
**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)*





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Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Overview	3
4.1 General.....	3
4.2 Stakeholders.....	3
4.3 Workflow.....	3
4.3.1 Introduction.....	3
4.3.2 Release of users' requirements.....	4
4.3.3 Model processing.....	4
4.3.4 Printing and delivery.....	5
5 Requirements	5
5.1 General.....	5
5.2 User management.....	5
5.3 Product design.....	5
5.4 3D intelligent detection and correction.....	5
5.5 Order management.....	5
5.6 Printing service.....	6
5.7 Security management.....	6
5.8 Operation monitoring.....	6
6 Framework	6
6.1 General.....	6
6.2 Functions of the layers.....	7
6.2.1 Resource layer.....	7
6.2.2 Technical support layer.....	8
6.2.3 Engine layer.....	8
6.2.4 Platform integration operating environment layer.....	8
6.2.5 Tool layer.....	9
6.2.6 Access layer.....	9
6.2.7 User layer.....	9
6.3 Correlation between framework and requirements.....	9
7 Considerations	10
7.1 Copyright protection.....	10
7.2 Quality inspection.....	10
Annex A (informative) Use cases of an AMSP	11
Bibliography	15

Foreword

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

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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.

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

1 Scope

This document specifies the framework for an Additive Manufacturing Service Platform (AMSP). The following elements are within the scope of this document:

- Overview introducing the stakeholders and workflow of an AMSP.
- Requirements specifying various prerequisite conditions from different aspects.
- Framework defining a general functional architecture based on the identified requirements.
- Use cases showing typical work modes of an AMSP.

This document is applicable when individuals or organizations (e.g. commercial enterprises, government agencies and non-profit organizations) build an AMSP or improve existing ones to provide 3D printing and other services specific to the submission, design and creation of AM parts.

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.

ISO/ASTM 52900, *Additive Manufacturing — General Principles — Fundamentals and vocabulary*

ISO/ASTM 52901, *Additive manufacturing — General principles — Requirements for purchased AM parts*