

<b>STN</b>	<b>Zdravotnícka informatika Interoperabilita prístroja Komunikácia zdravotníckeho prístroja na mieste zdravotnej starostlivosti Časť 10101: Terminológia (ISO/IEEE 11073-10101: 2020)</b>	<b>STN EN ISO 11073-10101</b>  84 8037
------------	---	--

Health informatics - Device interoperability - Part 10101: Point-of-care medical device communication - Nomenclature (ISO/IEEE 11073-10101:2020)

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 02/21

Obsahuje: EN ISO 11073-10101:2020, ISO/IEEE 11073-10101:2020

Oznámením tejto normy sa ruší  
STN EN ISO 11073-10101 (84 8037) z januára 2006

**132437**

EUROPEAN STANDARD

**EN ISO 11073-10101**

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2020

ICS 01.040.35; 35.240.80

Supersedes EN ISO 11073-10101:2005

English Version

**Health informatics - Device interoperability - Part 10101:  
Point-of-care medical device communication -  
Nomenclature (ISO/IEEE FDIS 11073-10101:2020)**

Informatique de santé - Interopérabilité des dispositifs  
- Partie 10101: Communication entre dispositifs  
médicaux sur le site des soins - Nomenclature  
(ISO/IEEE 11073-10101:2020)

Medizinische Informatik - Kommunikation  
patientennaher medizinischer Geräte - Teil 10101:  
Nomenklatur (ISO/IEEE 11073-10101:2020)

This European Standard was approved by CEN on 22 June 2020.

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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN ISO 11073-10101:2020 (E)**

<b>Contents</b>	<b>Page</b>
<b>European foreword.....</b>	<b>3</b>

## **European foreword**

This document (EN ISO 11073-10101:2020) has been prepared by Technical Committee ISO/TC 215 "Health informatics" in collaboration with 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 March 2021, and conflicting national standards shall be withdrawn at the latest by March 2021.

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

This document supersedes EN ISO 11073-10101:2005.

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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## **Endorsement notice**

The text of ISO/IEEE 11073-10101:2020 has been approved by CEN as EN ISO 11073-10101:2020 without any modification.

INTERNATIONAL  
STANDARD

ISO/IEEE  
11073-10101

Second edition  
2020-08

---

---

**Health informatics — Device  
interoperability —**

Part 10101:  
**Point-of-care medical device  
communication — Nomenclature**

*Informatique de santé — Interopérabilité des dispositifs —*

*Partie 10101: Communication entre dispositifs médicaux sur le site  
des soins — Nomenclature*



Reference number  
ISO/IEEE 11073-10101:2020(E)

© IEEE 2019

**ISO/IEEE 11073-10101:2020(E)****COPYRIGHT PROTECTED DOCUMENT**

© IEEE 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from IEEE at the address below.

Institute of Electrical and Electronics Engineers, Inc  
3 Park Avenue, New York  
NY 10016-5997, USA

Email: [stds.ipr@ieee.org](mailto:stds.ipr@ieee.org)  
Website: [www.ieee.org](http://www.ieee.org)

Published in Switzerland

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted (see [www.iso.org/directives](http://www.iso.org/directives)).

IEEE Standards documents are developed within the IEEE Societies and the Standards Coordinating Committees of the IEEE Standards Association (IEEE-SA) Standards Board. The IEEE develops its standards through a consensus development process, approved by the American National Standards Institute, which brings together volunteers representing varied viewpoints and interests to achieve the final product. Volunteers are not necessarily members of the Institute and serve without compensation. While the IEEE administers the process and establishes rules to promote fairness in the consensus development process, the IEEE does not independently evaluate, test, or verify the accuracy of any of the information contained in its standards.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

ISO/IEEE 11073-10101 was prepared by the IEEE 11073 Standards Committee of the IEEE Engineering in Medicine and Biology Society (as IEEE Std 11073-10101-2019) and drafted in accordance with its editorial rules. It was adopted, under the "fast-track procedure" defined in the Partner Standards Development Organization cooperation agreement between ISO and IEEE, by Technical Committee ISO/TC 215, *Health informatics*.

This second edition cancels and replaces the first edition (ISO/IEEE 11073-10101:2004), which has been technically revised. It also incorporates the Amendment ISO/IEEE 11073-10101:2004/Amd 1:2017.

A list of all parts in the ISO/IEEE 11073 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).





**IEEE Std 11073-10101™-2019**  
(Revision of  
ISO/IEEE 11073-10101:2004)

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

# **Part 10101: Nomenclature**

Developed by the

**IEEE 11073™ Standards Committee**  
of the  
**IEEE Engineering in Medicine and Biology Society**

Approved 13 June 2019

**IEEE SA Standards Board**

**ISO/IEEE 11073-10101:2020(E)**

**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

---

The Institute of Electrical and Electronics Engineers, Inc.  
3 Park Avenue, New York, NY 10016-5997, USA

Copyright © 2019 by The Institute of Electrical and Electronics Engineers, Inc.  
All rights reserved. Published 9 October 2019. Printed in the United States of America.

IEEE is a registered trademark in the U.S. Patent & Trademark Office, owned by The Institute of Electrical and Electronics Engineers, Incorporated.

HL7 is a registered trademark of Health Level Seven, Inc. (<http://www.hl7.org>).

SNOMED is a registered trademark of the College of American Pathologists (<http://www.cap.org>).

PDF: ISBN 978-1-5044-5981-5 STD23760  
Print: ISBN 978-1-5044-5982-2 STDPD23760

*IEEE prohibits discrimination, harassment, and bullying.*

*For more information, visit <http://www.ieee.org/web/aboutus/whatis/policies/p9-26.html>.*

*No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the publisher.*

## **Important Notices and Disclaimers Concerning IEEE Standards Documents**

IEEE documents are made available for use subject to important notices and legal disclaimers. These notices and disclaimers, or a reference to this page, appear in all standards and may be found under the heading “Important Notices and Disclaimers Concerning IEEE Standards Documents.” They can also be obtained on request from IEEE or viewed at <http://standards.ieee.org/ipr/disclaimers.html>.

### **Notice and Disclaimer of Liability Concerning the Use of IEEE Standards Documents**

IEEE Standards documents (standards, recommended practices, and guides), both full-use and trial-use, are developed within IEEE Societies and the Standards Coordinating Committees of the IEEE Standards Association (“IEEE SA”) Standards Board. IEEE (“the Institute”) develops its standards through a consensus development process, approved by the American National Standards Institute (“ANSI”), which brings together volunteers representing varied viewpoints and interests to achieve the final product. IEEE Standards are documents developed through scientific, academic, and industry-based technical working groups. Volunteers in IEEE working groups are not necessarily members of the Institute and participate without compensation from IEEE. While IEEE administers the process and establishes rules to promote fairness in the consensus development process, IEEE does not independently evaluate, test, or verify the accuracy of any of the information or the soundness of any judgments contained in its standards.

IEEE Standards do not guarantee or ensure safety, security, health, or environmental protection, or ensure against interference with or from other devices or networks. Implementers and users of IEEE Standards documents are responsible for determining and complying with all appropriate safety, security, environmental, health, and interference protection practices and all applicable laws and regulations.

IEEE does not warrant or represent the accuracy or content of the material contained in its standards, and expressly disclaims all warranties (express, implied and statutory) not included in this or any other document relating to the standard, including, but not limited to, the warranties of: merchantability; fitness for a particular purpose; non-infringement; and quality, accuracy, effectiveness, currency, or completeness of material. In addition, IEEE disclaims any and all conditions relating to: results; and workmanlike effort. IEEE standards documents are supplied “AS IS” and “WITH ALL FAULTS.”

Use of an IEEE standard is wholly voluntary. The existence of an IEEE standard does not imply that there are no other ways to produce, test, measure, purchase, market, or provide other goods and services related to the scope of the IEEE standard. Furthermore, the viewpoint expressed at the time a standard is approved and issued is subject to change brought about through developments in the state of the art and comments received from users of the standard.

