



EUROCAE WG-117 / RTCA SC-240 WG meeting minutes

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EUROCAE WG-117 / RTCA SC-240 Topics on Software Advancements (TOSA) Plenary Meeting 7

WG meeting minutes

	Date	Name	Signature
Approved			
Reviewed			
Prepared	01/08/2021	Andrew Hoag	

MINUTES, DAY 1
Monday 26 July 2021
1500 CEST (UTC +2) / 0900 EDT (UTC -4)

1. 1500/0900 Welcome, Introductions

EUROCAE WG-117/RTCA SC-240 Topics on Software Advancement (TOSA) is chaired by Steve Cook and Burak Ata.

Plenary #7 is hybrid (virtual and in-person) scheduled for 2 days as detailed in the 26 June 2021 meeting calling notice. The virtual meeting is held via WebEx. The in-person meeting is held at the RTCA headquarters.

The EUROCAE workspace is available at <https://join.eurocae.net/WorkspaceSelector>

The RTCA workspace is available at AerOpus at <https://aeropus.i3cloudservices.com/>

Day 1 Agenda

- Welcome/Introductions [All]
- Review of RTCA and EUROCAE Policies and Expectations [Sebastian/Rebecca]
- Review and Adoption of Agenda [Ata/Cook]
- Approval of minutes of previous meeting and status of action items [Ferrand/Hoag]
- Management team general information [Cook/Ata]
- Review of WG-117/SC-240 Work Plan, schedule, deliverables & task allocation [Ata]
- Update from EUROCAE WG-114 [Gabreau]
- Break
- Breakout Groups and Newcomer's Orientation [All]
- Adjourn

After the meeting kick-off, all participants virtually introduced themselves.

2. 1521/0921 Review of RTCA and EUROCAE Policies and Expectations

Rebecca Morrison and Sebastian Reschenhofer reviewed the RTCA and EUROCAE Policies and Expectations to all present on the call. This includes:

- RTCA Anti-Trust Policy
- RTCA Proprietary Policy
- RTCA Committee Participation Membership policy
- EUROCAE IPR Policy
- Participation in EUROCAE WGs

3. 1530/0930 Review and Adoption of Agenda

The proposed agenda for Plenary #7 was adopted without objection. Todd Stempel made the motion to approve, and Ross Hannan seconded.

4. 1545/0945 Review of minutes of previous meeting/s and status of action items

Andy Hoag reviewed the minutes of Plenary #6. The consolidated action item list is below in Table 1 and includes actions open in addition to actions closed in Plenaries 6 and 7.

Ross Hannan made the motion to approve the minutes of Plenary 6, and Mark Lillis seconded. There were no objections.

5. 1553/0953 Management team general information

- SG-1 Document Manager – Pranav Nagarajan
- Reminder - Framework for use of documents
 - SG-1 – Standalone – potential use for EASA SORA, FAA MOSAIC, other
 - SG-2 – Supplement – supplements SG-1 Document and DO-178C/ED-12C suite
- EUROCAE/RTCA Software Summit 23-24 June 2021

Steve Cook led the discussion on the first software summit held in June. This was a successful virtual event that included audience participation via polls. Steve shared some of the poll results and the feedback was positive in the foundation of DO-178C/ED-12C and many participants were interested in the incorporation of new technology and methods.

6. Review of WG-117/SC-240 Work Plan, schedule, deliverables & task allocation

Presentation on the work plan, the schedule, and preparation for the two days of breakouts with the subgroups.

7. Update from EUROCAE WG-114

An update presentation from EUROCAE WG-114 was given virtually, prepared by Christophe Gabreau. WG-114 is focused on Artificial Intelligence and its use and certification.

8. Breakout Groups and Newcomer's Orientation

The plenary split into breakout groups for SG-1 and SG-2. A limitation of WebEx breakout rooms was noted – any call-in users were unable to join or be assigned to a breakout room.

