



Directive on the use of transponders and ADS-B for drones and model aircraft

Date: 01.06.2021
For: Operators of drones and model aircraft

Reference: BAZL-311.340-33/7

1 General

A drone – insofar as it contains a radio transmitter and/or receiver – is an item of radio equipment. Drones fall within the remit of the Federal Office of Communications (OFCOM) with regard to frequency spectrum and radio equipment regulations, as well as in respect of the legal requirements for their market access and conformity.

Information and forms for licence applications can be found on the OFCOM website:

<https://www.bakom.admin.ch/bakom/en/homepage/frequencies-and-antennas/frequency-use-with-or-without-licences/drones-and-model-aircraft.html>.

The correct process for the allocation of a trial radiocommunication licence or full radio licence must be followed; i.e. **OFCOM** must be contacted at:

kf-fk@bakom.admin.ch

OFCOM consults the bodies involved (e.g. Skyguide/FOCA) when evaluating applications.

2 Operational considerations

Regardless of their size, mass and speed, all aircraft interact with each other by using the same airspace. In the aviation industry, the transponder is an important means used to keep aircraft apart by ATC (Air Traffic Control; legal requirement between IFR/IFR and VFR/IFRⁱ, depending on airspace).

Aircraft are equipped with transponders in accordance with EU rules (Commission Implementing Regulation (EU) No 1207/2011 of 22 November 2011 laying down requirements for the performance and interoperability of surveillance for the single European sky) and Swiss rules (DETEC Ordinance on Traffic Rules for Aircraft (TRAO) Art. 29 Obligation to carry and operate).

The use of transponders at 1030/1090 MHz is not required for drones and by these standards, so in principle is not scalable for such applications.

The 1030/1090 MHz band is already congested and the number of interrogations received by aircraft often exceeds the limits defined in the standards issued by the International Civil Aviation Organization (ICAO). Furthermore, there is a limited number of available ICAO 24-bit addresses.

In view of the expected high number of drones and model aircraft, only a small proportion of operators will be able to use ADS-B and/or mode-S transponders in future.



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The use of transponders on drones will therefore be restricted, so it is important that applications include full details giving reasons for the specifics of the proposed operation, such as:

1. why the device is to be used, and
2. whether the device is to be used in a predefined and limited space and time period.

3 Technical requirements

Where a transponder is to be installed, the corresponding transponder code will be sent to the applicant by the Swiss Aircraft Register.

It should be noted that, just as in manned aviation, the transponder installation must be checked and certified by an approved aircraft maintenance organisation. This check must be repeated every two years (see TN 20.100-20).

The transponder system must meet the requirements of CS-ACNSⁱⁱ and must be appropriately certified (e.g. EASA Form 1 or FAA Form 8130-3).

ⁱ IFR: instrument flight rules/VFR: visual flight rules

ⁱⁱ Certification Specification – Airborne Communications, Navigation and Surveillance