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Introduction

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For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



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TITLE: Obsolescence management Part 1: Policy, plan and process

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OBSOLESCENCE MANAGEMENT – Part 1: Policy, plan and process

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The text of this International Standard is based on the following documents:

Draft	Report on voting
XX/XX/FDIS	XX/XX/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available

170 at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are
171 described in greater detail at www.iec.ch/publications.

172 The committee has decided that the contents of this document will remain unchanged until the
173 stability date indicated on the IEC website under webstore.iec.ch in the data related to the
174 specific document. At this date, the document will be

- 175 • reconfirmed,
- 176 • withdrawn, or
- 177 • revised.

178

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180 **it contains colours which are considered to be useful for the correct understanding of its**
181 **contents. Users should therefore print this document using a colour printer.**

INTRODUCTION

For the purposes of this document, obsolescence management is a discipline used at all phases of an item's life cycle to ensure an item and its sub items can continue to fulfil their requirements over their expected useful life.

The use of the term obsolescence within obsolescence management differs from the standard dictionary definition. Instead of an item becoming outdated or no longer used, this document views obsolescence as the transition of a required item still in use from available to unavailable from the manufacturer. Any item that remains in use will be subject to obsolescence. Obsolescence manifests itself as difficulty in obtaining supplies, spares and/or support.

This document defines the requirements for managing the obsolescence of any type of item, including items provided as part of a service. Obsolescence management helps prevent unnecessary losses (for example loss of commercial service or capability) and treat risks associated with obsolescence. The assessment of risk associated with obsolescence takes account of factors including but not limited to the likelihood of an item becoming obsolete during its expected useful life, the likelihood of an impact occurring during that projected useful life, and the severity of that impact. Obsolescence management treats risks associated with obsolescence by reducing the likelihood or severity of impact, or both.

It has become essential to include obsolescence management within planning activities from the earliest life cycle phases. The guidance provided in this document could be characterized as strategic obsolescence management when obsolescence management is planned and implemented during the early life cycle phases.

Even though this situation may not be a direct case of obsolescence, this document will also be of assistance in the management of items that have diminished manufacturing sources and material shortages that can result in long lead times, reduced availability and ultimately obsolescence of those items.

Managing obsolescence contributes to the dependability of an item, particularly supportability, which is defined as the 'ability to be supported to sustain the required availability with a defined operational profile and given logistic and maintenance resources'. As such, obsolescence management may be performed as part of an overall dependability management programme as described in IEC 60300-1.

IEC 62402 Obsolescence Management standard is divided into the following three parts, focusing on different aspects of obsolescence management:

- IEC 62402-1 which provides requirements and guidance for obsolescence management;
- IEC 62402-2 which provides guidance for forecasting obsolescence costs;
- IEC 62402-3 which provides requirements and guidance for digital communication of item/product notifications related to discontinuance/change/general information/errata throughout any supply chain.

1 Scope

This part of IEC 62402 provides requirements and guidance for obsolescence management applicable to any organization that is dependent on another organization to obtain value from the usefulness of the items that it provides. A cost-effective obsolescence management process and the activities used to implement the process are applicable throughout all phases of an item's life cycle.

This document covers the following areas:

- establishing a policy for obsolescence management;
- establishing an infrastructure and an organization;
- developing an obsolescence management plan (OMP);
- develop strategies to minimize obsolescence;
- determining an obsolescence management approach to risk;
- selecting obsolescence resolution and implementation;
- measuring and improving the performance of the outcomes of the obsolescence management activities.

Further guidance on obsolescence management is included as notes, in the informative annexes and references in the Bibliography.

Standards have been developed for:

- Obsolescence management Part 2 forecasting obsolescence cost;
- Obsolescence management Part 3 exchange of information regarding change and discontinuance of products.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1.1

alternative item

item whose characteristics can be different from that specified for one or more reasons

EXAMPLE Items with different quality or reliability level, tolerance, parameters, temperature range.

Note 1 to entry: See also 'substitutes' (11.5).

