INTERNATIONAL ISO/IEC

First edition
2021-10

Information technology — 3D printing and scanning — Framework for an Additive Manufacturing Service Platform (AMSP)

Technologies de l'information — Impression et balayage 3D — Cadre conceptuel pour une Plateforme de services de fabrication additive (AMSP)

Reference number
ISO/IEC 23510:2021(E)

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

Published in Switzerland

Contents

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

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 document 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 or www.iec.ch/members_experts/refdocs).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC 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) or the IEC list of patent declarations received (see patents.iec.ch).

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. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

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 and www.iec.ch/national-committees.

Introduction

Additive manufacturing (AM) has been used for rapid prototyping for many years and is increasingly being applied to volume production, mass customization and spare parts production among other use cases. It is possible that low volume prototyping can tolerate simplified, ad hoc or informal interfaces between parts customers and AM service providers. As additive manufacturing capabilities have increased and as demand for additively manufactured parts has increased these informal interfaces are no longer sufficient. Additionally, AM workflows can require the contributions of several service providers in order to achieve the desired outcome. These workflows can need to nimbly adapt to needs specific to that outcome. To do so, a flexible and transparent interface structure is required.

Without interface standards, information exchanges between parts customers and AM service providers, and among collaborating AM service providers, often require ad hoc and expensive manual intervention. Inconsistent descriptions of the characteristics of the services provided can also create confusion, misunderstanding and rework.

The framework for an Additive Manufacturing Service Platform (AMSP) identifies interfaces and their key characteristics where standards can make a beneficial contribution to formalizing the interface for parts submission, design and creation. The Framework for an AMSP also identifies the qualities of an AM service provider that require a standard-consistent specification. The framework for an AMSP does not include these standards; they need to be developed separately. However, it does provide a landscape that clarifies how these standards relate to other elements of the AM ecosystem.

It is hoped that the adoption of this framework and the standards that it calls for will streamline and accelerate the adoption of AM technologies in the manufacturing ecosystem at large, enabling increasingly more complex use cases and richer collaboration between parts customers and a variety of AM service providers.