

SLOVENSKI STANDARD
oSIST prEN 9300-210:2024
01-junij-2024

Aeronavtika - LOTAR - Dolgoročno arhiviranje in iskanje digitalne tehnične dokumentacije, kot so podatki o 3D, CAD in PDM - 210. del: Podatki o obvladovanju proizvodov v pogledu "kot je bilo zasnovano"

Aerospace series - LOTAR - Long Term Archiving and Retrieval of digital technical product documentation such as 3D, CAD and PDM data - Part 210: Product management data in an "as designed" view

Luft- und Raumfahrt - LOTAR - Langzeit-Archivierung und -Bereitstellung digitaler technischer Produktdokumentationen, wie zum Beispiel von 3D-, CAD- und PDM-Daten - Teil 210: Produktmanagementdaten in einer "As Designed"-Ansicht

Série aérospatiale - LOTAR - Archivage Long Terme et récupération des données techniques produits numériques, telles que CAD 3D et PDM - Partie 210: Données de gestion des produits dans une vue « telle que conçue »

<https://standards.iteh.ai/catalog/standards/sist/1665131b-cfbb-4b77-8e4b-1424c633dd71/osist-pren-9300-210-2024>

Ta slovenski standard je istoveten z: prEN 9300-210

ICS:

01.110	Tehnična dokumentacija za izdelke	Technical product documentation
35.240.30	Uporabniške rešitve IT v informatiki, dokumentiranju in založništvu	IT applications in information, documentation and publishing
49.020	Letala in vesoljska vozila na splošno	Aircraft and space vehicles in general

oSIST prEN 9300-210:2024

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
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ICS 01.110; 35.240.30; 49.020

English Version

**Aerospace series - LOTAR - Long Term Archiving and
Retrieval of digital technical product documentation such
as 3D, CAD and PDM data - Part 210: Product management
data in an "as designed" view**

Série aérospatiale - LOTAR - Archivage Long Terme et
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Luft- und Raumfahrt - LOTAR - Langzeit-Archivierung
und -Bereitstellung digitaler technischer
Produktdokumentationen, wie zum Beispiel von 3D-,
CAD- und PDM-Daten - Teil 210:
Produktmanagementdaten in einer "As Designed"-
Ansicht

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ASD-STAN.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 9300-210:2024) has been prepared by ASD-STAN.

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

This document is currently submitted to the CEN Enquiry.

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prEN 9300-210:2024 (E)**Introduction**

This document provides the Fundamentals and Concepts and approaches of EN 9300 and referenced related standards with regard to the AIA-ASD LOTAR International Standards EN 9300-xxx structure. The EN 9300 top level Standard comprises multiple parts (i.e. -001, -002, -100, -200 etc.) based on business requirements and domain topic, (Basic Parts, Common Parts, Mechanical, Electrical etc.). This document is part of the Product Data Management series (EN 9300-2xx), which can be seen in Table 1.

The EN 9300-210 scope is the “as designed” data used for type certification.

Within the context of EN 9300 series the terms “Shall” and “May” are used per the US. Code of Federal Regulations (CFR) Title 14 Aeronautics and Space, Chapter 1, Federal Aviation Administration (FAA), Department of Transportation (DoT), Part 1, Definitions, and abbreviations, paragraph 1.3:

- “Shall” is used in an imperative sense.
- “May” is used in a permissive sense to state authority or permission to do the act prescribed.
- “Includes” means “includes but is not limited to”.

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1 Scope

1.1 In Scope

From EN 9300-210, from Clause 8 and above, the scope includes:

- Management Information;
- Product Design;
- Change Management;
- Documents;
- Application of PDM-specific metadata (see EN 9300-21);
- Definition of PDM-specific metadata for Archive Information Packages (AIP).

Common Meta Data archive package requirements defined in EN 9300-21.

A visual representation of the scope of this document can be seen in Figure 1.

