

SIXTY - EIGHTH MEETING

SC-186

AUTOMATIC DEPENDENT SURVEILLANCE - BROADCAST (ADS-B)

DATE: March 23, 2018
TIME: 9:00 a.m. – 1:00 p.m. (EDT)
PLACE: RTCA HQ
1150 18th NW, Suite 910
Washington, DC 20036

The attendees included:

SC-186 Co-Chairmen

Rocky Stone United Airlines, Inc.
Jessie Turner Boeing

SC-186 Secretary

Michael Garcia Aireon

SC-186 Designated Federal Official

Gregg Nesemeier FAA

Members (Present in the room and on the Teleconference/WebEx)

Name	Organization	Name	Organization
Arbuckle, Doug	Federal Aviation Administration (FAA)	Darr, Stephen	Dynamic Aerospace, Inc.
Baker, Charles	Federal Aviation Administration (FAA)	Daskalakis, Anastasios	Aurora Innovations
Berckefeldt, Richard	Honeywell International, Inc.	Duke, Jim	Air Line Pilots Association (ALPA)
Bone, Randy	The MITRE Corporation	Field, Jack	The MITRE Corporation
Bowman, Stuart	The MITRE Corporation	Garcia, Michael	Aireon, LLC
Brooks, Kimberly	Federal Aviation Administration (FAA)	Gaul, Bob	Garmin Ltd.
Comstock, Greg	StratMach	Godoy, Jose	ARINC Incorporated

Name	Organization	Name	Organization
Gray, David	Federal Aviation Administration (FAA)	Secen, Al	RTCA, Inc.
Gray, Martin	Trig Avionics Limited	Shafaat, Taji	The Boeing Company
Hahn, Edward	Air Line Pilots Association (ALPA)	Skoog, Todd	Garmin Ltd.
Jacobson, Randy	Rockwell Collins, Inc.	Sparrow, Jeffrey	Aurora Innovations
Jain, Ravi	Federal Aviation Administration (FAA)	Stassen, Hans	The MITRE Corporation
Kenney, Larry	Raytheon	Steiner, Timothy	Federal Aviation Administration (FAA)
Littleford, Daniel	Federal Aviation Administration (FAA)	Steinleitner, Jorg	EUROCONTROL
Lovelace, Dan	Regulus Group	Stone, Rocky	United Airlines, Inc.
Maccoomb, Ian	NAV CANADA	Stoops, Wes	Regulus Group
Mark, Eltzafan	Federal Aviation Administration (FAA)	Townsend, Brian	American Airlines, Inc.
Nesemeier, Gregg	Federal Aviation Administration (FAA)	Turner, Jessie	The Boeing Company
Nguyen, Lee	Federal Aviation Administration (FAA)	Von Hoene, Paul	Federal Aviation Administration (FAA)
Orell, Greg	MITRE	Walker, Don	Federal Aviation Administration (FAA)
Pagano, Thomas	Regulus Group	Weitz, Lesley	The MITRE Corporation
Perez, Brenda	Regulus Group		

**** Note: All files named in conjunction with Agenda items can be downloaded ** from the RTCA SC-186 Workspace at <http://workspace.rtca.org/kws>**

1. Chairman's Introductory Remarks.
 - Rocky convened the March 23, 2018 meeting by welcoming all in attendance. Participants introduced themselves and the FAA DFO and RTCA VP read several standard policy statements. (*RTCA Kickoff Slides.pdf*)
2. Review of Meeting Agenda.
 - Rocky reviewed the agenda for informational briefings.
 - Al Secen stated that the ACSS has completed their Commitment to license Phase Modulation to RTCA.
3. Review/Approval of the Sixty-Sixth Meeting Summary
 - The minutes from the July 28th / August 22nd, 2017 plenary (#67) were posted and Rocky requested that the participants review them at their earliest convenience.
 - The minutes were approved during the March 23rd plenary.
4. FAA Surveillance and Broadcast Services (SBS) Program – Status. (*SC-186 SBS Briefing.pdf*)
 - David Gray presented the SBS Status brief.
 - 43 airports will have ADS-B services by the end of 2018
 - Over 45,000 aircraft are ADS-B rule compliant

- Over 35,000 aircraft are ADS-B IN capable
- Several heat maps were shown conveying equipage and operations by various FAA airspaces.
- The concept of “No Services Aircraft List” (NSAL) was presented to the group that represents a list of aircraft that are not eligible for SBS services due to equipage issues. There are about 284 ICAO codes currently on the list.
- Rolling ICAO Code program is planned for implementation by CY2018
- ASSC Upgrade process planned for completion by 2019
- Interval Management MOPS is progressing. A demonstration of partial IM spacing applications is being conducted in collaboration with ACSS
- SBS ASEPS has 2 potential solutions: Space Based ADS-B (SBA) and ADS-C. ATOP automation enhancements have begun ahead of the FID planned for Nov 2018
- Greg Orrell and David Gray presented on Exercising TSAA Algorithms with Operational SBS Data for Helicopter v. Helicopter Interactions
- Three encounters exercised TSAA successfully: Hudson, Las Vegas, Seminole County
- TSAA algorithm performed as intended with the sample inspections performed

