Radio Technical Commission for Maritime Services (RTCM)

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RTCM Board of Directors
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Beacon Manufacturers Workshop 2012
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 mandated 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 Sub-Committee
Emergency Beacons
(EPIRBs and PLBs)
Update
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 Ship Security Alert Systems (SSAS)
- It is also involved in:
  - The work of SC119 on Marine Survivor Locator Devices
  - The work of SC128 on Satellite Emergency Notification Devices
  - A joint committee with SC101 on VHF DSC GPS Hand Portable Radios
  - 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 and 2nd Gen Beacon work
  - We also seem to be discussing an increasing number of ELT matters
Current SC110 Main Work Areas

- Participation in the Cospas-Sarsat JC-26 Meeting
- Developing input towards Second Generation Beacon Standards for MEOSAR
- Keeping abreast of work in other bodies e.g. IMO and ITU
- Recently completed an update to the RTCM 406 MHz EPIRB Standard
- Working towards an EPIRB AIS standard
- Considering a new type of ‘Rechargeable’ PLBs
- Considering including AIS in PLBs
- Working with NOAA on Beacon Registration Issues
- Considering implications of changing 121 homing requirement
- Battery Life Discussions
PLB Status

- Current Standard RTCM 11010.2 Published July 2008
- Amendment 1 to above Std Published Aug 2010 – Annex G Internal Navigation Device Test Methods and Test Procedures
- Amendment 2 to the above Std Published June 2012 – Amends part of Annex G
- Requested FCC to update Part 95 of rules to adopt new Std and protect term ‘PLB’
EPIRB Status

- Updated standard RTCM 11000.3 published June 2012
- Only 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
  - Testing internal GPS Receivers using GPS Simulators
- Ergonomics requirements not mandatory till Jan 1, 2014
EPIRB Standard Changes

- Key design improvement areas relate to reducing false alerts, one handed operation and making it easier to carry the EPIRB to a liferaft.
EPIRB AIS Work

- Developing new standard with three options:
  - Current 406 / 121.5 MHz EPIRB
  - 406 / 121.5 MHz EPIRB with in addition an AIS Transmitter
  - 406 MHz EPIRB with an AIS Transmitter (no 121 homer)
- AIS Transmitter based upon AIS SART
- Target to complete standard during 2013
- Issues revolve around interoperability between transmitting on all three frequencies e.g.
RTCM
SC128 Sub-Committee
Satellite Emergency Notification Devices (SEND)
RTCM SC128 SEND STANDARD

- New standard RTCM 12800.0 published August 2011
- A generic standard for both One way and Two way comms devices
- Standard addresses:
  - Controls
  - Indicators
  - Operation
  - General Construction
  - Technical Characteristics
  - Environmental and Other Tests
- Standard does not cover technical features of satellite communications (e.g. Tx Power, Frequency, Modulation), the satellite provider is responsible for this area
- Standard does not address non-distress functionality, except where it impacts the distress alerting function
- Minimum back end service requirements and a detailed emergency message format are included in an Informative annex
The standard addresses the following SEND variants:

Categories of SEND:
- Cat 1 SEND which must float
- Cat 2 SEND which is not required to float
- Cat 3 Fixed Vehicle Mounted SEND

Classes of SEND:
- Class 1 SEND which operates over the temperature range of -40C to +55C
- Class 2 SEND which operates over the temperature range of -20C to +55C

Thus currently there are 6 possible variants of SENDs

SENDSs can be One-way or Two-way communications devices

NOTE – Excluded from the standard are devices that are not dedicated distress alerting devices that connect to the PSTN (e.g. Satellite pagers and phones)
Questions?

For further information on RTCM and details of membership and the work of SC110 & SC128 visit www.rtc.org