SLOVENSKI STANDARD
SIST EN 60300-3-12:2004

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Vodenje zagotovljivosti – 3-12. del: Vodilo za uporabo – Integrirana logištična podpora (IEC 60300-3- 12:2001)

Dependability management -- Part 3-12: Application guide - Integrated logistic support

Zuverlässigkeitsmanagement -- Teil 3-12: Anwendungsleitfaden - Integrierte logistische Unterstützung

Gestion de la sûreté de fonctionnement -- Partie 3-12: Guide d'application - Soutien logistique intégré

Ta slovenski standard je istoveten z: **EN 60300-3-12:2004**

ICS:

03.120.01	Kakovost na splošno	Quality in general
21.020	Značilnosti in načrtovanje strojev, aparatov, opreme	Characteristics and design of machines, apparatus, equipment

SIST EN 60300-3-12:2004 **en**

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60300-3-12

March 2004

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English version

Dependability management
Part 3-12: Application guide -
Integrated logistic support
(IEC 60300-3-12:2001)

Gestion de la sûreté de fonctionnement
Partie 3-12: Guide d'application -
Soutien logistique intégré
(CEI 60300-3-12:2001)

Zuverlässigkeitsmanagement
Teil 3-12: Anwendungsleitfaden -
Integrierte logistische Unterstützung
(IEC 60300-3-12:2001)

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SIST EN 60300-3-12:2004
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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 60300-3-12:2004 E

Foreword

The text of document 56/769/FDIS, future edition 1 of IEC 60300-3-12, prepared by IEC TC 56, Dependability, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60300-3-12 on 2004-03-01.

The following dates were fixed:

– latest date by which the EN has to be implemented
   at national level by publication of an identical
   national standard or by endorsement   (dop)   2004-12-01

– latest date by which the national standards conflicting
   with the EN have to be withdrawn   (dow)   2007-03-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60300-3-12:2001 was approved by CENELEC as a European Standard without any modification.

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Annex ZA
(normative)

Normative references to international publications
with their corresponding European publications

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.

NOTE   When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60050-191	- [1]	International Electrotechnical Vocabulary (IEV) Chapter 191: Dependability and quality of service	-	-
IEC 60300-3-3	- [1]	Dependability management Part 3-3: Application guide - Life cycle costing	-	-
IEC 60300-3-11	- [1]	Part 3-11: Application guide - reliability centered maintenance	-	-
IEC 60706-2	- [1]	Guide on maintainability of equipment Part 2 - Section 5: Maintainability studies during the design phase	-	-
IEC 60812	- [1]	Analysis techniques for system reliability - Procedure for failure mode and effects analysis (FMEA)	HD 485 S1	1987 [2]
IEC 61160	- [1]	Formal design review	-	-

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[1] Undated reference.

[2] Valid edition at date of issue.

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NORME
INTERNATIONALE

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CEI

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60300-3-12

Première édition
First edition
2001-12

Gestion de la sûreté de fonctionnement –

Partie 3-12:
Guide d'application –
Soutien logistique intégré

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Dependability management –

Part 3-12:
Application guide –
Integrated logistic support

Commission Electrotechnique Internationale
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INTERNATIONAL ELECTROTECHNICAL COMMISSION
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DEPENDABILITY MANAGEMENT –

**Part 3-12: Application guide –
Integrated logistic support**

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.

3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.

4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60300-3-12 has been prepared by IEC technical committee 56: Dependability.

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

FDIS	Report on voting
56/769/FDIS	56/778/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 3.

IEC 60300 consists of the following parts, under the general title, *Dependability management*

Part 1:   Dependability programme management

Part 2:   Dependability programme elements and tasks

Part 3:   Application guide

Annexes A, B and C are for information only.

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The committee has decided that the contents of this publication will remain unchanged until 2006. At this date, the publication will be

• reconfirmed;
• withdrawn;
• replaced by a revised edition, or
• amended.

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INTRODUCTION

The successful operation of a product in service depends to a large extent upon the effective provision of logistic support in order to achieve and maintain the required levels of performance and customer satisfaction.

Logistic support encompasses the activities and resources required to operate and maintain a product (hardware and software) in service. Logistic support covers maintenance, manpower and personnel, training, spares, technical documentation and packaging handling, storage and transportation, support resources and disposal.

The cost of logistic support is a major contributor to the life cycle cost (LCC) of a product and increasingly customers are making purchase decisions based on life cycle cost rather than initial purchase price alone. Logistic support considerations may therefore have a major impact on product sales by ensuring that the product can be operated and supported at an affordable cost and that all the necessary resources have been provided to fully support the product so that it meets the customer requirements.

Quantification of support costs allows the manufacturer to define the support cost elements and evaluate the warranty implications. This provides the opportunity to reduce risk and allows support costs to be set at competitive rates.

Integrated logistic support (ILS) is a 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. In essence, the application of ILS

– ensures that supportability considerations influence the concept and design of a product;

– develops logistic support arrangements that are consistently related to the design and to each other;

– provides the necessary logistic support at the beginning and during customer use and disposal at optimum cost;

– allows improvements in the support of a product throughout its life.

