



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

**Process owner:**  
Anna von Groote

**Document owner:**  
Fabrice Ferrand


**Reference EUR:** 146-20/WG117-002  
**Reference RTCA:** 150-20/SC240-002

**Version:** v1.0  
**Dated:** 08/06/2020

**No pages:** 21

## EUROCAE WG-117 / RTCA SC-240 Topics on Software Advancements (TOSA) Plenary Meeting 1

### WG meeting minutes

	Date	Name	Signature
Approved	08/06/2020		
Reviewed	08/06/2020		
Prepared	07/06/2020	Andrew Hoag Fabrice FERRAND	



[EUR 146-20/WG117-002]  
[RTCA 150-20/SC240-002]

[June 07<sup>th</sup> 2020]

## **EUROCAE WG-117 / SC-240 “Topics on Software advancements (TOSA)”**

### **Meeting #1 Calling Notice**

<i>Date</i>	<i>19 – 20 May 2020</i>
<i>Place</i>	<i>15:00 – 20:00 CEST / 09:00 – 14:00 EDT</i>
<i>Venue</i>	<i>Virtual (Webex)</i>
<i>Hosted by</i>	<i>RTCA: 792478613@rtca.webex.com</i>

### **MINUTES, DAY 1**

#### **1. Welcome**

##### **RTCA President & CEO Terry McVenes addressed the group:**

- SC-240 and WG-117 is an opportunity to provide guidance for UAS software and to fill the gaps.
- Timeline and goal are aggressive but needed.

##### **EUROCAE Secretary General Christian Schleifer addressed the group:**

- DO-178/ED-12 is a well-known standard and has a lot of value
- This effort will make it more practical for low risk applications, and potentially general aviation
- Development of standards for VTOL and UAS in progress
- Interest by registered experts and industrials

## **2. Introductions – tour de table**

### **Introduction of Management team:**

- **RTCA:**
  - Vice President, Aviation Technologies and Standards: **Al Secen**
  - Program Director: **Rebecca Morrison**
- **EUROCAE:**
  - Director, Technical Programme: **Anna von Groote**
  - **Sebastian Reschenhofer**

### **Presentation of the agenda.**

### **Important policies highlighted by Rebecca Morrison:**

- **Anti-Trust Policy:**
  - Bringing together governments and industry in a single consortium requires specific rules.
  - Important to keep discussion purely at technical level. Management Team will take measures if not strictly followed.
- **RTCA Proprietary policy:**
  - Differences with EUROCAE but globally same philosophy,
  - The preferred and highly endorsed method for producing RTCA documents is to do so without reference to proprietary information (that is proprietary, patented, patent pending, or copyrighted material) including requirements, normative text, supplemental text, and appendices.
- **RTCA Committee participation membership policy:**
  - Participation in committees requires RTCA membership.
  - Individuals from Non-RTCA member organizations may attend Committee Plenary meetings that are announced on the RTCA.org website and in industry publications

### **Important policies highlighted by Anna von Groote:**

- **EUROCAE Proprietary policy:**
  - IP policy: consider dependency on patents for the production of documents and should be avoided as much as possible.
  - Proprietary information dependency shall be communicated as soon as possible.
- **EUROCAE membership:**
  - Activities reserved for EUROCAE members.

### **WebEx meeting tips and recommendations were explained**

### **Roll Call of participants:**

The participants that were in attendance for the online meeting are listed in Attachment A.

### **Presentation of leadership:**

- **RTCA leadership:**
  - Chair: Introduction of Stephen Cook, Northrop Grumman
  - Secretary: Andy Hoag, Aireon
  - Government Authorized Representative (GAR): Barbara Lingberg, FAA
- **EUROCAE leadership:**
  - Burak Ata : proposed for chair
  - Fabrice Ferrand : proposed for secretary

### 3. **Determination of EUROCAE WG-117 Chair and Secretary**

**Anna von Groote makes an online poll to participants:**

- **Poll:** “Any objection to EUROCAE appointments proposed for chair and secretary”:
- **Result:** no hands raised, taken as agreement.

