

Aerospace series - LOTAR - Long Term Archiving and Retrieval of digital technical product documentation such as 3D, CAD and PDM data - Part 002: Requirements

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 9300-002:2018 sisaldab Euroopa standardi EN 9300-002:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 9300-002:2018 consists of the English text of the European standard EN 9300-002:2018.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 20.06.2018.	Date of Availability of the European standard is 20.06.2018.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 01.110, 35.240.30, 35.240.60, 49.020

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ICS 35.240.60; 49.020; 01.110; 35.240.30

English Version

**Aerospace series - LOTAR - Long Term Archiving and  
Retrieval of digital technical product documentation such  
as 3D, CAD and PDM data - Part 002: Requirements**

Série aérospatiale - LOTAR - Archivage Long Terme et  
récupération des données techniques produits  
numériques, telles que 3D, CAO et PDM - Partie 002 :  
Exigences

Luft- und Raumfahrt - LOTAR - Langzeit-Archivierung  
und -Bereitstellung digitaler technischer  
Produktdokumentationen, wie zum Beispiel von 3D-,  
CAD- und PDM-Daten - Teil 002: Anforderungen

This European Standard was approved by CEN on 5 June 2017.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN 9300-002:2018) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2018, and conflicting national standards shall be withdrawn at the latest by December 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Foreword

This standard was prepared jointly by AIA, ASD-STAN, PDES Inc and the PROSTEP iViP Association.

The PROSTEP iViP Association is an international non-profit association in Europe. For establishing leadership in IT-based engineering it offers a moderated platform to its nearly 200 members from leading industries, system vendors and research institutions. Its product and process data standardization activities at European and worldwide levels are well known and accepted. The PROSTEP iViP Association sees this standard and the related parts as a milestone of product data technology.

PDES Inc is an international non-profit association in USA. The mission of PDES Inc is to accelerate the development and implementation of ISO 10303, enabling enterprise integration and PLM interoperability for member companies. PDES Inc gathers members from leading manufacturers, national government agencies, PLM vendors and research organizations. PDES Inc. supports this standard as an industry resource to sustain the interoperability of digital product information, ensuring and maintaining authentic longevity throughout their product lifecycle.

Readers of this standard should note that all standards undergo periodic revisions and that any reference made herein to any other standard implies its latest edition, unless otherwise stated

The Standards will be published under two different standards organizations using different prefixes. ASD-Stan will publish the standard under the number EN 9300-xxx. AIA will publish the standard under the number NAS 9300-xxx. The content in the EN 9300 and NAS 9300 documents will be the same. The differences will be noted in the reference documentation (i.e. for EN 9300 Geometric Dimensioning & Tolerancing will be referenced in ISO 1101 and ISO 16792, and for NAS 9300 the same information will be referenced in ASME Y14.5M and Y 14.41). The document formatting etc. will follow that of the respective editorial rules of ASD-Stan and AIA.

## Executive summary

Many companies are migrating their design processes from traditional hard-copy drawings and documents to using digital data. New processes are also needed to archive digital data and preserve access to it, in compliance with business and regulatory requirements appropriate to this new media. Some industries are required to archive data for the life of a product, which can be in excess of 50 years. Over these time periods, changes in technology impact the ability to retrieve and use product data. Organizations, which use digital product data, will need strategies and processes that maintain the usability of the data over multiple generations of technology.

Initially, this document sums up the main business requirements for long term archiving of digital product data.

Then, this document describes requirements for standardized processes (and associated technologies) that ensure product data are retrievable and usable for as long as needed. The archiving process is developed from the Open Archival Information System (OAIS) Reference Model (ISO 14721), which provides a conceptual framework for archive systems.

The archiving process is structured into sub processes for introducing new material into the archive (ingest), managing the data and metadata (data management), managing the physical systems (archive storage), retrieving information and providing it to users (access) and planning the evolution of the repositories (preservation planning). Specific requirements for the archiving of product data are put into this framework.

## 1 Scope

This document is a part of the EN 9300 Series. This document addresses requirements for the long term archiving of digital product information, applicable to the international aerospace industry.

Data shall be available to meet regulatory, legal, contractual and business requirements.

