



EUROCAE Paper No.78-20/ WG79-72
RTCA Paper No. 269-18/SC213-116

Minutes of Meeting
EUROCAE WG-79 # 41 meeting/ RTCA SC-213 Joint Plenary # 32
Enhanced Vision Systems (EVS) Synthetic Vision Systems (SVS)

Date	<i>October 30-31, 2019</i>
Place	Washington, DC - USA
Venue	<i>RTCA</i>
Host	<i>RTCA</i>
Contact Persons EUROCAE RTCA	<i>Sergiu Marzac</i> sergiu.marzac@eurocae.net <i>Phone: +33 1 49 46 19 73</i> <i>And</i> <i>Rebecca Morrison</i> rmorrison@rtca.org <i>+1 202-330-0654</i>

Attendance: Please see attached PDF document for complete attendance list.

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Agenda

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Agenda – Working Group Sessions

Tuesday, 29 Oct (0900 - 1700)

0900: Check-in
0905: WG1 and WG4 in one room
1200: Lunch
1300: WG2 in one room, WG4 separate room
1700: Adjourn

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Agenda - Plenary

Wednesday, 30 Oct (0900 - 1700)

0900: Check-in
0905: Welcome, Introductions, administrative items, agenda review
0910: Review and approve May 2019 meeting minutes
0915: Discussion on Errata/Changes
0945: WG1, WG2 and WG4 status updates
0950: Break (10 min)
1000: FAA OPS Introductions and Discussion (60 min.)
1100: FAA Discussions: AC updates, Other topics
1145: SAE G-10V Status TBD
1200: Lunch
1300: PMC Action on alignment to drafting guidelines
1310: WG1 Discussions (110 min.)
1500: Break (15 min.)
1515: WG2 Discussions (105 min.)
1700: Adjourn – Group Dinner @ 5:30pm

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Agenda - Plenary

Thursday, 31 Oct (0900 - 1700)

- 0900: WG4 Discussions (120 min.)
- 1100: Break (10 min)
- 1100: WG2 Discussions (60 min.)
- 1200: Lunch
- 1300: WG1 Discussions (90 min.)
- 1430: Break (10 min)
- 1440: Actions, next steps, next meeting objectives
 - WG meetings in Melbourne at Collins Feb 25-27
 - Prague Meeting April 21-23 (25 votes)
 - TBD option May 5-7 (19 votes)
- 1700: Adjourn

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Welcome and Introduction

Rebecca Morrison, RTCA, reviewed the RTCA Anti-Trust, Proprietary and Membership Policies along with the EUROCAE IPR and Participation Policy. She also reviewed the Errata, Change and Revision policy. She presented the current TOR and publication dates. Previous meeting minutes from May Toulouse meeting were reviewed and approved.

WG Updates

Thea Feyereisen, Honeywell, WG1 and WG3 chair; Randy Bailey, NASA LaRC, WG2; and Carlo Tiana, WG4. provided a high level status review.

FAA Status and Ops Discussion

Trent Prange, FAA, provided update on the AC20-185A and 167B. The documents have gone back to legal for review. It is unlikely they will be published in 2019 but there is no information available at this time of possible release dates. FAA plans to continue to refer to MASPS/MOPS or related documents in the AC as a method of compliance.

Scott McLellan, FAA, provided an update on EFVS flight ops and points of contact within the FAA. Sherri Hubbard, FAA, provided an update on the OKC facility and capabilities.

Matt Harmon, FAA, provided an update on LED lighting systems in the US. Currently the systems are in experimental status and no conclusions have been reached. There is no requirement currently for any IR emitters in lights in the NAS.

Ski Wisniewski, FAA, presented information on low visibility and EFVS flight test methods experience.

GAMA Brief, HUD EFVS Landing Brief

Glenn Connor, Discover Technology, presented on behalf of GAMA and its members, a concern about lack of harmonization during HUD and EFVS testing between EASA and FAA. He reviewed an EASA AWO proposal to add a landing factor for the use of the HUD due to treating the operation as a CatIII operation focused on symbology requirements and instrumentation for EASA CS-AWO HUD LS112 and EASA CS-AWO EFVS 109.

Jens Hennig, Vice President of Operations, GAMA, indicated that GAMA attempts to work directly with EASA (flight standards, and certification) have not yet been successful. He noted the EASA proposal has the potential to add up to 10-20% additional runway distance. Attempts by FAA and Transport Canada to provide data indicate that EASA is not looking for outside help at this time. Industry and regulators are encouraged to continue to engage with EASA to provide guidance and data.

TOR

Randy Bailey, NASA LaRC, recommended a change to the published SPR's Table 1-1. The committee approved the change contingent on PMC TOR change approval.

A proposal was moved to change the dates of WG1/3 and WG2 product dates to May 2021. The committee approved the change.

