

Health Informatics - Personal health device communication - Part 10471: Device specialization - Independant living activity hub (ISO/IEEE 11073-10471:2010)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 11073-10471:2011 sisaldb Euroopa standardi EN ISO 11073-10471:2011 ingliskeelset teksti. Standard on kinnitatud Eesti Standardikeskuse 31.03.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas. Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kätesaadavaks tegemise kuupäev on 16.03.2011. Standard on kätesaadav Eesti standardiorganisatsionist.	This Estonian standard EVS-EN ISO 11073-10471:2011 consists of the English text of the European standard EN ISO 11073-10471:2011. This standard is ratified with the order of Estonian Centre for Standardisation dated 31.03.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation. Date of Availability of the European standard text 16.03.2011. The standard is available from Estonian standardisation organisation.
---	--

ICS 35.240.80

Standardite reproduutseerimis- ja levitamisõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Estonia; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:
Aru str 10 Tallinn 10317 Estonia; www.evs.ee; Phone: 605 5050; E-mail: info@evs.ee

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 11073-10471

March 2011

ICS 35.240.80

English Version

Health Informatics - Personal health device communication -
Part 10471: Device specialization - Independant living activity
hub (ISO/IEEE 11073-10471:2010)

Informatique de santé - Communication entre dispositifs de
santé personnels - Partie 10471: Spécialisation des
dispositifs - Concentrateur d'activité pour une vie autonome
(ISO/IEEE 11073-10471:2010)

Medizinische Informatik - Kommunikation von Geräten für
die persönliche Gesundheit - Teil 10471:
Gerätespezifikation - Schnittstellenkonzentrator und -
umsetzer für assistierende Systeme (ISO/IEEE 11073-
10471:2010)

This European Standard was approved by CEN on 23 April 2010.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

The text of ISO/IEEE 11073-10471:2010 has been prepared by Technical Committee ISO/TC 215 "Health informatics" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 11073-10471:2011 by Technical Committee CEN/TC 251 "Health informatics" the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2011, and conflicting national standards shall be withdrawn at the latest by September 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO/IEEE 11073-10471:2010 has been approved by CEN as a EN ISO 11073-10471:2011 without any modification.

Contents

	Page
Foreword	v
Introduction	vii
1. Overview	1
1.1 Scope	1
1.2 Purpose	2
1.3 Context	2
2. Normative references	2
3. Definitions, acronyms, and abbreviations	2
3.1 Definitions	3
3.2 Acronyms and abbreviations	3
4. Introduction to ISO/IEEE 11073 personal health devices	3
4.1 General	3
4.2 Introduction to IEEE Std 11073-20601 modeling constructs	4
5. Independent living activity hub device concepts and modalities	5
5.1 General	5
5.2 Concepts	5
5.3 Collected data	5
6. Independent living activity hub domain information model	7
6.1 Overview	7
6.2 Class extensions	7
6.3 Object instance diagram	7
6.4 Types of configuration	9
6.5 MDS object	10
6.6 Numeric objects	13
6.7 Real-time sample array objects	13
6.8 Enumeration objects	13
6.9 PM-store objects	26
6.10 Scanner objects	26
6.11 Class extension objects	26
6.12 Independent living activity hub information model extensibility rules	26
7. Independent living activity hub service model	27
7.1 General	27
7.2 Object access services	27
7.3 Object access event report services	29

8. Independent living activity hub communication model	29
8.1 Overview.....	29
8.2 Communication characteristics	29
8.3 Association procedure.....	30
8.4 Configuring procedure	31
8.5 Operating procedure.....	32
8.6 Time synchronization.....	32
9. Test associations	32
9.1 Behavior with standard configuration	33
9.2 Behavior with extended configurations.....	33
10. Conformance.....	33
10.1 Applicability.....	33
10.2 Conformance specification.....	33
10.3 Levels of conformance.....	34
10.4 ICSSs.....	34
Annex A (informative) Bibliography.....	39
Annex B (normative) Any additional ASN.1 definitions.....	40
Annex C (normative) Allocation of identifiers.....	43
Annex D (informative) Message sequence examples.....	45
Annex E (informative) Protocol data unit examples	47

Introduction

ISO/IEEE 11073 standards enable communication between medical devices and external computer systems. This document uses the optimized framework created in IEEE Std 11073-20601^a and describes a specific, interoperable communication approach for independent living activity hubs. These standards align with, and draw upon, the existing clinically focused standards to provide support for communication of data from clinical or personal health devices.