3.1.2

commercial off-the-shelf

COTS

258 conforming to the manufacturer's datasheet and available to any purchaser

259 Note 1 to entry: A single user is not able to influence the manufacturer's datasheet.

260 Note 2 to entry: This note applies to the French language only.

261 3.1.3

262 emulation

263 process that produces a substitute item for the purpose of replacing another item while
264 maintaining the same form, fit and function, and interface

265 EXAMPLE Microcircuit emulation can replicate, with state-of-the-art, items that emulate the original item.

266 3.1.4

267 equivalent item

268 item which is functionally, parametrically and technically interchangeable

269 Note 1 to entry: This term is also known as 'form, fit, function and interface' F3I.

270 Note 2 to entry: See also 'substitutes' (11.5)

271 3.1.5

272 existing stock

273 sub item(s) from within the supply chain and inventory that can be allocated to the item without
274 requalification

275 3.1.6

276 indenture level

277 level of sub-division within a system hierarchy

278 EXAMPLE System, subsystem, assembly, and component.

279 Note 1 to entry: From the maintenance perspective, the indenture level depends upon various factors, including the
280 complexity of the item's construction, the accessibility of sub items, skill level of maintenance personnel, test
281 equipment facilities, and safety considerations.

282 [SOURCE: IEC 60050-192:2015, 192-01-05]

283 3.1.7

284 item

285 subject being considered

286 Note 1 to entry: The item can be an individual part, component, material, device, functional unit, equipment, product,
287 subsystem, system, service or process.

288 Note 2 to entry: The item can consist of hardware, software, knowledge, processes or any combination thereof.

289 Note 3 to entry: The item is often comprised of elements that can each be individually considered. See sub item
290 (3.1.22) and indenture level (3.1.7).

291 [SOURCE: IEC 60050-192:2015, 192-01-01 modified – Note 2 modified by replacing people
292 with knowledge, processes, Note 3 modified references in brackets]

293 3.1.8

294 integrator

295 organization that assembles an item of complex sub items for the end user

296 Note 1 to entry: Examples of items for the end user are: car, ship, aeroplane, oilrig.

297 3.1.9

298 life of need buy

299 procurement of sub items sufficient to support the item throughout its life cycle, or until the next
300 planned upgrade

301 Note 1 to entry: Identified as a proactive life of need buy or a reactive life of need buy depending on which approach
 302 to obsolescence risk is being used for the phase of the life cycle for which the procurement is taking place (See
 303 11.4).

304 Note 2 to entry: This term was previously known as lifetime buy.

305 Note 3 to entry: This note applies to the French language only.

306 **3.1.10**

307 **manufacturer**

308 organization or individual with responsibility for the design, manufacture, packaging and
 309 labelling of an item before placing the item on the market under their own name or trademark

310 **3.1.11**

311 **obsolescence**

312 transition of an item from available to unavailable from the manufacturer(s) in accordance with
 313 the original specification

314 Note 1 to entry: The reasons for the obsolescence can be economic (e.g. unacceptable operating costs), technical
 315 (e.g. due to innovation progress of newer available products), legislative changes, or other (e.g. for difficulty in
 316 obtaining supplies, support of associated software, processed material or spares).

317 Note 2 to entry: Specification includes a drawing, datasheet, standard, written specification or a list of keywords
 318 and properties.

319 [SOURCE: IEC 60050-192, 192-01-41 modified to only include the definition in Note 2 to entry]

320 **3.1.12**

321 **obsolescence issue**

322 effect when the item is obsolete or when there is certainty as to when the item will become
 323 obsolete

324 Note 1 to entry: The item has an obsolescence issue when the PDN (see 3.1.17) has been issued by the
 325 manufacturer of the item.

326 **3.1.13**

327 **obsolescence risk**

328 effect of uncertainty as to when an item will become obsolete

329 Note 1 to entry: Obsolescence risk is often expressed in terms of a combination of the impact of an item becoming
 330 obsolete and the associated likelihood.

331 **3.1.14**

332 **obsolete**

333 unavailable from the manufacturer(s) in accordance with the original specification

334 Note 1 to entry: The reasons for the obsolescence can be economic (e.g. unacceptable operating costs), technical
 335 (e.g. due to innovation progress of newer available products), legislative changes, or other (e.g. for difficulty in
 336 obtaining supplies, support of associated software, processed material or spares).

337 Note 2 to entry: Specification includes a drawing, datasheet, standard, written specification or a list of keywords
 338 and properties.

339 **3.1.15**

340 **plan owner**

341 the entity that has the ownership and responsibility of the OMP

342 **3.1.16**

343 **planned upgrades**

344 predetermination points during the item life cycle at which the design of all or part of the item
 345 will be brought up to date by replacing sub items with better performing sub items and/or
 346 replacing obsolete sub items or sub items at risk from becoming obsolete

347 Note 1 to entry: These upgrades will often involve changes to both the software and the underlying hardware.
 348 Between the planned upgrades other obsolescence resolutions could be necessary (see Clause 11).