### 4. **Summary presentation of EUROCAE and RTCA and WG/SC process**

**RTCA:** Rebecca Morrison presented process slides.

**EUROCAE:** Anna von Groote presented process slides.

**Joint Document Development:**

- Anna von Groote explained the principles and processes,
- General recommendations to comment and edit documents.
- Highlight on “Consensus”

**Anna asked participants for feedback:**

- Questions / remarks?
- No raised hands, no remarks.

---

---

15mins. break

---

---

## **5. Participants' presentations of background, experience and expectations**

### **Participant presentations:**

- Burak Ata - Volocopter
- Fabrice Ferrand – Safran
- Dr. Stephen Cook – Northrop Gummman
- Andy Hoag – Aireon
- Barbara Lingberg – FAA
- Guillaume Soudain – EASA
- Odile Auzary – Safran
- Patty Bath – AVISTA Inc.
- Martha Blankenberger – Rolls Royce
- Valentin Brossard - Hionos
- Jim Chelini – Verocel
- Blake Connor – Collins Aerospace
- Christian Decker – GE Aviation Systems
- Konstantin Dmitriev - Technical University of Munich & MathWorks
- Dr. Aaron Duple – NASA Langley
- Matthew Dykes – Textron Aviation
- Jamal Fegghi – BCA Airborne Software
- Keith Darwin – Garmin
- Jeremy Holman – Garmin
- Stefan Hristozov – Unmanned Systems Bulgaria
- Jim Krodel – Aerospace Software Consulting
- Mark Lillis – Triumph Group
- John Mannarino - MANNARINO Systems & Software
- Amanda Melles - MANNARINO Systems & Software
- Robert McGivern- Beca Applied Technologies

### **No questions from participants regarding presentations.**

### **A few words from Burak:**

- Definition of low risk, same topics and concerns among participants.
- Interesting points to discuss in next sessions.

---

---

15 mins. break

---

---

**Continuing participant presentations.**

- By Steve Cook : Review of slides received
- From Johnny A. Mowry up to end of document 1\_Contributors.pdf (available on shareplace).
- Johnny A. Mowry - Textron Aviation
- Haruka Nakao – Japan Manned Space Systems Corporation
- Nayyar Rao – Honeywell
- Peter Papadatos – Honeywell
- Gordon Putsche – BCA Airborne Software
- Malkit Rai – General Atomics Aeronautical Systems
- Nathan Romine – GE
- Steve Rosker – Avidyne
- Patrick Serrot – Thales
- Tom Snider – Honeywell
- Todd Stempel – ENSCO
- Edwin van de Sluis – NLR
- Philip Watson – Panasonic Avionics
- Ross Hannan – Sigma Associates
- Ed Hahn – Air Line Pilots Association
- Dr. Martin Momberg – Airbus

**Questions from presentations:**

- **Steve Cook for Peter Papadatos:**
  - What is “PDS credit” ? Previously Developed Software.
- **Steve Cook for Edwin van de Sluis**
  - Is the Report on study for NL-MoD on “black-box software certification” available to be shared with the Working Group ?
  - Edwin answered he will check.

**Additional presentations added:**

- Ross Hannan – Sigma Associates
- Ed Hahn – Air Line Pilots Association
- Dr. Martin Momberg - Airbus
- John Waddle – Astronautics Corporation of America

**From management team co participants:**

People that could not attend will be introduced in next meetings.

**A few words from Steve:**

- All participants have great background and can bring valuable inputs and support to this SC/WG.
- This variety of experience will help to produce high quality documents.

