SS ISO/ASTM 52950:2024

ISO/ASTM 52950:2021, IDT

(ICS 25.030)

SINGAPORE STANDARD

Additive manufacturing

− General principles − Overview of data processing

Singapore Standards Council

SS ISO/ASTM 52950:2024
ISO/ASTM 52950:2021, IDT
(ICS 25.030)

SINGAPORE STANDARD

Additive manufacturing

− General principles − Overview of data processing

Published by Enterprise Singapore

ISBN 978-981-5237-31-3

National Foreword

This Singapore Standard was prepared by the National Mirror Working Group on ISO/TC 261 set up by the Technical Committee on Additive Manufacturing under the purview of the Manufacturing Standards Committee.

This standard is a revision and renumbering of SS ISO 17296-4:2016, “Additive manufacturing – General principles – Overview of data processing”. It is an identical adoption of ISO/ASTM 52950:2021, published by the International Organization for Standardization.

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

NOTE

1. *Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions. Where SSs are deemed to be stable, i.e. no foreseeable changes in them, they will be classified as “mature standards”. Mature standards will not be subject to further review, unless there are requests to review such standards.*

2. *An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore and the Singapore Standards Council shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR. Although care has been taken to draft this standard, users are also advised to ensure that they apply the information after due diligence.*

3. *Compliance with a SS or TR does not exempt users from any legal obligations.*

INTERNATIONAL STANDARD

ISO/ASTM 52950

First edition
2021-01

Additive manufacturing — General principles — Overview of data processing

Fabrication additive — Principes généraux — Vue d'ensemble des échanges de données

Reference number
ISO/ASTM 52950:2021(E)

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11

Email: copyright@iso.org
Website: www.iso.org

ASTM International
100 Barr Harbor Drive, PO Box C700
West Conshohocken, PA 19428-2959, USA
Phone: +610 832 9634
Fax: +610 832 9635
Email: khooper@astm.org
Website: www.astm.org

Published in Switzerland

Contents

Page

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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.

INTERNATIONAL STANDARD **ISO/ASTM 52950:2021(E)**

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/