3.1.17**product change notice****PCN**

notification from a manufacturer announcing a change of process, properties, characteristics or specification of an item

3.1.18**product discontinuance notice****PDN**

notification from a manufacturer announcing unavailability of an item

3.1.19**product errata notice****PEN**

notification from a manufacturer announcing corrections to documentation of an item

3.1.20**product general notice****PGN**

notification from a manufacturer announcing name and item identity changes, product innovation, technology strategies, roadmaps and other information not covered by PCN or PDN

3.1.21**reclamation**

use of a sub item that has a remaining useful life from a surplus or redundant item

Note 1 to entry: Reclamation is a controlled process (see 11.3 and recycled item in Annex A).

Note 2 to entry: Reclamation is sometimes referred to as cannibalization.

3.1.22**sub item**

part of the subject being considered

Note 1 to entry: A sub item becomes the item, when individually considered.

[SOURCE: IEC 60050-192:2015, 192-01-02]

3.1.23**supply chain**

entire network of entities, such as organizations, people, technologies, activities, information and resources, directly or indirectly interlinked and interdependent, involved in serving the end user on delivering an item or service

Note 1 to entry: The supply chain is a part of an end-to-end process from the raw materials to the finished item delivered to the end user.

[SOURCE: IEC 62402:2019]

3.1.24**useful life**

time interval from first use until user requirements are no longer met due to economics of operation and maintenance, or obsolescence

Note 1 to entry: In this context, "first use" excludes testing activities prior to hand-over of the item to the end-user.

[SOURCE: IEC 60050-192:2015, 192-02-27]

3.2 Abbreviated terms

COTS	commercial off-the-shelf
ECMP	electronic components management plan
IOM	International Institute of Obsolescence Management
IPR	intellectual property rights
NRND	not recommended for new designs
OCM	original component manufacturer
OEM	original equipment manufacturer
OMP	obsolescence management plan
PCN	product change notice
PDN	product discontinuance notice
PEN	product errata notice
PGN	product general notice
REACH	registration, evaluation, authorization and restriction of chemicals
RoHS	restriction of hazardous substances

4 Obsolescence management

4.1 What is obsolescence

Obsolescence is the transition of an item from available to unavailable from the manufacturer in accordance with the original specification.

Obsolescence is a significant cost driver and can occur at all phases of an item's life cycle. Unforeseen obsolescence issues can happen quickly, can cost a significant amount of unplanned resources to resolve and may put at risk an organization's financial stability, operations and reputation.

Obsolescence management activities ensure an item and its sub items can continue to fulfil their requirements over their expected useful life. Most items will become obsolete eventually; however, there is often uncertainty about when this will occur and the consequences to the item concerned.

Items include but are not limited to:

- physical assets (for example products, equipment, sub-assemblies, components, manufacturing tooling, test equipment, spares);
- consumables (for example ink cartridges, adhesives, computer media, batteries);
- materials (for example metals, fluids, polymers, composites);
- software (for example operating environment, middleware, firmware, specific applications);
- systems (for example information systems, classification systems);
- services (for example maintenance, communication and information).

For the purposes of obsolescence management, items may also include information and knowledge such as data, services, processes, procedures, specifications, standards and regulations.

Legislation may have the potential to affect the use of some materials during the life of the item; those materials affected by the legislation are considered within the scope of obsolescence management.

Reasons why items become obsolete include but are not limited to:

- market factors including reduced demand of an item, lack of profitability or the introduction of new technologies and capabilities causing the manufacturer to issue a PDN;
- changes to the configured item (for example configured item number, item updates, item rebranding, merger or acquisition of the manufacturer);
- obsolete sub items (for example raw materials or other sub items that make up an item);
- loss or change to manufacturing capability (for example process re-tooling, test equipment, manufacturing equipment, in-process materials, support equipment, documentation);
- loss of skill or knowledge to manufacture or support the item;
- loss of legal authority for manufacturers to place the item on the market due to regulations (for example export control), legislation (for example environmental protection legislation such as RoHS, REACH), or legal agreements;
- natural or man-made disasters.

NOTE See guidance on the effects of obsolescence on different technologies in Annex C.