## **6. Review of WG objectives and ToR**

### **Anna:**

- WG/SC objectives and ToR
- Document format end procedures slightly different RTCA / EUROCAE.
- **Note that the ToR revision first distributed had an error, Anna has updated the correct document on sharepoint.**

### **Steve :**

- SC240 ToR received ~60 comments.
- **Participants are invited to review comments and think about possible resolution for proposal on Day 2.**

### **Rebecca:**

- RTCA ToR approved by PMC
- Quick review of ToR content.
- **Focus on publication date, to be aligned to PMC meetings**

### **Question from John Angermayer:**

- Do we need to consider security or hardware material, for security applications (e.g. DO 254, ... ?)
- Steve noted this topic shall be discussed in Day 2.
- Rebecca noted the only documentation to be considered is listed in the ToR, hence only software material.

---

---

Adjournment

---

---

### **Recommendations to participants for Day 2:**

- Review comments spreadsheet,
- be prepared to review items as per agenda item 6.

### **Steve reviewed the agenda for Day 2:**

- Question from group: provide link to spreadsheet
- Rebecca and Anna noted that the documents are on the workspace.
  
- Question regarding multiple workspaces at workspace.rtca.org and the EUROCAE SharePoint
- Rebecca & Anna : content of both workspace will be harmonized.

---

---

End of Day 1, 13:32 EDT / 19:32 CEST

---

---

## **MINUTES, DAY 2**

### **1. Welcome – 0900 EDT / 1500 CEST**

**Welcome message from Burak ATA.**

**Presentation of 8 new participants/organization not presented in Day 1:**

- Emmanuel CHENU - Thales Avionics
- Ales SIARD - AES Embedded Solutions
- Martin Momberg, David Leroux, Sebastien Falcoz, Hervé Delseny, Christophe Cucuron, Louis Fabre - Airbus Helicopters
- Patrick Desbiens - Transport Canada
- Philippe Robert - PMV Engineering
- Jasmina Surlan - Frequentis
- George Romanski - FAA
- Scott Beecher - Pratt & Whitney

**Steve Cook briefly reviewed the agenda for today and topics to be discussed.**

### **6. Review of WG objectives and ToR – 0924 EDT / 1524 CEST**

The SC/WG received 60 comments on the Terms of Reference (ToR) to be dispositioned, High, Medium, Low, Editorial, starting with highest priority. The consolidated ToR comments list was posted to the RTCA SC-240 workspace under Meetings/Meetings 2020/May 19-20, 2020 – Virtual Plenary/TOR Review. During the meeting, S. Cook proposed that editorial comments can be accepted and merged offline, there were no objections.

#### **Comment line 2:**

Stephen Cook: 5 comments “Low risk” from Stephen Cook. Several definitions of Low Risk, not fully aligned (JARUS, ...). Propose to reformulate and leave the topic as action for Low Risk Application document. Objective to find a generic term and further debate and comment on the meaning.

Mike Vukas: Based on low risk, small UAS are not out of scope.

Guillaume Soudain: propose Lower risk to avoid difficulty using the standard in another context (SAL4/SAL5)

Barbara Lingberg: the term Low is already used; it cannot be lower than certified it could lead to a contradiction.

John Angermayer: Use of Low is meaningful for military, the ‘not critical’ meaning is used.

Ed Hahn: consider using ‘lower application’ without losing the connection with UAS.

Tammy Reeve: first establish categories and then identify the term. Define where we are in risk scales, and then a term can be found.

Ross Hannan: need to make clear the equipment in scope and the operational in scope. Both terms Low and Lower are unclear. Must not underestimate the effort to get an agreement.



Stephen Cook: changing the word will not erase issues. Only trying to find a generic term to work on. Propose to add a footnote.

Burak agrees.

Patrick Debiens : exemplifying will help to understand. We need concepts by we also need instantiation to come to a consensus.

**Comment line 3:**

Reformulation agreed with footnote.

**Comment line 5:**

Same as “Low risk discussion”.

**Comment line 7:**

Reformulation agreed.

**Comment line 12:**

Barbara Lingberg: already discussed in comment 2.

**Comment line 13:**

Tammy Reeve: ‘Low’ is not associated with an effect, propose to define a term with respect to consequences it entails.