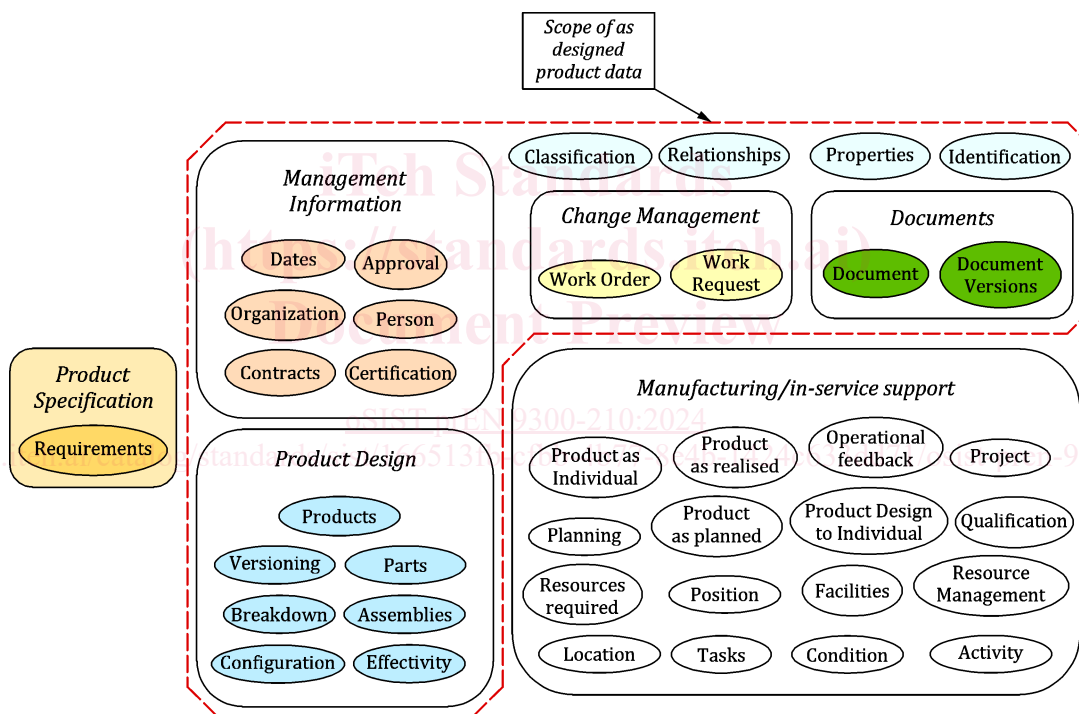


Figure 1 — Scope of EN 9300-210 As Designed

Table 1 — EN 9300 Part 200 series

Data domain specific part	Document Number
Product Management Data in an as designed view	EN 9300-210
Product Management Data in an as delivered/maintained view	EN 9300-230
Product Management Data In-development (including preliminary design review, critical design review, FAI, etc.)	EN 9300-240
Change documentation	EN 9300-250

1.2 Out of scope

This document does not attempt to describe how to create an OASIS/LOTAR information package. Nor does it address common issues in the archive domain, such as: snapshot vs. incremental archival methods (which are determined as part of the implementation of an archive system), or package-to-package linkages (Meta Data WG) or how to identify metadata for an archival package (Meta Data WG). For integration of PDM metadata with other domain and common metadata, see EN 9300-21.

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 9300-007, *Aerospace series — LOTAR -Long Term Archiving and Retrieval of digital technical product documentation such as 3D, CAD and PDM data — Part 007: Terms and References*

3 Terms and definitions

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

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

- ISO Online browsing platform: available at <https://www.iso.org/obp/424c633dd71/osist-pren-9300-210-2024>
- IEC Electropedia: available at <https://www.electropedia.org/>

4 Applicability

The scope of EN 9300-210 is the same as that of EN 9300-001.

5 Business Use Cases for Product Management Data in an “as designed” view

The scenarios and use cases used to support EN 9300-210 include:

- S1 – Evidence of the baseline for verification, certification, or product liability:
 - UC1.1 – Long term archiving of Type Design Configuration (certification);
 - UC1.2 – Acquisition/divestiture resulting in transfer of Product Definition Data and Type Design Data;
 - UC1.3 – Verification of design compliance to requirements;
 - UC1.4 – Ability to retrieve the design and verification data for the purpose of determining root cause as part of an investigation involving product liability;
 - UC1.5 – To support delivery of Type Design Configuration data to a customer;
 - UC1.6 – Transfer of Ownership;
 - UC1.7 – Change to Design;
- S2 – Reuse of design data as a starting baseline for design changes:
 - UC2.1 – Changes to Product Definition Data resulting in a major or minor change to the Type Design Data;
 - UC2.2 – To support the modification of existing product (e.g. for spares purposes).

6 Explanation of the diagrams

6.1 Reason for diagrams

There is a diversity of Product Lifecycle Management (PLM) systems. This diversity reflects the differences in terms and processes used to manage products. This document uses a simple diagramming technique to supplement the textual content that is easy to understand and can be created with presentation or drawing tools, which does not require expertise in formal modelling language.

The diagrams are based on graph theory and employ only two constructs: nodes and edges. In our usage, we typically will use the terms items and connections for nodes and edges, respectively. The term “item” is a generic term for the object being represented (e.g. Design Item can be a CAD file, part, assembly, etc.). Edges (connections) are directional; generally representing the connection in natural language. This graph form is known as a “directed property graph”.

