ADS-B Out

Be ready for the 2020 mandate!

In 2020, FAA and EASA will mandate that all Aircraft flying need to be equipped with an upgraded version of ADS-B out (DO-260B). As currently limited number of aircraft are flying with compliant hardware, a large retrofit program needs to be started, where 40k aircraft need to be modified.

The modification for ADS-B out may take considerable effort. Therefore most probably the heavy maintenance schedules will drive the window of opportunity to modify each aircraft.

Fokker Services offers you the ability to start your modification program to become compliant for the 2020 mandate. Request information about our integrated solution for your fleet today!

Your needs

ADS-B Out is an airspace requirement and already required in many parts of the world. A more stringent version of the ADS-B Out mandate in Europe (SESAR program) is due per June 2020 (retrofit) and in the USA (NextGen program) per January 2020. The existing ADS-B Out mandates require a version 0 (DO-260) ATC Mode S Transponder, while the coming mandates in Europe and USA require a version 2 (DO-260B) ATC Mode-S Transponder as well as a more capable GNSS Sensor.

To become compliant, you will need at least the following equipment:

› ATC Mode-S Transponder (compliant with DO260B)
› ADS-B out capable GNSS Sensors / Multi-Mode-Receivers / Flight Management System
› EASA / FAA approved STC package
› Aircraft Documentation update
› Sufficient installation time: modification may require multiple days work, likely to coincide with Heavy Maintenance checks

Your benefits

Fokker Services will be your ADS-B out one-stop-shop. We can offer you an integrated solution:

› Advise you on your hardware needs
› Offer hardware (or upgrades): Transponders, GNSS Sensors, Wiring and Flight Deck indications
› A Fokker Services STC package approved by EASA and/or FAA including installation instructions
› EASA/FAA approved documentation amendments
› Optional MRO capability or assistance on-site
› Support and repair capabilities on ADS-B components

Equip now as:

› Shop and MRO capacity will become constrained as the deadline approaches
› Shops and MRO may charge extra as the deadline approaches
› To be able to modify the aircraft during several slots
› Prices of hardware will likely increase as the deadline approaches
› Penalties will be in place after the deadline (aircraft grounded or limited use of airspace)
› Operational benefits (ATC support outside coverage of primary radar; Aircraft Tracking)
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Product description

Basically the aircraft needs:
- A capable ATC Mode S Transponder transmitting Extended Squitters on 1090MHz (1090ES)
- A Global Navigation Satellite Sensor (GNSS)
- Flight Deck indication and wiring interfaces between the aircraft sensors and the ATC Mode S Transponder

ATC mode S Transponder

Depending on the requirement, several aircraft parameters are ‘squittered’ to any ADS-B Out capable receiving station, such as: AC position, AC altitude, AC velocity, AC identification etc. For the upcoming EASA and FAA requirements a version 2 (DO-260B) ATC Mode S Transponder is required. Some ATC Mode S Transponder can be upgraded to DO-260B, others must be replaced by new DO-260B capable Transponders.

GNSS Sensor

A suitable GNSS Sensor that exceeds the Minimum Operational Performance Standards for GPS/SBAS Airborne Equipment is required. This GNSS Sensor can be part of the Flight Management System, Multi-Mode Receiver, in a dual installation, or being a single stand-alone sensor. Fokker Services can also develop a new single or dual stand-alone GNSS sensor installation to fulfill the GNSS sensor ADS-B Out requirements as well as possible future navigation mandates, if required.

Wiring interfaces and Flight Deck Indications

Wiring interfaces between several aircraft sensors and the ATC Mode S Transponder are required and depending on requirements a possible Flight Deck indication. Note that if the aircraft is already Enhanced Surveillance (EHS) or Elementary Surveillance (ELS) compliant, most required wiring interfaces are already present.

Aircraft Applicability

The ADS-B Out modification will be available for a wide range of aircraft, including Airbus, Boeing, Bombardier and Fokker aircraft. Fokker can act as a one-stop-shop for your mixed fleet needs.

References

Regulatory documents:
- USA (Mandate; January 01, 2020): FAA: 14 CFR 91.225, 14 CFR 91.227 and AC 20-165B
- Europe (Mandate; June 07, 2020): EU IR No. 1207/2011, No. 1028/2014 and CS-ACNS

Equipment qualification:
- ATC Mode S Transponder 1090 MHz Extended Squitter ADS-B RTCA MOPS DO-260B or EUROCAE ED-102A(E) TSO-C166b
- GNSS Sensor: RTCA MOPS DO-229(E) TSO-C145, (E) TSO-C146
- ADS-B In:
  - An ADS-B In mandate does not exist at this time.