In publishing and making its standards available, IEEE is not suggesting or rendering professional or other services for, or on behalf of, any person or entity nor is IEEE undertaking to perform any duty owed by any other person or entity to another. Any person utilizing any IEEE Standards document, should rely upon his or her own independent judgment in the exercise of reasonable care in any given circumstances or, as appropriate, seek the advice of a competent professional in determining the appropriateness of a given IEEE standard.

**IN NO EVENT SHALL IEEE BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO: PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE PUBLICATION, USE OF, OR RELIANCE UPON ANY STANDARD, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE AND REGARDLESS OF WHETHER SUCH DAMAGE WAS FORESEEABLE.**

# ISO/IEEE 11073-10101:2020(E)

## Translations

The IEEE consensus development process involves the review of documents in English only. In the event that an IEEE standard is translated, only the English version published by IEEE should be considered the approved IEEE standard.

## Official statements

A statement, written or oral, that is not processed in accordance with the IEEE SA Standards Board Operations Manual shall not be considered or inferred to be the official position of IEEE or any of its committees and shall not be considered to be, or be relied upon as, a formal position of IEEE. At lectures, symposia, seminars, or educational courses, an individual presenting information on IEEE standards shall make it clear that his or her views should be considered the personal views of that individual rather than the formal position of IEEE.

## Comments on standards

Comments for revision of IEEE Standards documents are welcome from any interested party, regardless of membership affiliation with IEEE. However, IEEE does not provide consulting information or advice pertaining to IEEE Standards documents. Suggestions for changes in documents should be in the form of a proposed change of text, together with appropriate supporting comments. Since IEEE standards represent a consensus of concerned interests, it is important that any responses to comments and questions also receive the concurrence of a balance of interests. For this reason, IEEE and the members of its societies and Standards Coordinating Committees are not able to provide an instant response to comments or questions except in those cases where the matter has previously been addressed. For the same reason, IEEE does not respond to interpretation requests. Any person who would like to participate in revisions to an IEEE standard is welcome to join the relevant IEEE working group.

Comments on standards should be submitted to the following address:

Secretary, IEEE SA Standards Board  
445 Hoes Lane  
Piscataway, NJ 08854 USA

## Laws and regulations

Users of IEEE Standards documents should consult all applicable laws and regulations. Compliance with the provisions of any IEEE Standards document does not imply compliance to any applicable regulatory requirements. Implementers of the standard are responsible for observing or referring to the applicable regulatory requirements. IEEE does not, by the publication of its standards, intend to urge action that is not in compliance with applicable laws, and these documents may not be construed as doing so.

## Copyrights

IEEE draft and approved standards are copyrighted by IEEE under U.S. and international copyright laws. They are made available by IEEE and are adopted for a wide variety of both public and private uses. These include both use, by reference, in laws and regulations, and use in private self-regulation, standardization, and the promotion of engineering practices and methods. By making these documents available for use and adoption by public authorities and private users, IEEE does not waive any rights in copyright to the documents.

## Photocopies

Subject to payment of the appropriate fee, IEEE will grant users a limited, non-exclusive license to photocopy portions of any individual standard for company or organizational internal use or individual, non-commercial use only. To arrange for payment of licensing fees, please contact Copyright Clearance Center, Customer Service, 222 Rosewood Drive, Danvers, MA 01923 USA; +1 978 750 8400. Permission to photocopy portions of any individual standard for educational classroom use can also be obtained through the Copyright Clearance Center.

## Updating of IEEE Standards documents

Users of IEEE Standards documents should be aware that these documents may be superseded at any time by the issuance of new editions or may be amended from time to time through the issuance of amendments, corrigenda, or errata. A current IEEE document at any point in time consists of the current edition of the document together with any amendments, corrigenda, or errata then in effect.

Every IEEE standard is subjected to review at least every ten years. When a document is more than ten years old and has not undergone a revision process, it is reasonable to conclude that its contents, although still of some value, do not wholly reflect the present state of the art. Users are cautioned to check to determine that they have the latest edition of any IEEE standard.

In order to determine whether a given document is the current edition and whether it has been amended through the issuance of amendments, corrigenda, or errata, visit the IEEE Xplore at <http://ieeexplore.ieee.org/> or contact IEEE at the address listed previously. For more information about the IEEE SA or IEEE's standards development process, visit the IEEE SA Website at <http://standards.ieee.org>.

## Errata

Errata, if any, for all IEEE standards can be accessed on the IEEE SA Website at the following URL: <http://standards.ieee.org/findstds/errata/index.html>. Users are encouraged to check this URL for errata periodically.

## Patents

Attention is called to the possibility that implementation of this standard may require use of subject matter covered by patent rights. By publication of this standard, no position is taken by the IEEE with respect to the existence or validity of any patent rights in connection therewith. If a patent holder or patent applicant has filed a statement of assurance via an Accepted Letter of Assurance, then the statement is listed on the IEEE SA Website at <http://standards.ieee.org/about/sasb/patcom/patents.html>. Letters of Assurance may indicate whether the Submitter is willing or unwilling to grant licenses under patent rights without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination to applicants desiring to obtain such licenses.

Essential Patent Claims may exist for which a Letter of Assurance has not been received. The IEEE is not responsible for identifying Essential Patent Claims for which a license may be required, for conducting inquiries into the legal validity or scope of Patent Claims, or determining whether any licensing terms or conditions provided in connection with submission of a Letter of Assurance, if any, or in any licensing agreements are reasonable or non-discriminatory. Users of this standard are expressly advised that determination of the validity of any patent rights, and the risk of infringement of such rights, is entirely their own responsibility. Further information may be obtained from the IEEE Standards Association.

**ISO/IEEE 11073-10101:2020(E)****Participants**

At the time this draft standard was approved by the IEEE SA Standards Board, the Point-of-Care Devices Working Group had the following membership:

**Malcolm Clarke, *Chair***  
**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 Rouillet  
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  
Ganesh Subramanian  
Lisa Ward  
Jan Wittenber  
Oren Yuen  
Daidi Zhong

When the IEEE SA Standards Board approved this standard on 13 June 2019, it had the following membership:

**Gary Hoffman, *Chair***  
**Ted Burse, *Vice Chair***  
**Jean-Philippe Faure, *Past Chair***  
**Konstantinos Karachalios, *Secretary***

Masayuki Ariyoshi  
Ted Burse  
Stephen D. Dukes  
J. Travis Griffith  
Guido Hiertz  
Christel Hunter  
Thomas Koshy  
Joseph L. Koepfinger\*

Thomas Koshy  
John D. Kulick  
David J. Law  
Joseph Levy  
Howard Li  
Xiaohui Liu  
Kevin Lu  
Daleep Mohla  
Andrew Myles

Annette D. Reilly  
Dorothy Stanley  
Sha Wei  
Phil Wennblom  
Philip Winston  
Howard Wolfman  
Feng Wu  
Jingyi Zhou

\*Member Emeritus

## 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.

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.

