



Radio Technical Commission for Maritime Services

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**Before the Federal Communications Commission
Washington, D. C.**

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
45 L Street NE
Washington, DC 20554

In the Matter of)
)
Wireless Telecommunications Bureau) RM-11765
Refreshes Record on Performance Standards)
for Maritime Radiocommunications)
Equipment Listed in Part 80 of the)
Commission's Rules)

**COMMENTS OF THE
RADIO TECHNICAL COMMISSION FOR MARITIME SERVICES (RTCM)**

Introduction

The Radio Technical Commission for Maritime Services (RTCM) is a membership non-profit 501(c)(3) organization whose purpose and history are described in the original petition for rulemaking in the proceeding. RTCM membership is comprised of the maritime stakeholders from the US and foreign governments, marine equipment manufacturers, maritime communications service providers, marine dealers and distributors, US government contractors, technical standards organizations, technical service organizations, marine pilots organizations, marine transportation services, marine insurance providers and many other interested parties in the marine industry in the US and abroad.

RTCM works intimately with and is a Category A liaison¹ member of the International Electrotechnical Commission (IEC) Technical Committee 80 – on Maritime navigation and

¹ The IEC defines Category A liaisons as “Organizations that make an effective contribution to the work of the technical committee or subcommittee for questions dealt with by this technical committee or subcommittee. Such

radiocommunication equipment and systems. RTCM is also a member of the US National Committee (USNC) Technical Advisory Group (TAG) for IEC TC80². The scope of TC80 is to prepare certification standards for maritime navigation and radiocommunication equipment and systems used on ships, and where appropriate on shore, for safety of navigation as well as distress and safety communications purposes. Certain of these IEC TC80 standards were set in motion by RTCM then further developed by IEC.

Responding to the eight questions asked for each standard listed in the Public Notice

Sixty-seven standards are listed in the Public Notice. Of these, forty-six have been superseded by later versions. Annexes A through D list each of these standards and respond to the eight questions asked in the Public Notice.

International Maritime Organization standards incorporated by reference

In its 2016 petition, RTCM proposed deleting several International Maritime Organization (IMO) performance standards as no longer needed, as they have been incorporated in other standards. While it is true most relevant IMO performance standards have been incorporated into IEC certification test standards, continued maintenance of most IMO standards was found to be necessary for other purposes, including installation, interpretation of Safety of Life at Sea (SOLAS) Convention regulations, and phase-in dates when newer standards become mandatory and older ones no longer apply.

Since the GMDSS was established during the 1990s, IMO has on several occasions mandated that Global Maritime Distress & Safety System (GMDSS) equipment installed on ships meet updated standards when installed on or after dates documented in those standards. Neither Subpart W nor the FCC ship inspection checklists include those dates nor the applicable standards. Ships not meeting these requirements could be held up by foreign port state inspections despite having passed its last FCC inspection.

Annex A includes a review of IMO standards incorporated by reference. That review includes information regarding relevant phase-in dates when newer standards become mandatory and older ones no longer apply. Annexes B through D include reviews of ITU, IEC/ISO, and RTCM, respectively.

organizations are given access to all relevant documentation and are invited to meetings. They may nominate experts to participate in a WG". ISO/IEC Directives, Part 1, Edition 2024, §1.17.2.

² The U.S. National Committee of the International Electrotechnical Commission (USNC/IEC) serves as the focal point for U.S. parties who are interested in the development, promulgation and use of globally-relevant, voluntary consensus standards. The USNC is the United States' representative to the IEC and is sponsored by the American National Standards Institute.

New standards that need to be incorporated by reference in Part 80

Annex E lists fifteen (15) standards that need to be incorporated by reference in Part 80. Four of these new standards, AIS aids to navigation station, Class B/SO shipborne AIS, DSC-equipped VHF handheld, and GMDSS ship earth stations, are for equipment urgently needing expedited approval.

The newest NMEA and IEC maritime data interface standards are included as well, supplementing the old serial interface IEC 61162-1 currently included in Part 80.

IMO COMSAR.1/Circ.32/Rev.2 dated 3 July 2023, is intended to provide an unambiguous interpretation of the radio installation requirements in SOLAS chapter IV and related IMO resolutions, including an interpretation of IMO's duplication of equipment requirement.

Part 95 Subpart K standards incorporated by reference

406 MHz maritime personal locating beacons (PLBs) and maritime survivor locating devices (MSLDs), are regulated under Part 95 Subpart K of the Commission's rules. Certification test standards for these devices, which are used to locate and rescue persons in distress, also need updating. They are listed in Annex F.

Proposal for routinely updating of standards incorporated by reference in Part 80

RTCM recognizes the difficulties in continually updating standards incorporated by reference, and consequentially proposed in its petition that §80.7 *Incorporation by reference* be rewritten by listing specific, dated references to standards only here, to allow updating of all standards referenced in Part 80 to be accomplished in this section only. We believe this was the Commission's intent for §80.7, but several standards, ITU-R, and IMO in particular, have specific standards listed throughout Part 80. This is easily correctable with ITU-R standards by simply deleting the dash number, but it is more difficult with IMO standards, whose identifier normally completely changes after each update.

Personal Locator Beacons and Maritime Survivor Locating Devices, regulated in Part 95 Subpart K, also require periodic updates. However, with only two standards listed, an incorporation by reference section is unnecessary.

RTCM proposes that the FCC simplify references to maritime standards incorporated by reference to ensure they can be effectively and routinely maintained.

This completes RTCM's comments under this Public Notice intended to refresh the record on performance standards.

