

**SIXTY - FOURTH MEETING**

**SC-186**

**AUTOMATIC DEPENDENT SURVEILLANCE - BROADCAST (ADS-B)**

**DATE:** October 30, 2015  
**PLACE:** RTCA Conference Rooms,  
1150 18<sup>th</sup> Street, NW, Suite 910,  
Washington, D.C. 20036

The attendees included:

<u>SC-186 Co-Chairmen</u>		<u>SC-186 Secretary</u>	
Rocky Stone	United Airlines, Inc.	Stuart Searight	FAA
Jessie Turner	The Boeing Company		

SC-186 Designated Federal Official  
Don Walker                      Federal Aviation Administration

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

Doug Arbuckle	Federal Aviation Administration
Richard Berckefeldt	Honeywell International, Inc.
Randy Bone	The MITRE Corporation
Stuart Bowman	The MITRE Corporation
Petr Casek	Honeywell International, Inc.
Zhong Chen	Honeywell International, Inc.
Gregory Comstock	Aurora Sciences LLC
Nico de Gelder	National Aerospace Laboratory NLR
Yu Duan	Honeywell International, Inc.
John Ferrara	John Ferrara Consulting
John Fisher	Federal Aviation Administration
Julie Flores-Kriegsfeld	Federal Aviation Administration
Michael Garcia	Aireon, LLC
Bob Gual	Garmin Ltd.
Yan Glina	MIT Lincoln Laboratory
John Gonda	The MITRE Corporation
David Gray	Federal Aviation Administration

Christine Haissig	Honeywell International, Inc.
Jens Hennig	General Aviation Manufacturers Association
Marie Hogestad	Federal Aviation Administration
Mark Hollinshead	Guest
Mike Jackson	Honeywell International, Inc.
Randy Jacobson	Rockwell Collins, Inc.
Usmann Javed	Federal Aviation Administration
Michael Koch	NASA
Fabrice Kunzi	Aurora Flight Sciences
Ian Levitt	Federal Aviation Administration
Dan Lovelace	Regulus Group
Johan Martensson	EUROCONTROL
Harold Moses	RTCA, Inc.
Thomas Pagano	Regulus Group
William Penhallegon	The MITRE Corporation
Darrell Pennington	ALPA
Steve Plummer	Federal Aviation Administration
Stephanie Priess	The MITRE Corporation
Mark Reed	ALPA
Jim Savage	Federal Aviation Administration
Taji Shafaat	The Boeing Company
Tetsu Shimizu	Japan International Transport Institute, USA
Timothy Steiner	Federal Aviation Administration
Jörg Steinleitner	Eurocontrol
Robert Strain	The MITRE Corporation
Sebastian Timar	Guest
Chris Tourigny	Federal Aviation Administration
Brian Townsend	American Airlines, Inc.
Eric Vallauri	Egis Avia
Mark Volner	Rockwell Collins, Inc.
Don Walker	Federal Aviation Administration
Jeff Weeldreyer	L-3 Communications
Mark Williams	SAIC

**\*\* 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 Stone welcomed everyone and convened the meeting at 9:00AM. Rocky acknowledged that at the last SC-186 meeting, the FIM MOPS was approved and has since been published as DO-361. (The document will also be published by EUROCAE as ED-236.) Rocky noted that the focus of meetings this week were on kicking off Advanced IM Activities and the committee will be hearing about that during the WG4

report.

