



Internet of Things – Underwater Acoustic Sensor Network (UWASN) Standards

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The 30140 series provides general requirements, reference architecture and high-level interface guidelines supporting interoperability among underwater acoustic sensor networks (UWASNs).

INCITS/ISO/IEC 30140-1:2018[2021]

Information technology - Underwater acoustic sensor network (UWASN) - Part 1: Overview and requirements

Part 1 of the series provides a general overview of underwater acoustic sensor networks (UWASN). It describes their main characteristics in terms of the effects of propagation variability and analyses the main differences with respect to terrestrial networks. It further identifies the specificities of UWASN and derives some specific and general requirements for these networks.

ISO/IEC 30140-2:2017

Information technology - Underwater acoustic sensor network (UWASN) - Part 2: Reference architecture

Part 2 of the series provides an underwater acoustic sensor network (UWASN) conceptual model by identifying and defining three domains (application domain, network domain and UWASN domain). It also provides multiple reference architecture views consistent with the requirements defined in ISO/IEC 30140-1 (systems reference architecture, communication reference architecture and information reference architecture). For each view, related physical and functional entities are described.

INCITS/ISO/IEC 30140-3:2018[2021]

Information technology - Underwater acoustic sensor network (UWASN) - Part 3: Entities and interface

Part 3 of the series provides descriptions for the entities and interfaces of the UWASN reference architecture.

INCITS/ISO/IEC 30140-4:2018[2021]

Information technology - Underwater acoustic sensor network (UWASN) - Part 4: Interoperability

Part 4 of the series provides information on interoperability requirements among entities within a UWASN and among various UWASNs.

INCITS/ISO/IEC 30142:2020[2021]

Information technology - Underwater acoustic sensor network (UWASN) - Network management system overview and requirements

This standard provides the overview and requirements of a network management system in underwater acoustic sensor network (UWASN) environment. It specifies the following: – functions which support underwater network management system; – entities required for underwater network management system; – data about the communication between elements in underwater network management system; – guidelines to model the underwater network management system; – general and functional requirements of underwater network management system

INCITS/ISO/IEC 30143:2020[2021]

Information technology - Underwater acoustic sensor network (UWASN) - Application profiles

This standard provides the guidelines for designing and developing new applications in the underwater environment such as fish farming, environment monitoring, harbour security, etc. This document also

- provides the components required for developing the application;
- provides instructions for modelling the application with examples;
- helps the user to understand the communication between the elements in the application for modelling the communication between elements;
- guides the user with the design process of underwater applications.

ISO/IEC TR 30167:2021

Internet of Things (IoT) - Underwater communication technologies for IoT

This document describes the enabling and driving technologies of underwater communication such as acoustic communication, optical communication, Very Low Frequency (VLF)/Extremely Low Frequency (ELF) communication, and Magnetic Fusion Communication (MFC). This document also highlights:

- technical overview of different communication technologies;
- characteristics of different communication technologies;
- trends of different communication technologies;
- applications of each communication technology;
- benefits and challenges of each communication technology

INCITS/IoT Technical Committee

The [INCITS/IoT](#) area of work addresses standardization in the areas assigned to ISO/IEC JTC 1/SC 41 which include:

- Serve as a focus of and proponent for the JTC 1 IoT standardization program.
- Develop foundational standards for IoT related to JTC 1 for guiding IoT efforts throughout JTC 1 upon which other standards can be developed.

The work will cover:

- Developing Terms and Definitions for JTC 1 IoT Vocabulary
- Developing IoT Reference Architecture and other foundational specifications as JTC 1 standards
- Continuing the work begun in SWG on IoT on standardization gaps
- Establishing a liaison with JTC 1, ISO, IEC or other entities undertaking work related to IoT
- Encouraging the prompt and efficient exchange of information within JTC 1 and with ISO, IEC, or other entities working on IoT, as appropriate
- Monitoring the ongoing IoT regulatory, market, business, and technology requirements
- Developing other IoT standards that build on the foundational standards when relevant JTC 1 subgroups that could address these standards do not exist or are unable to develop them.

To learn more about the activities of the technical committee and how to participate in the development of these and other deliverables, please contact [INCITS](#)

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