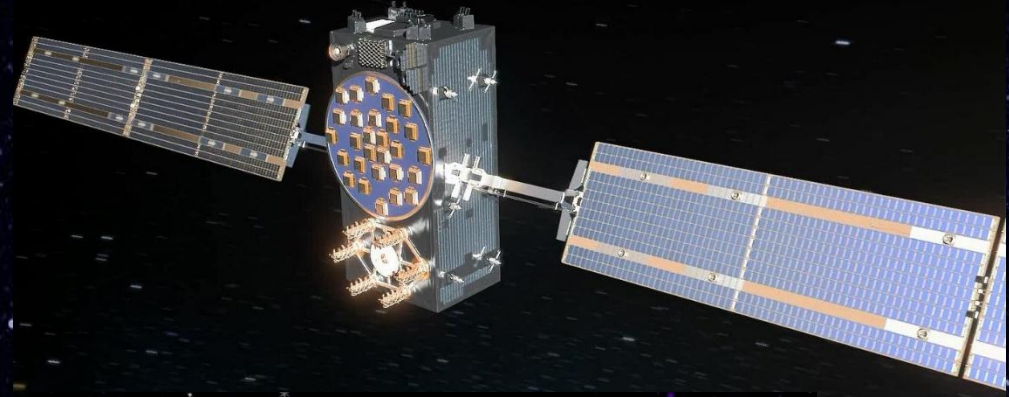


# Beacon Manufacturers Workshop

## 4-5 October 2021



## PRELIMINARY RESULTS OF THE 2021 BEACON MANUFACTURERS SURVEY

Andrey Zhitenev  
Cospas-Sarsat Secretariat

# Preliminary Results of the 2021 Survey of Beacon Manufacturers

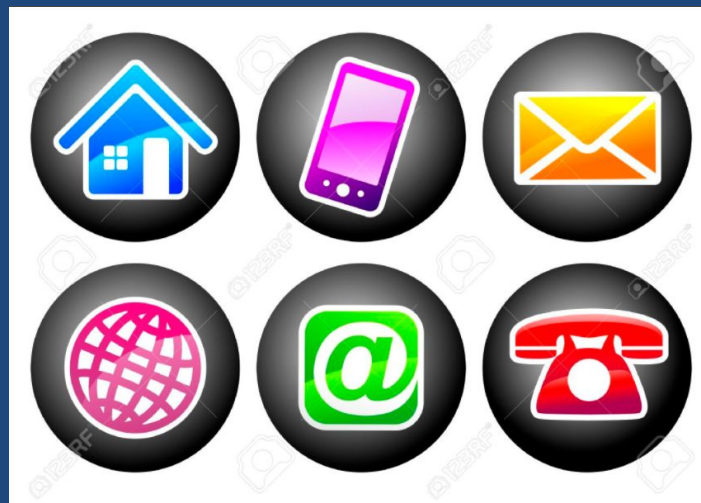
## 2021 Survey - Participants

- conducted by the Cospas-Sarsat Secretariat since 1991, annually
- **47** beacon manufacturers participated in the survey
- geographical distribution of participating manufacturers:
  - Europe: **40%**
  - North America: **23%**
  - Rest of the World: **37%**

## 2020 Survey Submissions

Submission methods used in the 2021 survey:

- 71% - email
- 25% - web
- 4% - other (phone)



## Extended 2020 Survey Questionnaire

- Better structured and more detailed survey form:
  - detailed beacon types and categories
    - ELT: (AF) / (AD) / (AP) / (S), ELT(DT)
    - EPIRB: FF, Non FF, VDR
  - questions about production of and plans for new beacon types:
    - SGBs, ELT(DT)s, RLS



# Web-Based Survey Forms

- automation of data collection and processing
- higher reliability of data collection and processing
- 25% respondents used tweb-based survey forms



