NOAA's Beacon Registration Database (RGDB)
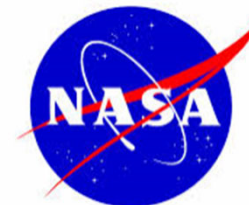
SARSAT Beacon Manufacturers Workshop
June 16, 2023

Apurve Mathur

ERT, Inc.
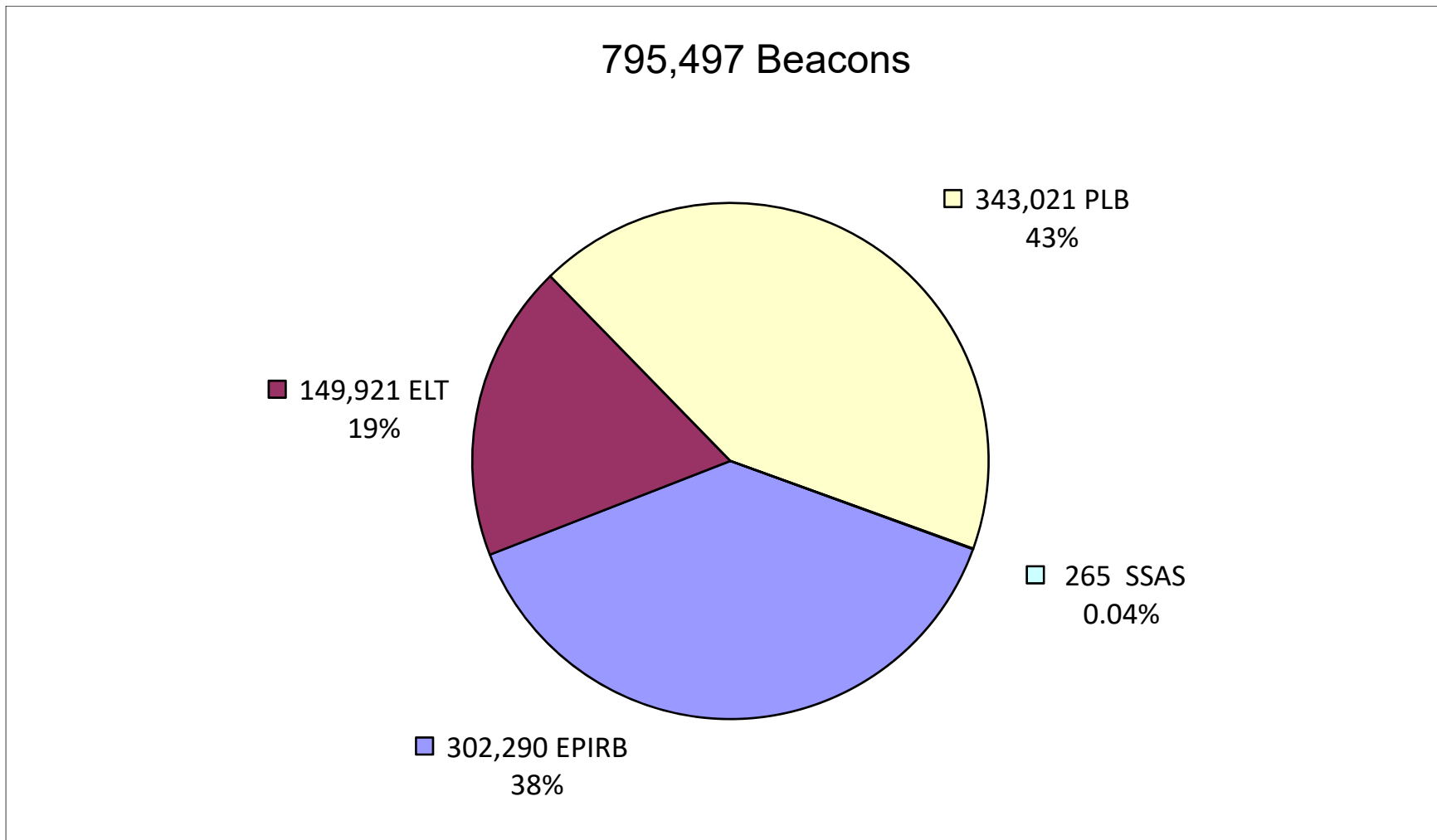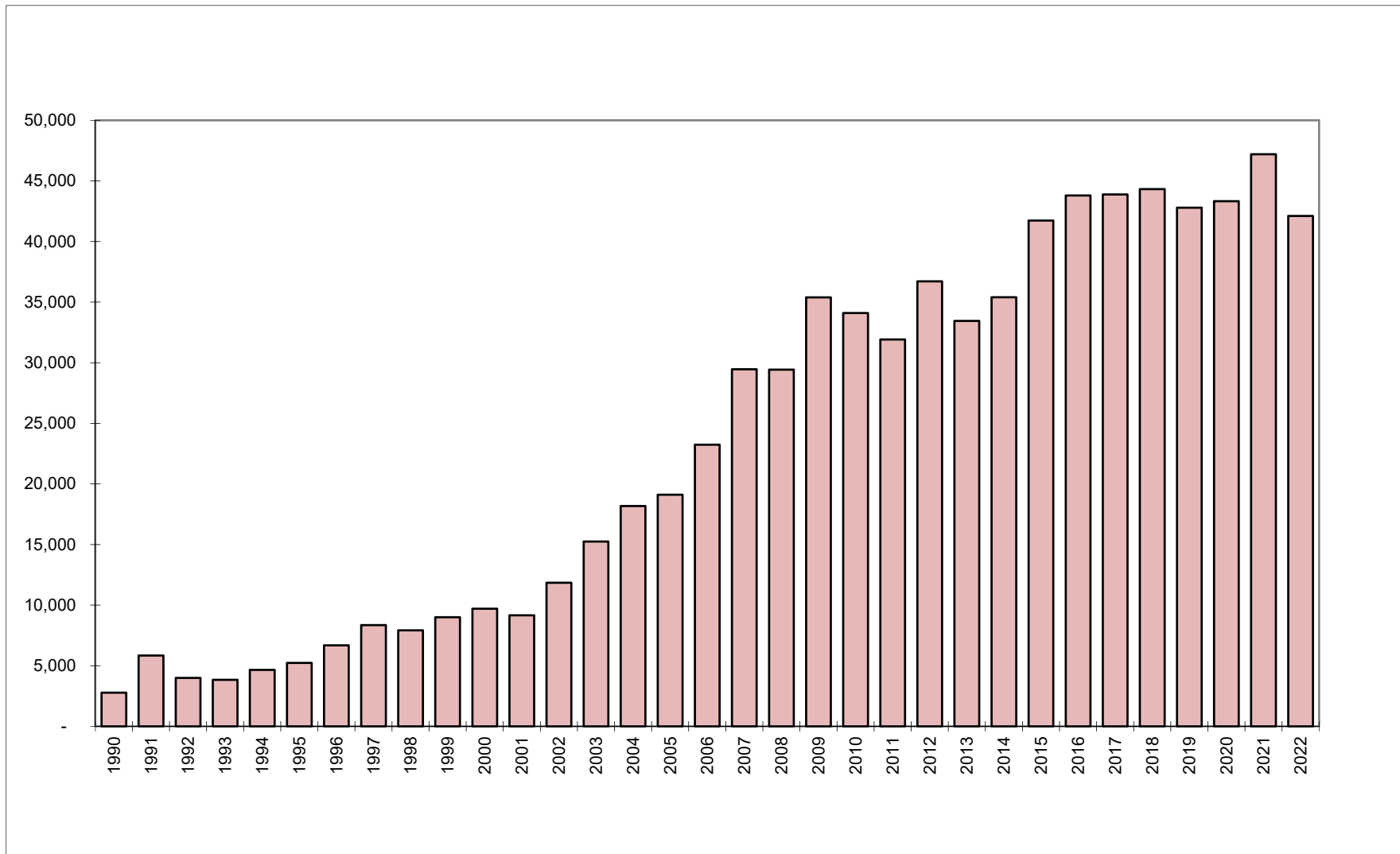
Registration Database Lead

