



RTCA Paper No. 165-15/SC229-015.

EUR 194-16 / WG98-18

EUROCAE WG-98 Plenary # 8 / RTCA SC-229 Plenary # 7- Meeting Minutes
“Aircraft Emergency Locator Transmitters (ELTs)”

Date	<i>Wednesday 16th through Friday 18th March 2016</i>
Place	<i>Washington D.C., USA</i>
Venue	<i>1150 18th NW, Suite 910, Washington, DC 20036.</i>
Hosted	RTCA

Present:

Name	1stname	Company
Anderson	Richard	Boeing Commercial Airplanes
Barton	Mike	OACI
Bekanich	Joseph	InFlight Labs
Bouhet	Alain	OROLIA
Burrows	Adrian	AAIB
Cresp	Claude	ELTA
Colin	Michel	VR2C
Dessaline	Assata	FAA
Feith	Greg	InFlight Labs
Fuhrmann	Dave	USAF ACC AFRCC/DOC
Greaves	Matthew	Cranfield University
Green	Charisse	FAA
Hoffman	Chris	ACR Electronics, Inc.
Horiot	Christophe	AIRBUS
Khalil	Fadl	The Boeing company
Koubeissi	Majed	Cobham
Le Bon	Dominique	Air France
Lelaie	Claude	Airbus
Mazzuca	Lisa	NASA
Ortenzio	Aaron	U.S. CoastGuard
Pack	Tom	ACR Electronics, Inc.

Parfitt	Christopher	FAA
Plantin de Hugues	Philippe	BEA
Saint-Pierre	Dany	Cospas-Sarsat
Smith	Greg	NTSB
Speraza	Eric	VR2C
Stimson	Chad	NASA
Taylor	Stuart	Techtest Ltd
Theodorakos	George	NASA
Thiedeman	Edwin	U.S. CoastGuard
Weed	Mike	L3Com
Weiss	Jennifer	Flight Data System
Von Groote	Anna	EUROCAE

Present using WebEx:

Lemon	Dan	NOAA
Klee	Lloyd	NZ Aviation Safety
Newman	Bernie	Astronautics Corporation of America
O'Conner	Chris	NOAA
Audouze	Xavier	EASA

Apologies:

Reed	Dan	Fedex
Politis	Elias	NRC
Bitterli	Daniel	Dassault
Chadli	Mohammed	BEA
Sparks	Dale	JT1 Aerospace Corp.
Winum	Philippe	Sierra Echo
Hiner	Eric	DME Corporation
Curran	Dave	Team Airborne Data Services

Day 1 – Wednesday 16th March (9:00 AM – 5 PM)

1. Welcome/Introductions/Administrative Remarks

Tom welcomed everyone to Washington for the RTCA SC-229 and EUROCAE WG-98 meetings. He Introduced Charisse Green (DFO) to officially open the meeting.

Charisse announced that In accordance with the Federal Advisory Committee Act, the Advisory Committee meeting is open to the public. Notice of the meeting was published in the Federal Register on: Feb 9th 2016 and that attendance is open to the interested public.

Jenifer gave a statement RTCA policy regarding proprietary references and new membership policy.

Questions - No questions.

Tom asked everyone to sign the attendance list and asked for round table introductions.

2. Agenda overview and approval

Tom reviewed the agenda from the onscreen presentation:

Day 1

Welcome/Introductions/Administrative Remarks

- FAA DFO and EUROCAE

Agenda Overview and approval

Minutes Paris Joint Meeting #6 meeting review and approval

Review Action Items from Paris Joint Meeting #6 Meeting

Briefing of ICAO, COSPAS-SARSAT, EASA activities

- ICAO activities: Mike Barton
- Cospas-Sarsat SGB Update: Dany St Pierre,
- Cospas-Sarsat T-ELT Correspondence Working Group: Chris Hoffman/Fabio Barbosa
- EASA: ELT New Types: Xavier AUDOUZE

Other Industry coordination and presentations

- Smart ELT™ - Distressed Aircraft Tracking SystemSM- In-Flight Labs - Greg Feith& Joseph Beganich
- SC-235 Lithium Battery – Jeff Densmore, John Trela

Working Group meetings

- Status and Work plans for the week.
- WG meetings for the rest of the day

Day 2

WG-2 to 5 meetings

Evening

- Group Dinner

Day 3

Morning

WG-2 to 5 Meetings (if needed)

Afternoon

- WG Status Reports
- Action item review
- Future meeting plans and dates
- Industry coordination and presentations (if any)

- Other Business

Questions -

Fadlasked when the schedule would be discussed. Tom suggested that it could be discussed during the afternoon schedule as he was taking inputs from different organisations. He announced that we may need to change TORs with PMC and maybe a change to the schedule.

