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# Health informatics — Point-of-care medical device communication — Part 10201: Domain information model

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

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**IEEE Engineering in Medicine and Biology Society**

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**Abstract:** Within the context of the ISO/IEEE 11073 family of standards for point-of-care (POC) medical device communication (MDC), this standard provides 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 object. All 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, information model, medical device communications, medical information bus, MIB, point-of-care, POC, object-oriented, patient, remote control

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75% of the member bodies casting a vote.

A pilot project between ISO and the IEEE has been formed to develop and maintain a group of ISO/IEEE standards in the field of medical devices as approved by Council resolution 43/2000. Under this pilot project, IEEE is responsible for the development and maintenance of these standards with participation and input from ISO member bodies.

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# IEEE Introduction

This introduction is not part of ISO/IEEE 11073-10201:2004(E), Health informatics — Point-of-care medical device communication — Part 10201: Domain information model.

ISO/IEEE 11073 standards enable communication between medical devices and external computer systems. They provide automatic and detailed electronic data capture of patient vital signs information and device operational data. The primary goals are to:

— Provide real-time plug-and-play interoperability for patient-connected medical devices

— Facilitate the efficient exchange of vital signs and medical device data, acquired at the point-of-care, 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 all the clinician has to do is make the connection — the systems automatically detect, configure, and communicate without any other human interaction.

“Efficient exchange of medical device data” means that information that is captured at the point-of-care (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. The standards are especially targeted at acute and continuing care devices, such as patient monitors, ventilators, infusion pumps, ECG devices, etc. They comprise a family of standards that can be layered together to provide connectivity optimized for the specific devices being interfaced.

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## Participants

At the time this standard was completed, the working group of the IEEE 1073 Standard Committee had the following membership:

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# Health informatics — Point-of-care medical device communication — Part 10201: Domain information model

## 1. Scope

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Within the context of the ISO/IEEE 11073 family of standards, this standard addresses the definition and structuring of information that is communicated or referred to in communication between application entities.

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This standard provides a common representation of all application entities present in the application processes within the various devices independent of the syntax.

The definition of association control and lower layer communication is outside the scope of this standard.

## 2. Normative references

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

CEN EN 1064, Medical informatics — Standard communication protocol — computer-assisted electrocardiography.[1]

CEN ENV 12052, Medical informatics — Medical imaging communication (MEDICOM).

IEEE Std 1073™, IEEE Standard for Medical Device Communications—Overview and Framework.[2]

[1]CEN publications are available from the European Committee for Standardization (CEN), 36, rue de Stassart, B-1050 Brussels, Belgium (http://www.cenorm.be).

[2]IEEE publications are available from the Institute of Electrical and Electronics Engineers, 445 Hoes Lane, Piscataway, NJ 08854, USA (http://www.standards.ieee.org/).

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