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Information technology — Internet of media things —

Part 2: Discovery and communication API

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Foreword

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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 document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

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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. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

This second edition cancels and replaces the first edition (ISO/IEC 23093-2:2019), which has been technically revised.

The main changes are as follows:

— modification of the introduction;

— addition of new APIs for discovery and communication;

— addition of a transaction model using state channels.

A list of all parts in the ISO/IEC 23093 series can be found on the ISO and IEC websites.

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 and www.iec.ch/national-committees.

Introduction

The ISO/IEC 23093 series provides an architecture and specifies APIs and compressed representation of data flowing between media things.

The APIs for the media things facilitate discovering other media things in the network, connecting and efficiently exchanging data between media things. The APIs also support transaction tokens to access valuable functionalities, resources, and data from media things.

Media things related information consists of characteristics and discovery data, setup information from a system designer, raw and processed sensed data, and actuation information. The ISO/IEC 23093 series specifies input and output data formats for media sensors, media actuators, media storages, media analysers, etc. Media analysers can process sensed data from media sensors to produce analysed data, and the media analysers can be cascaded in order to extract semantic information.

This document contains the APIs to discover media things in the network and communication between media things and the APIs to facilitate transactions between media things.

The International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) draw attention to the fact that it is claimed that compliance with this document may involve the use of a patent.

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Information technology — Internet of media things —

Part 2:
Discovery and communication API

1 Scope

This document specifies the abstract class of a media thing (MThing), which is a basic component to construct the Internet of media things. The MThing class contains the basic APIs to:

— discover other MThing(s) in the network;

— connect/disconnect MThing(s);

— support transactions (e.g. payments) using media tokens between MThings.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 23093-1, *Information technology — Internet of media things — Part 1: Architecture*

ISO/IEC 23093-3:2019, *Information technology — Internet of media things — Part 3: Media data formats and API*

ISO/IEC 21000-7:2007, *Information technology — Multimedia framework (MPEG-21) — Part 7: Digital Item Adaptation*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 23093-1 apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 APIs

4.1 General

This clause specifies APIs to discover MThings, and connect/disconnect communication between MThings. Besides, APIs and return class types are specified to provide MThing information and hardware descriptions.

An MThing can be discovered by its capabilities or supported media token types. The discovered MThing(s) can then relay its (their) information to the requester (i.e. another MThing).

Figure 1 shows the process to discover MThings in the network by a required capability. Each MThing, which supports the required capability, can send back its information. In the figure, an MThing