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EUR 368-15 / WG98-14

RTCA SC-229 Plenary # 5/ EUROCAE WG-98 Plenary # 6 - Minutes
"Aircraft Emergency Locator Transmitters (ELTs)"

Date	*Tuesday 1st through Thursday 3rd September 2015*
Place	*Washington D.C., U. S. A.*
Venue	*RTCA, 1150 18th St, NW, Suite 450, Washington, DC 20036*
Hosted	*RTCA*

Present:

Name	1st name	Company
Anderson	Richard	Boeing Commercial Airplanes
Andolers	Peter	Airbus
Audouze	Xavier	EASA
Bouhet	Alain	OROLIA
Bousquet	Sophie	RTCA
Burrows	Adrian	AAIB
Cresp	Claude	ELTA
Chadli	Mohammed	BEA
Densmore	Jeff	Radiant Power corp
Dessaline	Assata	FAA
Dohmen	Gert	Airbus
Dutruc	Hervé	Airbus Helicopter
Fitzmaurice Jr	Michael	US GOVT-NOAA
Foster	Anthony	NASA
Fuhrmann	David	U.S. Air Force Rescue Coordination Centre
Greaves	Matthew	Cranfield University
Green	Charisse	FAA
Hoffman	Chris	ACR Electronics, Inc.
Horiot	Christophe	AIRBUS
Khalil	Fadl	The Boeing company
Koubeissi	Majed	Cobham
Lelaie	Claude	AIRBUS
Le Bon	Dominique	Air France

Littell	Justin	NASA
Marin	Miguel	ICAO
Mazzuca	Lisa	NASA
Newman	Bernard	Astronautics Corporation of America
Ortenzio	Aaron	U.S. Coast Guard
Pack	Tom	ACR Electronics, Inc.
Parfitt	Christopher	FAA
Plantin de Hugues	Philippe	BEA
Politis	Elias	NRC
Saint-Pierre	Dany	Cospas-Sarsat
Smith	Greg	NTSB
Stimson	Chad	NASA
Taylor	Stuart	Techtest Ltd
Theodorakos	George	NASA
Thiedeman	Edwin	U.S. Coast Guard
van den Heuvel	Blake	DRS Technologies Canada Ltd

Present using WebEx:

Name	1st name	Company
Knox	Alan	USAF
Sparks	Dale	JT1 Aerospace Corp.
Biell	Mark	Airbus Defence and Space GmbH
Klee	Lloyd	Aviation Safety Supplies Ltd

Apologies:

Name	1st name	Company
Bitterli	Daniel	Dassault
Cazoulat	Fabienne	DGAC
Curran	David Gerard	Ad Astra Aero Consulting
de Guire	Stephen	Astronautics Corporation of America
Schuster Bruce	Alan	Inmarsat
Street	Bill	WS Technologies Inc.
Weisser	Carl	Honeywell

Day 1 – Tuesday 1st September 2015 (9 AM – 5 PM)

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: January 30th 2015 and that attendance is open to the interested public.

Sophie described the RTCA policy with a brief presentation, demonstrating intellectual proprietary and references policy. She asked everyone to read the slides from the presentation and asked if anyone had any questions.

No questions were raised.

Tom introduced himself as chair of SC-229 and welcomed everyone to the meeting.

He commenced round table introductions for both persons present and WebEx.

Sophie asked everyone to complete the attendance in sheet in the lobby.

Tom explained that this was the 5th joint meeting and explained emergency procedures and administrative remarks.

Tom announced that there would be a briefing from Andy Cebula from RTCA.

Presentation from Andy - RTCA Membership

Andy (RTCA) took the opportunity to thank everyone for joining the working group. He discussed the work he does in RTCA, one being RTCA membership explaining how it works.

Andy discussed how RTCA is funded and that it is a non-profit organisation, providing logistics for the working groups to work. He explained that he would like companies to join to participate in committees.

