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## Additive manufacturing — General principles —

### Part 4: Overview of data processing

*Fabrication additive — Principes généraux —*

*Partie 4: Vue d'ensemble des échanges de données*



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## 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](http://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](http://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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 261, *Additive manufacturing*.

ISO 17296 consists of the following parts, under the general title *Additive manufacturing — General principles*:

- *Part 1: Terminology*
- *Part 2: Overview of process categories and feedstock*
- *Part 3: Main characteristics and corresponding test methods*
- *Part 4: Overview of data processing*

## Introduction

Additive manufacturing are an inherent part of the product development process. They are used to manufacture prototypes, tools, and production parts.

In addition to engineering, the scope of this interdisciplinary technology now covers fields ranging from architecture and medicine to archaeology and cartography.

During its somewhat turbulent development, different terms and definitions have emerged which are frequently ambiguous and confusing. Moreover, there are different processes available on the market and it is not always clear what opportunities and limitations they offer in terms of application.

This International Standard aims to offer field-tested 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 much detail as it necessary to understand the statements.



# Additive manufacturing — General principles —

## Part 4: Overview of data processing

### 1 Scope

This part of ISO 17296 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 part of ISO 17296

- 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 the International Standard.

This part of ISO 17296 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:

- production 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, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 17296-1<sup>1)</sup>, *Additive manufacturing — General principles — Part 1: Terminology*

ASTM F2792-12a, *Standard Terminology for Additive Manufacturing Technologies*

ASTM F2915-11, *Standard Specification for Additive Manufacturing File Format (AMF)*

DIN 66301, *Industrial Automation — Computer Aided Design — Format For The Exchange Of Geometrical Information*

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1) To be published.