Sincerely,

/s/ Ed Wendlandt
President RTCM

Date: 10/22/2024

ANNEXES

Annex A – IMO Part 80 standards incorporated by reference

Annex B – ITU Part 80 standards incorporated by reference

Annex C – IEC-ISO Part 80 standards incorporated by reference

Annex D – RTCM Part 80 standards incorporated by reference

Annex E – Part 80 New standards needing to be incorporated by reference

Annex F – Part 95 Subpart K standards incorporated by reference

Standard	Name	Updated version	Applicable rule	Element modified affecting Part 80	Cost/Benefit	Vessel Class	Implementation challenges	How serves the public interest
IMO Resolution A.525(13)	PERFORMANCE STANDARDS FOR NARROW-BAND DIRECT PRINTING TELEGRAPH EQUIPMENT FOR THE RECEPTION OF NAVIGATIONAL AND METEOROLOGICAL WARNINGS AND URGENT INFORMATION TO SHIPS	IMO Resolution MSC.508(105)	§§ 80.7, 80.1101	Valid only for NAVTEX equipment installed before 1 July 2005	Equipment no longer manufactured	SOLAS	Subpart W inspection does not consider SOLAS-mandated implementation dates contained in these IMO resolutions.	Valid only for NAVTEX installs prior to 1 July 2005
IMO Maritime Safety Committee (MSC) Resolution MSC.148(77)	PERFORMANCE STANDARDS FOR THE RECEPTION OF MARITIME SAFETY INFORMATION AND SEARCH AND RESCUE RELATED INFORMATION BY MF (NAVTEX) AND HF	IMO Resolution MSC.508(105)	§§ 80.7, 80.905, 80.1101	Adds HF requirement to NAVTEX receiver. Instead of adding this HF requirement to the NAVTEX receiver, IEC instead added the requirement to the GMDSS MF/HF radio. Adds Bridge Alert Management interface.	Negligible cost in implementing this change as IEC interpreted them. Subpart S vessels do not use BAM, but the cost of that added interface is negligible.	SOLAS (GMDSS)	little to none	negligible change
IMO Assembly Resolution A.662(16)	PERFORMANCE STANDARDS FOR FLOAT-FREE RELEASE AND ACTIVATION ARRANGEMENTS FOR EMERGENCY RADIO EQUIPMENT	n/a	§§ 80.7, 80.1101	n/a	n/a	n/a	n/a	Remains valid. Updates references, thereby informing affected users of current requirements.
IMO Assembly Resolution A.664(16)	PERFORMANCE STANDARDS FOR ENHANCED GROUP CALL EQUIPMENT	IMO Resolution MSC.306(87); MSC.513(105)	§ 80.7	MSC.513(105): Updated requirements to ensure the operational reliability of equipment and to avoid adverse interaction between the equipment and other communications and navigation equipment onboard ship.	negligible cost impact for improved safety	SOLAS (GMDSS)	Need to check equipment installation date during inspection	Res A.664(16): Valid only for Inmarsat C installed prior to 1 July 2012. MSC.306(87): Valid only for equipment installed on or after 1 July 2012 and before 1 July 2019. MSC.431(98) for equipment installed on or after 1 July 2019. MSC.513(105): valid for equipment installed on or after 1 January 2024.
IMO Resolution A.694(17)	GENERAL REQUIREMENTS FOR SHIPBORNE RADIO EQUIPMENT FORMING PART OF THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS) AND FOR ELECTRONIC NAVIGATIONAL AIDS	None	§§ 80.7, 80.273, 80.1101	n/a	n/a	SOLAS (GMDSS)	Applies to installation of equipment on ship	IMO interpretation of SOLAS requirement intended to ensure safety equipment is operable in an emergency
IMO Resolution MSC.149(77)	PERFORMANCE STANDARDS FOR SURVIVAL CRAFT PORTABLE TWO-WAY VHF RADIOTELEPHONE APPARATUS	IMO Resolution MSC.515(105)	§§ 80.7, 80.273, 80.1101. Note apparent error in 80.273	Clarifies Battery replacement requirement	Codifies existing good practice	SOLAS (GMDSS)	existing best practice. Need to check equipment installation date during inspection	intended to ensure safety equipment is operable in an emergency MSC.149(77) Valid for equipment installed on or after 1 July 2005 but before 1 January 2024. MSC.515(105) Valid for equipment installed on or after 1 January 2024.
IMO Assembly Resolution A.700(17)	PERFORMANCE STANDARDS FOR NARROW-BAND DIRECT-PRINTING TELEGRAPH EQUIPMENT FOR THE RECEPTION OF NAVIGATIONAL AND METEOROLOGICAL WARNINGS AND URGENT INFORMATION TO SHIPS (MSI) BY HF	IMO Resolution MSC.508(105)	§§ 80.7, 80.1101	Requirements of Res. MSC.148(77) and Res A.700(17) combined in Res MSC.508(105)	n/a	SOLAS (GMDSS)	Addressed in impact in implementing changes to MF/HF GMDSS radio. Need to check equipment installation date during inspection	Remains valid for HF NBDDP (radiotelex) equipment receive capability installed before 1 January 2024
IMO Assembly Resolution A.801(19) Appendix 13, Annex 5	CRITERIA FOR USE WHEN PROVIDING INMARSAT SHORE-BASED FACILITIES FOR USE IN THE GMDSS	n/a	§§ 80.7, 80.1091	IMO dropped Annex 5 requirement when updating this Resolution in MSC.509(105).	n/a	SOLAS (GMDSS)	n/a	No longer valid

