RTCA Paper No. 024-23 / SC217-099
EUROCAE Paper No. EUR 029-23 / WG44-52
February 3, 2023

MEETING MINUTES OF THE 40th MEETING
JOINT RTCA SPECIAL COMMITTEE 217
EUROCAE WORKING GROUP 44

29th of November through 2nd of December 2022, Phoenix, Arizona, USA - Hosted by Honeywell International, Inc.

Executive Summary

RTCA SC-217 and EUROCAE WG-44 met jointly from November 29 through December 2, 2022. Plenary was held on December 2, with the prior days considered working sessions. The meeting was held in hybrid mode: in-person at Honeywell in Phoenix, AZ, and WebEx available to members participating remotely.

The main objective was to progress with the revisions to DO-200B/ED-76A. The group reviewed the change proposals on the topics currently being worked by sub-teams: Data Process Assurance Levels (DPAL), Verification and Validation (V&V), Tool Qualification, and Error Reporting. The proposed content in the white papers prepared by the sub-teams were discussed and revised until group consensus was reached. Significant progress was made on these topics, including completion of the DPAL, V&V, and Error Reporting content updates.

In Plenary, the group addressed organizational and administrative items, approved the minutes from the 39th meeting, and reviewed the status of the action items. The outcome of the discussions and the decisions made during the working meeting were formally confirmed. The plan for completing DO-200C/ED-76B was updated, including forming the sub-teams and assigning leads for the next set of topics, which are DQR guidance, authorized deviations, and data alteration/origination. It is expected the first draft of DO-200C/ED-76B incorporating action items completed so far will be ready in March 2023.

It was decided that the group would prepare a working paper for ICAO explaining our position on data integrity definitions in order to see if there is interest from ICAO in harmonizing with the approach that RTCA and EUROCAE standards have adopted, including pending revisions for DO-200C/ED-76B. Scott Roesch (Honeywell) will lead this effort, with support from Reuss Anderson (Garmin).

The group received an update on the work of RTCA SC-227, Standards of Navigation Performance, and discussed the schedule discrepancy between the latest expected completion date of DO-257C and the completion date of DO-201C/ED-77B in our Terms of Reference. Since DO-201C/ED-77B is dependent on DO-257C, our Terms of Reference will need to be updated to align with the new DO-257C date. Coordination between SC-227 and SC-217/WG-44 leadership will be arranged to discuss schedule ~~, but also to make~~and ~~sure that SC-217 can map or~~ alignment ~~with~~between SC-217/WG-44 standards and the data elements SC-227 is defining in DO-257C to support Data Driven Charting. It will be proposed to have a joint discussion with SC-227 Working Group 3 at their next working meeting in February 2023 (SC-217/WG-44 members will participate via Webex). It was also noted that lack of European participation in SC-227 WG3 could become an issue, and requested that Alex Milns from EUROCAE reach out to EASA regarding participation in WG3.

Since our Terms of Reference will need to be revised soon to account for the change in DO-201C/ED-77B date, the group discussed whether to also open up the User Requirements standards (DO-272D/ED-99D, DO-276C/ED-98C, DO-291C/ED-119C) ~~as well~~. It was agreed to go through the action items list for those documents in the next face-to-face meeting; currently the list contains 55 items, but there are other active industry activities that may drive more.

At the end of the plenary session, the group had a discussion on how the industry could address future cyber-security attacks on aeronautical data providers in light of recent high-profile attacks. It was agreed that the likelihood of future attacks is high, and the impacts of attacks could be much worse. Since there is currently no industry-wide mitigation plans or incident response teams in place, it is unclear what the industry should do if an issue (cyber-security attack, natural disaster, etc.) prevented data supplier delivery of its data. A new work plan topic for DO-200C/ED-76B was added to define the problem statement and create recommendations for the industry, and it was agreed to start working on this topic in the next Webex, led by Scott Roesch. This activity may result in a white paper that will be added to the upcoming revisions to our Terms of Reference.

