

# Radio Technical Commission for Maritime Services (RTCM)



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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 2<sup>nd</sup> 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

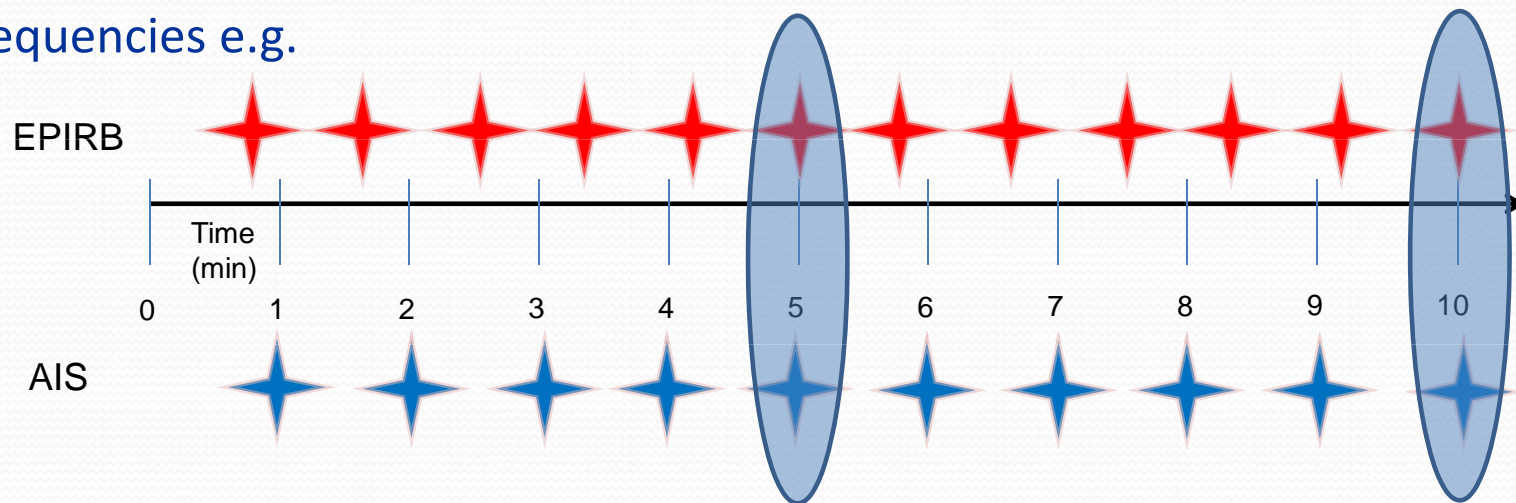
- Key design improvement areas relate to reducing false alerts, one handed operation and making it easier to carry the EPIRB to a liferaft





## 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





## RTCM SC128 TYPES OF SEND

- 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
- SENDs 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.rtcn.org](http://www.rtcn.org)