www.iec.ch/webstore/custserv)

If you wish to give us your feedback on this publication or need further assistance, please visit the Customer Service Centre FAQ or contact us.

Email: [csc@iec.ch](mailto:csc@iec.ch)  
Tel.: +41 22 919 02 11  
Fax: +41 22 919 03 00

### A propos de la CEI

La Commission Electrotechnique Internationale (CEI) est la première organisation mondiale qui élabore et publie des normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

### A propos des publications CEI

Le contenu technique des publications de la CEI est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

- Catalogue des publications de la CEI: [www.iec.ch/searchpub/cur\\_fut-f.htm](http://www.iec.ch/searchpub/cur_fut-f.htm)

Le Catalogue en-ligne de la CEI vous permet d'effectuer des recherches en utilisant différents critères (numéro de référence, texte, comité d'études,...). Il donne aussi des informations sur les projets et les publications retirées ou remplacées.

- Just Published CEI: [www.iec.ch/online\\_news/justpub](http://www.iec.ch/online_news/justpub)

Restez informé sur les nouvelles publications de la CEI. Just Published détaille deux fois par mois les nouvelles publications parues. Disponible en-ligne et aussi par email.

- Service Clients: [www.iec.ch/webstore/custserv/custserv\\_entry-f.htm](http://www.iec.ch/webstore/custserv/custserv_entry-f.htm)

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions, visitez le FAQ du Service clients ou contactez-nous:

Email: [csc@iec.ch](mailto:csc@iec.ch)  
Tél.: +41 22 919 02 11  
Fax: +41 22 919 03 00

INTERNATIONAL  
STANDARD  
NORME  
INTERNATIONALE

IEC  
CEI

62402

First edition  
Première édition  
2007-06

---

---

**Obsolescence management –  
Application guide**

**Gestion de l'obsolescence –  
Guide d'application**

<https://standards.iteh.ai/catalog/standards/iec/28449ca-6520-4b52-8722-83711dabf90c/iec-62402-2007>



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

PRICE CODE  
CODE PRIX

W

*For price, see current catalogue  
Pour prix, voir catalogue en vigueur*

## CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references .....	7
3 Terms, definitions and abbreviations .....	8
3.1 Definitions .....	8
3.2 Abbreviations .....	11
4 General principles .....	12
4.1 The obsolescence phase.....	12
4.2 Obsolescence management process .....	12
4.3 Documentation .....	14
5 Management responsibility .....	14
5.1 Management function on obsolescence .....	14
5.2 Meeting customer needs .....	15
5.3 Obsolescence contractual and regulatory implications.....	15
5.4 Obsolescence management planning.....	15
5.5 Responsibility.....	16
5.6 Management review .....	16
6 Resources.....	16
7 Managing obsolescence.....	16
7.1 Planning.....	16
7.1.1 General.....	16
7.1.2 Obsolescence management plan contents.....	17
7.1.3 Obsolescence management in the context of risk management .....	17
7.1.4 Planning.....	18
7.1.5 Assessment of impact, cost and probability of obsolescence .....	19
7.1.6 Determining the main strategy .....	19
7.1.7 Reactive strategy.....	20
7.1.8 Proactive strategy.....	21
7.1.9 Budgetary provision.....	21
7.1.10 Reviewing the strategy .....	21
7.2 Customer related activities .....	22
7.3 Reactive strategy recovery options (see Figure 8).....	22
7.3.1 Overview .....	22
7.3.2 Product search .....	22
7.3.3 Cannibalization.....	23
7.3.4 Repair .....	23
7.3.5 Design revision.....	23
7.3.6 Product obsolescence .....	24
7.4 Proactive strategy options .....	24
7.4.1 Design considerations .....	24
7.4.2 Technology transparency.....	24
7.4.3 Obsolescence monitoring .....	25
7.4.4 Planned system upgrades.....	26

