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Additive manufacturing - General principles - Overview of data processing (ISO/ASTM 52950:2021)

EESTI STANDARDI EESSÕNA

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EUROPEAN STANDARD

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Additive manufacturing - General principles - Overview of data processing (ISO/ASTM 52950:2021)

Fabrication additive - Principes généraux - Vue d'ensemble des échanges de données (ISO/ASTM 52950:2021)

Additive Fertigung - Grundlagen - Überblick über die Datenverarbeitung (ISO/ASTM 52950:2021)

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

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European foreword

This document (EN ISO/ASTM 52950:2021) has been prepared by Technical Committee ISO/TC 261 "Additive manufacturing" in collaboration with Technical Committee CEN/TC 438 "Additive Manufacturing" the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by August 2021, and conflicting national standards shall be withdrawn at the latest by August 2021.

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.

This document supersedes EN ISO 17296-4:2016.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO/ASTM 52950:2021 has been approved by CEN as EN ISO/ASTM 52950:2021 without any modification.

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative reference	1
3 Terms and definitions	1
4 Data exchange	2
4.1 Dataflow.....	2
4.1.1 General.....	2
4.1.2 Explanation of the key terms used in Figure 1.....	2
4.2 Data formats.....	4
4.2.1 General.....	4
4.2.2 STL.....	4
4.2.3 VRML (WRL).....	4
4.2.4 IGES.....	4
4.2.5 STEP.....	5
4.2.6 AMF.....	5
4.2.7 OBJ.....	5
4.2.8 3MF.....	5
4.3 Data preparation.....	5
4.3.1 The importance of data quality for part quality.....	5
4.3.2 Export parameters.....	6
4.3.3 Special considerations in data processing.....	7
Bibliography	8

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 261, *Additive manufacturing*, in cooperation with ASTM Committee F42, *Additive Manufacturing Technologies*, on the basis of a partnership agreement between ISO and ASTM International with the aim to create a common set of ISO/ASTM standards on additive manufacturing, and in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 438, *Additive manufacturing*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This first edition of ISO/ASTM 52950 replaces ISO 17296-4:2014, which has been technically revised and renumbered. The main changes compared to ISO 17296-4:2014 are as follows:

- change of the document number to ISO/ASTM 52950;
- removal of outdated or withdrawn standards ISO 17296-4 and DIN 66301 (VDA-FS);
- revisions to [Figure 1](#).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Additive manufacturing is used to fabricate prototypes, tools, and production parts.

This document aims to offer recommendations and advice to users (customers) and manufactures (both external and internal service providers), to improve communication between customer and supplier, and to contribute to an authoritative performance design and a smooth handling of the project.

It assumes that the reader has a basic understanding of the process flow of different additive processes. It explains the processes used in practice in only as much detail as it necessary to understand the statements.

Additive manufacturing — General principles — Overview of data processing

1 Scope

This document covers the principal considerations which apply to data exchange for additive manufacturing. It specifies terms and definitions which enable information to be exchanged describing geometries or parts such that they can be additively manufactured. The data exchange method outlines file type, data enclosed formatting of such data and what this can be used for.

This document

- enables a suitable format for data exchange to be specified,
- describes the existing developments for additive manufacturing of 3D geometries,
- outlines existing file formats used as part of the existing developments, and
- enables understanding of necessary features for data exchange, for adopters of this document.

This document is aimed at users and producers of additive manufacturing processes and associated software systems. It applies wherever additive processes are used, and to the following fields in particular:

- producers of additive manufacturing systems and equipment including software;
- software engineers involved in CAD/CAE systems;
- reverse engineering systems developers;
- test bodies wishing to compare requested and actual geometries.

2 Normative reference

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.

ISO/ASTM 52900, *Additive manufacturing — General principles — Fundamentals and vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in in ISO/ASTM 52900 and the following apply.

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

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