



SLOVENSKI STANDARD
oSIST prEN ISO 11073-10201:2020
01-januar-2020

Zdravstvena informatika - Medobratovalnost naprav - 10201. del: Komunikacija medicinskih naprav na mestu oskrbe - Informacijski model domene (ISO/IEEE FDIS 11073-10201:2019)

Health informatics- Device interoperability - Part 10201: Point-of-care medical device communication - Domain information model (ISO/IEEE FDIS 11073-10201:2019)

Medizinische Informatik - Kommunikation patientennaher medizinischer Geräte - Teil 10201: Bereichs-Informationsmodell

Informatique de santé - Communication entre dispositifs médicaux sur le site des soins - Partie 10201: Modèle d'information du domaine

Ta slovenski standard je istoveten z: prEN ISO 11073-10201

ICS:

35.240.80	Uporabniške rešitve IT v zdravstveni tehniki	IT applications in health care technology
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oSIST prEN ISO 11073-10201:2020 **en,fr,de**

FINAL
DRAFT

INTERNATIONAL **ISO/IEEE/**
STANDARD **FDIS**
11073-10201

ISO/TC 215

Secretariat: ANSI

Voting begins on:
2019-11-13

Voting terminates on:
2020-04-01

**Health informatics — Device
interoperability —**

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

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IEEE Std 11073-10201™-2018
(Revision of
IEEE Std 11073-10201-2004)

Health informatics—Point-of-care medical device communication

Part 10201: Domain Information Model

Sponsor

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Approved 5 December 2018

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ISO/IEEE FDIS 11073-10201:2019(E)

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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PDF: ISBN 978-1-5044-5433-9 STD23484
Print: ISBN 978-1-5044-5434-6 STDPD23484

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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.

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