4.2 What is obsolescence management

Obsolescence is inevitable but normally involves uncertainty as to when it will occur and what the likely consequences in terms of cost and impact will be. Due to this uncertainty, it is essential that obsolescence be addressed in a risk management context by understanding the level of risk and implementing any necessary activities to treat the risks. This makes it necessary to implement a management process to mitigate the negative effects of obsolescence.

Obsolescence management collectively describes the activities taken by individuals or an organization to manage the obsolescence of items. The objective of obsolescence management is to ensure that obsolescence is managed as an integral part of the item's life cycle (see Annex H).

Obsolescence management seeks to reduce the risk of obsolescence through undertaking planned activities to reduce the frequency of obsolescence issues and/or reduce the impact when an item becomes obsolete. The impact of obsolescence can vary depending on the type of item and the context in which it delivers value to the organization. Obsolescence impacts can be categorized in the following ways:

- Financial impacts. Responding to obsolescence can introduce significant costs to an organization from changing supply chains, design or testing new items, changes to item information or processes, or increased item cost as supply becomes scarce.
- Operational impacts. When an item becomes unavailable, the user can no longer derive benefit from the item. The unavailability of the item may also impact the user's ability to derive benefit from other sub items or items.
- Compliance impacts. The obsolescence of an item may prevent an organization from complying with regulatory requirements such as environmental or safety obligations.
- Reputation impacts. Where others are dependent on an organization to provide an item or service, the inability to provide the item or service due to obsolescence may have long term impacts on the reputation of the organization.

NOTE Obsolescence can create a market for counterfeit items. Counterfeit items can impact the performance of items in terms of safety and reliability which in turn may increase life cycle costs. The Bibliography identifies several standards providing guidance on how to avoid counterfeit items.

4.3 Benefits of obsolescence management

Effective obsolescence management typically delivers:

- an understanding of the current and future obsolescence risk being carried by an organization;

- a lower overall risk to an organization's objectives from obsolescence;
- greater information and a framework to support obsolescence risk assessment and decision making;
- efficiencies through common obsolescence approaches, standards, processes or knowledge across and between organizations;
- more resolutions and time to respond to obsolescence risk and issues.

5 Obsolescence management process

The obsolescence management process should contain the following steps, which are detailed in the clauses below:

- establishing and maintaining a policy for obsolescence management (see Clause 6);
- establishing and maintaining an infrastructure and an organization (see Clause 7);
- developing and maintaining OMP(s) (see Clause 8);
- developing and implementing strategies to minimize obsolescence (see Clause 9);
- determining and implementing approaches to obsolescence risk (see Clause 10);
- undertake obsolescence monitoring (see Clause 10.2);
- selecting and implementing obsolescence resolutions (see Clause 11);
- measuring and improving the performance of the outcomes of the obsolescence management activities (see Clause 12).

Figure 1 gives a representation of the steps of the obsolescence management process as listed above. Those steps should be applied to the obsolescence management activities within the organisation and throughout the life cycle of the items.

