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**SC-230 Plenary 3 Meeting Minutes – March 2015**

**Attendance list:**

<b>Name</b>	<b>Company</b>
Baker, James	Federal Aviation Administration
Beutelman, Peter	Rockwell Collins, Inc.
Blake, William	Garmin
Bousquet, Sophie	RTCA
Campagna, Franck	Airbus
Danilov, Vladimir	State Research Institute of Aviation Syste...
Do, Mai	Airbus
Finley, Jeff	Rockwell Collins, Inc.
Fersdahl, Mark	Rockwell Collins, Inc.
Gidner, Dawn	Honeywell International, Inc.
Harrah, Steve	NASA
Jeanneau, Charlotte	Airbus
Logan, Gloria	Honeywell International, Inc.
Marczinko, Jenő	Nordam
Moreno, Irene	Airbus
Mueller, Roland	The Boeing Company
Nguyen, Lee	Federal Aviation Administration
Robertson, Roy	Rockwell Collins, Inc.
Sishtla, Venkata	Rockwell Collins, Inc.
Sprague, Bob	Southwest Airlines
Tatas, Hulya	STM A.S
Tschacher, Luke	The Boeing Company

**March 17, 2015**

- **EUROCAE WG 95 Update (Jeff Finely and Irene Moreno)**
  - Jeff provided an initial introduction to the background of WG-95 followed by further detail by Irene regarding the Terms of Reference (TOR) revision that was proposed for WG-95 to the EUROCAE council in February 2015.
  - EUROCAE recommendation was to only target WXR system and HAIC, rather than all icing conditions and all sensors. This was presented to the EUROCAE TAC on February 12<sup>th</sup>, 2015.
    - TAC recommended changes to the TOR revision as follows, “[This document will include] conclusions and recommendations for the future In-Flight Ice Crystal Long Range Awareness discussions, identifying the need of further standardization activities and collaborations with relevant bodies.”
  - Corresponding changes to the TOR are being proposed to the TAC again for final approval on TBD (Irene to follow up with EUROCAE on when we can get formal approval from EUROCAE TAC).
  - Likely first meeting of the new working group sub group would be formally in the July WG-95 meeting with perhaps a telecom before and after EUROCAE approval.
  - Final document would be released in 3Q2016.
  - Once complete, depending on the state of the technology, we could address potential updates to DO-220 at that time.
  - RTCA/FAA requested Irene share her final TOR updates to the RTCA so they can determine if they will pursue a joint RTCA/EUROCAE approach for the WG-95 subgroup and the interim report.
  
- **Dedicated Atmospheric Hazards MOPS Discussion (Lee Nguyen)**
  - Lee brought forth a recommendation from the wave vortex tiger team (RTCA team) to “Develop onboard weather sensor MOPS to support airborne radar weather hazards indication and meteorological data link reporting. The MOPS should include, but not be limited to icing, relative humidity, lightning and volcanic ash sensors.” This was item 20 on the tiger team recommendation list.
  - Lee’s proposal was to create a functional Minimum Operational Performance Standard (MOPS) to address this recommendation as a potential follow-on activity for the DO-220/DO-213 team as a separate requirements document.
  - There was some discussion on perhaps not having enough information on the current technology for all of these items in the recommendation. There was a suggestion to have a white paper instead of functional MOPS until enough information was available

to construct a useful MOPS. The FAA's recommendation was to continue with a functional MOPS. Others in the room (NASA) provided the example of HAIC as one strategy (WG-95 is creating an Interim Report (similar to a white paper)) which may be something that could be used to facilitate a future MOPS. NASA's position was, if we want to call this a 'functional MOPS' to provide the support the FAA needs, then maybe that is okay. Lee mentioned a functional MOPS is actually a normal MOPS, just with a different level of information.

- The final vote was to continue the discussion on Thursday to see if this committee or another committee would like to pick up this discussion and take on this task.
- DO-213 TOR Revision Background / Proposal - Jeff/Dawn/Franck
  - Next we briefly went over some of the TOR updates for DO-213.
  - There was a recommendation from the FAA to move the FRAC resolution to November for both DO-220 & DO-213, which would have release or proposal for release to the PMC in March 2016. There was some concern within the team that this would be a very sporty proposal. The RTCA (among others) had some reservations about changing the FRAC resolution meeting for DO-213 from the current proposal (March 2013) to November 2014 (stated it was not possible).
  - We will need to have RTCA outline the overall timeline for the release process. (3/19/15 update - RTCA provided a pitch on 3/19/15 with the overall process requirements. The plan is to shoot for the December PMC for both DO-220 and DO-213 revisions, knowing things may change as we get into the document).
  - FAA strongly recommended (with direction from their management) to try to wrap up only the changes proposed to DO-213 and keep the review very short.
  - There was concern from the room that the revision might not be that simple and that some of the revisions proposed would likely need to be vetted with the larger Radome community and may require further testing/analysis (the side lobe discussion in particular)
  - Discussion to continue on Thursday.
  - The Airbus team presented the proposed changes to DO-213 and will provide a copy of the presentation for the team's consideration and as the starting point for the draft revision to DO-213. Dawn will use this as the baseline once approved by the RTCA council and provide a working 1st draft to the team members identified for the sub-group.

