



Federal Aviation
Administration

United States Aircraft Certification Standards and Guidance on ADS-B

Presented To: ADS-B SITF/12
Date: April 15, 2013



Overview

- **ADS-B Out Final Rule**
 - Overview
 - Dual Frequencies
 - Timeline
- **ADS-B Out Standards and Guidance**
 - RTCA Documents
 - Technical Standard Order (TSO)
 - Advisory Circular (AC)
- **ADS-B In Standards and Guidance**
 - RTCA Documents
 - Technical Standard Order (TSO)
 - Advisory Circular (AC)
- **International ADS-B Mandates**



FAA ADS-B OUT Final Rule

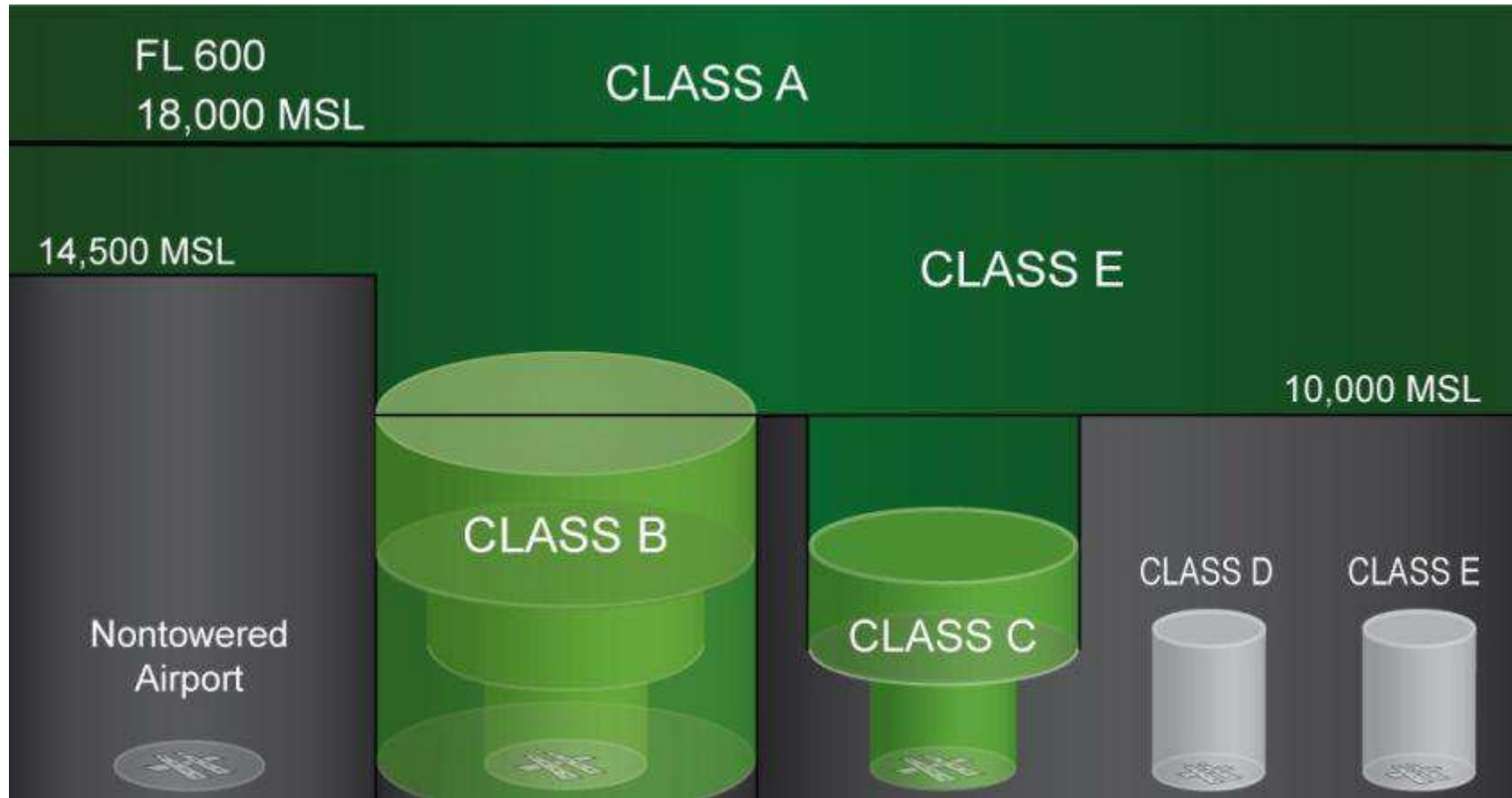
- **Published the Final Rule for ADS-B Out equipage on May 27, 2010**
- **All aircraft flying in the designated airspace must be equipped with ADS-B OUT avionics by January 1, 2020**
- **The rule mandates performance requirements for ADS-B avionics that will be required to fly in designated airspace**
- **The rule assumes position information received from a Global Navigation Satellite System but does not preclude other navigation source methods**
- **The rule does not mandate ADS-B In**



