



# Report on GMDSS & Related Activities

Mr. Edwin Thiedeman

10 May 2024





- **IMO Beacon Standards**
- **RTCM EPIRB Standard**
- **RTCM PLB Standard**
- **Maritime Survivor Locating Devices (MSLD)**
- **NCSR 10 Outcomes**
- **Beacon Channel Management**
- **MEOSAR Capacity Model**
- **Iridium GMDSS SAR Service**
- **Upcoming IMO Events**
- **Questions**





# IMO BEACON STANDARDS



## MSC Resolution 471(101), Performance Standards For EPIRBs, in effect as of 01 July 2022 for all SOLAS Vessels

### Additional Guidance related to EPIRBs:

- MSC.1/Circ.1039/Rev.1 – Guidelines for Shore-based Maintenance of Satellite EPIRBs
- MSC.1/Circ.1040/Rev.2 – Guidelines on Annual Testing of 406 MHz Satellite EPIRBs
- Resolution MSC.493(104), Amends MSC.163(78), Performance standards for S-VDRs
- Resolution MSC.494(104), Amends MSC.333(90), Revised performance standards for VDRs





# RTCM EPIRB Standard



RTCM 11000.5 with Amendment 1 published

- Amendment 1 includes optional RLS functionality for US beacons
- Aligned with both MSC.471 & IEC 61097-2 ED-4

RTCM petition to FCC for update of 47 CFR 80 to include RTCM Standard 11000.5, and thus by reference, MSC.471 and IEC 61097-2

In interim, FCC will accept and process Waiver Requests to substitute RTCM Standard 11000.5 instead of the 47 CFR cited RTCM 11000.3

USCG is supportive of Waiver Requests to use RTCM 11000.5





# RTCM PLB Standard



RTCM 11010.4 with Amendment 1 published

- Amendment 1 addresses multi-constellation GNSS receivers, and
- Aligns the AIS identifier to align with EPIRBs IAW ITU-R M.633

RTCM petition to FCC for update of 47 CFR 95 to include RTCM Standard 11010.4, pends action by the FCC

In interim, FCC will accept and process Waiver Requests to substitute RTCM Standard 11010.4 instead of the 47 CFR cited RTCM 11010.2

USCG is supportive of Waiver Requests to use RTCM 11010.4





# MARITIME SURVIVOR LOCATING DEVICES



Update of RTCM 11901.1 is in progress

- Addresses the different types of man overboard devices (AIS, DSC, 406 MHz, etc.), including those with combined technologies
- Addresses non-406 MHz satellite devices (e.g., SEND)
- Aligns with current IEC standards and RTCM standards
- Provides guidance on the various MSLD notifying and locating technology capabilities to assist in users in selecting a MSLD suited for the user's operating region and types of operation

Next step is preparation of the Committee Draft for Vote (CDV)





# NCSR 10 Outcomes



## AIS Cancellation Protocol

- Proposal to add “EPIRB – CANCEL” to ITU-R M.1371 in support of the Cospas-Sarsat second-generation beacon (SGB) 406 cancellation messages
- Topic discussed at NCSR 9 and again at NCSR 10, and addressed in a liaison statement to the ITU Working Party 5B to propose including in ITU-R M.1371 the following:
  - ‘ When manually deactivated, a safety related text message stating "SART OFF", "MOB OFF" and "EPIRB OFF" should be broadcast from such a device. If a cancel function is provided and activated, the following safety related text message should be broadcast: "MOB CANCEL" or "EPIRB CANCEL". ’
- Monitoring the ITU WP-5B discussion and its outputs.





# NCSR 10 OUTCOMES



## Recognition of PLBs within IMO

- NCSR was asked to clarify the status of a PLB within the IMO guidance:
  - Considering the ITU Radio Regulations guidance for 406.0 – 406.1 MHz distress devices, is a PLB considered to be like an EPIRB device?
  - Or is a PLB considered to be like a man over-board (MOB) or Autonomous Maritime Radio Device (AMRD) as described in ITU-R M.493, ITU-R M.1371 and ITU-R M.541?
- Based on the discussion, NCSR determined a new work output would be necessary to undertake such a review, however based on MSC guidance, a new request may not be addressed until NCSR 12 (2025) at the earliest.
- USCG is preparing a request to MSC 109 to seek a new output to clarify the PLB status within GMDSS and IMO, promoting the voluntary carriage of PLBs with AIS to enhance crew safety.







