



# TECHNICAL INFORMATION

36 Myeongji ocean city 9-ro,  
Gangseo-gu, Busan, 618-814  
Republic of Korea

Phone : +82-70-8799-8331  
Fax : +82-70-8799-8339  
E-mail : convention@krs.co.kr  
Person in charge: JEON, Gyejeong

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## **Subject : Amendments to SOLAS Chapter IV(Radiocommunications) implemented on 1<sup>st</sup> January 2024**

Since the adoption of the GMDSS(Global Maritime Distress and Safety System) in 1988, the IMO(International Maritime Organization) has carried out "GMDSS modernization" for many years with the aim to adapt to modern communication systems and remove carriage requirements for obsolete systems.

As a result, a number of existing IMO instruments related to radio communication, including SOLAS Chapter IV, have been revised for implementation on 1<sup>st</sup> January 2024. In this regard, this document intends to bring the essential points of the amendments and measures to be taken to the attention of all concerned parties, including all shipowners/operators.

### **1. Amendments to SOLAS and related Codes** → Refer to "Attachment 1" for the details.

#### **1.1 Brief descriptions of the amendments to SOLAS Chapter IV**

- SOLAS Chapter IV now uses generalized terms and expressions to address existing and/or future GMDSS technologies. (e.g., INMARSAT → Recognized Mobile Satellite Service, NAVTEX/EGC receiver/HF NBDP → Facilities for reception of MSI and search and rescue related information)
- The provisions of two-way VHF radio telephone apparatus and SART were entirely deleted from SOLAS III/Reg.6, and consolidated in SOLAS IV/Reg.7.
- VHF-EPIRB will be no longer accepted in lieu of satellite EPIRB for sea area A1.
- The coverage of sea area A3 became variable by the type of RMSS(Recognized Mobile Satellite Service) SES(Ship Earth Station).
- Sea areas were respectively changed from A1, A1+A2, A1+A2+A3 and A1+A2+A3+A4 to A1, A2, A3 and A4.
- MF/HF radio installation is no longer categorized as primary equipment for sea area A3 but remains only primary equipment for sea area A4.

- The function of NBDP(Narrow Band Direct Printing) for MF/HF radio installation is no longer required.

## **1.2 Amendments to other Chapters of SOLAS and related Codes**

- SOLAS Chapter II-1(Construction – Structure, Subdivision and Stability, Machinery and Electrical installations), Chapter III(Life-saving Appliances and Arrangements) and Chapter V(Safety of Navigation) were amended in line with the amendments to Chapter IV.
- The requirement of radio communication in 1994/2000 HSC Codes, 1983/2008 SPS Codes and 1979/1989/2009 MODU Codes were amended in line with the amendments to SOLAS Chapter IV.
- Forms of related certificates were consequently changed (Passenger Ship Safety Certificate, Cargo Ship Safety Equipment Certificate, Cargo Ship Safety Radio Certificate, Cargo Ship Safety Certificate, HSC Safety Certificate, and their records of equipment, etc.)

## **2. Main changes to requirements on shipborne GMDSS equipment**

### **2.1 Replacement/Addition of GMDSS equipment**

Except below, there is no GMDSS equipment to be added or replaced on ships on or after 01.01.2024 compared to the existing requirements.

- If a VHF-EPIRB is installed on a ship operating only in the sea area A1, it should be replaced with satellite-EPIRB.

### **2.2 Deletion of function of NBDP for MF/HF radio installation**

The NBDP for MF/HF radio installation is not be used, since the function is no longer required on or after 01.01.2024. And for the KR registered vessels, the marking of the NBDP for MF/HF radio installation will be deleted on relevant statutory certificates issued after following the first radio survey after 01.01.2024. If the NBDP is voluntarily uninstalled before the date by the ship owner/operator, the relevant certificate should be revised and reissued.

### **2.3 Selection of RMSS SES**

The kinds of RMSS SES(INMARSAT, IRIDIUM, etc.) to be installed on board can be selected by ship owner/operator with following cautions.

- Since each RMSS system provides different coverage of communication, the ship`s maximum operational area can be varied depending on the kinds of RMSS SES installed on board.(The coverage of sea area A3 became variable.) → Refer to "Attachment 2" for the details.
- The RMSS SES to be installed on board should be able to receive EGC(Enhanced Group Calling) broadcasting in the sea area where the ship is intended to operate. However, the areas where

MSI(Maritime Safety Information) and SAR(Search and Rescue) related information can be obtained by other equipment(NAVTEX, HF NBDP, etc.) installed on board are excluded from the consideration. (The areas where information can be received through each MSI and SAR receiver can be found on the GMDSS module of [IMO GISIS website.](#))

- When different types of RMSS SES are installed on board as the primary and duplicated system, an RMSS SES with lesser coverage should be designated as a primary system to determine the coverage of sea area A3 for the ship. The coverage of RMSS SES installed as duplicated system should include the coverage of primary RMSS SES. Therefore, RMSS SES that partially overlaps or has no correlation with the communication range of primary RMSS SES cannot be accepted as duplicated system.

