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Information technology — 3D printing and scanning — Vocabulary and overview

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FOREWORD

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INTRODUCTION

This document provides an overview of 3D scanning along with a set of terms and definitions. The purpose of this document is to provide foundational standards for better understanding and for developing key ideas and practices on the information and communication technology (ICT) aspect of 3D scanning.

This document places an emphasis on the ICT aspects of terms used for 3D scanning. It clarifies and enhances definitions for generic workflows of 3D scanning to emphasize the ICT perspective. This document defines terms related to 3D scanning devices, data, process, and its applications.

This document presents an extensive list of terms and definitions relevant to 3D scanning, categorized into general terms, attribute-related terms, processing of scanned data, 4D printing terminology, and abbreviated terms. The document also outlines the overall 3D scanning process, emphasizing the data flow from sensing to user-accessible outputs. Finally, the document provides diverse application scenarios and use cases across domains such as engineering, manufacturing, healthcare, retail, office environments, and emerging fields like the metaverse and 4D printing.

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Information technology — 3D printing and scanning — Vocabulary and overview

1 Scope

This document defines terms related to data and information, and to processes, for 3D scanning. This document also provides an overview of 3D scanning.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org

3.1 General terms relating to 3D scanning

3.1.1
accuracy
closeness of agreement between indications or measured quantity values obtained by 3D scanning on the same or similar objects under specified conditions

Note 1 to entry: accuracy defines how closely measured quantity values reflect the true size of the scanned object.

Note 2 to entry: Modified from ISO/IEC Guide 99:2007.

3.1.2
artefact
any undesired alteration of data made by a 3D scanning

3.1.3
dataset
meaningful grouping of data generated by 3D scanning

EXAMPLE 1 Point cloud files.

EXAMPLE 2 3D DICOM image files.

EXAMPLE 3 3D mesh files.

3.1.4
metadata
data defining and describing 3D scanned data

Note 1 to entry: 3D scanning metadata can be used in follow-up processes, such as modeling, visualization, and printing.

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