

Date: November 15, 2017



# Summary of the 48th Meeting Special Committee 206 Aeronautical Information Services (AIS) and Meteorological (MET) Data Link Services

### **Executive Summary**

The 48th meeting of SC-206 was held September 11 - 15, 2017, at RTCA in Washington, DC.

### • SG1 — Aircraft-based Observation (AbO) Requirements

- o SG1 is defining ADS-Wx requirements in support of the Combined Surveillance Committee (CSC) through the Weather Surveillance subgroup.
- o The CSC is updating DO-181F / ED-73E (Transponder MOPS) and DO-260C / ED-102B (ADS-B MOPS). Publication is expected in 2019.

### • SG4 — Guidelines for Eddy Dissipation Rate (EDR) Algorithm Performance

- o SG4 presented the results from FRAC. All comments were resolved, with the resolution accepted by the submitters. There were no non-concurs. There are no outstanding issues.
- o SC-206 unanimously approved the document to go forward to the PMC. Presentation to the PMC is scheduled for December 19, 2017.

### • SG5 — DO-358A (MOPS for FIS-B via UAT)

- o SG5 is pushing hard to meet an aggressive schedule:
  - June 2018 FRAC release
  - September 2018 FRAC resolution
  - December 2018 PMC approval

# • SC-206 TOR update discussion

- o The draft revised TOR would add an update to DO-364 (AIS/MET MASPS) to:
  - Expand the scope to include aeronautical and MET information inputs to the system
  - Add new service descriptions to the annexes
  - Update the SPR and OPR, as required, for the added services
  - Harmonize requirements with EUROCAE WG-76 to ensure global capability
- o Two underlying decisions are required:
  - If we're going to define information input, what is that content?
  - Do we want to address the quality of that content?

### • Next SC-206 meetings:

- o December 5-7, 2017, in Hendon, VA.
- o March 12-16, 2018, in Melbourne, FL.
- o June 2018 in Washington DC.
- o September 2018, location TBD.

The 48<sup>th</sup> meeting of SC-206 was held September 11 - 15, 2017, at RTCA in Washington, DC.

Presentations are posted at:

http://workspace.rtca.org/apps/org/workgroup/sc-206/documents.php?folder\_id=6858

#### **Monday Opening Plenary**

### 1. Opening remarks from the chairmen

- On the agenda this week:
  - o Approve SG4's EDR Guidelines document for release to RTCA for publication.
  - o Discuss updating our Terms of Reference (TOR) to add an update to DO-364
  - o Presentation on issues with NOTAMs for Temporary Restricted Areas
  - o Presentation on a possible AIS/MET data link service for unmanned vehicles

#### 2. Introductions

1.	Allan Hart, Co-chair	Honeywell
2.	Rocky Stone, Co-chair	United

3. Moin Abulhosn FAA Aircraft Certification

4. Joe Bracken AvMet5. Bill Carson MITRE

6. Stephen Darr Dynamic Aerospace

7. Ernie Dash\* AvMet
8. Rune Duke AOPA
9. Alex Engel\* EUROCAE
10. Tom Evans\* NASA

11. Tammy Farrar FAA Aviation Weather

12. John Ferrara Consultant

13. Eldridge Frazier FAA Aviation Weather

14. Paul Freeman Harris15. Tom Helms AvMet

16. Brian Hint FAA Flight Standards

17. Karan Hofmann **RTCA** 18. Amanda Hoprich AvMet 19. Ed Johnson **FAA** 20. Brock Lascara **MITRE** 21. Clark Lunsford **MITRE** 22. Greg Meymaris\* **UCAR** 23. Jim Mills\* **HQ USAF UK Met Office** 24. Andrew Mirza\* 25. Karol Molnar\* Honeywell 26. Benoît Morizet\* Airbus

27. Dan Mulally\* Panasonic Avionics

28. Mark Mutchler\* FAA Policy and Innovation

29. Jim Olivo Basic Commerce and Industries, Weather Systems

30. Mark Phaneuf\* ALPA
 31. Frances Prott AvMet
 32. Tim Rahmes\* Boeing

33. Boris Resnick\* International Aeronavigation Systems (IANS)

34. Jason Rice Delta

35. Iain Ronis Honeywell
 36. Charles Thomas Harris
 37. Frances Prott Velazquez AvMet

38. Bill Watts\* Delta Air Lines

\*Telecom

- 3. The meeting agenda was approved.
- 4. The minutes of the previous SC-206 plenary (July 10, 2017 at RTCA) were approved.
- 5. Action items were reviewed.
- 6. Status of SG1 Requirements for Aircraft-based Observations (AbO)

