

Minutes of 32nd Meeting
RTCA Special Committee 227
27th Meeting
EUROCAE WG-85
15 – 19 August 2022
Virtual/RTCA

Agenda

Monday, August 15, 2022, 10 AM to 4 PM EDT (17h – 22h CEST)

1. Welcome and Administrative Remarks, review of RTCA/EUROCAE Policies
2. Introductions
3. Review and Approve May 2022 Meeting Minutes
4. Status of DO-236D (PMC Approved?)
5. Status of TOAC/FIM Conops Activity
6. *Possible new issues/tasking for SC-227*
7. *Working Group 3 Change Proposals for Plenary Acceptance*
8. Suspend plenary, convene WG-2 & WG-3 to end of day

Tuesday, August 16, 2022, 9 AM to 4 PM (16h – 22h CEST)

1. WG-2 & WG-3 Meeting Concurrently

Wednesday, August 17, 2022, 9 AM to 4 PM (16h – 22h CEST)

1. WG-2 & WG-3 Meeting Concurrently

Thursday, August 18, 2022, 9 AM to 4 PM (16h – 22h CEST)

1. WG-2 & WG-3 Meeting Concurrently

Friday, August 19, 2022, 9 AM to 12 PM (16h – 18h CEST)

1. Reconvene in plenary
2. *Working Group 2 Change Proposals for Plenary Acceptance*
3. *Working Group 3 Change Proposals for Plenary Acceptance*
4. Review remaining plenary dates in 2022 & 2023
5. *Planning info/discussion for November meeting at EUROCAE*
6. Review Action Items
7. WG Meeting Reports
8. New Business

9. Adjourn

10. Working Groups may continue to meet until 4 PM if desired

Note, items in italics were added at the meeting.

Chairperson (acting): Dave Nakamura, MITRE CAASD
 GAR: Barry Miller, FAA
 Secretary: Dave Nakamura, MITRE CAASD
 Program Director: Rebecca Morrison
 EUROCAE TPM: Alex Engel
 WG-85: Okuary Osechas, DLR

Attendees

Name	Company/Organization
Aaron Jacobson	Boeing
Alex Engel	EUROCAE
Andrew Riedel (WG3 Lead)	Boeing
Andrew Videmsek	Reliable
Atsushi Kezuka	ENRI
Axel Friedrich	Navblue
Barry Miller	FAA
Bennie Hutto	NATCA
Bill Tuccio	Garmin
Bob Gaul	Garmin
Brad Miller	FAA
Brandon Lint	FAA
Brian Lieu	UASC
Cameron Little	NAVAIR
Christina Clausnitzer	FAA
Colin Ogden	Collins Aerospace
Dale Courtney	FAA
Daniel Nelson	UK NATS
Dave Nakamura	MITRE CAASD
David DeSmedt	EUROCONTROL
Dinesh Kushwaha	Collins Aerospace
Doug Phifer	FAA
EAS Department	ALPA
Erik Ringnes (WG2 Co-Lead)	Honeywell
Fernando Diaz	ENAIRE
Frank Wigold	Lufthansa Systems
Gang Feng	Boeing
Gary Petty	FAA
Greg Comstock	Stratmach
Guy Deker	Thales
Jan Langen	LH Systems
Jason Hewes	Garmin
Jeff Meyers	FAA
Joel Dickinson	FAA
John Barry	FAA
Kendal Hershberger	Garmin
Kevin Schwemmer	Textron Aviation
Kirk Kolek	Collins Aerospace
Kristi Peterson	FAA
Lesley Weitz	MITRE CAASD
Mitch Meldrum	Honeywell
Monica Vafiades	USAF
Nathan Beeten	USAF
Nick Tallman	FAA

Okuary Osechas
Phillip Pankratz
Rebecca Morrison
Robert Goodson
Regina Richardson
Ricardo De Sousa
Richard Meldrum
Russ Ramaker
Ruth Hirt
Sam Miller
Shivathsan Narayanan
Stephen Moody
Steve Horvath
Tim Geels
Tim Padden
Tizi Bernard
Tom Yochum
Toyohachi Yokota
Valeriu Vitan
Wade Morton
Wes Googe (WG2 Co-Lead)
Yee Xiong

DLR
Textron Aviation
RTCA
NGIA
Avian
UK NATS
Honeywell
GE
FAA
Boeing
DLR
Boeing
Garmin
Collins Aerospace
USAF
Gulfstream
Boeing
JRANSA
EUROCONTROL
Boeing
American Airlines
UASC

Monday, August 15th

Dave stated that he was acting chair for this meeting due to a number of events that prevented the current RTCA and EUROCAE chairs from attending.