**ISO/IEEE 11073-10101:2020(E)****Contents**

1. Scope .....	20
2. Normative references.....	20
3. Terms, definitions, symbols, and abbreviated terms.....	22
3.1 Terms and definitions .....	22
3.2 Symbols and abbreviated terms .....	22
4. Conformance .....	25
5. Introduction to the standard.....	25
6. Application .....	25
7. Semantics.....	26
7.1 Attribution .....	26
7.2 Coding .....	27
7.2.1 Context-sensitivity .....	27
7.2.2 Grouping .....	28
7.3 Synonyms .....	29
7.4 Deprecated terms .....	29
7.5 Withdrawn terms .....	29
8. Syntax.....	29
8.1 Transfer.....	29
8.1.1 Types.....	29
8.1.2 Notation .....	30
8.2 Programmatic form.....	32
8.2.1 Attribution.....	32
8.2.2 Notation .....	32
9. Extensibility.....	33
10. Version exporting .....	33
Annex A (normative) Nomenclature semantics.....	34
A.1 Overview of nomenclature for vital signs—Semantics .....	34
A.2 Code assignment to the MDIB elements.....	35
A.2.1 Overview .....	35
A.2.2 Relationship to other standards .....	35
A.2.3 Basic rules .....	35
A.2.4 Coding spaces .....	36
A.3 Data dictionary and codes for object-oriented modeling elements (Partition 1).....	45
A.3.1 Introduction .....	45
A.3.2 Object-oriented modeling elements: inventory tables .....	46
A.4 Data dictionary and codes for communication infrastructure (Partition 8).....	79
A.4.1 Introduction .....	79
A.4.2 Communication infrastructure: inventory tables .....	79
A.5 Nomenclature, data dictionary, and codes for vital signs devices (Partition 1) .....	84
A.5.1 Introduction.....	84
A.5.2 Base concepts.....	85



**ISO/IEEE 11073-10101:2020(E)**

A.5.3 First set of differentiating criteria.....	85
A.5.4 Second set of differentiating criteria .....	86
A.5.5 Third set of differentiating criteria .....	86
A.5.6 Attributes.....	87
A.5.7 Device class discriminator .....	87
A.5.8 Code table .....	87
A.6 Terminology and codes for units of measurement (Partition 4).....	98
A.6.1 Introduction.....	98
A.6.2 Orders of magnitude discriminator .....	98
A.6.3 Units outside of SI.....	99
A.6.4 Units of measurement .....	100
A.6.5 Withdrawn terms for vital signs units of measurement.....	122
A.6.6 Deprecated terms for vital signs units of measurement.....	123
A.6.7 Deprecated RefIds for Vital Signs Units of Measurement .....	124
A.7 Nomenclature, data dictionary, and codes for metrics (measurements and enumerations) (Partition 2).....	125
A.7.1 Nomenclature for ECG measurements.....	125
A.7.2 Nomenclature for ECG enumerations .....	157
A.7.3 Nomenclature, data dictionary, and codes for haemodynamic monitoring measurements .....	173
A.7.4 Nomenclature and codes for respiratory, ventilator, and anesthesia measurements.....	192
A.7.5 Nomenclature, data dictionary, and codes for common blood-gas, blood, urine, and other fluid chemistry measurements .....	273
A.7.6 Nomenclature, data dictionary, and codes for fluid output measurements.....	288
A.7.7 Nomenclature, data dictionary, and codes for pumps .....	292
A.7.8 Nomenclature, data dictionary, and codes for neurological monitoring measurements.....	309
A.7.9 Nomenclature, data dictionary, and codes for neurophysiologic enumerations .....	322
A.7.10 Nomenclature, data dictionary, and codes for stimulation modes.....	346
A.7.11 Nomenclature, data dictionary, and codes for miscellaneous measurements.....	353
A.7.12 Nomenclature and code extensions for infant incubator and warmer microenvironments.....	360
A.7.13 Nomenclature, data dictionary, and codes for spirometry.....	362
A.7.14 Nomenclature and code extensions for personal health devices .....	372
A.8 Nomenclature, data dictionary, and codes for body sites (Partition 7) .....	377
A.8.1 Introduction .....	377
A.8.2 Sites for neurophysiological signal monitoring: locations near peripheral nerves.....	378
A.8.3 Sites for neurophysiological signal monitoring: locations near muscles.....	392
A.8.4 Sites for EEG-electrode placement on the head .....	430
A.8.5 Sites for EOG signal monitoring.....	438
A.8.6 Sites for general neurological monitoring measurements and drainage.....	443
A.8.7 Sites for cardiovascular measurements .....	445
A.8.8 Miscellaneous sites used in vital signs monitoring and measurement .....	451
A.8.9 Equipment sites used in vital signs monitoring and measurement.....	466
A.8.10 Qualifiers of body site locations.....	468
A.9 Nomenclature, data dictionary, and codes for events and alerts (Partition 3).....	472
A.9.1 Introduction.....	472
A.9.2 Diagnostic pattern events .....	472
A.9.3 Device-related and environment-related events .....	483
A.10 Systematic derivations of terms and codes for infrastructure (Partition 8).....	519
A.10.1 Introduction.....	519
A.10.2 Base concepts, device specialization.....	519
A.10.3 Base concepts, device sub-specialization.....	523
A.10.4 Base concepts, time synchronization profiles .....	526
A.11 Systematic derivations of terms and codes for personal health devices disease management (Partition 128).....	527
A.11.1 Introduction.....	527
A.11.2 Base concepts, general device properties .....	527
A.11.3 Base concepts, Basic ECG sensors and status.....	528

**ISO/IEEE 11073-10101:2020(E)**

A.11.4 Base concepts, Basic ECG event context.....	528
A.11.5 Base concepts, SABTE sensors and settings.....	529
A.11.6 Base concepts, SABTE modes.....	540
A.11.7 Base concepts, Glucose Monitoring, carbohydrate source.....	542
A.11.8 Base concepts, Glucose Monitoring, carbohydrate source.....	543
A.11.9 Base concepts, Glucose Monitoring, carbohydrate sources.....	543
A.11.10 Base concepts, Glucose Monitoring, insulin type.....	545
A.11.11 Base concepts, Glucose Monitoring, insulin types.....	546
A.11.12 Base concepts, Glucose Monitoring, general health.....	547
A.11.13 Base concepts, Glucose Monitoring, general health.....	548
A.11.14 Base concepts, Glucose Monitoring, sample location.....	549
A.11.15 Base concepts, Glucose Monitoring, sample locations.....	549
A.11.16 Base concepts, Glucose Monitoring, meal.....	551
A.11.17 Base concepts, Glucose Monitoring, meal type.....	552
A.11.18 Base concepts, Glucose Monitoring, tester.....	553
A.11.19 Base concepts, Glucose Monitoring, tester type.....	554
A.11.20 INR Status and Context.....	554
A.11.21 Base concepts, Continuous Glucose Monitoring.....	556
A.11.22 Base concepts, Continuous Glucose Monitoring, status.....	558
A.11.23 Base concepts, Continuous Glucose Monitoring, device.....	559
A.11.24 Base concepts, Insulin Pump, sensors.....	560
A.11.25 Base concepts, Power StatusMonitor, sensors.....	563
A.11.26 Base concepts, Power Status Monitor, battery.....	564
A.11.27 Base concepts, Peak Expiratory Flow.....	565
A.12 Systematic derivations of terms and codes for health and fitness (Partition 129).....	566
A.12.1 Introduction.....	566
A.12.2 Base concepts.....	566
A.12.3 First set of differentiating criteria, sensors.....	566
A.12.4 Second set of differentiating criteria, activity.....	570
A.12.5 First set of differentiating criteria, exercise.....	572
A.12.6 Second set of differentiating criteria, exercise.....	572
A.13 Systematic derivations of terms and codes for independent living monitoring measurements (Partition 130).....	575
A.13.1 Introduction.....	575
A.13.2 Base concepts.....	575
A.13.3 First set of differentiating criteria, sensor.....	575
A.13.4 Second set of differentiating criteria, location, general.....	579
A.13.5 Second set of differentiating criteria, location, room.....	581
A.13.6 Second set of differentiating criteria, location, medical room.....	584
A.13.7 Second set of differentiating criteria, location, doors and windows.....	586
A.13.8 Second set of differentiating criteria, location, furniture.....	587
A.13.9 Second set of differentiating criteria, location, appliance.....	588
A.13.10 Third set of differentiating criteria, AI events.....	590
A.13.11 First set of differentiating criteria, sensors, medication dispenser.....	593
A.14 Nomenclature for error return codes (Partition 255).....	595
A.14.1 Base concepts.....	595
A.14.2 First set of differentiating criteria.....	595
A.14.3 Code table.....	595
A.14.4 Withdrawn terms for error return codes.....	596
A.15 Nomenclature, data dictionary, and codes for external nomenclatures and messaging standards (Partition 256).....	597
A.15.1 Introduction.....	597
A.15.2 Base concepts.....	597
A.15.3 First set of differentiating criteria.....	597
A.15.4 Second set of differentiating criteria.....	598
A.15.5 Third set of differentiating criteria.....	598

