Radio Technical Commission for Maritime Services (RTCM)

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Beacon Manufacturers Workshop 2019
Agenda

- RTCM Overview
- SC110 Overview
- SC136 Overview
- RTCM Cospas-Sarsat Related Activities
- RTCM EPIRB Standard Status
- RTCM PLB Standard Status
RTCM Overview
RTCM Overview

- RTCM is an international non-profit scientific, professional and educational organization
- Members are both government and non-government organizations
- Established in 1947 as a U.S. government advisory organization
- Now an independent organization with members from all over the world
- Headquartered in Arlington VA, (Washington DC)
RTCM Main Activities

- RTCMs main area of activity is related to commercial shipping and navigation and radiocommunications systems for these vessels.
- It also works in other areas when requested such as Differential GPS and Terrestrial Satellite Distress Alerting.
- RTCMs main role is in developing standards, but it also plays a major part in national and international committees, information dissemination to its members and advising on legislation and regulatory changes.
RTCM SC110
Emergency Beacons
Overview
RTCM Special Committee SC110 on Emergency Beacons

- SC110’s primary role is to develop and maintain standards for Emergency Beacons – 406 MHz EPIRBs, PLBs and 406 MHz Ship Security Alert Systems (SSAS)

- It is also heavily involved in:
  - Considering new technology, ideas and other related matters of interest to its members e.g. AIS EPIRB, C/S MEOSAR system, ELT(DT)s
  - RTCM also plays a very active role in the work of Cospas-Sarsat and in particular in its Joint Committee (JC) meetings
  - Developing input towards Second Generation Beacon Standards for MEOSAR
  - New EPIRB and PLB AIS standards
RTCM SC136
Beacon Type Approvals
Overview
RTCM Special Committee SC136 on Beacon Type Approvals

- Took on the mantel of the Type Approvals Workshop (TAW) group earlier this year
- Principally acts as a sub-group of SC110
- Currently mainly focusses on matters related to C/S T.001 and T.007, likely to get involved in T.021 in the future
- Basically provides a forum for RTCM and the C/S Secretariat along with other Participants to try and address type approval related matters
RTCM
Cospas-Sarsat
Related Activities
Under its observer status, RTCM basically represents the interests of beacon manufacturers at C/S meetings.

So far this year RTCM has participated in the following:
- CSC-61 Open Council Meeting (Feb)
- TG-1/2019 on ELT(DT)s and SGBs (April)
- JC-33 (June)
- EWG-1/2019/RLS (Virtual Meetings) (September)

At these meetings RTCM submitted 16 documents in its own right and was involved in a further 7 joint submissions.
Topics addressed by RTCM included:

- PLBs on PFDs
- Changes to T.001, T.007, T.018 and T.021
- RLS and SGB GNSS Receiver functionality
- Various features and functions of ELT(DT)s
- MMSI Numbers for RLS Capable EPIRBs and PLBs
- Programming Adapters
- SINSIN
- Changes resulting from the new IMO EPIRB standard

All of this work supports your beacons business, so please participate
RTCM
EPIRB Standard Status
EPIRB Status

- Current standard in FCC Rules is RTCM 11000.3
- FCC requires all EPIRBs sold in the USA to comply with 11000.3 from 17 Jan 2020
- Current standard RTCM 11000.4 Amendment 1
  - Just addresses differences from the IEC standard
    - Mandatory Internal Navigation Device
    - Internal Navigation Device Timing
    - GNSS Self Test
    - Inadvertent Activation
    - Incorrect Mounting
    - Ergonomics Requirements and Tests
    - Cold Thermal Shock Tests
    - Includes options for AIS Homing signals
- RTCM has petitioned the FCC to adopt 11000.4
- RTCM is supporting work to update IEC 61097-2
RTCM
PLB Standard
Status
Current standard in FCC Rules is RTCM 11010.2 including Amendments 1 and 2, dated June 8, 2012

FCC requires all PLBs sold in the USA to comply with 11010.2 from 17 Jan 2020

Only real implication of above is to require PLBs with integral GPS Receivers to be tested using the RTCM scenarios in Annex G of the standard

The current Standard is RTCM 11010.3 Published June 25, 2018.

RTCM petitioned the FCC to adopt this new standard in August 2018
- **RTCM 11010.3 addresses:**

- **Two Generations of PLBs:**
  - First Generation PLBs complying with C/S T.001 and approved to T.007
  - Second Generation PLBs complying with C/S T.018 and approved to T.021

- **Two Categories of PLBs:**
  - Category 1 PLBs designed for use in and around water and which must float
  - Category 2 PLBs designed principally for use on land and which are not required to float

- **Three Classes of PLB:**
  - Class 0 - -55°C to +70°C, Class 1 - -40°C to +55°C, Class 2 -20°C to +55°C

- **Three Groups of PLB:**
  - Group 1 PLBs include a 121.5 MHz homing transmitter
  - Group 2 PLBs – reserved for future use
  - Group 3 PLBs include a 121.5 MHz homer and an AIS Locating Transmitter
- All PLBs must include a GNSS Receiver
- The GNSS position update rate requirement is at least every 5 minutes
- Return Link Service (RLS) capability is optional in all PLBs
- The 121.5 MHz Homing Transmitter must have a duty cycle of at least 33% (not less than 0.75s on and then off for not more than 1.5s)
- For greater duty cycles, the on time is increased and the off time decreased accordingly
- The AIS locating signal is based upon the AIS SART specification and uses the 972xxyyyy identity and the “MOB Active” text as does the AIS MOB
Beacon Manufacturers Workshop 2019

Questions?

Thank you

For further information on RTCM and details of membership and the work of SC110 / SC136 visit

www.rtcm.org