Andy discussed Workspace access, Joint Committees and that you must be member of RTCA or EUROCAE and those Non-members need to join by January 1, 2016. The purpose is to ensure fairness of support and achieve consistency with other standards organizations.

Tom asked if there were any questions.

Philippe asked that if there was a consultant who is working for a member of RTCA, how do they attend the meeting. Andy replied that they should join RTCA or approach RTCA to discuss and work through it together, as they don't want to impinge on the work of the committees.

Chris H asked how companies and subsidiaries are handled. Andy answered that it wouldn't be an issue as they will be part of the main company who has RTCA membership.

Fadl asked how do we know if we are a member or not. Andy answered that there is a list on their website or to ask Sophie for clarification.

Tom asked about the process for if someone wanted to present a paper or presentation in Plenary, how they do it? Andy said that they should let you know ahead but the chair can decide with the federal representative.

Tom asked about freedom of information and how does this work, had RTCA been subjected to it? Andy explained that up until this point they had not been open to freedom of information because it is purely an industry standard and industry product.

No further questions.

Agenda overview and approval

Tom reviewed the agenda from the onscreen presentation:

Day 1

Welcome/Introductions/Administrative Remarks
Agenda overview and approval
Minutes Hamburg meeting review and approval
Review Action Items from Hamburg Meeting
"Phasing in" RTCA/DO-204B , EUROCAE/ED-62B requirements - discussion
Briefing of ICAO and COSPAS-SARSAT activities (Philippe in the absence of Miguel)
WG 1 to 5 status and week's plan
Other Industry coordination and presentations
WG meetings 1&2(rest of the day)

Day 2

WG meetings
WG-2: Continue work
WG-4: Kick-off

Day 3

WG-5 to start to work on the following:
    Review FRAC
    Review TSO Process
    MOPS Standards
    DO-204, ED62 Matrix and proposed changes.
WGs' reports
Action item review
Future meeting plans and dates
Industry coordination and presentations (if any)
Other business

Tom explained that there is flexibility in the agenda should working groups need more time.

No questions on the agenda.

Minutes Hamburg meeting review and approval

Tom reviewed the minutes from the previous meeting, there were no questions so he considered the minutes as approved.

Review Action Items from Hamburg

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

Action	Actionnee	Action
Action 1	Tom	To produce a combined timeline to submit to group members
Action 2	GROUP MEMBERS	To read ED62a & DO204a and to complete Philippe's spreadsheet for recommended changes
Action 3	PHILIPPE	To distribute WG1 documents
Action 4	SOPHIE	To check/update workspace calendar viewing capability for all group members
Action 5	PHILIPPE/ CHARISSE	To produce ICAO WG document
Action 6	PHILIPPE	To prepare summarised answers to Cospas-Sarsat questions and send to the group for approval

Tom announced that he has produced a timeline to cover Action 1 and would cover on the next slides.

Action item 2 – he reminded group members to read them and make comments. He said that it will remain open and will be important to the work of WG-5.

Action Item 3 – was completed on August 27th.

Action Item 4 – Sophie has completed this to prevent WebEx clashes with other WG's.

Action Item 5 – Tom Asked Philippe if this was posted on the workspace or sent to ICAO. Philippe confirmed that it was sent to ICAO along with the answers to the Cospas-Sarsat questions which cover Action Item 6.

Elias asked if he could see the document referenced on action item 5.

Philippe took action to update the group during the week.

Work Plan

Tom presented the work plan that he had produced to include milestones and approval dates. (Can be found on the workspace).

Xavier explained that it might not necessary work this way for EASA but sometimes they will adopt the FAA TSO but it could take about 6 months.

Tom reviewed the previous meetings and future meetings and that by December meeting in 2016 we should complete the work of the group.

Question from Fadl – for the final approval of TSO, would it be affected by Cospas-Sarsat (CS) specifications? Tom answered that yes it would be dependent on the CS documentation for 2nd generation beacons. Charisse clarified that they will have to work in conjunction with each other.

