



## EASA Safety Information Bulletin

**SIB No.:** 2008-84  
**Issued:** 17 October 2008

**Subject:** **Funkwerk Avionics (formerly Filser Electronic) TRT 600 and TRT800 Series Transponders – Intermittent Loss of Detection, Insufficient Mode S Reply.**

**Ref. Publications:** EASA Airworthiness Directive (AD) 2008-0158R1  
EASA Proposed AD (PAD) 08-117 [planned AD 2008-0183]

**Description:** EASA received reports of intermittent loss of detection on Mode-S Secondary Surveillance Radar (SSR) of aircraft equipped with Funkwerk Avionics TRT800A Transponders. To address this unsafe condition, EASA issued AD 2008-0158 which prohibits aircraft equipped with transponder TRT800A or similar design (TRT600, TRT800, TRT800H) from operating in airspace in which a transponder is required and Mode S interrogation is used by the ground system. The only exception is when prior acceptance from the Air Navigation Service Regulator has been granted.

Further investigation has shown that this issue can be separated into several cases which allow a stepped approach in the development of solutions and making these available to aircraft owners and operators.

1) In the current European mixed mode environment Mode S and Mode A/C interrogations are sent separately. Under certain conditions the TRT600, TRT800A and TRT800H transponders do not respond to the interrogations as expected in this mixed mode environment resulting in loss of track in the ground system.

It has been demonstrated that the TRT800 low power version is not affected by this problem. This allowed the reduction of the applicability for EASA AD 2008-0158.

For the TRT600 the investigation is ongoing.

For the high power versions TRT800A and TRT800H Funkwerk has developed a fix indicated as Mod-Index 10 which is the subject of EASA PAD 08-117 and will be implemented through EASA AD 2008-0183.

2) Under certain conditions, the reply rate of the TRT600, TRT800, TRT800A and TRT800H transponders to Mode S interrogations is less than expected. This will only result in a safety issue when Air Navigation Service Providers switch to pure mode S interrogations. This is planned for the core area of Europe and NATS (the main United Kingdom ANSP) will start in the UK airspace by April 2009 with that transition.

As Funkwerk has demonstrated (again) that the affected units fully comply with ED-73B (ETSO-2C112b) requirements, the reason for this second issue is still under further investigation.

It has to be mentioned that the units do not provide diversity functionality which is requested for aircraft with a maximum mass in excess of 5700 kg or a maximum cruising true airspeed capability in excess of 463 km/h (250 knots). In addition, the low power version is only approved for installation in aircraft with a maximum cruising true airspeed below or equal 324 km/h (175kt) and operated at altitudes not exceeding 15 000 ft.

In the interest of safety, we request that aircraft owners and operators report any unexpected loss of radar tracking to EASA using the occurrence reporting EASA form 44:

[http://www.easa.europa.eu/ws\\_prod/g/doc/Contact/Form%2044%20Technical%20Occurrence%20Report%20Form.doc](http://www.easa.europa.eu/ws_prod/g/doc/Contact/Form%2044%20Technical%20Occurrence%20Report%20Form.doc)

The following data are important for further analysis:

- aircraft call sign (+24Bit address),
- position of the loss of detection, as precise as possible, including:
  - altitude,
  - exact time UTC,
  - duration of loss of detection, and
  - transponder type, including mod status.

**Applicability:**

Funkwerk Avionics GmbH TRT600 and TRT800 Series Mode-S Transponders, including units previously manufactured by Filser Electronic.

These transponders are known to be installed on, but not limited to, aircraft certificated (validated) by EASA under CS 22 or CS 23, and aircraft certificated (validated) by EU Member States or associated countries prior to 28 September 2003 under equivalent National Standards.

**Contact:**

For further information contact the Airworthiness Directives, Safety Management & Research Section, Certification Directorate, EASA. E-mail: [ADs@easa.europa.eu](mailto:ADs@easa.europa.eu).