# Beacon Use, Issues and 406 MHz Beacon Registration Database

Beacon Manufacturers Workshop

2016

Apurve Mathur

ERT, Inc.

Registration Database Lead
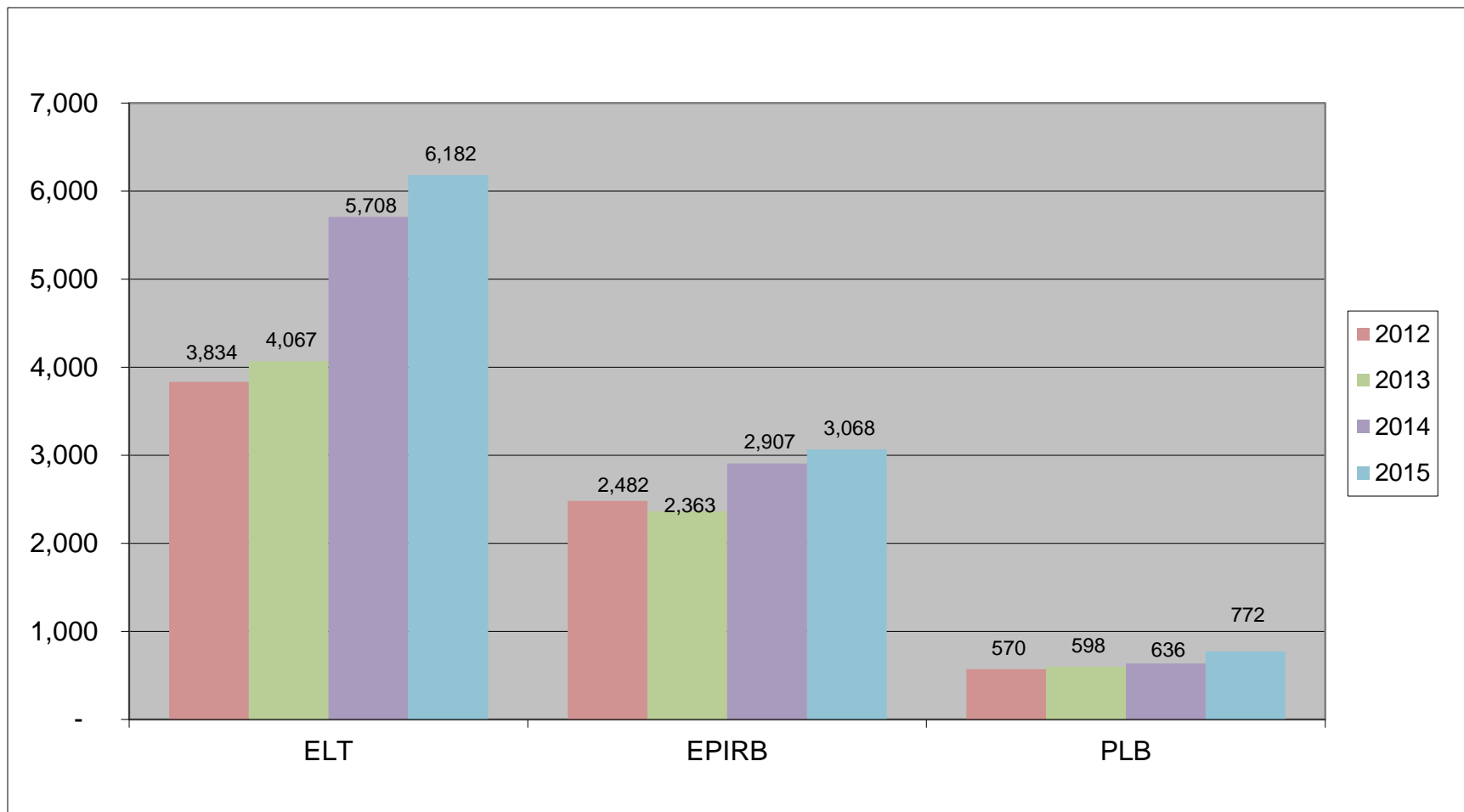
# False Alert Statistics

