PRELIMINARY RESULTS OF THE 2021 BEACON MANUFACTURERS SURVEY

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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 web-based survey forms

If you require a PDF version of this form, please find it here: http://cospas-sarsat.int/images/cospas_sarsat/pdfUploads/2021-B-mans-Survey-Form.pdf

2021 Survey of Cospas-Sarsat 406 MHz Beacon Manufacturers

2021 Survey Highlights
Distribution of Beacon Manufacturers by Annual Production Volumes (*)

<table>
<thead>
<tr>
<th>Annual production</th>
<th>Count of manufacturers in 2020</th>
<th>% to Total in 2020</th>
<th>Count of manufacturers in 2019</th>
<th>% to Total in 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;0&quot; production</td>
<td>9</td>
<td>19.1%</td>
<td>8</td>
<td>19.0%</td>
</tr>
<tr>
<td>1-499 units</td>
<td>16</td>
<td>34.0%</td>
<td>16</td>
<td>38.1%</td>
</tr>
<tr>
<td>500-999 units</td>
<td>5</td>
<td>10.6%</td>
<td>2</td>
<td>4.8%</td>
</tr>
<tr>
<td>1000-5000 units</td>
<td>11</td>
<td>23.4%</td>
<td>8</td>
<td>19.0%</td>
</tr>
<tr>
<td>&gt; 5000 units</td>
<td>6</td>
<td>12.8%</td>
<td>8</td>
<td>19.0%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>47</td>
<td></td>
<td>42</td>
<td></td>
</tr>
</tbody>
</table>

* 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.).
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

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

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EPIRB</td>
<td>10</td>
<td>10(8/9/8)</td>
<td>8(9/9/9)</td>
</tr>
<tr>
<td>PLB</td>
<td>10</td>
<td>10(9/8/8)</td>
<td>8(8/7/7)</td>
</tr>
<tr>
<td>ELT</td>
<td>10</td>
<td>12(15/15/10)</td>
<td>18(19/16/17)</td>
</tr>
<tr>
<td>ALL beacon types</td>
<td>10</td>
<td>10(10/10/10)</td>
<td>9(9/9/9)</td>
</tr>
<tr>
<td><strong>Estimated 2020 Global Population</strong></td>
<td><strong>~ 1,895,500 (“10-10-10” assumption)</strong></td>
<td><strong>~ 1,969,500 (“10-10-12” assumption)</strong></td>
<td><strong>~ 1,921,000 (“8-8-18” assumption)</strong></td>
</tr>
</tbody>
</table>

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

\[
WLS = \frac{\sum (L_i \times W_i)}{\sum W_i}, \text{ where:}
\]

- \(L_i\) 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

<table>
<thead>
<tr>
<th>Beacon Type</th>
<th>Manufacturers’ Plans for 2020</th>
<th>Actual Production in 2020</th>
<th>Actual over Forecast Discrepancy, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>All beacon types</td>
<td>227,100</td>
<td>201,000</td>
<td>-11.5%</td>
</tr>
</tbody>
</table>
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...

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