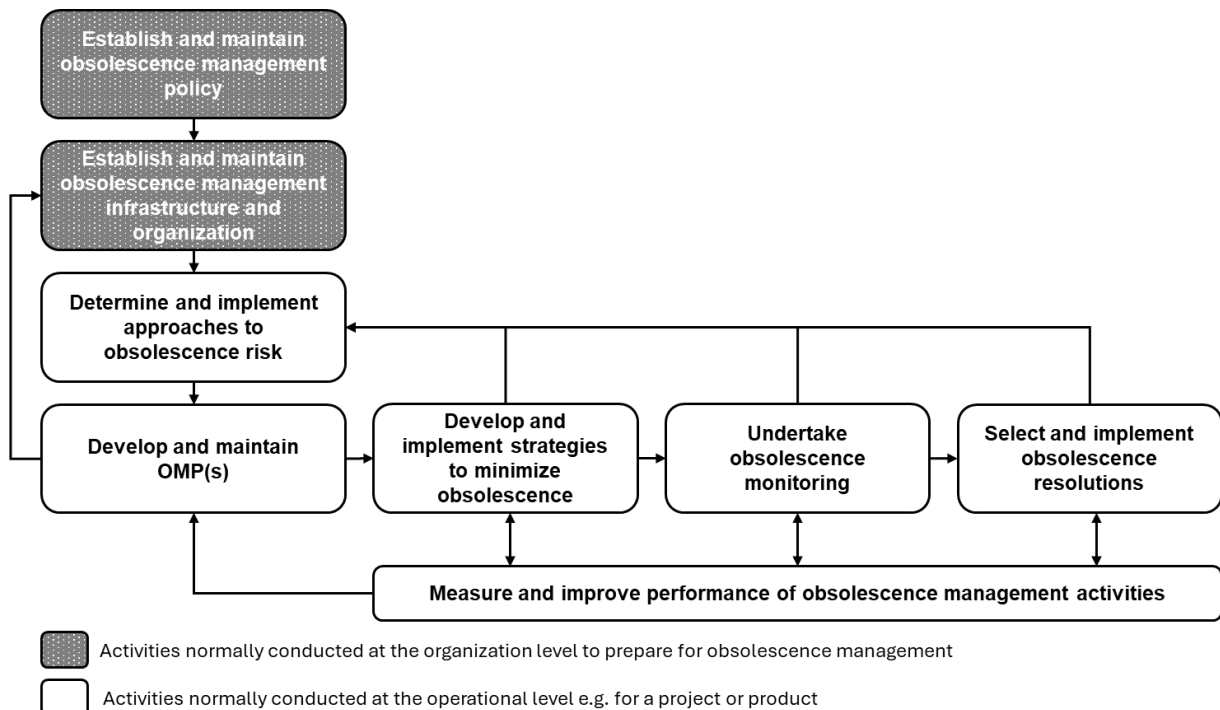


Figure 1 – Obsolescence management activities

The end user's/customer's requirements (including technical, business and social) for the item have to be taken into consideration when performing and initiating the obsolescence management activities by setting a policy for obsolescence management. The plan owner's obsolescence management organization sets up the necessary resources to implement the

obsolescence management activities and strategies. The output of the obsolescence management process is continuously evolving OMP(s).

As each sub item is considered for the design it is selected from sustainable technologies and assessed, identifying obsolescence risks and issues for the life of the item. As part of the sustainment strategy, each sub item is fully identified (see 9.10) from the assessed manufacturers which are selected from the technology and supply chain management strategies (see 9.6).

Figure 2 details the activities to determine approaches to obsolescence risk (box within Figure 1).

The general approach selected to treat the level of risk for each of the technologies of the item is added to the OMP, including approaches for monitoring notifications of critical sub items as necessary. All individual sub items may be recorded within the OMP or a reference document, with their selected approach, resolution and implementation, as necessary. During the life cycle of the item the status information of each sub item may change the level of risk, which may change the selected approach and resolution. This would result in the need to update the risk level with the changes during the monitoring stage of the process.

