



BSI Standards Publication

Health informatics – Device interoperability

Part 10201: Point-of-care medical device communication
– Domain information model

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National foreword

This British Standard is the UK implementation of EN ISO/IEEE 11073-10201:2020. It is identical to ISO/IEEE 11073-10201:2020. It supersedes BS EN ISO 11073-10201:2005, which is withdrawn.

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

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Amendments/corrigenda issued since publication

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June 2020

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Supersedes EN ISO 11073-10201:2005

English Version

Health informatics - Device interoperability - Part 10201: Point-of-care medical device communication - Domain information model (ISO/IEEE 11073-10201:2020)

Informatique de santé - Interopérabilité des dispositifs
- Partie 10201: Communication entre dispositifs
médicaux sur le site des soins - Modèle d'informations
du domaine (ISO/IEEE 11073-10201:2020)

Medizinische Informatik - Kommunikation
patientennaher medizinischer Geräte - Teil 10201:
Bereichs-Informationsmodell (ISO/IEEE 11073-
10201:2020)

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This second edition cancels and replaces the first edition (ISO/IEEE 11073-10201:2004), which has been technically revised.

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(Revision of
IEEE Std 11073-10201-2004)

Health informatics—Point-of-care medical device communication

Part 10201: Domain Information Model

Sponsor

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

Approved 5 December 2018

IEEE-SA Standards Board

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Abstract: Within the context of the ISO/IEEE 11073 family of standards for point-of-care medical device communication, an abstract, object-oriented domain information model that specifies the structure of exchanged information, as well as the events and services that are supported by each type of object, is provided in this standard. All data structure elements are specified using abstract syntax (ASN.1) and may be applied to many different implementation technologies, transfer syntaxes, and application service models. Core subjects include medical, alert, system, patient, control, archival, communication, and extended services. Model extensibility is supported, and a conformance model and statement template is provided.

Keywords: abstract syntax, alarm, alert, ASN.1, DIM, domain information model, IEEE 11073-10201™, information model, medical device communications, medical information bus, MIB, object-oriented, patient, POC, point-of-care, remote control

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Introduction

This introduction is not part of IEEE Std 11073-10201-2018, Health informatics—Point-of-care medical device communication—Part 10201: Domain Information Model.

ISO/IEEE 11073 standards enable communication between different medical devices and between medical devices and other IT systems for information and for command and control. The primary goals are to:

- Provide real-time plug-and-play interoperability for patient-connected medical devices
- Facilitate the efficient exchange of patient related data and medical device related data, acquired at the point-of-care (POC), in all health care environments

“Real-time” means that data from multiple devices can be retrieved, time correlated, and displayed or processed in fractions of a second.

“Plug-and-play” means that when a device or system is connected to another device or system, detection, configuration, and the initiation of communication all occur automatically and without any other human interaction.

“Efficient exchange of medical device data” means that information that is captured at the POC (e.g., patient vital signs data) can be archived, retrieved, and processed by many different types of applications without extensive software and equipment support, and without needless loss of information. This standard is especially targeted at acute and continuing care devices, such as patient monitors, ventilators, infusion pumps, ECG devices, etc. It is a member of a family of standards that can be layered together to provide connectivity optimized for the specific devices being interfaced.

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Health informatics—Point-of-care medical device communication

Part 10201: Domain Information Model

1. Scope

The scope of this project is to define a general object-oriented information model that may be used to structure information and identify services used in point-of-care (POC) medical device communications. The scope is primarily focused on acute care medical devices and the communication of patient vital signs information.

2. Normative references

The following referenced documents are indispensable for the application of this document (i.e., they must be understood and used, so each referenced document is cited in text and its relationship to this document is explained). For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments or corrigenda) applies.

ISO/IEC 8824-1, Information technology — Abstract Syntax Notation One (ASN.1) — Part 1: Specification of basic notation.¹

ISO/IEEE 11073-10101, Health informatics — Point-of-care medical device communication — Part 10101: Nomenclature.²

ISO/IEEE 11073-20101, Health informatics — Point-of-care medical device communication — Part 20101: Application profiles – Base standard.

OMG[®] Unified Modeling Language[®] (OMG UML[®]) 2.5.1.³

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³ The OMG UML standard can be freely downloaded at <https://www.omg.org/spec/UML/>