Standard	Name	Updated version	Applicable rule	Element modified affecting Part 80	Cost/Benefit	Vessel Class	Implementation challenges	How serves the public interest
IMO Assembly Resolution A.802(19)	PERFORMANCE STANDARDS FOR SURVIVAL CRAFT RADAR TRANSPONDERS FOR USE IN SEARCH AND RESCUE OPERATIONS	IMO Resolution MSC.510(105)	§§ 80.7, 80.1101	Adds Horizontal polarization or circular polarization should be used for transmission and reception." to Res A.802(19). Replaced by MSC.247(83), and later by MSC.510(105)	n/a	SOLAS (GMDSS)	n/a	No longer valid
IMO Resolution MSC.247(83)	ADOPTION OF AMENDMENTS TO PERFORMANCE STANDARDS FOR SURVIVAL CRAFT RADAR TRANSPONDERS FOR USE IN SEARCH AND RESCUE OPERATIONS (RESOLUTION A.802(19))	n/a	§§ 80.7, 80.1101	n/a	n/a	SOLAS (GMDSS)	n/a	No longer valid
IMO Assembly Resolution A.803(19)	PERFORMANCE STANDARDS FOR SHIPBORNE VHF RADIO INSTALLATIONS CAPABLE OF VOICE COMMUNICATION AND DIGITAL SELECTIVE CALLING	IMO Resolution MSC.511(105)	§§ 80.7, 80.1101	MSC.511(105): Updated requirements to ensure the operational reliability of equipment and to avoid adverse interaction between the equipment and other communications and navigation equipment onboard ship.	negligible cost impact for improved safety	SOLAS (GMDSS)	Need to check equipment installation date during inspection	Valid for equipment installed on or after 23 November 1996 but before 1 January 2024
IMO Resolution MSC.68(68)	Performance standards for VHF radio installations capable of voice communication and digital selective calling	IMO Resolution MSC.511(105)	§§ 80.7, 80.1101	MSC.511(105): Updated requirements to ensure the operational reliability of equipment and to avoid adverse interaction between the equipment and other communications and navigation equipment onboard ship	negligible cost impact for improved safety	SOLAS (GMDSS)	Need to check equipment installation date during inspection	Valid for equipment installed on or after 1 January 2000 but before 1 January 2024
IMO Assembly Resolution A.804(19)	PERFORMANCE STANDARDS FOR SHIPBORNE MF RADIO INSTALLATIONS CAPABLE OF VOICE COMMUNICATION AND DIGITAL SELECTIVE CALLING	IMO Resolution MSC.512(105)	§§ 80.7, 80.1101	MSC.512(105): Updated requirements to ensure the operational reliability of equipment and to avoid adverse interaction between the equipment and other communications and navigation equipment onboard ship	negligible cost impact for improved safety	SOLAS (GMDSS)	Need to check equipment installation date during inspection	Valid for equipment installed on or after 23 November 1996 but before 1 January 2024
IMO Assembly Resolution A.806(19)	PERFORMANCE STANDARDS FOR SHIPBORNE MF/HF RADIO INSTALLATIONS CAPABLE OF VOICE COMMUNICATION, NARROW-BAND DIRECT-PRINTING AND DIGITAL SELECTIVE CALLING	IMO Resolution MSC.512(105)	§§ 80.7, 80.1101	MSC.512(105): Updated requirements to ensure the operational reliability of equipment and to avoid adverse interaction between the equipment and other communications and navigation equipment onboard ship	negligible cost impact for improved safety	SOLAS (GMDSS)	Need to check equipment installation date during inspection	Valid for equipment installed on or after 1 January 2000 but before 1 January 2024
IMO Assembly Resolution A.807(19)	PERFORMANCE STANDARDS FOR INMARSAT-C SHIP EARTH STATIONS CAPABLE OF TRANSMITTING AND RECEIVING DIRECT-PRINTING COMMUNICATIONS	IMO Resolution MSC.513(105)	§§ 80.7, 80.1101	MSC.513(105): Updated requirements to ensure the operational reliability of equipment and to avoid adverse interaction between the equipment and other communications and navigation equipment onboard ship	negligible cost impact for improved safety	SOLAS (GMDSS)	Need to check equipment installation date during inspection	Valid for equipment installed on or after 23 November 1996 but before 1 January 2024
IMO Assembly Resolution A.808(19)	PERFORMANCE STANDARDS FOR SHIP EARTH STATIONS CAPABLE OF TWO-WAY COMMUNICATIONS	MSC.130(75)	§§ 80.7, 80.1101	Requirements significantly reduced and simplified	No known cost impact	SOLAS (GMDSS)	Need to check equipment installation date during inspection	Valid for equipment designed to operate on a mobile satellite service recognized on or after 23 November 1996 before 1 February 1999.

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IMO Assembly Resolution A.809(19)	PERFORMANCE STANDARDS FOR SURVIVAL CRAFT TWO-WAY VHF RADIOTELEPHONE APPARATUS	MSC.149(77), replaced in turn by MSC.515(105)	§§ 80.7, 80.1101	Clarifies battery replacement date	negligible cost impact for improved safety	SOLAS (GMDSS)	Need to check equipment installation date during inspection	Valid for equipment designed to operate on a mobile satellite service recognized before 1 January 2021, and installed on or after 1 February 1999.
IMO Assembly Resolution A.810(19)	PERFORMANCE STANDARDS FOR FLOAT-FREE SATELLITE EMERGENCY POSITION-INDICATING RADIO BEACONS (EPIRBs) OPERATING ON 406 MHz	IMO Resolution MSC.471(101)	§§ 80.7, 80.1101	Updated references to COSPAS SARSAT specifications. Inclusion of AIS for locating	n/a	SOLAS (GMDSS)	Need to check equipment installation date during inspection	Valid for equipment installed on or after 23 November 1996 but before 1 July 2022
IMO Resolution MSC.56(66)	ADOPTION OF AMENDMENTS TO RECOMMENDATION ON PERFORMANCE STANDARDS FOR FLOAT-FREE SATELLITE EMERGENCY POSITION-INDICATING RADIO BEACONS (EPIRBs) OPERATING ON 406 MHz (RESOLUTION A.810(19))	IMO Resolution MSC.471(101)	§§ 80.7, 80.1101	Updated references to COSPAS SARSAT specifications. Inclusion of AIS for locating	n/a	SOLAS (GMDSS)	Need to check equipment installation date during inspection	Valid for equipment installed on or after 23 November 1996 but before 1 July 2022
IMO Resolution MSC.120(74)	ADOPTION OF AMENDMENTS TO PERFORMANCE STANDARDS FOR FLOAT-FREE SATELLITE EMERGENCY POSITION-INDICATING RADIO BEACONS (EPIRBs) OPERATING ON 406 MHz (RESOLUTION A.810(19))	IMO Resolution MSC.471(101)	§§ 80.7, 80.1101	Updated references to COSPAS SARSAT specifications. Inclusion of AIS for locating	n/a	SOLAS (GMDSS)	Need to check equipment installation date during inspection	Valid for equipment installed on or after 23 November 1996 but before 1 July 2022
IMO Assembly Resolution A.811(19)	PERFORMANCE STANDARDS FOR A SHIPBORNE INTEGRATED RADIOCOMMUNICATION SYSTEM (IRCS) WHEN USED IN THE GMDSS	IMO Resolution MSC.517(105)	§§ 80.7, 80.1083	Replaces the older Shipborne Integrated Radiocommunication System (IRCS), which though optional, must meet the updated performance standard.	Only applies to new GMDSS installations, usually upon new or overhauled vessels.	SOLAS (GMDSS)	Need to check equipment installation date during inspection	Valid for systems installed before 1 January 2024
IMO Assembly Resolution A.1001(25)	CRITERIA FOR THE PROVISION OF MOBILE SATELLITE COMMUNICATION SYSTEMS IN THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS)	n/a		n/a	§§ 80.7, 80.1091	SOLAS (GMDSS)	Res A.1001(25) is undergoing revision at IMO.	Remains valid
IMO Resolution MSC.74(69) Annex 3	Annex (3) RECOMMENDATION ON PERFORMANCE STANDARDS FOR AN UNIVERSAL SHIPBORNE AUTOMATIC IDENTIFICATION SYSTEM(AIS)	n/a	§§ 80.7, 80.1101	n/a	n/a	SOLAS (GMDSS)	n/a	Remains valid
IMO Resolution MSC.80(70)	(1) RECOMMENDATION ON PERFORMANCE STANDARDS FOR ON-SCENE (AERONAUTICAL) PORTABLE TWO-WAY VHF RADIOTELEPHONE APPARATUS ; and (2) RECOMMENDATION ON PERFORMANCE STANDARDS FOR ON-SCENE (AERONAUTICAL) TWO-WAY VHF RADIOTELEPHONE APPARATUS FOR FIXED INSTALLATIONS	IMO Resolution MSC.516(105)	§§ 80.7, 80.1101	MSC.516 Requires distinguishable color and conformance with ICAO channel arrangements	Impact negligible	SOLAS (GMDSS)	Need to check equipment installation date during inspection	Valid for systems installed before 1 January 2024
IMO Resolution MSC.191(79)	PERFORMANCE STANDARDS FOR THE PRESENTATION OF NAVIGATION-RELATED INFORMATION ON SHIPBORNE NAVIGATIONAL DISPLAYS	n/a	§§ 80.7, 80.273, 80.1101	n/a	n/a	SOLAS	n/a	n/a
IMO Resolution MSC.192(79)	ADOPTION OF THE REVISED PERFORMANCE STANDARDS FOR RADAR EQUIPMENT	n/a	§§ 80.7, 80.273, 80.1101	n/a	n/a	SOLAS	n/a	Valid for equipment installed on or after 1 July 2008

