



RTCA Paper No. 353-16/SC229-019-TBA

EUR 5-17 / WG98-21

EUROCAE WG-98 Plenary # 9 / RTCA SC-229 Plenary # 8- Meeting Minutes
“Aircraft Emergency Locator Transmitters (ELTs)”

Date	Tuesday 6th through Friday 9th September 2016
Place	Lorient, France
Venue	A division of OROLIA - ZI des cinq Chemins - 56520 GUIDEL - FRANCE
Hosted	McMURDO

Present:

Name	1st name	Company
Anderson	Richard	Boeing Commercial Airplanes
Audouze	Xavier	EASA
Barton	Mike	OACI
Biell	Mark	Airbus DS Electronics and Border Security
Bouhet	Alain	OROLIA
Calmettes	Thibaud	ThalèsAlenia Space
Cresp	Claude	ELTA
Dutruc	Hervé	Airbus Helicopters
Fuhrmann	David	USAF RCC
Hoffman	Chris	ACR Electronics, Inc.
Horiot	Christophe	Airbus
Larhantec	Philippe	ThalèsAlenia Space
Lelaie	Claude	Airbus
Martin	Pauline	ThalèsAlenia Space
Menard	Frederic	McMurdo
Morrison	Rebecca	RTCA
Ortenzio	Aaron	U.S. CoastGuard
Pack	Tom	ACR Electronics, Inc.
Plantin de Hugues	Philippe	BEA
Politis	Elias	NRC

Saint-Pierre	Dany	Cospas-Sarsat
Smith	Greg	NTSB
Taylor	Stuart	Techtest Ltd
Thiedeman	Edwin	U.S. CoastGuard
Thompson	Ed	FedEx Express
Von Groote	Anna	EUROCAE
Waggener	William	L3Com

Present using WebEx:

Barry	John	FAA
Chism	Linda	Alaska Airlines
Foster	Anthony	NASA
Green	Charisse	FAA
Khalil	Fadl	The Boeing company
Lemon	Dan	NOAA
Stimson	Chad	NASA
Theodorakos	George	NASA
Weiss	Jennifer	Flight Data System

Apologies:

Colin	Michel	VR2C
Dessaline	Assata	FAA
Mazzuca	Lisa	NASA
Klee	Lloyd	NZ Aviation Safety
Weed	Mike	L3Com
Von Groote	Anna	EUROCAE

Day 1 – Tuesday 6th September (11:00 AM – 7PM)

1. Welcome/Introductions/Administrative Remarks

Tom welcomed everyone to France for the RTCA SC-229 and EUROCAE WG-98 meetings.

He introduced Christian Belleux from Orolia to open the meeting with a presentation.

Christian, Aviation and Military Business Unit Manager at McMurdo announced that this is the 40th anniversary of the company. In 1976 the company was created and ten years later they had their first approved beacon ‘Kannad’ meaning messenger. He announced that the company had organised an open door event where everyone was invited to share their journey throughout the last 40 years.

Tom thanked Christian for the introduction, hosting for the week and organising the event.

Alain discussed the evening function and details for the scheduled event on the Friday.

Tom welcomed everyone introducing himself and Philippe as Group Chairs and asked the group to give round table introductions.

Tom 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: July 18th 2016 and that attendance is open to the interested public.

Rebecca gave a statement RTCA policy regarding proprietary references and patentable technology and copyright material required to comply with RTCA.

Philippe displayed an IPR policy from EUROCAE explaining that EUROCAE work very close with RTCA and both EUROCAE and RTCA members could participate in this group.

Questions - No questions.

Tom asked everyone to sign the attendance list.