Welcome and Administrative Remarks

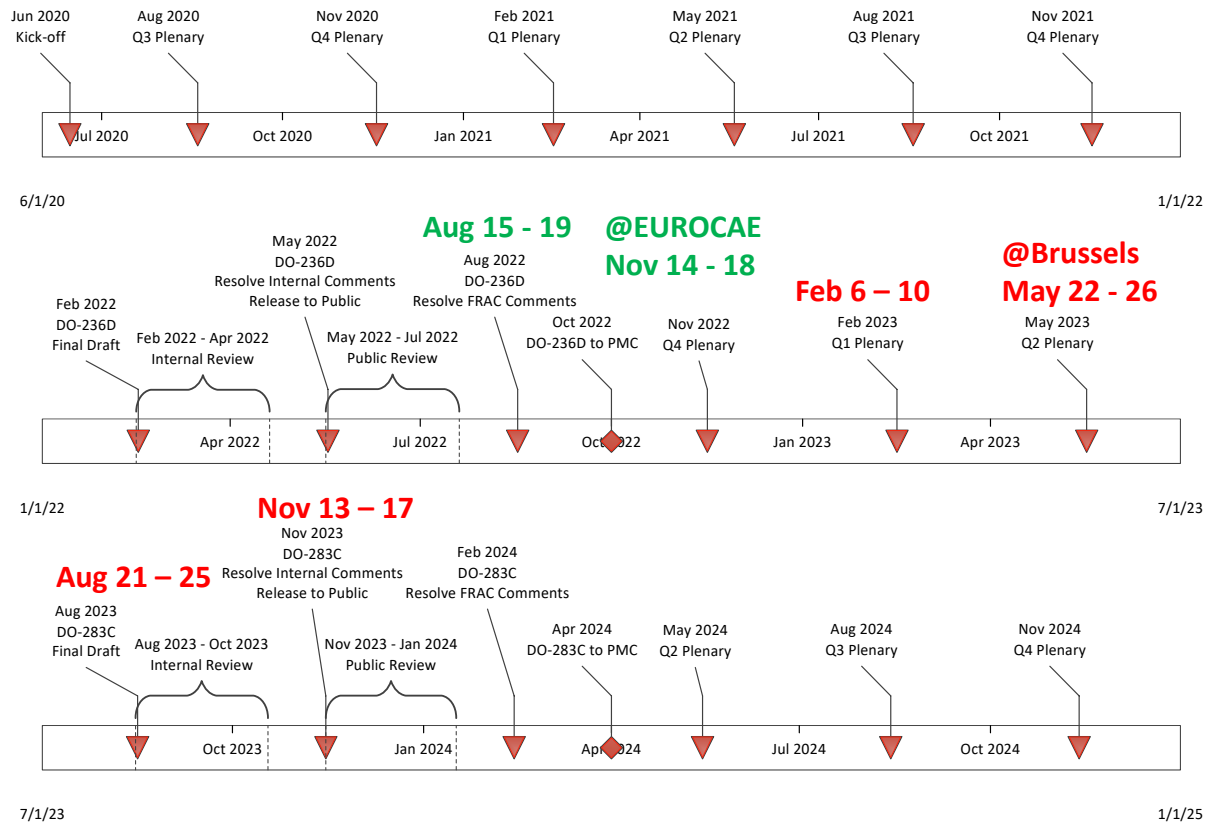
Dave opened the plenary Webex session at 10:05 AM, Monday, August 15th. Dave welcomed the participants.

Rebecca and Alex reviewed both the RTCA and EUROCAE Anti-Trust, Proprietary, and Committee Membership Participation policies. It was noted that WG3 is working around a known proprietary info issue. Dave reviewed the agenda and proposed additional topics for change proposals and possible new tasking. The changes were accepted.

SC227 Agenda & Meeting Dates

Dave presented an revised agenda with new items for possible future tasks and for discussion of change proposals for plenary acceptance. The revised agenda was approved by the committee.

Dave showed the planned dates for 2022 and proposed dates for 2023. For this look ahead, the group was reminded that the RTCA/EUROCAE arrangement is for one meeting a year in Europe, rather than every other meeting. Beyond the November meeting, the 2023 dates accepted by the committee were for Feb 6-10, May 22-26 (Brussels), Aug 21-25, and Nov 13-17. Meeting locations other than RTCA are welcome but must satisfy RTCA requirements for web conference capability and performance.