- As the SC-186 Designated Federal Official, Don Walker read the DFO Public Meeting Announcement. (*SC-186 DFO Public Announcement 10-30-2015.pdf*) Hal Moses, RTCA Program Director then reminded everyone of the RTCA Proprietary Policy, which has been posted on the RTCA Workspace.
  - Hal Moses explained the new membership policy for RTCA in which while all meetings of Special Committees will be open to the public, working group meetings and access to the workspace will be for members only. Some exceptions include members of EUROCAE and contractors for FAA will both be considered members even if their companies are not.
2. Review of Meeting Agenda.
    - The agenda was reviewed and approved with the addition of one extra topic from FAA Certification regarding the use of Geometric Type codes for 1090 ES systems.
  3. Review/Approval of the Sixty-third Meeting Summary (*186min63 -FINAL- 06-12-2015.pdf*)
    - The minutes from the 63rd meeting, held June 6, 2015 were approved without comment. Stuart acknowledged Gary Furr's help in completing the minutes and reminded everyone of Gary's retirement. Everyone agreed he will be sorely missed!!
  4. FAA Surveillance and Broadcast Services (SBS) Program (*SBS\_SC-186\_Plenary\_Brief\_20151030b.pdf*)
    - David Gray presented a status brief from the Surveillance Broadcast Services (SBS) Program Office. The briefing included statistics on ADS-B integration into all automation platforms, broken out by en route, terminal, surface, and oceanic domains. David also discussed partnered efforts with airlines and GA organizations to promote ADS-B equipage and upgrades. David shared current equipage levels and projections. David mentioned that A4A has requested an exemption that has been granted which will allow – on a case-by-case basis – aircraft to fly after 2020 without meeting the NAC<sub>P</sub> and NIC requirements for a given period of time. David moved on to recap the status of the PO's work on implementing ADS-B applications, including ITP and Interval Management (GIM & FIM).
    - David announced that the FAA was exploring the use of space-based ADS-B on ATOP for 30/30 spacing on Oceanic airspace with the goal to potentially reduce minima to 15/15.
    - David concluded the briefing with a discussion on new FAA FIS-B Products. These products are display capabilities for lightning strikes, turbulence, icing conditions, cloud tops, and more frequent weather updates. David mentioned that updates will be needed for the FIS-B standards from SC-206.
  5. WG-4 – Application Technical Requirements (*RTCA\_SC186\_WG4\_Status\_OCT2015\_-\_v1.pdf*)
    - A-IM: Planned scope, schedule, and work plan
      - Don Walker recapped the meetings held earlier in the week which formally kicked off the standards development work on Advanced FIM (A-IM). Don

noted that due to financial and organizational constraints in Europe, EUROCAE WG51 is not currently working with SC186 on this effort. Don acknowledged Bill Penhallegon for his efforts over the last 12-18 months to collect and organize all the work on concepts and preliminary requirements for advanced FIM done in the background while the FIM MOPS was being completed. Don reviewed the primary objectives for A-IM, including making use of more integration among flight-deck systems, making use of new information sources such as winds and Target Intended Flight Path Information (IFPI), and being able to support reduced spacing or new separation minima for both radar-controlled and oceanic airspaces.

- Don then handed the presentation over to Bill to recap the work plan for the A-IM MOPS. Bill reviewed a very high-level work plan that would lead to a 2019 completion and approval of the MOPS. Bill touched on the breakdown of sub-applications or supported operations for A-IM. Don then concluded the briefing by discussing some of the efforts needed to integrate systems such as Data Comm and the FMS for A-IM.
6. SC-214/WG-78 Status of final release of CPDLC messages for IM AACD and PTM (*IM\_data\_comm\_req\_development-\_Bone-\_SC-186\_Plenary\_2015-10.pdf*)
    - Randy Bone, MITRE/CAASD presented an update on the work being done within SC-214/WG-78 for CPDLC messages to support FIM-S and A-IM. FIM-S messages were incorporated into the initial releases of the SPR and Interop documents of Baseline 2 for Air Traffic Services. (DO-350/ED228 & DO-351/229, respectively.) A-IM Data Comm requirements will be included in Revision A of each document.
  7. Wake / MET Data: SC-206 Status / Tiger Team Deliverable (*Wake\_Vortex\_Tiger\_Team\_White\_Paper\_SC-186\_briefing\_103015.pdf*)
    - Rocky informed the committee about the White Paper completed by the Wake Vortex Tiger Team. Key Recommendations: included weather information at low rate via ADS-B or other “near real-time” data link; consider initiating standards activity for transferring weather information via request/reply schemes. Rocky concluded noting that the next steps need to include RTCA stakeholders collaborating with the FAA on how to see implementation of these important exchanges of information.
  8. WG-3 – Extended Squitter MOPS (*2015 10 30 SC-186 WG3 SC-209 Stand Up.pdf*)
    - Don Walker announced that the FAA has requested to stand back up WG3 to revise the DO-260 MOPS. This will be done in conjunction with a parallel effort to reconstitute SC-209 to work on the Transponder MOPS (DO-181E). Tom Pagano, recently retired from the FAA and now supporting the Surveillance Branch at the FAA Technical Center, will remain as chair for both WG3 and SC-209. Don announced that this will be joint effort with WG51 and the general plan is to meet three times a year.
    - The scope of this effort will be to clean up a set of identified minor clarifications and corrections needed from DO-260B and the creation of new messages to support applications such as Advanced IM, communication of MET data, and communicating collision avoidance capabilities. Don also noted that the use of Geometric Altitude will