Dany asked a question regarding the readiness of CS documentation. he asked if they mean if the document is released or finalized? He asked what was meant by ready. He explained that CS documents would be updated regularly. Tom clarified that 'ready' means the stage at which you can use the CS documents to 'type approve' a beacon.

There was discussion on 1st and 2nd generation beacons on whether we have to wait for CS on 2nd generation beacons.

George said that he doesn't recall anything in the MOPs that specifically includes 2nd generation beacons or are we just including reference to them in the Mops?

Charisse clarified that the MOPs have to include both 1st and 2nd generation beacons.

George asked what part of the MOPs include 2nd generation beacons.

Charisse explained that the MOPs call up CS documents and reference CS documents currently.

George discussed that he is trying to figure out if there is something in the MOPS that only apply to 2nd generation beacons.

Chris H discussed that the MOPs currently don't call for an issue. He said we know the document numbers for 2nd generation beacons and doesn't see that there will be a holding factor. Charisse said that it is a problem if the referenced documents are yet finalised or published. Charisse confirmed that it could hold up the TSO process.

Tom said that he needs to add Cospas-Sarsat dates into his timeline.

ACTION – TOM TO ADD COSPAS-SARSAT SCHEDULE TO TIMELINE

Tom asked if Dany could take the action to give an update after the next JC meeting for the group.

ACTION - DANY PROVIDE UPDATE OF THE SCHEDULE TO TOM FOLLOWING JC-29 IF POSSIBLE.

There were discussions that the ICAO requirements can't be met by 1st generation beacons.

Xavier discussed other items like cancelation features of beacons that cannot just be referenced in the specifications.

Tom asked Philippe in WG-1 to bring up the issues with triggered in flight, cancelation and anything else that would have to go into the MOPs, debate on it and come back to plenary and provide a way forward.

Dany suggested that this group could produce a paper for the upcoming meeting to help the CS committee understand some of the points coming out of this group during the week.

Tom suggested that we could address this on Thursday.

Briefing of ICAO and COSPAS-SARSAT activities

Philippe gave a short update on ICAO activities referencing the letter sent from ICAO and that they have just received the comments back. He said that ANC will plan to review the documents by the end of September, which will be sent to high level in ICAO for publication. Publication will be at the end of November 2016 and the date is set for the 1st January for equipment to be fitted on-board newly manufactured aircraft. The key date for our timeline is the 1st January 2021 regarding ICAO.

Questions

Tom asked what lead-time would be required from Airbus and Boeing to work out what they need to do. Fadl said it would probably take about two years at least.

Airbus said it would also be about 2 years for them.

Philippe announced that there would be national regulation and the national regulation may add additional requirements.

Cospas-Sarsat update

Dany gave an update on Cospas-Sarsat activities. He said that CS had been at its busiest for the last two decades with work into MEOSAR and 2nd generation beacons. He said that they are deep into the testing of MEOSAR D&E test phase, testing the system. He announced that they had just completed the phase 2 test but they still have a phase 3 to complete. They are currently developing the ground segments.
They have other working groups focusing on 2nd generation beacons, homing scheduling and opening and closing of channels.

He said they are going to deploy MEOSAR and then 2nd generation beacons. He discussed that they would have to update all the ground segments to process 2nd generation beacons.

In terms of schedule, he said that they won't have a new schedule at the JC; they will analyse where they are now and produce recommendations.

The next update should come from the council at their meeting just before our meeting in Paris.

Dany discussed the JC and that it will be an important meeting as they have 107 working papers so far and approximately 40 information papers to review.

Dany said that it was mentioned that they will need to test 2nd generation beacons. He said this would be done in parallel and that some administrations are already carrying

out tests on 1st generation beacons. He said there will be administrations willing to test ELT's in a working environment.

Dany asked as there are chairs of the correspondence groups in the room and asked if they wanted to add any additional info?

Xavier asked when phase 3 of MEOSAR would be complete and when will we know when the MEOLUTs are complete and working for 2nd generation beacons.