Standard	Name	Updated version	Applicable rule	Element modified affecting Part 80	Cost/Benefit	Vessel Class	Implementation challenges	How serves the public interest
IMO Circular MSC/Circ.1040	GUIDELINES ON ANNUAL TESTING OF EMERGENCY POSITION-INDICATING RADIO BEACONS (EPIRBs)	MSC.1/Circ.1040 /Rev.2	§§ 80.7, 80.1085	Includes check of 23 Hex ID for second-generation beacons and AIS identity. Includes GNSS self check.	maintains relevancy of check with no change to cost	SOLAS (GMDSS)	None known	Increase safety in distress.
IMO Resolution MSC.246(83)	PERFORMANCE STANDARDS FOR SURVIVAL CRAFT AIS SEARCH AND RESCUE TRANSMITTERS (AIS-SART) FOR USE IN SEARCH AND RESCUE OPERATIONS	n/a	§§ 80.7, 80.233	n/a	n/a	SOLAS (GMDSS)	n/a	Remains valid
IMO Assembly Resolution A.525(13)	PERFORMANCE STANDARD FOR NARROW-BAND DIRECT PRINTING TELEGRAPH EQUIPMENT FOR THE RECEPTION OF NAVIGATIONAL AND METEOROLOGICAL WARNINGS AND URGENT INFORMATION TO SHIPS	Replaced by MSC.148(77) and MSC.525(105) listed above	§§ 80.7, 80.905, 80.1101	Addressed under MSC.148(77) above	Addressed under MSC.148(77) above	SOLAS (GMDSS)	Addressed under MSC.148(77) above	Addressed under MSC.148(77) above
IMO Resolution A.569(14)	GENERAL REQUIREMENTS FOR SHIPBORNE RADIO EQUIPMENT FORMING PART OF THE FUTURE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM	Replaced by IMO Resolution A.694(17), listed above.	§ 80.1105	n/a	n/a	SOLAS (GMDSS)	None known	Res A.569(14) revoked by IMO

Standard	Name	Updated version	Applicable rule	Element modified affecting Part 80	Cost/Benefit	Vessel Class	Implementation challenges	How serves the public interest
ITU-R Recommendation M.476-5	Direct-Printing Telegraph Equipment in the Maritime Mobile Service	Not updated	§§ 80.7, 80.207, 80.219, 80.225	n/a	n/a	Ship and coast stations where radiotelex is voluntarily used	n/a	n/a
ITU-R Recommendation M.492-6	Operational Procedures for the use of Direct-Printing Telegraph Equipment in the Maritime Mobile Service	Not updated	§§ 80.7, 80.142	n/a	n/a	Ship and coast stations where radiotelex is voluntarily used	n/a	n/a
ITU-R Recommendation M.493-13	Digital Selective-calling System for Use in the Maritime Mobile Service	ITU-R Recommendation M.493-16	§§ 80.5, 80.7, 80.179, 80.225, 80.1101, 80.1113	Integral electronic position fixing (e.g. GPS) requirement for non-GMDSS equipment, updated software requirements, eased MMSI reset, updated alarm requirements, compatibility with ITU RR AP18 frequency channels.	60% of DSC distress alert identities are invalid, and 76% have no position information (no GPS)] -- 2019 USCG statistics, IMO NCSR 8/Inf.9. Cost of ITU-R-compliant radios are comparable with cost of non-compliant radios.	All	IEC 62238 certification test standard is severely out of date, updated scheduled ~2027.	Provides significantly improved safety capability, improved performance, simplifies resetting MMSI when radio or boat is sold or otherwise needs to be changed.
ITU-R Recommendation M.540-2	Operational and Technical Characteristics for an Automated Direct-printing Telegraph System for Promulgation of Navigational and Meteorological Warnings and Urgent Information to Ships	Not updated	§§ 80.7, 80.905, 80.1101, 80.1135	n/a	n/a	SOLAS (GMDSS) and Subpart S	n/a	n/a
ITU-R Recommendation M.541-9	Operational Procedures for the Use of Digital Selective-Calling Equipment in the Maritime Mobile Service	ITU-R Recommendation M.541-11	§§ 80.5, 80.7, 80.103, 80.179, 80.225, 80.359, 80.1101, 80.1113, 80.1117	Operational procedures in the handling of distress and safety messages and alerts due to evolving software and lessons learned.	No known effect on equipment cost	GMDSS (SOLAS) and coast stations	Effects GMDSS training	Improved handling of distress alerts and other safety calls.
ITU-R Recommendation M.625-3	Direct-Printing Telegraph Equipment Employing Automatic Identification in the Maritime Mobile Service	ITU-R Recommendation M.625-4	§§ 80.7, 80.207, 80.225, 80.1125, 80.1127, 80.1131, 80.1133	Modernization of the old radiotelex system, reflects greater acceptance of MMSIs as identification. Since this means of communications is no longer required (except for defining NAVTEX modulation), its use has significantly been abandoned. Nevertheless when used, ITU-R Radio Regs require this updated version be used.	Negligible effect on new equipment	Ship and coast stations where radiotelex is voluntarily used	None	Improved performance and interoperability for those that use it.
ITU-R Recommendation M.628-4	Technical Characteristics for Search and Rescue Radar Transponders	ITU-R Recommendation M.628-5	§§ 80.7, 80.1101, 80.1129	Minor mostly editorial changes such as updating reference to IMO radar performance standards	negligible effect on new equipment	GMDSS (SOLAS)	USCG and RTCM considering recommending this device be phased out in the US in favor of the AIS SART due to its poor performance.	minimally improved performance.
ITU-R Recommendation M.633-3	Transmission characteristics of a satellite emergency position-indicating radiobeacon (satellite EPIRB) system operating through a low polar-orbiting satellite system in the 406 MHz band	ITU-R Recommendation M.633-5	§§ 80.7, 80.1101	Updated to reflect latest specifications for Cospas-Sarsat 406 MHz distress beacons, necessary for continued beacon compatibility with satellites.	No effect; new EPIRBs already meet this requirement	All	None	Ensures distress transmissions from emergency beacons are quickly heard and located
ITU-R Recommendation M.824-3	Technical Parameters of Radar Beacons (RACONS)	ITU-R Recommendation M.824-4	§§ 80.7, 80.605	Update necessary to ensure continued radar compatibility with racon aids to navigation	No known effect on equipment cost	Private Aids to navigation stations	None	Provides for improved navigation safety.