FAA ADS-B OUT Final Rule

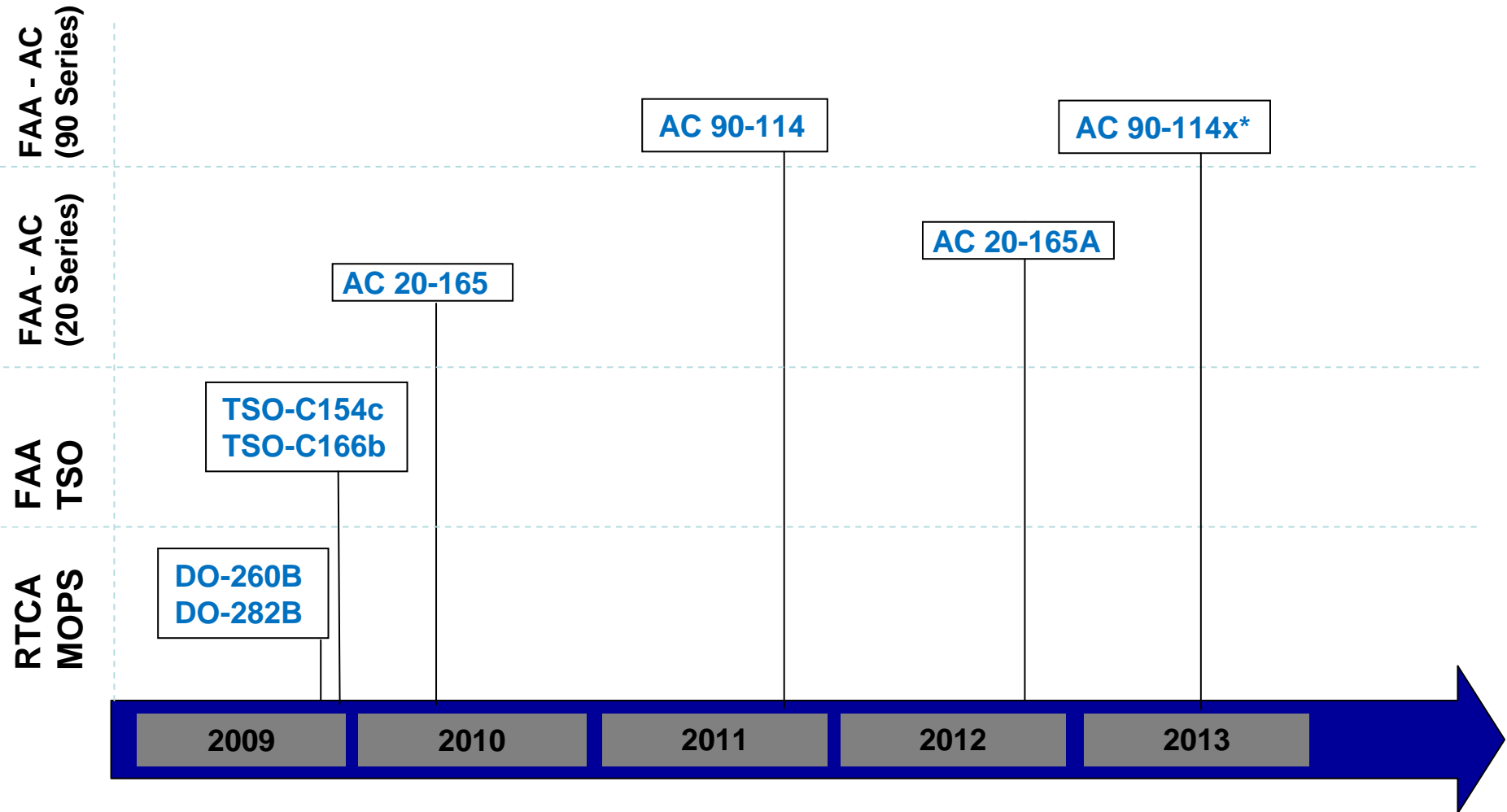
- **Two frequencies have been designated for ADS-B transmissions in the USA National Airspace System:**
 1. 1090 MHz Extended Squitter (1090ES) for commercial aircraft,
 2. Universal Access Transceiver (UAT) at 978 MHz for general aviation and airport vehicles. This frequency is needed to support transmission of weather and other aeronautical information that is most beneficial for general aviation aircraft.
- **The rule requires all aircraft flying in Class A airspace (Flight Level 180 and above) to transmit on the 1090ES MHz link.**
- **The rule does not preclude transport aircraft from equipping with both the 1090ES and UAT, or general aviation from equipping with 1090ES.**