7.4.5	Lifetime buy.....	26
7.4.6	Additional factors affecting the choice of obsolescence management programme options.....	27
7.4.7	Skills training.....	27
7.5	Supply chain management .....	27
8	Measurement, analysis and improvement .....	27
9	Software obsolescence issues and strategies .....	28
9.1	Additional planning aspects for software.....	28
9.1.1	Software and hardware similarities and differences .....	28
9.1.2	Causes of software obsolescence.....	29
9.1.3	Determining the main strategy to combat software obsolescence .....	30
9.1.4	Reactive strategy – Do nothing until the need arises .....	31
9.1.5	Proactive strategy.....	31
9.2	Relationship between the customer and the supplier .....	32
9.3	Reactive strategy recovery options (see Figure 10).....	32
9.3.1	Overview .....	32
9.3.2	Software search .....	32
9.3.3	Revision .....	32
9.3.4	Software obsolescence.....	33
9.4	Proactive strategy as applied to software separable from hardware (see Figure 11) .....	33
9.4.1	Overview .....	33
9.4.2	Design considerations .....	33
9.4.3	Technology transparency/open systems .....	33
9.4.4	Contract support.....	34
9.4.5	Planned upgrades .....	34
9.4.6	Additional factors affecting choice of obsolescence management programme options.....	34
Annex A (informative)	Check list .....	36
Annex B (informative)	Monitoring products.....	37
Bibliography.....		39
Figure 1 – Availability phases .....		12
Figure 2 – Process steps for managing obsolescence.....		13
Figure 3 – Obsolescence management versus product life cycle.....		13
Figure 4 – Relationship between OCM, OEM and the customer .....		14
Figure 5 – Process steps in project risk management versus obsolescence management.....		18
Figure 6 – Reactive versus proactive strategy.....		20
Figure 7 – Proactive strategy .....		21
Figure 8 – Overview of reactive strategy recovery options .....		22
Figure 9 – Reactive versus proactive strategy in relation to software obsolescence .....		31
Figure 10 – Overview of recovery options .....		32
Figure 11 – Proactive options overview (software) .....		33
Figure B.1 – Simplified outline of monitoring of active electronic parts with suggested solutions (see 7.4.3) .....		38

# INTERNATIONAL ELECTROTECHNICAL COMMISSION

## OBSOLESCENCE MANAGEMENT – APPLICATION GUIDE

### FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62402 has been prepared by IEC technical committee 56: Dependability.

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

FDIS	Report on voting
56/1189/FDIS	56/1205/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 maintenance result 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.

Withdawn

iTech Standards  
(<https://standards.itih.ai>)  
Document Preview

[IEC 62402:2007](https://standards.itih.ai/standards/iec/62449ca-6520-4b52-8722-83711dabf90c/iec-62402-2007)

<https://standards.itih.ai/standards/iec/62449ca-6520-4b52-8722-83711dabf90c/iec-62402-2007>

## INTRODUCTION

Obsolescence affects all products and it impacts upon all stages of their life. The term product includes

- capital equipment;
- infrastructure;
- consumer durables;
- consumables;
- software products.

Obsolescence is inevitable and it cannot be avoided, but forethought and careful planning can minimize its impact and its potential high costs. The objective of obsolescence management is to ensure that obsolescence is managed as an integral part of design, development, production and in-service support in order to minimize cost and detrimental impact throughout the product life cycle.

Obsolescence presents itself in two ways:

- the item is no longer suitable for current demands, or
- the item is no longer available from the original manufacturer, e.g. due to economic constraints.

From the user's point of view, obsolescence then manifests itself as difficulty in obtaining supplies. If the end-user is the general public, it will be in the interest of the supplier to protect his brand image by having a defined obsolescence policy.

Commercial-off-the-shelf (COTS) products and custom designed items, e.g. new design tools and new production processes, tend to have a much shorter life in terms of availability and supportability than in the past. With the increased use of commercial items in complex products expecting to have a long life cycle, it has become essential to include obsolescence management within programme plans from the earliest stages. Furthermore environmental considerations have the potential to affect the use of some materials during the life of the product and should be considered from the outset.

Obsolescence management is essential to achieve optimum cost-effectiveness throughout the life cycle of a product. The purpose of this standard is to provide guidance on planning a cost effective obsolescence management process that takes into account essential factors to ensure product life cycle costs are considered and applied. Obsolescence management should also include the maintenance of the relevant knowledge and skill base sets.

Clause 4 provides overview of the process and its relation to others.

Clauses 5, 6 and 8 give guidance on management responsibility, resources, measurement and improvement with regard to obsolescence management.

Clause 7 gives guidance on planning, strategies and options described for hardware (including integral software).

Clause 9 gives guidance on planning, strategies and options for software that is separable from its hardware.



## OBSOLESCENCE MANAGEMENT – APPLICATION GUIDE

### 1 Scope

This International Standard gives guidance for establishing a framework for obsolescence management and for planning a cost-effective obsolescence management process that is applicable through all phases of the product life cycle, the term 'product' includes:

- capital equipment;
- infrastructure;
- consumer durables;
- consumables;
- software products.

