

# PUBLICLY AVAILABLE SPECIFICATION

**Maritime navigation and radiocommunication equipment and systems –  
Removable external data source (REDS) – General requirements, methods of  
testing and required test results**

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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – REMOVABLE EXTERNAL DATA SOURCE (REDS) – GENERAL REQUIREMENTS, METHODS OF TESTING AND REQUIRED TEST RESULTS

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# MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – REMOVABLE EXTERNAL DATA SOURCE (REDS) – GENERAL REQUIREMENTS, METHODS OF TESTING AND REQUIRED TEST RESULTS

## 1 Scope

This document specifies requirements, methods of testing and required test results for removable external data sources (REDS) applied to all equipment described hereunder:

- a) shipborne radio equipment forming part of the global maritime distress and safety system required by the International Convention for Safety of Life at Sea (SOLAS) as amended, and by the Torremolinos International Convention for the Safety of Fishing Vessels as amended;
- b) shipborne navigational equipment required by the International Convention for Safety of Life at Sea (SOLAS) as amended, and by the Torremolinos International Convention for the Safety of Fishing Vessels as amended, and to other navigational aids, where appropriate.

It is based upon the requirements of IEC 61162-460 for removable external data source (REDS).

## 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

#### removable external data source

#### REDS

user removable non-network data source, including, but not limited to compact discs, memory sticks and Bluetooth<sup>®</sup> devices

Note 1 to entry: Bluetooth is the trademark of a product supplied by Bluetooth Special Interest Group. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the product named.

[SOURCE: IEC 61162-460:2015, 3.30]

## 4 Requirements

### 4.1 Physical protection

The number of connection points (USB ports, disc drives, etc.) shall be limited to the absolute minimum required for the operation of the system and its lifetime maintenance and support. All other points shall be physically blocked from easy access by a user without a tool or key.

## 4.2 Operational protection

USB connection points intended for keyboards, printers, etc. shall be blocked from easy access to connect and use a different device, for example by means of a tool or key or password protected device set-up (disable/enable).

Connection points used for access to data storage shall be configured to permit connection only to data sources identified as USB device class 08h (USB mass storage).

For other operation with other USB device classes and non-USB REDS, the manufacturer shall provide information about the technology used and how the connection point fulfils the requirement to limit connection to only data sources.

## 4.3 Executable program file verification

All automatic execution from REDS including auto-run from USB and CD/DVD shall be prohibited. Manual execution of any type of files from REDS shall only be possible after passing authentication for accessing the executable content of the REDS. Manual execution shall be possible only for the files which are verified before execution, using digital signature or special keys.

NOTE 1 A digital signature method is based on a private/public key pair. Typically, a hash function is used, for example the SHA-2 family. (Use of MD5 and SHA-1 are now discouraged, see ISO/IEC 10118-3.)

NOTE 2 Special keys can be values calculated from the delivered data using a specified function and compared against a known and expected value, both the function and the value being specified by the trusted source or sender.

## 4.4 Non-executable data verification

All non-executable data in REDS shall be verified before it is used in equipment.

## 5 Methods of testing and required test results

Refer to the device and the manufacturer's documentation and confirm by inspection of the documented evidence that the number of connection points for REDS (USB ports, disc drives, etc.) are limited to the minimum required for the operation of the system and its lifetime maintenance and support.

Confirm by observation that any other connection points are physically blocked from easy access by a user without a tool or key.

For USB based connection points for REDS attach one by one a keyboard or mouse device (i.e. USB device class other than 08h) to the port and confirm by analytical evaluation that the EUT both refuses to recognize the attached device and refuses to perform any functionality with the attached device.

For USB based ports for other purposes than data sources, confirm by observation that they are blocked from easy access by a user.

For connection points other than for USB based REDS use information provided by the manufacturer about the technologically possible roles of the REDS. If such a REDS is technologically subject for possible change of role then attach one by one an example of such a non-data storage device to the port and confirm by analytical evaluation that the EUT both refuses to recognize the attached device and refuses to perform any functionality with the attached device.

One by one attach a device to the connection points for REDS or insert a media into the REDS (disc drives, etc.) and confirm by analytical evaluation that all automatic executions at the EUT is prohibited.

If the EUT provides manual execution of any type of files from REDS, confirm by analytical evaluation that manual execution is only possible for files which have been verified by digital signatures or special keys.

Use the manufacturer's documentation about non-executable files which can be used by EUT. Confirm by analytical evaluation that all non-executable files are verified as described in the manufacturer's documentation before use by the EUT.

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