Designated ADS-B Airspace (Green)



Note: 1090MHz Extended Squitter ADS-B link is required above FL180

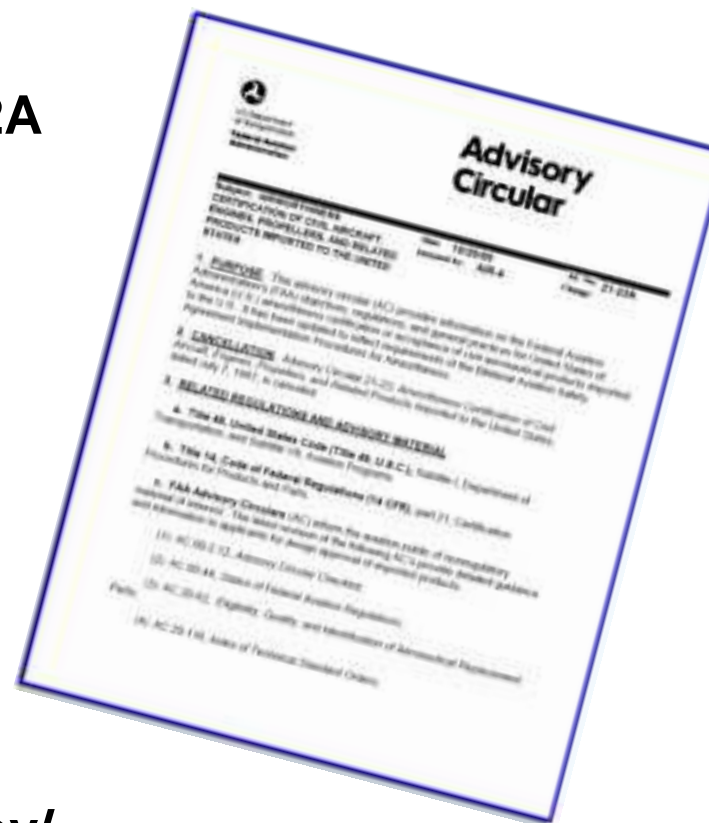
ADS-B OUT Standards and Guidance



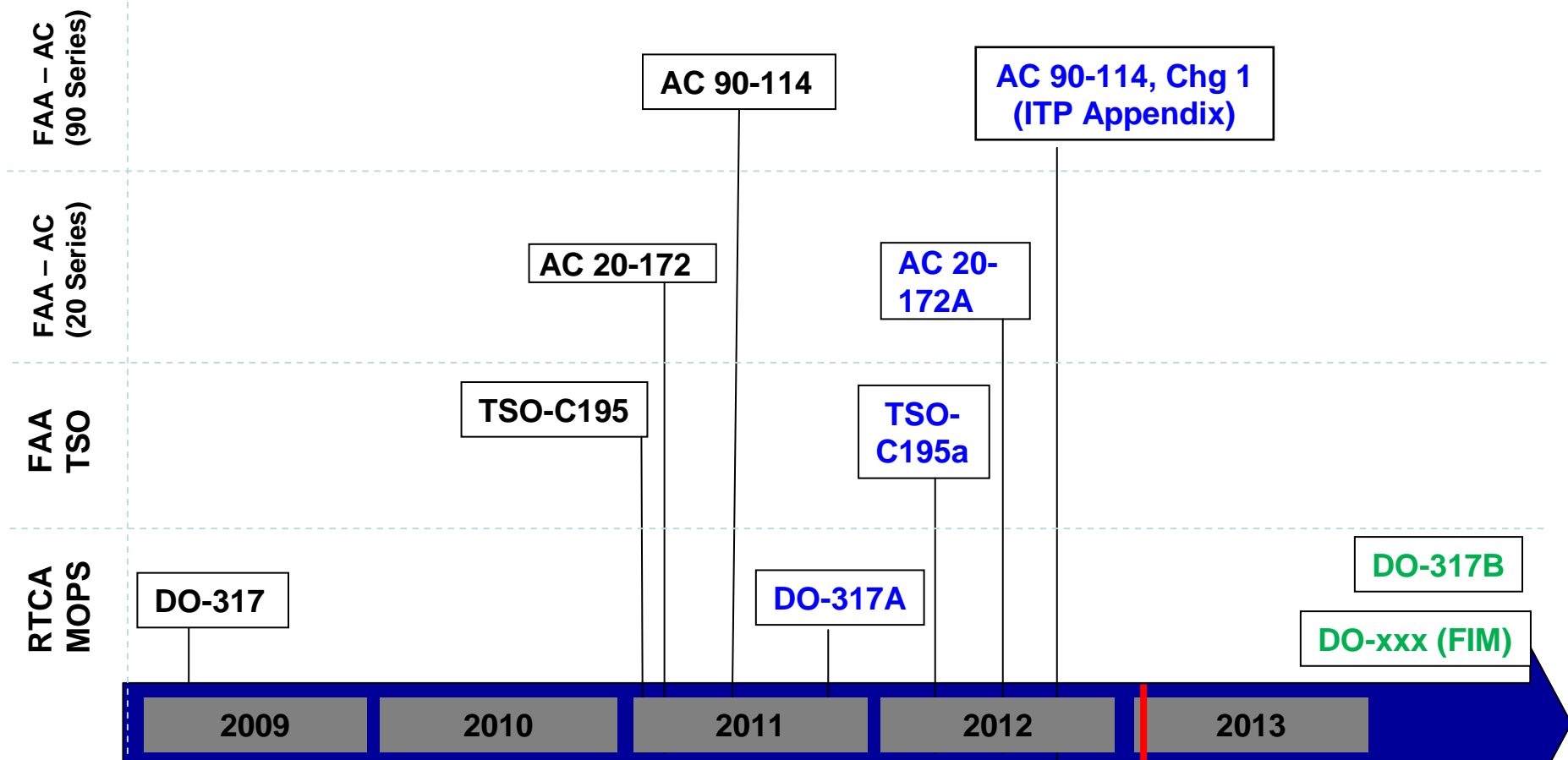
* AC 90-114 was revised to AC 90-114, Change 1, to add an Appendix for ITP (ADS-B-In application). This revision of the AC (90-114x) will include guidance on the Service Availability Prediction Tool (SAPT).