# Non-Distress Beacon Counts

# False Alert Rate by Beacon Type vs. Registrations by Beacon Type 2015

| **ELTs** | **2015** |
|---|---|
| % of Total False Alerts | 61% |
| % of Total Beacons Registered which are ELTs | 18% |

| **EPIRBs** | **2015** |
|---|---|
| % of Total False Alerts | 31% |
| % of Total Beacons Registered which are EPIRBs | 45% |

| **PLBs** | **2015** |
|---|---|
| % of Total False Alerts | 8% |
| % of Total Beacons Registered which are PLBs | 37% |

# National Use Beacons

- When a US Government Agency orders beacons, ask the buyer to contact NOAA to ensure that:
    - Special coding and processing is considered
    - They understand the C-S system and how alerts from their beacons will be distributed
    - They understand beacon operation and do not generate false alerts
    - They are aware of **and** follow proper test policies
    - The beacons are properly registered
    - Proper procedures are followed for:
        - Battery replacement and disposal
        - Beacon replacement and disposal

# NOAA's Beacon Registration Database

# Checksum Implementation

- The registration form (approved by OMB) contains a 5-digit checksum field, which is used to verify the 15-hexadecimal beacon ID
- The checksum is currently provided by a few manufacturers
- Initial RGDB logic requiring checksum entry confused owners
- Currently, a new registration is accepted regardless of whether the checksum value is correct, incorrect, or absent; this minimizes owner confusion and frustration, so that the owner does not skip registration.
- NOAA contacts owners where the CheckSum values they provide does not match the calculated CheckSum value
  - This check has proved to be VALUABLE!

# Beacon Manufacturers' Checksum Implementation

- NOAA has started the Code of Federal Regulations (CFR) process for mandating that checksum be used for most new beacons

- In preparation, NOAA requests that manufacturers start generating checksum values for their new beacons

- Refer questions on implementing the checksum to:
  Jesse Reich, SARSAT Ground System Engineer
  jesse.reich@noaa.gov
  301-817-4509

- Contact NOAA immediately when an issue arises that has a direct impact on beacon owners, such as:
  - Duplicate beacon IDs encoded into beacons
  - Mislabeling of beacon IDs on forms or beacons
  - Recalls of beacons you have manufactured
- Ensure that the UIN label is legible and affixed to the blank registration form.
  - Consider using a font type, where the zero and the number 8 stand out. Owners often confuse zero with letter "O" and 8 with letter "B".

- Consider ideas to make your manufacturer UIN stand out on both the beacon and the registration form
- Consider putting bar codes on the beacon label and/or form since NOAA will be using bar code readers to increase speed and accuracy
- Verify NOAA decal currency and remind the owner, if appropriate, to update the beacon's registration with NOAA, _especially_ if a different beacon is returned to the owner
- Provide NOAA the UINs for beacons received from an owner that will not be returned to the registered owner
- Inform retailers the importance of placing correct registration forms back into the box for opened boxes on their site

- The revised RGDB user interface, unveiled on May 9$^{th}$ will result in more accurate registration information by:

    - Allowing owners to gain access to their registration information using a challenge question-and-answer sequence

    - Including more online real-time transparent checks to alert registrants to look for and correct inconsistencies, such checking the beacon ID when the beacon ID and CheckSum combination fails

- Providing the means to make it easier for the latest beacon possessor to notify NOAA about their interest in registering a beacon; if a beacon transfer has not been confirmed, the new owner's information can be entered and later accepted by NOAA after the transfer confirmation from registered owner is confirmed

- Generating customized letters to owners

- Providing information relevant to testing and proper disposal, which may result in fewer false alerts

# Upcoming NOAA Correspondence with Decal

SARSAT Beacon Registration
NOAA/SARSAT
NSOF, E/SPO53
1315 East West Hwy
Silver Spring MD 20910

www.beaconregistration.noaa.gov
Exp.: **09/30/2017**
2DD60  0013F  81FE0
Vsl: **SeaStar**

Beacon Registration Database
1315 East-West Highway
Silver Spring, MD 201910

Beacon ID: **2DD600013F81FE0**

30 September 2015

Dear John Doe:

Thank you for submitting your 406 MHz emergency beacon registration. Please take a few moments now to verify your beacon ID, check/update your registration information, and attach your registration decal to your beacon.