Initially, this document sums up the main business requirements for long term archiving of digital product data. Although these requirements are not in themselves normative, when making data available over an extended period, it is a fundamental principle that the contextual data needed to interpret the data is also available.

This document uses the OAIS reference model to provide comparability with other approaches to keeping information available. However, OAIS is a standard reference model for comparison, not a standard for implementation. Consequently, this document defines requirements for processes (and associated technologies) intended to make data available for the life of a product, and does so in terms of the OAIS model.

In dealing with traditional media, the differences between substantial change and unimportant “surface” change are generally self-evident. For example, the yellowing of paper over time, or the encrustation of a gravestone with lichen do not lose the information contained, whereas the loss of pages of a document, or the erosion of the stone do so, and archiving focusses on the preservation of the medium. For digital product data, the medium is unimportant, but the content can be corrupted. The subject of the (many) remaining parts of this standard is the identification of the information that shall be uncorrupted if digital product data is to be usable in the future, and the consequent refinement of processes and procedures to insure this.

This document addresses, archiving of digital product data required for product definition, such as in three-dimensional representations a tolerances, material properties, manufacturing data, etc. specification call-outs, product structure and configuration control data, etc. Other parts of the EN 9300 standards will cover more specifically the long term archiving of, for example, composites, electrical systems, product analyses and product simulation information.

This document also addresses managing the evolution of technologies required to ensure the availability and usability of the data for the required archiving period.

This document is not intended to incorporate company specific requirements and does not dictate specific organizational structures within a company. This document does not specify a design or an implementation of an archive system. Actual implementations may distribute responsibilities or break out functionality differently.

This document assumes that all requirements for configuration management of the product data are in place and therefore are not specifically described in this document.

If an organization chooses to implement requirements beyond those outlined in this requirements document, those additional requirements shall not conflict or negatively impact the requirements contained in this document.

Purpose:

This document establishes legal and other business requirements for processes intended to preserve digital data. Data needs to be stored and maintained so that data is retrievable and usable for the required archiving period. In addition, for some business requirements, data needs to be authentically preserved and accessed.

This standard is intended to allow for different implementations based on a company’s specific business environment.



## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 9300 (all parts), *Aerospace series — LOTAR — LOng Term Archiving and Retrieval of digital technical product documentation such as 3D, CAD and PDM data*

## 3 Terms, definitions and abbreviations

For the purposes of this standard, the terms, definitions and abbreviations given in EN 9300-007 shall apply.

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

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

## 4 Applicability

Refer to EN 9300-001, Clause 4, for applicability.

## 5 Introduction

Many companies are migrating their design processes from using traditional hard-copy drawings and documents to using digital data. New processes are also needed to archive digital data and preserve access to it, in compliance with business and regulatory requirements appropriate to this new media. Some industries are required to archive data for the life of a product, which can be in excess of 50 years. Over these time periods, changes in technology impact the ability to retrieve and use product data. Organizations which use digital product data will need strategies and processes that maintain the usability of the data over multiple generations of technology.

The cost of a particular technology varies over time. As a particular technology ages, the cost of implementation, use and maintenance of that technology can provide a large economic pressure to move to a more current technology. Typically, a newer technology also provides additional business benefits, which is not reflected only in the figures of a cost and benefits comparison. At some point, regardless of cost, it may become impractical or even impossible to use older technology due to lack of materials, equipment, tools and support for the technology.

Business requirements dictate the archiving of product data for long periods of time. It is generally not feasible to maintain a single generation of technology over a period of 50 years. Over these time periods, changes in technology impact the ability to retrieve, reproduce and use product data. Organizations which use digital product data will need strategies and processes that maintain the reproducibility and usability of the data over multiple generations of technology.

Development of new aerospace projects implies increasingly the use of digital product information by the supply chain, for inservice support reasons and by the customers. The business requirements described within this standard are planned to be applicable for the full aerospace product life cycle.

This standard sums up the main business requirements for long term archiving of digital product data. In some cases, the authentic preservation of design type information is requested; EN 9300 describes related requirements applicable for this constraint. (see also EN 9300-003 “Fundamentals and Concepts”).

Then, this document describes requirements for standardized processes (and associated technologies) that ensure product data are retrievable, reproducible and usable for the required retention period. The