Co-Chairs: Ed Johnson and Clark Lunsford

- SG1 is supporting the Combined Surveillance Committee (CSC) in updating DO-181F / ED-73E (Transponder MOPS) and DO-260C / ED-102B (ADS-B MOPS).
- The CSC's Weather Surveillance subgroup (WxS SG), led by SG1's Steve Darr, is defining ADS-Wx requirements for these.
  - o The WxS SG meets via WebEx the second Tuesday of each month to propose, review, and resolve Working Paper content
  - o The WxS SG updated CSC and SC-206 on status, membership, approach, and work plan during committee meetings
- SG1 supported FRAC of SG4's EDR Guidelines document

Organizations involved in the CSC include Boeing, Airbus, WMO, FAA, Eurocontrol, Honeywell, Rockwell Collins, ACSS, UK NATS, and Nav Canada.

#### 7. Status of SG4 — Guidelines for EDR Algorithm Performance

Co-Chairs: Tammy Farrar and Bill Watts

- The document has been through FRAC.
- Scope: Requirements for input parameters and computational methodologies to facilitate calculation of EDR such that algorithm outputs are operationally comparable.
- Users: Algorithm developers, FAA, industry.
- Content:
  - o Operational applications of EDR algorithm output
  - o Required algorithm performance pass/fail criteria
  - o Detailed test procedures and test environment requirements
  - o Manufacturer and operator considerations for implementations
  - o Recommendations for regulatory bodies
  - o FAA-funded recommendation reports

FRAC results will be presented later this week.

#### 8. Status of SG5 — DO-358A FIS-B UAT MOPS

Co-Chairs: John Ferrara and Paul Freeman

- All new products listed in the updated TORs have been added to the draft document.
- Work on the test requirements section has begun.
- Description of changes from DO-358 to DO-358A and backward compatibility appendix not yet started. Need to alert readers of changes that affect equipment built to DO-358.

- Preparing to merge document sections into single document.
- TRA (Temporary Restricted Area) NOTAM issue brought to SG5 for comment. Time consuming but doesn't affect DO-358A unless program office changes requirements.
- Only a few key people are completing the technical sections. Need them all present to have group discussions.
- Some contributors are behind on some items as they have other commitments.
- SG5 is trying hard to be done by the end of 2018, ahead of the due date in the TOR.

SC-206 members were urged to help review the document when SG5 has a draft ready.

#### 9. Eldridge Frazier – Proposal on Updating DO-364 (AIS/MET MASPS)

- o DO-364 is great, especially its systems approach, but we need to:
  - Expand the scope to include aeronautical and MET information inputs to the system (the information content of data link services carried by the system)
  - Add new service descriptions to the annexes
  - Update the SPR and OPR, as required, for the added services
  - Harmonize requirements with EUROCAE WG-76 to ensure global capability
- o The update should retain the AbO material in DO-364 so as to not impact CSC work.
- o DO-364 should retain its guidance purpose.
- o DO-364 is based on three use cases (AI uplink, EDR crosslink, AbO downlink). WG-76 has defined 17 services. We should look at WG-76's service descriptions for the SPR and OPR, but focus on the information content of the services and how the information gets to the aircraft. As an analogy, think of MET elements CSS-Wx provides via SWIM.
- o MITRE is studying how WG-76's services might be accommodated in the update.
- Eldridge showed the information elements (e.g. NOTAM, RVR, wind, temperature) that make up WG-76's services. Many services could be built from the various elements. The elements could be put into two buckets: AI and METI.

#### Feedback from the group:

Support was expressed for bringing weather information elements into scope. This may help airlines to get an operational benefit from a weather product.

This information (e.g. NOTAMs) is available today, but there's no requirement it be data linked to the cockpit. Does this set the precedent for requiring that in the future?

>> We want products good enough that pilots can make suggestions based on them. Say a pilot can know about convective weather beyond the range of onboard weather radar. Traffic flow management could be more efficient if pilots were involved in the decision making.

If we start defining information requirements, where does it stop?

>> We need minimum standards for information available to cockpit systems. Pilots could benefit from a strategic view.

