

INTERNATIONAL STANDARD



**Internet of Things (IoT) – Underwater acoustic sensor network (UWASN) –
Network management system –
Part 2: Underwater management information base (u-MIB)**



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IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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INTERNET OF THINGS (IoT) – UNDERWATER ACOUSTIC SENSOR NETWORK (UWASN) – NETWORK MANAGEMENT SYSTEM –

Part 2: Underwater management information base (u-MIB)

FOREWORD

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ISO/IEC 30142-2 has been prepared by subcommittee 41: Internet of Things and Digital Twin, of ISO/IEC joint technical committee 1: Information technology. It is an International Standard.

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

Draft	Report on voting
JTC1-SC41/288/FDIS	JTC1-SC41/296/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1, available at www.iec.ch/members_experts/refdocs and www.iso.org/directives.

In order to highlight specifically the managed objects in this document, the managed objects are written in italics throughout this document.

A list of all parts in the ISO/IEC 30142 series, published under the general title *Internet of Things (IoT) – Underwater acoustic sensor network (UWASN) – Network management system*, can be found on the IEC website.

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INTRODUCTION

Water covers approximately 70 % of the surface of the Earth. Modern technologies introduce new methods to monitor the body of water, such as pollution monitoring and detection. Underwater data gathering techniques require exploring the water environment, which can be most effectively performed by underwater acoustic sensor networks (UWASNs). Applications developed for the UWASNs can record underwater climate, detect and control water pollution, monitor marine biology, discover natural resources, detect pipeline leakages, monitor and find underwater intruders, perform strategic surveillance, and so on.

To build and apply the UWASN technology, most suitable methods for managing the network have been developed based on the ISO/IEC 30140 series. This document describes the network management outline and requirements appropriate to the UWASN under the constraints of an underwater physical environment.

The ISO/IEC 30142 series provides information such as requirements of an underwater network management system (U-NMS), functions supporting U-NMS, and components required for U-NMS in UWASN.

This document provides the underwater management information base (u-MIB) for the U-NMS. u-MIB is a hierarchical database specifically designed for managing the networks or devices in the underwater network management system of UWASN.

Various technical standards derived from the R&D results of the technical areas under the UWASN and underwater communication fields not covered by the ISO/IEC 30140 series are continuously proposed and developed.

INTERNET OF THINGS (IoT) – UNDERWATER ACOUSTIC SENSOR NETWORK (UWASN) – NETWORK MANAGEMENT SYSTEM –

Part 2: Underwater management information base (u-MIB)

1 Scope

This document provides the underwater management information base (u-MIB) of the underwater network management system (U-NMS). It specifies the following:

- general requirements for constructing u-MIB in U-NMS;
- designing the managed objects of the manager and agent u-MIB;
- integrating the managed objects of the manager and agent u-MIB.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

3.1

managed object

abstract representation of an underwater object or resource in u-MIB that is managed using an underwater network management system

3.2

managed objects

collection of underwater objects or resources that are defined in the underwater management information base (u-MIB)

Note 1 to entry: The managed objects (MOs) are the component used for exchanging the information between manager and agent in U-NMS.

3.3

management protocol

protocol used for carrying information between the manager and agent in U-NMS

3.4

TABLE

data type that holds a collection of information related to underwater networks and underwater devices

EXAMPLE The notification record.