Guillaume Sodain: Less Rigorous is not appropriate with the flavor of the standard. Tailored could also be acceptable because it does not bring a judgement.

Barbara Lingberg: simplified cannot be understood. Important to come to an agreement, Low risk is already used and agree with this and footnote. From background, meaning of words important. Ok to leave it for now and work on it later.

Todd Stempel: if terms are subjective, they need to be fully defined.

Stephen Cook: first task to work on for document 1.

Anna von Groote: initially, no technical thoughts in mind, only be easier for development.

Ross Hannan: propose less rigorous to avoid tu use Low risk with two different meanings.

Jim Kridel: agree with “tailored” for now on.

---

---

10:20 EDT / 16:20 CEST  
10 mins. break

---

---

**Comment line 14:**

Barbara Lingberg: Slight differences between Tor RTCA and EUROCAE.

Anna van Groote: Yes the intention is to apply to both documents for consistency.

Stephen Cook: propose to shorten the sentence.

**Comment line 15:**

Barbara Lingberg: Title of 2<sup>nd</sup> document is not clear. Update text and title with “consideration” ? May or may not be acceptable by PMC, take into account that ToR must be aligned with PMC expectations that may demand additional oversight.

Stephen Cook: titles shall be defined by WG/SC. Prefer not to decide titles today.

John Angermayer: DO-248 used word “clarification”

Giuseppe Graniero: confused with the title of the second document. Service History is not software, but safety assurance.

Stephen Cook: propose to discuss titles later on.

**Comment Line 22:**

Stephen Cook: copy paste error, the remark should be fixed.

Mike Vukas: agree.

**Comment line 26:**

Tammy Reeve: security aspects are going to be important when establishing facts or implications. Security guidance DO-0356 and DO-355 should be included. ToR should take this into account in “Additional Considerations” section.

Future standard is at system level, need to introduce the concepts related to security in the guidelines produced. Need at least to have the acknowledgement of threats in the process.

Tammy agree with the conclusion of the discussion provided notes are detailed in system overview section.

Ross Hannan : include security as we do with safety, with requirements.

Jim Krodel: topic has been already discussed and difficult to establish a consensus. Security is put in place at system definition.

Philippe Robert: DO 355 & 356 are focused to aircraft, and system oriented not software. If security is not handled at system level, one cannot think it is solved.

Dietmar freeze: should not mix security and safety assessment. All aspects have to be addressed to meet safety assurance.

Louis Fabre: Specific process for safety and security, and addressed at aircraft level. Even on level D, some activities can take place, like security. Does not seem to be a need to add security considerations to this standard.

Anna von Groote: Security is an important topic but was not initially planned to be part of the documents and not main focus of this group, some forewords or notes can be added, and several security related documentation already exist. Contact with Security group should be made to discuss on how to address the gap.

Stephen Cook: WG/SC not scoped to make a full document for security purposes, more time and resources will be needed, topic should be discussed further with PMC/TAC.

Guillaume Soudain: agree with the proposal. Example of IA working group that has links with security group, so it can also be applied here.

Rebecca Morrison: DO 178 published seems different to what PMC/TAC expect now.

Al Secen: PMT should always be informed of discussions of WG/SC. Documents produced can identify security issues but not necessarily solve them.

Stephen Cook: further discussions within management committee to solve the issue and have additional discussions with EUROCAE and RTCA.

**Comment Line 53:**

Jim Krodel: Low risk already discussed. Regarding guidance, maybe a conflict with DO-178 guidance in COTS section. ToR does not really need to be changed.

Stephen Cook: agree, needs to be discussed with integration of COTS. Another comment mentioned potential contradictions. How to address comment ?

Rebecca Morrison: This committee will not supersede the FAS,

Anna von Groote: FAS objectives is identify gaps, and at leadership level, a link with the FAS should be put in place, and not going back to PMC/TAC.

**Comment Line 55:**

Andy Thurling: comment already answered with updated ToR. Comment line 57 is responded by discussions on Low Risk.