# NCSR 10 OUTCOMES



## Coding of Beacons with a Vessel MMSI

- Discussed at NCSR 10 with a liaison statement to ITU WP-5B prepared, noting:
  - Cospas-Sarsat advised administrations warning against coding of 406-MHz distress beacons with a country code (MID) in the forms "98M" or "974"
  - Critical change to the Cospas-Sarsat ground segment was approved with implementation date of November 2023 to prevent messages with maritime mobile service identity (MMSI) in the format 98MIDXXXX and 974XXYYYY from being processed as "invalid"
  - Timing of implementation of the Cospas-Sarsat change is in the hands of States providing ground segment, and the change does not provide for the automatic recovery of the MID from the 98M identity
  - Cospas-Sarsat Joint Committee will examine the issue with a view towards identifying an optimal long-term recommendation





# Beacon Channel Management



**At JC-36, an informal correspondence working group (CWG) was established to address channel management concerns & develop recommendations for review at JC-37 and forwarding to Council.**

**At CSC-69, the C/S Council decided to:**

- close channel D (406.031) effective at 01 July 2025
- open new channel S (406.076) effective at 01 January 2025
- advise Administrations and equipment manufacturers of associated impacts to DF and beacon tester equipment with new channel above the center-band
- identify further tasks to update C/S 406 MHz Frequency Management Plan (C/S T.012) with a MEOSAR capacity model and improved processes for future beacon channel selection and post-closure channel management





# MEOSAR Capacity Model



## The CWG has continued its work on the MEOSAR capacity model and developed:

- A provisional definition for MEOSAR capacity,
- The nominal MEOSAR system conditions for governing the model performance,
- The initial guiding assumptions and boundary conditions,
- A concept of how the Cospas-Sarsat traffic model and beacon population model may integrate with and support the capacity model, and
- An approach on developing the model using a structured approach to examine the satellite payload capacity and the MEOLUT capacity as building blocks for defining and establishing MEOSAR system capacity.
- The CWG will present its work to the Joint Committee (JC-37) in June 2024.





# Iridium GMDSS SAR Service



## Iridium GMDSS Service implementation status

- Process & procedures are defined for associating RCCs
- USCG RCC Norfolk serves as the associated RCC for world-wide non-US regions and the US Atlantic SRR; RCC Alameda serves as the associated RCC for the US Pacific SRR and as the RCC Norfolk back-up for world-wide non-US regions
- In addition, RCC New Zealand is associated at Stage 3
- Total of 15 RCCs are operational (3 automatic, 12 manual)
- An additional 30+ RCCs are in processing to be Iridium Associated





# Upcoming IMO Events



- Maritime Safety Committee (MSC 108) to meet 15-24 May 2024
- Navigation, Communications and Search and Rescue Sub-Committee (NCSR 11) to meet 4-13 June 2024
- Joint IMO/ITU Experts Group (EG-20) to meet 7-11 October 2024
- ICAO/IMO Joint Working Group On Search & Rescue to meet 4-8 November 2024
- Maritime Safety Committee (MSC 109) to meet 2-6 December 2024





## Questions?

### USCG Points Of Contact:

**Mr. Layne Carter**

**Mr. Edwin Thiedeman**

**Mr. Brent Vizbulis**

**Layne.P.Carter@uscg.mil**

**Edwin.B.Thiedeman@uscg.mil**

**Brent.M.Vizbulis@uscg.mil**





## Backup Slides

- **FCC Waivers**
- **Autonomous Distress Tracking**
- **ELT (DT) Status**





# FCC Waivers



## FCC waiver requests should include:

- The manufacturer and the models needing a waiver.
- Statement that waiver of FCC rule sections 80.7(f)(2) and 80.1061 needed to allow important safety of life devices to keep up with international standards by meeting the RTCM standard 11000.5 instead of the outdated 11000.3 specified in the FCC rules.
- IMO requires EPIRBs installed on or after July 1, 2022 comply with the resolution MSC.471(101) performance standards.
- The new performance standard allows increased reliability and battery life of these safety of life systems and meets signaling protocols with new satellite systems.
- The request meets the FCC waiver standards in Sections 1.103 and 1.925 because the underlying purpose of the rule would not be served by requiring compliance with an outdated standard. Further the public interest and safety is served by allowing deployment of the improved EPIRBs while the FCC considers updating its rules.
- The frequencies remain the same and there is no harm in granting the waiver.







# Autonomous Distress Tracking



## ADT Implementation required by 01 January 2025

### Location of an Aircraft in Distress Repository (LADR):

- LADR provides Secure Storage for Position/Location Data of Aircraft in Distress or Potentially in Distress
- Not defined as an Alerting Means
- Supports timely access of Aircraft Event Data by stakeholders (Operator, ATSU, RCC & Others)
- LADR operation awarded to EURO-CONTROL, with a regional LADR operated by BENIN
- LADR development to complete the interface & deploy the operational system continues
- US SARSAT Program participating in the LADR workshops
- USCG monitoring progress and advocating SAR interests





# ELT(DT) Status



- Cospas-Sarsat Declared MEOSAR System FGB ELT(DT) at Full Operational Capability (FOC) as of 01 January 2023
- Cospas-Sarsat Declared MEOSAR System SGB ELT(DT) at Full Operational Capability (FOC) as of 01 January 2024
- SAR Authorities are developing doctrine and processes for managing and responding to ADT / ELT(DT) alerts, using operational guidance provided in recently updated COMSAR.1/Circ.59-Rev.1
- Registration data and the LADR data are key elements which support SAR response planning and actions
- Numerous ELT(DT) false activations are being received. Investigation and analysis is underway to determine root causes and identify solutions.