Dany said that he couldn't give a date at this moment and that administrations are looking into the update of the ground stations at the moment.
He said that both questions would be discussed during the JC. He said that they are currently reviewing the phase 2 results but to keep in mind that phase 3 will take a few months to complete.

Xavier asked if it would it be feasible to organise a WebEx after the JC where CS could debrief the working group?

Dany suggested that RTCA could attend and provide a delegation.

Tom said that all this group needs to know is when we can apply to get a 2nd generation beacon approved.

Dany answered that they will not be in a position to type approve a beacon until they know the whole system can process a 2nd generation beacon. They need to know when they have enough MEOLUT coverage available and that also has to be upgraded. It will involve administrations from all over the world.

Chris H added that all the necessary points are in the plan but there are too many unknowns to see when we will complete the specifications.
He volunteered to provide an update for this group following the JC meeting.

George asked where the requirements are coming from for 2nd generation beacons to satisfy the ICAO requirements or the requirements coming from this special committee. He said that he is not confident that CS has a full set of requirements and they seem to be growing. He suggested that we should close the loop on what is expected from CS and what the requirements are.

Tom said that he would like to discuss in WG-1 and asked the group if we need to discuss if we are obligated to include ICAO requirements as the ICAO letter came in after this committee was formed.

Xavier pointed out that they are suggestions not requirements. He commented that the ICAO requirement and accuracy of position will have an impact. We should ensure that they are compatible.

Tom said that it's more than just the CS standards; we are also concerned about when all the documents are ready. It all has to come together with the TSO timeline. Tom suggested that we would try and get an update after the JC with Chris and Dany's help and then include it in our timeline.

WG 1 to 5 status and week's plan

Tom asked working group chairs if they could give an update to what they hoped to achieve during the week.

WG-1 – Philippe announced that WG-1 met through WebEx sessions to try and complete all outstanding questions. They are trying to focus on specific paragraphs to resolve various issues during the face to face meeting. They hoped to provide a new version of the document by the end of the meeting. He announced plans for a couple more WebEx meetings to complete the document for Open Consultation at the end of November.

WG-2 – Chad announced that they were still following their schedule, trying to make an initial draft of their final specification. He said that they have held WebEx and a face to face meeting during the last crash test at NASA.

WG-3 – Ed told the group that they meet via WebEx every other week, trying to schedule some 121.5 MHz performance testing with reduced duty cycle to compare performance. 4 countries have indicated they will try and carry out the tests, where Australia had already started to conduct tests. Other countries, Canada, USA and the UK are also following. They have prepared 3 papers for the next JC that he planned to share with the group later in the week. He discussed a questionnaire that they produced for DF manufacturers to complete, looking at what is required for their system to work.

WG-4 –Chris H explained that it would be their 1st meeting that week focusing on Return-link/Power Source. He wanted to review how much they are going to rely on existing CS specifications, RTCM specifications etc. he also planned to look at other specifications that are already out there that could be specified. He wanted to document the way forward.

WG-5 – Tom said that it involves stitching all of the work together, discussing FRAC process, MOPs and how we are going to complete the documents in time to get time to enable the TSO process to continue.

Tom discussed dates for the next meetings:-

Joint meeting 5: Washington	1 to 3 September 2015	
Joint meeting 6: Paris	15 to 17 December 2015	
Joint meeting 7: US	xx to xx April 2016	
Joint meeting 8: Europe	xx to xx September 2016	
Joint meeting 9: US last meeting	xx to xx December 2016	

He announced that the next meeting is scheduled before Christmas in Paris and would like to schedule dates for the next meetings. He asked members if they could have a think if there were any other meetings scheduled around the proposed months to make him aware during the week.

WG meetings commenced (rest of the day)

Day 2 – Wednesday 2nd September 2015 (9 AM – 5 PM)

WG 1 to 5 meetings continued.

Day 3 – Thursday 3rd September 2015 (9 AM – 10 AM)

WG 1 - 5 meetings (morning session)

WGs' reports

Tom welcomed everyone back to the plenary session. He thanked everyone for being flexible as there had been constructive debates taking time with WG-1 and WG-4. He discussed that WG-4 were developing a paper for the JC asking Cospas-Sarsat to consider the requests from the ICAO letter. He discussed the need to break as Ed had to leave early and wanted to present his working group report.