Standard	Name	Updated version	Applicable rule	Element modified affecting Part 80	Cost/Benefit	Vessel Class	Implementation challenges	How serves the public interest
ITU-R Recommendation M.1177-3	Techniques for measurement of unwanted emissions of radar systems	ITU-R Recommendation M.1177-4	§§ 80.7, 80.273, 80.1101	Updates in measurement added consequential to changed emission requirements in the ITU Radio Regs.	No known effect on equipment cost	All	None known	Reduces possibility of interference from maritime radars.
ITU-R Recommendation M.1371-3	Technical characteristics for a universal shipborne automatic identification system using time division multiple access in the VHF maritime mobile band	ITU-R Recommendation M.1371-5. M.1371-6 expected to be completed by the end of 2025 and published in early 2026.	§§ 80.7, 80.1101	Added requirements for stations using burst transmissions used by AIS SARTs, and numerous other essential technical updates added to ensure proper and reliable operation. ITU Radio Regulations state that use be in accordance with the most recent version of Recommendation ITU-R M.1371	Improved performance, capability and interoperability in communicating navigation safety information. Negligible cost effect on new equipment.	All	None known	Improved performance, capability and interoperability in communicating navigation safety information. Provides for internationally recognized use of mobile AToN, including marking of fishing gear for reasons of safety.
ITU-T Recommendation E.161:2001	Series E: Overall Network Operation, Telephone Service, Service Operation and Human Factors: International Operation- Numbering Plan of the International Telephone Service: Arrangement of Digits, Letters and Symbols on Telephones and Other Devices that Can Be Used for Gaining Access to a Telephone Network	ITU-T Recommendation E.161:2001 + AMD1:2014	§ 80.7	New Annex A: Arrangement of digits, Korean Character set and symbols	Update not needed.	SOLAS (GMDSS)	None	Affects installation of numbered touchpads separate from equipment. Change not needed.
ITU-T Recommendation E.164.1:2008	Series E: Overall Network Operation, Telephone Service, Service Operation and Human Factors: International Operation—Numbering Plan of the International Telephone Service: Criteria and Procedures for the Reservation, Assignment, and Reclamation of E.164 Country Codes and Associated Identification Codes (ICs)	Not updated	§§ 80.7, 80.1101	n/a	n/a	SOLAS (GMDSS)	n/a	n/a

Standard	Name	Updated version	Applicable rule	Element modified affecting Part 80	Cost/Benefit	Vessel Class	Implementation challenges	How serves the public interest
IEC 60092-101:1994 + A1:1995	Electrical installations in ships - Part 101: Definitions and general requirements	IEC 60092-101:2018	§§ 80.7, 80.1101	Addresses good installation practices	Codifies existing good installation practice. Does not affect radio equipment itself.	SOLAS	None known.	Improved installation practices. Improved reliability of GMDSS safety systems
IEC 60533:1999(E)	Electrical and electronic installations in ships - Electromagnetic compatibility (EMC) - Ships with a metallic hull	IEC 60533:2015	§§ 80.7, 80.1101	Addresses EMC during installation	Codifies existing good installation practice. Does not affect radio equipment itself.	SOLAS	Significant update to IEC 60533 in progress which will address LED EMC interference to VHF radio and AIS onboard ship.	Improved EMC installation guidelines. Maximizes safety issues due to electromagnetic compatibility issues during installation.
IEC 60945:2002	Maritime navigation and radiocommunication equipment and systems-General requirements-Methods of testing and required test results	IEC 60945:2002 + C1:2008	§§ 80.7, 80.237, 80.1101	Incorporated by reference in most Part 80 IEC standards. Separate listing presumably in support of SOLAS installation requirements of equipment not otherwise certified by IEC TC80 standards	No cost impact from corrigendum.	SOLAS installations. Equipment on most other vessels	Update to the EMC portion badly needed. Shipboard VHF and AIS systems, GNSS and GMDSS satellite systems are consequently vulnerable to interference. Workarounds needed.	Ensures equipment works in all environments ships might encounter. Ensures EMI does not affect radio receivers and other equipment near ships.
IEC 61097-1:2007(E)	Global maritime distress and safety system (GMDSS) - Part 1: Radar transponder - Marine search and rescue (SART) - Operational and performance requirements, methods of testing and required test results	Not updated	§§ 80.7, 80.1101	n/a	n/a	n/a	Ice 61097-1 incorporates ITU-R M.628-4, not M.628-5.	n/a
IEC 61097-3:1994	Global maritime distress and safety system (GMDSS) - Part 3: Digital selective calling (DSC) equipment - Operational and performance requirements, methods of testing and required test results	IEC 61097-7 ED2 and IEC 61097-9 ED2, expected to be adopted in early 2025.	§§ 80.7, 80.1101	No longer required once IEC 61097-7 ED2 and IEC 61097-9 ED2 equipment is installed.	n/a	n/a	n/a	n/a
IEC 61097-4	Global maritime distress and safety system (GMDSS) - Part 4: Inmarsat-C ship earth station and Inmarsat enhanced group call (EGC) equipment - Operational and performance requirements, methods of testing and required test results	IEC 61097-4:2024	§§ 80.7, 80.1101	Data interface improvements, updated to conform to MSC.306(87), notification when position has not been updated, and low paper alarm.	Notification of un-updated position addresses NTSB recommendation consequential to El Faro casualty. No known cost impact	SOLAS (GMDSS)	None known.	Improved safety particularly in regard to un-updated position.
IEC 61097-6:2005(E)	Global maritime distress and safety system (GMDSS) - Part 6: Narrowband direct-printing telegraph equipment for the reception of navigational and meteorological warnings and urgent information to ships (NAVTEX)	IEC 61097-6:2005 + AMD1:2011 + AMD2:2019	§§ 80.7, 80.1101	Adds Bridge Alert Management interface.	Negligible cost for increase in messages received and bridge alarm capability	SOLAS (GMDSS) and Subpart S	negligible impact to Subpart S or Subpart W	Intended to bring urgent navigational and weather warnings to the attention of bridge personnel in a timely manner.
IEC 61097-7:1996	Global maritime distress and safety system (GMDSS) - Part 7: Shipborne VHF radiotelephone transmitter and receiver - Operational and performance requirements, methods of testing and required test results	IEC 61097-7 ED2, expected to be adopted in early 2025.	§§ 80.7, 80.1101	updated to incorporate the provisions of the new IMO performance standards given in Resolution MSC.511(105) and new ITU-R recommendations given in ITU-R M.493-16	Significant safety improvements with minimal impact to new equipment cost.	SOLAS (GMDSS)	Cost of GMDSS VHF and MF/HF radio equipment is high compared to their non-GMDSS equivalence. This updated standard will not change that existing situation.	Improves performance and simplifies operation of distress and safety radiocommunications equipment, including the handling of distress alerts.
IEC 61097-8:1998(E)	Global maritime distress and safety system (GMDSS) - Part 8: Shipborne watchkeeping receivers for the reception of digital selective calling (DSC) in the maritime MF, MF/HF and VHF bands - Operational and performance requirements, methods of testing and required test results	IEC 61097-7 ED2 and IEC 61097-9 ED2, expected to be adopted in early 2025.	§§ 80.7, 80.1101	No longer required once IEC 61097-7 ED2 and IEC 61097-9 ED2 equipment is installed.	n/a	n/a	n/a	n/a