A new product for WG4 is proposed for CVS Helicopter MASP. The committee approved the inclusion of the new product in the TOR.

All work products will be joint with EUROCAE.

WG1/ WG3

Thea Feyereisen, Honeywell, lead the discussion around the breakdown of the requirements for the document that includes variants SVS including: SVS, ASA, SVGS, and CVS for both HDD and HUD. There are general requirements for all systems, medium specific requirements (HD vs HU) and then building block requirements. It was agreed that the generic term, Vision Systems, will be used to capture those technologies covered in this MASPS.

WG4

Carlo Tiana, Collins Aerospace, lead the discussion about rotorcraft. The overlap with WG4 and the newly formed SAE G10 rotorcraft vision systems was discussed. It is unknown if there is a government sponsor for the SAE committee. Sergiy, EUROCAE, reached out to SAE on request to collaborate. The response to that inquiry from SAE is unknown.

WG2

Randy Bailey, NASA LaRC, presented a high level MASPS overview of the EVS/EFVS document draft. It has been decided to pull the CVS content that was previously identified to be housed in WG1/WG3 document into the WG2 document.

Actions Items

1. Add EUROCAE paper number, meeting number and attendance list to the May 2019 meeting minutes. (Rebecca)
2. Update TOR for both RTCA and EUROCAE to change Due Date from May 2020 to May 2021 for the SVS and CVS MASP. Add WG4 Rotorcraft to TOR for RTCA with Oct 2020. (Rebecca, Carlo).
3. WG79 and RTCA to prepare the Table 1 SPR Change for OC/FRAC (Sergiu and Rebecca).
4. Identify if there is a government sponsor for the SAE Rotorcraft Vision Systems committee. (Carlo)
5. Clarify request and response from EUROCAE to SAE Rotorcraft Vision Systems on collaboration. (Carlo and Sergiu)
6. Contact SAE Rotorcraft Vision Systems to see if they want to merge with WG4 meetings. (Carlo)
7. Work with Cliff Johnson on rotorcraft operator vision system survey. (Carlo)
8. Elevate concerns of duplicity between WG4 and SAE Rotorcraft Vision Systems standards to PMC. (Patrick, Tim, Rebecca)

Next Meetings

The next working group meeting will be hosted by Collins Aerospace (Carlo Tiana) in Melbourne FL, February 25-27. Our next plenary meeting will be hosted by Honeywell (Tomas Beda) in Prague Czech Republic, April 21-23.

Name	Company
Archer, Jonathan	GAMA
Bailey, Randy	NASA
Belanger, Emmanuel	Transport Canada
Boucher, Alain	Dassault Falcon Jet Corporation
BOUSQUET, Fabrice	Airbus
Carothers, Steve	Bombardier Aerospace
Chiew, Daniel	Collins Aerospace
Colquhoun, William	Bombardier Aerospace
Dixon, Doug	FAA
Edkins, Craig	FAA
Feyereisen, Thea	Honeywell International, Inc.
Fisch, Wayne	Universal Avionics Systems Corp.
Flack, Sean	FAA
Gardonio, Rikki	Air Line Pilots Association (ALPA)
Greenwood, Janet	Federal Aviation Administration (FAA)
Harmon, Matt	FAA
Hausmann, Jeffrey	Gulfstream
Henning, Jens	GAMA
Holtorf, Gerard	Federal Aviation Administration (FAA)
Hrabak, Ronald	Federal Express Corporation (FedEx Express)
Humphreys, Mark	Precision Approaches
Jones, Terry	Federal Express Corporation (FedEx Express)
Kenward, Paul	Lockheed Martin Corporation
Kratichounova, Daniela	Federal Aviation Administration (FAA)
Krohn, Patrick	Universal Avionics Systems Corp.
Lesko, Bryan	Air Line Pilots Association (ALPA)
Litwin, Kajetan	Transport Canada
Martin, Chris	Bombardier Aerospace
Martin, K	GAMA
McLellan, Scott	Federal Aviation Administration (FAA)
Metz, Robert	
Morrison, Rebecca	RTCA, Inc.
Muers, Yair	Elbit
Neumeier, Peter	Lockheed Martin Corporation
Prange, Trent	Federal Aviation Administration (FAA)
Reznicek, Jan	Honeywell International, Inc.
Salmon, Philippe	Collins Aerospace
Simpson, Khambrel	The MITRE Corporation
Spauld, Ian	FAA
Stuber, John	Federal Aviation Administration (FAA)
Therriault, Rick	Collins
Tiana, Carlo	Collins Aerospace
Vafiades, Monica	US Air Force
Ververs, Trish	Honeywell International, Inc.
Wisniewski, Mariusz	Federal Aviation Administration (FAA)
Wong, Natalie	Bombardier Aerospace