PUBLICLY AVAILABLE SPECIFICATION

ISO/PAS 21195

First edition
2018-01

Ships and marine technology — Systems for the detection of persons while going overboard from ships (Man overboard detection)

Navires et technologie maritime — Systèmes pour la détection des personnes passant par-dessus bord (détection d'un homme à la mer)

Reference number
ISO/PAS 21195:2018(E)

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

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).

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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 1, *Maritime safety*.

Introduction

The lack of standardized man overboard (MOB) detection system requirements has made it difficult for end users to objectively evaluate the safety and effectiveness of such systems. This document addresses these issues by clearly defining the technical specifications for the equipment, thereby allowing manufacturers to develop systems against a common set of requirements and enabling end-users to evaluate the safety, effectiveness, performance, and reliability of MOB detection systems.

Comments to ISO TC 8 SC 1 on this document are encouraged. The experience gained by the wider audience of users, suppliers, and other stakeholders using this document will better inform the development of the final International Standard. To submit comments, see https://www.iso.org/committee/45800.html.

Ships and marine technology — Systems for the detection of persons while going overboard from ships (Man overboard detection)

1 Scope

This document specifies technical requirements for systems designed to detect a person who has gone overboard from a passenger ship. This document addresses how a system is expected to perform in various environmental conditions and a wide variety of incident profiles.

This document does not cover man overboard (MOB) detection systems that require the passengers or crew to wear or carry a device to trigger an MOB event.

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/TR 7250-2:2010, *Basic human body measurements for technological design — Part 2: Statistical summaries of body measurements from national populations*

IEC 60068-2-6:2007, *Environmental testing — Part 2-6: Tests — Test Fc: Vibration (sinusoidal)*

IEC 60092-376:2003, *Electrical installations in ships — Part 376: Cables for control and instrumentation circuits 150/250 V (300V)*

IEC 60945:2002(E), *Maritime navigation and radiocommunication equipment and systems — General requirements — Methods of testing and required test results*

IEC 61162-3:2014, *Maritime navigation and radiocommunication equipment and systems — Digital interfaces — Part 3: Serial data instrument network*

IMO Resolution A.1021(26), *Code on alerts and indicators*, 2009

IMO Resolution MSC.337(91), *Adoption Of The Code On Noise Levels On Board Ships*

SOLAS Chapter III, International Safety of Life at Sea, 1974

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:

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

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

3.1
accessible open area
any area of the ship that is accessible to either passengers or crew and open to the outside

3.2
active state
state in which the system is on

3.3
alarm actions
actions available within the system when an MOB warning or alarm is triggered or changes status

3.4
A-weighted noise level
quantity measured by a sound meter in which the frequency response is weighted according to the A-weighting curve defined in IEC 61672:2013

3.5
control station
equipment that provides the facilities for human observation and control of the MOB detection system

3.6
data
information captured and/or generated by the MOB detection system

Note 1 to entry: Data may be in either a raw or a processed form and includes basic (e.g. text, numeric, Boolean), composite (e.g. array, class, and list), and multimedia (e.g. images, audio, and video) data types.

3.7
electronic chart display and information system
ECDIS
navigation information system that is defined in the International Maritime Organization (IMO) Performance Standard for ECDIS (IMO Resolution A.817 (19), as amended)

3.8
environmental vibration
periodic motion of equipment installed aboard ships as a result of environmental forces

3.9
false alarm
system activation not caused by an actual MOB event

3.10
heading
angle between the direction in which the ship's bow is pointing and a reference direction expressed in degrees from a reference direction, e.g. true north, usually from 000° clockwise through 360°

3.11
independent laboratory
laboratory that has been recognized by a laboratory accrediting organization to test and evaluate products to a product safety standard, and is free from commercial, financial, and other pressures that may influence the results of the testing and evaluation process