### **3. Main changes to relevant statutory certificates**

#### **3.1 Changes on forms of certificates**

The forms of relevant statutory certificates will be changed as below from 01.01.2024. And for the KR registered vessels, the revised certificates will be issued after following the first radio survey(periodical or renewal) after 01.01.2024.

<b>Main Changes</b>	<b>Relevant Certificates<sup>1</sup></b>
<ul style="list-style-type: none"> <li>• If the ship`s operating sea area includes the sea area A3, the type of RMSS SES installed on board will be marked. (INMARSAT, IRIDIUM, etc.)</li> <li>• The "NBDP of MF/HF radio installation" will be deleted.</li> <li>• "NAVTEX receiver", "EGC receiver" and "HF direct printing radiotelegraph receiver" will be changed to "Facilities for reception of MSI and search and rescue related information".</li> <li>• The "VHF-EPIRB" will be deleted.</li> <li>• The two-way VHF radio telephone apparatus will be categorized as below, except HSC Certificate, and the numbers of equipment will be marked.               <ul style="list-style-type: none"> <li>- Portable two-way VHF radiotelephone apparatus; or</li> <li>- Two-way VHF radiotelephone apparatus fitted in survival craft</li> </ul> </li> <li>• The SART will be categorized as below, except HSC Certificate, and the numbers of equipment will be marked.               <ul style="list-style-type: none"> <li>- Radar search and rescue transponders (radar SART) stowed for rapid placement in survival craft;</li> <li>- Radar search and rescue transponders (radar SART) stowed in survival craft;</li> <li>- AIS search and rescue transmitters (AIS-SART) stowed for rapid placement in survival craft; or</li> <li>- AIS search and rescue transmitters (AIS-SART) stowed in survival craft</li> </ul> </li> </ul>	SR, PS, CSS, HSC, SPS
<ul style="list-style-type: none"> <li>• The two-way VHF radio telephone apparatus and SART will be moved to record of radio facilities from record of life-saving appliances.</li> </ul>	PS, CSS, HSC, SPS
<ul style="list-style-type: none"> <li>• The two-way VHF radio telephone apparatus and SART will be deleted.</li> </ul>	SE

<sup>1</sup> SR : Cargo Ship Safety Radio Certificate, SE : Cargo Ship Safety Equipment Certificate, PS : Passenger Ship Safety Certificate, CSS : Cargo Ship Safety Certificate, HSC : High Speed Craft Safety Certificate, SPS : Special Purpose Ship Safety Certificate

### 3.2 Changes on marking at certificates

As per the GMDSS equipment installed on board, the ship`s maximum operating area and sea areas to be marked on relevant certificates will be determined. → Refer to "Attachment 2" for the details.

If the current relevant certificates for KR registered vessels were marked as below, it should be changed. The revised certificates with changes as below will be issued after following the first radio survey(periodical or renewal) after 01.01.2024. Despite of changes on marking at certificate, there is no GMDSS equipment to be added or replaced, and also the actual permitted operating sea areas do not change.

Case	As-is			To-be		
	Sea areas	Primary	Duplication	Sea areas	Primary	Duplication
1	A1+A2+A3	VHF+MF/HF	VHF+INMARSAT	A1+A2+A3	VHF+MF+RMSS <sup>1)</sup>	VHF+MF/HF
2	A1+A2+A3+A4	VHF+MF/HF	VHF+MF/HF	A1+A2+A4	VHF+MF/HF	VHF+MF/HF

1) Although there is one MF/HF radio installation on board(refer to attachment 2), considering SOLAS IV/Reg.10, an MF radio installation should be marked on certificate as a primary system.

### 4. Amendments to IMO performance standards for GMDSS equipment

Equipment	Previous documents	New documents
NAVTEX and HF NBDP	Res.MSC.148(77), Res.A.700(17)	Res.MSC.508(105)
Radar SART	Res.A.530(13), Res.A.802(19)	Res.MSC.510(105)
VHF radio installation	Res.A.803(19)	Res.MSC.511(105)
MF and MF/HF radio installation	Res.A.804(19), Res.A.806(19)	Res.MSC.512(105)
INMARSAT-C Ship Earth Station	Res.A.807(19)	Res.MSC.513(105)
Survival craft portable Two-way VHF radiotelephone apparatus	Res.MSC.149(77)	Res.MSC.515(105)
On-scene(Aeronautical) portable and fixed Two-way VHF radiotelephone apparatus	Res.MSC.80(70)	Res.MSC.80(70), Res.MSC.516(105)
Integrated Communication System(ICS)	Res.A.811(19)	Res.MSC.517(105)

Above new IMO performance standards should be applied to equipment installed on or after 01.01.2024. (Refer to IACS UI SC 298<sup>2</sup> for the phrase "installed on or after 01.01.2024".) And it is necessary to note below paragraph 5.3(regarding the MSC.1/Circ.1676) for delays affecting the availability of VHF, MF, MF/HF radio installation and INMARSAT-C SES.