ADS-B Published Standards – ADS-B OUT

- RTCA documents
 - RTCA DO-260B / Eurocae ED-102A
- TSO
 - TSO-C166b
- Advisory Circular
 - AC 20-165A
- ADS-B documents can be found at:
 - RTCA documents - www.rtca.org
 - FAA documents - <http://rgl.faa.gov/>



ADS-B IN Standards and Guidance



Initial ADS-B-In applications – basic airborne and surface situation awareness, enhanced visual approach (US standards, not harmonized with Europe)

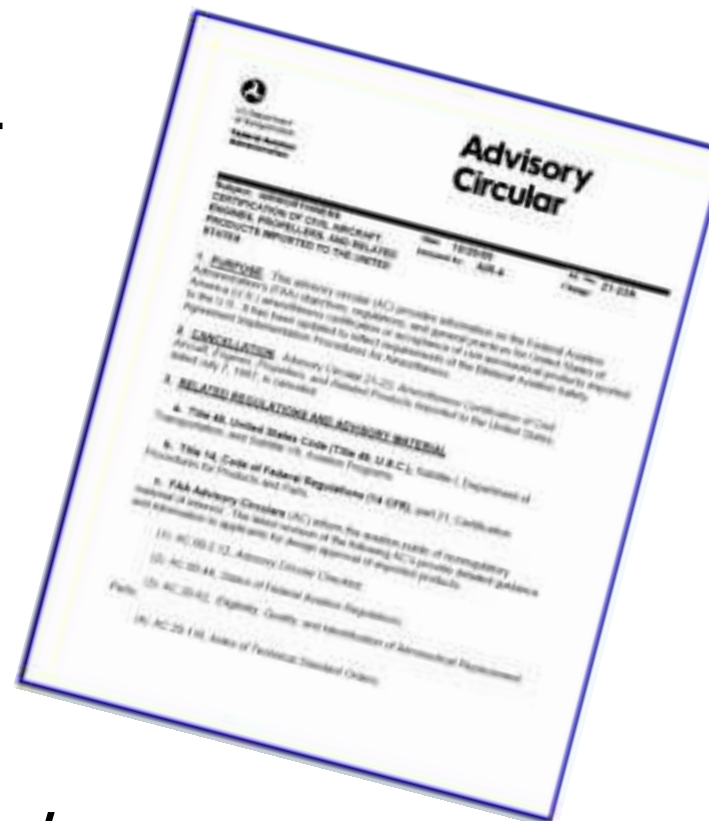
Revised ADS-B-In applications – basic airborne and surface situation awareness, visual separation on approach (VSA), In-Trail Procedure (ITP) -- all harmonized with Europe