# Registration Database Statistics

# Statistics on Registration Renewals
# April 2015 to April 2016

| Month/Year | Updated by Owners Through Website | Updated by NOAA | Total Registrations Renewals | Percentage Updated by Owners Through Website | Percentage Updated by NOAA |
|---|---|---|---|---|---|
| Apr-15 | 12,661 | 4,140 | 16,801 | 75% | 25% |
| May-15 | 13,579 | 2,953 | 16,532 | 82% | 18% |
| Jun-15 | 12,046 | 4,021 | 16,067 | 75% | 25% |
| Jul-15 | 11,083 | 3,435 | 14,518 | 76% | 24% |
| Aug-15 | 10,677 | 3,358 | 14,035 | 76% | 24% |
| Sep-15 | 10,358 | 3,591 | 13,949 | 74% | 26% |
| Oct-15 | 9,770 | 3,292 | 13,062 | 75% | 25% |
| Nov-15 | 8,923 | 3,342 | 12,265 | 73% | 27% |
| Dec-15 | 9,171 | 3,456 | 12,627 | 73% | 27% |
| Jan-16 | 10,825 | 3,135 | 13,960 | 78% | 22% |
| Feb-16 | 10,802 | 4,063 | 14,865 | 73% | 27% |
| Mar-16 | 11,968 | 4,535 | 16,503 | 73% | 27% |
| Apr-16 | 12,035 | 4,386 | 16,421 | 73% | 27% |

# New Registrations by Year
## as of April 2016
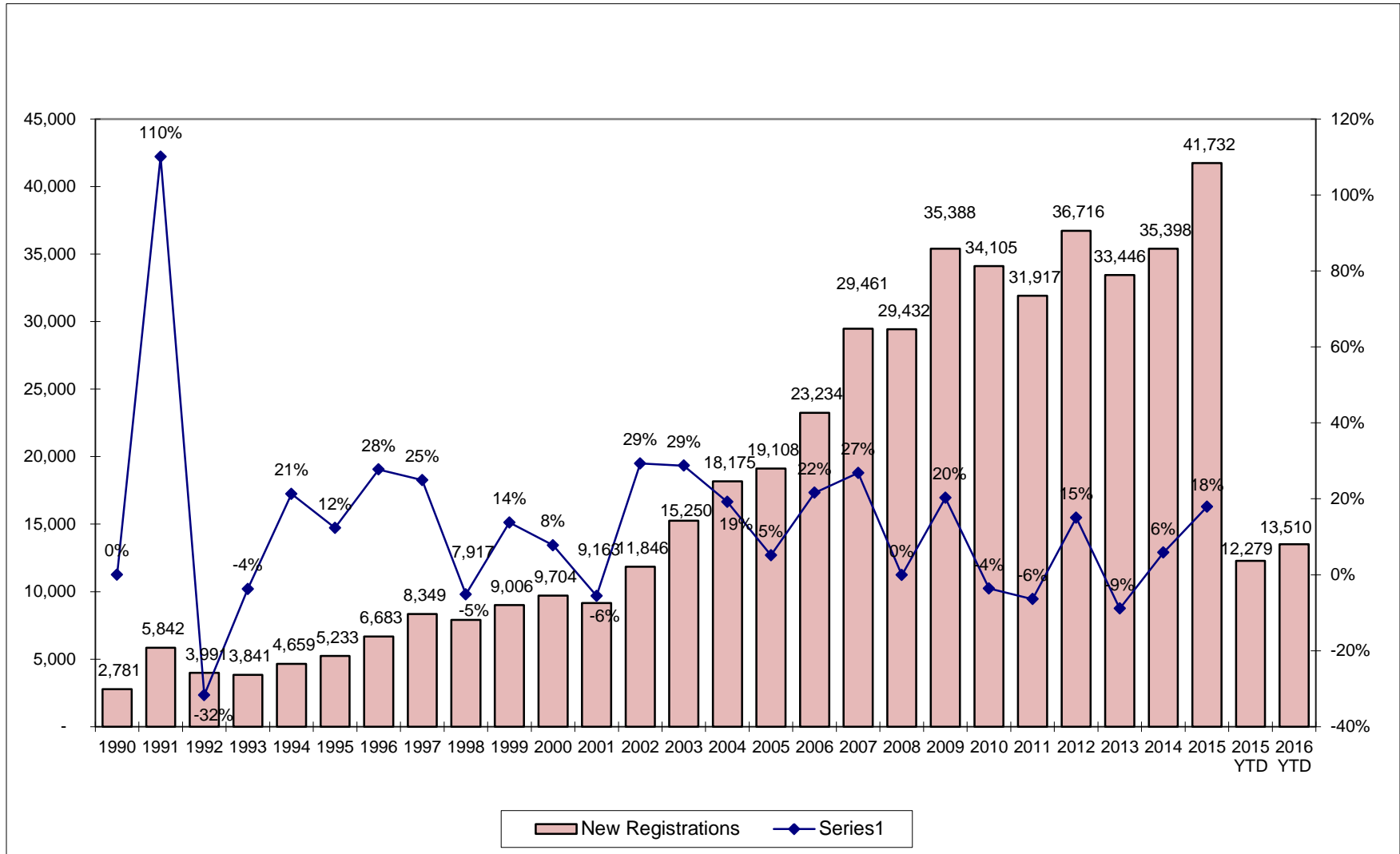
# Distribution of Registered Beacons by Beacon Type as of April 2016



