



**BSI Standards Publication**

## **Health informatics — Device interoperability**

---

Part 10415: Personal health device communication  
— Device specialization — Weighing scale

This is a preview of "BS EN ISO/IEEE 11073...". [Click here to purchase the full version from the ANSI store.](#)

## National foreword

This British Standard is the UK implementation of EN ISO/IEEE 11073-10415:2022. It is identical to ISO/IEEE 11073-10415:2022. It supersedes BS EN ISO 11073-10415:2011, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee IST/35, Health informatics.

A list of organizations represented on this committee can be obtained on request to its committee manager.

### Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2023  
Published by BSI Standards Limited 2023

ISBN 978 0 539 22276 0

ICS 35.240.80

### Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 January 2023.

### Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

---

This is a preview of "BS EN ISO/IEEE 11073...". [Click here to purchase the full version from the ANSI store.](#)

## EUROPÄISCHE NORM

December 2022

ICS 35.240.80

Supersedes EN ISO 11073-10415:2011

English Version

### Health informatics - Device interoperability - Part 10415: Personal health device communication - Device specialization - Weighing scale (ISO/IEEE 11073- 10415:2022)

Informatique de santé - Interopérabilité des dispositifs  
- Partie 10415: Communication entre dispositifs de  
santé personnels - Spécialisation des dispositifs -  
Plateau de balance (ISO/IEEE 11073-10415:2022)

Medizinische Informatik - Kommunikation von Geräten  
für die persönliche Gesundheit - Teil 10415:  
Gerätespezifikation - Waage (ISO/IEEE 11073-  
10415:2022)

This European Standard was approved by CEN on 4 December 2022.

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, Türkiye 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**

This is a preview of "BS EN ISO/IEEE 11073...". [Click here to purchase the full version from the ANSI store.](#)

## European foreword

This document (EN ISO/IEEE 11073-10415:2022) 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 June 2023, and conflicting national standards shall be withdrawn at the latest by June 2023.

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 11073-10415:2011.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, Türkiye and the United Kingdom.

## Endorsement notice

The text of ISO/IEEE 11073-10415:2022 has been approved by CEN as EN ISO/IEEE 11073-10415:2022 without any modification.

This is a preview of "BS EN ISO/IEEE 11073...". [Click here to purchase the full version from the ANSI store.](#)

## 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 11073-10415 was prepared by the *IEEE 11073 Standards Committee of the IEEE Engineering in Medicine and Biology Society* (as IEEE Std 11073-10415-2019) 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 11073-10415:2010), which has been technically revised.

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).

This is a preview of "BS EN ISO/IEEE 11073...". [Click here to purchase the full version from the ANSI store.](#)

This is a preview of "BS EN ISO/IEEE 11073...". [Click here to purchase the full version from the ANSI store.](#)

(Revision of IEEE Std 11073-10415-2008)

**Health informatics—Personal health device communication**

**Part 10415: Device specialization—  
Weighing scale**

Developed by the

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

Approved 7 November 2019

**IEEE SA Standards Board**

This is a preview of "BS EN ISO/IEEE 11073...". [Click here to purchase the full version from the ANSI store.](#)

**Abstract:** Within the context of the ISO/IEEE 11073 family of standards for device communication, this standard establishes a normative definition of communication between personal telehealth weighing scale devices and compute engines (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, information models, application profile standards, and transport standards. It specifies the use of specific term codes, formats, and behaviors in telehealth environments restricting optionality in base frameworks in favor of interoperability. This standard defines a common core of communication functionality for personal telehealth weighing scales.

**Keywords:** IEEE 11073-10415™, medical device communication, personal health devices, weighing scale

---

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 23 December 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.

PDF: ISBN 978-1-5044-6363-8     STD24007  
Print: ISBN 978-1-5044-6364-5     STDPD24007

*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.*



This is a preview of "BS EN ISO/IEEE 11073...". [Click here to purchase the full version from the ANSI store.](#)

## 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.

## 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 US 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.

This is a preview of "BS EN ISO/IEEE 11073...". Click here to purchase the full version from the ANSI store.

## 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. An official 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 10 years. When a document is more than 10 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 IEEE Xplore at <https://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 IEEE standards can be accessed via <https://standards.ieee.org/standard/index.html>. Search for standard number and year of approval to access the web page of the published standard. Errata links are located under the Additional Resources Details section. Errata are also available in IEEE Xplore: <https://ieeexplore.ieee.org/browse/standards/collection/ieee/>. Users are encouraged to periodically check for errata.

## 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 <https://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 Patents 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.