The method by which ILS achieves much of the above is through the application of Logistic Support Analysis (LSA). This is a series of support analysis tasks that are performed iteratively throughout the design process in order to ensure that the product can be supported efficiently in accordance with the requirements of the customer.

The successful application of ILS will result in a number of customer and supplier benefits. These should include, but will not be limited to, some or all of the following:

– meeting customer requirements;

– increased overall customer satisfaction;

– better visibility of support costs;

– lower customer support costs;

– greater product availability;

– fewer product modifications due to supportability deficiencies and hence less supplier rework;

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– better adherence to production schedules in process plants through reduced maintenance and better support;

– reduced product LCC;

– lower supplier product costs;

– a better and more saleable product leading to increased product purchases;

– potential for purchase or upgrade of the product sooner through customer savings on support of current product;

– improved safety;

– reduced support costs providing more likelihood of repeat sales.

ILS should be an integral part of the total product design and management process with an on-going improvement activity using monitoring of achieved performance to tailor existing support and influence future design activities.

For many years, ILS was predominantly applied to military procurement, primarily using Military Standard 1388, generated by the US Department of Defense (DoD). Other countries have also produced their own military standards that refer to specialized government infrastructures and these may be unnecessarily complex for commercial application. The methods and benefits of ILS, however, have potential for much wider application in commercial and civilian use.

The idea of ILS is simple and depends on a structured procedure which ensures that the appropriate logistic aspects are considered fully throughout the design and development phases of a product, in close co-operation with the designers. Under an ILS approach the ability to support the product effectively is given equal weight to performance and is fully considered in relation to its cost.

The application of ILS provides improvements in availability, maintenance support and long-term logistic cost savings. Logistic costs are significant through the life of a system and can often amount to many times the initial purchase cost of the system.

This standard is one of a series of application guides that describe various tools in the field of maintenance support under the generic heading of *Dependability management*. ILS is a management technique that can effectively be used to determine the support requirements of a product.

This standard provides guidance on the minimum activities necessary to implement effective ILS for a wide range of commercial suppliers. The standard supplements IEC 60706-4 [1], which emphasizes the maintenance aspects of the support requirements and refers to other existing standards where appropriate. The use of Reliability and Maintainability (R&M) studies is also mentioned in this standard, as R&M analysis is an important contributor to the ILS process. However, R&M techniques are not described in any detail in this standard and the appropriate IEC standards should be consulted.

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[1] IEC 60706-4, *Guide on maintainability of equipment – Part 4: Section 8: Maintenance and maintenance support planning*

DEPENDABILITY MANAGEMENT –

Part 3-12: Application guide – Integrated logistic support

1 Scope

This part of IEC 60300-3 is an application guide intended for use by a wide range of suppliers including large and small companies wishing to offer a competitive and quality product which is optimized for the purchaser and supplier for the complete product life cycle. This standard can be applied to both commercial and military products. It describes the process of ILS, and the various minimal common practices and logistic data analyses that should be undertaken to meet this objective.

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 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 IEC and ISO maintain registers of currently valid International Standards.

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

IEC 60300-3-3, *Dependability management – Part 3: Application guide – Section 3: Life cycle costing*

IEC 60300-3-11, *Dependability management – Part 3-11: Application guide – Reliability centred maintenance*

IEC 60706-2, *Guide on maintainability of equipment – Part 2 – Section 5: Maintainability studies during the design phase*

IEC 60812, *Analysis techniques for system reliability – Procedure for failure mode and effects analysis (FMEA)*

IEC 61160, *Formal design review*

3 Definitions

For the purposes of this part of IEC 60300 the definitions given in IEC 60050-191 apply, together with the following.

3.1
design life
period that the item is expected to meet its performance specification in an agreed environment and level of utilization with the recommended support

3.2
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

3.3
line replaceable unit (LRU)
lowest level of assembly, subassembly or component which is recommended to be exchanged during maintenance to effect a repair at a specified repair level

3.4
logistic support
all material and resources required for the operation and maintenance of a product including both hardware and software

3.5
logistic support analysis (LSA)
selective application of a range of tasks undertaken to assist in complying with supportability and other ILS objectives

3.6
provisioning
process of determining and acquiring the range and quantity of spares required to operate and maintain the product

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3.7
supportability
degree to which product design characteristics and planned logistic support resources meet product operational utilization requirements

3.8
trade-off
determination of the optimum balance between product characteristics (cost, performance, and supportability)

3.9
support concept
recommended support policy and procedure for a particular product specific to a particular user or application

4   Acronyms

A,R&M   Availability, Reliability and Maintainability

BITE   Built-In Test Equipment

CP&S   Customer Profile and Supportability

EDI   Electronic Data Interchange

FMEA   Fault Mode and Effects Analysis

FMECA   Fault Mode, Effects and Criticality Analysis

FRI   Functional Requirement Identification

ILS   Integrated Logistic Support