Additional ADS-B-In applications – Traffic Situation Awareness with Alerts (TSAA), CDTI-Assisted Visual Separation (CAVS)/CDTI-Assisted Pilot Procedure (CAPP), and Flight-deck-based Interval Management (FIM)

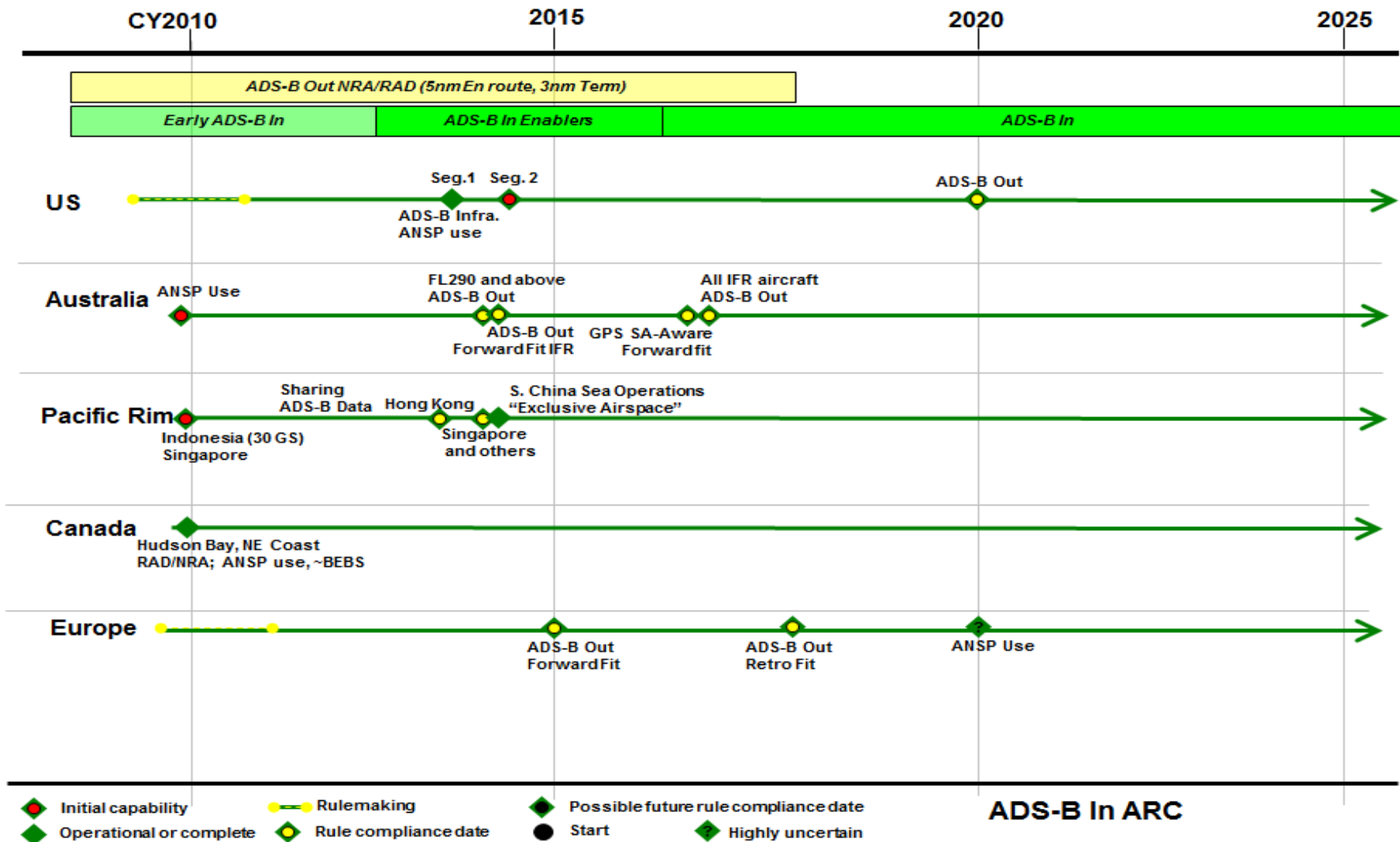


ADS-B Published Standards – ADS-B IN

- RTCA documents
 - RTCA DO-317A / Eurocae ED-194
- TSO
 - TSO-C195a
- Advisory Circular
 - AC 20-172A
- ADS-B documents can be found at:
 - RTCA documents - www.rtca.org
 - FAA documents - <http://rgl.faa.gov/>



International ADS-B Mandates



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