

MINUTES OF THE SEVENTEENTH MEETING

RTCA Special Committee SC-222

Aeronautical Mobile Satellite (Route) Services

January 22 and 26, 2015

The seventeenth meeting of RTCA Special Committee SC-222 was held at RTCA in Washington, DC.

The following participated either by attending in person or dialed in by phone and Webex (shown by *):

Dr. E.F.C. LaBerge, Co-Chairman	EFC LaBerge Engineering & Analysis, LLC
Dr. Orville Nyhus, Secretary*	Honeywell International, Inc.
Mr. David Robinson, Designated Federal Representative	Federal Aviation Administration/AIR 130
Bill Bowen*	Rockwell Collins
Dumitru Cristea*	Bombardier
Johan Gericke*	Cobham
David Green*	Rockwell Collins
Jun Han*	Rockwell Collins
Nick Hendrickson*	Flyht
Matt Hills*	CMC Electronics
Michael Hooper*	Iridium
Jennifer Iversen	RTCA
James Klopfenstein*	Rockwell Collins
Bob Lehman*	Honeywell International, Inc.
Louis Rossa	
Alan Schuster-Bruce*	Inmarsat
Richard Tapp*	Honeywell International, Inc.
Glenn Torgerson*	Boeing
Craig West*	Thales

Introductory Remarks

Dr. LaBerge opened the meeting at 9:30 AM EST on January 22, 2015, with introductory greetings and remarks. He then called for introductions of the attendees in attendance, both on-site and on-phone.

David Robinson gave a Federal Introduction.

Jennifer Iversen Reviewed RTCA Policies related to Special Committees.

Dr. LaBerge presented an agenda for this meeting. The purpose of this meeting is threefold: First, to consider the draft Change 4 to DO-210D. Second, to consider a work plan to progress development of Iridium NEXT material for DO-343, as approved the the PMC on December 16, 2014. Third, to consider

a work plan to progress cooperation with Eurocae WG-82, as approved by the PMC on December 16, 2014.

Dr. LaBerge reviewed WP-115 which contains the minutes of the sixteenth meeting of SC-222. Dr. Nyhus was requested correct the minutes to indicate that the meetings in April and May were conducted via telecons. Also the word "Inmarsat" was removed from the title of the minutes. With those changes the minutes were approved by the group.

Dr. LaBerge reported that DO-262B has been approved by the PMC.

Dr. LaBerge introduced Working Paper WP-151. There was discussion to change the Out-of-Band requirements in the SDM back to DO-210D and for the related test section to use the approach in DO-262B.

Dr. LaBerge introduced WP-156 from Rockwell which was reviewed by James Klopfenstein.. This is a table relating DO-210D and the SDM. Mr. Klopfenstein reviewed a history of equipment development and documents related to STC versus TSO, etc.

Alan Schuster-Bruce indicated that Inmarsat will support Classic Aero services until the end of life of the I-4 satellites.

James Klopfenstein and Jun Han conducted a line-by-line review of the table in WP-156 while Dr. LaBerge recorded recommended changes to be included in a new working paper, WP-156a.

Dr. LaBerge introduced working paper WP-157. For Section 2.2.2.0 Dr. LaBerge will add text similar to DO-262B for the antenna and transceiver to support separate TSOs for antennas and transceivers.

Regarding the new Table 2-15A, Dr. LaBerge indicated that this table may need more work, but the modified table will be included in material for consideration for FRAC which will bring comments about that table for FRAC.

Related to Items #4, #5, and #6 in WP-157, Dr. Nyhus is to ensure the 40 dB isolation between SATCOM and GPS antennas is correctly included in the HSN tables for the GPS frequency range.

For Item #7, the spectral level of -55 dBc/4 kHz should be -70 dBc/4 kHz starting at ± 100 kHz and beyond from the carrier. In section 2.2.4.2.16, Figure 2-1, the requirements should be for Figure 2-0 rather than the break points in the table. The mask for 8.4 kHz is different and needs a new figure. Alan Schuster-Bruce volunteered to draft new material and add a new paragraph for -55 dBc/4 kHz out to ± 100 kHz and step down to -70 dBc/4 kHz beyond ± 100 kHz.