Obsolescence management covers the following areas:

- a) design of new products;
- b) new technology insertion into existing products;
- c) support and maintenance of legacy products.

### 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, *International Electrotechnical Vocabulary (IEV) – Part 191: Dependability and quality of service*

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

IEC 60300-2:2004, *Dependability management – Part 2: Guidelines for dependability management*

IEC 62198, *Project risk management – Application guidelines*

IEC/TS 62239, *Process management for avionics – Preparation of an electronic components management plan*

IEC 62258 (all parts), *Semiconductor die products*

IEC 62309, *Dependability of products containing reused parts – Requirements for functionality and tests*

### 3 Terms, definitions and abbreviations

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

#### 3.1 Definitions

##### 3.1.1

##### **bench marking**

testing and comparing similar products or processes

##### 3.1.2

##### **bridge buy**

lifetime buy for a given period, e.g. during replacement product development

##### 3.1.3

##### **cannibalization**

re-use of components and assemblies taken from products within the inventory to support other products

##### 3.1.4

##### **commercial-off-the-shelf**

##### **COTS**

conforming to the manufacturer's data sheet and available to any purchaser

NOTE A single user is not able to influence the specification.

##### 3.1.5

##### **end of life**

##### **EOL**

discontinuance of production by the original manufacturer

NOTE EOL should not be confused with 'time to wear out' or 'end of use'.

##### 3.1.6

##### **hardware**

physical components of a system including its associated data and documentation

##### 3.1.7

##### **infrastructure**

facilities, plant and people who design, manufacture, operate and support the product

##### 3.1.8

##### **integrated logistic support**

##### **ILS**

management method by which all the logistic support services required by a customer can be brought together in a structured way and in harmony with a product

[IEC 60300-3-12:2001, Subclause 3.2]

**3.1.9****intellectual property rights****IPR**

patents, designs (whether registered or not), registered trade marks, and copyright

NOTE These are rights defined and regulated by international agreement. Confidential technical information (usually in reports, drawings, specifications or data), and general “know-how” comprise other rights under international law. Although to an extent intangible, they constitute a form of property, possess value and can be bought, sold or licensed.

**3.1.10****legacy product**

product whose development is complete

**3.1.11****legacy system**

system whose development is complete

**3.1.12****lifetime buy****LTB**

purchase of a supply of components sufficient to support the product throughout its life cycle or until the next planned technology change

**3.1.13****matériel**

systems, products, stores, supplies, spares and related documentation, manuals, computer software and firmware

**3.1.14****original component manufacturer****OCM**

manufacturer of an item, material or component that is intended for embodiment into an assembly or a product by an original equipment manufacturer (OEM)

**3.1.15****original equipment manufacturer****OEM**

manufacturer of an assembly or a product

NOTE 1 OEM is a common term, used to identify a position in the supply chain.

NOTE 2 The assembly or product might be regarded as a component by a customer.

**3.1.16****obsolescence**

3.1.16.1 transition from availability from the original manufacturer to unavailability

3.1.16.2 permanent transition from operability to non-functionality due to external reasons

**3.1.17****obsolescence management**

co-ordinated activities to direct and control an organization with regard to obsolescence

**3.1.18****obsolescence management plan**

description of the strategies for the identification and mitigation of the effects of obsolescence through all stages of the life of a product

### 3.1.19

#### **obsolescent**

subject to an announced future end of

- service provision;
- support of software;
- production by the OCM;
- processed material supply

### 3.1.20

#### **obsolete**

no longer available

NOTE This might be because of the lack of availability of

- service provision;
- support of software;
- production by the OCM and there is no replacement available;
- processed material supply.

### 3.1.21

#### **proactive strategy**

development and implementation of an obsolescence management plan in advance

### 3.1.22

#### **product**

result of a process

NOTE There are four generic product categories, as follows:

- service (e.g. transport, after sales support);
- software (e.g. computer program, dictionary);
- hardware (e.g. mechanical component, electrical component or assembly);
- process material (e.g. lubricant).

[ISO 9000:2005, definition 3.4.2 modified]

### 3.1.23

#### **product change note/notice/notification**

#### **PCN**

notice from a supplier announcing a change of process, an error on a data-sheet or the obsolescence of a component

### 3.1.24

#### **product discontinuance notice**

#### **PDN**

notice of discontinuance of production by the original manufacturer

NOTE It is also often referred to as an EOL notice.