But a lot of this can be done today without imposing additional requirements on information. >> You could uplink weather products today through a third party vendor without new standards, but we need something codified so systems can show they meet the required "ilities." That would go further to breaking down today's barriers. We have to put some relative requirements guidance around the product (e.g. minimum resolution). It can't be just any weather product.

What operational credit will be received when these new data link services are available?

>> Airlines would like some exemption from some traffic flow management initiatives, to be able to request strategic reroutes. That requires weather information that meets some minimum quality (e.g. latency, resolution). To get the CDM community to accept that "intelligent" cockpits should have more freedom for efficient reroutes we need standards to take to them.

Would any of the requirements of these services be more than current EFB policy? >> Yes, because of the inclusion of MET.

Would these requirements prohibit the use of COTS technology? >> No.

We need some of the FAA's CDM community here to help guide us over the hurdles. We don't know what it will take to convince them and break down the barriers, but we could assure them that our standards will be focused on the minimum information content necessary to assure that cockpit involvement in CDM would be productive rather than disruptive. When you look at CDM today it's common to think of a three legged stool (cockpit, AOC, ATC), but it's really just two legs now (AOC and ATC). Flight crews with this standards-based information in the cockpit could contribute more to the process.

We're up against philosophical barriers more so than practical ones.

This will be similar to the implementation of ETOPs, in terms of barriers to cross.

For the airlines, the value in this comes only if the CDM community buys in. CDM is the big barrier.

As more weather information becomes available to the cockpit there needs to be a broad look at ATC procedures and how operational decisions are made within the CDM framework.

We want to see capabilities that airlines can get operational credit for.

A lot of this can be done without a standard, but the best way to effect change, to break down the barriers, is with a standard that shows the information available in the cockpit with this capability and how reliable it is.

Are we heading toward an uplink only standard?

>> To best achieve what we want, yes. And we have to address information quality. That's scary enough without adding crosslink.

From the EUROCAE point of view, WG-76 was reactivated to specify requirements for AIS/MET data link services. The services they have defined make sense to their stakeholders. SC-206's MASPS could be the vehicle to jointly specify international standards for them. We cannot say what credit will be given in the future when these services are available, although EASA has been supportive of WG-76. Global harmonization is very important. WG-76 hopes to find common ground with SC-206. WG-76 will discuss going forward within their group.

#### 10. Rune Duke: Temporary Restricted Areas – NOTAM format and FIS-B

- Rune is Director of Airspace & Air Traffic Services with AOPA and a member of SG5.
- Issue 1. Lack of pilot guidance. Proposed solutions:

- o AOPA / AJV-8 AIM DCP Not in book until 2018
- o Robust outreach to pilot community SPANS notices, Articles, etc.
- Issue 2. NOTAM identifier issue, i.e., issued under ARTCC. Proposed solution:
  - o Pointer NOTAMs to be issued for nearby airports. Not yet policy.
- Issue 3. FIS-B will not uplink geometry for depiction on EFBs / avionics. Proposed solution:
  - o White paper by SG5. No implementation date.
  - o Manual processing by SkyVector, ForeFlight, others.
- Issue 4. Overreliance on NTAP to deliver flight critical information. Proposed solution:
  - o Safety panel to evaluate relocating critical information to better location.

### Comments from the group:

We need to standardize the various types of NOTAMs to ICAO formats, with predefined fields. DOD recognized this in 1999 when DINS (Defense Internet NOTAM Service) came about. The FAA is not there yet. When we have standardized formats across the board, a lot of these problems go away.

Does using AIXM solve the problem?

>> No. We need to standardize to ICAO formats.

Whatever is uplinked via FIS-B must be in a format onboard systems are expecting.

SG5 supports what Rune is doing, but it's beyond the scope of SG5.

Do we need to change the TORs to add TRAs?

>> No. This is an FAA problem. It goes to safety of flight and getting useable information to pilots. It requires an FAA-wide solution.

It was suggested SC-206 take the issue to the FAA.

SG5 took an action to formulate the issue for SC-206 leadership to take to RTCA leadership. If this issue will impact SG5's schedule, SG5 should let SC-206 know as soon as possible.

