Summary of the May 4, 2017 Meeting
Special Committee 206
Aeronautical Information Services (AIS) and Meteorological (MET) Data Link Services

Executive Summary

- Due to circumstances beyond SC-206’s control, this meeting was not deemed an official plenary. As a result the following decisions are deferred to a future official plenary:
  - Approve the release of the SG4’s EDR document for FRAC
  - Approve the release of the SG7’s Winds document to RTCA for publication
  - Approve Terms of Reference (TOR) changes for submission to the PMC
  - Approve the minutes of the previous official plenary
  - Decision on re-joining WG-76 in joint standards development

- **SG1 — Aircraft-based Observations (AbO) requirements for DO-181F and DO-260C**
  SG1 identified an issue with WG-76’s downlink service. The parameter for wake vortex strength generated is problematic due to extensive flight testing costs and is at variance with the work of the CSC group. There is schedule risk while this remains unresolved.

- **SG4 — Guidelines for Eddy Dissipation Rate (EDR) Algorithm Performance**
  In proposed changes to SC-206’s TOR, the document type was changed from MOPS to guidelines due to unsuitable mandatory language required for MOPS documents. SG4 awaits SC-206 approval in an official plenary to release the document for FRAC.

- **SG5 — DO-358A (MOPS for FIS-B via UAT)**
  In proposed changes to SC-206’s TOR, six weather products were added to the MOPS and the due date was extended to December 2018. A list of the six weather products was added to the TOR by SG5 to ensure the scope of the document matches the implementation requirements requested of Harris by the SBS office.

- **SG7 — Guidance for Use of Data Linked Wind Information in ATM Operations**
  FRAC resolution is complete. SG7 awaits SC-206 approval in an official plenary to release the document to RTCA for consideration by the PMC.

- **WG-76 coordination**
  Due to: (1) the need to see EUROCAE’s response to the WG-76 request on how to address the MASPS and re-joining SC-206, (2) the FAA’s need to discuss internally how to go forward with DO-364 (MASPS), (3) the need to resolve the AbO (Weather Downlink) Service issue, and (4) our need for two successive official plenary to discuss and finalize the TOR changes, SC-206 does not foresee a decision on re-joining occurring until the September plenary meeting.

- **Planned future SC-206 plenary meetings:**

<table>
<thead>
<tr>
<th>SG</th>
<th>Focus</th>
<th>June 2017</th>
<th>Sept 2017</th>
<th>Dec 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ADS-B MOPS &amp; Transponder MOPS</td>
<td>Ongoing document development.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>EDR Guidelines</td>
<td>Plenary approves release for FRAC.</td>
<td>Plenary approves release to RTCA.</td>
<td>PMC approves publication. SG4 is sunset.</td>
</tr>
<tr>
<td>5</td>
<td>FIS-B MOPS</td>
<td>Ongoing document development.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Winds Guidance</td>
<td>Plenary approves release to RTCA.</td>
<td>PMC approves publication. SG7 is sunset.</td>
<td></td>
</tr>
</tbody>
</table>
The meeting of SC-206 was held May 4, 2017, at RTCA in Washington, DC.


Co-chairs Rocky Stone and Allan Hart welcomed the attendees to the meeting.

1. Agenda
   - Opening remarks
   - Attendee introductions
   - Action item review
   - Presentation: FPAW Fall Session “Big Data in Aviation Weather”
   - TOR changes
   - Sub-Group reports from SG1 and SG5
   - Document reviews
     - SG7: Wind Document FRAC Resolution
     - SG4: EDR Guidelines for FRAC Release
   - SC-206 work plan

2. Opening Remarks
   - Sign-off from DOT Secretary Elaine Chou (after sign-off from FAA Administrator Michael Huerta) is now required to publish notice of an RTCA meeting in the Federal Register. This has introduced delays. Without this published prior notice, meetings are not recognized as official plenaries and substantive committee decisions cannot be made.
   - This is the case today and was for the previous meeting (Hampton, VA, Mar 13-17, 2017).
   - Documents can be reviewed and issues can be worked and discussed, but the following decisions are deferred to a future official plenary:
     - Approve the release of the EDR document for FRAC
     - Approve the release of the Winds document to RTCA for publication
     - Approve TOR changes for submission to the PMC
     - Approve the minutes of the previous official plenary (December 2016)
     - Decision on re-joining WG-76 in joint standards development