The group decided to hold the next meetings as follows:

- 41st Plenary: 27–30 March 2023, in ~~Zurich (Lufthansa Systems), or~~ Frankfurt, Germany (Boeing) ~~or Paris (EUROCAE)~~
- 42nd Plenary: 27–30 June 2023, in Washington DC (RTCA)
- 43rd Plenary: 23–26 October 2023, in Prague or Brno (Honeywell) or Paris, France (EUROCAE) ~~Brno (Honeywell) or Frankfurt (Boeing)~~

In addition, ~~three~~ two~~monthly~~ 2-hour working meetings via WebEx were scheduled to take place on January 17 and March 2, 2023.

1 Working meeting

1.1 *Introduction*

The working meeting took place on 2930 November and 1 December 2022. Brian Gilbert opened the meeting and introduced the meeting agenda. He recalled that during the working meeting the following topics would be covered: DPAL, V&V, Tool Qualification and Error Reporting. The Plenary meeting was scheduled to take place on Friday, 2 December 2022. All participants introduced themselves.

1.2 *Attendance List*

Commented [SD1]: If not for this meeting, maybe for next time it would be good to differenciate those prticipants attending on site from the remote ones (eg with the use of an asterisk)

Name	Company/Organization
Abi Gonzaga	Honeywell International, Inc.
Alex Milns	EUROCAE
Andrew Goldsmith	Federal Aviation Administration (FAA)
Begona Martin Velayos	European Aviation Safety Agency (EASA)
Bradford Miller	Federal Aviation Administration (FAA)
Brian Belcher	U.S. Navy
Brian Gilbert	The Boeing Company
Caroline Doucet	NAV CANADA
Caroline Biarnes	Thales
Collin Ogden	Collins Aerospace
Darin Fala	Honeywell International, Inc.
David Atkinson	National Geospatial-Intelligence Agency
David Baker	The MITRE Corporation
Douglas Ginty	The Boeing Company
Erik Ringnes	Honeywell International, Inc.
Eustis Gosselin	Jacobs Technology
Frank Wigold	Lufthansa
Garth Munz	NAV CANADA
Gary Bobik	Federal Aviation Administration (FAA)
Jeff Meyers	Federal Aviation Administration (FAA)
Jeff Plantinga	GE Aviation
Jennifer Wyze	GE Aviation
John Maurer	The MITRE Corporation
Kevin Carey	U.S. Air Force
Kim Jordan	Universal Avionics Systems Corp.
Laurent Pomiès	DOSOFT Consulting (EUROCAE)
Matthew Colburn	The Boeing Company
Max Gornish	Garmin Ltd.
Michael Sauter	Lufthansa
Rebecca Morrison	RTCA, Inc.
Patrick Benson	US Navy
Reuss Anderson	Garmin Ltd.
Richard Timms	National Geospatial-Intelligence Agency

Name	Company/Organization
Sam Blackwell	Jacobs Technology
Shanahan Shannon-Hailey	NGA
Sasho Neshevski	EUROCONTROL
Scott Clewell	Garmin Ltd.
Scott Roesch	Honeywell International, Inc.
Solange Fairlie Matos	American Airlines, Inc. (A4A)
Stéphane Dubet	DGAC/DSNA
Stephen Moody	Jeppesen
Steve Dinaro	NAV Canada
Thomas Ciolino	U.S. Air Force

1.3 *Data Process Assurance Levels (DPAL)*

1.3.1 DPAL Levels

Reuss Anderson presented version 14.0 of WP10009. The content of the paper was discussed in detail by the group and revised accordingly.

This paper proposes a new ~~data integrity classification and a new~~ DPAL to be established between the existing DPALs 2 and 3 called DPAL 2B (Basic), as well as a new ~~d~~Data ~~i~~Integrity ~~classification~~ Level (DIL) called Basic to coincide this this additional DPAL.

Reuss introduced the latest status of the ~~edits~~ paper since the previous plenary and the group reviewed the specific proposals in Annex A that had remained opened from the last plenary.

Proposal 4: Section 2.4.1: The Data Processing Procedure Requirements has been revised without changing the content, just reshuffling the process steps. The update was reviewed and agreed.

Proposal 5: The text of the note under Table 2-1 was revised to provide clarity and readability.

Proposal 7: Appendix 7, Section B.1.3 to be modified, to enhance consistency with the other B.1. sections that describe other data quality characteristics, as well as more thoroughly describe the concept of data integrity in the context of the full data chain.

