

Detailed explanation of Proposal no. 2 – Integrated TABS device

Authoritative technical standards and requirements will be specified in section 9B and Appendix XIII of CAO 20.18 (see the draft instrument included with this consultation for details).

In summary, the following technical requirements would apply:

- An integrated TABS device must meet the relevant standards specified in ((E)TSO-C199¹ for a device with integrated Class A and Class B TABS functionality²
- An integrated TABS device must transmit a Source Integrity Limit (SIL)³ value of 1
- an integrated TABS device must be authorised by the relevant National Aviation Authority (NAA) of the equipment manufacturer as meeting the standards mentioned in the first two bullet points.

What is TABS?

TABS was originally envisaged in the USA for voluntary equipage on aircraft exempted from carrying a transponder or Automatic Dependent Surveillance - Broadcast (ADS-B) equipment, such as gliders, balloons and aircraft without electrical systems.

TABS devices do not meet Mode S transponder or ADS-B requirements for operations in controlled airspace. However, TABS equipment will enable an aircraft to be visible to other aircraft equipped with airborne collision avoidance system (ACAS) and/or ADS-B IN capability.

It is possible that TABS equipped aircraft will be visible on the next-generation air traffic service surveillance system, however equipment transmitting low position integrity messages will not be eligible for ATS surveillance separation service.

CASA is proposing to more broadly utilise the TABS concept in Australia to provide ADS-B OUT functionality in VFR aircraft.

Eligibility for use of TABS

CASA proposes an integrated TABS device will be useable in a VFR aircraft to which all of the following applies:

- VFR flight below FL290
- The aircraft has a maximum certificated take-off weight of no more than 5 700kg
- The aircraft has a maximum cruising speed not exceeding 250kt
- The aircraft is not used for RPT or charter operations

¹ (E)TSO means FAA Technical Standard Order and/or European Technical Standard Order.

² According to TSO-C199, 'Class A' refers to the transponder, altitude source, and ADS-B OUT transmitting functionality of a TABS; while 'Class B' refers to the Global Navigation Satellite System (GNSS) position source functionality.

³ SIL means Surveillance or Source Integrity Limit (the specific variant depending on the referenced technical standard) and is a numeric value between 0 and 3 that indicates the position source's probability of exceeding the reported integrity value. It is one of the messages transmitted by a modern ADS-B transmitting equipment. SIL is a static (unchanging) value, normally specified by the equipment manufacturer and normally set by the installer at the time of equipment installation.

The speed and MTOW limits are proposed for consistency with overseas practice (EASA) for the same equipment. Further, the speed limit is to account for a lower peak output power being permissible in a TABS compared to a standard transponder (70W vs 125W).

In which airspace can a TABS be used?

CASA proposes that an eligible aircraft will be able to operate an integrated TABS device in Class D, E & G airspace.

It is also proposed that eligible aircraft will be able to use an integrated TABS device instead of a transponder for VFR operations in Class E airspace, or at or above 10 000ft AMSL in Class G airspace.

A TABS cannot substitute for a transponder or IFR-standard ADS-B OUT equipment, where one or the other is required for operations in Class A or C airspace.

Is an integrated TABS device available?

At this time, CASA is not aware of any integrated TABS being currently available. The reason for CASA proposing the use of an integrated TABS is to cater for possibility that CASA's proposal provides an incentive for a manufacturer to bring a device to the market.