likely be addressed. (See Agenda item 11, “New Business.”)

- **ACTION:** John Fischer to conform feasibility of the proposed WG3/SC-209 meeting dates with EUROCAE WG51 leadership.
- **ACTION:** Don Walker, John Fischer, and Tom Pagano to finalize new TORs for SC-209 to be delivered to the PMC

#### 9. ADS-B Implementation

- ADS-B Equipage Update: (*ADS-B\_Equipage\_Update.pdf*) Doug Arbuckle went quickly through the latest equipage statistics collected by the FAA and SBS Program Office.
- FAA Broadcast Services (TIS-B, FIS-B, ADS-R): Doug followed up the quick walk through of equipage statistics with an announcement that the FAA, as part of the “Equip 2020” effort has an updated web site with a new reporting mechanism for observed problems with TIS-B, FIS-B, etc. The URL for the Equip ADS-B website is <http://www.faa.gov/nextgen/equipadsb/>.

#### 10. Date, Place and Time of Next Meeting.

- The next SC-186 Plenary will be held Friday March 11, 2016 in conjunction with the WG4 meetings. Location is planned for Washington DC at RTCA but needs to be finalized in cooperation with WG4 leadership.

#### 11. New Business.

- Don presented a paper (*Feasibility\_of\_Encrypting\_the\_1090MHz\_Frequency.pdf*) on the potential of using encryption as a means to provide anonymity. FAA is asking SC-186 to draft a industry-based response providing feedback on the feasibility of the proposed mitigation of encrypting ADS-B information being transmitted on the 1090MHz frequency by December 11, 2015.
  - **ACTION:** Jens Henning, GAMA volunteered to help with this effort and Jens will work to include other industry stakeholders. Larry Kenny from Raytheon volunteered to assist.
- Don next presented a paper regarding the use of geometric type codes in the airborne position for 1090ES systems when placed in Alt Off condition. (*Use\_of\_Geometric\_Type\_Code\_in\_Altitude\_Off\_Condition\_for\_1090ES\_Systems.pdf*) This issue will be further examined and discussed as part of the WG3 effort to develop DO-260C.

#### 12. Other Business.

- No other business was brought before the committee.

#### 13. Review Action Items/Work Programs.

- Stuart reviewed the actions regarding finalizing the meeting dates for the initial WG3 meeting with our EUROCAE WG51 colleagues and the TORs for SC-209 as well as those who volunteered to work on an industry response to potentially encrypting the 1090 MHz Extended Squitter.

14. Adjourn Plenary.

- With no other business before the committee, Rocky thanked everyone for their participation and adjourned the plenary at 12:17PM.

-S -

J. Stuart Searight  
Secretary, SC-186

**CERTIFIED** as a true and  
accurate summary of the meeting.

- S -

Rocky Stone  
Co-Chair, SC-186

- S -

Jessie Turner  
Co-Chair, SC-186