The ~~remaining item to be reviewed and agreed was the~~ updated diagram i~~o~~n Figure B-x, Sequence of Events for Data Error Leading to a Failure Condition~~. The diagram and the explanatory text to it were~~, was reviewed, updated, and agreed.

Proposal 12: The text on application of V&V techniques was reviewed and updated; mostly editorial changes were introduced to the version discussed at the last plenary.

~~Proposal 4: Section 2.4.1: The Data Processing Procedure Requirements has been revised without changing the content, just reshuffling the process steps. The update was reviewed and agreed.~~

Proposal 13: The text in C.2.3.1 was reviewed and revised to better explain the differences in validation expectations per DPAL. Table C-3 has also been modified to recognize four DPALs. This included providing examples of validation techniques for various DPALs as well as an example of required vs. optional validation techniques for DPAL 2B.

Proposal 14: The text in Appendix C, Section C.2.3.2 Application of Verification was reviewed and modified.

The section provides guidance on the application of verification techniques. It explains the application of graduated levels/rigor of automated and manual verification per DPAL, ranging from a combination of validation techniques to achieve DPAL 1 through ~~a~~potentially single forms of validation for DPAL 2 to minimal or no V&V for DPAL 3.

Proposal 15: Table C-6 Acceptable Quality Limit for Sampling Program, Appendix C, Section C.2.3.3 was modified to recognize four DPALs in the context of sampling and offer example AQLs for DPAL 2B, as well as to propose that DPAL 3 can have higher AQLs than the current table contains.

Proposal 16: Removal of ambiguous use of the term "Assurance Level 1" and focusing the statement instead on DPAL was reviewed and agreed.

Proposal 17: The text in Appendix C, Section C.2.3.3, page C-14 was revised to adjust statements about sub-division of assurance levels that can instead reference the newly recognized, more granular DPALs and data integrity classifications.

Version 17 of the WP, updated according to the conclusions of the discussions, was produced and reviewed by the joint group.

The DPAL theme, including V&V, was closed.

1.3.2 Tool Qualification

David Baker presented WP10022: Modifications for Tools Previously Qualified

Commented [G(BD2]: I know David didn't title it this, but that is the action item number, so that is what it should be titled.

The changes to Section 2.4.5.1 proposed by the Tool Qualification sub-team were reviewed.

The change proposals to the tool qualification requirements in Appendix D were reviewed and revised.

Scott Clewel presented an amendment proposal regarding the text on External Components, Attachment A, Appendix D, Section D1.1. It was noted that for some DO-330 requirements it was considered impractical/impossible to fully apply to external components such as Libraries and APIs.

Eustis Gosselin presented the update proposal to Section 2.4.5.3. The section provides guidance to data suppliers for the migration of tools to DO-200C/ED-76B. The current text in DO-200B/ED-76A addresses the actions needed for tools previously qualified to DO-200A/ED-76. It was underlined that the intention is for tools qualified to DO-200B/ED-76A, the transition to DO-200C/ED-76B compliance would be seamless.

For tools categorized as TQL-3 previously qualified to DO-200B/ED-76A, the process will follow DO-200C/ED-76B. A proposal was made to exclude from the qualification requirements areas of the tool that have not been changed (apply grandfathering). The scope of the qualification process would be the areas of the tool that have been changed. The group discussed extensively the proposal without reaching a consensus.

It was suggested that the determination of whether certain parts of TQL-3 categorized tools qualified to DO-200A/ED-76 could be grandfathered in DO-200C/ED-76B be further discussed with active

The existing text for TQL-4 categorized tools was reviewed. Provisions currently existing in DO-330 Sections 11.4 and 11.5 were also discussed and it was concluded that the sub-group would undertake further analysis taking into account the requirements in DO-330 Sections 11.4 and 11.5 and update the WP for submission to the joint group at the next meeting.

It was agreed that the sub-group will undertake discussion with the EASA and FAA tool qualification experts.

1.51.4 *Error Reporting*

Brad Miller presented the WP on Error Reporting.

Following a discussion, the conclusion was to keep the original provision and to add a note saying that this requirement does not apply in cases where there is no user-supplier relationship.

