RTCM
SC110 Sub-Committee
Emergency Beacons

Chris Hoffman
V P Development
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)
- 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 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
  – A joint committee with SC101 on VHF DSC Hand Portable Radios with GPS
  – Considering new technology and ideas and other related matters of interest to its members e.g. AIS EPIRB, other Satellite Systems
  – RTCM also plays a very active role in the work of Cospas-Sarsat and in particular in its yearly Joint Committee (JC) meetings
SC110 Main Work Areas

- Multi-Environment Beacon (MEB) Subcommittee and Updates to the RTCM 406 MHz PLB Standard
- Cospas-Sarsat JC-22 Input
- Guidance on the use of PLBs for Aircraft
- Performance Standards for GPS DSC VHF-FM Handheld Radios
- Future work plans include
  - Updating the RTCM 406 MHz EPIRB Standard
  - Updating the RTCM 406 MHz SSAS Standard
MEB Sub-committee Key Work Areas

- 406 MHz radiated output power and antenna beam pattern – Complete (covered by T.001 and T.007)
- 121.5 MHz radiated output power and antenna beam pattern – Complete (included in latest PLB standard)
- The ability of the Embedded GPS to provide position in the transmitted message – Nearing Completion
- Revision of PLB standard and suitability of labelling, manuals and environmental aspects – Complete
GPS Simulator Status Update

- We have established a Test Set Up
- We have a set of Simulated Scenarios (GPS Test Signals)
- We have an agreed Test Method
- We have completed a series of tests
- We still have to finalise a Test Procedure and Set Pass / Fail Criteria

<table>
<thead>
<tr>
<th>PLB #</th>
<th>Land scenarios with locations</th>
<th>Percent success</th>
<th>Maritime scenarios with Locations</th>
<th>Percent success</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>47.6</td>
<td>32</td>
<td>82.1</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>11.9</td>
<td>22</td>
<td>56.4</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>23.8</td>
<td>29</td>
<td>74.4</td>
</tr>
<tr>
<td>4</td>
<td>28</td>
<td>66.7</td>
<td>32</td>
<td>82.1</td>
</tr>
</tbody>
</table>
Updated RTCM PLB Standard

• SC110 has just completed an update to its PLB standard, which should be published by the end of May
• 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

• The main changes that have been included in the latest version of the RTCM PLB standard are:
  – 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
Future SC110 Work

- RTCM will shortly start work on its EPIRB standard, to bring this into line with the updated version of IEC 61097-2 Edition 3 which was published earlier this year and already includes many of the changes that are in the RTCM PLB standard (e.g. 121.5 MHz Off Ground Plane Test).
Questions?

www.rtcn.org