3.12
International Association of Classification Societies (IACS)
organization that establishes, reviews, promotes, and develops minimum technical requirements in relation to the design, construction, maintenance, and survey of ships and other marine related facilities; and assists international regulatory bodies and standards organizations to develop, implement and interpret statutory regulations and industry standards in ship design, construction, and maintenance, with a view to improving safety at sea and the prevention of marine pollution

3.13
man overboard (MOB) event
incident in which a person(s) has accidently or intentionally gone over the side/front/back of a ship and into the water

3.14
man overboard (MOB) verification data
system data that may be used by user to acknowledge, deny, confirm, or terminate an MOB warning or alarm at the control station

3.15
nominal operating conditions
set of ship and environmental conditions that are typically encountered by a ship while travelling with passengers as shown in Table 1

Table 1 — Nominal operating conditions

Condition	Value
Wave height	0 m to 2,5 m
Precipitation	None
Ship speed	0 knots to 25 knots

3.16
recognized organization
competent organization that has been assessed by a National Authority and found to be capable of witnessing the required tests and certifying the test results

3.17
sensor unit
device or system of devices that detects and responds to one or more physical stimuli

3.18
shipboard cable
armored or unarmored cable constructed in accordance with ISO/IEC 11801:2002, ISO/IEC 11801:2002/Amd2:2010 or other recognized ship cable standards, and listed or classified by a nationally recognized testing laboratory

3.19
underway
not at anchor, or made fast to the shore, or aground

4 Abbreviated terms

ECDS Electronic chart display and information system

IACS International Association of Classification Societies

IBS Integrated bridge system

IEC International Electrotechnical Commission

IMO International Maritime Organization

MOB Man overboard

NMEA National Marine Electronics Association

RAID Redundant array of independent disks

RO Recognized Organization

RoHS Restriction of the Use of Certain Hazardous Substances

S-VDR Simplified voyage data recorder

SOLAS International Convention for the Safety of Life at Sea, 1974, as amended by IMO Res. MSC.47(66)

TBT Technical Barriers to Trade

UTC Coordinated universal time

VDR Voyage data recorder

WTO World Trade Organization

5 Requirements

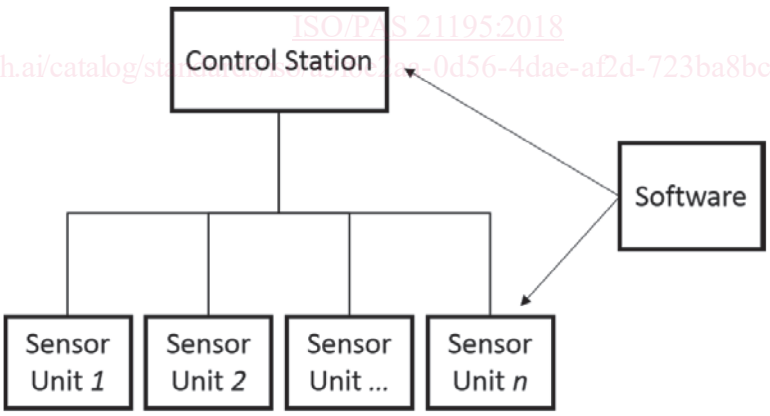
5.1 General

The testing outlined in this document shall be conducted by an independent laboratory or may be conducted by the manufacturer provided the tests conducted by the manufacturer are approved (or certified) by a Recognized Organization or Classification Society that complies with the applicable unified interpretations and requirements posted by the International Association of Classification Societies (IACS).

The intent of the following requirements is to verify that the system contains all the core system capabilities.

5.2 System description

A general MOB detection system described in this document consists of a control station, sensor units, cables, and associated software (Figure 1).



NOTE Depending on the system, the associated software can be installed on the control station and/or sensor units.

Figure 1 — Block diagram of a general MOB detection system with logical links

5.3 Control station

The system shall include a control station where alarms and data can be reviewed.

The system shall have the capability for an operator to manually select an imaging sensor and timeline for playback at the control station.