2 Plenary meeting

2.1 *Welcome, Introductions, and review of the RTCA/EUROCAE Policies*

The Plenary Session took place on the 2nd of December 2022 in hybrid mode - face-to-face meeting in Phoenix, Arizona, USA - Hosted by Honeywell International, Inc, with WebEx facility available to members who connected remotely. The main objective of the meeting was to progress with the revision of DO-200B/ED-76A.

Rebecca Morrison presented the RTCA membership policy, RTCA Anti-Trust Policy, the RTCA Proprietary Information Policy, and Alex Milns presented the EUROCAE IPR Policy Call, and the EUROCAE membership policy with regard to participation in EUROCAE Working Groups, and the General Data Protection Regulation (GDPR) and Privacy policy.

The meeting was opened by Brian Gilbert (RTCA SC-217 co-chair), who introduced the agenda for the Plenary.

Attendees introduced themselves.

2.2 *Review and Approve minutes from the 39th Joint Plenary (June-July 2022)*

Sasho Neshevski reported on the status of the draft meeting minutes of the 39th Joint Plenary. The draft meeting minutes had been uploaded on AerOpus on 22 September, 2022. No comment had been received to the draft. No comments were raised during the meeting. The group approved the minutes from the 39th Joint Plenary.

2.3 *Proposals related to revisions to DO-200B/ED-76A*

The outcome of the discussions and the decisions made during the working meeting were formally confirmed.

2.4 *Review of action items*

There following action items are open:

- Action Item Id 10022: Prepare a Working Paper (WP) on Tool Qualification
- Action Item Id 10023: Coordination with EUROCAE WG-114 Artificial Intelligence in Aviation

In line with the updated Work Plan (see Section 2.5 below) the following new Action Items were recorded:

- Action Item Id 10091: Prepare a Working Paper (WP) on data quality requirements guidance
- Action Item Id 10092: Prepare a Working Paper (WP) on the concept of "authorized deviations"
- Action Item Id 10093: Prepare a Working Paper (WP) on data alteration/origination
- Action Item Id 10094: Prepare a Working Paper (WP) on data integrity definitions for submission to ICAO
- Action Item Id 10095: Liaise with EASA regarding the lack of European participation in SC-227 WG-3
- Action Item Id 10096: Prepare a Working Paper (WP) on cyber-security attacks on aeronautical data providers

2.5 *Next Steps*

The Work Plan was confirmed as follows:

Batch 2 – target completion July 2023

1. **Tool Qualification**
    - DO-330 Tool Qualification issues
    - Appendix D.2 gives the impression that those DO-330 activities are mandated
    - Appendix D, Table D-1

Participants
David Baker - Lead
Laurent Pomiès, Reuss Anderson, Jeff Plantinga, David Atkinson, Eustis Gosselin, Kevin Carey

Batch 3 – target completion March 2023

2. **Data quality requirements guidance**
   - What is the value of Appendix B.2? No need to separate it from B.1

Participants
Reuss – Lead
Michael, Jeff P.

3. **Authorized deviations**
   - Should Section 2.5.2 address the concept of "authorized deviations"?

Participants
Brad - Lead
Jeff M., Scott R., David A.

Batch 4 – target completion October 2023

4. **Alteration/origination**
   - Fold DO-394 into DO-200C?
   - Revisit Sections 2.3, 2.4.2, other sections in light of the Data Alteration document

Participants
David A. - Lead
Rick, Steve, Reuss, Rebecca, Darin

Batch 5 – target completion October 2023

5. **Document mechanics/organization**
   - Apply Requirements numbering (like user requirements documents)?
   - Review the use of “shall” vs. “should”; investigate current statements that use "need", "must", etc.

6. **Terminology/consistency**
   - Replace "data supplier" with "data processor" (limited in scope to those terms, can add new action items if other terminology tweaks/harmonization topics arise)

Participants
Reuss Anderson – Lead

7. **WG-114 Artificial Intelligence in Aviation needs**
   - Coordinate with WG-2 and WG-3
   - Statement of Concerns, roadmap available for review

Participants
Laurent Pomiès - Lead

2.6 *Coordination with ICAO on new DPAL classification*

It was decided that the group would prepare a working paper for ICAO explaining our position on data integrity definitions in order to see if there is interest from ICAO in harmonizing with the approach that RTCA and EUROCAE standards have adopted, including pending revisions for DO-200C. Scott Roesch (Honeywell) will lead this effort, with support from Reuss Anderson (Garmin).