WG-3 Report

Ed introduced himself as acting chair of WG-3, described their purpose and goals to update existing standards.

He discussed the activities based around their monthly conference calls, preparing papers for JC-29 and providing input to T.008 CS specification.

He discussed the 121.5 MHz duty cycle testing and that they have been discussing homing requirements with DF manufacturers.

Ed said that most of their recent work has been looking at 121.5 MHz performance and that they are currently changing different duty cycles to justify changing IMO requirements. So far they have a number of countries involved in the trials.

He discussed a survey to DF manufacturers based on 5 responders to help derive what requirements will have to be met going forward. He said that different duty cycles shouldn't be a problem.

Ed discussed the 406 MHz homing characteristics they are developing discussing EIRP, CW duration and repetition rate specifications.

Ed asked if there were any questions.

Xavier asked if they intended to remove speech/voice from ED62A. Ed clarified that they had no plans to look at removing it. They are just looking at the homing tone.

Ed said at this time, it would take approximately 10 years to implement new technology and any major change would have to be phased in gradually. They have to accommodate current DF signals as well as looking to the future. He said they have action items to update draft 406 MHz based the survey and have to provide input to CS specifications.

Dany asked if we were to randomise the transmission of the 406 burst, would this have an impact on the DF? Secondly did we get an agreement if homing will be required for triggered in flight?

Ed said it needs to be discussed further and there are a whole range of parameters to be discussed. For question 1, it is randomised after the start, but the pattern is pretty much the same.

Chris H confirmed that verbally for an in-flight phase for an ELT you wouldn't provide homing but homing would be initiated after a crash however it's not stated on paper yet.

Xavier discussed, not using the homing during the triggered in flight stage, he said that we need to be careful when we word ED-62B/DO-204B to see how we switch from one phase to the other.

Chris H said that all of the work from WG-2 will increase the reliability of the G-Sensor, and secondly it could be timed to switch homing on after a while as a suggestion?

Philippe announced that we need discussion to know which mode the ELT is, whether it would be triggered in flight, whether it has crashed etc and would like to discuss further in WG-1.

Plenary adjourned at 10:40

WG-1 & WG-3 commenced

WG-1 reconvened to try and complete their work.
WG-3 also reconvened to produce a paper for JC-29.

Plenary commenced at 13:30

Tom welcomed everyone back to plenary.

Philippe discussed Action 5 from the first day as it was not clear. He said the action was to produce an ICAO working document and he had some work to do with Charisse to contact Arinc to see if it would be appropriate to create a WG, to determine what kind of inputs the ELT will need to send a signal whilst aircraft is in flight. He said they have sent documents to them to include the activities of this WG and information regarding ICAO. He said they have started a list of what inputs should be required but would like some input from the group on this issue.

Tom announced that we would have the working group updates and review action items

Presentation from Chair of WG-1

Philippe gave an update from WG-1, describing that they worked on the MASPS and that they reviewed the document from the previous week. He described what the document is about, primarily for the triggering logic that is inside the aircraft, discussing the ICAO recommendation for in-flight triggering. They tried to define the function blocks and specify what would be the criteria to start the condition for triggering. They have 4 scenarios defining the condition when the logic shall send information to the transmission system. The first being the ELT to trigger it and tell SAR responders that there is an aircraft in distress.

He said at the beginning, they had criteria of about 80 scenarios which had been reduced. They discussed logic to cancel the ELT if the aircraft recovers and defined persistence time, nuisance triggers and auto cancellation triggers.

he said that from early discussions, it was asked what would be acceptable nuisance trigger and they came up with values. Airbus had used the criteria on aircraft and have had 4 nuisance triggers in over 900,000 hours.

He described the verification process to demonstrate that the triggering criteria can detect a real event. They used reports and databases to test if the triggering criteria will work for every event.