- DO-220 General Requirements Section Review (Sections 1 through 2.2.2) - Roy Robertson
  - Roy presented the changes made to the general requirements section of DO-220. There was a general comment that we use the terms 'must' throughout the document. Sophie mentioned that, if at all possible, we should avoid the use of 'must' and therefore should be changed to meet the definitions in section 1.7. If we *must* use must, we *must* define it along side Shall, Should and May in section 1.7.
  - Also, in general, F Factor will be replaced throughout with the hyphenated version 'F-factor'
  - Also a general comment, section 1.4.1 should be put into bullets or a paragraph more in line with section 1.4.3 rather than having subsections.
  - There was some discussion on section 1.4.5 and whether we should keep 'adversely' in this section. It was decided to leave 'adversely' in the sentence as the intent is to say it should not negatively (from a qualitative standpoint) the crew workload as opposed to negatively (quantitatively) impact crew work load. The sentence was re-structured for grammatical reason.
  - There was a request to revise 2.1.2 to include section 1.4 as a point of reference for the description of the intended functions. This was accepted by the team provided we leave in the sentence in section 2.1.2 stating the radar manufacturer shall provide a clear description of each included function.
  - There was discussion on whether the 'Fire Protection' section should be kept under the umbrella of not requiring testing as stated in section 2.1. The discussion was tabled until the section 2.3 discussion as the same test is listed as 'when required'. Some believe it has always been this way, others that there should be a requirement to test or provided analysis for flammability (14 CFR Part 25, Appendix F) as this is a requirement at the installation level. The team will need to check DO-160G and compare to Appendix F (FAA commented they are now the same...)
  - There was wide discussion on whether section 2.1.8.1 (Windshear Detection Equipment Interface Tolerances) should be moved out of 2.1.8 and perhaps either completely deleted or moved to the windshear appendix. This decision was made to let the working group determine the appropriate fate of 2.1.8.1.
  - Section 2.2.2.2 is going to be revisited to address adding clarification to what 'Reflectivity Data' means in this case (can mean simple translation of existing radar data stored in memory vs. new measured data).
  - Further Discussion on 3/18/15 - There was a lot of discussion regarding non-standard modes/practices that may result in being in a mode which does not meet the requirements of this MOPS. There was a suggestion that this is a non-TSO function and





**Start of 3/19/2015**

- DO-220 Atmospheric Threat Awareness Requirements Section Review (Sections 3 and 4) - Mark Fersdahl
  - There was a fair amount of discussion regarding the use of ‘must’ or ‘shall’ in a heading paragraph of any of the sections in section 2. The FAA had the position that ‘shall’ should be included in the header to ensure that IF you are going to have an ATA feature, you **shall** meet *all* the requirements in that section. Others in the room wanted to remain consistent with the rest of the document and only put shall statements in place when there was an associated test section. The **action** was to go verify consistency with the rest of the document. The discussion ended with both parties not in agreement as to the final position. A comment was noted in the document.
  - There was some discussion whether there should be a ‘False Alert’ requirement added to ATA. The comment was withdrawn and the team decided we didn’t need to add a ‘False Alert’ requirement for every radar feature.
  - The FAA questioned whether there is a need to annunciate a unique mode when you have ATA selected/displayed. I was determined this original writing of the ATA section has been updated slightly and this information is embedded in the test section of ATA (movement to the requirements section is being contemplated). In the end, an **action** was given to Mark’s working group to look into adding a requirement for making sure the modes in use shall be clear to the pilot.
  - The symbology requirement was also updated to more closely reflect the wording in AC 25-11A/B and the use of human factors studies as part of the verification for the requirement.
- DO-213 Committee Discussion (Jeff)
  - Jeff reviewed the pitch to be provided to the RTCA PMC next week and an initial list of candidates for the new committee was gathered. All participants will provide Jeff a full list within the next month to gather the initial team (members can always be added at a later date as needed).