<sup>2</sup> i) for ships for which the building contract is placed on or after 01.01.2024: any installation on the ship

ii) for ships for which the building contract is placed before 01.01.2024: a contractual delivery date for the equipment or, in the absence of a contractual delivery date, the actual delivery of the equipment to the ship on or after 01.01.2024

## **5. Issuance of Circulars**

### **5.1 MSC.1/Circ.1460/Rev.4 – Guidance on the validity of radiocommunications equipment installed and used on ships**

Current VHF radio installation should be taken proper measures, such as upgrade of software or replacement of equipment, by the first radio survey after 01.01.2028, at the earliest, to meet the arrangements of VHF band frequencies contained in appendix 18 of the latest ITU Radio Regulation. This requirement is 4-year extension of deadline(01.01.2024) required by MSC.1/Circ.1460/Rev.3. Moreover, further clarification may be discussed and decided by IMO meetings on whether these measures should be taken by all vessels or for all VHF radio installation installed on board.

### **5.2 MSC.1/Circ.1645 – Guidance for the reception of MSI and SAR related information as required in the GMDSS**

This document provides the kinds of equipment for the reception of MSI and SAR related information, such as NAVTEX, EGC receiver and HF NBDP, and operational guidance. And this circular is referred at SOLAS IV/Reg.7 as a footnote. Therefore, all vessels, applied to SOLAS Chapter IV, should be provided such equipment to receive MSI and SAR related information at all sea areas intended to operate with reference to this document.

### **5.3 MSC.1/Circ.1676 – Delays affecting the availability of new GMDSS equipment compliant with the revised performance standards set out in resolutions MSC.511(105), MSC.512(105) and MSC.513(105)**

New IMO performance standards mentioned in above section 4 should be applied to equipment installed on or after 01.01.2024. But due to the delay in developing relevant IEC standards, concerns were raised that there may not be GMDSS installations, i.e. VHF, MF, MF/HF radio installation and INMARSAT-C SES, complying with the new performance standards for implementation on 01.01.2024. In this regard, MSC 107(June 2023) urgently discussed the matter and issued the circular to invite Member States to consider permitting until 01.01.2028 the continued installation of VHF, MF, MF/HF radio installation and INMARSAT-C SES conforming to the old Performance standards. → For this issue, KR has a point of view that the related radio installations conforming to the old Performance standards can be installed on board until before 01.01.2028, unless there is detailed instruction by each flag administration to implement this circular.

### **5.4 COMSAR.1/Circ.32/Rev.2 – Harmonization of GMDSS requirements for radio installations on board SOLAS ships**

This document provides an unambiguous interpretation and guidelines on the radio installation requirements in SOLAS Chapter IV and related IMO instruments. Especially, the requirements on GMDSS equipment to be installed on board(primary and duplicated system) as per ship`s operational sea areas

were amended in line with the amendments to SOLAS Chapter IV. The effective date of the document is 01.01.2024. Also, paragraph 6.1.2 of the document states the impact, measurement and suggested solution of Electro-Magnetic Interface(EMI) due to LED lighting on-board. It can be used as a reference considering the recent increasing cases of installation of LED lighting for navigation light, deck light and etc.

<Summary of measurement of EMI due to LED lighting (Para. 6.1.2 of COMSAR.1/Circ.32/Rev.2)>

<b>Source of EMI</b>	LED-based navigation/signal/deck lights, etc. mounted near antennas
↓	
<b>Simplified checks</b>	<ul style="list-style-type: none"> <li>• VHF with a received signal strength indicator (RSSI): Select a free channel and observe if RSSI level is affected when suspected source of EMI is on and off.</li> <li>• VHF without RSSI: Check if a channel's quality is affected when suspected source of EMI is on and off.</li> <li>• AIS: Swap its antenna cable connection between the AIS and VHF radio, and proceed with the VHF test.</li> <li>• GNSS(GPS): Check if Signal-to-Noise(SNR) level is affected, when suspected source of EMI is on and off.</li> </ul>
↓	
<b>Full evaluation</b>	If EMI is suspected but the source may not be identified through the simplified checks, proceed with a full evaluation using a spectrum analyzer. The result of this analysis should be documented and kept on board.
↓	
<b>Suggested solution</b>	If EMI has been identified, either the identified interferer has to be removed, the interference has to be suppressed or the antenna has to be relocated to an area without harmful interference.

## 6. Actions requested of concerned parties

**Ship owners/operators** are invited to note above sections from 1 to 5 in general, and apply them in ship`s operation, as appropriate.

**Ship builders** are invited to note above sections 2, 4 and 5, and apply them in ship`s construction and installation of GMDSS, as appropriate.

**Manufacturers and Service suppliers of GMDSS equipment** are invited to note above sections 2, 4 and 5, and apply them in installation or inspection of GMDSS equipment, as appropriate.

**KR surveyors** are invited to note above sections from 1 to 5 in general, and issue the relevant certificates considering above section 3 after following the first radio survey(periodical or renewal) or request from ship owners/operators after 01.01.2024.

Attachment 1 – Amendments to IMO instruments related to GMDSS modernization

Attachment 2 - GMDSS equipment as per ship`s operational sea areas and marking on the relevant certificates

Attachment 3 – COMSAR.1/Circ.32/Rev.2

[The end]

\* Distribution : KR surveyors, Ship owner/operators and other relevant parties

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