He said that they have some minor adjustments to make to refine the database ensuring that all types of scenario are included in the database. He asked members of group 1 to check that he had summarised correctly the work of the working group.

Philippe announced that there would be a new version that would be sent to the group following the 2 WebEx sessions on 21st September and 16th October. The document would also be sent to Eurocae for open consultation (equivalent of FRAC). In mid-December he announced that he planned to have received all comments from Eurocae members which will enable them to review comments in Paris and update the document for publication in January 2016.

Philippe asked if there were any questions.

Tom asked what the next stage would be following publication. How will regulations work? Philippe said there will be a rulemaking process in Europe to discuss the process of informing the ground before the accident. He said they will analyse a robust means to locate an accident. Xavier added that they already have operational requirements but that's a general requirement. He said they are almost ready to release AMC material to support this.

Philippe asked the group to read the document and produce comments, especially beacon manufacturers.

ACTION GROUP MEMBERS TO READ THE DOCUMENT AND PROVIDE FEEDBACK.

Presentation from Chair of WG 2

Chad summarised the work that had been completed during the week and throughout the summer, reviewing the scope of work which was an outstanding action from the last meeting.

He discussed the 3 airplanes they crashed during the summer, assessing beacons transmissions and installation techniques. The outcome would be to produce computer models with the aim of improving aircraft survivability.

They are still assessing the crash data which they hope to be available for the next meeting in Paris.

They continued the work on the MOPS for crash safety, fire flame and vibration.

He said that the scope hadn't changed since Hamburg apart from the inclusion of ED62-A references.

He discussed the plan for the next steps to finalise their recommendations for crash safety. He described that the documents are in a draft status but there are a few items that need input from plenary.

He presented a video from the first test which simulated a hard emergency landing; the data was reviewed back in July which is now available on the workspace. The second crash was more severe pitched at 12 degrees nose down into soil. Chad announced that if anyone wanted to know more about the tests, a formal paper available in November. For the data assessed so far, it was representative as a severe but survivable crash and they did get transmission back from space even though the plane was on its back.

The third test was 12 degrees nose up (tail strike) the tail struck the soil first and the plane flipped again. The tail totally separated from the cabin but stayed with the cabin via the skin. Some of the cables gave way and some had damage at the BNC connector but some did survive and transmit.

The other part of the scope was to find is the best place to put the ELT. He announced that for crash sensing, you want it in the forward position but for survivability, towards the back is more survivable.

Questions

Dany asked if they could clarify that they got MEOSAR detection with antenna facing the ground. Chad answered 'yes' that is true, and showed the video which is available on the NASA website. He confirmed that they got GEO and MEO detections.

Lisa discussed that after the first crash there were seemingly delayed transmissions. Chad explained that at that time they were taking data from a local beacon tester and NOAA. The beacon monitor and GEO agreed the time stamps. Later, they found that MEOSAR received transmissions at the same time. It was later discovered that there is a delay with the beacon tester when detecting multiple beacons where MEOSAR can take multiple transmissions. Chad clarified that the initial data wasn't true and that beacons did actually go off at the same time.

Dany asked if NASA were planning on publishing this data to a Cospas-Sarsat meeting as there are so many people thinking that perhaps ELTs don't work because planes are on their back. He said it would be useful information. Chad replied that they had no intention at this stage.

Chad discussed the fire tests and that the group is debating and seeking input as to what a reasonable duration of exposure should be. He said that they may need different requirements for 1st and 2nd generation beacons due to the repetition rate.

Chad discussed Eric Hiner's tests on fire testing but informed the group that it has now been delayed until 2016 due to technical issues.

Chad plans to Continue monthly WebEx meetings and to have a face to face meeting Paris.

Presentation from Chair of WG 4

Chris announced that WG-4 met for the first time to start looking at the 3 key areas that they are responsible for. They started by looking at the decisions from the table produced during plenary in January 2014.