3. Introductions
   1. Allan Hart, Co-chair Honeywell
   2. Rocky Stone, Co-chair (telecom) United Airlines
   3. Moin Abulhosn FAA Aircraft Certification
   4. Joe Bracken AvMet
   5. Bill Carson (telecom) MITRE
   6. Greg Comstock Aurora Sciences
   7. Stephen Darr Dynamic Aerospace
   8. Ernie Dash AvMet
   9. Tom Evans (telecom) NASA
   10. Tammy Farrar FAA Aviation Weather
   11. John Ferrara (telecom) Consultant
   12. Eldridge Frazier FAA Aviation Weather
   13. Paul Freeman (telecom) Harris
   14. Karan Hofmann RTCA
   15. Amanda Hoprich (telecom) AvMet
   16. Ryan Howe-Veenstra (telecom) Honeywell
Summary of the May 4, 2017 Meeting
RTCA SC-206 – AIS/MET Data Link Services

17. Ed Johnson    FAA
18. Clark Lunsford  MITRE
19. Michael McPartland  MIT Lincoln Labs
20. Greg Meymaris (telecom)  NCAR
22. Tim Miner    American Airlines Turbulence Task Force
23. Dan Mulally (telecom)  Panasonic Avionics
24. Mark Mutchler (telecom)  FAA Small Airplane Directorate
25. Shane O’Dell (telecom)  Garmin
26. Tim Rahmes (telecom)  Boeing
27. Jason Rice (telecom)  Delta Air Lines
28. Brad Thurow (telecom)  Appareo
29. Bill Watts (telecom)   Delta Air Lines

4. Open action items

<table>
<thead>
<tr>
<th>#</th>
<th>To</th>
<th>Action</th>
<th>Assigned</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>282</td>
<td>Moin</td>
<td>Clarify what type of AIS/MET data link MOPS would be needed (as follow on to the AIS/MET MASPS), if one or multiple MOPS are needed, or one with different sections for different systems. --Can close pending resolution of AI 299.</td>
<td>March 2014</td>
<td>Open</td>
</tr>
<tr>
<td>299</td>
<td>Eldridge</td>
<td>Advise SC-206 what the FAA would like to see as follow on to the AIS/MET MASPS (outside of what’s already covered by the MOPS ISRAs with SC-186 and SC-209). -- Coordinating with FAA’s AWD, AVS, and others.</td>
<td>Sept 2016</td>
<td>Open</td>
</tr>
</tbody>
</table>

5. Steve Darr – Update on Friends and Partners of Aviation Weather (FPAW)

- History of FPAW
- Draft agenda for 12-13 July 2017 meeting (hosted by NTSB in Washington, DC )
  - Weather user panel (ATC, Airlines, GA, HEMS, and UAS) discussion of needs
  - Ceiling and visibility forecast/nowcast improvements
  - In lieu of the surface observation including RTMA, web cams, remote observation
  - NextGen Weather Program (CSS/Wx and NextGen Wx Processor) as examples of multi-agency collaboration: What is still needed to improve multi-agency processes?
  - Graphic area forecast, its transition to operations, and termination of the area forecast
  - Major infrastructure needs to improve aviation weather
- Draft agenda for 11-12 Oct 2017 meeting (hosted by NBAA in Las Vegas or Orlando)
  - Big data in aviation weather: crowd sourcing, automated data from aircraft, down-linking of data relevant to weather
  - Cockpit weather: existing capabilities vs future “must haves”
  - NextGen weather user forum
  - Update on Weather Evaluation Team activities in support of CDM and TFM and update on a demonstration with NWS at the New York and Atlanta TRACONs
  - Status of graphic area forecast transition
  - Status of Takeoff and Landing performance Assessment (TALPA) and Runway Condition Assessment Matrix (RCAM)
Summary of the May 4, 2017 Meeting  
RTCA SC-206 – AIS/MET Data Link Services

6. Proposed TOR Changes
   • Changes for SG4
     o Change EDR document type from “MOPS” to “Guidelines” due to unsuitable mandatory language required for MOPS documents.
     o Essentially the EDR Guidelines document is a modified MOPS.
   • Changes for SG5
     o Explicitly call out six weather products being added to the FIS-B MOPS:
       ▪ Lightning
       ▪ Turbulence
       ▪ Icing
       ▪ Cloud Tops
       ▪ Center Weather Advisory
       ▪ Graphical AIRMET
     o Extend due date by one year to December 2018.

Question to SG5: Why do we need to explicitly specify in the TOR the six new weather products in the MOPS?
>> Paul Freeman said this is needed was to ensure the scope of the document matches the implementation requirements requested of Harris by the SBS office.