### 11. Mark Mutchler: AIS/MET Data Link Service Needs for UAS & Autonomous Aviation Services

- Future needs for data link services
  - o Increasing connectivity to aircraft from ground, ATC, other aircraft
  - o Future ATM concepts will rely on increased crosslink (transponders already do this)
    - EDR, wake, winds, etc.
  - Future UAS and passenger aircraft need data to allow systems to perform functions of a pilot (autonomy)
- Automation strategy
  - o Mid-term: Deconstruct pilot functions/flight information at all levels Evaluate maturity of automation and data required
  - o Long-term: Planned steps from current private pilot to pilotless aircraft
- Applications
  - o Intelligent vehicle management
  - o Robot pilot decision making
  - o Air traffic integration processing ATO voice commands to autopilot inputs
  - o Human machine interface / workload

- Things are moving quickly. Companies are entering the realm of autonomous aircraft and coming to the FAA with plans. Some plans are at a high level of maturity and vehicles will be flying in a couple of years. Some companies are not aware of the role of RTCA standards and the benefit of providing input to standards development. This has been a challenge.
- This is not about UAS command and control. That would be covered by SC-228 (MOPS for UAS). This is looking beyond that.
- If SC-206 rejoins WG-76 in updating DO-364, perhaps we could add a service that data links AIS/MET information to autonomous systems that would replace certain pilot functions. Data quality requirements would need to be looked at as well. This could be more than one service based on what pilot functions are to be automated.

A lot of the research in this area focuses on ATM. That's a big piece of the puzzle and we need their input as to integration of UAS/Autonomous into the NAS.

This concluded the opening plenary.

#### Wednesday plenary

#### 12. Tammy Farrar & Bill Watts: SG4 FRAC report – Guidelines for EDR Algorithm Performance

- FRAC results
  - o FRAC closed August 9. 108 comments were submitted:
    - 4 Highs
    - 11 Mediums
    - 14 Lows
    - 79 Editorials
  - o All comments were resolved, with the resolution accepted by the submitters.
  - o There were no non-concurs.
  - o There are no outstanding issues.
- Next steps
  - o Finalized document will go to RTCA NLT November 6
  - o Presentation of document to the PMC is scheduled for December 19
- Recommended targets for future work:
  - o Implementation differences
  - o Slower aircraft
  - o Airborne radar EDR calculations

#### Comments / questions:

No changes to the document were requested.

The FAA material in the appendices will be part of the final EDR Guidelines document because it is not readily available to the public. The document will include a signed memo in Appendix G allowing its inclusion.

Should "FOC" be included with "AOC"? The decision was to make no change as AOC is a generic term.

RTCA needs the document 45 days prior to the PMC meeting. The document is provided to the PMC for review 30 days prior to the meeting.

Will the FAA invoke the document?

>> Yes, through ACs. AIR-130 will need to write a new AC for manufacturers. AFS will likely update existing ACs.

SC-206's decision on approving the document will be held on Friday morning.

#### **Friday Closing Plenary**

### 13. SG1 Closing Report – Requirements for (AbO)

Co-Chairs: Ed Johnson and Clark Lunsford

- CSC Weather Surveillance Subgroup (WxS SG) met Sept 12
  - o Three Working Papers (WP) were discussed (Clark Lunsford primary author):
    - Draft WP 18: Departure and Arrival Airport Parameters
      - Determined that Arrival and Departure Airport are Configuration Control Message parameters and do not need to be implemented as part of ADS-Wx, given its 'no-cost message' architecture
      - ACAS Xo identified as potential user of Arrival Airport parameter;
         CSC and SC-147 coordination is handled separately from WxS SG
    - WP 14: Flap Position and WP 15: Aircraft Configuration
      - Investigating how flap positions are encoded by different aircraft
      - Feedback that flap position in 1 degree increments is not required
  - o Frank Holzäpfel, DLR, presented "Relevance of Flap Position for Onboard Wake Vortex Prediction"
    - Flap position impacts initial separation between wake vortex cores
    - Initial separation between cores is critical for predicting wake behavior
  - o ADS-Wx Report Generation function and options for one or two reports introduced
- Next steps
  - o CSC meets three times a year. Meeting #7 is Oct 23-27 in Seattle, hosted by Boeing.
  - o CSC WxS SG meets monthly preparing working papers for SC-209 and SC-186.
    - Develop WP that evolves over time for each parameter
      - Parameter reporting requirements
      - Parameter availability
      - Interrogation and/or Broadcast determination
      - Register and/or Message Set requirements
      - MOPS verbiage proposal
    - Final integrated WP