The agenda was approved

3. Minutes Washington meeting review and approval

Stuart gave an update of the minutes produced from the Paris meeting explaining a request from Xavier to update the ETSO adoption time on page 6 to be changed from 6 months to 6-12 months along with a couple of other minor text changes. Stuart announced that the updated minutes would be posted on the webspace.

Tom considered the Minutes to be approved.

4. Review Action Items from DC

Tom reviewed the action items (below) and their status.

ACTION NUMBER	ACTIONNEE	ACTION	STATUS
ACTION 1	TOM	To add Cospas Sarsat schedule to timeline	OPEN (Carried Over)
ACTION 2	ANNA/HAL	To set up WebEx and organise a specialist from SC159 to provide an overview of the current GNSS specifications	OPEN (Carried Over)
ACTION 3	PHILIPPE	To send a copy of the report regarding the rationale for the 6 nautical mile/ 1 min update. To George.	OPEN
ACTION 4	MIKE	To inform members when the ICAO expert working groups will be scheduled	OPEN
ACTION 5	XAVIER /CHARISSE	To investigate if we need an ADFR as a separate type of beacon within the specifications.	OPEN
ACTION 6	WG4 (CHRIS)	To provide justification for the reasons behind making GNSS mandatory	OPEN
ACTION 7	ALL	(From WG4) to look at the interface between the ELT and aircraft and provide feedback (looking at stand-alone or use information from aircraft). Philippe will prepare a document	OPEN

5. Briefing of ICAO and COSPAS-SARSAT activities

Mike Bartongave an update from ICAO from their last meeting. He provided an update on the GADSS concept looking at normal trackingAutonomous Distress Tracking and flight recorder data recovery.

He described theGADSS advisory group with approximately 12 specialists which had been set up and were due to have their first meeting. It now includes the Cospas secretariat, Philippe and Mike. The first telecom kicks was scheduled for 23rd march.

Tom asked if the meetings were private or public. Mike confirmed that they don't run it that way and it's not normal to have observations other than the membership.

Chris asked how we could get involved to make input or comment. Mike said that between them they will keep the group updated and provide updates via the web space.

Philippe said that usually the work is done as a group which is not normally discussed outside.

The presentation is available on the web space.

6. Cospas-Sarsat update

Dany gave an update on Cospas-Sarsat activities with a presentation looking at the incremental space and ground infrastructure as there haven't been any major meetings since his last update.

He discussed MEOSAR updates looking at the system evolution.

Chris asked if all 10 Galileo satellites are now operational. Dany said that some are still in test but declared as working and some are operational for different things like some being operational for return link and some not used for SAR.

He described future meetings, task groups and future plans for 2016.

He discussed 2016 plans and what they hope to achieve MEOLUTS, D&E,Ground Segment testing and MEOSAR.

7. Cospas-Sarsat Trigger in-flight update

Chris Hoffman gave a presentation on behalf of FabioBarbosafor the group which was tasked by Cospas-Sarsat to look at triggered in flight ELTs.

Chris discussed the groups mandate discussing the group'sstatus report which is available on the webspace.

Chris discussed the current ICAO status andgave an update following on from Mike on the ICAO mandate.

Chris discussed the newly adopted ED-237 document and that the group are looking at how the cancelation feature would work for 406MHz ELTs as it is currently unclear.

The group will also look at the impact to current Cospas-Sarsat specifications proposing changes.

Chris described current recommendations from the group that can be found in the presentation on the webspace.

8. Presentation from EASA

Xavier gave a presentation discussing new types of ELTs. He discussed that this came from an action item from the last meeting with Charisse.

Xavier had carried out a lot of work assessing the need for a new ELT type and applicable requirements, distress tracking and ADFRs, reviewing ICAO requirements and Recorder Eurocae documents and found that ED-62A beacon types were inadequate.

Xavier said that there needs to be considerable discussion going forward and for ADFRs, we need manufactures input and review. For Distress Tracking we need to take inputs from the T-ELT CWG/Cospas-Sarsat group and complete analysis with this Working Group.

He proposed that we update table 4-1 (Environmental Test Sequence) and add an additional matrix for applicable requirements vs. type.

Questions

Charisse made additional comments saying that Xavier did a good job and had taken all the additional requirements that we need to consider. She said that we can use this to submit to the PMC to give us more time to look at these requirements.

Tom asked how they currently type certify an ADFR. Xavier said he would check but they don't have an approved ADFR at this moment in time. He said they are in discussion with some manufacturers about that but they would have to define a special condition should such an application be made.

Adjourn for lunch at 12:30

9. Presentation from SC-235

Jeff Densmore and John Trela gave a presentation on their work on Lithium batteries, describing their scope of work, deliverables and timelines. He discussed that they have just requested to extend their time line with the PMC.

He discussed the updates from their last meeting as they have just completed their second plenary in January.