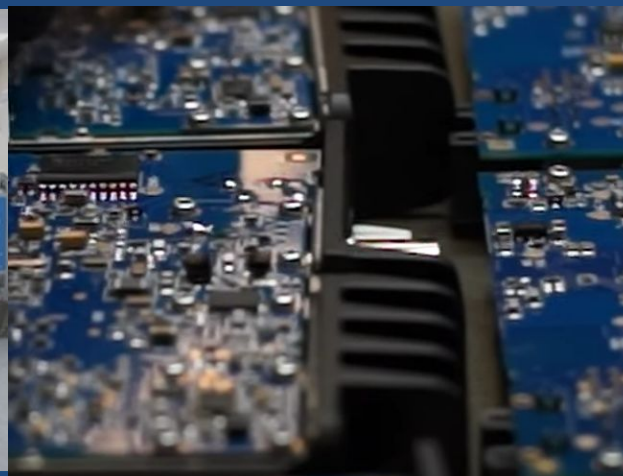
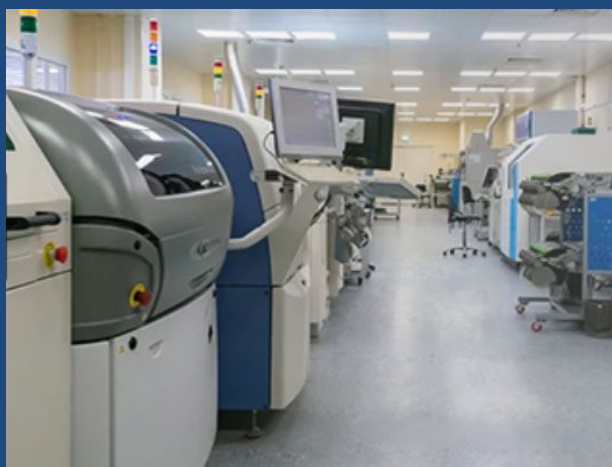
The screenshot shows the COSPAS-SARSAT website interface. At the top left, the logo reads "COSPAS-SARSAT.INT PRO" with the tagline "INTERNATIONAL SATELLITE SYSTEM FOR SEARCH AND RESCUE" and "406™ DISTRESS ALERTING SERVICE". To the right is the "COSPAS-SARSAT" logo. Further right are language options for "Français" and "Русский", a Facebook icon, and a "COSPAS-SARSAT REGULAR" button. A red navigation bar contains dropdown menus for "SYSTEM", "BEACONS", "DOCUMENTS", "MEETINGS", and "CONTACT LISTS". The main content area features a text link: "If you require a PDF version of this form, please find it here: [http://cospas-sarsat.int/images/cospas\\_sarsat/pdf\\_uploads/2021-B-mans-Survey-Form.pdf](http://cospas-sarsat.int/images/cospas_sarsat/pdf_uploads/2021-B-mans-Survey-Form.pdf)". Below this is a large grey rectangular placeholder. At the bottom of the content area, the title "2021 Survey of Cospas-Sarsat 406 MHz Beacon Manufacturers" is displayed.

<https://www.cospas-sarsat.int/en/documents-pro/beacon-manufacturer-survey-2021>

# 2021 Survey Highlights

## Distribution of Beacon Manufacturers by Annual Production Volumes (\*)

Annual production	Count of manufacturers in 2020	% to Total in 2020	Count of manufacturers in 2019	% to Total in 2019
"0" production	9	19.1%	8	19.0%
1-499 units	16	34.0%	16	38.1%
500-999 units	5	10.6%	2	4.8%
1000-5000 units	11	23.4%	8	19.0%
> 5000 units	6	12.8%	8	19.0%
<b>TOTAL</b>	<b>47</b>		<b>42</b>	