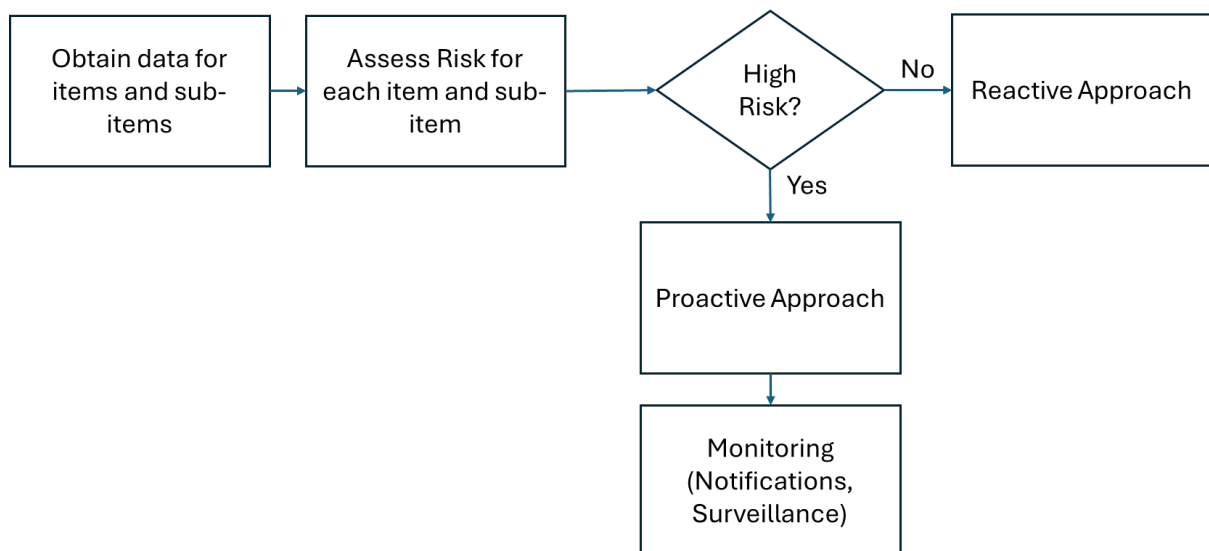


Figure 2 – Determine approaches to obsolescence risk

The Plan Owner requests availability status data for all the items (and sub items) in the items list. This shall be carried out at a level that is agreed within the OMP. Each item (and sub item) is then subjected to a risk assessment to determine the level of risk based on the likelihood and impact of each item (and sub item) being discontinued. A threshold will be agreed as to high-risk items (and sub items). Low risk items (and sub items) can be subjected to a reactive approach that allows minor resolutions to be carried out that does not impact the design, qualification, or release of the items (and sub items). Any items (and sub items) with a high risk, shall be subjected to a proactive approach. This will encompass an assessment on the options available, that will include monitoring notifications and market surveillance. Examples of resolutions are captured in Clause 11.

6 Policy

An overarching policy for risk-based obsolescence management shall be in place to guide the overall effort to manage obsolescence. This policy may include integration of obsolescence considerations into an existing supply chain and support policy. The policy for obsolescence management shall identify recommendations of this document as requirements where required by the end user/customer.

Usually only one policy is required for the whole organization, but the policy may allow for multiple OMPs.

The policy shall identify:

- the roles, responsibilities and infrastructure from all disciplines of the organization for managing obsolescence;
- the obsolescence management skill level and training required for the infrastructure;
- the organization's operational procedures related to obsolescence management which may be part of a life cycle management plan or support plan.

7 Infrastructure and organization

7.1 General

To execute the policy, there should be an obsolescence management infrastructure and organization in place. This infrastructure and organization should include:

- management responsibilities;
- obsolescence management organization and authorities;
- end user/customer/manufacture management;
- partnering agreements between organizations.

7.2 Management responsibilities

Top management should appoint a representative that is given the authority and resources to manage, monitor, evaluate and coordinate obsolescence management activities. The representative should be responsible for the policy and prepare and revise OMPs at all life cycle phases, approving revisions. This appointment is to promote effective and efficient operation and improvement of obsolescence management. The obsolescence management representative should report to top management and may communicate with end users/customers, contract manufacturers, integrators, and manufacturers on matters pertaining to obsolescence.

7.3 Obsolescence management organization

Obsolescence management has roles that should be performed to execute the policy which is suitably resourced according to the requirements of the organization. An individual can fulfil multiple roles and can be a dedicated member or a matrixed member of the obsolescence management organization. These roles should include but are not limited to an obsolescence management lead communicating and/or coordinating with management, end users/customers, manufacturers and their suppliers, sourcing/contracting officers, engineering, quality, and finance. The organization should put in place the means for effective communication between all levels of the supply chain on identifying, treating obsolescence risks and resolving obsolescence issues.

To enable staff to be able to identify, analyse and manage obsolescence effectively, they need to understand the processes that are involved in obsolescence management and therefore require the correct training and/or mentoring to enable them to perform.

The transfer of skills either through the physical transfer of resources or through training, may be necessary, removing reliance on a third-party organization.

NOTE Competence recognition for obsolescence practitioners is available from the IIOM.

7.4 Customer/manufacturing management

The customer should check there is a capability to manage obsolescence. The customer/manufacturing relationship should allow for the timely exchange of information about technologies and items being made obsolete, in order to facilitate the obsolescence management processes. A manufacturing should make notifications (PCN/PDN/PEN/PGN) available to their customers, which are recommended to be in accordance with IEC 62402-3. For COTS items and services, notifications should be made publicly available, e.g. on websites. Organizations should use this information and monitor the availability of their supplied items at regular intervals.

This relationship may be in the form of a contract between the manufacturing and their suppliers, ensuring early and comprehensive notification of technology status (PGN), change notification (PCN), item status (PDN) and errata (PEN) and an appropriate reaction to obsolescence risks and issues from obsolescence monitoring (see 10.2.2). This contract may include other conditions such as traceability and warranties, and this relationship is often known as a franchised distributor for the supply of items from the manufacturing.

