BSI Standards Publication

Health informatics — Device interoperability

Part 10206: Personal health device communication —
Abstract content information model

bsi.

National foreword

This British Standard is the UK implementation of EN ISO/IEEE 11073-10206:2026. It is identical to ISO/IEEE 11073-10206:2024.

The UK participation in its preparation was entrusted to Technical Committee IST/35, Health informatics.

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Health informatics - Device interoperability - Part 10206: Personal health device communication - Abstract content information model (ISO/IEEE 11073-10206:2024)

Informatique de santé - Interopérabilité des dispositifs - Partie 10206: Communication entre dispositifs de santé personnels - Modèle d'information de contenu abstrait (ISO/IEEE 11073-10206:2024)

Medizinische Informatik - Interoperabilität von Geräten - Teil 10206: Kommunikation persönlicher Gesundheitsgeräte - Abstraktes Informationsmodell für Inhalte (ISO/IEEE 11073-10206:2024)

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Health Informatics—Device Interoperability—

Part 10206: Personal Health Device Communication—Abstract Content Information Model

Developed by the

IEEE 11073 Standards Committee
of the
IEEE Engineering in Medicine and Biology Society

Approved 21 September 2022

IEEE SA Standards Board

Abstract: Within the context of the ISO/IEEE 11073 family of standards for device communication, a simplified framework for making an abstract model of personal health data is available in this standard. The specification addresses the structure and content of information. It does not address communication of the information between devices.

Keywords: device interoperability, IEEE 11073-10206™, personal health device communication

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Introduction

This introduction is not part of IEEE Std 11073-10206-2022, Health Informatics—Device Interoperability—Part 10206: Personal Health Device Communication—Abstract Content Information Model.

ISO and IEEE 11073 standards enable communication between medical devices and external computer systems. This standard addresses a need for a simplified content model that can be used for personal health devices and is not tied to a method of communicating the content model. This standard aligns with, and draws upon, the existing clinically focused standards as well as implementation experience gained over the past decade.

Other closely related standards include the following:

ISO/IEEE 11073-20601:2022, Health informatics—Device interoperability—Part 20601: Personal health device communication—Application profile—Optimized exchange protocol [B12].[6]

[6] The numbers in brackets correspond to those of the bibliography in Annex A.

Contents

Health Informatics—Device Interoperability—

Part 10206: Personal Health Device Communication—Abstract Content Information Model

1. Overview

This standard defines an abstract content model (ACOM) for personal health devices (PHDs). The objective of this work is to document the information in a PHD and the content of health observations that are sent by the PHD so that when an observation is received from the PHD, regardless of the protocol used to perform the communication, the health information is complete, consistent, and unambiguous. This standard does not define a protocol by which information is exchanged between devices and hence does not make requirements on how concepts are represented. When specific representations are made herein the purpose is to provide clarity of concept.

1.1 Scope

This standard defines an object-oriented abstract information model to represent a PHD and the observations generated by a PHD. It specifies what information needs to be present and the relationships between the informational elements in the model. It models observations in a generic way by focusing on the information content contained in the presentation of health measurements. The modeling follows the practice of ISO/IEEE 11073-20601 [B12] where Unified Modeling Language (UML) is used to describe a set of objects and the relationship between the objects.[7] Tables provide descriptions of the attributes in the objects. IEEE 11073-10101™ nomenclature terms are used to express clinical content.[8] This standard provides guidance as to what an exchange protocols needs to communicate to properly represent health observations, but is not, in itself, sufficient to be an exchange protocol. However, the content model defined herein does have sufficient detail to help organizations validate that there is no loss of the semantic content induced by data exchanges in a protocol adhering to this standard. This standard does not define a security framework.

1.2 Purpose

This standard supports an ecosystem in which PHDs use the nomenclature and dictionary of IEEE 11073™. When the IEEE nomenclature is used it helps to ensure that data communicated by PHDs is clearly understood and useable by health professionals as well as intelligent systems in the wider digital health

[7] The numbers in brackets correspond to those of the bibliography in Annex A.

[8] Information on references can be found in Clause 2.