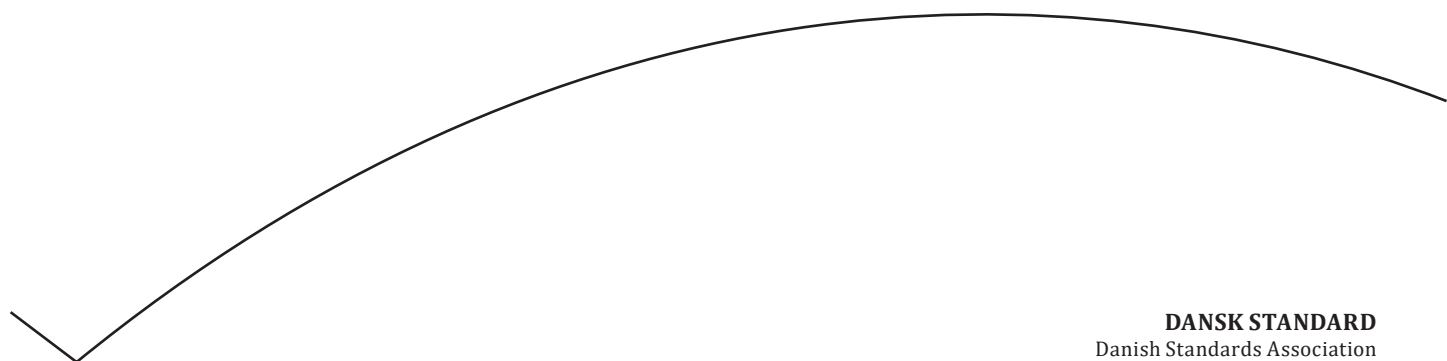


Sundhedsinformatik – Interoperabilitet mellem enheder – Del 10420: Kommunikation med personligt sundhedsudstyr – Udstyrsspecifikation – Kroppsanalysevægt

Health informatics – Device interoperability –
Part 10420: Personal health device communication –
Device specialization – Body composition analyzer



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Second edition
2022-12

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Part 10420: Personal health device communication — Device specialization — Body composition analyzer

Informatique de santé — Interopérabilité des dispositifs —

*Partie 10420: Communication entre dispositifs de santé personnels —
Spécialisation de dispositif — Analyseur de composition corporelle*



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(Revision of IEEE Std 11073-10420-2010)

Health informatics—Device interoperability

Part 10420: Personal health device communication—Device specialization— Body composition analyzer

Developed by the

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

Approved 4 June 2020

IEEE SA Standards Board

Abstract: Within the context of the ISO/IEEE 11073 family of standards for device communication, a normative definition of the communication between personal body composition analyzer agents and managers (e.g., cell phones, personal computers, personal health appliances, set-top boxes) is established by this standard 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 to restrict optionality in base frameworks in favor of interoperability. This standard defines a common core of communication functionality for personal telehealth body composition analyzers. In this context, the phrase “body composition analyzer” is used broadly to cover analyzing devices that measure body impedances and compute the various body components including body fat from the impedance.

Keywords: body composition analyzer, IEEE 11073-10420™, medical device communication, personal health devices

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Introduction

This introduction is not part of IEEE Std 11073-10420-2020, Health informatics—Device interoperability—Part 10420: Personal health device communication—Device specialization—Body composition analyzer.

ISO/IEEE 11073 standards enable communication between medical devices and external computer systems. Within the context of the ISO/IEEE 11073 family of standards for device communication, this standard establishes a normative definition of the communication between body composition analyzer agents and managers (e.g., cell phones, personal computers, personal health appliances, 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 to restrict optionality in base frameworks in favor of interoperability. This standard defines a common core of communication functionality for personal telehealth body composition analyzers. In this context, the phrase “body composition analyzer” is used broadly to cover analyzing devices that measure body impedances and compute the various body components including body fat from the impedance.