Topics That Will Be Covered

- RGDB Statistics

- Registration Forms and Beacon Labeling

- Beacon Servicing

- 15- and 23-Hex ID Errors and Beacon Recalls

- Beacon Disposal

- New RGDB Website Features

Registered Beacons by Beacon Type
(Current to May 2023)

795,497 Beacons

- 343,021 PLB — 43%
- 149,921 ELT — 19%
- 265 SSAS — 0.04%
- 302,290 EPIRB — 38%

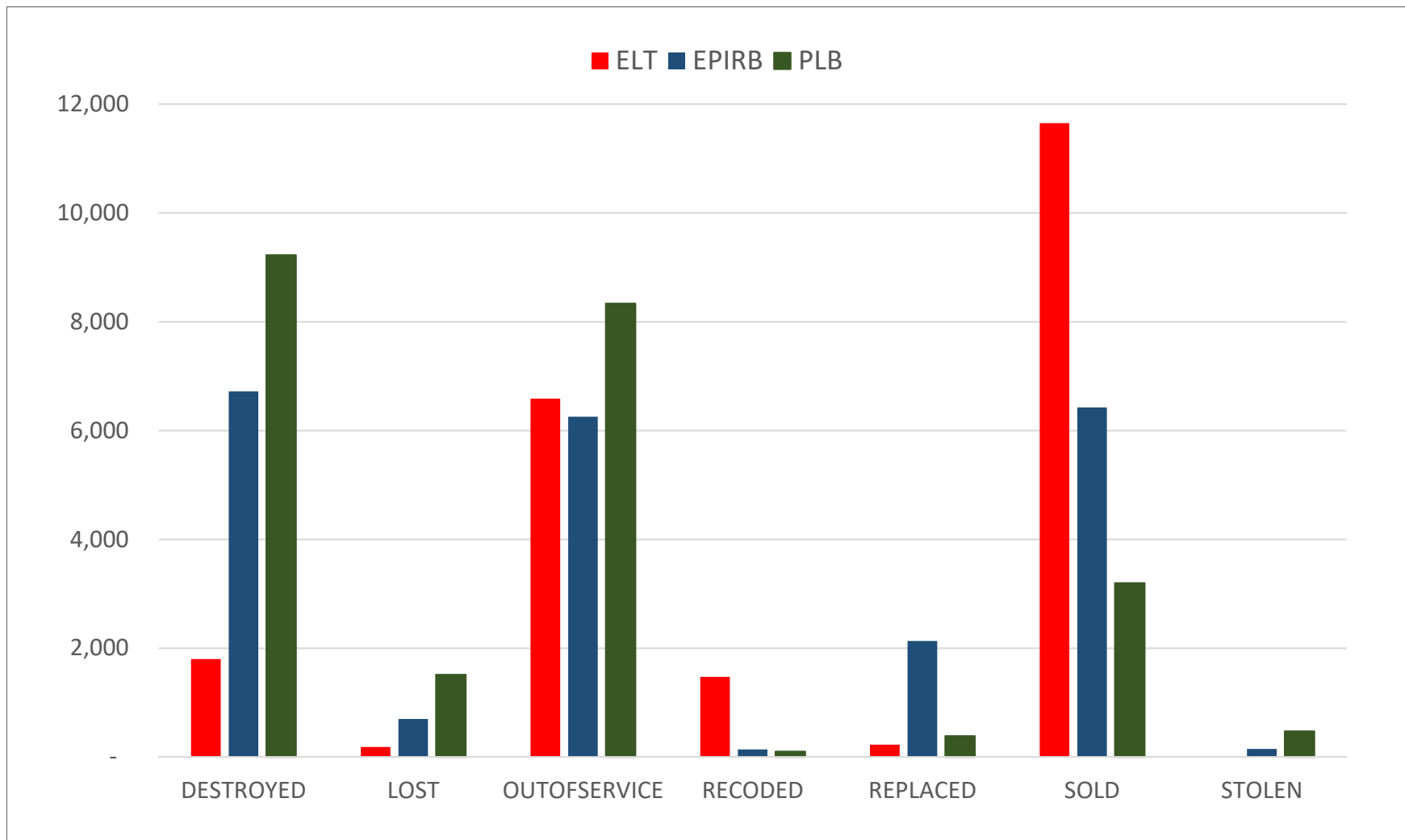# New Registrations by Year
(1990 - 2022)