**Comment Line 59:**

This comment is a duplicate of line 55.

---

---

11:41 EDT / 15:41 CEST  
10 mins. break

---

---

**New High Comment line 62:**

Giuseppe Graniero : we need to review definition of COTS. On ground system, we use a lot of COTS that we sometimes modify. We need an agreed definition to be applicable to ground and air.

**Stephen Cook: review medium comments.**

**Comment Line 6:**

Stephen Cook: reformulated to be consistent. New formulation in line with Guillaume Soudain comment.

Guillaume Soudain: Consistent and not contradict do not mean the same, we need something compatible. Indeed, contradict appeared to be correct to what we expect.

**New question:**

John Angermayer: What does Levelling Objective mean ?

Stephen Cook : Explained page 9 of ToR.

Dewi Daniels: Discussed possibility to add a single new software levels between Level C and Level D, and the same between Level D and E, that's where came from the wording but was only a discussion (e.g. where Level C is too much and level D is not enough)

Guillaume Soudain: confirms and we need a rationale in case of new levels, and this will have to be extended to the safety objectives. Be careful not limiting the work to levelling.

Barbara Lingberg: The ToR did not took into account different meaning for COTS. Compatible can be OK for now and better than consistent.

**Comment Line 8:**

Guillaume Soudain: Applications is a problem : low risk from operations and then we miss products certification.

Fabrice Ferrand: be careful on the wording "certification" vs. "approval" could mean ground or airborne because different terminology in DO 278 and DO 178.

Stephen Cook: leave titles to further discussions.

**Comment Line 9:**

Stephen Cook: leave titles to further discussions.

**Comment Line 10:**

Stephen Cook: leave titles to further discussions.

**Comment Line 21:**

Stephen Cook: Comment already addressed.

Dewi Daniels: First purpose was on UAS, if possible to apply to DO-178, then OK, but UAS was initially targeted.

Barbara Lingberg: FAS made recommendations, but is the WG/SC bound to FAS recommendations only ? A lot of people are not member of FAS.

Stephen Cook: FAS cannot produce standard, but the our scope agreed by PMC/TAC.

Al Secen: FAS Ad Hoc made recommendations to PMC/TAC and PMC/TAC committed this committee. Recommendations cannot be altered because need to go back to PMC/TAC.

Anna von Groote: Agree with Al. We are not bound by the FAS report, but by the ToR.

**Comment Line 23 & 24:**

Stephen Cook: Comment similar.

Mike Vukas: Yes, and addressed by discussion on “Low Risk” definition.

**Comment Line 27:**

Andy Hoag: reword airborne sections to include ground software (potential for CNS/ATM).

Stephen Cook: Be careful, CNS/ATM does not include cockpit.

Anna von Groote: Airborne and ground systems can be discussed, ToR initially meant for that.

Stephen Cook: ToR can discuss ground systems in its current form.

**Comment Line 42 & 43:**

Ross Hannan: on ground systems, we use Assurance Level, airborne, we use Software levels.

Guillaume Soudain: we can create a supplement that goes beyond existing guidance, without beeing limited by software level and assurance level. It can be managed.

**Comment Line 45:**

Stephen Cook: Addressed by foot note.

**Comment Line 46:**

Stephen Cook: Proposed resolution agreed.

Nick Tudor: We are not producing a new process, guidance would be better. Alternative methods is not a process, it is a guidance in DO-178C. Means of compliance is the matter of regulators.

Todd Stempel : also consider alternative methods from DO-178C ?

Barbara Lingberg: since we do not have final output, we cannot tell we will produce documents acceptable for regulators.

**Comment Line 54 & 58:**

Stephen Cook: Already answered, defined by WG/SC.

**Comment Line 56 & 60:**

Stephen Cook: Already answered by Rebecca on first day.

---

---

12:43 EDT / 18:43 CEST  
7 mins. break

---

---

**Stephen Cook: review low and editorial comments.**

Stephen Cook: Propose that editorial comment be accepted directly.

