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INTERNET OF THINGS (IoT) – VOCABULARY

FOREWORD

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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition ISO/IEC 20924:2018. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

International Standard ISO/IEC 20924 has been prepared by subcommittee 41: Internet of Things and related technologies, of ISO/IEC joint technical committee 1: Information technology.

This second edition cancels and replaces the first edition published in 2018. This edition constitutes a technical revision.

This edition includes the following technical changes with respect to the previous edition:

- a) addition of new terms (safety, wearable device, data acquisition functional system, transport interoperability, etc) which are used in other ISO/IEC IoT related standards;
- b) update of some definitions (data, data store, discovery service, etc.) to align with current usage in other IoT standards.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
JTC1-SC41/195/FDIS	JTC1-SC41/209/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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INTERNET OF THINGS (IoT) – VOCABULARY

1 Scope

This document provides a definition of Internet of Things along with a set of terms and definitions. This document is a terminology foundation for the Internet of Things.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1 General terms

3.1.1

address

<endpoint> value that can be used to identify an *endpoint*, which can designate the originating source or destination of data being transmitted

3.1.2

application

software designed to fulfil a particular purpose

[SOURCE: ISO/IEC 24713-2:2008, 4.1, modified – "program or piece of" has been removed from the beginning of the definition.]

3.1.3

architecture

<system> set of fundamental concepts or properties of a system in its environment embodied in its elements, relationships, and in the principles of its design and evolution

[SOURCE: ISO/IEC/IEEE 42010:2011, 3.2, modified – "set of" has been added to the beginning of the definition.]

3.1.4

asset

~~physical entity or digital entity that has value to an individual, an organization or a government~~

~~[SOURCE: ISO/IEC 27032:2012, 4.6, modified – "anything" has been replaced by "physical entity or digital entity" at the beginning of the definition.]~~

entity that has value and is either owned by or under the custody of an individual, an organization, a government, or other groups

**3.1.5
availability**

property of being accessible and usable upon demand by an authorized *entity*

Note 1 to entry: *IoT systems* can include both *human users* and service components as "authorized entities".

[SOURCE: ISO/IEC 27000:2018, 3.7]

**3.1.6
characteristic**

abstraction of a property of an *entity* or of a set of entities

[SOURCE: ISO 18104:2014, 3.1.4]

**3.1.7
cloud computing**

paradigm for enabling *network* access to a scalable and elastic pool of shareable physical or virtual resources with self-service provisioning and administration on-demand

[SOURCE: ISO/IEC 17788:2014, 3.2.5]

**3.1.8
cloud service**

one or more capabilities offered via *cloud computing* invoked using a defined *interface*

[SOURCE: ISO/IEC 17788:2014, 3.2.8]

**3.1.9
cloud service provider**

party which makes *cloud services* available

[SOURCE: ISO/IEC 17788:2014, 3.2.15]

**3.1.10
compliance**

~~characteristic of~~ conformance to rules, such as those defined by a law, a regulation, a standard, or a policy

**3.1.11
component**

modular, deployable, and replaceable part of a system ~~that encapsulates implementation and exposes a set of interfaces~~

[SOURCE: ISO 14813-5:2010, B.1.31, modified – "that encapsulates implementation and exposes a set of interfaces" has been deleted from the end of the definition.]

**3.1.12
confidentiality**

property that information is not made available or disclosed to unauthorized individuals, entities, or processes

[SOURCE: ISO/IEC 27000:2018, 3.10]

**3.1.13
data**

symbol or symbols represented in a digital and formalized manner suitable for communication, storage, interpretation or processing

**3.1.14
data store**

persistent repository for digital ~~information~~ data

Note 1 to entry: A *data store* can be accessed by a single entity or shared by multiple entities via a *network* or other connection.

**3.1.15
digital entity**

computational *element* and/or data element

Note 1 to entry: A digital entity can exist ~~as~~ in several forms, including a *cloud service* or as a *service* in a data centre, or as a *network* element or as an IoT gateway.

**3.1.16
discovery service**

service to find ~~unknown~~ resources, entities or services based on a specification of the desired target

Note 1 to entry: A discovery service can be used by a *human user* or a digital user.

**3.1.17
endpoint**

component that exposes or uses one or more *network interfaces*

**3.1.18
entity**

thing (physical or non-physical) having a distinct existence

[SOURCE: ISO/IEC 15459-3:2014, 3.1]

**3.1.19
functional component**

functional building block needed to engage in an activity, backed by an implementation

Note 1 to entry: See also "*component*", which is a superset containing all functional components and other types of *component* that are deployable.

[SOURCE: ISO/IEC 17789:2014, 3.2.3, modified – Note 1 to entry has been added.]

**3.1.20
human user**

natural person who uses a system

**3.1.21
identifier**

information that unambiguously distinguishes one *entity* from other entities in a given *identity context*

**3.1.22
identity context**

environment where an *entity* can ~~use a set of attributes for identification~~ be sufficiently identified by a certain set of its attributes and values

**3.1.23
information**

data that within a certain context has a particular meaning

**3.1.24
interface**

shared boundary between two functional *components*, defined by various *characteristics* pertaining to the functions, physical interconnections, signal exchanges, and other *characteristics*; ~~as appropriate~~

[SOURCE: ISO/IEC 13066-1:2011, 2.15, modified – In the definition, "units" has been replaced by "*components*"; ", as appropriate" has been deleted from the end of the definition.]

**3.1.25
interoperability**

ability of two or more systems or *applications* to exchange information and to mutually use the information that has been exchanged

[SOURCE: ISO/IEC 17788:2014, 3.1.5]

**3.1.26
network**

infrastructure that connects a set of *endpoints*, enabling communication of *data* between the digital entities reachable through them

**3.1.27
physical entity**

~~entity that has material existence in the physical world~~

~~Note 1 to entry: In the Internet of Things reference architecture, the physical entity is the thing to be sensed and/or actuated by IoT devices or IoT systems.~~

entity in the physical world that can be the subject of sensing and/or actuating

**3.1.28
reference architecture**

~~architecture description that provides a proven template solution when developing or validating an architecture for a particular solution~~

architecture framework used as a template when developing or validating an architecture description for a particular solution

**3.1.29
safety**

state in which the risk of harm (to persons) or damage is limited to an acceptable level

[SOURCE: ISO 21101:2014, 3.34]

**3.1.30
service**

distinct ~~part of the~~ functionality that is provided by an *entity* through *interfaces*

[SOURCE: ISO/IEC TR 14252:1996, 2.2.2.46, modified – In the definition, "part of the functionality" has been replaced by "functionality" and "on one side of an interface to an entity on the other side of the interface" has been replaced by "through *interfaces*".]

**3.1.31
service provider**

~~organization or part of an organization that manages and delivers a service or services to the customer~~

[SOURCE: ISO/IEC TR 20000-10:2015, 2.32]