The major changes in this revision include the following:

- The addition of basal metabolism numeric object, body muscle numeric object, and bioimpedance analysis method enumeration object
- The use of base offset time
- An upgrade of the baseline protocol

Contents

1. Overview	13
1.1 Scope	13
1.2 Purpose	13
1.3 Context	13
1.4 Word usage	14
2. Normative references.....	14
3. Definitions, acronyms, and abbreviations	15
3.1 Definitions	15
3.2 Acronyms and abbreviations	16
4. Introduction to ISO/IEEE 11073 personal health devices	16
4.1 General	16
4.2 Introduction to IEEE 11073-20601 modeling constructs	17
4.2.1 General.....	17
4.2.2 Domain information model (DIM).....	17
4.2.3 Service model.....	17
4.2.4 Communication model.....	17
4.2.5 Implementing the models.....	17
4.3 Compliance with other standards.....	17
5. Body composition analyzer concepts and modalities	18
5.1 General	18
5.2 Body fat	18
5.3 Body height	18
5.4 Body weight.....	18
5.5 Body mass index.....	19
5.6 Fat free mass	19
5.7 Soft lean mass	19
5.8 Body water.....	19
5.9 Basal metabolic rate.....	19
5.10 Bioimpedance analysis method	19
5.11 Body muscle	19
6. Body composition analyzer DIM	20
6.1 Overview	20
6.2 Class extensions.....	20
6.3 Object instance diagram	20
6.4 Types of configuration.....	21
6.4.1 General.....	21
6.4.2 Standard configuration	21
6.4.3 Extended configuration	22
6.5 Medical device system (MDS) object.....	22
6.5.1 MDS object attributes	22
6.5.2 MDS object methods.....	23
6.5.3 MDS object events	25
6.5.4 Other MDS services	26
6.6 Numeric objects.....	26
6.6.1 General.....	26
6.6.2 Body fat.....	26
6.6.3 Body height.....	27

This is a preview of "DS/ISO/IEEE 11073-10...". Click here to purchase the full version from the ANSI store.

6.6.4 Body weight	27
6.6.5 Body mass index	37
6.6.6 Fat free mass	38
6.6.7 Soft lean mass	39
6.6.8 Body water	40
6.6.9 Basal metabolic rate	41
6.6.10 Body muscle	42
6.7 Real-time sample array objects	43
6.8 Enumeration objects	43
6.8.1 General	43
6.8.2 Bioimpedance analysis method	43
6.9 PM-store objects	44
6.10 Scanner objects	44
6.11 Class extension objects	44
6.12 Body composition analyzer DIM extensibility rules	44
7. Body composition analyzer service model	44
7.1 General	44
7.2 Object access services	44
7.3 Object access event report services	45
8. Body composition analyzer communication model	47
8.1 Overview	47
8.2 Communications characteristics	47
8.3 Association procedure	47
8.3.1 General	47
8.3.2 Agent procedure—association request	48
8.3.3 Manager procedure—association response	48
8.4 Configuring procedure	49
8.4.1 General	49
8.4.2 Body composition analyzer—standard configuration	49
8.5 Operating procedure	51
8.5.1 General	51
8.5.2 GET body composition analyzer MDS attributes	51
8.5.3 Measurement data transmission	52
8.6 Time synchronization	52
9. Test associations	52
9.1 General	52
9.2 Behavior with standard configuration	52
9.3 Behavior with extended configurations	53
10. Conformance	53
10.1 Applicability	53
10.2 Conformance specification	53
10.3 Levels of conformance	53
10.3.1 General	53
10.3.2 Conformance level 1: Base conformance	53
10.3.3 Conformance level 2: Extended nomenclature (ASN.1 and/or IEEE 11073-10101)	54
10.4 Implementation conformance statements (ICSs)	54
10.4.1 General format	54
10.4.2 General ICS	54
10.4.3 DIM MOC ICS	56
10.4.4 MOC attribute ICS	56
10.4.5 MOC notification ICS	57
10.4.6 MOC nomenclature ICS	58

This is a preview of "DS/ISO/IEEE 11073-10...". Click here to purchase the full version from the ANSI store.

Annex A (informative) Bibliography59

Annex B (normative) Any additional ASN.1 definitions60

Annex C (normative) Allocation of identifiers.....61

Annex D (informative) Message sequence examples62

Annex E (informative) Protocol data unit examples64

Annex F (informative) Revision history.....76

Health informatics—Device interoperability

Part 10420: Personal health device communication—Device specialization—Body composition analyzer

1. Overview

1.1 Scope

Within the context of the ISO/IEEE 11073 family of standards for device communication, this standard establishes a normative definition of the communication between personal body composition analyzer agents and managers (e.g., cell phones, personal computers, personal health appliances, 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 to restrict optionality in base frameworks in favor of interoperability. This standard defines a common core of communication functionality for personal telehealth body composition analyzers. In this context, the phrase “body composition analyzer” is used broadly to cover analyzing devices that measure body impedances and compute the various body components including body fat from the impedance.