9. Adjourn

Day 1 of plenary adjourned with the plan to re-group in breakout sessions for SG-1 and SG-2 at the start of Day 2. The leadership thanks everyone for their participation.

End of Day 1

**Table 1: Consolidated Action Item List, Plenary 6 - Plenary 7
(actions open; actions closed in Plenary 6 – 7)**

Action	Opened	Description	Assigned to	Due	Status	Closed
9	Plenary #5	Create master schedule	Ata	28-Feb-2021	Closed	Plenary #6
10	Plenary #5	Subgroups to define relationships (giver/receiver)	Stempel, Serrot	26-Aug-2021	Open	
11	Plenary #5	Create outreach plan for additional experts in other domains	Ata	28-Feb-2021	Closed	Plenary #6
12	Plenary #5	Ensure consistency on UAS use cases between SG-1 and SG-2 ("Medium" risk)	Stempel, Lillis	Plenary #6	Closed	Plenary #6
13	Plenary #6	Publish agenda work plans & master schedule on both worksites	Ata	End of Plenary #7	Open	
14	Plenary #6	Identify any Key Comment for plenary discussion	SG Leads	1-Jul-2021	Closed	Plenary #7
15	Plenary #6	Ensure compatibility between the two deliverables: assert how SG1 guidance can take advantage on SG2 supplement.	Cook, Ata	Plenary #7	Open	
17	Plenary #7	SG leadership meeting - meet with leads to harmonize the schedule	Ata	5-Aug-2021	Open	

MINUTES, DAY 2
Tuesday 27 July 2021
1500 CET (UTC +2) / 0900 EST (UTC -4)

1. **1500/0900 Welcome; Breakout groups, continued**

Agenda for day 2:

- Breakout groups, continued [All]
- SG-1 Status, Issues, Way Forward [Hannan/Stempel]
- SG-2 Status, Issues, Way Forward [Lillis/Serrot]
- Identification of blocker issues (if any) for FRAC/OC [Ata/Cook]
- Review of Actions [Ferrand/Hoag]
- Date of Next Meeting/s [Ata/Cook]
- Any other business [All]
- Adjourn

Breakout groups for SG-1 and SG-2 resumed, continuing from day 1.

2. **1735/1135 SG-1 Status, Issues, Way Forward**

Todd Stempel presented on behalf of SG-1.

Slide presented: SG-1 Plenary Outputs

- Worked SCM comments and addressed all high and medium priority comments – SCM team will continue to integrate comments with text
- Discussed schedule and priorities – we [SG-1] are in better shape than the report but need to rejig dates – no impact on end date
- Monday August 2: (a) rejig dates (b) address the issues list

Slide presented: Table of status by IP (note that the dates on slides incorrect at presentation)

Discussion included several questions around complexity, DAL and manned vs unmanned craft.

- Steve Cook inquired about the note listing IP 1008 as the highest priority. Todd Stempel clarified that there is a separate IP 1008 meeting every Wednesday at 2pm pacific time. Rebecca Morrison asked for clarification regarding the meeting attendance this is open to all of SG-1 or a limited set of people.
- Steve Cook asked about IP 1013 on Data Items – it is only at 10%. Steve Cook also mentioned that SG2 had PDI. Todd Stempel noted that IP 1030 Data items is not PDI (DO-178C/ED-12C context) but the software lifecycle data required for the lower risk software. The original plan was to request that each of the process IPs disclose the outputs of the specific outputs addressed by the compartmentalized approach and then collect in 1013. Todd expressed a plan to speed this up rather than data mining the other IPs.
- In discussion, Todd Stempel noted that SG-1's going in position for the lower risk was "notionally equivalent level DAL C."
- Steve Cook noted that 1017 is more stringent than 3150a which is already accepted for GA; wants to keep it in the core document.
- Steve Cook addressed comments related to DO-248. Rebecca Morrison noted the history of one SC trying to change another SC's document – this was rejected by the PMC. The committees and their relationships must be defined, and the chairs need to bring it to the PMC for review and approval. The SC cannot make assumptions on scope. FAS business is not in scope for SC-240/WG-117 today. Steve noted that if we did want to do something with DO-248 we would want something like ISRA to define the relationships. Todd Stempel agreed that it sounds reasonable. Rebecca noted that once the FAS becomes its own special committee, we can work it out.

