



CURRENT STATUS OF ADS-B REGULATIONS

Current and Proposed Rules – As of 30 April 2010

Europe

- An EASA rule (AMC 20-24) is in place for non-radar airspace (NRA).
 - Equipage currently optional; it applies only to aircraft participating in the Pioneer Program in pocket areas (e.g., Kiruna, Dutch North Sea coast, Azores, Alghero, Pescara, Rhodes, Larnaca, and Trabzon).
 - Both TSO-C129(AR) and TSO-C145(AR) are acceptable as position sensors.
- Initial Rule for high traffic density radar airspace (RAD) should be available in 2010.
- EUROCAE has released a version of the 1090 MHz ADS-B MOPS that's equivalent to RTCA/DO-260B; i.e., ED-102A.
- ETSO-C166a now available for certification of 1090 MHz ADS-B. ETSO-C166b referencing ED-102A expected to replace it.
- A Draft Implementing Rule (SPI IR) for fixed wing and transport-type state aircraft with MTOW > 5,700 kg or Maximum Cruising Speed TAS > 250 kts stipulates:
 - ADS-B Out equipage to EHS standard for new civil aircraft after 1 Jan 2012;
 - ADS-B Out equipage to EHS standard for existing civil aircraft by 4 February 2015; (unless locally mandated otherwise, or ceasing operation by 2017)
 - State aircraft equipage with ADS-B Out by 1 Jan 2017 (unless locally mandated otherwise, or ceasing operation by 2020)
 - For small and slow aircraft (MTOW ≤ 5,700 kg and Maximum Cruising Speed TAS ≤ 250 kts), local regulations can be applied to stipulate ADS-B Out equipage, with same dates of applicability as for heavier or faster aircraft.
- Going forward, EASA will require compliance with DO-260B MOPS for avionics approval
 - At a minimum, SA Aware GNSS will be recommended for compliance. The timing of the Galileo GNSS and existing radar coverage may impact the GNSS requirement. At least through 2025, one of two SSR layers (which is typical for high density radar-controlled airspace) will be replaced by ADS-B surveillance, possibly making GNSS reliability less of an issue than in other parts of the world.

USA

- On 2 December 2009 RTCA published two new Minimum Operational Performance Standards (MOPS): DO-260B, for ADS-B and TIS-B using datalink 1090 MHz and applicable to all altitudes, and DO-282B, for Universal Access Transceiver (UAT) ADS-B using datalink 978 MHz and applicable to altitudes up to 24,000 feet. Released concurrently by the FAA and referencing them are TSO-C166b and TSO-C154c, respectively.
 - The previous revision of each TSO can be used for TC and STC qualifications during a transition period.
- Existing NPRM stipulates a GPS WAAS positional reference required for all ADS-B applications.
- GOMEX IFR helicopter ADS-B equipage:
 - Voluntary equipage recommended currently to avoid procedural separation.
 - Mandatory equipage starting in 2020.



- Final ADS-B rule publication is expected in May 2010. Likely changes to the NPRM include:
 - Preferred performance in accordance with TSO-C166b or TSO-C154c (UAT) rather than previous revisions.
 - Requires all aircraft in Class A airspace (starting at 18,000 ft) to use the 1090 MHz datalink for transmission.
 - Class E airspace at or below 2,500 ft AGL need not follow ADS-B standards.
 - Antenna Diversity not required in all ADS-B mandated airspace for every aircraft type.
 - Navigation Accuracy Category for position (NACp) reduced from ≤ 30 meters ($\text{NACp} \geq 9$) to ≤ 0.05 NM ($\text{NACp} \geq 8$).
 - Navigation Accuracy Category for velocity (NACv) ≥ 1 (i.e., Horizontal Velocity Error < 10 m/s).
 - Navigation Integrity Category (NIC) reduced from ≤ 0.1 NM ($\text{NIC} \geq 8$) to ≤ 0.2 NM ($\text{NIC} \geq 7$).
- Draft specification for ADS-B on ground vehicles was released in March 2009. Calls for:
 - $\text{NACp} \geq 9$
 - $\text{NACv} \geq 1$
 - $\text{NIC} \geq 7$
- Four key sites designated for ADS-B “critical services” have achieved Initial Operational Capability (IOC):
 - Louisville TRACON facility
 - Houston ARTCC
 - Philadelphia TRACON
 - Anchorage Center (includes coverage of Juneau)
- FAA intends to define a strategy for ADS-B In by 2012.

Canada

- As cited in Advisory Circular 700-009 dealing with ADS-B, EASA’s AMC 20-24 has been adopted by Transport Canada as the basis for avionics certification for initial ADS-B Out use on routes over Hudson Bay (NRA).
- Hudson Bay ADS-B is now operational, and the airspace will be exclusionary when enough aircraft comply with AMC 20-24. Once 80% equipage is attained, only equipped aircraft will be allowed to use routes at fuel-efficient FL350 - FL400 with 5-mile separation. Others will fly lower or higher with procedural separation (~80 miles in trail).
- ADS-B coverage is being introduced to Canada’s northeastern coast, enabling aircraft surveillance to 250 miles east of Greenland along the North Atlantic track system. Coverage is expected to be operational in November 2010.

Australia

- Lower Airspace: No mandate, but preferential clearances provided in non-radar airspace by Airservices Australia.
- Upper Airspace (FL 290 and above): Starting 12 Dec 2013, CASA-compliant ADS-B equipage is mandatory and must transmit continuously. Also, if ADS-B Out equipment is used anywhere in Australia optionally, it must be compliant and operated continuously.



- ADS-B fitment is currently voluntary. If ADS-B equipment does not comply with a CASA-approved equipment configuration, it must be deactivated before flight in Australian airspace or set to transmit only a value of 0 for NUCp or NIC.
- ADS-B equipment must meet a version of TSO-C166 and its MOPS, DO-260(AR), ATSO-C1004, ATSO-C1005, or an equivalent standard acceptable to CASA.
- For an aircraft manufactured before 28 June 2012, the positional source must be an IFR-capable GNSS receiver that complies with TSO-C145(AR) or TSO-C146(AR), TSO-C196, TSO-C129/C129a if possessing FDE, or another equivalent system authorized by CASA.
- For an aircraft manufactured on or after 28 June 2012, the positional source must be an IFR-capable GNSS receiver that complies with TSO-C145(AR) or TSO-C146(AR), TSO-C196, TSO-C129/C129a if possessing FDE and it's computation of HPL accounts for the absence of SA, or another equivalent system authorized by CASA.

India

- Targeting 2015 for having ADS-B available to supplement radar coverage of its continental and adjacent oceanic airspace (over Bay of Bengal and Arabian Sea).



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