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INTERNATIONAL STANDARD

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Internet of things (IoT) – Underwater acoustic sensor network (UWASN) – Network management system overview and requirements

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

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FOREWORD

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FDIS	Report on voting
JTC1-SC41/149/FDIS	JTC1-SC41/160/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.

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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.

In order 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 underwater physical environment.

The ISO/IEC 30140 series provides general requirements, reference architecture (RA) including the entity models and high-level interface guidelines supporting interoperability among UWASNs in order to provide the essential UWASN construction information to help and guide architects, developers and implementers of UWASNs.

This document provides the information such as requirements of an underwater network management system (U-NMS), functions supporting U-NMS and components required for U-NMS in 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.

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

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1 Scope

This document 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.

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 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
agent
software program that manages the devices installed in underwater

3.2
u-MIB
collection of managed objects, which acts as the database for the management of each device in the underwater environment

3.3
manager
program installed in the management station, which is used for the management of devices in underwater networks