- In discussion, Mark Lillis noted that DO-331 has defined SRATS: System Requirements Allocated to Software.

3. 1808/1208 SG-2 Status, Issues, Way Forward

Mark Lillis and Patrick Serrot presented on behalf of SG-2.

SG-2 Status

- When referring to open source and service history do not claim “not applicable to DAL A or DAL B.” The process in this case may be difficult but it cannot be portrayed as impossible.
- SG-2 noted that the artifacts used are not black and white – service history, COTS, et. cetera are all part of a safety case. There may be different combinations of evidence to meet this (examples: what if the source code is not available? What do you do for the higher levels? What about coverage?)
- What is “residual error rate” and how does it relate to service history. Are there cases when service history is higher than DAL A or DAL B?
 - Discussion - While DAL A and DAL B have residual errors, they do not affect safety.
 - Service history does not exercise full robustness – it covers the normal case and the “normal abnormal” cases. So you can use service history but not for the robustness.
- SG-2 needs to work on objective table

Discussion with plenary

- Steve Cook asked a question regarding the note about the safety case and where. Mark Lillis noted the artifact will not be the perfect cookbook for any combination of COTS, Open Source, Service History – there are too many variables.
- Group discussion on what is valid and what is not? The gray area in the middle is the difficult part.
- Burak Ata asked if there are any support needs to highlight. Mark needs more people willing to take a shot at writing things. Everyone (even new members) can contribute. Will make the draft of the table.

4. 1827/1227 Identification of Blocking Issues Prior to FRAC and OC

For shared awareness of the critical path, Steve Cook led the discussion on any blocking issues facing the subgroups prior to FRAC and OC.

Steve asked Todd Stempel to provide the top three blockers for SG-1. Todd highlighted:

1. Associated with transitioning criteria and the degree to which the lower risk items needs to retain an expectation for observing and measuring transition criteria.
2. Transitioning our terms for "Software Quality Assurance" to "Software Process Assurance" so there's some contention over the acceptability of this transition.
3. Process convention of performing full verification in lieu of full change control consistent with DO-178C.

Steve asked Todd how confident he is on resolution. Todd is confident but noted it is important to understand during the process of drafting text what the regulators will be interpreting.

Mark Lillis highlighted the blockers for SG-2:

1. Service history hours and applicability. Is there an industry or regulatory value for expected or acceptable residual error rate per assurance level? (Regulator/researcher question – can we find data?)
2. Nothing else blocking SG-2.

5. 1835/1235 Review of Actions

Andy Hoag reviewed the action item list along with notes. The group agreed on closure of action item #14. Action item #17 was added to the list for Burak Ata to harmonize the schedule.

6. 1841/1241 Date of Next Meeting/s; Any other business; Adjourn

Plenary #8 date change: Tue-Thu 28-30 September 2021

Discussion about meeting in-person and impact COVID-19 has had on our industry and logistics around travel.

Option A (default): All meet at EUROCAE HQ in Paris. Virtual option provided.

Option B: North American participants

Mike Vukas commented on what he heard participating in SG-1 – give credit to everybody for the participation and hard work. Wanted to make it a point that change is always a challenge no matter what it is. How can new technology help us (e.g. automation in verification). Happy to hear that we are thinking out of the box and bringing new ideas forward.

In the final notes and closing Steve Cook asked for statements from the leadership. Positive feedback was presented by all members of the leadership.

The WG/SC thanks all for their involvement.

Plenary #7 was closed.

