

# AVIONICS QUALIFICATION POLICY

## 2021 MID-YEAR REPORT

Prepared for:  
The Aviation Industry

July 2, 2021



# 2021 YTD: AQP TEST RESULTS SUMMARY

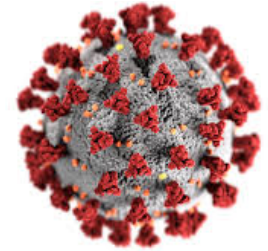
Phase 3 Tests	Phase 3 Test Waivers	Phase 4 Tests
7	14	0

Tested Results Category*1	Number of Tested Suites	Percent
Passed	2	29%
Waived: Non-Network Impacting	4	57%
Waived – Network Impacting	0	0%
Failed	1	14%

**\*1: Final AQP Status – In many cases the manufacturer corrected detected issues, some critical, during the course of the AQP test session. All reported results as of June 30, 2021**

# AQP NEWS & TRENDS: COVID-19

- COVID-19 greatly impacted our AQP test schedule throughout 2020; AQP testing was on-hold until the 3QTR2020 and resumed with a significant backlog.
- In 2021, AQP testing has resumed a normal schedule; however, customer/manufacturer supported on-site testing was restricted due to government recommendations and safety concerns.
- At the end of 2QTR2021 most government COVID restrictions have been lifted:
  - Guests are allowed to support testing within the AQP labs; however, guests must follow ARINC daily self-assessment procedures and are required to wear face masks and practice social distancing.



# NEWS & TRENDS IN AQP TESTING

- With the maturity of classic VHF-based avionics systems, the number of VHF AQP tests is gradually declining and being replaced with the AQP testing of avionics supporting new communications media including Iridium, enhanced Swift Broadband-Safety, and ACARS over IP.
- Iridium Next/Certus Test Facilities and Test Procedures are complete and ready to support AQP.
- The enhanced Swift Broadband-Safety (SB-S Ver 2.0) AQP facility and test procedures were completed in June 2020 and we are currently scheduling Phase 3 AQP.
- 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.



# NEWS & TRENDS IN AQP TESTING

- Current AQP Policy: Revision K: May 1, 2017. Revised to add new media....ACARS-Over-IP (AoIP), Iridium Next/Certus and Swift Broadband Safety (SB-S) .
- For mature, AQP-approved suites, we are frequently able to Waive the AQP testing requirement for minor software updates.
  - Fourteen such Waivers in 2021 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.



# 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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