**Comment Line 11:**

Stephen Cook: Proposed resolution accepted.

**Comment Line 29:**

Stephen Cook: Proposed resolution accepted.

**Comment Line 40:**

Stephen Cook: Proposed resolution accepted.

**Comment Line 48:**

Stephen Cook: Proposed resolution accepted.

**Stephen Cook: End of ToR review, updates of comments spreadsheet will be uploaded to workspace.**

**Note: The spreadsheet takes precedence over the documented discussions in these minutes.**

## **7. Review of existing material & context**

Stephen Cook: recommend to read the report from the FAS working group. Report available on workspace.

Jim Krodel: quick presentation of slides on report presented to EUROCAE TAC:

REPORT ON THE APPLICABILITY OF THE DO-178C/ED-12C RELATED SET OF SOFTWARE DOCUMENTS FOR THE DEVELOPMENT OF UAS SOFTWARE

## **8. Development of draft Work Plan, schedule, deliverables & task allocation**

Anna von Groote: slides available online by the end of the meeting.

Giuseppe Graniero: Question on slide 62: why not including ED 153 ?

Ross Hannan: because not produced by software group from RTCA and EUROCAE, so no control on the content of this document.

Stephen Cook: to all participants:

Visit URL <https://eurocae.typeform.com/to/Q2KCqi>

**Participants will be requested to express their intended contribution to the documents and to working groups. The management team needs leaders and documents editors as well as active contributors and reviewers.**

**Rebecca presents workspaces and duplicate area issues:**

- EUROCAE is 'truth' location,
- RTCA is the mirror.

**Rebecca presents DRAFTING and STYLE guides, participants must use the templates to ease documents production and reduce risks of publishing process.**

**One document editor, i.e. one person per document will be identified.**

**9. Date of next meetings**

Barbara Lingberg: Next meetings: proposed are full weeks, is it 5 days meeting ? Take care of holidays for different locations.

Stephen Cook: Add a location to put suggestions by participants.

**10. Adjourn**

**Closing comments**

Stephen Cook: thanks to the whole group and participants

Barbara Lingberg: thanks to all participants and to leadership

Anna von Groote: thanks for contributions, great membership

Al Secen: thanks to all contributions and best wished for next steps.

**Steve Cook adjourned the meeting**

---

---

End of Day 2, 13:37 EDT / 19:37 CEST

End of meeting

---

---

**Action items**

The meeting reviewed the action list and updated the following list:

No actions have been decided during the meeting.

<b>Number</b>	<b>Action</b>	<b>Responsible</b>	<b>Due By</b>	<b>Status</b>
<i>n/a</i>	n/a	<i>n/a</i>	n/a	n/a



## ATTACHMENT A

### WG-117/SC-240 Meeting 1 – day 1 attendance

Due to the specific format of the meeting (online WebEx), attendance cannot be signed by each participant.