He discussed the various Working Groups

WG-1: DO-227A MOPS Template and Section 1 (Jim Russell – Boeing)

WG-2: Cell and Battery Requirements (John Nielsen – Ultralife)

WG-3: Mini-organizational session / solicit members

He also announced that the next Plenary has been scheduled for April 26-27, 2016

Questions

Chris asked about the special conditions and defining means of compliance, will it be mandatory? He said it is still being discussed but those manufacturers that are seeking an ETSO should have to adopt these regulations.

10. Presentation from InFlight Labs

Greg Feith and Joseph Bakanich from InFlight labs gave a presentation discussing aircraft tracking discussing how the company started before MH370 looking at aircraft tracking and how they have advanced from General Aviation (GA) to start looking at solutions for both GA and commercial aviation markets.

They showed a video describing all of the elements that they have proven so far. They described the product that they have designed to comply with the GADSS requirements. The presentation can be found on the webpage.

Questions

Mike discussed their marketing and asked what are they targeting, they answered that it would be industry wide. They discussed certification as there is no TSO. They said that it could fall into the distress tracking.

Dany asked if it is an ELT itself or does it rely on a separate ELT. They confirmed that the design was for a plug and play to existing ELTs.

Dany said that if their intent was for flight tracking, would they be using Cospas Sarsat? They did but only for distress tracking.

They explained that they use iridium for the flight tracking.

A question was asked if the device has a GPS receiver. They confirmed that it does.

A question was asked if it contained its own sensors or take it from on-board systems. He said its self-contained as they have a digital gyro, accelerometers, power sensing devices inside the box.

It was asked that if communicating with iridium why use the ELT? He said it's just for distress purpose.

Question was asked how is it tied in to an existing ELT? They confirmed that they would supply custom cable to fit to on-board ELT.

Chris discussed the ground infrastructure asking who will control it. They announced that they have the capability to key in the individuals automatically.

Chris O Connors thought it was an interesting concept and thank them for sharing.

Justin how it was powered. They confirmed that it would be from aircraft power and then has a battery backup.

11. Discussion about separate ELTs/Scheduling

Tom discussed the two types of ELT discussed in the presentations and that one is proposed in the T-ELT paper that's going to be discussed in April at the Cospas-Sarsat meeting and the other one comes from Xavier which is the AFDR with 406MHz ELT embedded. He said the question is, for our plenary, should we be looking at these two types and include them in our documents/ specifications which would impact schedule issues and beyond that we need to look at a schedule discussion.

Charisse discussed the FAA's position on the two types of ELT looking at the reference. Charisse said that in general, she doesn't think they are against the new ELTs but need to be careful due to the delays to the documents and said we need ask ourselves whether the inclusion of the two ELTs would add to the delay of the documents. We also need to decide what additional work we have to do to ensure they are incorporated smoothly. She suggested that we would have to review the TORs and take back to the PMC in June if we choose to include them.

The ICAO regulations were reviewed again by Philippe and he said that we will need a standard for a triggered in flight ELT in the future and this specification should be available for the triggering function, embedded in a triggered in-flight ELT. He also believes that an AFDR is also a good means of compliance from 2021 and in this case we need to make sure that we have specifications within ED-62B/DO-204B that include the use of ADFRs.

Chris H discussed ED-112A and that it doesn't describe the ELT type but just a 406MHz ELT.

There were discussions on antenna configurations and if AFDRs land on water, do they have to land in a certain way up and Cospas-Sarsat specifications.

Tom discussed that there are already devices out there and asked Stuart how his device was certified. Stuart said that the ADELTA has two antennas and that it has been tested and is fully certified by Cospas-Sarsat and compliant with ED-62.

Chris discussed the difference in maritime recorders and AFDRs and one of those is for the AFDR there is still a homer that is extended adhere for maritime it's both the 406MHz and homer that's extended for a long period of time on the basis that the ship could have sunk and with storms it could be a long time for recovery. Maybe there are some maritime specs that could be fed back into the AFDR.

There was general discussion on whether the AFDR should be a 1st or 2nd generation beacon. Dany said that 1st generation beacons will still be available even when 2nd generation beacons are on the market.

There was general consensus that to add an ADFR to the specifications wouldn't be that difficult and that it didn't matter if it would be 1st or 2nd generating technology.

12. Work Plan for Days 2 & 3

Philippe discussed the work that he started recently stating that he has two documents with a slightly different structure. He discussed the work of chapters 2 and 5 and that they have one conference call looking at the alignment of the documents. Philippe feels that we need to work on aligning the document first to have a single document to work on. They spent two hours reviewing 1.5 pages. He suggested that they have a small group working on the alignment for day two consisting of technical and editorial expertise to try and move on to align the two documents. Philippe proposed that for day two, working group two carries on with their work. The rest of the group could split into two to align the documents. Everyone agreed.