7. WG-76 coordination
   • No decisions on rejoining WG-76 will be made until the September plenary at the earliest.
   • An FAA position on rejoining needs to be developed first.
   • WG-76 has embraced our recommendations for collaboration
     o Skip re-opening and re-engineering the SPR
     o Update our MASPS with their 17 services.
   • SG1 reported an issue with WG-76’s downlink service, especially the parameter for wake vortex strength generated. This parameter is problematic for Airbus due to extensive flight testing costs and is at variance with the work of the CSC group. There is risk to the schedule while this remains unresolved. Consensus on this is needed early. If WG-76 dropped this service and adopted instead the downlink service in the MASPS that would work for SG1. Another possible work-around was suggested: Make downlink of wake vortex strength optional as opposed to mandatory.
   • Eldridge said the MASPS is very solid and does not need to be modified. He would like to see a DO-200/DO-201 type document as follow-on so that the MASPS does not have to be updated every time a new product comes along.

8. Status of SG1 — Requirements for Aircraft-based Observations
   Co-Chairs: Ed Johnson, Clark Lunsford, Steve Darr
   • WG1 is supporting the Combined Surveillance Committee (consisting of SC-186 WG-3, EUROCAE WG-51 SG-1, SC-209 WG-1, EUROCAE WG-49)
   • Regular monthly meetings of the CSC Weather Surveillance Subgroup (WxS SG)
   • CSC Weather Surveillance Subgroup (led by Steve Darr) to prepare working papers and other materials for SC-209 and SC-186 based on discussions of the WxS SG
     o 20 working papers planned (overview plus 19 parameter-specific papers)
     o Work within CSC to implement ADS-Wx requirements in DO-260 (ADS-B MOPS) and DO-181 (Transponder MOPS) revisions to be published in 2019
   • Initiate and/or continue coordination
     • Weather community (FAA, NOAA/NWS, AMS, WMO)
Summary of the May 4, 2017 Meeting
RTCA SC-206 – AIS/MET Data Link Services

- International (EUROCAE, ICAO, other standards bodies)

9. Status of SG5 – Update to DO-358 FIS-B UAT MOPS
Co-Chairs: John Ferrara and Paul Freeman
- 2-hr weekly telecons ongoing.
- The output of the May 18 Harris product design review on CWA and G-AIRMET will be useful to SG5 in their MOPS work.
- Harris is providing samples of the new FIS-B products to avionics vendors to support software development.
- TOR changes as discussed earlier.
- FIS-B uplink of Lightning, Turbulence, Icing, and Cloud tops is expected in December 2017.
- FIS-B uplink of CWA and G-AIRMET is expected around March 2018.

10. SG7 — Guidance for Data Linked Wind Info in ATM Operations: FRAC Resolution Overview
Co-chairs: Ernie Dash and Michael McPartland
- FRAC period January 9th – February 8th
- 361 comments received
  - Non-concur = 4
  - High = 62
  - Med = 64
  - Low = 78
  - Editorials = 153
- The high and non-concur comments for the main sections were distributed as follows:

<table>
<thead>
<tr>
<th>Section</th>
<th>High</th>
<th>Non-Concur</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – Introduction</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2 – Findings &amp; Recs</td>
<td>23</td>
<td>1</td>
</tr>
<tr>
<td>3 – Current Sources</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>4 – Wake</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>5 – RTA</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>6 – IM</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