They looked at the decisions applicable to WG-4 to include GNSS, Return link service and power sources. When the original list was produced, there were some items that were left to be determined, so the group started to look at these items first.

They proposed that integral GNSS for 2nd generation beacons should be optional.

They proposed that external GNSS for 2nd generation beacons should be mandatory but not for survivable ELTs.

They proposed that automatic triggered in flight capability should not be required in 1st generation beacons.

They discussed rechargeable batteries and are proposing that this should be an option within the ELTs. This is due to ongoing issues with primary cells and rechargeable batteries may be able to deliver the requirements but suggested that a plenary meeting should discuss this subject.

They looked at GNSS receivers to see what standards are currently available to see if they could be used within our specifications. He suggested that there are currently no requirements within ED62A or DO204A for GNSS systems.

Chris asked if Charisse if she could go back to the FAA to see if we can adopt existing standards for GNSS and to see if they are already referenced in existing TSOs. Chris also suggested that we do need to know more about existing standards and there are Special committees already working on these like SC159. He said that Sophie had agreed to set up a WebEx for WG-4 and is going to organise an expert from SC159 to give an overview of what's in those documents.

ACTION CHARISSE TO LOOK AT EXISTING STANDARDS USED IN TSOs TO SEE IF IT IS ACCEPTABLE TO ADOPT FOR ED-62A/DO-204A.

ACTION SOPHIE TO SET UP WEBEX AND ORGANISE A SPECIALIST FROM SC159 DO PROVIDE AN OVERVIEW OF THE CURRENT GNSS SPECIFICATIONS

Chris said that they have looked at return link service and suggested and one of the suggestions was that this could be provided in a separate box as it doesn't necessarily have to be part of the ELT. Using this method you can use and existing approved ELT and bolt on the return link option to it.

They discussed the issues with power from the aircraft power supply. It was discussed that they don't know the ICAO requirement well enough to solve this issue at this stage. They ran out of time to continue with this subject but will continue at the next meeting.

Chris said that they look further into batteries and would like input from OEMs on this subject.

They agreed that they didn't want to restrict battery technology. They agreed that they would use RTCA specifications where applicable. He suggested that we talk to SC235 which is a working group that has just started to discuss Battery technology on Aircraft. We would also need to look at timelines if we are going to reference the new version of DO-227.

They discussed the need to look at ELT antenna specifications but are not looking at proposals at this stage. They have also questioned whether the 121.5 MHz homing signal still needs to last 48 hours but they need input from the SAR responders on this subject.

Questions

Fadl raised a question regarding the DO-227 not being be ready in time, he proposed that they consider to meet the requirements of the FAA regulations instead. Chris said that it was discussed and SC235 will include them into DO-227 however we are not aware of their timelines. They have their first meeting in October.

Mike discussed external GPS, He said that the reasoning behind that was that it's inexpensive for users to provide and it's not mandatory but beneficial. He said that other GNSS receivers are there apart from Arinc like RS232 to provide a cheaper way of getting GNSS into your ELT.

Dany raised three questions, the first in terms of RLS. He asked if there was a need to have RLS, not necessarily to turn on the ELT but just the RLS as a return message, for example getting an indication in the cockpit?

Secondly, when looking at power source, did you consider the aircraft providing power for the triggering in-flight?

The final question would be when talking about ELT antennas, was it applicable to 1st and 2nd generation beacons or just 2nd generation beacons?

Chris answered for the antenna it apply to both 1st and 2nd generation but more about looking into tests with the antennas situated on antenna skins that are more true to life. He suggested that it's just an idea at this stage. For the power source, it was their understanding that you can't use aircraft power to cover the GADS requirement but this comes back to needing clarification from ICAO requirements. For the RLS they are looking to use the simple option. They agreed that it should remain optional if the manufacturer wants to build it in.

Xavier asked about GNSS, he would discourage the use of current specifications as they are very large and confusing. He suggested that it should be kept simple but good criteria. Regarding the 48 hours, he agreed that we need SAR specialist's feedback before proceeding to reduce 121.5 MHz to 24 hours.