Standard	Name	Updated version	Applicable rule	Element modified affecting Part 80	Cost/Benefit	Vessel Class	Implementation challenges	How serves the public interest
IEC 61097-9:1997(E)	Global maritime distress and safety system (GMDSS) - Part 9: Shipborne transmitters and receivers for use in the MF and HF bands suitable for telephony, digital selective calling (DSC) and narrow band direct printing (NBDP) - Operational and performance requirements, methods of testing and required test results	IEC 61097-9 ED2, expected to be adopted in early 2025.	§§ 80.7, 80.1101	updated to incorporate the provisions of the new IMO performance standards given in Resolution MSC.512(105) and new ITU-R recommendations given in ITU-R M.493-16	Significant safety improvements with minimal impact to new equipment cost.	SOLAS (GMDSS)	Cost of GMDSS VHF and MF/HF radio equipment is high compared to their non-GMDSS equivalence. This updated standard will not change that existing situation.	Improves performance and simplifies operation of distress and safety radiocommunications equipment, including the handling of distress alerts.
IEC 61097-10:1999(E)	Rescinded	Rescinded	§§ 80.7, 80.1101	n/a	n/a	n/a	n/a	n/a
IEC 61097-12:1996(E)	Global maritime distress and safety system (GMDSS) - Part 12: Survival craft portable two-way VHF radiotelephone apparatus - Operational and performance requirements, methods of testing and required test results	IEC 61097-12:1996 + AMD1:2017 + AMD2:2023	§§ 80.7, 80.1101	Clarifies Battery replacement requirement	Codifies existing good practice	SOLAS (GMDSS)	existing best practice	intended to ensure safety equipment is operable in an emergency
IEC 61097-13:2003(E)	Rescinded	Rescinded	§§ 80.7, 80.1101	n/a	n/a	n/a	n/a	n/a
IEC 61097-14:2010	Global maritime distress and safety system (GMDSS) - Part 14: AIS search and rescue transmitter (AIS-SART) - Operational and performance requirements, methods of testing and required test results	Not updated	§§ 80.7, 80.233	No change	n/a	n/a	n/a	n/a
IEC 61162-1:2007(E)	Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 1: Single talker and multiple listeners	IEC 61162-1:2024	§§ 80.7, 80.1101	Significant addition of new interface capabilities needed by equipment developed in the last 15 years.	No cost impact	SOLAS (GMDSS)	Should include IEC 61162-450 ethernet standard used in conjunction with IEC 61162-1, and IEC 61162-460 Security standard which is used with IEC 61162-450. Except for the data sentence, these two standards have largely replaced the old serial interface IEC 61162-1. See Annex E.	Intended to ensure a reliable SOLAS-recognized installation of equipment
IEC 61993-2:2001(E)	Maritime navigation and radiocommunication equipment and systems - Automatic identification systems (AIS) - Part 2: Class A shipborne equipment of the automatic identification system (AIS) - Operational and performance requirements, methods of test and required test results	IEC 61993-2:2018	§§ 80.7, 80.1101	Significant safety related and performance improvements implemented, including use of Message 27 dedicated to long range tracking by satellite, updated date interface requirements,, a new Annex addressing a standardized method of calculating area size and distance, including the ITU-R M.1371-5-mandated improvements, included IMO-mandated Bridge Alert management, includes extended dimension values used by towing vessels consequential to recommendations of the NTSB addressing a safety issue, and a capability for software update.	Significant improvements to improve safety and performance. These changes have long been implemented by the market so cost should not be significant for new devices.	SOLAS	None known.	Significant Improvements to improve safety and performance, meeting updated requirements of ITU-R M.1371.

Standard	Name	Updated version	Applicable rule	Element modified affecting Part 80	Cost/Benefit	Vessel Class	Implementation challenges	How serves the public interest
IEC 62238:2003(E)	Maritime navigation and radiocommunication equipment and systems - VHF radiotelephone equipment incorporating Class "D" Digital Selective Calling (DSC) - Methods of testing and required test results	Not updated. New Edition in process expected ~2027. ETSI EN 301 025 may be a necessary substitute.	§§ 80.7, 80.225, 80.273	Necessary changes include: Integral electronic position fixing (e.g. GPS) requirement for non-GMDSS equipment, updated software requirements, eased MMSI reset, updated alarm requirements, compatibility with ITU RR AP18 frequency channels.	60% of DSC distress alert identities are invalid, and 76% have no position information (no GPS) -- 2019 USCG statistics, IMO NCSR 8/Inf.9. Cost of ITU-R-compliant radios are comparable with cost of non-compliant radios.	All ships except SOLAS.	Completing necessary updates to existing certification test standard IEC 62238 or a substitute and adopted in Part 80 in a timely manner.	Significantly improves distress capability and ease of operation of the radio, simplifying onerous procedures for resetting MMSI identities.
IEC 62287-1:2006(E)	Maritime navigation and radiocommunication equipment and systems - Class B shipborne equipment of the automatic identification system (AIS) - Part 1: Carrier-sense time division multiple access (CSTDMA) techniques	IEC 62287-1:2017 + AMD1: 2022	§§ 80.7, 80.231	Numerous technical changes such as MMSI restrictions and the introduction of Message 27 on channels 75 and 76 to improve satellite detection, and others to improve reliable and interoperable operation.	Significant improvements to improve safety and performance. These changes have long been implemented by the market so cost should not be significant for new devices.	All ships	Including recognition of the better performing alternative Class B AIS Self-Organized TDMA standard IEC 62287-2, as an authorized equivalent to the Carrier Sense TDMA AIS.	Improvements to improve safety and performance, meeting updated requirements of ITU-R M.1371.
IEC 62388:2007	Maritime navigation and radiocommunication equipment and systems - Shipborne radar - Performance requirements, methods of testing and required test results	IEC 62238:2013	§§ 80.7, 80.273, 80.1101	Referenced in 80.273, missing from Notice. Significant improvements in display requirements, including heads up stabilized, display presentation, AIS presentation, tightened RF emission masks.	Significant improvements to safety and reduced interference. These changes have long been implemented by the market so cost should not be significant.	SOLAS ships and ships operating in coastal areas required by the Coast Guard to carry radar	None known.	Significant safety improvements and magnetron emission interference mitigation
ISO Standard 3791:1976	Office machines and data processing equipment — Keyboard layouts for numeric applications	Not updated.	§§ 80.7, 80.1101	n/a	n/a	n/a	n/a	n/a