\* 500, 1K, 5 K thresholds - as requested by BMW 2020

## 2020 Survey Highlights

# 201,004

beacons produced Worldwide in 2020

-1% decrease from 2019

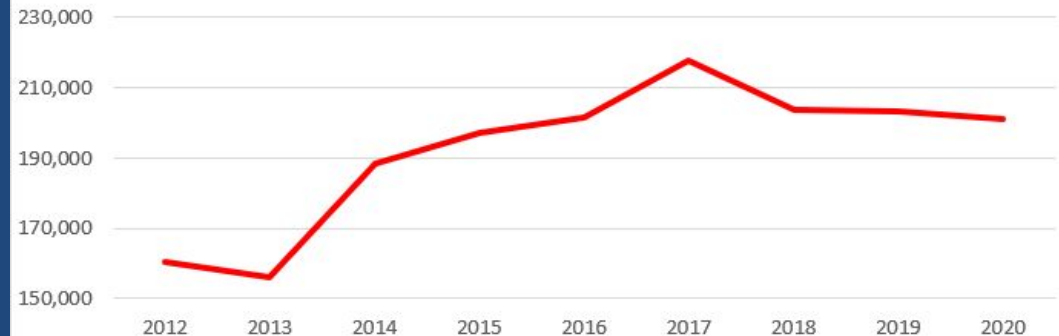


# 2021 Survey Highlights

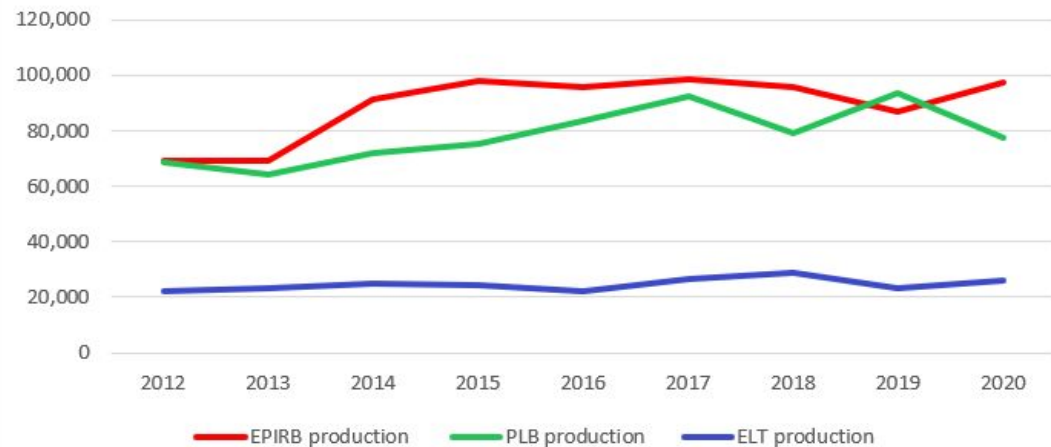
## Annual Production

- 2020: **201,000** beacons produced Worldwide (-1% vs 2019)
  - 2019: ~**203,000** (- 0.3%)
  - 2018: ~**204,000** (- 6.5%)
  - 2017: ~**218,000** (+ 8.4%)
  - 2016: ~**201,000** (+ 2.3%)
  - 2015: ~**197,000** (+ 4.5%)
  - 2014: ~**189,000** (+ 20.7%)
  - 2013: ~**156,000** (- 2.5%)
  - 2012: ~**160,000** (+ 2.2%)
- =====
- Average annual production growth : **+5,100 units (+ 5% p.a.)** .

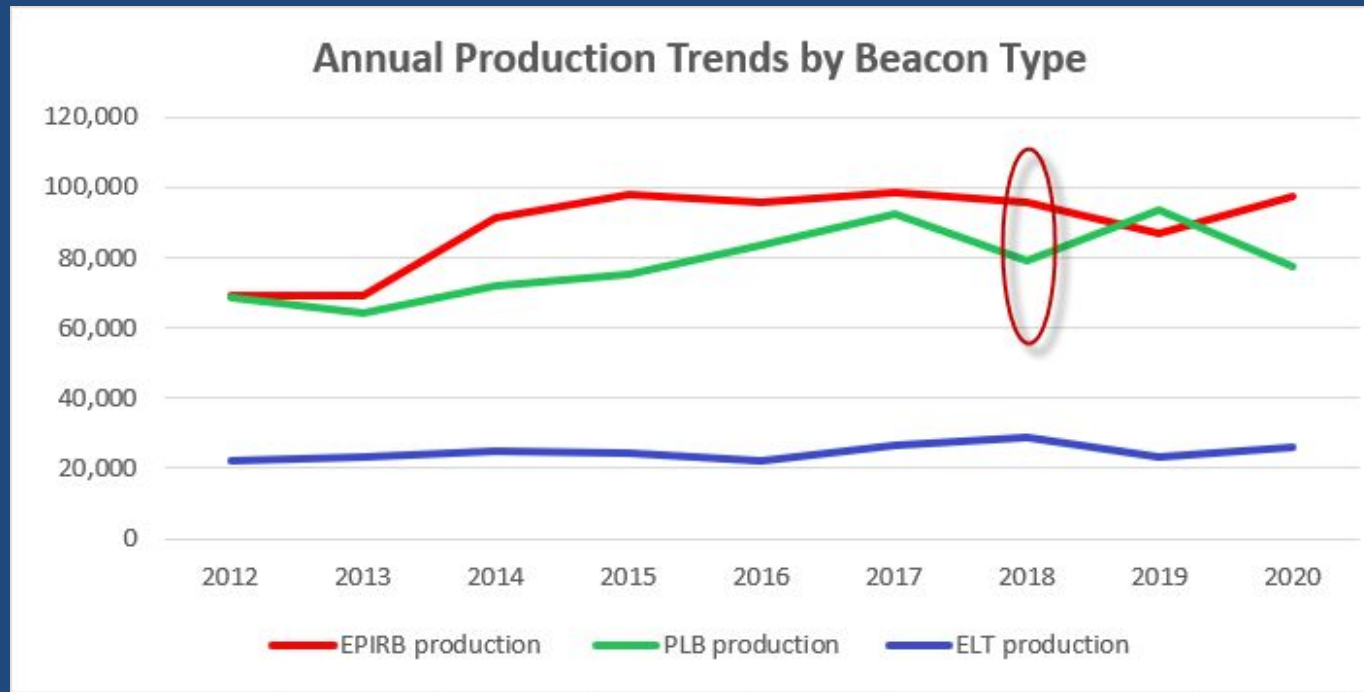
Actual Annual Production Trend of 406 MHz Beacons (all beacon types)



