Federal Aviation Administration

Memorandum

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To: See Distribution List

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Subject: Installation Approval for ADS-B Out Systems

The purpose of this memorandum is to explain the FAA's policy regarding required approvals and non-interference installations of Automatic Dependent Surveillance-Broadcast (ADS-B) systems. This memorandum supersedes the memo dated August 30, 2010 on the same subject.

How can the ADS-B Out system obtain initial approval?

ADS-B Out systems may be installed using the type certificate (TC), amended TC (ATC), or supplemental type certificate (STC) process. We recognize that some installations may not constitute a major change in type design, but authorize the use of a TC amendment or STC as an acceptable method for approval due to the new and novel design and the importance of assuring compliance for the National Airspace System.

For ADS-B Out system projects approved under an Organization Designation Authorization (ODA), it is expected that the FAA Organization Management Teams (OMTs) will be involved if the project involves ADS-B equipment or Global Navigation Satellite System (GNSS) position sensors not previously approved. This level of involvement is based on the lack of maturity in the means of compliance and the coordination with the FAA to obtain test data from the FAA ground network.

Can ADS-B Out systems be approved using data approvals other than an STC, including field approvals?

Yes, ADS-B Out systems can be approved using data approvals other than an STC if all of the following conditions are met:

a) The ADS-B Out equipment is authorized under TSO-C166b or TSO-C154c;
b) The GNSS position sensor is approved under TSO-C129 or later, TSO-C145a/C146a or later, or TSO-C196 or later;

c) The ADS-B Out equipment (transponder or Universal Access Transceiver (UAT), GNSS position sensor, and interconnect wiring are identical to previously-approved design under type certificate or supplemental type certificate (see example in figure 1);

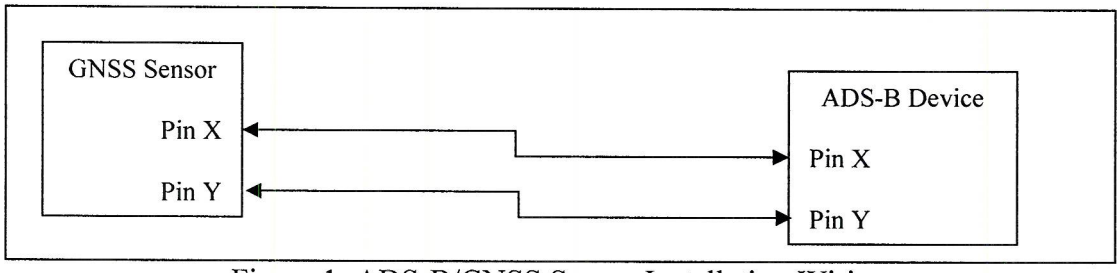

Figure 1: ADS-B/GNSS Sensor Installation Wiring

d) The installation is performed in accordance with the equipment manufacturer's installation guidance;
e) The installer verifies the installation in accordance with the guidance of AC 20-165, Chapter 3 and 4. The data from the previously-approved installation may be used to address paragraphs 3-1 c, 3-1 d, 3-3 b (2), 4-1b, 4-1c. A return-to-service operational check flight in accordance with AC 20-165 Section 4-3 is recommended for determining if the installation performance is acceptable;

All other aspects of the installation qualify for installation under 14 CFR part 43 and follow the guidance in the Major Alteration Data Approval Job Aid (8900.1 Fig 4-68 or other approved guidance).

When field approvals are granted for qualifying ADS-B Out projects, approval of an AFM supplement with the following statement is delegated to the approving ASI:

> "The installed ADS-B Out system has been shown to meet the equipment requirements of 14 CFR § 91.227."

Can ADS-B Out systems be approved for purposes other than ADS-B Out rule compliance?

All transponders or ADS-B transmitters with RTCA DO-260B or DO-282B ADS-B functionality shall be installed in accordance with AC 20-165. Do not allow the installation of a transponder or ADS-B transmitter on a non-interference basis. This policy applies to all ADS-B Out systems utilizing the DO-260B or DO-282B standard, not just TSO-C166b or TSO-C154c equipment.

For 1090 MHz ADS-B, equipment that broadcasts version 0 (RTCA/DO-260) or version 1 (RTCA/DO-260A) can be installed in accordance with EASA Approved Means of Compliance (AMC) 20-24, in lieu of AC 20-165, to support ADS-B usage in other regions of the world. A UAT ADS-B installation that broadcasts version 0 or version 1 can be installed under any of the following methods:

a) Using a ramp tester to verify the appropriate transmission of ADS-B information per guidance outlined in AMC 20-24;
b) Perform a flight test and post flight data analysis as described in AC 20-165A Section 4-3.

Who should I contact for questions about this policy memorandum?

Please contact Mr. Chris Parfitt (AFS-360), 202-385-6398, Chris.Parfitt@faa.gov, or Mr. Alejandro Rodriguez (AIR-130), (202) 385-4943, Alex.J.Rodriguez@faa.gov.

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