



RTCM

SC110 Sub-Committee

Emergency Beacons

Chris Hoffman
V P Development
SafeLife Systems
a division of Procon Inc.



Radio Technical Committee for Maritime Services (RTCM)

- RTCM keeps its members informed about regional and international maritime radionavigation and radiocommunication policy issues, regulatory changes, and technical standards development.
- Our Special Committees provide a forum in which government and non-government members work together to develop technical standards and consensus recommendations in regard to issues of particular concern.
- We are actively engaged in the development of international standards for maritime radionavigation and radiocommunication systems through our involvement in:
 - the International Maritime Organization (IMO);
 - the International Electrotechnical Commission (IEC);
 - the International Organization for Standardization (ISO);
 - the European Telecommunication Standards Institute (ETSI); and
 - COSPAS-SARSAT



Radio Technical Committee for Maritime Services (RTCM)

- We also contribute to the relevant work of:
 - the International Telecommunications Union (ITU)
 - the International Hydrographic Organization (IHO)
 - the International Association of Aids to Navigation and Lighthouse Authorities (IALA)
 - the Comité International Radio-Maritime (CIRM)
- RTCM has over 150 member organizations, including: Manufacturers, Government agencies, Maritime Associations, Ship owners and operators, Educational institutions, and Sales and Service providers.

Radio Technical Committee for Maritime Services (RTCM)

- Current Special Committees include:
 - Special Committee (SC) 101 on Digital Selective Calling (DSC)
 - Joint Special Committee (SC) 101/110 on GPS Equipped Hand Held VHF Radios
 - Special Committee (SC) 104 on Differential Global Navigation Satellite Systems (DGNSS)
 - Special Committee (SC) 109 on Electronic Charts
 - Special Committee (SC) 110 on Emergency Beacons (EPIRBs and PLBs)
 - Special Committee (SC) 117 on Maritime VHF Interference
 - Special Committee (SC) 121 on Automatic Identification Systems (AIS) and digital Messaging
 - Special Committee (SC) 123 on VHF-FM Digital Small Message Services
 - Special Committee (SC) 127 on Enhanced Loran (eLoran)
 - Special Committee (SC) 128 on Satellite Emergency Notification and Locating Devices



Radio Technical Committee for Maritime Services (RTCM)

- RTCM also has a number of subject-specific interest groups which are not currently developing or maintaining recommended standards. These include:
 - Mailing List (ML) 107 on Maritime Safety Information Dissemination
 - Mailing List (ML) 112 on Ship Radar
 - Special Committee (SC) 119 on Maritime Survivor Locator Devices
 - Mailing List (ML) 120 on High Speed Craft
 - Mailing List (ML) 122 on Ship Security Alert Systems
 - Mailing List (ML) 124 - Maritime HF Users Interest Group
 - Mailing List (ML) 126 - Voyage Data Recorders

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 Hand Portable Radios with GPS
 - 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 yearly Joint Committee (JC) meetings



Current SC110 Main Work Areas

- Updates to the RTCM 406 MHz PLB Standard, including GPS Simulator Testing of beacons with integral GPS
- Cospas-Sarsat JC-23 Inputs
- Including an AIS-SART in an EPIRB
- Updating the RTCM 406 MHz EPIRB Standard, including adding new Ergonomics requirements
- Updating the RTCM 406 MHz SSAS Standard
- Other topics include:
 - Battery Life Discussions
 - The possibility of removing the 121.5 MHz Homer in some PLBs
 - Emerging technologies e.g. 406 MHz DF, related devices



Updated RTCM PLB Standard

- SC110 completed an update to its PLB standard last summer (2008)
- The main changes that have been included in the latest version of the RTCM PLB standard are:
 - References updated to reflect latest C/S standards (T.001, T.007 and T.012)
 - Added Internal Navigation Device Timing requirements that front load the GPS Receiver operation
 - Improved PLB Labeling requirements added (e.g. location of GPS antenna and warning not to obstruct it, whether PLB floats or not, readability / intelligibility requirement, definition of operational configuration)



Updated RTCM PLB Standard

- Improved PLB documentation requirements added (e.g. instructions on safe (hazardous cargos) transportation, details on connecting external GPS Receivers to the PLB)
- Packaging Labeling requirements added (e.g. note that PLB does not meet regulatory carriage requirements for an ELT or EPIRB, details on whether PLB will float or not)
- 121.5 MHz Off Ground Plane Radiated Power Test added
- Annex G – reserved for future addition of Internal Navigation Device Test Methods and Test Procedures
- Numerous other minor amendments and updates



Current RTCM PLB Standard Work

- Annex G – Internal Navigation Device Test Methods and Test Procedures
 - Final draft completed this week, expected to go out to vote as a CDV next month and to be published in September
 - Includes two sets of scenarios – Land and Maritime – designed to ensure that the GPS Receiver in the beacon obtains a fix from a cold start in a reasonable time with reasonable accuracy over a range of typical operational conditions
 - Work expected to feed into the updated RTCM EPIRB standard
 - RTCM also expects to make proposals to C/S next year to introduce tests for internal navigation devices in all 406 MHz Beacons



Cospas-Sarsat JC-23 Inputs

- Interim Medium Term Stability Procedure modifications – two papers
- Clarification of Navigation Test Script Encoding Methods paper
- Coding multiple beacons with the Aviation User Protocol information paper
- MEOSAR Next Generation Beacons paper
- Status report on GPS Simulator Testing work and plans to propose this as a set of C/S tests for application to all 406 MHz beacons with Internal Navigation Devices next year

JC-23 Other Areas of Interest

- Reviewing the French paper on Rechargeable Lithium Batteries
- Monitoring work on the SAR-Galileo Return Link Service
- Considering proposals for New Location Protocols
- Considering the 3km MCC location alerts update criteria



AIS EPIRB

- SC110 involved in evaluating technical issues related to including an AIS function in an EPIRB instead of the 121.5 MHz Homer
- US made proposal to COMSAR 13 suggesting this as an alternative to a standard EPIRB
- COMSAR 13 divided on issue, some countries wish to retain the 121.5 Homer and add AIS to EPIRB as well, but this probably isn't practical
- IEC TC80 AIS Working Group has developed IEC 61097-14 AIS-SART CDV and carried out trials to support their work, the AIS portion of the EPIRB would be based on this work
- US has submitted a formal proposal to MSC 86 which meets in 3 weeks time to add AIS EPIRB onto the work program for COMSAR 14
- RTCM has sent a Liaison Statement to IALA, IEC and CIRM requesting IEC to carry out trials on AIS in an EPIRB to support IMO performance standards requirements



AIS EPIRB

Comparison with Standard 406/121 GPS EPIRB

Feature	406 / AIS	406 / 121 / AIS
Power Requirements	-0.25 Whrs	+2.0 Whrs
End User Cost Difference	+ \$30	+ \$300
Size and Weight	Same	Larger?
Manufacturer Interest	Yes	No



RTCM EPIRB Standard Update

- RTCM updating standard to bring it into line with latest issue of IEC 61097-2
- Updated standard will only address differences from the IEC standard
 - Internal Navigation Device Timing
 - GNSS Self Test
 - Inadvertent Activation
 - Incorrect Mounting
 - Ergonomics Requirements and Tests
 - Cold Thermal Shock Tests



Questions?

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