2. Agenda overview and approval

Tom reviewed the agenda from the onscreen presentation:

Day 1

- Welcome/Introductions/Administrative Remarks
- Agenda overview and approval
- Washington DC Paris meeting review and approval
- Review Action Items from Paris meeting
- "Phasing in" RTCA/DO-204B, EUROCAE/ED-62B –Timeline and ToR
- Briefing of:
 - ICAO GADSS-AG activities
 - COSPAS-SARSAT activities
 - Other Industry coordination and presentations
- GRICAS
- HELIOS
- WG 2 to 5 status and week's plan

Day 2

WG meetings

Evening

Group Dinner

Day 3

Morning

WG Meetings

Afternoon

- WG 2 - 5 meetings in the morning starting 9 AM
- WGs' reports
- Action item review
- Future meeting plans and dates
- Industry coordination and presentations (if any)
- Other business

Philippe announced that he would also like to have a discussion on two issues. One to provide a response to the Canadian TSB. Also to discuss the white paper regarding the standard.

Questions -

Chris announced that there were some other outstanding issues that need to be discussed that came out of Cospas-Sarsat meetings. Some of the categories would be of interest to the group and he asked if this should be added to the agenda. Tom announced that prior to the meeting there were discussions about some questions that came out of a correspondence group for distress tracking ELTs that Cospas-Sarsat initiated. Some of the issues were relevant to the group and some particular items like will the ELT-DT be added to our documents? Temperature

conditions for storage and operation, whether they should be part of DO160 or Cospas-Sarsat documents? Plus interfaces. He said that these would be discussed throughout the week's meetings.

The agenda was approved.

3. Washington DC meeting review and approval

Stuart gave an update of the minutes produced from the Washington meeting and stated that they were currently posted in draft form on the web space. Stuart asked if anyone had any requested amendments. No requests

Tom considered the Minutes to be approved.

4. Review Action Items from Paris meeting

Stuart reviewed the action items (below) and their status. All items with the exception of item 5 were considered to be closed. It was agreed that action 5 would be discussed further during the course of the week.

ACTION NUMBER	ACTIONNEE	ACTION	STATUS
ACTION 1	TOM	To add Cospas-Sarsat schedule to timeline	Closed 06/09/2016
ACTION 2	ANNA/HAL	To set up WebEx and organise a specialist from SC159 to provide an overview of the current GNSS specifications	Closed 06/09/2016
ACTION 3	PHILIPPE	To send a copy of the report regarding the rationale for the 6 nautical mile/ 1 min update. To George.	Closed 06/09/2016
ACTION 4	MIKE	To inform members when the ICAO expert working groups will be scheduled	Closed 06/09/2016
ACTION 5	XAVIER /CHARISSE	To investigate if we need an ADFR as a separate type of beacon within the specifications.	OPEN (pending discussion during the weeks meetings)
ACTION 6	WG4 (CHRIS)	To provide justification for the reasons behind making GNSS mandatory	Closed 06/09/2016
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	Closed 06/09/2016

5. “Phasing in” RTCA/DO-204B , EUROCAE/ED-62B –Timeline and ToR

Tom discussed that we should now be in the FRAC stages but due to other industry activities the timelines couldn't be met so we now have a 1 year extension.

Tom's objective is to give an update to the program committee in December and to be at the FRAC stage this time next year.

He announced that this was our 8th meeting and that there is an offer for the next meeting to held in Florida at ACR.

Philippe said that he wanted to confirm the March date and venue before the end of the week.

Chris proposed that we should have an extra meeting around June as there is a big gap during the summer. The group agreed for an additional meeting in 2017.

6. Briefing of ICAO Activities

Mike Barton gave a verbal update of ICAO updates with the working group looking at amendments to Annex 6 and discussed that there is an amendment based on a safety case basis. He discussed that the group are also looking at a guidance manual and have started looking at abnormal tracking. He discussed the GADSS Advisory Group and that they are working on the CONOPS document, updating due to feedback received and that it is progressing quite well.

Elias discussed the flight recorder panel. He asked what the status was. Mike suggested that Philippe could give a more accurate update. Philippe said that they had been completed and that it will be part of the ICAO doc10054.