New Registrations by Type
(2001 – 2022)
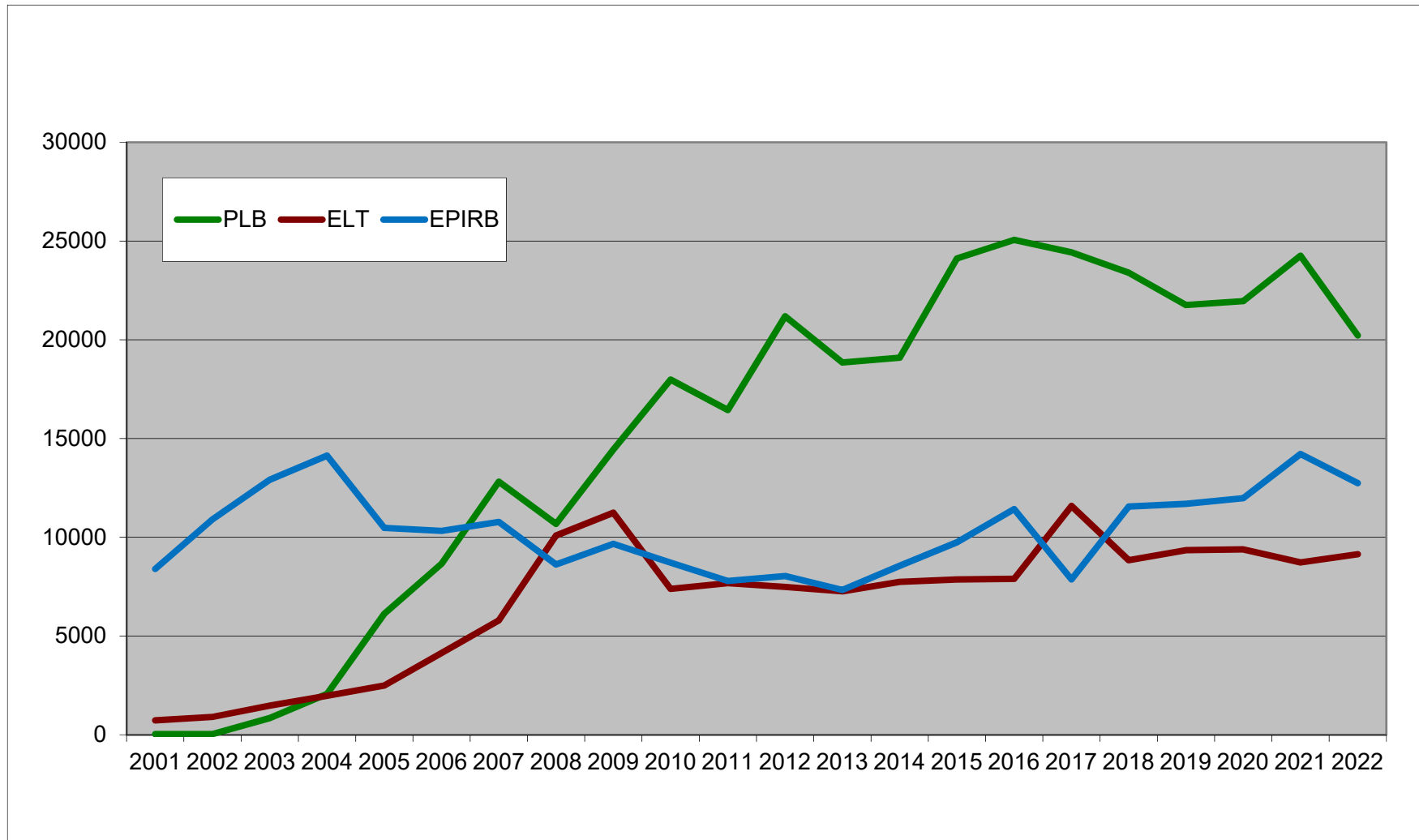
Special Status Beacons (2018-2022)