- 181,414 PLB 37.34%
- 88,399 ELT 18.20%
- 263 SSAS 0.05%
- 215,757 EPIRB 44.41%
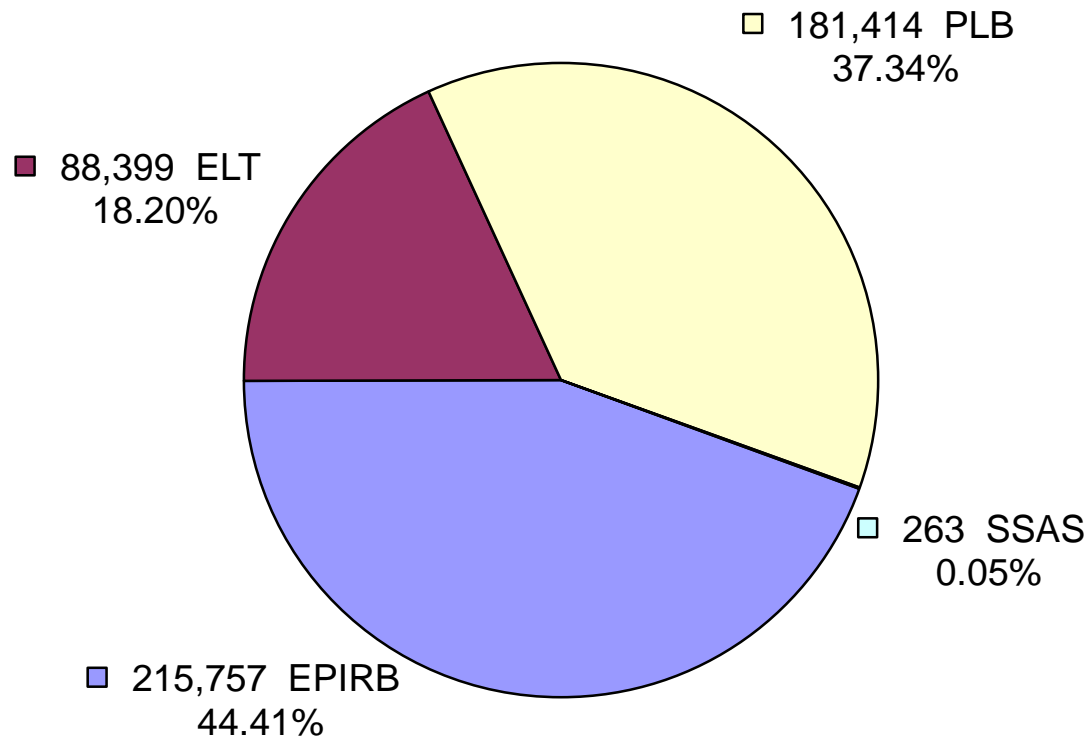
# New Beacon Registrations 2001 - 2015
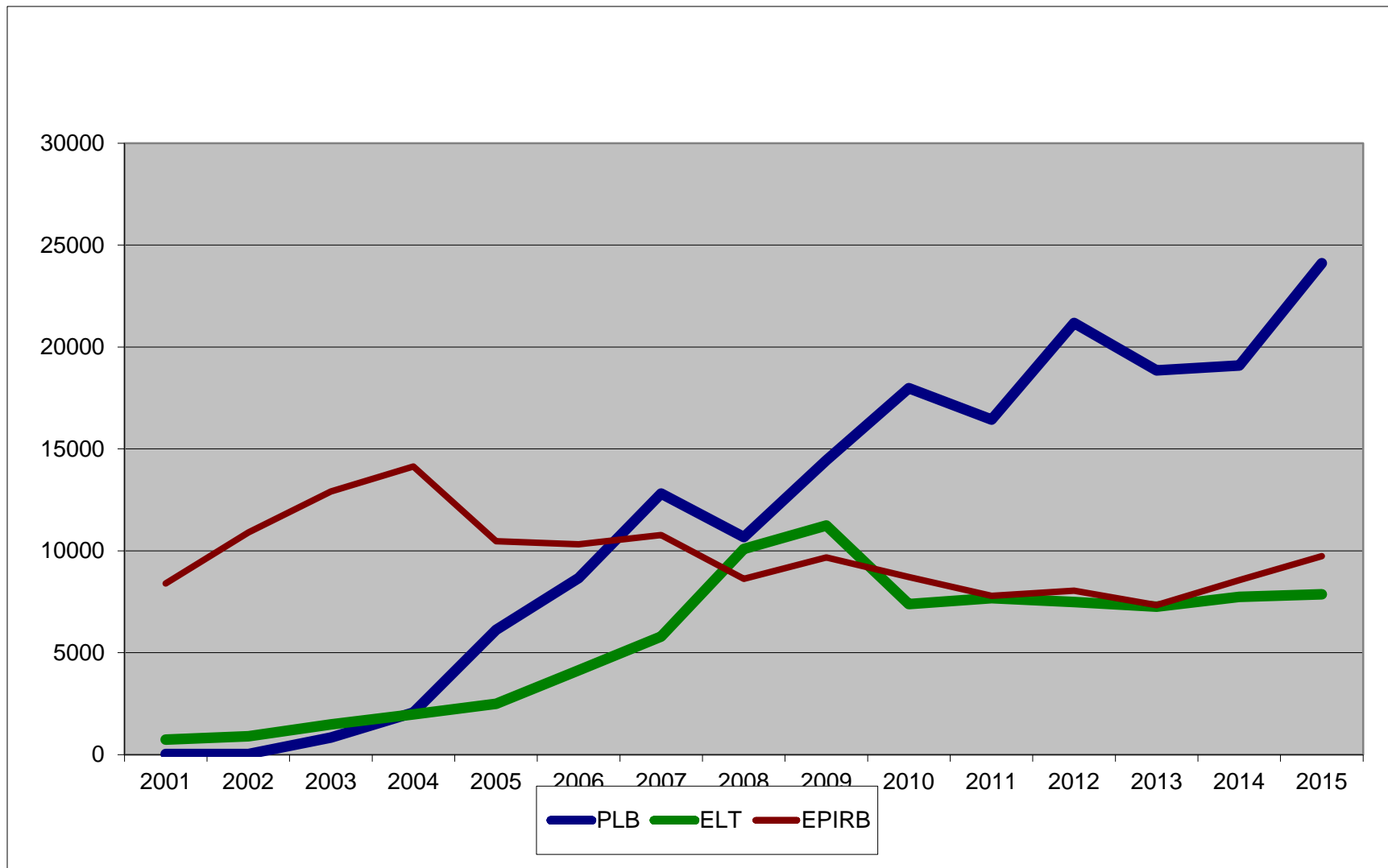
# Registration Statistics Available on the SARSAT Website

- Registration statistics are updated on a monthly basis on the NOAA SARSAT website (www.sarsat.noaa.gov) under "Other Resources"/"SARSAT Statistics" (http://www.sarsat.noaa.gov/statistics.html)
  - New Beacon Registrations by Type
    - This is a table of first-time registrations of beacons, listed by type of beacon, for each month from January 2010 through the most recent month

# New Website Demo

# RGDB Contact Information

Apurve Mathur
Registration Database Lead
ERT, Inc.
Apurve.Mathur@noaa.gov
301-817-4542