**ISO/IEEE 11073-10101:2020(E)**

A.15.6 Discriminator .....	598
A.15.7 Code table .....	598
A.16 Information attributes to support IHE PCD DEC and PCHA/Continua Services Interface (Partition 1 and Partition 8) .....	602
A.16.1 Information attributes to support IHE PCD Alert Communication Management .....	602
A.16.2 Notification attributes to support IHE PCD Alert Communication Management .....	602
A.16.3 Infrastructure attributes to support PCHA/Continua Services Interface and IHE PCD DEC .....	602
A.16.4 Information attributes to support PCHA/Continua Services Interface .....	604
A.16.5 Information attributes to support IHE PCD DEC and PCHA/Continua Services Interface timekeeping .....	604
A.16.6 Information attributes to support semantics defined by this standard .....	607
A.16.7 Information attributes to support ECG semantics defined by this standard .....	607
Annex B (normative) Nomenclature syntax .....	608
B.1 General .....	608
B.1.1 Notation .....	608
B.1.2 Partition codes .....	608
B.2 Object infrastructure and device nomenclature – Partition 1 .....	609
B.2.1 Object infrastructure .....	609
B.2.2 Device nomenclature .....	630
B.3 Medical supervisory control and data acquisition (SCADA) – Partition 2 .....	650
B.3.1 Discriminator ranges .....	650
B.3.2 SCADA Term Codes .....	651
B.4 Events – Partition 3 .....	722
B.5 Dimensions – Partition 4 .....	741
B.6 Virtual attributes – Partition 5 .....	761
B.7 Parameter groups – Partition 6 .....	761
B.8 Body Sites – Partition 7 .....	761
B.9 Communication infrastructure – Partition 8 .....	802
B.10 File Exchange Format – Partition 9 .....	810
B.11 ECG Extension – Partition 10 .....	810
B.12 ICDO Extension – Partition 11 .....	810
B.13 PHD Disease Management – Partition 128 .....	810
B.14 PHD Health Fitness – Partition 129 .....	820
B.15 PHD Aging Independently – Partition 130 .....	824
B.16 Return Codes – Partition 255 .....	835
B.17 External nomenclature – Partition 256 .....	836
B.18 Device Settings – Partition 258 .....	837
B.19 Device Predicted Values – Partition 514 .....	840
Annex C (normative) Terms, discriminators, and numeric codes .....	843
C.1 Overview .....	843
C.2 Discriminators .....	843
C.3 Discriminator sets .....	844
C.3.1 Device Type [MVC] discriminator set .....	844
C.3.2 Statistical [MMM] discriminator set .....	844
C.3.3 Haemodynamic pressure measurements [SDM] discriminator set .....	844
C.3.4 Rates for countable events [RCE] discriminator set .....	845
C.3.5 Rates for countable neurological events [RCN] discriminator set .....	845
C.3.6 Body Site Orientation (laterally) [LAT] discriminator set .....	845
C.3.7 Unit of Measure [UoM] discriminator set .....	846
C.3.8 Unit of Measure (singular) [UoM1] discriminator .....	846
C.3.9 No [1] Discriminator .....	847
C.3.10 Event [2] discriminator set .....	847
C.3.11 Statistical profile [PN3] discriminator set .....	847

**ISO/IEEE 11073-10101:2020(E)**

C.3.12 Location [LOC] discriminator set .....	848
C.3.13 Version of External Nomenclature [64] Discriminator .....	849
C.3.14 ECG lead designation from ISO/IEEE 11073-10101:2004 [LEAD1] discriminator set .....	849
C.3.15 ECG lead designation from ISO/IEEE 11073-10102:2012 [LEAD2] discriminator set .....	852
C.3.16 Equivalent ECG lead designations in ISO/IEEE 11073-10101:2004 and ISO/IEEE 11073-10102:2012 [LEAD] discriminator set .....	857
C.3.17 Comparison of ECG lead discriminators in ISO/IEEE 11073-10101:2004 and ISO/IEEE 11073-10102:2012 .....	859
C.4 Alphabetical listing of terms, discriminators, and numeric codes.....	862
C.4.1 Object-Oriented – Partition 1 .....	862
C.4.2 Supervisory Control and Data Acquisition (SCADA) – Partition 2 .....	895
C.4.3 Events and Alerts – Partition 3 .....	950
C.4.4 Dimensions – Partition 4 .....	965
C.4.5 Parameter Groups – Partition 6 .....	981
C.4.6 Body Sites – Partition 7.....	981
C.4.7 Communication Infrastructure—Partition 8 .....	1014
C.4.8 PHD Disease Management—Partition 128 .....	1019
C.4.9 PHD Health Fitness—Partition 129 .....	1025
C.4.10 PHD Aging Independently—Partition 130.....	1028
C.4.11 Return Codes—Partition 255 .....	1036
C.4.12 External Nomenclature—Partition 256 .....	1036
C.4.13 Device Settings—Partition 258 .....	1037
C.4.14 Predicted Values—Partition 514 .....	1040
Annex D (informative) Synonyms .....	1042
D.1.1 Term code Synonyms.....	1042
D.1.2 RefId synonyms .....	1042
Annex E (informative) Breaths and inflations.....	1044
Annex F (informative) Respiratory, ventilator, and anesthesia RefId naming conventions .....	1046
Annex G (informative) Anesthesia ventilation and breathing circuits .....	1048
G.1 Bellows driven on expiratory side .....	1050
G.2 Piston driven on inspiratory side.....	1051
G.3 Mapleson circuits .....	1052
Annex H (informative) Term approval and management process.....	1053
H.1 Term approval and management process.....	1053
H.1.1 Proposed term .....	1054
H.1.2 Proposed term review.....	1054
H.1.3 Provisional term .....	1054
H.1.4 Provisional term review .....	1054
H.1.5 Rejected term .....	1054
H.1.6 Accepted term .....	1054
H.1.7 IEEE Ballot .....	1054
H.1.8 Published term.....	1055
H.1.9 Deprecated term .....	1055
H.1.10 Withdrawn term .....	1055
H.2 Rosetta Terminology Mapping Management System (RTMMS).....	1055
H.3 Right to use .....	1055
Annex I (informative) Bibliography.....	1057
Annex J (informative) Revision history .....	1059

