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EUR 416-22 / WG78-54

November 10, 2022
St Denis & Washington

EUROCAE WG-78 Plenary # 33 / RTCA SC-214 Plenary # 42 “Standards for Air Traffic Data Communication Services” - Minutes
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Date	November 7-10, 2022
Place	Seal Beach, CA, USA
Hosted by	Boeing

Meeting Summary:

The joint plenary of RTCA Special Committee 214 (SC-214) (#42) and EUROCAE Working Group 78 (WG-78) (#33) was held November 7-10, 2022. The meeting was conducted as an in-person and WebEx meeting with the following attendees participating (* indicates in person attendance).

<u>Name</u>	<u>Company</u>	<u>November 7</u>	<u>November 10</u>
Alexander Engel*	EUROCAE	X	X
Andrew Ives	Inmarsat	X	
Anna Cagedemetrio	EUROCONTROL		X
Armin Schlereth	DFS	X	X
Bjarni Stefansson*	ISAVIA	X	X
Brandi Teel*	RTCA	X	X
Chris Young	Collins	X	
Christophe Visee*	EUROCONTROL	X	X
Claire Robinson*	Universal Avionics	X	
David Illan	ESSP	X	
Doug Straub	Collins	X	
Dung Nguyen*	Boeing	X	X
Edward San	FAA	X	X
Erik Mok	Universal Avionics	X	
Ferdinand Dijkstra	FerWay		X

Frank Lindemayer	DFS	X	X
Frederic Beltrando*	Airbus	X	X
Greg Saccone*	Boeing	X	X
Guillaume Molinier*	Airbus	X	X
Isabelle Herail	EUROCONTROL	X	
Jean Boucquey	EUROCONTROL	X	X
Joachim Hochwarth*	General Electric	X	X
Karsten	Mikeska	X	
Kim Cardosi*	The Volpe Center	X	X
Kirk Kolek	Collins	X	
Luc Emberger*	Airbus	X	X
Mark Patterson	FAA		X
Michael McDowell	Collins		X
Mike Matyas*	Boeing	X	X
Moin Abulhosn*	FAA	X	X
Noah Inahara*	Boeing	X	X
Radek Zaruba	Honeywell		X
Richard Kynard	Garmin		X
Shelley Bailey*	NavCanada		X
Steve Ferra	FAA	X	X
Theresa Brewer	FAA	X	
Thierry Lelievre*	Cap Gemini (on behalf of Airbus)	X	X
Thomas Mustach	FAA	X	X
Todd Kilbourne	Mosaic ATM	X	X
Viktor Jagasits*	EUROCONTROL	X	X
Vincent McMenemy	FAA	X	X
Wendy Gutierrez*	Collins	X	X
Willie Truong*	Honeywell	X	X

* Indicates attendance in person

1. Welcome, Introductions and Administrative Remarks (Plenary)

The joint 42nd Plenary of SC-214 / 33rd Plenary of WG-78 was convened in person at Boeing and via Webex on November 7th, 2022 at 9:00 am PST by Chairs Claire Robinson (Universal Avionics) and Luc Emberger (Airbus). RTCA and EUROCAE anti-trust statement, proprietary policy and membership policy were read by Brandi Teel (RTCA) and Alex Engel (EUROCAE). Welcoming remarks were then made, followed by each attendee introducing themselves.

2. Agenda, Meeting Minutes and Action Item Review (Plenary)

Claire Robinson (Universal Avionics) presented the detailed agenda. The agenda was reviewed with some minor changes based on presenter availability for the plenary. The agenda was then agreed to with the changes noted.

The plenary held discussion of revisions to the title of the SPR document. There was no decision on the first day. The discussion was continued later in the week.

Meeting minutes from SC-214 Plenary 40/WG-78 Plenary 32 were reviewed and approved with minor changes of the attendance list. The correction was to add the attendance of Anna Cagedemetrio and Christophe Visee as attending on the 10th.

Todd Kilbourne (Mosaic ATM) went over the action item list and any actions which were completed were officially closed. The action items were revisited once more at the closing plenary session.