1.2 Purpose

This standard addresses a need for an openly defined, independent standard for controlling information exchange to and from personal health devices and managers (e.g., cell phones, personal computers, personal health appliances, set-top boxes). Interoperability is key to growing the potential market for these devices and 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.¹

This standard defines the device specialization for the body composition analyzer, being a specific agent type, and it provides a description of the device concepts, its capabilities, and its implementation according to this standard.

¹ Information on normative references can be found in Clause 2.

This standard is based on IEEE Std 11073-20601, which in turn draws information from both ISO/IEEE 11073-10201 [B6] and ISO/IEEE 11073-20101 [B7].² The medical device encoding rules (MDER) used within this standard are fully described in IEEE Std 11073-20601.

The object classes and attributes in this standard are referenced using nomenclature codes. Each code is identified by a reference identifier (RefID). By using a consistent nomenclature, interoperability is enhanced as all implementations maintain the same semantic meaning for the numeric codes. This standard leverages the existing nomenclature codes in IEEE Std 11073-10101™. Meanwhile, it defines specialized nomenclature codes that will be collected in future revisions of IEEE Std 11073-10101. Between this standard, IEEE Std 11073-10101, IEEE Std 11073-20601, and other IEEE Std 11073-104zz, all required nomenclature codes for implementation are documented. New codes may be defined in newer versions/revisions of each of these documents. In the case of a conflict, where one term code has been assigned to two separate semantic concepts with different RefIDs, in general the oldest definition that is in actual use should take precedence. The same policy applies when one RefID has two different code values assigned in different specifications. The resolution of such conflicts will be determined through joint action by the responsible working groups and other stakeholders, and any corrective action will be published as corrigenda.

NOTE—In this standard, IEEE Std 11073-104zz is used to refer to the collection of device specialization standards that utilize IEEE Std 11073-20601, where zz can be any number from 01 to 99, inclusive.³

1.4 Word usage

The word *shall* indicates mandatory requirements strictly to be followed in order to conform to the standard and from which no deviation is permitted (shall equals is required to).^{4,5}

The word *should* indicates that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required (should equals is recommended that).

The word *may* is used to indicate a course of action permissible within the limits of the standard (may equals is permitted to).

The word *can* is used for statements of possibility and capability, whether material, physical, or causal (can equals is able to).

2. Normative references

The following referenced documents are indispensable for the application of this document (i.e., they must be understood and used; therefore, each referenced document is cited in text, and its relationship to this document is explained). For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments or corrigenda) applies.

IEEE Std 11073-10101™, Health informatics—Point-of-care medical device communication—Part 10101: Nomenclature.

IEEE Std 11073-10415™, Health informatics—Personal health device communication—Part 10415: Device specialization—Weighing scale.⁶

² The numbers in brackets correspond to the numbers of the bibliography in Annex A.

³ Notes in text, tables, and figures are given for information only and do not contain requirements needed to implement the standard.

⁴ The use of the word *must* is deprecated and cannot be used when stating mandatory requirements; *must* is used only to describe unavoidable situations.

⁵ The use of *will* is deprecated and cannot be used when stating mandatory requirements; *will* is used only in statements of fact.

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Part 10420: Personal health device communication—Device specialization—Body composition analyzer

IEEE Std 11073-20601™, Health informatics—Personal health device communication—Part 20601:
Application Profile—Optimized Exchange Profile.^{7,8}

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

⁶ For overlapping objects, this standard follows the definitions from IEEE Std 11073-10415, with potential minor variation. Full details of such objects are reproduced in this standard for the convenience of implementers.

⁷ IEEE publications are available from The Institute of Electrical and Electronics Engineers, Inc. (<https://standards.ieee.org/>).

⁸ The IEEE standards or products referred to in this clause are trademarks of The Institute of Electrical and Electronics Engineers, Inc.