Avionics Qualification Policy:
2017 Annual Report

Prepared for:
The Aviation Industry
December 26, 2017
## 2017 AQP Test Results Summary

<table>
<thead>
<tr>
<th>Tested Results Category*</th>
<th>Number of Tested Suites</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passed</td>
<td>11</td>
<td>46%</td>
</tr>
<tr>
<td>Waived: Non-Network Impacting</td>
<td>8</td>
<td>33%</td>
</tr>
<tr>
<td>Waived – Network Impacting</td>
<td>2</td>
<td>8%</td>
</tr>
<tr>
<td>Failed</td>
<td>3</td>
<td>13%</td>
</tr>
</tbody>
</table>

*Final AQP Status – In many cases the manufacturer corrected detected issues, some critical, during the course of the AQP test session.  
*As of: December 26, 2017
News & Trends in AQP Testing:

• For mature, AQP-approved suites, we are frequently able to waive the AQP testing requirement for minor software updates.
  – Twenty-eight waivers were provided in 2017.
    • 18 for VHF avionics suites
    • 7 for Iridium suites
    • 3 for Inmarsat avionics suites
• Most avionics suites submitted for AQP support POA, VDL Mode 2 AOA and ATN plus long range media (Aero-satellite/Iridium/HF).
  – Complete AQP testing is averaging eight days.
• Typical trouble area for many suites is VDL Multi-Frequency as defined in AEEC 631.
  – Recommend conducting ARINC published test cases prior to submission for AQP.
**AQP Classifications**

**Pass:** Avionics are fully compliant with AEEC standards and have unrestricted network use.

**Waived:** Avionics have minor deviations from AEEC standards that do not require additional RF resources. Unrestricted use.

**Waived/Network-Impacting:** Avionics have defects that will require additional RF resources. Unrestricted use; however, RF charges may apply in North America and Europe.

**Failed:** Avionics have serious problems that will impact the network and be disruptive to other airline messages. Restricted from use.

**Not Tested:** Avionics version has not been submitted for AQP testing. RF utilization charges will apply and possible termination of communications service.
<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stuck Message</td>
<td>Data link system sends a message in an endless loop jamming up the radio channel regionally for all aircraft and users</td>
</tr>
<tr>
<td>Stuck Transmitter/Radio/Carrier</td>
<td>Data link suite keys transceiver continually blocking communications for all other users on the media</td>
</tr>
<tr>
<td>Killer Message/Protocol</td>
<td>Data link sends illegal or corrupted message that would cause ARINC data link service component(s) to stop operating (“crash”)</td>
</tr>
<tr>
<td>Locking-Up Data Link Requiring Reboot</td>
<td>Data link suite repeatedly enters unrecoverable fault mode (“crashes”) under normal use and ceases sending downlinks and responding to all uplinks. A circuit breaker reset is required to restore ATS and AOC service—generally not allowed in flight</td>
</tr>
<tr>
<td>Unstable Data Link System</td>
<td>Data link suite is repeatedly unresponsive to human input or addressed uplink activity making it unsatisfactory from a customer viewpoint. Typically associated with “Locking-Up”</td>
</tr>
</tbody>
</table>
Questions?

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