#### 14. SG5 Closing Report – Update to DO-358 FIS-B UAT MOPS

Co-Chairs: John Ferrara and Paul Freeman

- Frances Prott (AvMet) is facilitating SG5 work now and is amazingly productive
- Work areas this week:
  - o TRA's and their problems. This is not a core issue for SG5, but they reviewed a resolution path for that.
  - o How to address daily and recurring NOTAMs.
  - o The handling of NOTAMs by the FIS-B ground system.
  - o Current Report List
  - o New requirements
  - o Cross referencing requirements to test procedures (biggest thing left to finish)
  - o Burndown chart

- o Honeywell technology demo
- Schedule goals
  - o June 2018 FRAC release
  - o Sept 2018 FRAC resolution
  - o Dec 2018 PMC approval

### 15. SC-206 Decision on SG4's Guidelines for EDR Algorithm Performance

- No document concerns or objections were expressed by SC-206.
- SC-206 unanimously approved the document to go forward to the PMC.
- Thanks to the SG4 team and Amanda for their hard work.

#### 16. Allan Hart: SC-206 TOR update discussion

- The TOR changes under discussion relate to updating DO-364 (AIS/MET MASPS). The key changes under discussion are underlined and italicized below.
  - o Scope of update to DO-364
    - 1. Expand system requirements to cover <u>additional services identified by</u> SC-206, WG-76, and industry associated with:
      - Near Real-Time AbO Services
      - Uplink AIM Services
      - Uplink MET Services
    - 2. Expand system requirements to include *information input* associated with:
      - AIS information
      - MET information
  - o Deliverables
    - 1. The allocation of system level requirements needed to support services, <u>recommendations</u>, and requirements identified in DO-364, DO-349, DO-340, and DO-339
- WG-76's services as of this meeting:

### Uplink:

- 1. Airspace restrictions
- 2. D-NOTAM
- 3. Obstacles
- 4. Winds & Temps
- 5. Winds & Temps for FM
- 6. Aerodrome Weather
- 7. Hazardous Weather
- 8. Wx in Flight Critical Phases

- 9. Atmospheric Info
- 10. Weather Imagery
- 11. RVR
- 12. D-ATIS
- 13. Airport Operational Service
- 14. Emergency Diversion
- 15. Winter Conditions

#### Crosslink / downlink:

16. Special Air Reporting

- 17. Aircraft-Derived MET Data
- Think about how to scope the services. Adding WG-76's services is just one perspective.
- Think about expanding the system requirements to include AIS and MET input information.
- Allan identified actions needing resolution for SC-206 and WG-76 to get on the same page:
  - 1. Determine whether the SAA Notification service in DO-364 falls into WG-76's Airspace Restrictions service.
  - 2. Determine whether WG-76's crosslink/downlink services are already covered by DO-364.
  - 3. Determine what to do with the DO-364 EDR crosslink use case (air-to-air), since WG-76 crosslink allows air-to-ground-to-air.

- 4. Determine whether we just add WG-76's services to the appendix and then update section 3 if there are new common requirements between these services, or whether we add specific service requirements to section 3.
- 5. WG-76 to confirm their acceptance of the MASPS system definition
- 6. Establish the reasons for not including the information output in the system scope
- 7. Determine how we define information input
- 8. Determine how to break down information input into its elements.
- 9. Determine the requirements for these elements.
- The information elements of WG-76's services differ from those in Table C of DO-340 (ConUse) for AIS and MET and differ from those in DO-364 for AbO.
- SC-206's DO-349 (Architecture) recommended developing information quality requirements.
- Data quality requirements are covered to some extent in the following documents:
  - 1. AI: DO-200B & ICAO Annex 15
  - 2. MET: ICAO Annex 3
  - 3. Flight & Flow: ICAO Doc 9971
  - 4. Surveillance: DO-260B / ED-102A

Data quality characteristics are not uniform across these.

- The ICAO Information Management Panel is updating Doc 10039 (SWIM Concept Manual):
  - 1. <u>Data</u> is a representation of fact, concept, or instruction in a formalized form suitable for communication, interpretation or processing by humans or automated systems.
  - 2. <u>Information</u> is any communication or representation of knowledge such as facts, data, or opinions.
  - 3. <u>Services</u> perform tasks that form a coherent functionality from the point of view of service providers and consumers.
  - 4. <u>Data quality</u> requirements are defined in terms of

Accuracy
 Resolution
 Integrity
 Traceability
 Timeliness
 Completeness

- Format

- o Information quality requirements may be defined in terms of
  - MeaningAggregationRelevanceConsistency
  - Credibility
- 5. Service quality requirements may be defined in terms of

Availability
 Performance
 Continuity
 Reliability
 Security
 Accessibility

You could have great service quality but terrible data quality. Or vice versa.