Tom discussed driving to a section that has requirements and a separate section of how it is tested

They scheduled a 9am start on Day 2.

Ed said that WG-3 are scheduled to have a conference call on day two starting at 9:30 in the Garmin room.

Chad explained that WG-2 starts at 9am on day 2 keeping to their original schedule but focusing on installation. He discussed their 2-hour monthly telecoms and that they are still on schedule.

WG meetings

WG 2 and 5 meetings (rest of the day from 3 pm)

Day 2 – Thursday 17th March 2016 (9 AM – 5 pm)

WG 1,2 and 4 meetings (morning session)

Day 3 – Friday 18th March 2016

WG-4 reconvened 9 am – 11:30.

Day 3 – Friday 18th March 2016 Plenary (starting at 11:30am)

Tom welcomed everyone back to the plenary session and asked WG Chairs to give working group updates.

13. WG reports

Presentation from Chair of WG-1

Philippe gave an update from WG-1 by announcing that they had completed their work. He said that EUROCAE ED-237 was published on Friday and he asked Anna to give the details on how to obtain the document. He said that it will be mentioned in Annex 6 at the end of the year.

George asked if RTCA had plans to do anything in the future, Jenifer said there were no plans.

Anna explained how the documents could be obtained from the secretariat or through her. Non EUROCAE members would have to purchase the document.

Chris discussed that this document will be called up by EASA regulations, he asked about the Cancellation feature and would it mean that it is mandatory? Philippe said that it could be.

Presentation from Chair of WG 2

Chad summarised the work that had been completed during the week finalising their work for WG5, they stepped through the MOPS guidance also looking at FAA advisory circulars and took an action to review and identify any gaps in the requirements and suggest any changes in the MOPS. He said the NASA team will be providing more updates for installation techniques over the coming months.

Presentation from Chair of WG 3

Ed gave an update as chair of WG-3, looking at homing and intelligent transmissions for Cospas-Sarsat. He described activities since the last meeting such as 406 homing specs and preparations for Cospas Sarsat task group for 2nd generation beacons.

He discussed the papers that the group had submitted to the council and how the GADSS influence had had an impact on homing.

Their action items going forward to look at AIS-SART in ELT to see if it might be desired for transoceanic operations and to define rationale for reduction of 121.5 homing signal in ADFR to 5 mW after 48 hours

Presentation from Chair of WG 4

Chris gave an update from his working group discussing GNSS, Battery and Return link services.

Presentation from Chair of WG 5

Philippe started a small group to look at the alignment of ED62A and DO204A and continued their work. He said he would send the document to group members and he discussed the work carried out with Alain looking at the differences between the documents. He said that they analyse all the proposed changes and document the rationale to the changes that they want to change.

[Action] for Philippe to send the document to the group and for the group members to add comments.

He said the goal is to have a document which is a single based document to with the input from each of the working groups. He said that users will no longer have to look at ED62A and DO204A, just use the one document.

Chapter 1 & 6 still need to be completed and will be carried out via telecom.

He described the document and comments received.

14. Future meeting plans and dates

Tom reviewed future meeting dates, looking at possible conflicts with Cospas-Sarsat meetings, RTCM, IMO etc.

Philippe announced that they proposed 6-8th September in Europe.

The last date of 2016 was proposed for 13-15th December was discussed to be held in the USA.

Tom asked for a volunteer to host.

Philippe discussed future meeting in Europe and the two proposed venues in Lorient and Cologne. He thanked both Xavier and Alain and proposed that the next meeting takes place in Lorient. The date will be the 6-8th September.

There was an agreement for the next meeting.

Philippe said if anyone needs help regarding travel plans to contact him or Alain.

It was suggested that the extra day is added to the calling notice.

15. ACTION ITEMS

Stuart gave an overview of the action items from the week.

16. Other business

Anna discussed the upcoming EUROCAE symposium discussing that one of the sessions would be to discuss flight tracking. The meeting will take place in Vienna on 28th-29th April and told members that they are welcome to attend.

No other business

17. Adjourn

Tom asked if there were any other questions.

Tom thanked Stuart, Charisse, Philippe and group leaders for their work.

He also thanked everyone for attending.

Meeting closed 15:00

List of Actions

ACTION NUMBER	ACTIONNEE	ACTION	STATUS
ACTION 1	TOM	To add Cospas Sarsat schedule to timeline	OPEN (Carried Over)
ACTION 2	MIKE	To inform members when the ICAO expert working groups will be scheduled	OPEN (Carried Over)
ACTION 3	PHILIPPE	To send the ED62A/DO204A Combined document to the group and	OPEN
ACTION 4	ALL MEMBERS	For the group members to add comments.	OPEN