Annual Production Trends by Beacon Type



# Analysis of 2018 “Dip” of PLB Production



Observation: Production of PLBs in 2018 (~79,000 units) was lower than in 2017 (~92,500 units) and in 2019 (~93,300 units).

BMW 2020 AI: C/S to investigate if the noted dip in PLB production in 2018 in the beacon manufacturers survey is accurate and if so provide a suitable explanation of the variance

Inputs from beacon manufacturers: double checked

Discrepancy in the 2019 survey data processing: not detected

Reason: Variations of the annual production volumes of individual PLB manufacturers

# 2020 Survey – Detailed Beacon Distribution

**Table 2 - Distribution of ELTs, EPIRBs and PLBs Manufactured in 2020**

Beacon type	2020	% of Total Beacon Type	% of Global Production Total
	Global Production, units		
Total ELTs , Including:	26,039	100%	13.0%
- ELT(AF)	17,919	68.8%	8.9%
- ELT(AP)	517	2.0%	0.3%
- ELT(AD) and ELT(S)	7,603	29.2%	3.8%
- ELT(DT)	0	0.0%	0.0%
Total EPIRBs, including:	97,472	100%	48.5%
- EPIRB Float Free and EPIRB VDR	43,497	44.6%	21.6%
- EPIRB Non-Float Free	53,975	55.4%	26.9%
Total PLBs	77,493	100%	38.6%
Total of Global Production for all beacon types	201,004	100%	100.0%

## Location Protocol Beacons

Beacon Type	Production of LP-beacons, units	Ratio of LP-beacons to all beacons produced, %	Ratio to all LP-beacons, %
EPIRBs	83,350	85.5%	46.6%
PLBs	77,300	99.8%	43.2%
ELTs	18,147	69.7%	10.1%
All 406 MHz Beacon Types	178,797	89.0%	100.0%

An estimated **1,389,000** LP beacons were in use at the end of 2020 , which corresponds to 73 % of all beacons deployed worldwide

( 70% - in 2019, 63% - in 2018, 59% - in 2017)

# Estimated Global Beacon Population

- About **1,898,500** beacons were in use at the end of **2020** using the assumed-replacement-period estimation method)
- Annual change in global beacon population: ~ **+1.5%**
- Production in 2020(**~201,000**) was higher than in 2010 (**~173,000**)
- Estimates obtained with the alternative method - the Registration Rate method - indicates that in 2020, global beacon population could reach **2,534,000** units.



# Estimates of Beacon Population as Function of the Assumed Beacon Life Cycle

Beacon Type	Historical modelling assumption, years	Median life cycle survey of 2021 (2020/2019/2018), years	Weighted* life cycle survey of 2021 (2020/2019/2018), Years
EPIRB	10	10(8/9/8)	8(9/9/9)
PLB	10	10(9/8/8)	8(8/7/7)
ELT	10	12(15/15/10)	18(19/16/17)
ALL beacon types	10	10(10/10/10)	9(9/9/9)
<b>Estimated 2020 Global Population</b>	<b>~ 1,895,500</b> (“10-10-10” assumption)	<b>~ 1,969,500</b> (“10-10-12” assumption)	<b>~ 1,921,000</b> (“8-8-18” assumption)