## Tables

Table 1—Nomenclature attributes.....	26
Table 2—Attribution example.....	26
Table 3—Systematic name derivation—medical device type example.....	27
Table A.2.4.1.1—Partition 1—Object-oriented elements, Device nomenclature.....	37
Table A.2.4.2.1—Partition 2—Metrics (multipage table).....	37
Table A.2.4.3.1—Partition 3—Alerts and events.....	39
Table A.2.4.4.1—Partition 4—Units of measurement (dimensions).....	39
Table A.2.4.6.1—Partition 6—Program group.....	40
Table A.2.4.7.1—Partition 7—Body sites.....	40
Table A.2.4.8.1—Partition 8—Communication infrastructure.....	41
Table A.2.4.9.1—Partition 9—Reserved for file exchange format (FEF).....	41
Table A.2.4.10.1—Partition 10—ECG additional nomenclature (annotated ECG).....	41
Table A.2.4.11.1—Partition 11—IDCO nomenclature.....	41
Table A.2.4.12.1—Partition 128—PHD disease management.....	42
Table A.2.4.13.1—Partition 129—PHD health and fitness.....	42
Table A.2.4.14.1—Partition 130—PHD aging independently.....	43
Table A.2.4.15.1—Partition 255—Return codes.....	43
Table A.2.4.16.1—Partition 256—External nomenclatures.....	43
Table A.2.4.17.1—Partition 258—Settings.....	44
Table A.2.4.18.1—Partition 514—Predicted values.....	44
Table A.2.4.19.1—Partition 1024—Private.....	44
Table A.3.2.1.1—Object-oriented modeling elements—General—object class items.....	46
Table A.3.2.1.2—Object-oriented modeling elements—General—attributes.....	47
Table A.3.2.1.3—Object-oriented modeling elements—General—attribute groups.....	47
Table A.3.2.1.4—Object-oriented modeling elements—General—behavior.....	47
Table A.3.2.1.5—Object-oriented modeling elements—General—notifications.....	47
Table A.3.2.2.1—Object-oriented modeling elements—Medical Package—object class items.....	47
Table A.3.2.2.2—Object-oriented modeling elements—Medical Package—attributes (multipage table)....	48
Table A.3.2.2.3—Object-oriented modeling elements—Medical Package—attribute groups.....	52
Table A.3.2.2.4—Object-oriented modeling elements—Medical Package—behavior.....	52
Table A.3.2.2.5—Object-oriented modeling elements—Medical Package—notifications.....	52
Table A.3.2.3.1—Object-oriented modeling elements—Alert Package—object class items.....	53
Table A.3.2.3.2—Object-oriented modeling elements—Alert Package—attributes.....	53
Table A.3.2.3.3—Object-oriented modeling elements—Alert Package—attribute groups.....	53
Table A.3.2.3.4—Object-oriented modeling elements—Alert Package—behavior.....	53
Table A.3.2.3.5—Object-oriented modeling elements—Alert Package—notifications.....	54
Table A.3.2.4.1—Object-oriented modeling elements—System Package—object class items.....	54
Table A.3.2.4.2—Object-oriented modeling elements—System Package—attributes (multipage table)....	54
Table A.3.2.4.3—Object-oriented modeling elements—System Package—attribute groups.....	56
Table A.3.2.4.4—Object-oriented modeling elements—System Package—behavior.....	57
Table A.3.2.4.5—Object-oriented modeling elements—System Package—notifications.....	57
Table A.3.2.5.1—Object-oriented modeling elements—Control Package—object class items.....	57
Table A.3.2.5.2—Object-oriented modeling elements—Control Package—attributes (multipage table)....	57
Table A.3.2.5.3—Object-oriented modeling elements—Control Package—attribute groups.....	59
Table A.3.2.5.4—Object-oriented modeling elements—Control Package—behavior.....	59
Table A.3.2.5.5—Object-oriented modeling elements—Control Package—notifications.....	59
Table A.3.2.6.1—Object-oriented modeling elements—Extended Services Package—object class items.....	59
Table A.3.2.6.2—Object-oriented modeling elements—Extended Services Package—attributes.....	60
Table A.3.2.6.3—Object-oriented modeling elements—Extended Services Package—attribute groups ...	60
Table A.3.2.6.4—Object-oriented modeling elements—Extended Services Package—behavior.....	61
Table A.3.2.6.5—Object-oriented modeling elements—Extended Services Package—notifications.....	61
Table A.3.2.7.1—Object-oriented modeling elements—Communication Package—object class items....	61

**ISO/IEEE 11073-10101:2020(E)**

Table A.3.2.7.2—Object-oriented modeling elements—Communication Package—attributes ( <i>multipage table</i> ) .....	62
Table A.3.2.7.3—Object-oriented modeling elements—Communication Package—attribute groups .....	63
Table A.3.2.7.4—Object-oriented modeling elements—Communication Package—behavior .....	63
Table A.3.2.7.5—Object-oriented modeling elements—Communication Package—notifications .....	63
Table A.3.2.8.1—Object-oriented modeling elements—Archival Package—object class items .....	63
Table A.3.2.8.2—Object-oriented modeling elements—Archival Package—attributes ( <i>multipage table</i> ) .....	64
Table A.3.2.8.3—Object-oriented modeling elements—Archival Package—attribute groups .....	65
Table A.3.2.8.4—Object-oriented modeling elements—Archival Package—behavior .....	65
Table A.3.2.8.5—Object-oriented modeling elements—Archival Package—notifications .....	65
Table A.3.2.9.1—Object-oriented modeling elements—Patient Package—object class items .....	65
Table A.3.2.9.2—Object-oriented modeling elements—Patient Package—attributes ( <i>multipage table</i> ) .....	66
Table A.3.2.9.3—Object-oriented modeling elements—Patient Package—attribute groups .....	67
Table A.3.2.9.4—Object-oriented modeling elements—Patient Package—behavior .....	67
Table A.3.2.9.5—Object-oriented modeling elements—Patient Package—notifications .....	67
Table A.3.2.10.1—Object-oriented modeling elements—PHD—object class items .....	68
Table A.3.2.10.2—Object-oriented modeling elements—PHD—attributes ( <i>multipage table</i> ) .....	68
Table A.3.2.10.3—Object-oriented modeling elements—PHD—attribute groups .....	70
Table A.3.2.10.4—Object-oriented modeling elements—PHD—behavior .....	71
Table A.3.2.10.5—Object-oriented modeling elements—PHD—notifications .....	71
Table A.3.2.11.1—Object-oriented modeling elements—WCM—object class items .....	72
Table A.3.2.11.2—Object-oriented modeling elements—WCM—attributes ( <i>multipage table</i> ) .....	72
Table A.3.2.11.3—Object-oriented modeling elements—WCM—attribute groups .....	74
Table A.3.2.11.4—Object-oriented modeling elements—WCM—behavior .....	74
Table A.3.2.11.5—Object-oriented modeling elements—WCM—notifications .....	74
Table A.3.2.12.1—Object-oriented modeling elements—MEM-LS—object class items .....	74
Table A.3.2.12.2—Object-oriented modeling elements—MEM-LS—attributes ( <i>multipage table</i> ) .....	75
Table A.3.2.12.3—Object-oriented modeling elements—MEM-LS—attribute groups .....	77
Table A.3.2.12.4—Object-oriented modeling elements—MEM-LS—behavior .....	77
Table A.3.2.12.5—Object-oriented modeling elements—MEM-LS—notifications .....	77
Table A.3.2.13.1—Object-oriented modeling elements—USI—object class items .....	77
Table A.3.2.13.2—Object-oriented modeling elements—USI—attributes .....	77
Table A.3.2.13.3—Object-oriented modeling elements—USI—attribute groups .....	77
Table A.3.2.13.4—Object-oriented modeling elements—USI—behavior .....	78
Table A.3.2.13.5—Object-oriented modeling elements—USI—notifications .....	78
Table A.3.2.14.1—Object-oriented modeling elements—Deprecated identifier terms .....	78
Table A.4.1—Communication infrastructure—object class items .....	79
Table A.4.2—Communication infrastructure—attributes ( <i>multipage table</i> ) .....	80
Table A.4.3—Communication infrastructure—attribute groups .....	82
Table A.4.4—Communication infrastructure—behavior .....	82
Table A.4.5—Communication infrastructure—notifications .....	83
Table A.4.6—Communication infrastructure—profile support attributes .....	83
Table A.4.7—Communication infrastructure—optional package identifiers .....	83
Table A.4.8—Communication infrastructure—system specification components .....	83
Table A.5.1—Nomenclature and codes for vital signs devices ( <i>multipage table</i> ) .....	88
Table A.6.2.1—Table of decimal factors .....	99
Table A.6.3.1—Non-SI units ( <i>multipage table</i> ) .....	99
Table A.6.4.1—Vital signs units of measurement ( <i>multipage table</i> ) .....	101
Table A.6.5.1—Withdrawn terms for vital signs units of measurement .....	122
Table A.6.6.1—Deprecated terms for vital signs units of measurement .....	123
Table A.6.7.1—Deprecated Reflds for vital signs units of measurement .....	124
Table A.7.1.3.1—List of standardized ECG <lead> descriptors from SCP-ECG ( <i>multipage table</i> ) .....	130
Table A.7.1.3.2—Nomenclature and codes for ECG lead descriptors from IEEE Std 11073-10101-2004 with discriminator group [LEAD1] ( <i>multipage table</i> ) .....	132