This is a preview of "BS EN ISO/IEEE 11073...". [Click here to purchase the full version from the ANSI store.](#)

## Participants

At the time this standard was completed, the Personal Health Devices Working Group had the following membership:

**Daidi Zhong**, *Co-chair*  
**Michael J. Kirwan**, *Co-chair*

Karsten Aalders	James Cheng	Rick Geimer
Charles R. Abbruscato	Peggy Chien	Igor Gejdos
Nabil Abujbara	David Chiu	Ferenc Gerbovics
Maher Abuzaid	Jinyong Choi	Alan Godfrey
James Agnew	Chia-Chin Chong	Nicolae Goga
Haidar Ahmad	Saeed A. Choudhary	Julian Goldman
Manfred Aigner	Jinhan Chung	Raul Gonzalez Gomez
Jorge Alberola	Malcolm Clarke	Chris Gough
Murtaza Ali	John A. Cogan	Channa Gowda
Rolf Ambuehl	John T. Collins	Charles M. Gropper
David Aparisi	Cory Condek	Amit Gupta
Paolo Ariano	Todd H. Cooper	Jeff Guttmacher
Lawrence Arne	David Cornejo	Rasmus Haahr
Diego B. Arquillo	Douglas Coup	Christian Habermann
Serafin Arroyo	Nigel Cox	Michael Hagerty
Muhammad Asim	Hans Crommenacker	Jerry Hahn
Merat Bagha	Tomio Crosley	Robert Hall
Doug Baird	Allen Curtis	Shu Han
David Baker	Ndifor Cyril Fru	Nathaniel Hamming
Anindya Bakshi	Jesús Daniel Trigo	Rickey L. Hampton
Ananth Balasubramanian	Eyal Dassau	Sten Hanke
Sunlee Bang	David Davenport	Aki Harma
M. Jonathan Barkley	Russell Davis	Jordan Hartmann
Gilberto Barrón	Sushil K. Deka	Kai Hassing
David Bean	Ciro de la Vega	Wolfgang Heck
John Bell	Pedro de-las-Heras-Quiros	Nathaniel Heintzman
Rudy Belliardi	Jim Dello Stritto	Charles Henderson
Kathryn M. Bennett	Matthew d'Entremont	Jun-Ho Her
Daniel Bernstein	Kent Dicks	Helen B. Hernandez
George A. Bertos	Hyoungdo Do	Takashi Hibino
Chris Biernacki	Alistair Donaldson	Timothy L. Hirou
Ola Björnsne	Xiaolian Duan	Allen Hobbs
Thomas Blackadar	Brian Dubreuil	Alex Holland
Marc Blanchet	Sourav Dutta	Arto Holopainen
Thomas Bluethner	Jakob Ehrensvarð	Kris Holtzclaw
Douglas P. Bogia	Fredrik Einberg	Xinyi Hong
Xavier Boniface	Michihiro Enokida	Robert Hoy
Shannon Boucousis	Javier Escayola Calvo	Frank Hsu
Julius Broma	Mark Estes	Anne Huang
Lyle G. Bullock, Jr.	Leonardo Estevez	Sen-Der Huang
Bernard Burg	Roger Feeley	Ron Huby
Chris Burns	Hailing Feng	David Hughes
Anthony Butt	Bosco T. Fernandes	Robert D. Hughes
Jeremy Byford-Rew	Christoph Fischer	Jiyoung Huh
Satya Calloji	Morten Flintrup	Hugh Hunter
Xiaoying Cao	Joseph W. Forler	Hitoshi Ikeda
Carole C. Carey	Russell Foster	Yutaka Ikeda
Craig Carlson	Eric Freudenthal	Philip O. Isaacson
Santiago Carot-Nemesio	Matthias Frohner	Atsushi Ito
Randy W. Carroll	Ken Fuchs	Michael Jaffe
Simon Carter	Jing Gao	Praduman Jain
Seungchul Chae	Qi Gao	Danny Jochelson
Rahul Chauhan	Marcus Garbe	Phaneeth Junga
Wenjuan Chen	John Garguilo	Akiyoshi Kabe

This is a preview of "BS EN ISO/IEEE 11073...". [Click here to purchase the full version from the ANSI store.](#)

