Maritime and Inland Waterways Requirements (Focusing on IWW)

User Consultation Platform 2020

Gergely Mezo
New Requirements Identified

- less than 5 m horizontal positioning accuracy with detection on errors > 3 σ within 30 seconds integrity (iECDIS navigation mode)
- time to alarm smaller than 6 s (LAESSI IWW applications)
- integrity risk smaller than $10^{-5}$ per 2 minutes (LAESSI bridge warning)
- integrity risk smaller than $10^{-5}$ per 10 minutes (LAESSI mooring assistance)
- integrity risk smaller than $10^{-5}$ per 1 hour (LAESSI conning display)
- 0.1 m horizontal positioning accuracy (H2H project, LAESSI project)
LAESSI project (DE) requirements

<table>
<thead>
<tr>
<th></th>
<th>Bridge collision warning</th>
<th>Automatic guidance</th>
<th>Mooring assistance</th>
<th>Conning display</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position accuracy [cm]</strong></td>
<td>20</td>
<td>30</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td><strong>Height accuracy [cm]</strong></td>
<td>10</td>
<td>not relevant</td>
<td>not relevant</td>
<td>not relevant</td>
</tr>
<tr>
<td><strong>Heading accuracy [°]</strong></td>
<td>0,3</td>
<td>0,17</td>
<td>0,07</td>
<td>0,1</td>
</tr>
<tr>
<td><strong>Integrity risk</strong></td>
<td>10 $10^{-5}$ / 2 min</td>
<td>0,55 $10^{-5}$ / 3 h</td>
<td>18 $10^{-5}$ / 10 min</td>
<td>18 $10^{-5}$ / 1 h</td>
</tr>
<tr>
<td><strong>Time to alarm [s]</strong></td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 3: Accuracy and integrity requirements of assistance functions (Sandler et al 2016)
Linking space to user needs

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