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## **Ships and marine technology — Heading control systems**

*Navires et technologie maritime — Systèmes de contrôle du cap*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 documents 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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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](http://www.iso.org/iso/foreword.html).

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

This third edition cancels and replaces the second edition (ISO 11674:2006), which has been technically revised.

The main changes compared to the previous edition are as follows.

- [Clause 1](#): The bridge alert management (BAM) requirement was added.
- [Clause 2](#): The referenced documents such as related to BAM were added.
- [Clause 3](#): Along with renewal of the overall structure of the document, the terms, definitions and abbreviated terms were also updated.
- [Clause 4](#): The IMO performance requirements that were defined in each clauses were summarized in [Clause 4](#). In addition, [Clause 4](#) was classified into Operational requirements ([4.2](#)), Functional requirements ([4.3](#)), and Control performance requirements ([4.4](#)) and the corresponding tests are specified in [Clause 6](#), [Clause 7](#) and [Clause 8](#).
- [4.3.4](#), [7.4](#), [Annex B](#): Because the HCS becomes the BAM compliant equipment, alerts with a standard alert identifier, BAM requirements, test methods, communication procedures, and other requirements regarding implementation were added.
- [Clause 5](#): To harmonize with IEC 62065:2014, the test procedure positively utilizing the ship motion simulator of IEC 62065:2014 and the required test results were specified.
- [Annex A](#): In connection with the change in [Clause 8](#), the use of IEC 62065:2014 ship models and wave disturbances for the HCS performance test was specified.
- The IEC 61162 interface requirements specified in the main body of this document were transferred to [Annex C](#), and details were specified.

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](http://www.iso.org/members.html).

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# Ships and marine technology — Heading control systems

## 1 Scope

This document specifies the minimum operational, functional and performance requirements, as well as methods of testing and the corresponding required test results, for heading control systems installed on board ships conforming to performance standards adopted by IMO Resolution MSC.64(67), Annex 3.

In addition, it takes into account parts of IMO resolution A.694(17) to which IEC 60945 is associated.

Also it takes into account IMO resolution MSC.302(87) on bridge alert management (BAM).

In this document, the ship models of simulators used for performance testing are based on those from ships with a combined system of propeller propulsion and conventional rudder, with a speed range of up to 30 knots.

The test results are considered also to be valid for ships with multiple parallel operated rudders.

**NOTE** The text in this document that is identical to that in IMO Resolution A.342(IX), as amended by IMO Resolution MSC.64(67) Annex 3, and IMO Resolution A.694(17), is printed in italics.

## 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.

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

IEC 61162-2, *Maritime navigation and radiocommunication equipment and systems — Digital interfaces — Part 2: Single talker and multiple listeners, high-speed transmission*

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

IEC 62288, *Maritime navigation and radiocommunication equipment and systems — Presentation of navigation-related information on shipborne navigational displays — General requirements, methods of testing and required test results*

IEC 62065:2014, *Maritime navigation and radiocommunication equipment and systems — Track control systems — Operational and performance requirements, methods of testing and required test results*

IEC 62923-1:2018, *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*

IMO Resolution MSC.302(87), *Performance standards for bridge alert management*