**ISO/IEEE 11073-10101:2020(E)**

Table A.7.1.3.3—Nomenclature and codes for ECG lead descriptors from IEEE Std 11073-10102 with discriminator group [LEAD2] ( <i>multipage table</i> ).....	135
Table A.7.1.6.1—Nomenclature and codes for global lead ECG measurements ( <i>multipage table</i> ).....	144
Table A.7.1.6.2—Nomenclature and codes for ECG measurements with lead origin ( <i>multipage table</i> )....	151
Table A.7.1.7.1—Deprecated terms for ECG measurements.....	156
Table A.7.1.8.1—Deprecated RefIds for ECG measurements defined in IEEE11073-10102 .....	156
Table A.7.2.6.1—Nomenclature and codes for ECG enumerations ( <i>multipage table</i> ) .....	160
Table A.7.2.7.1—Withdrawn terms for ECG enumerations .....	171
Table A.7.2.8.1—Deprecated terms for ECG enumerations .....	171
Table A.7.2.9.1—Deprecated RefIds for ECG enumerations .....	172
Table A.7.3.6.1—Nomenclature and codes for haemodynamic monitoring measurements ( <i>multipage table</i> ) .....	176
Table A.7.3.7.1—Deprecated terms for haemodynamic monitoring measurements .....	191
Table A.7.4.11.1—Ventilator modes bit string ( <i>multipage table</i> ) .....	200
Table A.7.4.11.2—Ventilator modes nomenclature and codes ( <i>multipage table</i> ) .....	202
Table A.7.4.16.1—Correction of gas measurements.....	206
Table A.7.4.17.1—Gas measurement sites.....	207
Table A.7.4.17.2—Default gas measurement sites.....	207
Table A.7.4.18.1—Inspiratory breath type classifications .....	209
Table A.7.4.19.1—Deployment of gas partial pressure and concentration and consumption information (informative).....	210
Table A.7.4.19.2—Nomenclature and codes for respiratory, ventilator, and anesthesia measurements ( <i>multipage table</i> ) .....	211
Table A.7.4.20.1—Deprecated terms for respiratory measurements.....	258
Table A.7.4.21.1—Deprecated RefIds for respiratory measurements.....	258
Table A.7.4.22.1—Recommended mapping of deprecated to ‘unified’ gas RefId prefixes (informative).....	259
Table A.7.4.23.1—Deprecated terms for respiratory measurements ( <i>multipage table</i> ) .....	260
Table A.7.4.24.1—Deprecated RefIds for respiratory measurements ( <i>multipage table</i> ) .....	265
Table A.7.4.25.1—Deprecated nomenclature for undefined respiratory measurements from Annex B .....	269
Table A.7.4.26.1—Nomenclature and codes for nebulizers ( <i>multipage table</i> ) .....	270
Table A.7.5.6.1—Nomenclature and codes for common blood-gas, blood, urine, and other fluid chemistry measurements ( <i>multipage table</i> ) .....	276
Table A.7.5.7.1—Withdrawn terms for blood-gas, blood, urine, and other fluid chemistry measurements .....	287
Table A.7.5.8.1—Deprecated RefIds for blood-gas, blood, urine, and other fluid chemistry measurements .....	287
Table A.7.6.6.1—Nomenclature and codes for fluid-output measurements ( <i>multipage table</i> ) .....	290
Table A.7.7.6.1—Nomenclature and codes for pump data ( <i>multipage table</i> ) .....	297
Table A.7.7.7.1—Deprecated RefIds for pump data .....	302
Table A.7.7.13.1—Pump modes bit string values (value to be communicated in enumeration observation element Mode     Device   Pump).....	305
Table A.7.7.19.1—Pump states bit string values (value to be communicated in EnumerationObservation with code: Status   Operational   Device   Pump).....	308
Table A.7.8.6.1—Nomenclature and codes for neurological monitoring measurements ( <i>multipage table</i> ) .....	313
Table A.7.9.6.1—Nomenclature and codes for neurophysiologic enumerations ( <i>multipage table</i> ).....	330
Table A.7.10.6.1—Nomenclature and codes for neurophysiologic stimulation modes ( <i>multipage table</i> ) ..	349
Table A.7.11.6.1—Nomenclature and codes for miscellaneous measurements .....	355
Table A.7.11.6.2—Nomenclature and codes for temperature ( <i>multipage table</i> ).....	356
Table A.7.11.7.1—Deprecated nomenclature for temperature.....	357
Table A.7.11.8.1—Body weight and surface area for pre-coordinated RefIds.....	358
Table A.7.11.9.1—Nomenclature and codes for body mass (weight) and estimates .....	359
Table A.7.12.1.1—Nomenclature and code extensions for infant incubator and warmer microenvironments ( <i>multipage table</i> ) .....	360
Table A.7.13.6.1—Nomenclature and codes for spirometry measurements ( <i>multipage table</i> ) .....	364

**ISO/IEEE 11073-10101:2020(E)**

Table A.7.14.1.1—Nomenclature and code extensions for personal health devices ( <i>multipage table</i> ).....	372
Table A.7.14.2.1—Deprecated RefIds for personal health devices.....	376
Table A.8.2.5.1—Nomenclature and codes for sites for neurophysiological signal monitoring: locations near peripheral nerves ( <i>multipage table</i> ).....	381
Table A.8.3.5.1—Nomenclature and codes for sites for neurophysiological signal monitoring: locations near or in muscles ( <i>multipage table</i> ).....	398
Table A.8.4.6.1—Nomenclature and codes for electrode sites for EEG according to the international 10–20 system ( <i>multipage table</i> ).....	433
Table A.8.5.6.1—Nomenclature and codes for sites for EOG signal monitoring ( <i>multipage table</i> ).....	441
Table A.8.6.5.1—Nomenclature and codes for general neurological sites for monitoring measurements and drainage.....	444
Table A.8.7.5.1—Nomenclature and codes for body sites for cardiovascular measurements ( <i>multipage table</i> ).....	447
Table A.8.8.5.1—Nomenclature and codes for miscellaneous body sites used in vital signs monitoring and measurement ( <i>multipage table</i> ).....	454
Table A.8.9.5.1—Nomenclature and codes for external sites used in vital signs monitoring and measurement.....	467
Table A.8.10.6.1—Nomenclature and codes for qualifiers of body site locations ( <i>multipage table</i> ).....	470
Table A.9.2.5.1—Nomenclature and codes for pattern events ( <i>multipage table</i> ).....	475
Table A.9.3.5.1—Nomenclature and codes for device-related and environment-related events ( <i>multipage table</i> ).....	491
Table A.9.3.6.1—Deprecated terms for device-related and environment-related events.....	518
Table A.9.3.7.1—Deprecated RefIds for device-related and environment-related events.....	518
Table A.10.2.3.1—Nomenclature and codes for infrastructure, device specialization ( <i>multipage table</i> )...	520
Table A.10.2.4.1—Withdrawn terms for device specialization.....	522
Table A.10.3.3.1—Nomenclature and codes for Infrastructure, sub-specialization ( <i>multipage table</i> ).....	523
Table A.10.4.3.1—Time synchronization profiles.....	526
Table A.11.2.3.1—Nomenclature and codes for PHD Disease Management, general.....	527
Table A.11.3.3.1—Nomenclature and codes for PHD Disease Management, Basic ECG sensors.....	528
Table A.11.4.3.1—Nomenclature and codes for PHD Disease Management, Basic ECG event context ...	529
Table A.11.5.3.1—Nomenclature and codes for PHD Disease Management, SABTE sensors and settings ( <i>multipage table</i> ).....	530
Table A.11.5.4.1—Withdrawn terms for PHD Disease Management, SABTE sensors and settings ( <i>multipage table</i> ).....	536
Table A.11.6.3.1—Nomenclature and codes for PHD Disease Management, SABTE mode settings ( <i>multipage table</i> ).....	540
Table A.11.7.3.1—Nomenclature and codes for PHD Disease Management, Glucose carbohydrate source.....	542
Table A.11.8.3.1—Nomenclature and codes for PHD Disease Management, Glucose carbohydrate source.....	543
Table A.11.9.3.1—Nomenclature and codes for PHD Disease Management, Glucose moncarbohydrate sources.....	544
Table A.11.10.3.1—Nomenclature and codes for PHD Disease Management, Glucose Monitoring, insulin type.....	545
Table A.11.11.3.1—Nomenclature and codes for PHD Disease Management, insulin types.....	546
Table A.11.12.3.1—Nomenclature and codes for PHD Disease Management, general health.....	547
Table A.11.13.3.1—Nomenclature and codes for PHD Disease Management, general health.....	548
Table A.11.14.3.1—Nomenclature and codes for PHD Disease Management, Glucose Monitoring, sample location.....	549
Table A.11.15.3.1—Nomenclature and codes for PHD Disease Management, Glucose Monitoring, sample locations.....	550
Table A.11.16.3.1—Nomenclature and codes for PHD Disease Management, Glucose Monitoring, meal.....	551
Table A.11.17.3.1—Nomenclature and codes for PHD Disease Management, Glucose Monitoring, meal types.....	552