5. WG-3 – Extended Squitter MOPS / SC-209 Transponder MOPS revisions (*SC186 WG3 Status Brief.pptx*)

- Tom Pagano presented the brief on the meetings of WG3 and SC-209 to revise the extended squitter and transponder MOPS.
- 2 Meetings have occurred since the last Plenary (Oct and Jan)
- ADS-B Topics Covered by the group:
 - ACAS-X changes
 - Improved guidance for Target State and Status
 - Data in support of A-IM
 - Removal of Mode A = 1000 Disable capability
 - Removal of Event-Driven Squitter protocol
 - Weather Surveillance Update
 - Consideration for Indication of RPAS
 - Surface Link Mitigation Service Status
 - Many others as described in the posted slide deck...
- Slide 17 had several Issues asking for Plenary Review
 - Removal of ADS-B Message Elements
 - New ADS-B Parameters
 - Proposal to remove Emitter Category
 - UAS Lost-Link Support
 - New Weather Parameters
 - DO-317B Changes being tracked by WG-4
 - UAT MOPS Changes
- Plenary approved the direction that CSC is taking with respect to the topics on Slide 17

- CSC WxS SG Briefing is posted on the RTCA Workspace for participant review (*CSC Weather Surveillance (WxS) Status.pdf*)
6. WG-4 – Application Technical Requirements (*SC-186 WG4 Status Brief.pptx*)
A-IM Status:
- Don Walker and Lesley Weitz presented the brief on the meetings of WG4.
 - Dispositioned FIM MOPS comments from preliminary review of Draft DO-361A
 - Several FIM MOPS Requirements have been refined
 - Scope for FIM MOPS v2 was clarified: Paired Approach, Dependent Staggered Arrivals, Dependent Converging and Crossing Runways, Integration with DataComm and ATS Winds service, Partial Clearances and IM Clearance transition
 - An overview of WG4 Meeting 308 was shown
 - SPR due for early June release with 3 week review period scheduled
 - Pre-FRAC and FRAC expected in Q4 of 2019
7. Other Business.
- Update on Aireon Activities (*2018-03-23 RTCA Mtg – Aireon Briefing – v1.pdf*)
 - Mike G. gave an update of the Aireon System status including coverage from the fourth launch
 - Aireon program status was reviewed as well as progress with respect to provisioning data to the FAA SBS system.
 - SC-186 Terms of Reference Considerations
 - Doug Arbuckle presented briefed on the updates to the SC-186 Terms of Reference. This includes the addition of ASA MOPS
 - Rocky motioned to approve the draft of the SC-186 TOR to submit to the PMC, it was seconded and approved
 - Date, Place and Time of Next Meeting.
 - A virtual plenary is planned for September TBD, and coordination will be needed with EUROCAE
 - The next face-to-face plenary session for SC-186 is Nov 2, 2018, location at RTCA HQ in DC.
8. New Business
- Process to introduce new items into the ADS-B standards (*SC-186 Ad Hoc Fast Track Recommendation December 2007.doc* and *Process Diagram 2007.doc*)
 - Rocky posted 2 documents onto the RTCA workspace that describe this process
 - Perhaps this process of new application proposals will come from a NAC subgroup or a derivation of the Equip-2020 SG4
9. Review Action Items/Work Programs.
- Doug Arbuckle will check with SASP to determine what can be shared with RTCA on ASEPS

- Don Walker and David Gray to reach out to Buck regarding analyzing TSAA algorithm performance for Helicopters (Does the Fixed-Wing based algorithm work well enough for most Helicopter operations?)
- Al Secen and Rocky Stone will reach out to the UAT community to survey whether they are available and interested to initiate WG5
- Don Walker has an action to update the definition of CAPP and review it at the next Plenary
- Lesley and Doug will review the definition of CAPP and determine how it might fit in with other related IM work
- Doug and Lesley will coordinate with Jorg to determine the exact date/time of the virtual plenary meeting planned for Sept.
- Doug will email to the SC-186 leadership documents relating to WG4/WG1 activities (from circa 2014) for new applications to the RTCA workspace
- Action Items from previous plenary:
 - ~~Chuck Manberg has an action to update ACSS that there's about a 6 month window to resolve the IP issues surrounding adding the Phase Modulation technique to DO-260C~~
 - Rocky to provide a presentation on the process to introduce new items into the ADS-B standards by the next plenary.
 - ~~Jessie to split the DO-260C and DO-282C products in the table in the TOR document prior to submitting to PMC.~~
 - Al Secen will prepare a request letter to EUROCAE regarding EUROCAE's participation in RTCA's SC-186 WG-4 (from EUROCAE's WG-51).

10. Adjourn Plenary.

- Rocky thanked everyone for their participation and adjourned the meeting.