



**UN/USA Training Course on
Satellite Aided Search and Rescue
Miami Beach, FL
19 – 23 January 2009**

**Beacon Registration
Databases**

INTRODUCTION



- **Requirements for Beacon Registration**
- **406 MHz Beacon Population**
- **Registration Databases**
 - **Overview of Existing Databases**
 - **Overview of USA RGDB**

REQUIREMENTS FOR BEACON REGISTRATION



- **IMO - Assembly Resolution A.887(21) - “Establishment, Updating and Retrieval of the Information Contained in the Registration Databases for the Global Maritime Distress and Safety System (GMDSS)”** was adopted on **25 November 1999** – includes **11 relevant provisions**.
- **ICAO - Annex 10 to the Convention on International Civil Aviation, Volume 3, Part II, Chapter 5 “Emergency Locator Transmitter (ELT) for Search and Rescue”**,
 - paragraph 5.1.8: “States shall make arrangements for a 406 MHz ELT register. Register information regarding the ELT shall be immediately available to search and rescue authorities.”
 - paragraph 5.3.2.2: “The emergency locator transmitter shall be coded in accordance with either the aviation user protocol or one of the serialized user protocols described in Appendix 1 to this chapter, and shall be registered with the appropriate authority.”

REQUIREMENTS FOR BEACON REGISTRATION (Cont'd)



- **ITU has no recommendations, regulations, etc. on the establishment of beacon registration databases.** However,, The vessels themselves need to be registered with the ITU's Maritime Mobile Access and Retrieval System (MARS) database. This on-line query database has been established in accordance with Resolution 340 (WRC- 97) of the Radio Regulation and is intended to assist in search and rescue activities.
- **Cospas-Sarsat - Section 3.5 of the DDP (C/S A.001):** “It is essential that every country using 406 MHz beacons maintain a register where SAR agencies can obtain vital information at any time. Each country using 406 MHz beacons should make appropriate arrangements to ensure 24-hour access to their national register(s) by SAR services.”

BEACON POPULATION



Based on the Cospas-Sarsat Secretariat's recent estimate :

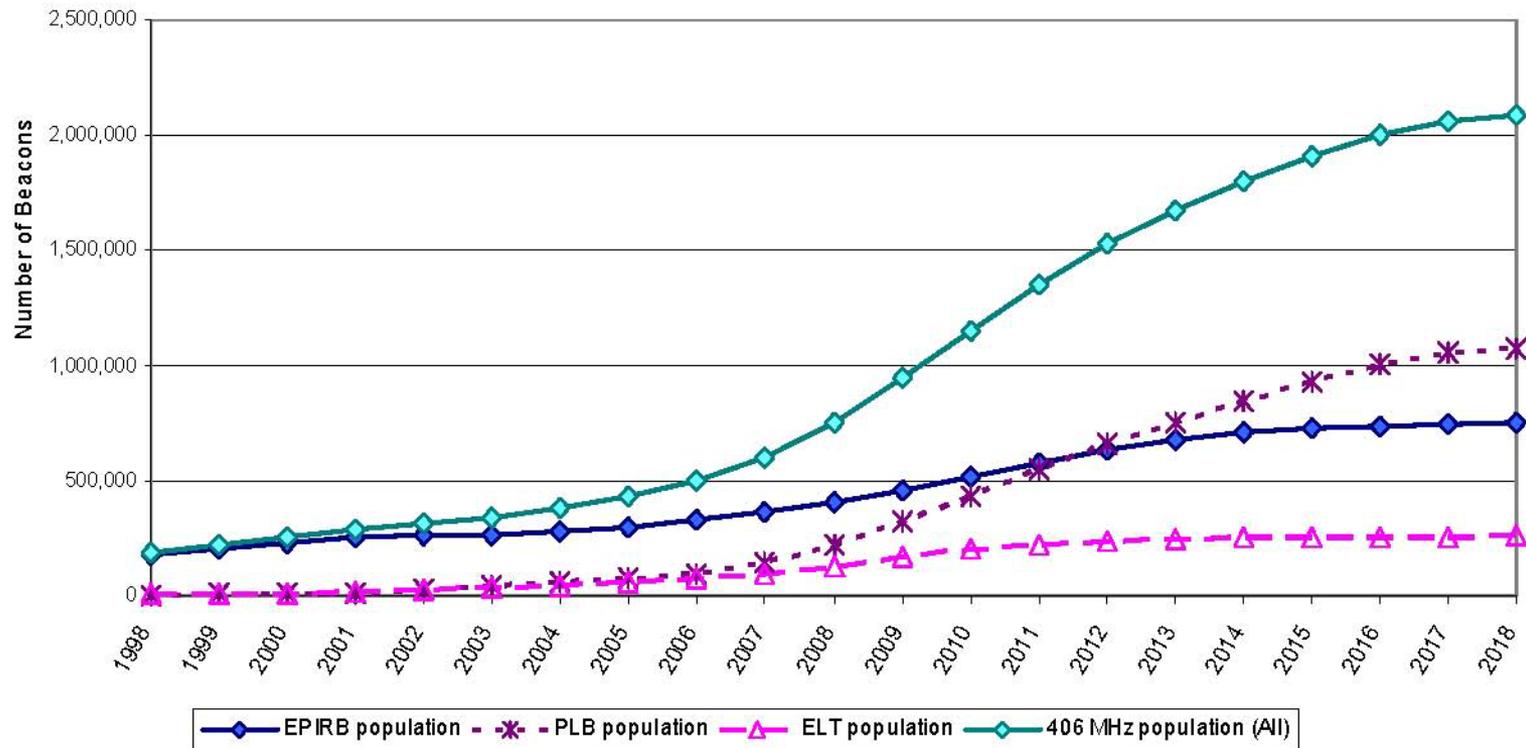
- **about 600,200 beacons operating at 406 MHz were in use at the end of 2007**
- **the population could reach about:**
 - **1.3 million in the year 2011**
 - **1.9 million in the year 2015**
 - **over 2 million in the year 2017**