2.7 *DO-201C/ED-77B update planning*

Revision to the ToR was discussed to change the DO-201C/ED-77B completion date (FRAC resolution), which is currently December 2023. The latest SC-227 plan is to complete the Data Driven Charting (DDC) MOPS around Dec 2024 – May 2025 (FRAC resolution). It was noted that there is a need to work on DO-201/ED-77 revisions in close coordination with SC-227.

SC-227 is working on a list of items that are required for DDC. Once this list is mature, SC-217/WG-44 should work on corresponding DQRs.

It was agreed that a joint meeting would be best in order to align our respective views. It was proposed to have half a day of the next SC-227 meeting (February 2023, Dallas, TX) to have such meeting.

It was also agreed to plan another SC-217/WG-44 and SC-227 leadership coordination meeting before the SC-227/WG-85 meeting in February 2023, e.g. in January 2022 and to propose a working meeting with SC-227 WG-3 in January 2023.

A concern was raised regarding the lack of European counterpart participation (EUROCAE), including EASA involvement, to SC-227 WG-3. An action was recorded for Alex Milns to look into the issue, coordinate with EASA, and report back at the next meeting.

ToR updates will be reviewed in March 2022 for presentation to the June PMC meeting. It will be possible to add new work, e.g. DO-272/ED-99 and DO-276/ED-98 updates (and subsequent DO-291/ED-119), to the ToR if there is sufficient rationale. It was decided to discuss the list of change items at the next face-to-face meeting.

2.92.8 *Dates of next meetings*

The Group decided to move to 4-day meetings instead of 5-day ones with Closing Plenary on the final day – mornings in US meetings, afternoons in Europe meetings.

The dates and locations of those were agreed as follows:

- 41st Plenary: 27 - 30 March 2023, Location – Frankfurt, Germany (Boeing)
- 42nd Plenary: 27 – 30 June 2023, Location – Washington, D.C., hosted by RTCA
- ~~43rd~~ Plenary: 23 – 26 October 2023,

Meetings in US will be scheduled Tuesday through Friday. Meetings in Europe will be scheduled Monday through Thursday.

All meetings are foreseen as in-person meetings with the possibility to join remotely via WebEx.

Two 2-hour working meetings via WebEx were agreed and scheduled to take place prior to the next Plenary as follows:

- 17 January 2023 10:00 – 12:00 EST
- 02 March 2023, 10:00 – 12:00 EST

2.102.9 *AOB*

2.10.12.9.1 Security

The group had a discussion on how the industry could address future cyber-security attacks on aeronautical data providers in light of recent high-profile attacks. It was agreed that the likelihood of future attacks is high, and the impacts of attacks could be much worse. Since there is currently no industry-wide mitigation plans or incident response teams in place, it is unclear what the industry should do if an issue (cyber-security attack, natural disaster, etc.) prevented data supplier delivery of its data. A new work plan topic for DO-200C was added to define the problem statement and create recommendations for the industry, and it was agreed to start working on this topic in the next Webex, led by Scott Roesch. This activity may result in a white paper that will be added to the upcoming revisions to our Terms of Reference.

2.10.22.9.2 Coordination with EUROCAE WG-105 Unmanned Aircraft Systems (UAS)

The work of SG-3 UAS Traffic Management (UTM) is ongoing. There is no significant update to report. Stéphane Dubet will continue to provide progress report to the group on this topic at the next plenary meetings

2.112.10 *Adjourn*

Brian Gilbert thanked all members for the participation, in particular Scott Roesch, Abi Gonzaga, and Darin Fala for hosting of the meeting, and closed the plenary meeting.

Certified as a true and accurate summary of the meeting:

Sasho Neshevski
Secretary, RTCA SC-217, EUROCAE WG-44

Brian Gilbert
Chairman, RTCA SC-217

Stéphane Dubet
Chairman, EUROCAE WG-44