Greg asked for clarification regarding ICAO doc10054. Mike confirmed that it is guidance material for the distress tracking and flight data recovery of Annex 6.

Ed asked for clarification. He indicated that abnormal operations are now being addressed under normal tracking. Does this mean that ICAO has now determined that abnormal operations do not constitute distress? Mike said the answer is 'no' at the moment abnormal operation is a term that exists within a term of operation. Now what they have done is instead of being a standalone topic they are going to include whatever needs to be determined as an extension of what is meant by normal operations and flows into distress tracking. In the concept you have 'normal' and 'distresses where 'abnormal' sits between the two of them.

Mike summarised stating that by the end of the year they expect the next version of the GADSS CONOPS to be issued, He also expects the guidance material to be in a form to go out for consultation to the states to also be completed.

7. Briefing of COSPAS-SARSAT activities

Dany gave an update on Cospas-Sarsat activities with a presentation looking at the developments from the program since the last meeting in March.

He discussed updates to the development of the MEOSAR System, future Second Generation beacons and how they are investigating various approaches to locate ELTs triggered in flight whilst maintaining its LEO-GEO System operational capability and continuing its support towards the current generation of beacons.

Full presentation can be found on the web space.

Questions –

Tom asked if there is a schedule for MEOLUTS, space segments and specifications to come out of the JC. Dany said that there is a proposal for the JC and it has to be reviewed and agreed but if there is no agreement at the JC, there is a possibility for a group to come up with an acceptable plan for the council to approve at the end of the year.

8. Other Industry coordination and presentations

GRICAS

Pauline Martin from ThalèsAlenia Space gave a presentation introducing Galileo Search and Rescue Return Link Improvement for a better Civil Aviation Safety (GRICAS), which is funded under H2020 Call Galileo-2015-1.

Full Presentation can be found on the Web space.

Questions

George asked where the return link acknowledgment goes within the aircraft? Do the crew see the acknowledgement? Pauline replied 'Yes 'there could be a light in the cockpit.

Fadl asked if the tracking ELT could be a first or second generation beacon. Tom confirmed that it could be either.

HELIOS

Alain gave a presentation to discuss the overview of the Helios program funded by the European galley agency looking at Cospas-Sarsat beacons for GALILEO Search & rescue applications in MEOSAR environment

Fadl asked if the presentations could be posted on the workspace. Philippe confirmed that he would check and post on the workspace.

9. DISCUSSION

Philippe discussed the communication between the aircraft system and the ELT and what standards are required for communications between the aircraft and ELT. He discussed the requirement for a standard for this purpose and what would be required. Philippe is proposing that they use 429 and everything will be available. He noted that this is not to be mandated but available to use should this option.

He discussed a white paper that had been produced and that a small group has produced a list of potential inputs and outputs that could be required as a proposal. Philippe discussed the intent and wanted a discussion with the group and if everyone is in agreement, the paper will be sent to SAE for them to develop the label. Philippe said that he had sent this to the group and would like to be in the position to send to SAE by the end of the week.

Questions – Fadl asked if this would be applicable for discrete too as there are aircraft without. Philippe said that this was just one of the options for SAE to develop a label. Discretes could also be used if agreed by the ELT manufacturer and aircraft OEM.

General question – Is it planned to have more description on the inputs and outputs for example, the inputs we have reset and armed and it is not clear exactly what they mean. Philippe said that it is possible to add clarification once this paper has been submitted to the SAE committee.

George asked is this required or could there be other interfaces?

Tom confirmed that this isn't mandatory, it's one of the options like serial, digital discrete and/or other types.

Philippe asked the group if every input is included on the list on screen or is there anything to add or delete? Fadl suggested that an external navigation input should be added. There were no additional inputs but Philippe asked if anyone had any additions, to send them to him by email.

Philippe discussed that the inputs and outputs were derived from beacon manufactures and that they would probably go above and beyond the MOPS.