Note: \* Weighted life cycle (WLS) was calculated with the formula:

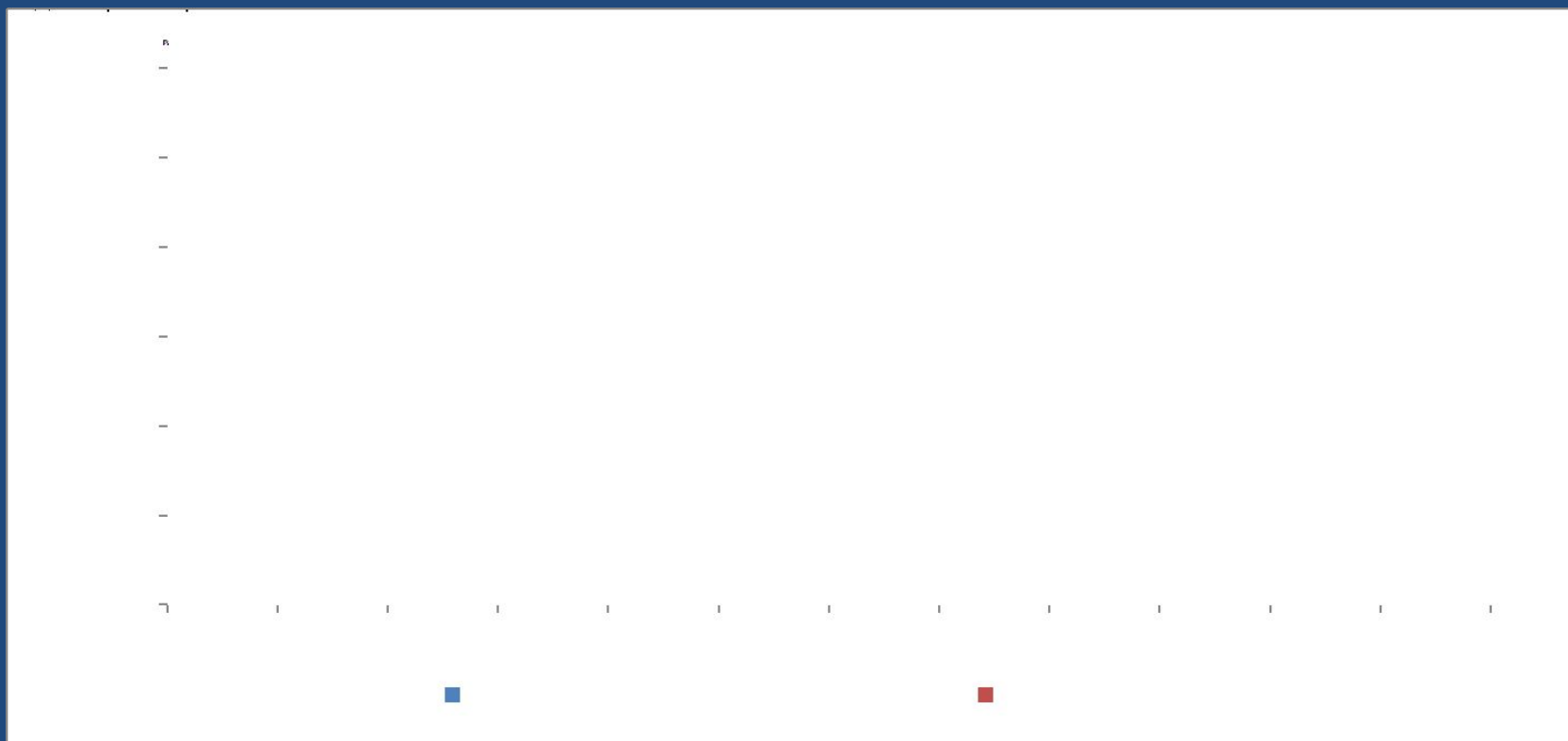
$$WLS = \sum (L_i \times W_i) / \sum W_i, \text{ where:}$$

- $L_i$  is the beacon life cycle reported by the  $i$ -th beacon manufacturer for a beacon type,
- $W_i$  (weighting factor) is the annual production volume of a beacon type, as reported by the  $i$ -th beacon manufacturer.

