

# AVIONICS QUALIFICATION POLICY

2018 ANNUAL REPORT

Prepared for:  
The Aviation Industry

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# 2018 AQP TEST RESULTS SUMMARY

Phase 3 Tests	Phase 3 Test Waivers	Phase 4 Tests
16	19	0

Tested Results Category*	Number of Tested Suites	Percent
Passed	7	44%
Waived: Non-Network Impacting	3	19%
Waived – Network Impacting	2	12%
Failed	4	25%

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

**\*As of: 12/31/2018**

# NEWS & TRENDS IN AQP TESTING

- AQP Test Procedures and Facilities for AoIP are nearing completion.
- Current AQP Policy: Revision K: May 1, 2017. Revised to add new media....ACARS-Over-IP, Iridium Next/Certus and Swift Broadband Safety.
- For mature, AQP-approved suites, we are frequently able to Waive the AQP testing requirement for minor software updates.
  - Nineteen such Waivers in 2018 YTD.
- 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.



# NEWS & TRENDS IN AQP TESTING

- Due to the maturity of classic VHF based avionics, the number of AQP tests performed in 2018 has declined.
- AQP testing for prototype systems supporting new media did not fair well during AQP and yielded a disproportionate percentage of suites with a status of Failed.
- The development of Iridium Next/Certus Test Facilities is complete and the corresponding Test Procedures are well underway to support AQP for this media in the near future.
- Since September 2015, all VDLM2 capable avionics systems submitted for AQP must include functionality intended to comply with AEEC Standard 631-6 for Multi-Frequency operation.



# 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.

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## Stuck Transmitter/Radio/Carrier

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

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## Killer Message/Protocol

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

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## 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.

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## 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”.

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# QUESTIONS ?

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