<b>Surname</b>	<b>First name</b>	<b>Organization</b>
ANGERMAYER	John	The MITRE Corporation
ATA	Burak	Volocopter
AUZARY	Odile	Safran
BATH	Patty	AVISTA, Inc
BEECHER	Scott	Pratt & Whitney
BLANKENBERGER	Martha	Rolls-Royce PLC
BROSSARD	Valentin	Hionos
CHELINI	Jim	VEROCEL, Inc.
CHENU	Emmanuel	Thales Group
CONNER	Blake	Collins Aerospace
COOK	Stephen	Northrop Grumman Corporation
CUCURON	Christophe	Airbus
DANIELS	Dewi	Software Satefy
DARWIN	Keith	Garmin Ltd.
DECKER	Christian	GE Aviation
DELSENY	Herve	Airbus
DESBIENS	Patrick	Transport Canada
DIEBOLD	Mitchell	Garmin Ltd.
DMITRIEV	Konstantin	Techncial University Munich & MathWorks
DUTLE	Aaron	NASA
DYKES	Matthew	Textron
ELIAHOO	Sharon	Elbit Systems
FABRE	Louis	Airbus Helicopters
FEGHHI	Jamal	The Boeing Company
FERRAND	Fabrice	Safran
FREESE	Dietmar	EASA
GRANIERO	Giuseppe	ENAV SpA
HAHN	Ed	Air Line Pilots Association (ALPA)
HANNAN	Ross	Sigma Associates (Aerospace)
HOAG	Andrew	Aireon, LLC
HOLMAN	Jeremy	Garmin Ltd.
HRISTOZOV	Stefan	Unmanned Systems Bulgaria
KRODEL	Jim	Aerospace Software Consulting
LILLIS	Mark	Triumph Engine Control Systems
LINGBERG	Barbara	Federal Aviation Administration (FAA)
MANNARINO	John	Mannarino Systems & Software, Inc.
MCGIVERN	Robert	Beca Applied Technologies
MELIA	Gabriele	EASA
MELLES	Amanda	Mannarino Systems & Software, Inc.
MINSKER	Uzi	IAI
MOMBERG	Martin	Airbus
MORRISON	Rebecca	RTCA, Inc.
MOWRY	Johnny	Textron
NAKAO	Haruka	JAMSS
PAPADATOS	Pater	Honeywell International, Inc.
PAPINI	Marco	FlyingBasket
PINTO	Pablo	Abionica Solutions SLP
PUTSCHE	Gordon	The Boeing Company
QUINTANA	Marcos	TBC

RAI	<b>Malkit</b>	<b>General Atomics Aeronautical Systems, Inc.</b>
RAO	<b>Nayyar</b>	<b>Honeywell International, Inc.</b>
REEVE	<b>Tammy</b>	<b>Patmos Engineering</b>
RESCHENHOFER	<b>Sebastian</b>	<b>EUROCAE</b>
ROBERT	<b>Philippe</b>	<b>PMV Engineering</b>
RODRIGUEZ	<b>David</b>	<b>TBC</b>
ROMANSKI	<b>George</b>	<b>Federal Aviation Administration (FAA)</b>
ROMINE	<b>Nate</b>	<b>GE Aviation</b>
ROSKER	<b>Steven</b>	<b>Avidyne Corporation</b>
SECEN	<b>Albert</b>	<b>RTCA, Inc.</b>
SERROT	<b>Patrick</b>	<b>Thales Group</b>
SIARD	<b>Ales</b>	<b>AES Aerospace Embedded Solutions GmbH</b>
SNIDER	<b>Tom</b>	<b>Honeywell International, Inc.</b>
SOUDAIN	<b>Guillaume</b>	<b>EASA</b>
STEMPEL	<b>Todd</b>	<b>ENSCO, Inc.</b>
THURLING	<b>Andy</b>	<b>Northeast UAS Airspace Integration Research Alliance (NUAIR)</b>
TUDOR	<b>Nick</b>	<b>Tudor Associates Ltd</b>
VAN DE SLUIS	<b>Edwin</b>	<b>NLR</b>
VIDA	<b>Jan</b>	<b>Honeywell International, Inc.</b>
VON GROOTE	<b>Anna</b>	<b>EUROCAE</b>
VUKAS	<b>Mike</b>	<b>Federal Aviation Administration (FAA)</b>
WADDLE	<b>John</b>	<b>Astronautics Corporation of America</b>
WATSON	<b>Phil</b>	<b>Panasonic Avionics Corporation</b>
ZAFAR	<b>Shanza Ali</b>	<b>Institute of Flight System Dynamics</b>

**ATTACHMENT B****WG-117/SC-240 Meeting 1 – day 2 attendance**

Due to the specific format of the meeting (online WebEx), attendance cannot be signed by each participant.

