Input paper: [[1]](#footnote-1) ENAV21-5.3

Input paper for the following Committee(s): check as appropriate Purpose of paper:

**□** ARM **□** ENG **□** PAP **□** Input

☑ ENAV **□** VTS ☑ Information

Agenda item [[2]](#footnote-2)

Technical Domain / Task Number 2 COMMUNICATIONS

Author(s) / Submitter(s) Capt. Jean-Charles CORNILLOU

Report from rapporteur on GMDSS

# Summary

The present report provides developments in GMDSS and the modernization of GMDSS.

## Purpose of the document

This document reports the latest update on GMDSS and the modernization of GMDSS at IMO.

## Related documents

NCSR 4/29 annex 11: draft modernization plan of GMDSS (approved by MSC98)

MSC 98/23 annex 19: draft amendments to the 1994 HSC Code

MSC 98/23 annex 20: draft amendments to the 2000 HSC Code

MSC 98/23 annex 21: draft amendments to the 2008 SPS Code

MSC 98/23 annex 22: draft amendments to SOLAS appendix (certificates)

NCSR 5/12: report of 13th IMO/ITU EG on maritime radiocommunication matters

# Background

## Development in GMDSS

MSC98 adopted:

* resolution MSC.430(98) on Amendments to the Revised performance standards for narrow-band direct-printing telegraph equipment for the reception of navigational and meteorological warnings and urgent information to ships (NAVTEX) (resolution MSC.148(77));
* resolution MSC.431(98) on Amendments to the Revised performance standards for enhanced group call (EGC) equipment (resolution MSC.306(87)),
* resolution MSC 434(98) on Performance standards for a ship earth station for use in the GMDSS

Considering the possible introduction of extra satellite operators in the GMDSS, MSC 98 approved amendments to SOLAS relative to the introduction of the term ***"recognized mobile satellite service"*** and its consequence on Certificates, HSC & SPS Codes (refer to documents in 1.2).

MSC98 invited the IMSO to undertake the necessary technical and operational assessment of the Inmarsat FleetBroadband (FBB) Maritime Safety Data Service and provide a report for consideration by the NCSR Sub-Committee. In consequence, a report from IMSO on FFB Maritime Safety Data Service as well as another report on Iridium to remove the uncertainties on this latter system raised by the NCSR should be submitted at NCSR5.

Indeed, the FBB and Inmarsat C systems can be provided on the same time with the help of SafetyNet 2. France, UK and USA NAVAREA coordinators are already using SafetyNet 2 for the broadcasting of MSI in their respective NAVAREAs. In that respect MSC98 noted for FBB that not all elements of resolution A.1001(25) on *Criteria for the provision of mobile satellite communication systems in the GMDSS* would need to be reviewed in detail.

The introduction of new satellite radiocommunication operators, in particular Iridium, is interfering with the work on the modernisation of GMDSS. An operational question with the introduction of new satellite operators came from the IMO/ICAO Join Working Group on the harmonisation of SAR procedure (IMO/ICAO JWG). The question is how RCC will relay a distress alert on the same time to all ships without having to contact all satellite operators. One idea is to have one “service provider” for all RCC, NAVAREA providers and METAREA providers in order to broadcast distress alert relay, urgent or safety messages via different satellite operators. If this is a nice idea, nobody knows which body could be able to do this task.

The discussion relative to SART versus AIS-SART is in close relation to the GMDSS functional requirement for on scene locating. The IMO/ICAO JWG when considering the development of the Modernization Plan of the GMDSS, had noted the advantages of both the AIS-SART and the radar SART, and that both types of locating devices had benefits. Basics should be remind with a reference to IAMSAR manual: “*Having a very precise search object position is useful but does not eliminate the need for Search and Rescue Unit (SRU) homing capabilities. This is especially true if the SRU does not have precise navigation equipment or if operations take place at night or in other low-visibility conditions*.”[[3]](#footnote-3)

## Modernization of GMDSS

### ***2.2.1 SOLAS and IMO instruments amendments***

The Correspondence Group on the Modernization of the GMDSS should develop a draft revision of SOLAS Chapters III and IV and a draft work plan for the related and consequential amendments to other existing instruments.

If this work can seem very legal, it is fundamental because it will condition all that we are going to do of the GMDSS. In that respect the GMDSS functional requirements are very crucial for all users should understand them and they should be coherent with all other SOLAS chapters and IMO instruments.