Beacon Population



406 MHz Beacon Population Forecast to 2018

(taken from JC-22/5/7 Secretariat)



REGISTRATION DATABASES



- **Overview of Existing Databases**
- **USA RGDB (Overview)**
- **IBRD (Next Presentation)**

OVERVIEW OF EXISTING DATABASES



- **In 2008, 103 countries maintained 406 MHz beacon registers**
- **The majority of these are EPIRB databases**
- **Estimated registered beacons – 424,056 as of 12/31/07**



USA RGDB (Overview)

- **NOAA USMCC requires a system that automates & facilitates processes for:**
 - **Registering 406 MHz emergency beacons**
 - **Handling anticipated dramatic increase in 406 MHz registrations after 01 February 2009**
 - **Increasing time for USMCC personnel to actively pursue contacting owners that have registrations with expired decals**

- **The life-and-death nature of SAR demands that the system:**
 - **Provide high reliability and system responsiveness flawlessly**
 - **Protect against viruses, hackers, and other threats**

- **Public policy adds requirements for:**
 - **Equal access for all operators and users**
 - **Privacy of personal data**
 - **Government Paperwork Elimination Act**

- **Cost-management considerations call for:**
 - **A COTS-intensive, low-maintenance design**
 - **Compatibility with existing USMCC hardware and system software**



USA RGDB (Overview)



NOAA 406 MHz BEACON REGISTRATION DATABASE SYSTEM

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Beacon Owners

Please note that a Beacon ID is required to use the on-line system.

Click [New Registration](#) to register a new beacon.

Click [Access Beacon Previously Registered By Mail](#) to create a password for an existing beacon registration that was registered by mail.

Click [Access Beacon](#) to access existing beacon registration data.

Click [Access Block of Beacons](#) to access a block of existing beacons registration data.

Click [Create Block Account](#) to create a beacon block user account

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USA RGDB (Overview)



Official 406 MHz EPIRB Registration Form

SARSAT
E/SP3, Room 3320, FB-4
NOAA
5200 Auth Road
Suitland, MD 20746-4304

New Beacon Registration Form

Note: * indicates required field(s)

EPIRB Information

Beacon ID (Unique Identifier Number)

ADCE08AD744006D

(15 digit character ID provided by EPIRB manufacturer)

Activation Type CAT2

*EPIRB Manufacturer

*Model No

Owner/Operator Information

*Name
(Last, First, Middle Initial)

*Mailing Address

*City

State Province

ZIP (Postal) code *Country USA

E-mail

Telephone

* Home Work Cell Fax Other
Area Code



USA RGDB (Overview)



Beacon Registration Database System

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Acknowledge Confirmation Request	
Beacon ID	F14E9F95DA1ACC5
Owner's name <i>(Last, First, Middle Initial)</i>	Smith, John
Owner's telephone number <i>(Home)</i>	703-555-1234
Current status	CONFIRMED
Select status	<input type="radio"/> Confirmed (confirmed with no changes) <input type="radio"/> Change (confirmed with changes)
<input type="button" value="UPDATE"/> <input type="button" value="CANCEL"/>	

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USA RGDB (Overview)



NOAA 406 MHz BEACON REGISTRATION DATABASE SYSTEM

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SAR User (search options)

Beacon Registration Type	All EPIRB	Registration Number		Last Updated	
Beacon ID		Radio Call Sign		Last Confirmation Date	
Vessel Name		Vehicle Type	?	Beacon Status	All Normal
Aircraft Manufacturer		Beacon Block ID		Sort by	Beacon ID
Aircraft Model		MMSI			
Owner's Name	baker sam*				

[SEARCH](#) [CANCEL](#)

Search results: 1 - 5 of 5 registered beacon matches.

Select	Beacon ID	Country Code	Beacon Type	Owner's Name	Vessel Name	Radio Call Sign
<input checked="" type="radio"/>	adcd0141bec04a3	USA	EPIRB	BAKER SAMUEL b	serefe	WWW123
<input type="radio"/>	ADCD016D86C0401	USA	EPIRB	BAKER SAMMY D	SEA DUCER II	



VITAL STATISTICS

- **Online system operational since August 11, 2003**
- **As of January 1, 2009 – 225,007 beacons registered**
- **Profile**
 - 67.9% EPIRBs**
 - 13.1% ELTs**
 - 18.9% PLBs**
 - 0.1% SSAS**
- **30,184 new beacons added in CY 2008**
- **Estimate 31,000 registrations in CY 2009**
- **65% - 70% of beacon registration transactions are performed by beacon owners via online RGDB**



Future Activities

- **Implement an upgrade to the US 406 MHz Registration Data Base that incorporates proven technologies along with the latest IT Security controls**
- **‘Design-in’ redundancy to increase availability**
- **Provide for electronic storage of hardcopy records to increase retrieval efficiency and decrease storage space requirements**

SUMMARY



- **International Organizations (IMO & ICAO) have established basic requirements for beacon registration**
- **Beacon population continues to experience significant growth**
- **The US 406 MHz Beacon Registration Data Base continues to experience significant growth particularly in registration of ELTs and PLBs**
- **Not all countries have beacon registers or provide continuous access to existing databases**
- **To provide assistance to States, Cospas-Sarsat manages an International Beacon Registration Database (IBRD) that provides significant benefits to SAR forces and administrations**