Radio Technical Commission for Maritime Services (RTCM)

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Beacon Manufacturers Workshop 2018

Agenda

- RTCM Overview
- SC110 Overview
- RTCM EPIRB Standard Status
- Overview of new RTCM PLB Standard
- RTCM FCC PLB Petition

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 Update

- RTCMs previous President resigned last year
- Bob Markle stepped back in and filled the gap as Acting President
- We recruited Ed Wendlandt to take over as the new President starting this week, after a transitional period with Bob over the last few months
- Ed graduated from the CG Academy in 1985 and served in the Coast Guard for 20 years, retiring in 2005 with the rank of Commander. After retiring he began consulting in all aspects of Maritime Domain Awareness systems for a number of overseas nations before joining RTCM

RTCM
SC110 Sub-Committee
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
  - 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 C/S Related Activity

- In recent years RTCM has become increasingly involved in active participation at C/S meetings
- Under its observer status, RTCM basically represents the interests of beacon manufacturers at C/S, especially with respect to beacon related standards, but also on overall system matters relevant to beacons
- For example at last years JC meeting RTCM submitted a total of 11 documents in its own right and was involved in a further 6 joint submissions
- All of this work supports your beacons business, so please participate

RTCM
EPIRB Standard
Status

EPIRB Status

- Current standard RTCM 11000.4 Amendment 1 published July 2016
- 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
- Does not address SGBs
- Is likely to require updating in order to comply with the expected changes to the IMO EPIRB Performance Standard once these are finalised, hopefully next year

Overview of New RTCM PLB Standard

PLB Status


RTCM

- Current Standard RTCM 11010.3 Published June 25, 2018. The new standard 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 – –55C to +70C, Class 1 – –40C to +55C, Class 2 –20C to +55C
- 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

PLB Combos

- Any combination of Generation, Category, Class and Group of PLB is permitted by the standard
- Every PLB must comply with the requirements of at least one Generation, one Category, one Class and one Group
- A PLB cannot be both a Category 1 and Category 2 device, either it floats, or it doesn't
- A PLB is only ever approved to one Class; by definition a Class 0 PLB also meets the requirements for a Class 1 and Class 2 PLB and a Class 1 PLB also meets the requirements for a Class 2 PLB
- A PLB can currently only be a Group 1 or Group 3 PLB, a Group 3 PLB may potentially also meet the requirements of a Group 1 PLB

PLB Functions

- 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

PLB Operation

Category 1 Buoyant PLB Usage

PLB Group	Homing Signal	Use on Water	Use on Land
Group 1	121.5 MHz	Designed Use	Designed Use
Group 3	121.5 MHz + AIS	Designed Use	AIS Restricted use, only allowed in conjunction with a 406.0 to 406.1 MHz distress transmission

Category 2 Non-Buoyant PLB Usage

PLB Group	Homing Signal	Use on Water	Use on Land
Group 1	121.5 MHz	Designed Use	Designed Use
Group 3	121.5 MHz + AIS	Designed Use attached to personal LSA	AIS Restricted use, only allowed in conjunction with a 406.0 to 406.1 MHz distress transmission

RTCM FCC PLB Petition

RTCM FCC Pt95 Petition

- On August 20 RTCM submitted a petition for rulemaking to the FCC requesting them to commence a rulemaking to revise the regulation at 47 CFR Part 95 Subpart K.
- This petition requested the FCC to update 95.2989(a) and 95.2989(b) to call up the 11010.3 version of the PLB standard.
- On August 23 the FCC issued a public notice (RM 11813) requesting interested persons to file statements supporting or opposing the RTCM Petition by September 23.
- There are 4 filing against this public notice, all supporting the adoption of the new PLB standard

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Questions?

Thank you

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

www.rtcm.org