

Standard Change CS-SC002d

INSTALLATION OF MODE S ELEMENTARY SURVEILLANCE EQUIPMENT

1. Purpose

This SC is for the installation of a Mode S transponder, including, optionally, an altitude encoder.

The individual installation of an altitude encoder is covered by this SC.

This SC does not include the installation of antennas (see CS-SC004(), which may be applied concurrently).

Note: SC-CS005() refers to the installation of ADS-B OUT equipment.

2. Applicability/Eligibility

This SC is applicable to:

- aeroplanes and rotorcraft that are not complex motor-powered aircraft provided that they do not have to comply with the ADS-B parts of the surveillance performance and interoperability (SPI) Regulation¹²;
- any ELA2 aircraft.

Note: In this SC, the SPI Regulation designates Regulation (EU) No 1207/2011 and all its subsequent amendments. Such amendments currently include Regulations (EU) No 1028/2014, (EU) 2017/386 and (EU) 2020/587.

This SC may be used for eligible aircraft as a means of compliance with the Mode S elementary surveillance (ELS) parts of the SPI Regulation.

3. Acceptable methods, techniques, and practices

The following standards contain acceptable data:

- FAA Advisory Circular AC 43.13-1B, Chapter 11 or ASTM F2639-18 or subsequent revisions; and
- FAA Advisory Circular AC 43.13-1B, Chapter 12.

Additionally, the following conditions apply:

- The transponder equipment and its installation meet point CS ACNS.D.ELS.010 characteristics relevant for non-complex motor-powered aircraft. Additionally, the altitude encoder meets ETSO-C88a, or later amendments, or its equivalent.
- The elementary surveillance system provides relevant data according to CS ACNS.D.ELS.015.
- If automatic determination of the on-the-ground status is not available, the on-the-ground status is set to 'airborne'.
- The reported pressure altitude is obtained from an approved source that is connected to the static pressure system that provides pressure to the instrument used to control the aircraft.

¹² Commission implementing Regulation (EU) No 1207/2011 of 22 November 2011 laying down requirements for the performance and the interoperability of surveillance for the single European sky (OJ L 305, 23.11.2011, p. 35) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32011R1207&qid=1649776306407>).

- Any antenna connected to the transponder has a resulting radiating pattern which is vertically polarised, omnidirectional in the horizontal plane, and has sufficient vertical beam width to ensure proper system operation during normal aircraft manoeuvres.
- The equipment is suitable for the environmental conditions to be expected during normal operations; see CS STAN.42 in Subpart A for guidance.
- The installation instructions from the equipment manufacturer have to be followed.
- A system ground test that verifies all the transmitted data according to CS ACNS.D.ELS.015 has to be performed.

4. Limitations

Any limitations defined by the equipment manufacturer apply.

In the case of aircraft approved for NVISs/NVGs, the change cannot be considered a SC.

If a Class A TABS device is already installed in the aircraft, the Mode S transponder system cannot be installed using CS-STAN.

5. Manuals

Amend the AFM with an AFMS that contains or references the equipment instructions for operation, as required.

Amend the Instructions for Continuing Airworthiness (ICAs) to establish maintenance actions/inspections and intervals, as required.

6. Release to service

This SC is not suitable for the release to service of the aircraft by the pilot-owner.

[Issue: STAN/2]

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