International Standard

ISO 17097

3-D human body scan data — Methods for the processing of human body scan data

Données de numérisation 3D du corps humain — Méthodes relatives au traitement des données de numérisation du corps humain

First edition
2024-05

Reference number
ISO 17097:2024(en)

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Published in Switzerland

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Foreword

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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 159, *Ergonomics*, Subcommittee SC 3, *Anthropometry and biomechanics*.

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.

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Introduction

Three-dimensional (3-D) human body scan data are the digitized 3-D shape information of the human body in the form of a point cloud. 3-D body scanners or 3-D image-capturing systems are used to obtain these data. The collected 3-D point-cloud data are processed using 3-D scan data processing software and then used for anthropometric measurement, body shape analysis and ergonomic product design.

Knowledge and experience in the processing and analysis of 3-D point-cloud and mesh are required to improve the quality of human body scan data while maintaining their morphological characteristics for their application to the design of a particular product, workplace or system. Custom software can be developed to support the processing of human body scan data by incorporating terms, methods and considerations in this document in a selective manner.

This document is intended to be used by software developers during the development of scan data processing software. It could also be helpful for anthropometric researchers and product designers when they establish 3-D human body scan databases to analyse human body shape and size. A 3-D human body scan database could benefit manufacturers, customers and employees by developing products, workplaces and systems with better fit, comfort and usability.

The purpose of this document is to enhance the utilization of 3-D human body scan data through appropriate processing. It is further intended to improve the accuracy and reliability of analysis of 3-D human body scan data.

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3-D human body scan data — Methods for the processing of human body scan data

1 Scope

This document specifies methods for the processing of human body scan data acquired using a 3-D body scanner.

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 7250-1, *Basic human body measurements for technological design — Part 1: Body measurement definitions and landmarks*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 7250-1 and the following apply.

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 3-D anthropometry

3.1.1
3-D body scanner
hardware and software system that creates data representing a human form, or parts thereof, in three dimensions

[SOURCE: ISO 20685-1:2018, 3.2, modified — “creates digital data” has been replaced by “creates data” in the definition.]

3.1.2
3-D scanner hardware
physical components of a 3-D body scanner and any associated computer(s)

[SOURCE: ISO 20685-1:2018, 3.4]

3.1.3
3-D scanner software
operating system, user interface, programs, algorithms and instructions associated with a 3-D scanning system

[SOURCE: ISO 20685-1:2018, 3.3]

3.1.4
anatomical landmark
point clearly defined on the body that can be used for defining anthropometric measurements

[SOURCE: ISO 20685-1:2018, 3.6]

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