

## Standard Change CS-SC051d

### INSTALLATION OF 'FLARM' EQUIPMENT

*Note:* Originally, FLARM® equipment was developed for sailplanes, but nowadays such devices are more and more being installed in other light aircraft as well. FLARM® is an internationally registered trademark. For the purpose of this SC, the term 'FLARM' is also used to describe the functionality.

#### 1. Purpose

This SC is for the installation or exchange of FLARM systems that provide situational awareness information on traffic, or traffic and obstacles. These systems are based on the specifications as defined by FLARM® Technology Ltd. Such products include all devices that embed FLARM technology.

*Note:* FLARM equipment is not equivalent to Transponder Mode A/C/S, ADS-B, Class A TABS or TCAS/ACAS equipment.

An aircraft that has only FLARM equipment installed will not be seen by air traffic control (ATC) or by ACAS/TCAS systems.

The installation of additional batteries is not covered by this SC.

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

#### 2. Applicability/Eligibility

This SC is applicable to:

- aeroplanes that are not complex motor-powered aircraft;
- rotorcraft that meet all the following conditions:
  - have a MTOM of 3 175 kg or less;
  - are certified for a maximum passenger seating configuration of 9 passengers or fewer;
  - are not approved for Category A (CAT A), or equivalent to CAT A, operations;
- ELA2 aircraft.

#### 3. Acceptable methods, techniques, and practices

The following standards contain acceptable data:

- FAA Advisory Circular AC 43.13-2B, Chapters 1, 2 and 11; and
- FAA Advisory Circular AC 43.13-1B, Chapter 11 or ASTM F2639-18 or subsequent revisions.

Additionally, the following conditions apply:

- All the parts and appliances identified in this SC are eligible for installation without an EASA Form 1.
- The design of the equipment installation must take into account crashworthiness, the arrangement of the installation and its visibility, interference with other equipment, the jettison of the canopy and the emergency exit.

- The design of the equipment installation must take into account the structural integrity of the instrument panel or any other attachment point. Special consideration is necessary for equipment installed in a location behind the occupant(s).
- The installation should allow the pilot to isolate the FLARM unit in flight from the aircraft's electrical system without interrupting the power supply to other essential avionics.
- Data bus/data connectivity between the FLARM device and other equipment which is:
  - ETSO authorised (or equivalent authorisation); or
  - required by the TCDS, AFM or POH; or
  - required by other applicable requirements such as those for operations and airspace,is not allowed unless the FLARM device is explicitly recognised by the manufacturer of the other equipment as compatible equipment to which the other equipment can be connected.

*Note:* The recognition of FLARM by the equipment manufacturer has to address overall compatibility and digital communication interfaces and information security protection aspects, if the latter is applicable.
- The equipment is suitable for the environmental conditions to be expected during normal operations; see CS STAN.42 in Subpart A for guidance.
- Installation and maintenance follow the instructions provided by the manufacturer.

*Note:* FLARM® Technology Ltd has published generic instructions for continuing airworthiness (refer to FTD-073).
- An installation check flight is conducted to assess the installation for satisfactory antenna coverage and identify any possible limitations, by analysing data from the built-in flight recorder with the 'FLARM Range Analyzer' tool of FLARM® Technology Ltd (available at [www.flarm.com](http://www.flarm.com)). Additionally, for installation on rotorcraft, this installation check flight should also verify that the installation of the FLARM device does not cause excessive vibrations. Refer to CS STAN.48 in Subpart A for guidance.

#### 4. Limitations

The FLARM-based system cannot be used to substitute for any anti-collision device that is mandated by the EU AIR OPS rules for the intended operation.

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

Any limitations defined by the manufacturer of the FLARM device are applicable. These must include periodical firmware and database updates as defined in the Instructions for Continuing Airworthiness (ICAs).

Alerts generated by other rotorcraft systems, which need more immediate action, shall prevail over any other alerts generated by FLARM installations.

The use of FLARM is limited to prompting additional crew actions in accordance with the rules of the air to try to acquire a visual contact with surrounding traffic and/or obstacles.

The information provided by FLARM shall not be displayed by an instrument that is used to provide information that is required by airworthiness or operational rules.

## **5. Manuals**

Amend the AFM with an AFMS to include, at least, the following:

- a description of the system, its operating modes and its functionality, and information about interoperable systems;
- limitations, warnings and placards, at least, for the following:
  - 'For situational awareness only',
  - 'Use in day VFR only' for aircraft which are approved for operations beyond day VFR;
- the normal and emergency operating procedures; and
- instructions for carrying out software and database updates.

Amend the ICAs to establish maintenance actions/inspections and intervals, as required.

*Note:* FLARM® Technology Ltd has published instructions for continuing airworthiness in document FTD-073 'Instructions for Continued Airworthiness'.

## **6. Release to service**

The first installation of this SC is not suitable for the release to service of the aircraft by the pilot-owner.

The pilot-owner may exchange an already installed FLARM unit for another FLARM unit under the following conditions:

- the new FLARM unit is installed in the same location;
- the new FLARM unit is identical to the exchanged unit, or the installation instructions from FLARM® Technology Ltd foresee the possibility of an exchange of one FLARM unit for another with the same form and fit.

[Issue: STAN/2]

[Issue: STAN/3]

[Issue: STAN/4]