**ISO/IEEE 11073-10101:2020(E)**

Table A.11.18.3.1—Nomenclature and codes for PHD Disease Management, Glucose Monitoring, tester .....	553
Table A.11.19.3.1—Nomenclature and codes for PHD Disease Management, Glucose Monitoring, tester types .....	554
Table A.11.20.3.1—Nomenclature and codes for PHD Disease Management, INR status and context .....	555
Table A.11.21.3.1—Nomenclature and codes for PHD Disease Management, CGM sensors ( <i>multipage table</i> ) .....	556
Table A.11.22.3.1—Nomenclature and codes for PHD Disease Management, CGM sensors .....	558
Table A.11.23.3.1—Nomenclature and codes for PHD Disease Management, CGM device .....	559
Table A.11.24.3.1—Nomenclature and codes for PHD Disease Management, Insulin Pump ( <i>multipage table</i> ) .....	560
Table A.11.24.4.1—Deprecated term codes for PHD Disease Management, Insulin Pump .....	562
Table A.11.25.4.1—Nomenclature and codes for PHD Disease Management, PSM device .....	563
Table A.11.26.2.1—Nomenclature and codes for PHD Disease Management, PSM device .....	564
Table A.11.27.3.1—Nomenclature and codes for PHD Disease Management, PEF status .....	565
Table A.12.3.2.1—Nomenclature and codes for health and fitness sensors ( <i>multipage table</i> ) .....	567
Table A.12.3.3.1—Deprecated terms for PHD disease management, health and fitness ( <i>multipage table</i> ) .....	569
Table A.12.4.2.1—Nomenclature and codes for health and fitness activity ( <i>multipage table</i> ) .....	570
Table A.12.5.2.1—Nomenclature and codes for health and fitness exercise .....	572
Table A.12.6.2.1—Nomenclature and codes for health and fitness specific exercise .....	573
Table A.12.6.3.1—Deprecated terms for health and fitness exercise .....	574
Table A.13.3.2.1—Nomenclature and codes for assisted living sensors ( <i>multipage table</i> ) .....	577
Table A.13.4.3.1—Nomenclature and codes AI locations, general .....	580
Table A.13.5.3.1—Nomenclature and codes AI locations, rooms ( <i>multipage table</i> ) .....	581
Table A.13.6.3.1—Nomenclature and codes AI locations, medical rooms ( <i>multipage table</i> ) .....	585
Table A.13.7.3.1—Nomenclature and codes AI locations, doors and windows .....	587
Table A.13.8.3.1—Nomenclature and codes for AI locations, furniture .....	588
Table A.13.9.3.1—Nomenclature and codes for AI locations, appliances ( <i>multipage table</i> ) .....	589
Table A.13.10.2.1—Nomenclature and codes for AI events ( <i>multipage table</i> ) .....	591
Table A.13.11.3.1—Nomenclature and codes AI medication dispenser .....	594
Table A.14.3.1—Nomenclature for error return codes ( <i>multipage table</i> ) .....	595
Table A.14.4.1—Withdrawn nomenclature for error return codes .....	596
Table A.15.7.1—Nomenclature and codes for external nomenclatures and messaging standards ( <i>multipage table</i> ) .....	599
Table A.16.1.1—IHE PCD Alert Communication Management attributes .....	602
Table A.16.2.1—IHE PCD Alert Communication Management Notifications .....	602
Table A.16.3.1—Continua Services Interface infrastructure attributes .....	603
Table A.16.4.1—Continua Services Interface information attributes .....	604
Table A.16.5.1—IHE PCD and Continua Services Interface timekeeping information attributes ( <i>multipage table</i> ) .....	605
Table A.16.6.1—Breathing circuit attributes .....	607
Table A.16.6.2—Calculation method attribute .....	607
Table A.16.7.1—ECG nomenclature attributes .....	607
Table C.3.1.1—Device Type [MVC] discriminator set .....	844
Table C.3.2.1—Statistical [MMM] discriminator set .....	844
Table C.3.3.1—Haemodynamic pressure measurements [SDM] discriminator set .....	844
Table C.3.4.1—Rates for countable events [RCE] discriminator set .....	845
Table C.3.5.1—Rates for countable neurological events [RCN] discriminator set .....	845
Table C.3.6.1—Body Site Orientation (laterally) [LAT] discriminator set .....	845
Table C.3.7.1—Units of Measure [UoM] discriminator set .....	846
Table C.3.8.1—Unit of Measure (singular) [UoM1] discriminator set .....	846
Table C.3.9.1—No Discriminator [1] discriminator set .....	847
Table C.3.10.1—Event Discriminator [EVT] discriminator set .....	847
Table C.3.11.1—Statistical profile [PN3] discriminator set .....	847
Table C.3.12.1—Location Discriminator [LOC] discriminator set .....	848