Alan Schuster-Bruce commented that the SDM should use $\pm 4 * SR$ instead of ± 35 kHz for 21k bit channels with a 10.5k symbol rate.

For Item #9, for voice tests, Alan Schuster-Bruce, Rockwell Collins, Honeywell, and Cobham are to write a recommendation. Alan Schuster-Bruce will lead this effort. Richard Tapp will propose a paragraph plus add a note to refer to DO-262S as an alternative method.

A continuation of this plenary meeting was planned for January 26, 2015 at 2:00 PM EST.

RTCA Paper Number: 089-15/SC222-39
March 27, 2015
SC-222/WP-159
January 26, 2015

This meeting was adjourned at 1:48 PM EST.

The continuation of this plenary meeting began at 2:00 PM EST on January 26, 2015.

The meeting continued with further review of Change 4 to DO-210D.

There were additional comments that the antennas and transceivers can be separately approved.

Comments about Paragraph 2.4.4.3.11 will be covered in FRAC comments to get the text corrected. There was no consensus on this subject in this meeting.

There were comments about using DO-210C for older equipment.

Alan Schuster-Bruce commented that the references to Inmarsat documents are out-of-date. Bob Lehman commented that Inmarsat previously agreed to archive old documents for reference purposes. Dr. LaBerge recommended not changing the references in DO-201D. Alan Schuster-Bruce pointed out that newer versions of the SDM, especially Module 6, are proprietary and subject to non-disclosure agreements with manufacturers. This will be a further question for FRAC.

Action Items

Dr. LaBerge: Provide text for Section 2.2.2.0 similar to DO-262B for the antenna and the transceiver to support separate TSOs for Antennas and Transceivers.

Alan Schuster-Bruce: Draft new material for a new table and a new figure for Section 2.2.4.2.16 to correct signal spectral requirements.

Richard Tapp: Provide comments for Item 7 in WP-157 for FRAC comments for signal noise levels.

Matt Hills: Provide comments for FRAC regarding signal spectrum.

SC-222 Committee Members: Submit comments for FRAC.

Future Plans

The next plenary meeting is planned for February 27, 2015 at 9:00 AM EST.

SC-222 Information Website

SC-222 material is found at <http://workspace.rtca.org>. For help contact Jennifer Iversen at RTCA, 202-330-0662, or jiversen@rtca.org.

Adjournment

Dr. LaBerge adjourned the final session of this plenary meeting at 3:00 PM EDT on January 26, 2015.

**LIST OF PAPERS PRESENTED AT THE 17th MEETING OF SC-222,
 January 22 and 26, 2015 at RTCA**

WORKING PAPER No.	AUTHOR	DATE	TITLE
WP-119	LaBerge	5/5/2014	Draft revised HSN/IM tables and text for DO-262B
WP-120 to WP-149	None	None	Unused WP Numbers
WP-150	LaBerge	12/16/2014	Agenda for Plenary 17
WP-151	Han/Klopfenstein	8/27/2014	DO-210D Change 4 Proposals
WP-152	LaBerge	1/8/2015	Draft DO-210D Change 4
gWP-153	LaBerge	1/8/2015	Suggested DO-210D Change 4 content on in-band, off-channel spectrum
WP-154	Gericke	1/8/2015	Comments on RCI Proposed Content for DO-210D Change 4
WP-155	LaBerge	1/20/2015	Rationale for -70 dBc/4 kHz oob limit
WP-156	Klopfenstein/Han	1/20/2015	Rationale and revised proposal for Change 4
WP-157	LaBerge	1/21/2015	Draft DO-210D Change 4 with proposed modifications
WP-158	Richard Tapp	1/20/2015	Honeywell Comments to WP-152 Draft Change 4