### 3.1.25

#### **project manager**

individual or body with authority and responsibility for managing a project to achieve specific objectives

**3.1.26****reactive strategy**

reaction to problems of obsolescence as and when they occur

**3.1.27****software**

programs, procedures, rules, data and documentation associated with programmable aspects of systems hardware and infrastructure

**3.1.28****support**

total resources required to operate and maintain systems or products throughout their operating phase, including all aspects of software, hardware and complete design knowledge

**3.1.29****technology insertion**

updates or upgrades to legacy products (utilizing developing technologies)

NOTE 1 Update: new version, same features.

NOTE 2 Upgrade: new version, additional features.

**3.1.30****life cycle costs****LCC**

cumulative cost of a product over its life cycle

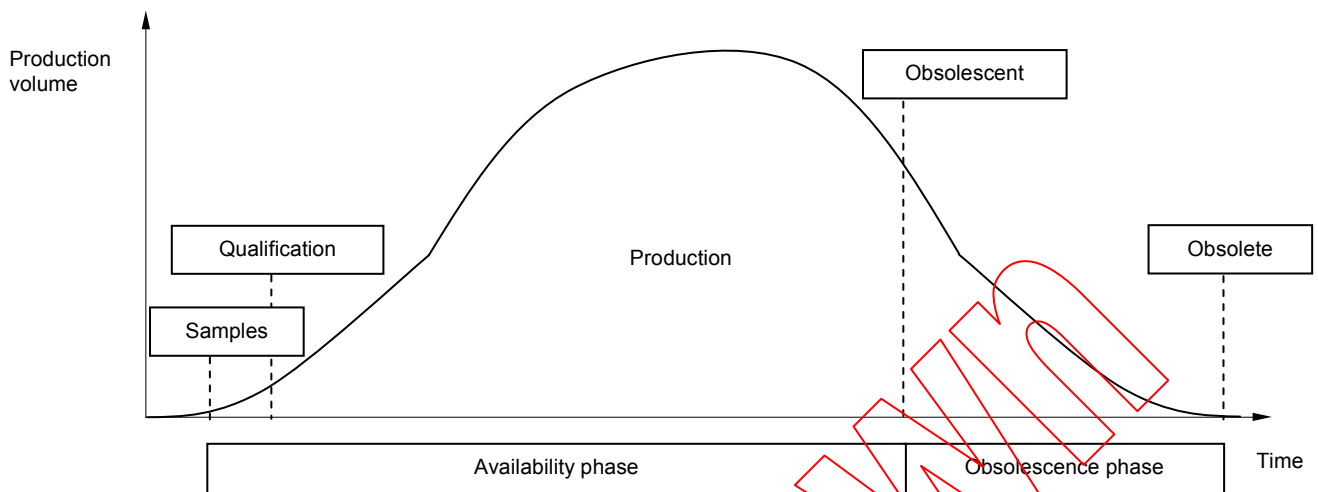
[IEC 60300-3-3:2005, Subclause 3.3]

**3.2 Abbreviations**

COTS	commercial-off-the-shelf
EOL	end of life
ILS	integrated logistics support
IPR	intellectual property rights
LCC	life cycle costs
LTB	life time buy
OCM	original component manufacturer
OEM	original equipment manufacturer
PCN	product change note/notice/notification
PDN	product discontinuance notice

## 4 General principles

### 4.1 The obsolescence phase



**Figure 1 – Availability phases**

As a general principle, the obsolescence phase of a product begins immediately after the information about discontinuance is issued and the product is considered as obsolescent, as shown in Figure 1. The information at the obsolescent phase change is often in the form of a product discontinuance notice (PDN), end-of-life (EOL) notification or lifetime buy (LTB) notification. A product change notice (PCN) may also cause a product to enter the obsolescence phase for certain manufacturers (OCM or OEM). For a software product, the obsolescence phase commences once the original software manufacturer indicates that the software is no longer supported.

A product may be considered obsolete once it is no longer available from the original manufacturer, even though some product is still in the supply chain.

### 4.2 Obsolescence management process

Dependability management encompasses obsolescence management, which is the process of assuring that the product is manufacturable and supportable for the intended life, see Figure 2. The process consists of planned and co-ordinated activities for providing availability of a product during its intended life, by the economic and practicable provision of replacement components and support activities. Figure 3 shows the relationship between obsolescence management and product life cycle.