Greg discussed some minor text changes to the document for clarification.

Greg/Philippe took the action to improve the wording and send it to the group for agreement prior to sending to SAE.

10. TSB SAFETY RECOMMENDATION

Philippe discussed the second Issue regarding a response to AIR Canada safety recommendation. Philippe discussed a safety recommendation from the TSB. Philippe discussed that he had sent a proposed draft response but wanted discussion from the group to produce a full response.

He displayed the response onscreen and had previously sent it to group members. Xavier had sent some comments to Philippe but his main comment is that normally recommendations go direct to the FAA or EASA (not RTCA/EUROCAE). Elias asked if it appropriate for EUROCAE to respond.

Charisse said we need to make the decision if we want to respond as a committee or send a response to say that it needs to go back to the FAA/EASA. Rebecca said that if we want to respond as a group we need to get PMC approval.

It was suggested that both EUROCAE and RTCA should go back to TSBC to say that the recommendation should go to the FAA and EASA.

Jenifer took the action to discuss the issue with Margret and AL.

Greg took the option to excuse himself from this part of the meeting as he is part of the NTS Band couldn't participate to answer a safety recommendation from another agency.

Action to EUROCAE and RTCA to discuss with leadership and to review later in the week.

11. Week plans

Tom discussed the rest of the week's plans. He said that he envisioned two main bodies to work on, the specifications and that they have to be reviewed paragraph by paragraph and decide what needs to be added. The other item was to review the comments to look at chapter 1. Philippe discussed that the differences between the ED and DO documents have been highlighted and that he had left the comments to review.

Philippe asked if we could have an agreement on splitting into two groups. One working on chapter 1 and the other on chapter 2, 3, 4 and 5.

This was agreed.

12. WORKING GROUP UPDATES

Tom asked sub group Chairs to provide updates from the working groups.

WG1 - Philippe announced that is now complete.

WG2 – Chad gave a verbal update. He said that WG2 is closed at this point and that the technical input is complete and the comments have been sent to Philippe. He doesn't plan on having any specific WG 2 meetings in the future. Philippe confirmed that he has included all of Chad's inputs in the document to review on day 2.

WG3 – Ed deferred his presentation to Thursday afternoon.

SC235 - update scheduled for Thursdays meeting.

13. WG meetings (rest of the day)

The plenary closed and working groups convened for the rest of the day.

Day 2 – Wednesday 7th September (9:00 AM – 6 PM)

WG Meetings Convened

Day 3 – Thursday 8th September (9:00 AM – 12 PM)

WG Meetings convened for the morning

Day 3 – Thursday 8th September (13:30 AM – 5 PM)

14. PLENARY SESSION

Plenary reconvened and Tom welcomed everyone back and discussed the agenda for the rest of the day as there will be extra presentations including Dany (Cospas-Sarsat), SC235 and Alain for the SAR exercise on day 4, Followed by an update from the two groups.

Alain described arrangements for the special event on the final day.

15. MS804 Presentation

Dany presented an update of what would be presented to the JC regarding Egyptair MS804 accident and that they received a signal and it was processed.

He described that at the time of the accident, two self-test messages were received by the Cospas-Sarsat system. At the time of the first transmission there were several MEOSAR satellites available and ground stations.

He described the accident providing the Cospas-Sarsat summary of events. Dany reported that 406 bursts were received by MEOSAR which still doesn't have operational status but is able to receive and decode.

He demonstrated slides showing Cospas-Sarsat assets, looking at LEO satellites and that they were all away from the signal at the time of the bursts so with the LEO system they would not have received any data transmissions. There were also 4 GEO satellites so they would expect detection from those assets. He also showed a series of MEOSAR assets that were also available. Nothing was detected from GEO but they received data in Greece, Turkey and France from the MEO satellites. Because there was no GPS Nav device in the beacon there was no GPS data available.

Dany said that these were self-test bursts which are normally used to test beacons.