7.5 Partnering agreements between organizations

If applicable, contractual arrangements between manufacturers, suppliers and/or integrators can be used to ensure that obsolescence information is actively communicated through the supply chain. This includes any organizations within the supply chain where distributors have franchised agreements with their sources to provide items, including warranties.

Contractual arrangements should define the requirements for obsolescence management roles and responsibilities of each organization. All organizations in the supply chain should have agreements which should include information exchange on obsolescence, appropriate time-limits and exchange formats. The agreements may not be with the manufacturing but may be with other organisations within the supply chain. Partnering agreements or contracts between organizations within the supply chain should include:

- creation of an OMP (see 8.2);
- responsibilities for treating obsolescence risks and resolving obsolescence issues;
- reporting of notifications (PCNs, PDNs, PENs and PGNs) up the supply chain, which are recommended to be in accordance with IEC 62402-3;
- reporting, including:
 - obsolescence health of the items being supplied;
 - status reports on the progress of obsolescence resolutions;
 - status of life of need buy inventory being held for items being supplied.
- access to the items list and other intellectual property.

Partnering agreements between organizations may include the assessment of capability in relation to obsolescence management as part of the quality management system for approved manufacturers and their approved suppliers. These partnering agreements may be in the form of a service level agreement, contractually committing a supplier to the level of item availability, thus devolving the risk of obsolescence onto the supplier.

A process should be established to evaluate the capability and effectiveness of partnering agreements. In cases where the supplier can or will not meet the obsolescence management contractual arrangement, several options can be pursued:

- find a supplier that meets the expectations;
- assist the supplier in developing sufficient obsolescence management capabilities;
- establish internal controls to monitor and manage obsolescence of that supplier's items.

8 Obsolescence Management Plan

8.1 General

In accordance with the policy, an OMP shall be developed and implemented to ensure appropriate selection and timely implementation of relevant obsolescence activities. The plan should include strategies to minimize obsolescence during all life cycle phases. The plan should identify those technologies requiring either a proactive or reactive approach based on risk assessment.

The OMP describes the activities for prevention, detection/identification and treatment of the effects of obsolescence risk through all phases of the item life cycle to achieve the optimum compromise between life cycle costs for the item's performance and item availability, maintainability and safety. The OMP can be part of another plan or a separate document.

To demonstrate the value of obsolescence management activities and ensure the OMP is affordable, a forecast of costs to manage obsolescence should be determined. It is recommended obsolescence costs are forecast in accordance with IEC 62402-2.

8.2 OMP contents

The OMP contents include but are not limited to the following:

- **Authorities and resources.** The plan shall identify the organization or individual responsible for developing, reviewing and maintaining the plan and shall identify the organization or individual to approve the plan. The plan shall identify the skill level and roles to execute the plan's activities. The plan should identify resources allocated for execution.
 - **Scope.** The plan shall identify the:
 - criteria for selecting items to be considered for obsolescence management;
 - item's life cycle;
 - organization's policy for obsolescence management (list the contents);
 - end user/customer requirements (list the references).
 - **Objectives.** The plan shall identify the objectives of the obsolescence management activities, depending on the organization's role in the supply chain, life cycle of the items, and goals to be achieved.
 - **Approaches to obsolescence risk.** The plan shall define the approach to manage obsolescence based on the risk assessment (see Clause 10).
 - **Strategies to minimize obsolescence.** The plan shall identify strategies throughout the item's life cycle which may include:
 - surveillance of sustainable technologies and their assessed manufacturers;
 - selection of sub items from sustainable technologies to minimize obsolescence;
- NOTE 1 Selection of sub items from assessed manufactures can reduce the risk of obsolescence for the life of the item.
- plan item upgrades for unsustainable technologies.
 - **Monitoring.** After the initial surveillance of technologies, selection of manufacturers and monitoring of item and sub item status, the plan should schedule those items that require monitoring. Those sub items that are identified as critical to the item shall be scheduled for a period of monitoring.
 - **Flow down of obsolescence management requirements throughout the supply chain.** The plan shall identify agreements for the flow down of obsolescence management activities and outputs throughout the supply chain. These should include agreements for timely receipt of notifications of obsolescence (see also 7.4 and 7.5).
 - **Resolution selection and implementation.** The plan should define the activities to implement the most efficient and effective resolution(s) to treat or resolve obsolescence.