Standard	Name	Updated version	Applicable rule	Element modified affecting Part 80	Cost/Benefit	Vessel Class	Implementation challenges	How serves the public interest
RTCM Paper 56-95/SC101-STD	RTCM Paper 56-95/SC101-STD, Recommended Minimum Standards for Digital Selective Calling (DSC) Equipment Providing Minimum Distress and Safety Capability, Version 1.0	N/A	§§ 80.7, 80.225	This standard is obsolete and its reference should be removed from Part 80	N/A	N/A	N/A	N/A
RTCM Standard 11000.3	Standard for 406 MHz Satellite Emergency Position Radio Beacons (EPIRBs), June 12, 2012	RTCM 11000.5 Standard for 406 MHz Satellite Emergency Position-Indicating Radiobeacons (EPIRB), April 14, 2022, with Amendment 1	§§ 80.7, 80.1061	Updated references to COSPAS SARSAT specifications. Inclusion of GPS receiver requirement. Inclusion of AIS for locating. Inclusion of return link service (RLS). Category 1, Class 2, Group 3 EPIRBs, which complies with IEC 61097-2:2021, and meets the GMDSS requirements as defined by IMO Resolution MSC.471(101) for installation on SOLAS vessels on or after 1 July 2022.	Significant improvements in signal compatibility with COSPAS-SARSAT satellites, quicker distress position fixing, quicker SAR response. This standard affects equipment certification only.	all vessels	Encourage voluntary users to keep battery up to date and migrate to newer versions. NOTE USCG maintains EPIRB carriage requirement regulations.	Significant improvements in response to distress alerts. Provides more category/class/type options for users.
RTCM Standard 11020.1	Standard for Ship Security Alert Systems (SSAS) using the Cospas-Sarsat System	N/A	§§ 80.7, 80.277	N/A	N/A	SOLAS	N/A	Remains valid
RTCM Standard 12301.1	Standard for VHF-FM Digital Small Message Services, July 2009	N/A	§§ 80.7, 80.364	N/A	N/A	all vessels	N/A	Remains valid
All RTCM Standards	RTCM Physical Address	1150 18th Street NW Suite 910, Washington, DC 20036 US	§§ 80.7 (f)	The listed address for RTCM changed in 2016 and is no longer valid.	N/A	N/A	N/A	Allows interested parties to reference RTCM at its current address.

Standard	Name	Updated version	Applicable rule	Element modified affecting Part 80	Cost/Benefit	Vessel Class	Implementation challenges	How serves the public interest
IEC 61097-16:2019	Global maritime distress and safety system (GMDSS) - Part 16: Ship earth stations operating in mobile-satellite systems recognized for use in the GMDSS - Operational and performance requirements, methods of testing and required test results	n/a	§§80.7 and 80.1101	SOLAS required for all new GMDSS mobile satellite terminals, including Iridium and GMDSS FleetSafety, and others once adopted by IMO	Allows certification of equipment other than Inmarsat C for GMDSS use.	GMDSS and all other ships	None known. Waiver granted for Iridium on 26 December 2019 under WT Docket 19-280, DA 19-1334.	Allows certification of equipment other than Inmarsat C for GMDSS use. Allows GMDSS satellite terminals to have greater safety capability than old Inmarsat-C
IEC 62287-2:2017	Maritime navigation and radiocommunication equipment and systems - Class B shipborne equipment of the automatic identification system (AIS) - Part 2: Self-organising time division multiple access (SOTDMA) techniques	n/a	§§80.7 and 80.231	Class B AIS using self-organizing TDMA technology, similar to Class B AIS using carrier-sense TDMA already incorporated in Part 80.	No cost - provides users more technology choices	all (not carried on Subpart W ships)	None known	Superior performance over Class B CSTDMA, less costly than Class A AIS. Provides users more technology choices.
IEC 62320-2:2016	Maritime navigation and radiocommunication equipment and systems - Automatic identification system (AIS) - Part 2: AIS AtoN Stations - Operational and performance requirements, methods of testing and required test results	n/a	§§ 80.7 and Subpart M	n/a	No cost - already accepted by waiver for certain manufacturers	all	None known. No FCC carriage requirement	Improves maritime navigation safety by enabling private AIS aids to navigation to be implemented. Simplifies requirement for manufacturers now having to seek a waiver.
IEC 61162-450:2024	Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 450: Multiple talkers and multiple listeners - Ethernet interconnection	n/a	§§ 80.7, 80.1101	Except for the data sentence, this standard has largely replaced the old serial interface IEC 61162-1. See Annex C.	Reduced cost as it describes existing SOLAS installation requirements and best commercial practice.	all	None known	Provides user and installer with significantly greater flexibility in installation and interface with other equipment
IEC 61162-460:2024	Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 460: Multiple talkers and multiple listeners - Ethernet interconnection - Safety and security	n/a	§§ 80.7, 80.1101	Used with IEC 61162-450, this standard has largely replaced the old serial interface IEC 61162-1. See Annex C.	Improves cyber security for data interconnection	all	None known	Provides user and installer with significantly greater flexibility in installation, security and interface with other equipment
IEC 63154:2021	Maritime navigation and radiocommunication equipment and systems - Cybersecurity - General requirements, methods of testing and required test results	n/a	§§80.7 and 80.1011	Adds cybersecurity requirements for GMDSS installations	Improves cybersecurity, but does increase installation costs	SOLAS (GMDSS)	Standard should be allowed for GMDSS installations at least as an option. Mandatory inclusion should be further studied, with comments sought.	Provides equipment manufacturers and installers guidance on inclusion of cybersecurity measures
IMO COMSAR Circ.32/Rev.2	HARMONIZATION OF GMDSS REQUIREMENTS FOR RADIO INSTALLATIONS ON BOARD SOLAS SHIPS	n/a	§§ 80.7 and 80.1101(b)	This supplements other standards listed in 80.11-1(b) general requirements for SOLAS Convention mandated GMDSS installations on ships. Addresses interpretation of 2023 SOLAS changes to duplication of equipment.	No known cost as it describes existing SOLAS installation requirements and best commercial practice.	GMDSS (SOLAS)	None known.	This standard describes how equipment specified in Subpart W is to be installed on ships under the SOLAS Convention. Addresses duplication of equipment under recent SOLAS changes.

