International Standard

ISO/IEC 23093-5

First edition
2025-03

Information technology — Internet of media things —

Part 5: IoMT autonomous collaboration

Technologies de l'information — Internet des objets media — Partie 5: Collaboration autonome dans l'IoMT

Reference number
ISO/IEC 23093-5:2025(en)

© ISO/IEC 2025



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2025

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 either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword ... **iv**

Introduction ... **v**

1 Scope ... **1**

2 Normative references ... **1**

3 Terms, definitions, and abbreviated terms ... **1**
3.1 Terms and definitions ... 1
3.2 Abbreviated terms ... 2

4 Schema documents ... **2**
4.1 General ... 2
4.2 Use of prefixes ... 2

5 An overview of the mission management and control-related issues ... **3**
5.1 Mission data usage process ... 3
5.1.1 General ... 3
5.1.2 Mission data usage scenario ... 4

6 APIs ... **14**
6.1 General ... 14
6.2 MController class ... 14
6.2.1 General ... 14
6.2.2 APIs ... 14

7 Data formats ... **16**
7.1 General ... 16
7.2 Holistic mission data formats ... 16
7.2.1 General ... 16
7.2.2 Syntax ... 16
7.2.3 Semantics ... 17
7.2.4 Example ... 18
7.3 MController output vocabulary ... 19
7.3.1 General ... 19
7.3.2 Schema wrapper ... 19
7.3.3 IoMT partial mission description ... 19

Annex A (normative) **Classification scheme** ... **22**

Annex B (Informative) **Example descriptions** ... **23**

© ISO/IEC 2025 – All rights reserved

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

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).

ISO and IEC draw attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO and IEC take no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO and IEC had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents and https://patents.iec.ch. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

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. 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*.

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..

© ISO/IEC 2025 – All rights reserved

Introduction

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

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

MThing-related information comprises characteristics and discovery data, mission descriptions from system designers and end-users, raw and processed sensed data and actuation information. The ISO/IEC 23093 series specifies input and output data formats for media sensors, actuators, storages, and analysers. In addition, media analysers can process sensed data from media sensors to produce analysed data, which can be cascaded to other media analysers to extract semantic information. Multiple MThings can be gathered and operated autonomously using mission descriptions given by system designers and end-users.

This document contains data formats and APIs to complete missions from system managers and end-users to operate multiple MThings autonomously. Refer to Figure 1 (items 1 and 1').

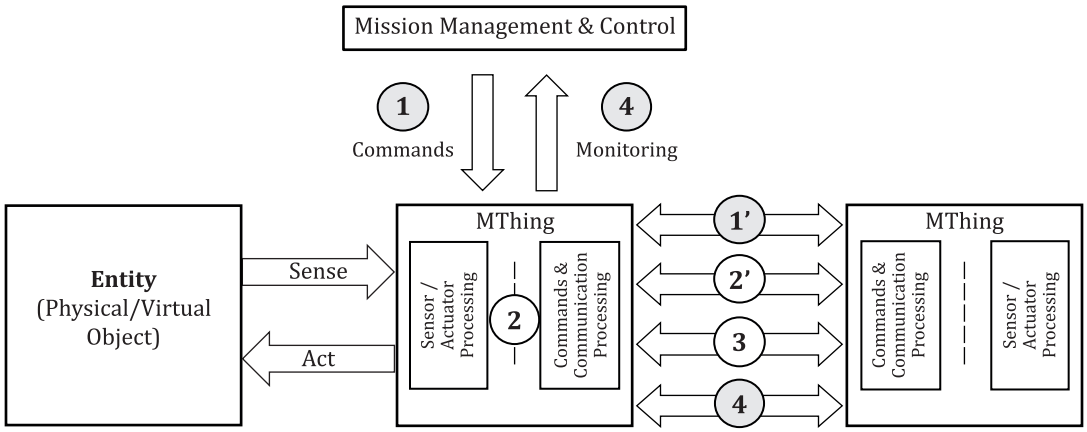


Figure 1 — Architectural view of the IoMT

© ISO/IEC 2025 – All rights reserved

Information technology — Internet of media things —

Part 5:
IoMT autonomous collaboration

1 Scope

This document specifies data formats and APIs for the mission management and control between MThings and end-users/system managers. Specifically, the following interfaces, protocols and associated media-related information representations are within the scope of this document:

— structured data formats (XML) representing the mission assigned by the user to the network of IoMT, for the data formats;

— structured data formats (XML) representing user commands to one or several MThings, possibly in a modified form (e.g. a subset of 1);

— APIs to exchange the data for mission management and control.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes the 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 23093-2, *Information technology — Internet of media things — Part 2: Discovery and communication API*

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

ISO/IEC 23093-6, *Information technology — Internet of media things — Part 6: Media data formats and APIs for distributed AI processing*

3 Terms, definitions, and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 23093-1, ISO/IEC 23093-2, ISO/IEC 23093-3, ISO/IEC 23093-6 and the following apply.

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

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

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

3.1.1
media analyser
MAnalyser
MThing (3.1.5) that can analyse media or metadata and produce interpreted media, metadata, or commands

© ISO/IEC 2025 – All rights reserved