Chris agreed about the GNSS and for the 48 hours and suggested that it is a hangover from the old style beacons, the 121.5 MHz does drain the batteries and it would save power making beacons smaller but agreed we need feedback from SAR responders.

No more questions.

Presentation from Chair of WG-5

Tom discussed that WG-5 was supposed to start during the week but most of the time was spent writing a letter for the JC. He said that they will start to have bi-weekly meetings all the way through December to start forming the standard. They were going to review FRAC and FAA/TSO process, and look at the drafting guide for producing the MOPS.

He announced that one of the first items is to look at compliance matrices demonstrating DO-204A. He said that ED-62A has a similar table but the sequence is different. We will have to rationalise the tests and make them match. Then they will need to look at the comments that Philippe has been receiving from the first meeting.

Tom said that they will need input from all areas.

Philippe discussed that he has organised a meeting with Alan the following week to try to analyse both of the documents and that Alan has already started looking at the deference's in the documents. The next level is to look to see if there are items in DO-204A that aren't in ED-62A. He stressed that it is important not to forget anything from DO-204A. Tom suggested that we need to keep justification on what we change and said that he will send the spreadsheet out to the group again to ask for comments along with rational.

ACTION PHILIPPE TOOK ACTION TO RESEND THE SPREADSHEET TO THE GROUP.

ACTION GROUP MEMBERS TOOK ACTION TO CONTINUE TO SEND COMMENTS ON SUGGESTED CHANGES TO THE DOCUMENTS FOR DEBATE.

Future meeting plans and dates

Tom reviewed future meeting dates.

Philippe announced that he had sent the calling notice but will update it to include the dinner.

Conflicts for future meetings were discussed and Tom announced that he will pencil in dates within the coming months.

Dates for the next meetings are scheduled as follows:

Joint meeting 6: Paris	15 to 17 December 2015
Joint meeting 7: US – RTCA	xx to xx April 2016
Joint meeting 8: Europe (FRAC Release)	xx to xx September 2016
Joint meeting 9: US - RTCA (FRAC Resolution)	xx to xx December 2016

Other business

No other business

Adjourn

Tom asked if there were any other questions.

Dany asked if there would be a summary of this meeting presented to the CS meeting. Tom said that he currently has no plans.

Tom thanked Stuart, Sophie, Charisse and Philippe for their work and group leaders and RTCA for hosting the week.

He also thanked everyone for attending.

Meeting closed 15:00

List of Actions TBD

ACTION NUMBER	ACTIONNEE	ACTION	STATUS
ACTION 1	GROUP MEMBERS	TO READ ED62A &DO204A AND TO COMPLETE PHILIPPE'S SPREADSHEET FOR RECOMMENDED CHANGES	OPEN
ACTION 2	TOM	TO ADD COSPAS SARSAT SCHEDULE TO TIMELINE	OPEN
ACTION 3	DANY	PROVIDE UPDATE OF THE SCHEDULE TO TOM FOLLOWING JC-29 IF POSSIBLE.	OPEN

ACTION 4	GROUP MEMBERS	ACTION GROUP MEMBERS TO READ THE DOCUMENT AND PROVIDE FEEDBACK.	OPEN
ACTION 5	CHARISSE	TO LOOK AT EXISTING STANDARDS USED IN TSOS TO SEE IF IT IS ACCEPTABLE TO ADOPT FOR ED62A/DO204A.	OPEN
ACTION 6	SOPHIE	TO SET UP WEBEX AND ORGANISE A SPECIALIST FROM SC159 DO PROVIDE AN OVERVIEW OF THE CURRENT GNSS SPECIFICATIONS	OPEN
ACTION 7	PHILIPPE	TOOK ACTION TO RESEND THE SPREADSHEET TO THE GROUP.	OPEN
ACTION 8	GROUP MEMBERS	TO CONTINUE TO SEND COMMENTS ON SUGGESTED CHANGES TO THE DOCUMENTS FOR DEBATE.	OPEN