- Ernie led the review of the non-concurs and sections 1 – 3 comments. Clark Lunsford led the review of the Wake comments. Michael McPartland led the review of the RTA comments. Greg Comstock led the review of the IM comments.
- Summary
  - The non-concurs were not significant show stoppers.
  - SG7 has reviewed and responded to all FRAC comments.
  - SG7 has received acceptance for all comment resolutions.
  - SG7 is in consensus on comment resolutions.
  - Only editorial cleanup remains.
  - FRAC is over now and new comments cannot be accepted.
  - SC-206 cannot approve the document for release for publication until the next official plenary, but SC-206 unanimously supported the document. No concerns with its publication were expressed.
  - After SG7 does the final cleanup it will deliver the document to RTCA for processing while it awaits formal SC-206 approval.
- Ernie also showed the slides that will be used to brief the PMC in June.
11. Status of SG4 — Guidelines for EDR Algorithm Performance  
Co-Chairs: Tammy Farrar and Bill Watts  
- SG4 presented the document to SC-206 before it is released for FRAC  
  - Tammy presented Section 1 (Purpose and Scope). This section provides information needed to understand the rationale for the EDR algorithm output characteristics. It describes typical EDR algorithm functionality and establishes the basis for Sections 2, 3, and 4.  
  - Greg Meymaris presented Section 2 (EDR Algorithm Performance Requirements and Test Procedures). This is the meat of the document. It contains requirements for algorithm performance in a standardized test environment and bench-test procedures to demonstrate compliance. These requirements apply to the developers of EDR algorithms, not to airlines, manufacturers, or users.  
  - Tim Rahmes presented Section 3 (Manufacturer Considerations). The EDR algorithm will typically be implemented as executable software. This section provides implementation considerations.  
  - Jason Rice presented Section 4 (Operator Considerations). This section describes actions that implementers (airlines, developers, manufacturers) would be expected to exercise in order to ensure that the operational implementations, including both software and hardware, continue to provide satisfactory EDR data, primarily through regular monitoring activities.  
  - Tammy presented Section 5 (Recommendations). This section describes actions that the regulatory body should consider when the developer is seeking recognition of an algorithm that meets performance standards.  
- The scope is limited to the performance of the EDR algorithms in the testing environment.  
- This is a guidelines document, but of necessity it contains required steps a developer must follow in the testing environment. Text will be added to Section 1 to clarify this.  
- Comments on the document may be submitted as part of the FRAC process. (The test data set is not subject to FRAC). The document is ready for FRAC release pending SC-206 approval at an official plenary. The tentative 2017 FRAC schedule (assuming June plenary is official):  
  - June 20: SC-206 approves release of document for FRAC. The assumption is SG4 does not have to present the document again, since it was already presented today.  
  - June 23: SG4 sends document to RTCA for review  
  - June 26: RTCA releases document for FRAC  
  - July 26: FRAC closes  
  - Aug 28 (could be maybe a week later): SG4 sends updated draft to SC-206 for review  
  - Sept 13: Comment resolutions presented at SC-206 plenary  
  - Sept 15: SC-206 approves document in plenary  
  - Oct 13 (latest): SG4 submits document to RTCA Program Director  
  - Nov 13 (latest): Program Director forwards draft document to the PMC  
  - Dec 13: PMC approves document for publication  

Although SC-206 cannot formally approve putting out the document for FRAC because this is not an official plenary, no concerns were expressed about the readiness of the document. SC-206 expressed thanks to SG4 for a job well done.

12. SC-206 work plan  
- The next planned plenary starts June 19.  
- As of this time, the agenda for that meeting has not been published in the Federal Register.
Summary of the May 4, 2017 Meeting
RTCA SC-206 – AIS/MET Data Link Services

- For the meeting to be an official plenary, notification of the meeting must be published in the Federal Register by June 4 (or possibly as late as June 18 if a waiver is granted).
- Tammy said that without FRAC comments to work through, convening SG4 at the June meeting would not be productive. If FRAC can be completed in July, the comments could be resolved in a SG4 face-to-face in early August.
- Allan said if notice of the June 19 plenary is not published in the Federal Register by June 5 we need to make a decision on whether to cancel the meeting.
- SG1 will not attend the June SC-206 meeting. They will be in Europe for another meeting.

13. Future meetings

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Current plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 19 – 23, 2017</td>
<td>Renton, WA (Boeing)</td>
<td>Approve EDR guidance for FRAC release</td>
</tr>
<tr>
<td>(PMC meets June 22)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sept 11 – 15, 2017</td>
<td>Washington, DC (RTCA)</td>
<td>Approve EDR guidance for release to RTCA</td>
</tr>
<tr>
<td>(PMC meets Sept 21)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 4- 8, 2017</td>
<td>TBD</td>
<td>TBD</td>
</tr>
</tbody>
</table>

If only SG1 and SG5 remain active after September, the December plenary meeting may not be needed.

While we may not need a 5-day plenary in December, it was strongly advocated that we need at least a 4-hr or 8-hr plenary to further communication. It would not necessarily have to be in December.

It was said this plenary could be tacked onto a face-to-face SG5 meeting at a location where they will get the most participation. Morris Town, NJ and Melbourne, FL were mentioned.

It is possible two SC-206 plenaries may be sufficient for 2018, depending on whether SC-206 rejoins WG76. If SC-206 rejoins WG76, SG6 would be reactivated.

Since it is unlikely that there will be any dependencies between SG5’s MOPS and SG6’s work with WG-76, the two sub-groups could work separate, independent schedules.

14. AOB

RTCA is having its annual symposium June 13-14. Some SC-206 folks will be recognized. See http://symposium.rtca.org/ for details on the symposium.

Thanks to everyone. This concluded the May 4, 2017 meeting of SC-206.

CERTIFIED as a true and accurate summary of the meeting.

Tom Evans, Secretary

Rocky Stone, Co-chair

Allan R. Hart, Co-chair