It was agreed at NCSR 4 that when there were good reasons, and there was substantial support to reconsider certain elements of the proposed set of new requirements, careful reconsideration should be undertaken when developing the amendments to SOLAS chapter IV. In particular, some delegations questioned on the necessity to have "security-related communications" in SOLAS chapter IV as a functional requirement separated from GMDSS. The functional requirement on "security-related communications", as proposed in the draft revision of SOLAS chapter IV, is in their view already covered by SOLAS chapter XI-2 and the ISPS Code (ISPS Code, paragraph B/4.13 refers), that includes the possibility to use GMDSS functional requirements. Furthermore, in their view there was also an overlap with the GMDSS functional requirement "receiving MSI" that could include "security-related communications" as mentioned in MSC.1/Circ.1310/Rev.1 revised joint IMO/IHO/WMO manual on maritime safety information (MSI).

The 13th IMO/ITU EG further noted the proposal by the Correspondence Group to organize the extensive amount of work to be undertaken, by developing a work plan and having one or a group of delegations volunteer to lead the preparation of draft revisions on different instruments. In that respect France volunteer to review Resolution A.801(19) Provision of radio services for the GMDSS. This is the only IMO resolution covering shore-based service and in that respect is of interest for IALA. This resolution will need to be revised in respect of new satellite providers and A3 and A4 Sea Areas. It should be also consider the need for guidance for coastal radio stations. In that respect, it should be reminded that the VTS committee already drafted guidelines on VTS equipment including basic requirements for radio stations.

***2.2.2 New radiocommunication systems***

By the way, VDES was introduced in the modernization plan after NCSR 4 drafting group, for there was no mention of VDES before. But a majority of NCSR4 members considered that more technical information and test beds are needed for VDES, and NAVDAT as well, before considering a new output on IMO performance standards on VDES or NAVDAT.

If Japan presentation on NAVDAT coverage during NCSR4 created some concerns, France indicated clearly that Japan coverage calculation were false. Anyway, it is a matter of facts that there are different NAVDAT testbeds running and some others will be performed around the world to demonstrate NAVDAT capacity.

In consequence, there is no planning action at IMO for NAVDAT nor VDES, but these two systems are still in the GMDSS modernization. We have to be patient and be ready to propose an unplanned output on these two digital systems in due time.

On the contrary, I should recall that there was no support at IMO to the Maritime Cloud (MC) for GMDSS. The reasons are simple to explain: the MC does not specify a particular radiocommunication system and, as mentioned with the introduction of new satellite operators, there is no idea about the body to manage it.

The 13th IMO/ITU EG identified the need for decisions on the following subjects:

.1 the proposal for a requirement of frequency scanning and/or Automatic Link Establishment (ALE) on HF;

.2 whether or not to develop Guidance for coastal radio stations;

.3 the proposal to the provision of shore-to-ship MSI broadcasts without charge to the originator; and

.4 with respect to COMSAR.1/Circ.50/Rev.3 on *Guidance on distress priority communications for RCCs from shore-to-ship via Inmarsat* whether there would be a need for similar circulars for additional satellite providers.

# 2.3 GMDSS modernization AND E-NAVIGATION

Despite the needs of the e-navigation strategy has been referred in the overarching considerations for the modernization of GMDSS, the link between the modernization of GMDSS and e-navigation is poor.

IMO member States are very reluctant to have recommendations on the shore side. This situation is not fair for GMDSS has been created originally to secure distress call by the shore. The shore side of GMDSS should be consider by IALA, already involved with the VTS committee, but also the ENAV committee. In order to help to clarify the relationship between GMDSS modernization and e-navigation, 9 points of common interest to GMDSS and e-navigation can be considered to be included in ENAV work-plan:

1. A rational use of frequencies for all applications (radiocommunications and radionavigation) in order to clarify the IMO agenda to WRC.
2. Functional requirements covering all user needs including ship-to-shore, shore-to-ship, ship-to-ship and shore-to-shore communications.
3. Use of digital communications.
4. Use of GMDSS sea areas to implement MSPs, in other word: exchange digital information in the appropriate frequency band.
5. Enhance shore services with the concept of Common Shored-based Service Architecture (CSSA), and in particular develop guidance for coastal stations.
6. Implement an international shore-based service for the management of long distance communications either by satellite services and HF.
7. Implement Software Quality Assurance (SQA) and Cybersecurity.
8. Implement a better usability of equipment.
9. Implement scalability in order GMDSS and e-navigation could be used by all ships.

# References

Report to related documents in paragraph 1.2

# Action requested of the Committee

The ENAV Committee is requested to take note of the above information and take action accordingly, in particular:

1. to consider the modernization of GMDSS as a first step to implement e-navigation through digital MSI and SAR information; and
2. to consider the 9 points of common interest to GMDSS and e-navigation indicated in 2.3 to be included in ENAV work plan.

1. Input document number, to be assigned by the Committee Secretary [↑](#footnote-ref-1)
2. Leave open if uncertain [↑](#footnote-ref-2)
3. IAMSAR manual volume 1 Edition 2016, chapter 2, para.2.2.6 [↑](#footnote-ref-3)