

Avionics Qualification Policy: 2016 Annual Report

Prepared for:

The Aviation Industry
December 12, 2016

2016 AQP Test Results Summary

Phase 3 Tests	Phase 3 Test Waivers	Phase 4 Tests
18	23	0

Tested Results Category*	Number of Tested Suites	Percent
Passed	8	44%
Waived: Non-Network Impacting	5	28%
Waived – Network Impacting	0	-
Failed	5	28%

*Final AQP Status – In many cases the manufacturer corrected detected issues, some critical, during the course of the AQP test session.

*As of: 12/12/2016

News & Trends in AQP Testing:

- Current AQP Policy: Revision J: December 2013.
- For mature, AQP-approved suites, we are frequently able to waive the AQP testing requirement for minor software updates.
 - 23 such waivers in 2016.
- 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.
- Approximately one-half of all AQP tests performed in 2016 were for configurations employing new prototype Iridium-based SDU's.



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.

What Yields a “Failed” AQP Status?

Stuck Message

Data link system sends a message in an endless loop jamming up the radio channel regionally for all aircraft and users

Stuck Transmitter/Radio /Carrier

Data link suite keys transceiver continually blocking communications for all other users on the media

Killer Message/Protocol

Data link sends illegal or corrupted message that would cause ARINC data link service component(s) to stop operating (“crash”)

Locking-Up Data Link Requiring Reboot

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

Unstable Data Link System

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”

Questions ?

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