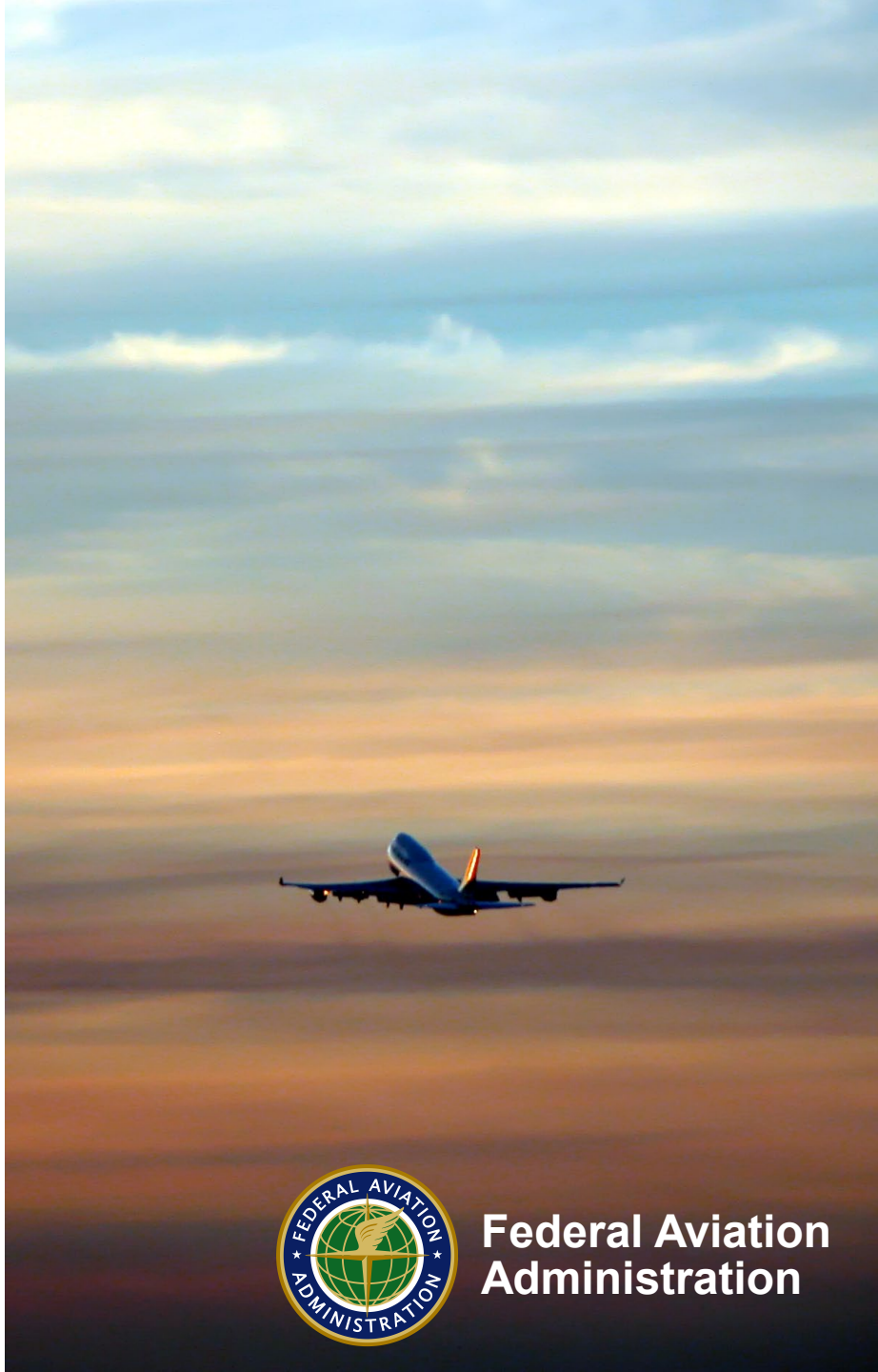
FAA Space-Based ADS-B Update



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By: Ahmad Usmani

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Background

- **Since 2017, the FAA has conducted an extensive and rigorous evaluation of the existing space-based ADS-B (SBA) implementation under the Agency's mandated Acquisition Management System (AMS) process**
- **The evaluation consisted of analysing multiple airspace domains for air traffic control operational use and potential benefits that may exist for non-separation use cases**
- **Based on this review, the FAA identified several limitations with the existing SBA implementation**

Limitations

- **Lack of consistent performance in airspace where spectrum congestion exists (e.g., terrestrial or offshore airspace)**
- **Inability to process data from Universal Access Transceiver (UAT) ADS-B systems allowed by the U.S. ADS-B mandate**
- **Performance challenges for aircraft without a top-mounted transponder/ADS-B antenna, particularly at lower latitudes**

Note: *The FAA team noted the SBA implementation performed better in oceanic airspace as the aircraft moved away from higher spectrum congested coastal areas*

Determination

- **After careful consideration, the FAA decided in 2022 to not move forward with the currently available SBA implementation due to:**
  - The high costs for the marginal benefits provided for use in U.S.-managed ICAO airspace
  - The limitations listed on the previous slide
- **The FAA is re-focusing on industry engagement around SBA to reassess market capabilities and determine if other implementation approaches are viable for future investment considerations**

FAA Industry Engagement with Space-Based ADS-B

- **Recognizing the rapid development of new business models and systems, the FAA engaged with industry in 2023 through a market survey to identify future potential options for cost-efficient and technologically acceptable SBA deployment in the future**
  - The RFI was published to the U.S. Federal government's System for Award Management (SAM) on April 7, 2023: https://sam.gov/opp/fe7472b05fe842c395a34afd5dbb764a/view
  - Responses were received from vendors on May 26, 2023

Purpose of Market Survey

- **Provide information to industry about the FAA's envisioned operational concepts and technical requirements for a future SBA service for oceanic aircraft surveillance**
- **Request information from vendors regarding technical design and capabilities, cost, and schedule of their existing or planned SBA service (also insight into VHF communications)**
- **Gain an understanding of vendor partnerships, committed capital, and investment strategies for this service**
- **Key assumptions:**
  - Meets ATC surveillance performance requirements in which aircraft can be identified and separated in real-time
  - No changes to the aircraft avionics
  - Cost-beneficial service
  - Full-service availability within the next three to five years

Overview of RFI Responses

- The FAA received responses from interested vendors for oceanic satellite-based ADS-B
- Vendor responses included information on technical capability, readiness, funding, and the potential for partnership with FAA per requirements of the RFI
- The FAA completed a thorough assessment of the responses from each vendor to inform next steps with SBA
- The FAA has determined that there are multiple potential SBA solutions, either operational or in some stage of development, which may be viable service options for the FAA in oceanic airspace in the next three to five years

Vendor Engagement

- **The FAA is pursuing continued engagement with RFI respondents to evaluate and foster the availability of multiple SBA vendors in the commercial marketplace**
- **This engagement is expected to consist of reviewing vendor design and architecture documentation to confirm it meets FAA requirements**
- **The FAA also seeks to further assess vendor SBA system performance and data when it becomes available, as well as explore vendor ideas for collaboration**