He displayed other slides demonstrating MEOSAR coverage and that there were 12 assets available. He also showed the available MEOLUTS at that time and therefore tracking satellites in view. Several participants received detection at the time. All participants sent their data to Cospas-Sarsat for analysis.

Dany concluded that the results look promising for future with MEOSAR even with a very small amount of bursts.

16. SC-235 Presentation

Tom gave an update of SC-235 describing the work carried out with lithium batteries. He described the history of DO-227A and that their target is to provide an update by June 2017.

There is now a draft DO-227A available that they are reviewing at the moment.

He discussed the special conditions imposed by the FAA for the carriage of Lithium batteries on-board aircraft.

The full presentation can be found on the Web space.

Question – will batteries on the market have to be requalified? Tom said that the FAA haven't made a statement on this to date.

17. Crash Report recommendation

Tom discussed the crash report from Tuesday to see whether the group should make comment on the subject. He said it was pushed back to RTCA to discuss with the FAA and what we have been asked to do is to make a statement on what we want to do.

Rebecca displayed the following text on screen for WG members to review: -

In June of 2016, RTCA and EUROCAE separately received notification of a TSBC report (Accident Investigation Report A13H001, concerning controlled flight into terrain of a Sikorsky S-76A, in Moosonee, Ontario on 31 May 2013).

The report contained separate but identical recommendations for improvements that could be made to ELTs by addressing the design standards contained in DO-204 and ED-62 updates: EUROCAE and RTCA establish rigorous emergency locator transmitter (ELT) system crash survivability specifications that reduce the likelihood that an ELT system will be rendered inoperative as a result of impact forces sustained during an aviation occurrence. (page 168 of the report)

Since the RTCA and EUROCAE had already established joint working committees to update these standards, the report was forwarded to the leadership of SC-229/WG-98.

The leadership presented this information to the Plenary and requested the opinion of the committee be noted in the minutes of the plenary:

Anna and Rebecca announced that Tom and Philippe have the action to communicate this group's opinion to the EUROCAE Secretariat and the RTCA PMC to determine the appropriate action.

Elias said in his opinion the response should be that we have a working group looking at developing standards not endorsing, not auctioning.

Greg stated that the first line of the response should be that the committee was made aware and the committee is made up from various fields, some of which think it is inappropriate to comment at all regarding a safety recommendation issued by another safety agency.

Greg announced that he didn't think it was appropriate for him to take a position on the subject and couldn't be participating in such response and asked that it was noted that 'THE NTSB DID NOT PARTICIPATE IN ANSWERING ANOTHER AGENCIES SAFETY RECOMMENDATION'.

Greg chose to leave the room for the rest of the discussion.

Chris H said that we are making significant effort to improve ELTs and maybe this should be part of our response. You could take it further but he thought we should say we are improving

on crash reliability. Tom suggested that we need a caveat. The timing issue is appropriate as Chad's work has proven that the sooner you get the bursts out the better but that would be more of a Cospas-Sarsat remit. Dany confirmed that they have received a copy of the recommendation and in reaction; they have prepared a paper and proposed a shorter delay for the first burst for automatic activation. There are no promises that this will happen and it will take time but it will be discussed at the JC.

Mike said that we maybe overcomplicating. RTCA has a special committee and EUROCAE have a working group who have aligned terms of reference that include looking at crash survivability for the next revision of the documents. That's all you can really say. That will satisfy their need that we are looking at it.

It was discussed that we continue to work to the ToRs of the committee.

Tom summarised that we should take Mikes words stating that Both EUROCAE and RTCA have a joint committee stating the Terms of Reference.

18. FRENCH MARINE SAR PRESENTATION

Alain introduced Stanislas-Xavier Azzis from the French Navy.

He described their experience in the Navy rescuing 2200 people since 1970 including some of the big ships including MOANA which proved very difficult due to the cables.

He discussed the structure for SAR and how the French authorities are segregated and how the Navy is involved in all scenarios.

