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Obsolescence management – Application guide

Gestion de l'obsolescence – Guide d'application

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OBSOLESCENCE MANAGEMENT – APPLICATION GUIDE

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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- withdrawn;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.

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
materiel
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

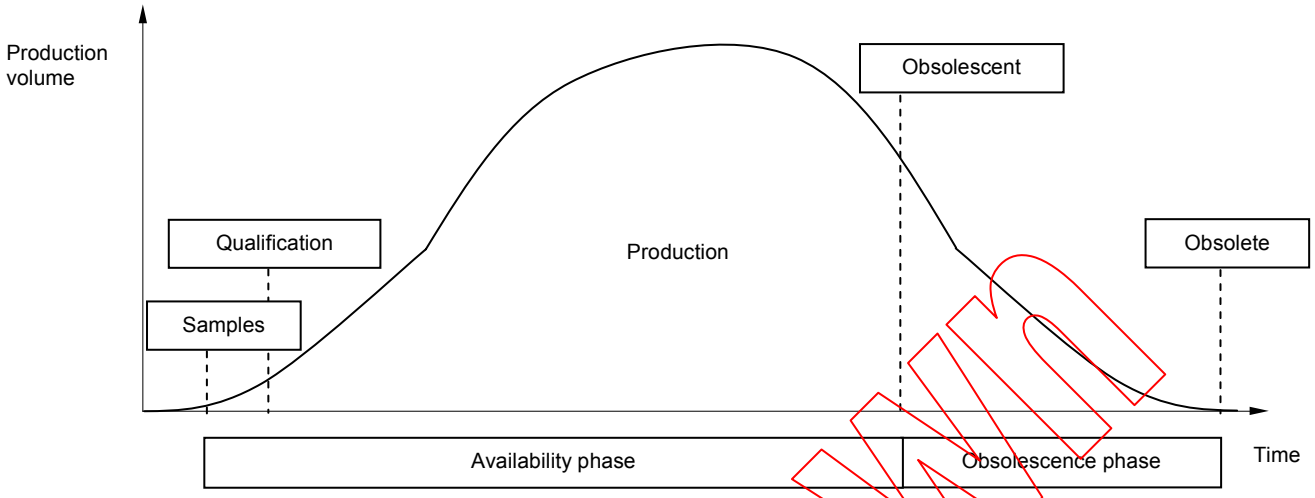

Figure 1 – Availability phases

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 thought 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.