Steve Kahle	Peter Mayhew	Fatemeh Saki
Tomio Kamioka	Jim McCain	Bill Saltzstein
James J. Kang	László Meleg	Benedikt Salzbrunn
Kei Kariya	Alexander Mense	Giovanna Sannino
Andy Kaschl	Behnaz Minaei	Jose A. Santos-Cadenas
Junzo Kashihara	Jinsei Miyazaki	Stefan Sauer mann
Kohichi Kashiwagi	Erik Moll	John Sawyer
Ralph Kent	Darr Moore	Guillaume Schatz
Laurie M. Kermes	Carsten Mueglitz	Alois Schloegl
Ikuo Keshi	Piotr Murawski	Paul S. Schluter
Ahmad Kheirandish	Soundharya Nagasubramanian	Lars Schmitt
Junhyung Kim	Jae-Wook Nah	Mark G. Schnell
Minho Kim	Alex Neefus	Richard A. Schrenker
Min-Joon Kim	Trong-Nghia Nguyen-Dobinsky	Antonio Scorpiniti
Taekon Kim	Michael E. Nidd	KwangSeok Seo
Tetsuya Kimura	Tetsu Nishimura	Riccardo Serafin
Alfred Kloos	Jim Niswander	Sid Shaw
Jeongmee Koh	Hongliang Niu	Frank Shen
Jean-Marc Koller	Hiroaki Niwamoto	Min Shih
Fei Kong	Thomas Norgall	Mazen Shihabi
John Koon	Anand Noubade	Redmond Shouidice
Patty Krantz	Yoshiteru Nozoe	Sternly K. Simon
Raymond Krasinski	Abraham Ofek	Marjorie Skubic
Alexander Kraus	Brett Olive	Robert Smith
Ramesh Krishna	BegonyaOtal	Ivan Soh
Geoffrey Kruse	Marco Paleari	Motoki Sone
Falko Kuester	Charles Palmer	Emily Sopensky
Rafael Lajara	Bud Panjwani	Rajagopalan Srinivasan
Shing C. B. Lam	Carl Pantiskas	Andreas Staubert
Pierre Landau	Harry P. Pappas	Nicholas Steblay
Jacchul Lee	Hanna Park	Lars Steubesand
JongMuk Lee	Jong-Tae Park	John (Ivo) Stivoric
Kyong Ho Lee	Myungeun Park	Raymond A. Strickland
Rami Lee	Soojun Park	Chandrasekaran Subramaniam
Sungkee Lee	Phillip E. Pash	Hermann Suominen
Woojae Lee	TongBi Pei	Lee Surprenant
Yonghee Lee	Lucian Pestritu	Ravi Swami
Joe Lenart	Soren Petersen	Ray Sweidan
Kathryn A. Lesh	James Petisce	Jin Tan
Catherine Li	Peter Piction	Yi Tang
Jingli Li	Michael Pliskin	Haruyuyki Tatsumi
Qiong Li	Varshney Prabodh	Isabel Tejero
Xiangchen Li	Jeff Price	John W. Thomas
Zhuofang Li	Harald Prinzhorn	Jonas Tirén
Patrick Lichter	Harry Qiu	Alexandra Todiruta
Jisoon Lim	Arif Rahman	Janet Traub
Joon-Ho Lim	Tanzilur Rahman	Gary Tschautscher
John Lin	Steve Ray	Masato Tsuchid
Hongliang Niu	Phillip Raymond	Ken Tubman
Xiaoming Liu	Terrie Reed	Yoshihiro Uchida
Wei-Jung Lo	Tim Reilly	Akib Uddin
Charles Lowe	Barry Reinhold	Sunil Unadkat
Don Ludolph	Brian Reinhold	Fabio Urbani
Christian Luszick	Melvin I. Reynolds	Philipp Urbauer
Songdong Lv	John G. Rhoads	Laura Vanzago
Bob MacWilliams	Jeffrey S. Robbins	Alpo Värri
Srikanth Madhurbootheswaran	Chris Roberts	Andrei Vasileteanu
Miriam L. Makhoul	Moskowitz Robert	Dalimar Velez
Romain Marmot	Scott M. Robertson	Martha Velez
Sandra Martinez	Timothy Robertson	Rudi Voon
Miguel Martínez de	David Rosales	Barry Vornbrock
EspronedcaCámara	Gary Sagiv	Isobel Walker

This is a preview of "BS EN ISO/IEEE 11073...". [Click here to purchase the full version from the ANSI store.](#)

David Wang  
Jerry P. Wang  
Yao Wang  
Yi Wang  
Steve Warren  
Fujio Watanabe  
Toru Watsuji  
Mike Weng  
Yuefeng Weng

Kathleen Wible  
Paul Williamson  
Jan Wittenber  
Jia-Rong Wu  
Will Wykeham  
Ariton Xhafa  
Qifeng Yan  
Ricky Yang  
Shaoqin Ye  
Melanie S. Yeung

Qiang Yin  
Done-Sik Yoo  
Jianchao Zeng  
Jason Zhang  
Zhiqiang Zhang  
Thomas Zhao  
Jia Zheng  
Miha Zoubek  
Szymon Zyskoter

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

Bjoern Andersen  
Lyle G. Bullock, Jr.  
Keith Chow  
Malcolm Clarke  
David Fuschl  
Randall Groves  
Werner Hoelzl