He discussed the different regions and that they have 5 RCCs situated around the coast describing the crew and various roles.

He described techniques involved to winch crew down to ships and how casualties are recovered using various search patterns also looking at equipment such as NVG goggles and their capability.

Full presentation can be found on the Web space.

19. WGs' reports

Philippe presented an update from group two looking at chapters from 2-7. They reviewed all of the comments that were received and got as far as section 4.5. When they were able to solve the issues and group 2 position, they made comments to say the group agreed. If they couldn't resolve the issue in a timely manner they set up a sub group to look at that particular paragraph.

There are a number of actions and 4 subgroups. He hasn't removed any comments and plans to send the improved document to group members to review and accept all of the changes. The proposed plan if agreed during the next face to face meeting will be to continue the work. There will be some fundamental issues that will still need to be done in plenary and a complete review of the document will still need to be carried out to ensure it is consistent.

Tony suggested that for the next meeting it might be better to do it as plenary to incorporate everyone, secondly there are pockets of people that haven't been involved in group two, some people haven't read all of the work carried out and suggested that everyone reviews the work of group two to get everyone aligned with the work carried out over the previous two years.

Philippe agreed to send a version with everything highlighted and also a clean version.

Tom discussed the group 1 work covering temperature class's buoyancy classes and capabilities, 1st and 2nd generation beacons, GNSS input and return link service, homing and how it is actually activated. They had a lot of debate trying to decide what is mandatory and optional.

They also looked at flight recorders and how do those capabilities map out. They looked at tracking ELTs.

The next step was to look at different formats looking at the ED and DO documents and Cospas-Sarsat documents which is a very simple document and they want to make sure everything is consistent.

There is still a lot of work to do and weekly calls will be required following the JC.

By December they aim to have something to review at plenary. Chris H said that he doesn't want to be at the stage where we are close to the last meeting and finally get the draft to review. He also suggested that it is done as a plenary, maybe not December but certainly by the March meeting.

Chris suggested what works best is that you publish the document, seek comment by email and any emails you get, you review as a group.

Philippe said it was necessary to align the documents first and suggested that for the next meeting we split to complete this work, then for the following meeting we should have the complete group.

Chad wanted to add that not all of the WG2 presentations were not at the SC-229 main web space but they are now.

20. Working Group Updates

WG3

Ed gave an update to WG3. Discussing the next generation looking at homing and on scene Locating, Participated in the Task Group on SGB (TG-1/2016), Conducting DF manufacturers surveys, developing homing specifications for T.018 and assessment different satellite signal repetition rates and impacts on battery endurance.

Full presentation can be found on the workspace.

WG4

Chris described the work of WG4 looking at GNSS, batteries and RLS. For the RLS he stated that we no longer have a requirement to trigger an ELT from the ground to the point where by it is currently defined so we don't need to do any more as it is already in the Cospas-Sarsat documents. The only thing we need to do is clarify where the RLS indicator goes on the ELT (CCU,ELT or bothetc). For batteries we are following SC-235 and we are also saying that you can also use rechargeable batteries now from the last discussion in WG4 driven by the ELT-DT discussion.

For GNSS we have two options a) to rely on what Cospas-Sarsat does which will be pretty basic b) to have test methods to ensure that we meet requirements and develop tests. It was discussed that we could develop RTCM tests that already exist going forward.

21. Future meeting plans and dates

It was discussed that the next meeting is scheduled for 13th – 15th December at ACR

The following meeting was proposed for Cologne et EASA new premises and we need to set up dates for 14th– 16thMarch.

For June meeting it was agreed 13th– 15th June in Washington DC at RTCA

Then 5th – 7th September EUROCAE in Paris

Then December 12th– 14th in the US close FRAC

22. Other business

No other Business

23. Adjourn

Tom thanked Alain for hosting us and Philippe, Rebecca, Anna, Stuart and everyone on WebEx and group members.