Standard	Name	Updated version	Applicable rule	Element modified affecting Part 80	Cost/Benefit	Vessel Class	Implementation challenges	How serves the public interest
IMO MSC.1/ Circ.1039/Rev.1	GUIDELINES FOR SHORE-BASED MAINTENANCE OF EMERGENCY POSITION-INDICATING RADIO BEACONS (EPIRBs)	n/a	§§80.7 and 80.1105	The purpose of these Guidelines is to establish standardized procedures and minimum levels of service for the testing and maintenance of emergency position-indicating radio beacons (EPIRBs) to ensure maximum reliability while minimizing the risk of false distress alerting. The Guidelines are applicable to EPIRBs approved to comply with the requirements of SOLAS regulation IV/7.1.	No known cost as it describes existing SOLAS installation requirements and best commercial practice.	GMDSS (SOLAS)	None known	Ensures EPIRBs perform as designed during a distress.
IMO MSC.1/Circ.1389	GUIDANCE ON PROCEDURES FOR UPDATING SHIPBORNE NAVIGATION AND COMMUNICATION EQUIPMENT	n/a	§§80.7, 80.1105, 80.1085, and 80.1101	As navigation and radiocommunication equipment becomes increasingly software and firmware dependent, updates to application software and firmware to meet changes in IMO and ITU regulatory requirements are needed. This applies in the case of retrospective changes to regulations which apply to all relevant ships.	Minimal cost since including this capability has become common commercial best practice. This requirement is being incorporated into all relevant maritime radiocommunication standards as they are maintained.	GMDSS (SOLAS), but could apply to all types	None known	For example, ensures radiocommunications equipment remain capable of transmitting only on radio frequencies authorized by the administration.
ITU-R M.585-9:2022	Assignment and use of identities in the maritime mobile service	n/a	§§ 2 Subpart D, 80.5 and 80.7	Although MMSIs are treated by the ITU Radio Regulations as equivalent to radio call signs in meeting the requirement for identifying transmitted signals, FCC never adopted MMSIs into its rules.	No known cost. Would clarify requirements for identifying signals transmitted from DSC and AIS radios.	all	none known	Would begin to address the ongoing problem whereby 60% of DSC distress alert identities are invalid. Would clarify the relevance of status of MMSIs.
ITU-R M.1080:1994	Digital Selective Calling System Enhancement for Multiple Equipment Installations	n/a	§§80.7, 80.205	Provides MMSI assignment guidance for multiple DSC radio installations on the same vessel.	No known cost as this would be allowable, not mandatory. Would clarify requirements for identifying signals transmitted from DSC radios.	all	Interoperability with other non-M.1080-compliant DSC equipment and user familiarization.	Address proper equipment identification when multiple DSC radios installed on the same vessel
RTCM 10150.0	10150.0 Standard for VHF-FM Portable Marine Radiotelephone Equipment with Digital Selective Calling (DSC) and Global Navigation Satellite System (GNSS) Location Function, July 5, 2012	n/a	§§80.7 and 80.225	RTCM 11050 needs to replace IEC 62238 and ITU-R M.493-13's application to VHF handheld, portable DSC equipment in 80.225 since neither standard was ever intended for handheld devices. Those older standards, originally included as an expedient, now need to be phased out.	Cost impact believed to be minimal while ensuring improved capability and consistency in distress alerting.	all	Standard may be updated within the next two years to ensure compatibility with updated ITU-R M.493-16.	Improves safety related capability of these devices, such as inclusion of distress position information, and eliminates functions not required in a handheld.

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Standard	Name	Updated version	Applicable rule	Element modified affecting Part 80	Cost/Benefit	Vessel Class	Implementation challenges	How serves the public interest
NMEA 0183 Ver.4.30:2023	Data interface	n/a	§§80.7	Fulfills same purpose as IEC 61162 series	No cost. Incorporating this standard by reference would allow manufacturers the option of using a more up-to-date data interface than that described by IEC.	all	May not apply to Subpart W SOLAS	Provides user and installer with significantly greater flexibility in installation and interface with other equipment
NMEA 2000 Ver 3.000:2022	Data Interface	n/a	§§80.7	Fulfills same purpose as IEC 61162 series	No cost. Incorporating this standard by reference would allow manufacturers the option of using a more up-to-date data interface than that described by IEC.	all	May not apply to Subpart W SOLAS	Provides user and installer with significantly greater flexibility in installation and interface with other equipment
NMEA OneNet Ver 1.000:2022	OneNet Ethernet Standard	n/a	§§80.7	Fulfills same purpose as IEC 61162 series	No cost. Incorporating this standard by reference would allow manufacturers the option of using a more up-to-date data interface than that described by IEC.	all	May not apply to Subpart W SOLAS	Provides user and installer with significantly greater flexibility in installation and interface with other equipment

Standard	Name	Updated version	Applicable rule	Element modified affecting Part 95	Cost/Benefit	Vessel Class	Implementation challenges	How serves the public interest
RTCM 11010.2	Standard for 406 MHz Satellite Personal Locator Beacons (PLBs)	RTCM 11010.4:2024 with Amendment 1	§§95.2989	Changes required to maintain alignment with COSPAS-SARSAT technical standards, additional detail on first and second generation PLB encoding, updated information regarding U.S. protocols, improved locating beacon, and updated labeling requirements.	No known cost. Improves ability to rescuers to find and rescue persons in distress.	all vessels	None known	Avoids requiring manufacturers to submit waivers for known, better technology rescue devices, provides user better choice of more effective rescue devices.
RTCM 11901.1	Standard for Maritime Survivor Locating Devices	Amendments 1 and 2:2015. RTCM 11901.2 published fall 2024.	§§95.2989	Aligns MSLD devices with requirements of ITU and IEC affecting DSC and AIS, improving alerting and locating signals used by responders. Provides more technology options to users.	No known cost. Improves ability to rescuers to find and rescue persons in distress.	all vessels	None known	Avoids requiring manufacturers to submit waivers for known, better technology rescue devices, provides user better choice of more effective rescue devices.