**ISO/IEEE 11073-10101:2020(E)**

Table C.3.13.1—Version of External Nomenclature Discriminator [64] .....	849
Table C.3.14.1—ECG lead discriminators [LEAD1] from ISO/IEEE 11073-10101:2004 ( <i>multipage table</i> ) .....	849
Table C.3.15.1—ECG lead discriminators [LEAD2] from ISO/IEEE 11073-10102:2012 ( <i>multipage table</i> ) .....	852
Table C.3.16.1—Equivalent ECG lead discriminators [LEAD] in ISO/IEEE 11073-10101:2004 and ISO/IEEE 11073-10102:2012 ( <i>multipage table</i> ) .....	857
Table C.3.17.1—Comparison of ECG lead discriminators in ISO/IEEE 11073-10101:2004 and ISO/IEEE 11073-10102:2012 ( <i>multipage table</i> ) .....	859
Table C.4.1.1—Object-Oriented—Partition 1 ( <i>multipage table</i> ) .....	862
Table C.4.2.1—SCADA—Partition 2 ( <i>multipage table</i> ) .....	895
Table C.4.3.1—Events and Alerts—Partition 3 ( <i>multipage table</i> ) .....	950
Table C.4.4.1—Dimensions—Partition 4 ( <i>multipage table</i> ) .....	965
Table C.4.5.1—Parameter Groups—Partition 6 .....	981
Table C.4.6.1—Body Sites—Partition 7 ( <i>multipage table</i> ) .....	981
Table C.4.7.1—Communication Infrastructure—Partition 8 ( <i>multipage table</i> ) .....	1014
Table C.4.8.1—PHD Disease Management—Partition 128 ( <i>multipage table</i> ) .....	1019
Table C.4.9.1—PHD Health Fitness—Partition 129 ( <i>multipage table</i> ) .....	1025
Table C.4.10.1—PHD Aging Independently—Partition 130 ( <i>multipage table</i> ) .....	1028
Table C.4.11.1—Return Codes—Partition 255 .....	1036
Table C.4.12.1—External Nomenclature—Partition 256 ( <i>multipage table</i> ) .....	1036
Table C.4.13.1—Device Settings—Partition 258 ( <i>multipage table</i> ) .....	1037
Table C.4.14.1—Predicted Values—Partition 514 ( <i>multipage table</i> ) .....	1040
Table D.1.1.1—Term code synonyms .....	1042
Table D.1.1.2—Term code synonyms .....	1042
Table D.1.2.1—RefId synonyms .....	1043
Table E.1—Inspiratory breath and inflation types and rates .....	1045
Table G.1—Gas measurement sites and anesthesia breathing circuit components (normative) .....	1049
Table J.1—Revision history .....	1059

**Figures**

Figure 1—Context-sensitive coding illustration.....	28
Figure 2—IEEE numbered series standards ISO ASN.1 OID assignments .....	30
Figure 3—IEEE 11073-10101-2004 ISO ASN.1 OID assignments.....	31
Figure 4—HL7 ISO ASN.1 OID assignments.....	31
Figure A.7.1.1—Basic form .....	126
Figure A.7.1.2—Multiform P Wave, 3 Extrema .....	126
Figure A.7.1.3—Multiform QRS .....	126
Figure A.7.1.4—ST-T morphologies.....	127
Figure A.7.1.5—Example for measurement of ventricular activation time at different QRS .....	128
Figure A.7.1.6—Ventricular activation time.....	129
Figure A.7.4.1—Gas concentration and partial pressure measurement locations .....	207
Figure A.7.4.2—Relationship between breaths and Inflations .....	208
Figure A.8.5.1—Schematic diagram of the EOG electrode positions .....	438
Figure E.1—Bi-Level pressure waveform with patient <P/> and <S/> breaths .....	1044
Figure G.1—Example of bellows-driven ventilator and circuit .....	1050
Figure G.2—Example of piston-driven ventilator and circuit .....	1051
Figure G.3—Mapleson circuits .....	1052
Figure H.1—Term approval and management process .....	1053

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

# Part 10101: Nomenclature

### 1. Scope

This standard defines a nomenclature for communication of information from point-of-care medical devices. Primary emphasis is placed on acute care medical devices and patient vital signs information. The nomenclature also supports concepts in an object-oriented information model that is for medical device communication.

### 2. Normative references

The following normative documents contain provisions that, through reference in this text, constitute provisions of ISO/IEEE 11073-10101. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on ISO/IEEE 11073-10101 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid international standards.

IEEE Std 1073™, IEEE Standard for Medical Device Communications—Overview and Framework.<sup>1,2</sup>

IEEE Std 11073-10102™-2012, Health informatics—Point-of-care medical device communication—Part 10102: Nomenclature—Annotated ECG.

IEEE Std 11073-10103™-2012, Health informatics—Point-of-care medical device communication—Part 10103: Nomenclature—Implantable device, cardiac.

ISO/IEC 8824 (all parts), Information technology — Abstract Syntax Notation One (ASN.1).<sup>3</sup>

ISO/IEC 8825 (all parts), Information technology —ASN.1 encoding rules.

---

<sup>1</sup> IEEE publications are available from The Institute of Electrical and Electronics Engineers, Inc. (<http://standards.ieee.org/>).

<sup>2</sup> The IEEE standards or products referred to in Clause 2 are trademarks owned by The Institute of Electrical and Electronics Engineers, Incorporated.

<sup>3</sup> ISO/IEC documents can be obtained from the International Organization for Standardization (<http://www.iso.ch/>), International Electrotechnical Commission (<http://www.iec.ch/>), and the American National Standards Institute (<http://www.ansi.org/>).

**ISO/IEEE 11073-10101:2020(E)**

IEEE Std 11073-10101-2019

Health informatics—Point-of-care medical device communication—Part 10101: Nomenclature

ISO/IEC 9596-1, Information technology — Open systems interconnection — Common Management Information Protocol — Part 1: Specification.

ISO/IEEE 11073-10201, Health informatics — Point-of-care medical device communication — Part 10201: Domain information model (referred to hereinafter as the “DIM”).

ISO/IEEE 11073-20101, Health informatics — Point-of-care medical device communication — Part 20101: Application profiles – Base standard.

ISO/IEEE 11073-20601, Health informatics — Personal health device communication — Part 20601: Application profile—Optimized Exchange Protocol

ISO/IEEE 11073-10404, Health informatics — Personal health device communication — Part 10404: Device specialization — Pulse Oximeter

ISO/IEEE 11073-10406, Health informatics — Personal health device communication — Part 10406: Device specialization — Basic electrocardiograph (ECG) (1- to 3-lead ECG)

ISO/IEEE 11073-10407, Health informatics — Personal health device communication — Part 10407: Device specialization — Blood Pressure

ISO/IEEE 11073-10408, Health informatics — Personal health device communication — Part 10408: Device specialization — Thermometer

ISO/IEEE 11073-10415, Health informatics — Personal health device communication — Part 10415: Device specialization — Weighing Scale

ISO/IEEE 11073-10417, Health informatics — Personal health device communication — Part 10417: Device specialization — Glucose Meter

ISO/IEEE 11073-10418, Health informatics — Personal health device communication — Part 10418: Device specialization — International Normalized Ratio (INR) monitor

ISO/IEEE 11073-10419, Health informatics — Personal health device communication — Part 10419: Device specialization — Insulin Pump

ISO/IEEE 11073-10420, Health informatics — Personal health device communication — Part 10420: Device specialization — Body composition analyzer

ISO/IEEE 11073-10421, Health informatics — Personal health device communication — Part 10421: Device specialization — Peak expiratory flow monitor (peak flow)

ISO/IEEE 11073-10422, Health informatics — Personal health device communication — Part 10422: Device specialization — Urine analyzer

ISO/IEEE 11073-10424, Health informatics — Personal health device communication — Part 10424: Device specialization — Sleep Apnoea Breathing Therapy Equipment (SABTE)

ISO/IEEE 11073-10425, Health informatics — Personal health device communication — Part 10425: Device specialization — Continuous Glucose Monitor (CGM)

ISO/IEEE 11073-10427, Health informatics — Personal health device communication — Part 10427: Device specialization — Power Status Monitor of Personal Health Devices

**ISO/IEEE 11073-10101:2020(E)**

IEEE Std 11073-10101-2019

Health informatics—Point-of-care medical device communication—Part 10101: Nomenclature

ISO/IEEE 11073-10441, Health informatics — Personal health device communication — Part 10441:  
Device specialization — Cardiovascular fitness and activity monitor

ISO/IEEE 11073-10442, Health informatics — Personal health device communication — Part 10442:  
Device specialization — Strength fitness equipment

ISO/IEEE 11073-10471, Health informatics — Personal health device communication — Part 10471:  
Device specialization — Independent living activity hub

ISO/IEEE 11073-10472, Health informatics — Personal health device communication — Part 10472:  
Device specialization — Medication monitor

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**