International Standard

ISO 19847

Ships and marine technology — Shipboard data servers for sharing field data at sea

Navires et technologie maritime — Serveurs de données embarqués pour partager les données de terrain en mer

Second edition
2024-02

Reference number
ISO 19847:2024(en)

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Published in Switzerland

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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 ISO 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).

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This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 6, *Navigation and ship operations*.

This second edition cancels and replaces the first edition (ISO 19847:2018), which has been technically revised.

The main changes are as follows:

— In Clause 7, a specific security requirement on the shipboard data server has been added.

— In Clause 8, a test standard in a tabular arrangement of test objectives, conditions, methods, and test criteria has been added.

— In Annex H, implementation requirements for the calculation function have been added.

— In Clause 5, additional examples of an output statement for reporting status have been added.

— In Clause 6, an additional output function with JSON data has been added.

— In Annex C, additional query parameters to designate date and time, search for partial matches of Local IDs and obtain down sampling data have been added.

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Introduction

Shipboard computer applications to ensure ships operate safely and efficiently are becoming increasingly popular.

These applications require access to data which is provided by shipboard machinery and equipment.

Navigational instruments can use the IEC 61162 series of standards when exchanging data, but access to other shipboard machinery and systems to obtain data has not yet been standardized.

For the purpose of sharing field data at sea, including non-standardized machinery data, this document specifies requirements for performance, function, service and safety for the shipboard data server that stores data from shipboard machinery and equipment, and sends stored data off the ship.

The shipboard data server is connected to an information network that is specified in ISO 16425. The requirements for cyber security on the shipboard data server are specified.

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Ships and marine technology — Shipboard data servers for sharing field data at sea

1 Scope

This document specifies requirements for shipboard data servers that are used to collect data from other shipboard machinery and systems, and to further share the collected data in a safe and efficient manner.

This document specifies communication protocols with reference to the data structure of ISO 19848.

This document is intended for users and developers of shipboard data servers, as well as users and developers of systems that record data on, or retrieve data from, shipboard data servers.

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 8601-1, *Date and time — Representations for information interchange — Part 1: Basic rules*

ISO 16425, *Ships and marine technology — Guidelines for the installation of ship communication networks for shipboard equipment and systems*

ISO 19848:2024, *Ships and marine technology — Standard data for shipboard machinery and equipment*

IEC 60092-504:2016, *Electrical installations in ships — Part 504: Special features — Control and instrumentation*

IEC 60945, *Maritime navigation and radiocommunication equipment and systems — General requirements — Methods of testing and required test results*

IEC 61162-1, *Maritime navigation and radiocommunication equipment and systems — Digital interfaces — Part 1: Single talker and multiple listeners*

IEC 61162-450:2018, *Maritime navigation and radiocommunication equipment and systems — Digital interfaces — Part 450: Multiple talkers and multiple listeners — Ethernet interconnection*

IEC 62923-1, *Maritime navigation and radiocommunication equipment and systems — Bridge alert management — Part 1: Operational and performance requirements, methods of testing and required test results*

IEC 62923-2, *Maritime navigation and radiocommunication equipment and systems — Bridge alert management — Part 2: Alert and cluster identifiers and other additional features*

INTERNET SOCIETY (ISOC) RFC 3986, *Uniform Resource Identifier (URI): Generic Syntax [online]. Edited by T. Berners-Lee, W3C/MIT, R. Fielding, Day Software, L. Masinter and Adobe Systems. January* 2005 *[viewed 2023-05-13]. Available at* https://datatracker.ietf.org/doc/html/rfc3986

IACS Rec.166, *Recommendation on Cyber Resilience*

3 Terms and definitions

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

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