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Health informatics—Point-of-care medical device communication

Part 10101: Nomenclature

Developed by the

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of the
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Abstract: Within the context of the ISO/IEEE 11073 family of standards for point-of-care (POC) and personal health devices (PHD) medical device communication (MDC), this standard provides the nomenclature that supports both the domain information model and service model components of the standards family, as well as the semantic content exchanged with medical devices. The nomenclature is specialized for patient vital signs information representation and medical device informatics, with major areas including concepts for electrocardiograph (ECG), haemodynamics, respiration, blood gas, urine, fluid-related metrics, and neurology, as well as specialized units of measurement, general device events, alarms, and body sites. The standard defines both the architecture and major components of the nomenclature, along with extensive definitions for each conceptual area.

Keywords: codes, IEEE 11073-10101™, IHE PCD-01, independent living, information model, medical device communication, nomenclature, ontology, patient, personal health devices, PHD, POC, point-of-care, semantics, service model, terminology

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Paul Schluter, *Vice Chair*

Spencer Crosswy
Steven Dain
Michael Faughn
Kenneth Fuchs
Marcus Garbe
John Garguilo
Kai Hassing
Stefan Karl
Brian Reinhold
Melvin Reynolds
John Rhoads
Mathieu Roullet
Stefan Schlichting
Richard Tayrien
Michi Tietz
Jan Wittenber
Daidi Zhong

The following members of the individual balloting committee voted on this standard. Balloters may have voted for approval, disapproval, or abstention.

Bjoern Andersen
Keith Chow
Malcolm Clarke
David Fuschi
Randall Groves
Kai Hassing
Werner Hoelzl
Noriyuki Ikeuchi
Atsushi Ito
Stefan Karl
Piotr Karocki
Martin Kasparick
H. Moll
Beth Pumo
Stefan Schlichting
Paul Schluter
Walter Struppler
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Introduction

This introduction is not part of IEEE Std 11073-10101-2019, Health informatics—Point-of-Care Medical Device Communication—Nomenclature.

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 focus on acute care devices, such as patient monitors, ventilators, infusion pumps, ECG devices, etc, and personal health devices and systems. 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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IEEE Std 11073-10101 was originally published in 2004 in conjunction with the International Organization for Standardization (ISO). In 2015, IEEE published an amendment that expanded the nomenclature and definitions covered in the standard to reflect the continued innovation in medical device and system design. This 2019 revision integrates the amendment into the original text and further updates and expands the nomenclature and definitions.

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