Registration Renewal/Currency – by Beacon Type

Active Beacon Registration Rate by Age (5-year Bins)
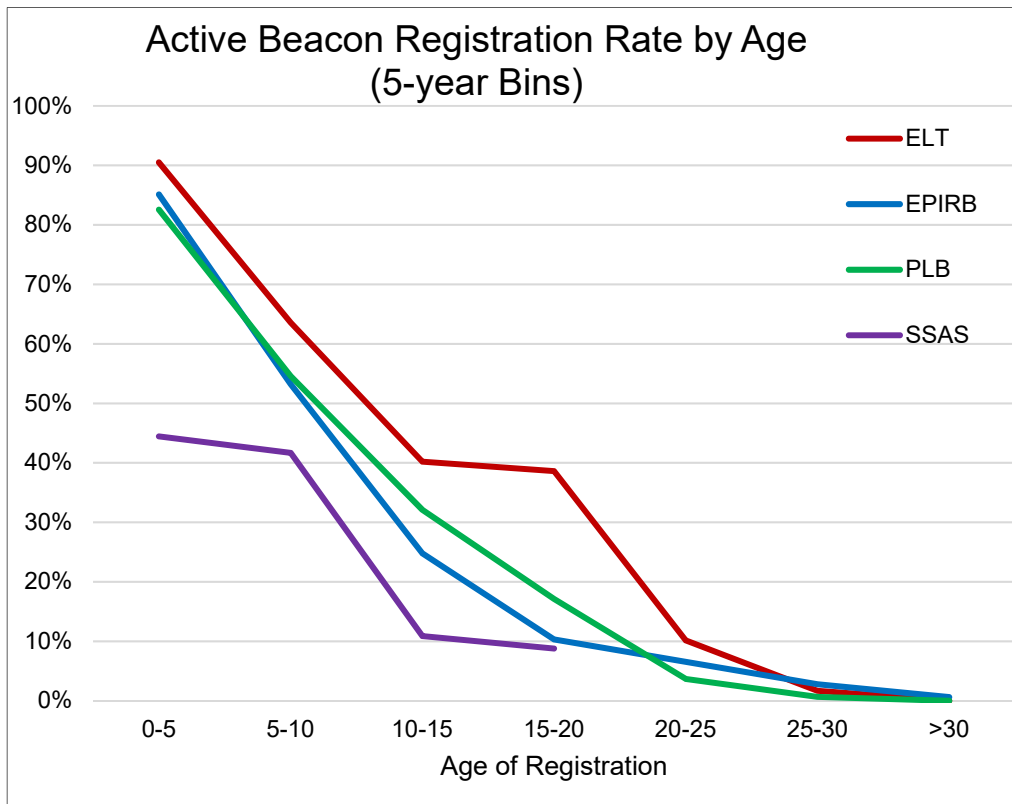
Of beacons first registered in the last 5 years,

> 90.5% of ELTs
> 85.1% of EPIRBs
> 82.6% of PLBs

have been updated/renewed within the past 2 years.

Current Registrations by Bin				
	0-5	5-10	10-15	15-20
ELT	49,403	18,920	10,172	3,914
EPIRB	62,701	24,230	8,395	4,362
PLB	95,959	56,465	22,458	4,779
SSAS	4	10	5	13

Access to RGDB Statistics

Registration statistics are available on the NOAA SARSAT website at:

www.sarsat.noaa.gov/statistics.html

This page:

- Shows a graph of the cumulative registered beacon counts by beacon type

- Provides a link to download a table showing first-time registrations by beacon type from April 2016 through the most recent month

Registration Forms and Beacon Labeling

Provide owners with **the latest** NOAA registration form, found at:

https://beaconregistration.noaa.gov/RGDB/forms

Affix a legible 15- or 23-hex label to the blank registration form and ensure that it matches the ID on the enclosed beacon. Follow these guidelines when creating your beacon labels:

- Use a large size font so the 15- or 23-hex ID is legible. Small fonts promote errors, particularly when a registration is submitted to NOAA by fax.

- A font such as Consolas helps owners distinguish between "0" and "D" and "8" and "B":

  0 1 2 3 4 5 6 7 8 9 A B C D E F

- Print 15- and 23-hex IDs in groupings (5-5-5 for 15-hex; 6-6-6-5 for 23-hex), with a space separating each group. This improves accuracy when completing a registration (see the sample form on page 10).

- Include the model number, serial number, and checksum on the label.

Registration Form Updates for SGBs

Second generation beacon (SGB) IDs use 23 characters vs. 15 for first generation beacons (FGBs)

- NOAA will continue to use a single form for each beacon type (ELT, EPIRB, or PLB), adding additional fields to accommodate 23-hex IDs

- While addressing the changes for SGBs, additional updates have been made to improve data collection, which has made the RGDB more robust and helpful to SAR forces

Save time and register your beacon online at www.beaconregistration.noaa.gov

See instructions and additional information on separate page

Official 406 MHz EPIRB Registration Form

EPIRB Information (Enter either 15- OR 23-Hex ID)

15-Hex Beacon ID

For manufacturer's use only

(15-digit hexadecimal ID provided by the beacon manufacturer)

23-Hex Beacon ID

(23-digit hexadecimal ID provided by the beacon manufacturer)

Checksum (CHK)   Serial No. (S/N)   EPIRB Manufacturer   EPIRB Model

Purpose of EPIRB Registration

New/Change of Ownership   Replacement for previously registered beacon; enter old ID no. below:

Update/Renewal   Old 15-hex ID

Old 23-hex ID

Top portion of an EPIRB, PLB, and ELT registration forms, modified to handle both15- and 23-hex ID beacon information

Additional Registration Form Updates

- The box for the manufacturer label was moved to allow space for the new SGB 23-hex ID fields

- PLB forms now have fields for radio call sign, vessel MMSI #, AIS MMSI #, and aircraft tail #

- EPIRB forms now have an AIS MMSI # field

- SSAS forms were updated to match formatting and spacing changes, but no new fields were added

- A single page of instructions (noted in top right corner of each registration form), which includes explanations of terms used in registration, is to be provided with the revised forms to help owners properly complete a registration

- New forms were launched in November 2022 and should be included in all new beacon packaging

Beacon Servicing

- When servicing a beacon, check the NOAA decal registration expiration date and remind the owner to properly update/renew with NOAA if expired.

- When replacing a beacon, ensure the owner is aware that the *new* ID must be registered with NOAA and the old ID registration must be updated with the correct disposition information of the *old* beacon.

- Include a registration form with the new ID with all reprogrammed beacons.

- Inform the owner **in writing** that an ELT programmed with a 24-bit address or tail number ID must be reprogrammed if the tail number changes or the unit is moved to a different aircraft.

Authorized Service Centers

NOAA has noticed more issues with secondary beacon service providers and resellers in the last few years. Some of these issues have resulted in duplicate and incorrect IDs. You can help by:

- Communicating currently allowed beacon programming protocols for each generation of beacon (e.g., MMSI protocol is not allowed for 1st generation US-coded beacons, but will be included in the protocol for 2nd generation EPIRBs).

- Ensuring that centers have the most updated coding software.

- Implementing refresher training programs on reprogramming beacons.

- Developing a quality assurance program that includes the ability to monitor service center performance.

Hex ID Errors and Beacon Recalls

- To mitigate potentially serious problems, notify NOAA **immediately** of any of the following situations:

    1. Duplicate 15- or 23-hex IDs encoded into any beacons
    2. 15- or 23-hex ID errors on forms or beacons
    3. Beacon recalls

- NOAA may be able to help investigate or communicate any potential issues to beacon owners. *The goal is to save lives.*

Beacon Disposal (NOAA)

Landfill/dumpster activations are an increasing problem for SAR forces. They occur when beacons are not disabled and are thrown away with their batteries still installed.

- The RGDB website provides information on beacon disposal guidelines (https://www.sarsat.noaa.gov/preventing-false-alerts).

- NOAA communications highlight the importance of disposing a beacon according manufacturer guidelines and include a reference to the online SARSAT disposal guidelines (https://www.cospas-sarsat.int/en/beacon-ownership/disposal-of-old-beacons-and-old-batteries).

- NOAA is considering adding disposal guidelines that would appear when an owner selects the "destroyed" status in their online registration.

Beacon Disposal (Manufacturers)

Beacon manufacturers play an important role in helping NOAA inform beacon owners about proper beacon disposal. Please consider:

- Sending us a list of the IDs for beacons you have received from owners and destroyed. One manufacturer is periodically providing a list to us, which allows us to reach out to beacon owners to ensure our database accurately reflects the beacon's status.

- Implementing a "buy-back" or "core-charge" incentive program for current owners to turn in their old, unserviceable beacons.

- Partnering with sellers or establishing service centers in high-use areas (e.g., Miami, Cape Cod, The Hamptons) to help increase proper servicing and/or disposal of old beacons.

- Increasing the distribution of beacon registration forms and information to second-hand buyers.

New RGDB Website Features

- The "Frequently Asked Questions" page was significantly updated to provide useful information on beacons, registration, SAR response, and the COSPAS-SARSAT system.

- A mechanism was added to help owners link registrations to a user account based on their email address.

- A validation was added requiring location protocol beacon IDs to end in FFBFF or 81FE0.

- NOAA decals show phone numbers to call for false activations of EPIRBs and PLBs (ELTs already had this).

New RGDB Website Features (Cont'd)

- ELT(DT)s registrations are allowed.

- The encoded tail number/24-bit address is now compared in real time to the tail number entered in the registration, highlighting mismatches that could be beacon ID errors (and therefore could affect distress response).

- A real-time check of the encoded TAC against valid TAC numbers was implemented to identify certain errors in beacon programming.

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