^a For information on references, see Clause 2.

Health informatics — Point-of-care medical device communication —

Part 10471: Device specialization — Independant living activity hub

IMPORTANT NOTICE: This standard is not intended to assure safety, security, health, or environmental protection in all circumstances. Implementers of the standard are responsible for determining appropriate safety, security, environmental, and health practices or regulatory requirements.

This IEEE document is made available for use subject to important notices and legal disclaimers. These notices and disclaimers appear in all publications containing this document and may be found under the heading "Important Notice" or "Important Notices and Disclaimers Concerning IEEE Documents." They can also be obtained on request from IEEE or viewed at <http://standards.ieee.org/IPR/disclaimers.html>.

1. Overview

1.1 Scope

Within the context of the ISO/IEEE 11073 family of standards for device communication, this standard establishes a normative definition of the communication between independent living activity hubs and managers (e.g., cell phones, personal computers, personal health appliances, and set top boxes) in a manner that enables plug-and-play interoperability. It leverages appropriate portions of existing standards including ISO/IEEE 11073 terminology and information models. It specifies the use of specific term codes, formats, and behaviors in telehealth environments restricting ambiguity in base frameworks in favor of interoperability. This standard defines a common core of communication functionality for independent living activity hubs. In this context, independent living activity hubs are defined as devices that communicate with simple situation monitors (binary sensors), normalize information received from the simple environmental monitors, and provide this normalized information to one or more managers. This information can be examined (for example) to determine when a person's activities/behaviors have deviated significantly from what is normal for them such that relevant parties can be notified. Independent living activity hubs will normalize information from the following simple situation monitors (binary sensors) for the initial release of the proposed standard: fall sensor, motion sensor, door sensor, bed/chair occupancy sensor, light switch sensor, smoke sensor, (ambient) temperature threshold sensor, personal emergency response system (PERS), and enuresis sensor (bed-wetting).

1.2 Purpose

This standard addresses a need for an openly defined, independent standard for controlling information exchange to and from personal health devices and managers (e.g., cell phones, personal computers, personal health appliances, and set top boxes). Interoperability is the key to growing the potential market for these devices and to enabling people to be better informed participants in the management of their health.

1.3 Context

See IEEE Std 11073-20601TM for an overview of the environment within which this standard is written.

This document, IEEE Std 11073-10471, defines the device specialization for the independent living activity hub, being a specific agent type, and it provides a description of the device concepts, its capabilities, and its implementation according to this standard.

This standard is based on IEEE Std 11073-20601, which in turn draws information from both ISO/IEEE 11073-10201:2004 [B3] and ISO/IEEE 11073-20101:2004 [B4]. The medical device encoding rules (MDERs) used within this standard are fully described in IEEE Std 11073-20601.

This standard reproduces relevant portions of the nomenclature found in ISO/IEEE 11073-10101:2004 [B2] and adds new nomenclature codes for the purposes of this standard. Between this standard and IEEE Std 11073-20601 all required nomenclature codes for implementation are documented.

NOTE— In this standard, IEEE Std 11073-104zz is used to refer to the collection of device specialization standards that utilize IEEE Std 11073-20601, where zz can be any number from 01 to 99, inclusive.²

2. Normative references

The following referenced documents are indispensable for the application of this document (i.e., they must be understood and used, so that 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.

IEEE Std 11073-20601TM-2008, Health informatics—Personal health device communication—Part 20601: Application profile—Optimized Exchange Protocol.^{3,4}

See Annex A for all informative material referenced by this standard.

3. Definitions, acronyms, and abbreviations

For the purposes of this standard, the following terms and definitions apply. *The Authoritative Dictionary of IEEE Standards* [B1] should be referenced for terms not defined in this clause.

¹The numbers in brackets correspond to those of the bibliography in Annex A.

²Notes in text, tables, and figures are given for information only and do not contain requirements needed to implement the standard.

³The IEEE standards or products referred to in this clause are trademarks of the Institute of Electrical and Electronics Engineers, Inc.

⁴IEEE publications are available from the Institute of Electrical and Electronics Engineers, 445 Hoes Lane, Piscataway, NJ 08854, USA (<http://standards.ieee.org/>).