SC-227 TIMELINE

Introductions

Introductions were made in the room and on-line through roll call. Rebecca reviewed the housekeeping information for passwords, restrooms, use of microphones, and group dinner. Rebecca pointed out that there were multiple ways to record attendance using Aeropus, Webex and attendance sheet.

Review and Approve minutes

Dave walked through the minutes for the May meeting, No. 31. There were no changes. They were accepted.

Review Status of DO-236D

Rebecca stated that the MASPS was approved by the PMC on 23 June 2022. Alex stated the ED-75E version was approved by the EUROCAE Council on 20 June 2022. WG-1 is now in standby mode.

Status of TOAC/FIM Conops Activity

Lesley briefed the group on the background of the NAC working group, SC186 and SC227 activities with regard to conops, benefits and development of harmonized standards. RTA/TOAC and IM/FIM functionality and benefits were summarized. A high level view of the operating applications was described. The prior work represents work activity that goes back 10+ years. The presentation described: integrated CONOPS assumptions, areas requiring further harmonization, and the intended metering environment. The complete presentation will be posted to the SC227 Aeropus. One FAA concern was raised with how to reconcile the integrated conops products which do not seem to provide sufficient detail to develop system standards with specific aircraft and pilot requirements for TOAC functionality and flight performance. The integrated conops effort should engage with SC227, since the issues with TOAC performance compatibility with IM

operations in the RNP MASPS may be better addressed by the FAA and industry expertise in SC227. This is not taking place so far.

Working Group 3 Change Proposals for Plenary Acceptance

A change proposal was presented for how the WG was thinking with regard to incorporating DDC and EACD (Electronic Aeronautical Chart Display) in the DO-257 MOPS vs a new separate MOPS. The change incorporates new sections for EACD captured in the MOPS reference table. This new structure makes the EACD requirements clearer and cleaner, and less ownership centric as the EMD section. The EACD section follows the structure of the EMD sections but differs as appropriate for EACD. The EACD guidance and criteria will support both RNP and conventional charting. Making this scope and correlation clear in the introductory material will avoid confusion with regard to the connection to RNP and not imply that the RNP MOPS contains standards and guidance for non-RNP operations. While this approach is viewed by the committee as consistent with the TORs, some have indicated that the current TORs might be read as more restrictive than the work intended and that is on going. There was discussion that the TORs be revised again to clarify the DDC work with regard to RNP. However, there is still a prevailing view that the TORs and WG3 work program are ok. WG3 will continue some discussion on this. The TORs will remain unchanged for now.

Possible new issues/tasking for SC-227

There are three issues that Barry presented for SC-227 to provide input and discuss if there are any MOPS requirements that could be developed to address any one or all of them.

1. NTSB Report recommendation, SR A-14-086
The subject is UPS Flight 1354, A300, LOC RWY 18 approach. In this crash, ILS to RWY 06/24 was not available. There was CFIT resulting from a chain of events. Recommendation to “..develop and implement means to provide with a direct and conspicuous cue when they program the FMC flight plan incorrectly....allowing the VDI to present misleading information for an approach.” The misleading VDI was in a flight plan discontinuity when there wasn't a valid path. The group was requested to provide any thoughts or recommendations to the SC227 GAR.
2. RNP APCH Procedure Designs vs MOPS
This is an RNAV GPS approach. A holding pattern is part of the procedure. However, as a replacement for a conventional procedure, is it intended that the hold be an RNP hold as illustrated? The hold is for alignment, not part of the procedure. Clarity is needed. One possible outcome is to revise the illustration to show the hold path as not part of the primary required flight path. Thoughts from the committee are welcome.
3. MagVar and Hybrid IAPs.
Large magvar issue at Salt Lake, it changes 10 degrees upon sequencing from the procedure, resulting in aircraft crossing over to the parallel runway flight path. The switch from use of the airport magvar to that of the navaid results in the behavior. What can be done? Thoughts from the committee are welcome.

Plenary suspended, Adjourned to WG-2/WG-3 Sessions

WG2 and WG3 will run sessions in parallel.

Tuesday – Thursday, August 16th – 18th

WG-2 and WG-3 were in work sessions.

Friday, August 19th Plenary

The next meeting is November 14-18 at EUROCAE, in Paris. Rooms have been reserved. Alex also presented information about the Paris location and means of getting there. The presentation

is posted to the 227 workspace. Regarding choices of where to stay, there is not much around EUROCAE and more to do downtown. There is Novotel is close to EUROCAE but again there isn't much to do after the meeting. The EUROCAE facilities allow for separate WG meetings with a capacity of 25 each for both working groups.