End of Day 2, 1901/1301

GLOSSARY OF TERMS, ABBREVIATIONS, AND ACRONYMS

This table is intended as quick reference for minutes and does not supersede respective authoritative sources.

SC-240/WG-117 SG-1/SG-2 developed a Common Glossary available in the SG-1 workspace.

Term	Usage	See Also; Context
AL	Assurance Level	DO-278A/ED-109A
COTS	Commercial off-the-shelf	
DAL	Design Assurance Level	DO-178C/ED-12C
GA	General Aviation	
EASA	European Union Aviation Safety Agency	
EASA SORA	EASA Specific Operations Risk Assessment	
FAA	Federal Aviation Administration	
FAA MOSAIC	FAA Modernization of Special Airworthiness Certification	
FAS	RTCA/EUROCAE Forum for Aeronautical Software	
FRAC	RTCA Final Review and Comment	
IP	Information Paper	
IPR	Intellectual Property Rights	
ISRA	Inter-Special Committee Requirements Agreement	
OC	EUROCAE Open Consultation	
PDI	Parameter Data Item	DO-178C/ED-12C
PMC	Program Management Committee	
SC	Special Committee (RTCA)	
SG	Subgroup	
SW	Software	
TOSA	Topics on Software Advancement	
WG	Working Group (EUROCAE)	

ATTACHMENT A

WG-117/SC-240 Meeting 7 Attendance

Surname	Firstname	Organization
Ata	Burak	Volocopter
Blankenberger	Martha	Rolls-Royce PLC
BOURDEAU	Julien	Aviadal
Conner	Blake	Collins Aerospace
Cook	Stephen	Northrop Grumman Corporation
Crestey	Francoise	
Darwin	Keith	Garmin Ltd.
Decker	Christian	
Diebold	Mitchell	Garmin Ltd.
DÖRHÖFER	Christoph	Amazilia Aerospace
Dutle	Aaron	NASA
Dykes	Matthew	Textron
Eliahoo	Sharon	
ELLIOTT	Philip	Rolls-Royce
FISH	Johannes	LH Systems
FREESE	Dietmar	EASA
GHIMIRE	Ritesh	Federal Aviation Administration (FAA)
Hannan	Ross	Sigma Associates (Aerospace)
HEUDE	Pascal	Airbus
Hoag	Andrew	Aireon, LLC
Holman	Jeremy	Garmin Ltd.
Iwaszkiewicz	Tomasz	VEROCEL, Inc.
Johnson	Matthew	
Lillis	Mark	Triumph Engine Control Systems
Melia	Gabriele	EASA
MELLES	Amanda	Mannarino Systems & Software, Inc.
MEYERS	Scott	Collins Aerospace
MINDKER	Uzi	IAI
Momberg	Martin	Airbus
Morrison	Rebecca	RTCA, Inc.
NAGARAJAN	Pranav	University of Munich
Nakao	Haruka	JAMSS
PALMA	Diego	Agência Nacional de Aviação Civil (ANAC-Brazil)
Peters	Kelly	Piper Aircraft
Papadatos	Pater	Honeywell International, Inc.
Rai	Malkit	General Atomics Aeronautical Systems, Inc.
REEVE	Tammy	Patmos Engineering
Reschenhofer	Sebastian	EUROCAE
Romanski	George	Federal Aviation Administration (FAA)
SAKUGAWA	Benedito	Agência Nacional de Aviação Civil (ANAC-Brazil)
Serrot	Patrick	Thales Group
Snider	Tom	Honeywell International, Inc.
Soudain	Guillaume	EASA
SPENCER	Richard	Federal Aviation Administration (FAA)
Stempel	Todd	ENSCO, Inc.
Tudor	Nick	Tudor Associates Ltd
Torens	Christoph	DLR
Vukas	Mike	Federal Aviation Administration (FAA)
Waddle	John	Astronautics Corporation of America

1. Records and control of the document

Revision	Description of changes	Author	Location	Comments
1.0	Initial version	Andrew Hoag		