<b>Surname</b>	<b>Firstname</b>	<b>Organization</b>
ANGERMAYER	John	The MITRE Corporation
ATA	Burak	Volocopter
AUZARY	Odile	Safran
BATH	Patty	AVISTA, Inc
BEECHER	Scott	Pratt & Whitney
BLANKENBERGER	Martha	Rolls-Royce PLC
BROSSARD	Valentin	Hionos
CHELINI	Jim	VEROCEL, Inc.
CHENU	Emmanuel	Thales Group
CONNER	Blake	Collins Aerospace
COOK	Stephen	Northrop Grumman Corporation
CUCURON	Christophe	Airbus
DANIELS	Dewi	Software Satefy
DARWIN	Keith	Garmin Ltd.
DECKER	Christian	GE Aviation
DELSENY	Herve	Airbus
DESBIENS	Patrick	Transport Canada
DIEBOLD	Mitchell	Garmin Ltd.
DUTLE	Aaron	NASA
DYKES	Matthew	Textron
ELIAHOO	Sharon	Elbit Systems
FABRE	Louis	Airbus Helicopters
FEGHHI	Jamal	The Boeing Company
FERRAND	Fabrice	Safran
FREESE	Dietmar	EASA
GRANIERO	Giuseppe	ENAV SpA
HAHN	Ed	Air Line Pilots Association (ALPA)
HANNAN	Ross	Sigma Associates (Aerospace)
HOAG	Andrew	Aireon, LLC
HOLMAN	Jeremy	Garmin Ltd.
HRISTOZOV	Stefan	Unmanned Systems Bulgaria
KRIDEL	Jim	Aerospace Software Consulting
LILLIS	Mark	Triumph Engine Control Systems
LINGBERG	Barbara	Federal Aviation Administration (FAA)
MANNARINO	John	Mannarino Systems & Software, Inc.
MELIA	Gabriele	EASA
MINSKER	Uzi	IAI
MOMBERG	Martin	Airbus
MORRISON	Rebecca	RTCA, Inc.
MOWRY	Johnny	Textron
NAKAO	Haruka	JAMSS
PAPADATOS	Pater	Honeywell International, Inc.
PINTO	Pablo	Abionica Solutions SLP
PUTSCHE	Gordon	The Boeing Company
RAI	Malkit	General Atomics Aeronautical Systems, Inc.
RAO	Nayyar	Honeywell International, Inc.
REEVE	Tammy	Patmos Engineering
RESCHENHOFER	Sebastian	EUROCAE
ROBERT	Philippe	PMV Engineering

ROMANSKI	<b>George</b>	<b>Federal Aviation Administration (FAA)</b>
ROMINE	<b>Nate</b>	<b>GE Aviation</b>
ROSKER	<b>Steven</b>	<b>Avidyne Corporation</b>
SECEN	<b>Albert</b>	<b>RTCA, Inc.</b>
SERROT	<b>Patrick</b>	<b>Thales Group</b>
SIARD	<b>Ales</b>	<b>AES Aerospace Embedded Solutions GmbH</b>
SNIDER	<b>Tom</b>	<b>Honeywell International, Inc.</b>
SOUDAIN	<b>Guillaume</b>	<b>EASA</b>
STEMPEL	<b>Todd</b>	<b>ENSCO, Inc.</b>
THURLING	<b>Andy</b>	<b>Northeast UAS Airspace Integration Research Alliance (NUAIR)</b>
TUDOR	<b>Nick</b>	<b>Tudor Associates Ltd</b>
VAN DE SLUIS	<b>Edwin</b>	<b>NLR</b>
VIDA	<b>Jan</b>	<b>Honeywell International, Inc.</b>
VON GROOTE	<b>Anna</b>	<b>EUROCAE</b>
VUKAS	<b>Mike</b>	<b>Federal Aviation Administration (FAA)</b>
WADDLE	<b>John</b>	<b>Astronautics Corporation of America</b>
WATSON	<b>Phil</b>	<b>Panasonic Avionics Corporation</b>
ZAFAR	<b>Shanza Ali</b>	<b>Institute of Flight System Dynamics</b>

**1. Records and control of the document**

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