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ISO TC 8/SC 13/WG 2

Secretariat: SAC

Ships and marine technology — General specification for shipborne meteorological instruments

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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 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 13, *Marine technology*.

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.htmlwww.iso.org/members.html.

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Introduction

~~Shipborne~~A shipborne meteorological ~~instruments~~instrument (SMI) ~~is~~forms a combined system installed on a ship and is used to measure meteorological elements at the ship's position. The meteorological information acquired by the system can be used ~~for safe navigation, as well~~ as input for meteorological applications that support forecasts, warning and climatological services ~~as well as~~, with a view to ensuring for safe navigation. This meteorological information can also be used for commercial or scientific needs.

Information sharing is an important feature at the time of publication of this document. The importance of exchanging or sharing meteorological information is also evident.

The number of ships that carry shipborne meteorological instruments with diverse sensors is extensive and in flux. It is generally desirable that the meteorological data measured by ship meteorological instruments can be exchanged and shared with other ships, land-based meteorological information platforms or global meteorological observation systems such as the Voluntary Observing Ship (VOS) Scheme of the World Meteorological Organization (WMO).

This document ~~aims to establish~~establishes a set of general technical specifications for all shipborne meteorological instruments, including terms, definitions and test methods, to ensure the quality of different shipborne meteorological instruments and the efficiency in exchanging or sharing ~~the~~ meteorological information. ~~This is with a view~~In doing so, this document aims to ~~helping~~help shipborne meteorological instruments play a more important role in safe navigation, weather forecast and other climatological services, such as wind energy or commercial or technical research.

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Ships and marine technology — General specification for shipborne meteorological instruments

1 Scope

This document specifies the technical requirements and test methods for shipborne meteorological instruments (~~SMI~~SMIs).

This document applies to shipborne meteorological instruments installed on ~~a ship~~ships that shares marine meteorological data with other ships, national meteorological services or other users.

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 10596:2009, *Ships and marine technology — Marine wind vane and anemometers*

IEC 60092-101:2018, *Electrical installations in ships — Part 101: Definitions and general requirements*

IEC 60092-305, *Electrical installations in ships — Part 305: Equipment — Accumulator (storage) batteries*

IEC 60092-376, *Electrical installations in ships — Part 376: Cables for control and instrumentation circuits 150/250 V (300 V)*

IEC 60092-504:2016, *Electrical installations in ships — Part 504: Automation, control and instrumentation*

IEC 60533~~:2015~~, *Electrical and electronic installations in ships — Electromagnetic compatibility (EMC) - Ships with a metallic hull*

WMO-No.8, *Guide to Instruments and Methods of Observation (2021 edition)*

~~WMO-No.306, *Manual on Codes, Volume 1.2 (Ed2019, Up2022)*~~

WMO-No.488, *Guide to the Global Observing System* (~~*Ed2010, Up2013*~~2010 Edition, Updated in 2017)

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:

— ISO Online browsing platform: available at ~~https://www.iso.org/obp~~https://www.iso.org/obp

— IEC Electropedia: available at ~~https://www.electropedia.org/~~https://www.electropedia.org/

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3.1
shipborne meteorological instrument
SMI
system installed on a ship that includes one or more meteorological sensors to measure meteorological parameters, and components to process, store, and transmit the meteorological data

Note 1 to entry: The meteorological parameters include air temperature, relative humidity, wind direction, wind speed, atmospheric pressure, visibility, sea-surface temperature, etc.

3.2
true north
northerly direction of the meridian

Note 1 to entry: See ISO 19018:2020, 5.1.1 for further information.

3.3
true wind
vector with a speed referenced to the fixed earth and a direction referenced to *true north* (3.2)

Note 1 to entry: The true wind is calculated from the *relative wind speed* (3.4.2) and *direction* (3.4.1), the ship's motion (speed and course over ground), and *true heading* (3.8).

3.3.1
true wind direction
TWD
direction relative to *true north* (3.2) from which the wind is blowing

3.3.2
true wind speed
TWS
magnitude of the *true wind* (3.3) vector

3.4
relative wind
wind vector measured relative to the ship

3.4.1
relative wind direction
RWD
direction relative to the bow of the ship from which the wind is blowing

Note 1 to entry: The direction conventions are 0°0° for wind from the bow, 90°90° for wind from the starboard side, 180°180° for wind from the stern, and 270°270° for wind from the port side.

3.4.2
relative wind speed
RWS
speed of the wind relative to the ship

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