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Health informatics — Personal health device communication —

Part 10207: Domain information and service model for service-oriented point-of-care medical device communication

Informatique de santé — Communication entre dispositifs de santé personnels —

Partie 10207: Informations de domaine et modèle de services pour la communication orientée services entre dispositifs médicaux sur le site des soins

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Abstract: Within the context of the ISO/IEEE 11073™ family of standards for point-of-care medical device communication, a Participant Model derived from the ISO/IEEE11073-10201 Domain Information Model is provided in this standard. The Participant Model specifies the structure of medical information objects. This standard also defines an abstract Communication Model to support the exchange of medical information objects. All elements of the Participant Model and Communication Model are specified using XML Schema. Core subjects of the Participant Model comprise modelling of medical device-related data, e.g., measurements and settings, alert systems, contextual information (e.g., patient demographics and location information), remote control, and archival information. Model extensibility is provided inherently through the use of XML Schema.

Keywords: alert systems, IEEE 11073-10207™, medical device communication, patient, point-of-care, remote control, service-oriented architecture, XML Schema

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Introduction

This introduction is not part of IEEE Std 11073-10207-2017, Health informatics—Point-of-care medical device communication—Part 10207: Domain Information and Service Model for Service-Oriented Point-of-Care Medical Device Communication.

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 of these standards 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, and electrocardiogram (EKG) devices. This family of standards can be layered together to provide connectivity optimized for the specific devices being interfaced.

Note that normative statements of requirements are presented in this standard in the following manner:

Rnnnn: Statement text here.

where "nnnn" is replaced by a number that is unique among the requirements in this standard and thereby forms a unique requirement identifier, for example,

R0007: All HANDLEs SHALL be unique within one MDIB sequence of a SERVICE PROVIDER.

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