Noriyuki Ikeuchi  
Atsushi Ito  
Raj Jain  
Piotr Karocki  
Raymond Krasinski  
H. Moll

Beth Pumo  
Stefan Schlichting  
Janek Schumann  
Walter Struppler  
Oren Yuen  
Janusz Zalewski  
Daidi Zhong

When the IEEE SA Standards Board approved this standard on 7 November 2019, it had the following membership:

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

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

David J. Law  
Joseph Levy  
Howard Li  
Xiaohui Liu  
Kevin Lu  
Daleep Mohla  
Andrew Myles

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

\*Member Emeritus

This is a preview of "BS EN ISO/IEEE 11073...". [Click here to purchase the full version from the ANSI store.](#)

## Introduction

This introduction is not part of IEEE Std 11073-10415-2019, Health informatics—Personal health device communication—Part 10415: Device specialization—Weighing scale.

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<sup>a</sup> and describes a specific, interoperable communication approach for weighing scales. These standards align with, and draw on the existing clinically focused standards to provide support for communication of data from clinical or personal health devices.

---

<sup>a</sup> Information on normative references can be found in Clause 2.

This is a preview of "BS EN ISO/IEEE 11073...". [Click here to purchase the full version from the ANSI store.](#)

## Contents

1. Overview .....	12
1.1 Scope .....	12
1.2 Purpose .....	12
1.3 Context .....	12
1.4 Word usage .....	13
2. Normative references.....	13
3. Definitions, acronyms, and abbreviations .....	14
3.1 Definitions .....	14
3.2 Acronyms and abbreviations .....	14
4. Introduction to ISO/IEEE 11073 personal health devices .....	15
4.1 General .....	15
4.2 Introduction to IEEE 11073-20601 modeling constructs .....	15
4.3 Compliance with other standards.....	16
5. Weighing scale device concepts and modalities.....	16
5.1 General .....	16
5.2 Body weight.....	16
5.3 Body height .....	17
5.4 Body mass index.....	17
6. Weighing scale domain information model.....	17
6.1 Overview .....	17
6.2 Class extensions.....	17
6.3 Object instance diagram .....	17
6.4 Types of configuration.....	19
6.5 Medical device system object.....	20
6.6 Numeric objects.....	23
6.7 Real-time sample array objects.....	28
6.8 Enumeration objects .....	28
6.9 PM-store objects.....	28
6.10 Scanner objects.....	28
6.11 Class extension objects.....	28
6.12 Weighing scale information model extensibility rules .....	28
7. Weighing scale service model .....	29
7.1 General .....	29
7.2 Object access services.....	29
7.3 Object access event report services .....	31
8. Weighing scale communication model.....	31
8.1 Overview .....	31
8.2 Communications characteristics .....	31



This is a preview of "BS EN ISO/IEEE 11073...". [Click here to purchase the full version from the ANSI store.](#)

8.3 Association procedure .....	32
8.4 Configuring procedure.....	34
8.5 Operating procedure .....	35
8.6 Time synchronization .....	36
9. Test associations.....	36
9.1 General .....	36
9.2 Behavior with standard configuration.....	36
9.3 Behavior with extended configurations .....	36
10. Conformance .....	37
10.1 Applicability .....	37
10.2 Conformance specification .....	37
10.3 Levels of conformance .....	37
10.4 Implementation conformance statements .....	38
Annex A (informative) Bibliography .....	43
Annex B (normative) Any additional ASN.1 definitions .....	44
Annex C (normative) Allocation of identifiers.....	45
Annex D (informative) Message sequence examples.....	46
Annex E (informative) Protocol data unit examples .....	48
Annex F (informative) Revision history.....	58

## Health informatics—Personal health device communication

# Part 10415: Device specialization— Weighing scale

### 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 communication between personal telehealth weighing scale devices and compute engines (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, information models, application profile standards, and transport standards. It specifies the use of specific term codes, formats, and behaviors in telehealth environments restricting optionality in base frameworks in favor of interoperability. This standard defines a common core of communication functionality for personal telehealth weighing scales.

#### 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 compute engines (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 11073-20601™ for an overview of the environment within which this standard is written.<sup>1</sup>

This document, IEEE Std 11073-10415, defines the device specialization for the weighing scale, 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 [B7] and ISO/IEEE 11073-20101:2004 [B8].<sup>2</sup> The medical device encoding rules (MDER) used within this standard are fully described in IEEE Std 11073-20601.

---

<sup>1</sup> Information on normative references can be found in Clause 2.

<sup>2</sup> The numbers in brackets correspond to the numbers of the bibliography in Annex A.