

Schedule 23 ATSO-1C112 — Air traffic control radar beacon system/mode select (ATCRBS/MODE S) airborne equipment

(subsection 13.2 (1), table, item 3)

1 Application

This Schedule applies to air traffic control radar beacon system/mode select (ATSRBS/MODE S) airborne equipment manufactured by an article manufacturer.

2 Definitions

In this Schedule:

ED-12 means the document called *Software considerations in Airborne Systems and Equipment Certification*, published by EUROCAE, as existing from time to time.

ED-14 means the document called *Environmental Conditions and Test Procedures for Airborne Equipment*, published by EUROCAE, as existing from time to time.

ED-73 means the document called *Minimum Operational Performance Specification for Secondary Surveillance Radar MODE S Transponders*, published by EUROCAE, as existing from time to time.

RTCA/DO-160D means the RTCA Document RTCA/DO-160D called *Environmental Conditions and Test Procedures for Airborne Equipment*, or a later version of RTCA Document No. DO-160, as existing from time to time.

RTCA/DO-160F means the RTCA Document RTCA/DO-160F called *Environmental Conditions and Test Procedures for Airborne Equipment*, or a later version of RTCA Document No. DO-160, as existing from time to time.

RTCA/DO-178C means the RTCA Document RTCA/DO-178C called *Software Considerations in Airborne Systems and Equipment Certification*, as existing from time to time.

RTCA/DO-181 means the RTCA Document RTCA/DO-181 called *Minimum Operational Performance Standards for Air Traffic Control Radar Beacon System/Mode Select (ATCRBS/Mode S) Airborne Equipment*, as existing from time to time.

3 Minimum performance standard — general

- (1) The equipment must meet the requirements mentioned in:
 - (a) section 2 of RTCA/DO-181; or
 - (b) ED-73.
- (2) The equipment must have a design assurance level commensurate with its failure condition classification as “major”.

Note The concept of failure condition classification is described in the appropriate certification specification guidance material. For example, EASA AMC 25.1309.

4 Minimum performance standard — environmental test

The equipment must be tested in accordance with the test conditions mentioned in RTCA/DO-160D or ED-14.

5 Minimum performance standard — fire protection

The material used in the equipment, other than small parts (such as knobs, fasteners, seals, grommets and small electrical parts) that would not contribute significantly to the propagation of a fire, must be self-extinguishing in the event of fire.

6 Minimum performance standard — marking

- (1) The equipment must be permanently and legibly marked with the following:
 - (a) either:
 - (i) the class of the equipment in accordance with RTCA/DO-181 or ED-73; or
 - (ii) if the equipment meets more than 1 class — the class with the more stringent requirements;
 - (b) if the equipment is of a level within the meaning of ED-73 — either:
 - (i) the level of the equipment in accordance with ED-73; or
 - (ii) if the equipment meets more than 1 level — the level with the more stringent requirements;
 - (c) the environmental categories over which the equipment has been designed to operate mentioned in Appendix A of RTCA/DO-160F;
 - (d) if an environmental test procedure is not applicable and the test is not conducted — an “X” in the space in which the category would otherwise be marked.
- (2) Subject to subclause (3), each component of the equipment, including the antenna and receiver-transmitter, must be permanently and legibly marked with:
 - (a) the name of the manufacturer; and
 - (b) “ATSO-1C112”; and
 - (c) the environmental categories over which it is designed to operate.
- (3) Subclause (2) does not apply to a component, other than the antenna and receiver-transmitter, to the extent the shape, size or nature of the component makes it impracticable to mark on the component the information required by subclause (2).

7 Minimum performance standard — technical data

The technical data mentioned in paragraph 21.605 (2) (b) of CASR for an application by an article manufacturer for an authorisation in relation to the equipment must include the following:

- (a) a description of the manufacturer’s operating instructions and equipment limitations in sufficient detail to explain the operational capability of the equipment;
- (b) the installation procedures and limitations for the equipment, including:
 - (i) an explanation of how the limitations will be sufficient to ensure that the transponder will meet the requirements set out in this Schedule; and
 - (ii) a description of any unique aspects of the installation procedures;
- (c) schematic drawings for the installation procedures;
- (d) wiring diagrams for the installation procedures;
- (e) a list of the components of the equipment, including the part number of each component and vendor part number cross-references, if any;
- (f) a component maintenance manual for the equipment that includes:
 - (i) information about the periodic maintenance, calibration and repair of the installed equipment for its continued airworthiness; and
 - (ii) recommended inspection intervals and service life of the installed equipment;
- (g) a material and process specifications list;
- (h) the manufacturer’s ATSO qualification test reports;

- (i) nameplate drawing showing the information to be marked on the equipment in accordance with clause 6 of this Schedule;
- (j) a list of the drawings and processes, including revision level, necessary to define the equipment's design;
- (k) an environmental qualification form for each component of the equipment as mentioned in RTCA/DO-160D or ED-14;
- (l) if the equipment includes a digital computer — a Plan for Software Aspects of Certification mentioned in RTCA/DO-178C.

8 Minimum performance standard — supply of equipment

If the manufacturer of the equipment supplies a unit of the equipment to a person, the manufacturer must give the person the following:

- (a) a copy of the technical data and information mentioned in paragraphs 7 (a) to (e), (i) and (k) of this Schedule;
- (b) a copy of any other data or information necessary for the proper installation, certification, use and continued airworthiness of the equipment;
- (c) for each item of equipment — a document containing the following statement:

The conditions and tests required for ATSO approval of this article are minimum performance standards. It is the responsibility of the person installing this article either on or within a specific type or class of aircraft to determine that the aircraft installation conditions are within the ATSO standards. ATSO articles must have separate approval for installation in an aircraft.