Meeting was adjourned.

24. List of Actions

Actions from Plenary

ACTION NUMBER	ACTIONNEE	ACTION	STATUS
ACTION 1	PHILIPPE	TO POST THE LATEST VERSION OF ED-62 REVB WORKING FOR REVIEW	OPEN
ACTION 2	GROUP MEMBERS	TO MAKE COMMENTS ON THE ABOVE PAPER	OPEN
ACTION 3	GROUP MEMBERS	TO REVIEW THE WORK OF WG2 FROM THE WEB SPACE	OPEN

Actions from Group 1

ACTION NUMBER	ACTIONNEE	ACTION	STATUS
ACTION 4	CLAUDE LELAIE	CHECK CS/FAR DOCUMENTS 23, 25 27 AND 29 CHECKING PARAGRAPH NUMBERS REGARDING TEXT CHANGE TO SECTION 2.4 (OPERATION OF CONTROLS)	OPEN
ACTION 5	RICHARD ANDERSON	ACTION TO COMPLETE THE PARAGRAPH 6.1.11.6	OPEN (CARRIED OVER)
ACTION 6	STUART TAYLOR	STUART TO PROVIDE FEEDBACK ON 4.4.1.1 'ADD ALTERNATIVE G LEVELS APPROPRIATE FOR ROTOR CRAFT TO BE ALLOWED 6.14G (REF CAA SPEC 16)' CONF MARCH 17 WG5 PROPOSING TO WAIT FOR WG2 INPUTS AND ASK STUART TO PRECISE THE COMMENT	OPEN

Actions from Group 2

ACTION NUMBER	ACTIONNEE	ACTION	STATUS
ACTION 7	MARK	CONFIRM THAT AN AD AND AD (FDR) HAVE BUOYANCY REQUIREMENTS AND DO THEY MATCH THE CURRENT DEFINITIONS.	OPEN
ACTION 8	ED	CLEARLY DEFINE GNSS: INTERNAL, INTEGRAL, EXTERNAL. CLARIFY DEFINITION OF EXTERNAL GNSS WITH RESPECT TO DT; WITH RESPECT TO EXTERNAL IS IT AIRCRAFT INPUT ONLY OR POSSIBLE CELL PHONE?	OPEN
ACTION 9	WG4	QUESTION OF GNSS PERFORMANCE FOR ELT: C/S, RTCM,? AF, AP, AD, S ARE STATIC SCENARIOS, DT MORE DYNAMIC.	OPEN
ACTION 10	MIKE BARTON	CLARIFY ICAO REQUIREMENT FOR AUTONOMOUS OPERATION AND HOW IT APPLIES TO EXTERNAL GNSS AS LONG AS IT IS AVAILABLE.	OPEN
ACTION 11	TOM PACK	ELT POWER SOURCE, FOR INTEGRAL DT SYSTEM?	OPEN
ACTION 12		FOR EACH CAPABILITY IN CHART, THERE NEEDS TO BE REQUIREMENTS.	OPEN
ACTION 13	STUART TAYLOR (CHRIS H RELAY)	CONFIRM ELT AD ACTIVATION AND DEPLOYMENT REQUIREMENTS WITH MFGS: HR SMITH, DRS	OPEN
ACTION 14	REBECCA MORRISON	DEFINE MANDATORY, PROHIBITED, OPTIONAL , N/A	OPEN
ACTION 15	PLENARY ISSUE: WG1	PLENARY QUESTION: WHAT HAPPENS WHEN AIRCRAFT POWER AND/OR ELT COMMUNICATION IS LOST?	OPEN
ACTION 16	PLENARY	HOW DOES THE ELT KNOW WHEN IT IS DT ARMED.	OPEN
ACTION 17	MIKE BARTON	CLARIFY ICAO REQUIREMENT FOR ELT ADFDR DEPLOYMENT VS. ACTIVATION	OPEN