- This comes down to two decisions:
  - 1. If we're going to define information input, what is that content?
  - 2. Do we want to address the quality of that content?

The following feedback from the group was noted:

DO-364 can cover virtually any data link service. Are we really talking about narrowing the scope down to specific services?

>> That gets to whether we add WG-76's services to the appendix and see if that drives any new common requirements in Section 3. The sense of the group was that Section 3 would not change much.

It was suggested to take out the reference to "Near Real-Time AbO services" in the draft TOR and limit the scope of the update to adding uplink services. There was strong support for that. The AbO material in DO-364 would stay as is.

Support was expressed for including a weather diversion service. It's important from the airline POV. We need to reach out to the CDM future concepts team for feedback on whether some minimal requirements would be valuable. Not all the requirements will be MET, some may be things like traffic density forecasts.

Concern was expressed that regulators need RTCA and EUROCAE versions of documents to be the same. If WG-76 and SC-206 jointly update DO-364, they will be the same. If WG-76 and SC-206 take separate paths, that would be the worst case for the manufacturers and regulators.

If we take the approach of adding services to the appendix and seeing whether that changes any requirements in Section 3, we may be able to demonstrate that "the pipe" can handle not only these services but whatever comes down the road.

Applicants for future AIS/MET data link services could reference the processes and requirements in the MASPS instead of needing the MASPS to be updated again.

Regarding not including the output information in the system scope, the system is a pipe. The output information equals the input information. The pipe doesn't change the information.

Output info then goes into cockpit systems. That piece could be addressed in a follow-on MOPS.

#### 17. Work plan though the end of the year

- Oct 6: SC-206 leadership draft TOR markup
- Nov 3: SC-206 leadership finalizes TOR markup
- Nov 6: Deadline to submit EDR doc to RTCA
- Dec 1: SC-206 leadership approves TOR for submittal to PMC
- Dec 5-7: Plenary, SG6 reactivates in preparation for 2018 meetings
- Dec 19: PMC approves EDR doc and TOR changes

### 18. Future meetings

Date	Location	Current plan
Dec 5-7, 2017	Herndon, VA (Harris)	PMC approves EDR doc on Dec 19
March 12-16, 2018	Melbourne, FL (Harris)	Document development
*June 18-22, 2018	DC (RTCA)	SC-206 approves FIS-B MOPS for FRAC
Sept 2018	TBD	FIS-B MOPS FRAC resolution;
		SC-206 approves release to RTCA

<sup>\*</sup>June dates are tentative. For some June 25-29 is better due to CSC meeting.

#### 19. Industry Coordination

• Friends and Partners of Aviation Weather (FPAW) meets Oct 11-12 in Las Vegas.

#### 20. Action Items

#	Owner	Action	Date	Status	ĺ
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282	Moin	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.	March 2014	Closed
299	Eldridge	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.	Sept 2016	Closed
308	SG1	Put together a document (presentation or white paper) that provides insight into how SC-206 can move forward with updating DO-364 while keeping the scope from impacting the work of the CSC and our ISRAs with SC-186 and SC-209. As part of this, define what material in DO-364 needs to be protected from modification when the document is updated.  Closed and rolled into TOR feedback.	July 2017	Closed
309	SC-206	Consider dates for 2018 meetings (WG or plenary).	July 2018	Open
310	SG5	There are serious problems with providing Temporary Restricted Areas information via NOTAM and FIS-B. Address this in a white paper to SC-206 leadership. The problem is system-wide, but focus on the FIS-B perspective. Formulate some options for SC-206 leadership.	Sept 2017	Open

## 21. AOB

Co-chair Allan Hart's last day at Honeywell is November 17. This is his last SC-206 meeting. SC-206 thanked Allan for the leadership, cohesion, and focus he brought to the group, enabling SC-206 to produce eight documents over the last five years. Allan thanked SC-206 and said his favorite memory will be the friendships developed over the years. Adios!

This concluded the meeting.

CERTIFIED as a true and accurate summary of the meeting.

Tom Evans, Secretary

Rocky Stone, Co-chair

Allan Hart, Co-chair