1. WG2 Summary

WG 2 reviewed and approved 6 change proposals to be presented to the plenary for acceptance. The changes are:

The committee was reminded that the changes proposals were to take MASPS accepted changes and make the same changes in the MOPS. Each paper was presented with a summary description of what MASPS changes are applied to the MOPS and accompanied with a screen scrolling of the paper to see what the changes look like. There is still ample opportunity to raise questions when the updated MOPS draft is made available to the committee. The plenary agreed with this process. The following six changes were accepted.

[M31-1] Errata Corrections for Speed Restrictions and Temperature Compensation

[M31-2] Consistency with MASPS Path Terminators

[M31-4] TOAC Updates

[M31-5] Editorial

[M31-6] General + Attachment

[M1-20] Retention of Procedure Attributes R5, this formalizes the paper from the last meeting.

Two papers were withdrawn.

[M1-14] Discussion Paper V2.3A-MRJ: Withdrawn since it was incorporated in [M31-4] including the updates resulting from FRAC.

[M31-3] Path Definition R2, withdrawn, the proposed change is unnecessary in the context of the MOPS functional descriptions and requirements.

The working group discussed a DLR concept for an improved Baro VNAV for the future. The change uses weather forecast information to create a more vertically accurate and stable location of the vertical path. The change raised a number of issues on how such a change could actually be implemented in an RNP system and aircraft that are not easily resolved, and fall outside of SC-227. The committee discussion concluded that it was not needed change at this time, and would only merit further consideration when the many issues associated with aircraft, systems, and possible global implementation are resolved. Erik raise a point regarding GPS jamming which was discussed and concluded after it was determined the FAA is actively working on it.

A new change was introduced and a proposal is expected for the next meeting. It is intended to provide guidance and information for the evaluation of GNSS style integrity that will replace MOPS Appendix B Containment Compliance Analysis. If found to be acceptable, this could be adapted to the MASPS in the next update. WG2 will meet in September and in follow on work sessions as required to review the paper in detail, and help develop the change proposal for the next SC227 meeting.

The accepted change proposals from this meeting will be placed in a new SC227 documents folder under DO-283C, named Plenary Accepted Change Proposals. There will be a high degree of commonality with the change proposals contained in the Change Proposal Presented folder.

Besides the expected papers for GNSS Style integrity, and incorporating path terminator exceptions from TSO-C115, there are few new work items on the horizon. WG2 could be done much earlier than the current 2024 date.

2. **WG3 Summary**

WG3 submitted 5 change proposals for presentation to the plenary for acceptance. The changes are:

1. **AI-10028** Intended Function, The new information and descriptions were **accepted**
2. **AI-10057** Document Structure, This proposes a structure and sections that clearly identifies the EACD requirements, where some are identical to EMD, indicated by reference. This was a refinement of the paper presented at the opening plenary. **Accepted**
3. **AI-10035** Database, this still needs SC-217 alignment. The EACD requirements are the same as for the EMD. The SC 217 schedule which is later than WG3's presents risk to the WG3 schedule. Text is also being prepared as a proposal for SC-217 consideration. There may also be issues with () for document versions which could pose issues and problems if an applicant chooses a standard not acceptable for the EACD/DDC being developed. **Withdrawn** for further refinement.
4. **AI-10081** IAP Vectors to Final Approach, this is providing clearer chart information supporting radar vectors if it is included in the EACD function. There is still some work to determine charting. The use of the term VTF was questioned, there seem to be many uses. One is associated with SC-229. It was noted that VTF is used in many cases for VTF course vs a function. **Withdrawn** for further refinement.
5. **AI-10082** Reversionary Mode. The intent of the paper to address the possible different types of chart forms and a default to a specific type of chart in the event of failure is acceptable but the text could result in regulatory interpretations that could be problematic. Some additional work is needed on the meaning of the wording. **Withdrawn** for further refinement.

The two accepted change proposals will be placed in a new SC227 documents folder under DO-257, named Plenary Accepted Change Proposals. There will be a high degree of commonality with the change proposals presented.

3. **Review Action Items**

Rebecca will arrange a September discussion between SC-227/WG3 leadership and SC-217 on their schedules and those of WG3.

4. **New Business**

While WG 1 is on standby following the recent publication of the MASPS, WG1 work will be needed before any formal coordination with 186 WG3 on possible MASPS changes for TOAC/FIM operational integration. Mike Cramer needs to weigh in on how he expects the conops coordination for TOAC/FIM will work.

5. **Adjourn**

Working Groups may continue to meet.

Webex/Meeting Adjourned