For example: “has part”. Thus a connection has “subject” side, which we call the “from” side, and an “object” side, which we call the “to” side. Lastly, the diagrams omit cardinality information in the interest of simplicity. We believe that cardinality can easily be added once formal STEP models are developed. Individual diagrams are simplified so that they focus on their particular subject and will not show all potential relationships.

NOTE In order to keep the diagrams concise, we use a variant of graph theory called hyper graph theory where edges are permitted to connect to other edges (but not multiple nodes to multiple nodes).

prEN 9300-210:2024 (E)**6.2 Attributes**

All nodes and edges (items and connections) have attributes. PLM systems are designed to be customized. Therefore, our team mostly focuses on the minimum attribution.

The minimum attribution (Meta Data) for an item can include:

- type: the kind of thing the data item represents. For example, a person, a part, a product, a document;
- name: the name or identifier (e.g. part number) assigned to the data and physical part as a unique identifier (used for human readable consumption) and is different from the system generated identifier for the object in the system;
- revision: the revision of the item as it undergoes changes;
- object ID: the internal (system) identity of the item that is unique within the system;

NOTE Typically, the triplet (type, name, revision) is also unique in a PLM system.

- timestamps: creation and modification;
- references to persons or systems acting as creator, modifier, and “owner”;
- status of item: especially whether it is (was) approved;
- description: an item often has a description, such as a title for a drawing item, or nomenclature for a part item.

The minimum attribution for a connection is:

- the ID of the connection itself;
- the type of the connection itself;
- the ID of the FROM item;
- the ID of the TO item;
- the change management effectivity timestamps:
 - Start: the date the connection was approved for use;
 - Stop: the date the connection was deprecated for use;
- the change management effectivity authorizations:
 - Start Authority: reference to the change document approving this connection;
 - Stop Authority: reference to the change document deprecating this connection;
- timestamps: creation and modification;
- references to persons or systems acting as creator, modifier, and “owner”.

6.3 Property Sheet Concept

Since these minimum attributes are not sufficient, we use the notion of a “property sheet” which is a container for the custom or PLM system-specific data that is needed. The name “property sheet” is intended to convey a simple enumeration of attribute names, values, data types (string, Boolean, number, date, etc.), and unit of measure. Such a set of properties could be modelled in our diagrams as a node with an edge named “has property” connecting it to an item or connection having the properties. But that needlessly complicates the diagrams, since virtually any item or connection will have custom properties. The Property Sheet concept can also be used to achieve other goals of a PLM system:

- Ad hoc properties: In this case, an item or connection might have multiple sets of properties. The extra properties might provide attributes for a part that are unique to its part family. For example, a bolt might additional attributes of head type, length, etc.; whereas a nut may have inner and outer diameter, lock nut indicator, etc.
- Restricted properties: In this case, properties might be segregated when the values may be export controlled or are proprietary information.
- Value added properties: during the lifecycle of the part, extra attributes, such as supplier, cost, plant, etc. might be added by downstream business functions.

Figure 2 shows a visual depiction of the property sheet concept:

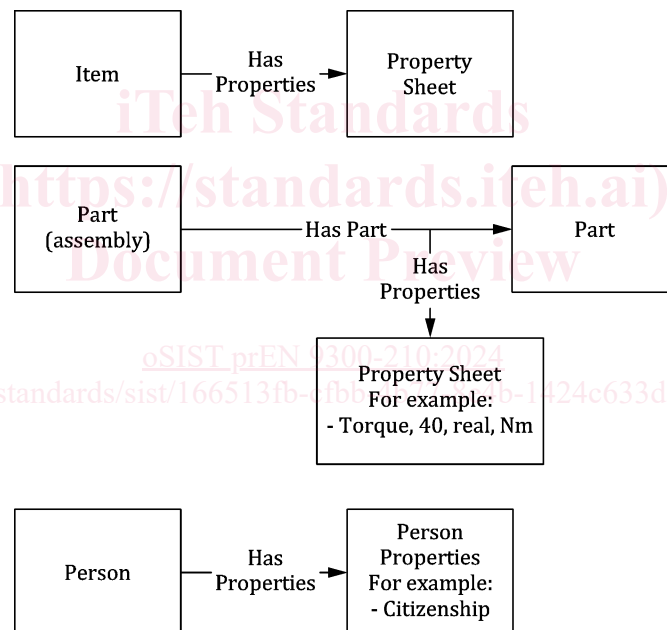


Figure 2 — Property sheet concept

A property sheet can be viewed a special kind of item with a type indicating the sort of properties it contains. Since most systems do not actually model properties this way, the revisions of its base item type and the properties may be synced, along with connections to change items.