## Manufacturers' Production Plans for 2021

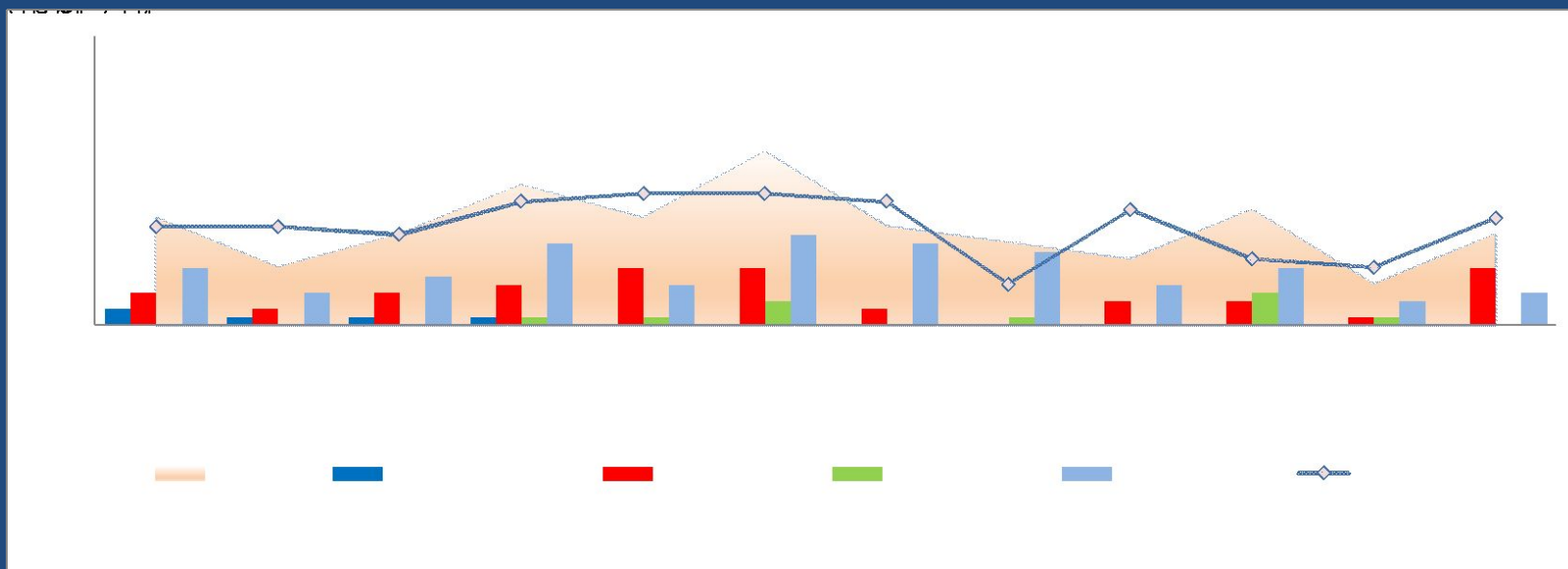
- For 2021, beacon manufacturers plan to produce over **220,000** new beacons (+ 16 % over the 2019 production volume), including:
  - 105,000 new EPIRBs,
  - 25,000 new ELTs,
  - 90,000 PLBs.
- Based on the beacon manufacturers plans for **2021**, an estimated global population of 406 MHz (FGB) beacons at the end of 2021 could reach: **1,961,000 units** (using the assumed-replacement-period estimation method; likely higher using the registration-rate method)

# Comparison of Beacon Manufacturers' Plans vs Actual Annual Production



Beacon Type	Manufacturers' Plans for 2020	Actual Production in 2020	Actual over Forecast Discrepancy, %
All beacon types	227,100	201,000	-11.5%

## Type Approval Activity in 2020



In 2020, the Secretariat performed 142 reviews of type-approval submissions, including:

- 5 submission for full type approvals,
- 45 change notices (“technical”), submissions;
- 11 submissions for administrative change notices,
- 81 previews of re-application submissions

**For more information...**

***Cospas-Sarsat Programme  
1250 Rene Levesque Blvd, Suite 4215  
Montreal, Quebec H3B 4W8  
Canada***

Phone: +1 514 500 7999

Fax: +1 514 500 7996

Website: [www.406.org](http://www.406.org)

E-mail: [mail@406.org](mailto:mail@406.org)



# Cospas-Sarsat – We Save Lives !