

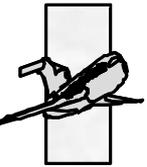


# Moving Forward

**June 6, 2001**

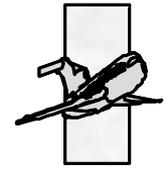
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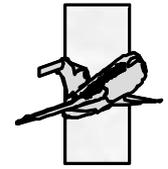
## Summary of What We Know About ADS-B?

- **Near-term applications for ADS-B have been identified and the FAA is working with industry to support the realization of projected benefits**
- **TLAT findings indicate each of the ADS-B links can satisfy some, but not all of the long term requirements considered**
- **Status of Standards and spectrum approval varies by link**
  - **1090 MHz Extended Squitter has U.S. & International standards & spectrum approved but standards for enhanced capabilities planned for 2002**
  - **UAT U.S. Standards and Spectrum authorization expected by 2002, ICAO Standards and international spectrum authorization date uncertain**
  - **VDL Mode 4 ICAO Standards in 2001, international spectrum authorization date uncertain**



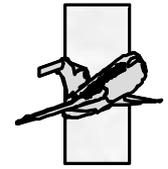
## **Summary of What We Know About ADS-B ? (cont.)**

- **An ADS-B Operational Safety Assessment has been completed and potential hazards have been identified**
- **FAA has completed a Pre-Investment Cost Benefits Analysis that considered both ground and airborne elements in the cost model**
- **The FAA has identified a number of possible multi-link configurations involving support for multiple ADS-B links on the ground and/or on the aircraft**



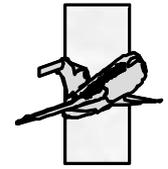
## Areas of Risk

- **FAA cost analysis for airborne segment was based on a number of assumptions and as a result may not reflect actual costs for aircraft equipage**
  - especially for multi-link ADS-B alternatives
- **The technical/economic viability of the single-link and multi-link alternatives have not been adequately explored**
  - for each airframe/user category
- **The estimates for ADS-B equipage rates need to be subjected to the review of the vendors and users**
  - Sensitivity of GA equipage rates to provision of weather services via the ADS-B link needs to be better understood
- **Risks remain for international spectrum authorization and standards approval for certain link technologies**
  - International interoperability of ADS-B at risk



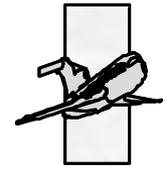
## **Areas being Worked by the FAA**

- **Continued support for ADS-B standards activities and spectrum coordination**
- **Additional refinements to the simulations and further analysis of measured link performance**
  - may produce results that supplement the TLAT findings
  - may help identify characteristics of multi-link alternatives
- **Refining cost analysis**
  - both single link and multi-link
  - additional analysis of ground infrastructure costs
- **Soliciting industry inputs to increase confidence in technical/economic assessments of the airborne segment and thus reduce risks**



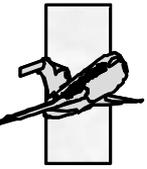
# Why Consider Multi-Link ADS-B Alternatives

- Different factors are the motivators for ADS-B equipage
  - air carriers are generally seeking improved efficiency to give economic benefits
  - GA is generally seeking improved safety through better weather information in the cockpit (via the ADS-B link) and improved traffic information (especially in the airport traffic pattern)
    - Alternative weather delivery mechanisms exist
- A multi-link solution has the potential to support a package of services attractive to each segment of the aviation community
  - allowing different avionics configurations
  - maximizing the potential for voluntary user equipage
- However, someone must bear the cost for a multi-link decision
  - some/all airborne users and/or added cost to ground system
- It is critical we have accurate cost data for the single and multi-link alternatives to support the ADS-B link decision



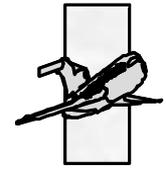
## Areas Where We Need Industry Inputs

- **Help in Identifying the most viable system configurations**
  - for representative aircraft/user classes
  - both single link and multi-link
  - understand the associated technical/schedule risks and cost discriminators
- **Help in Estimating Avionics and Installation Costs**
  - industry inputs needed on avionics and aircraft installation costs for the candidate single and multi-link ADS-B alternatives
  - focused on discriminators between the alternative airborne configurations
- **Help in estimating projected aircraft equipage rates for ADS-B by aircraft/user category**



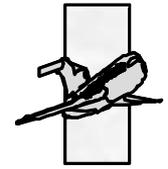
## Questions to be Answered Now

- **Is there a consensus on the need for an ADS-B Link(s) Decision**
- **Is the community willing to support the FAA by providing the requesting information**
  - **participate in the planned FAA/Industry Workshop**
  - **share costing information with the FAA via a response to the vendor survey and/or one-on-one meetings, under non-disclosure agreements, if needed**
  - **assist the FAA in identifying which of the multi-link alternatives are viable, both from a technical and from an economic standpoint**
  - **assist the FAA in refining the estimates for ADS-B equipage rates by aircraft/user category**



# Industry Preparations for the ADS-B Workshop

- **Avionics and airframe manufacturers should review the technical requirements for each candidate ADS-B link (provided on the CD-ROM) and prepare inputs to the Workshop to address:**
  - the questions raised today and in the Multi-Link Vendor Survey
- **Organizations responsible for ADS-B installations should review the requirements and prepare Workshop inputs to address:**
  - installation costs and risks for each single and multi-link alternatives
- **Vendors that have not already done so, are encouraged to complete the Multi-Link Vendor Survey and submit it before or at the Workshop**
- **Manufacturers should prepare an offer to participate in one-on-one meetings with the FAA team , as necessary, either in Washington D.C. or at the Vendor's site**
  - All such one-on-one meetings to be completed during July
  - Vendor should provide the FAA with a copy of their non-disclosure agreement before or at the Workshop



# FAA ADS/Industry Workshop

- **Who Should Attend: Representatives from:**
  - Avionics manufactures
  - airframe manufactures
  - organizations responsible for the installation of avionics (including antennas, cables)
  - user organizations in a position to provide estimates of projected ADS-B equipage rates
  
- **Date: June 25-26, 2001**
  
- **Time: 8:30 - 4:00 first day, 8:30 - noon second day**
  
- **Location: Aerospace Building, 901 D Street SW, Suite 850 (BAE Systems), Washington, DC**
  
- **To sign up contact: Ronnie Jones at [ronnie.jones@faa.gov](mailto:ronnie.jones@faa.gov)  
(202) 358-5345**