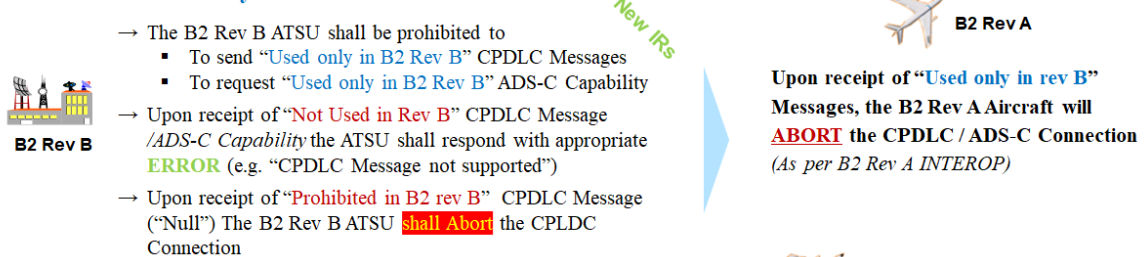
Action Item #5, **Message set and SPR modifications**, was discussed. Joachim spoke with Mike Jackson of Honeywell to clarify the findings from Task W. Joachim gave a brief presentation on Tuesday with his conclusions. The group agreed that the AI was OBE.

Action Item #42, **provide inputs/preference on the presented ASN.1 compatibility and version discussion** was closed on Monday. It was discussed in the subgroups during the week.

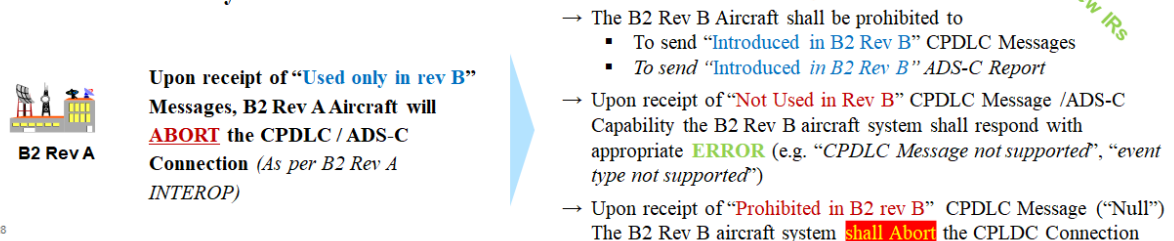
Action Item #43, **Create a comparison of the functional differences (such as the CPDLC message set differences) between the Rev A and Rev B Services** was discussed. It was decided to leave it open and discuss it during the subgroup meetings. The group indicated the CNS ATM operational capability is the same between Rev A and Rev B. Rev B only provides improvement and clarification to the same CNS ATM operations specified in Rev A; hence, the ATSP does not care if it provides data communications to a Rev A or Rev B equipped aircraft. This was also to be claimed in the Rev B standard to be published. The B2 Rev A Backward will be limited to the “technical” backward compatibility to avoid the shutdown (“abort”) of the CPLDC connection when a B2 Rev B system receives a B2 Rev A message. This result in an operational limitation of a B2 Rev A System when discussing a peer B2 Rev B system.

What does “B2 Rev A Backward compatibility” mean?

B2 Rev B Ground System with B2 Rev A Aircraft :



B2 Rev A Ground System with B2 Rev B Aircraft :



Action Item #44, **Reach out to the TAC/PMC to ask for clarification on the B2 mandate(s)/implementations specifically about CPDLC and specification revisions:** EASA has asked for clarification. This item remains open.

Action Item #45, **Leadership to reach out to the FAA and other ATSPs for existing test/operation, scope conversations:** the work has started. It will remain open for further discussion.

Action Item #47, **Airbus to provide the safety assessment performed on the ROT change that was presented to the safety and performance subgroup for review:** not ready to update the safety assessment; need more information. Remains open.

Action Item #48, **UM148 WHEN CAN YOU EXPECT, get feedback from pilots/human factors:** to be discussed during the week and the intent was to close on Thursday.

Action Item #49, **What is in scope and out of scope of the current standards documents update:** This item is covered in the TOR discussion. This item was closed.

Action Item #50, **Review the RSP concept definition and monitoring plan. Seek feedback from all ATSPs on their opinions:** This item is still open.

Three new action items were added:

Action Item #51, Survey to provide opinion on whether tables in DO-351, vol. 2 are useful.

Action Item #52, Work on new text for availability and continuity clarification

Action Item #53, Solicit members for support of final editorial work

There was discussion regarding an action to review a proposed change to the title of the SPR document. The group decided that the name of the document will be DO-350 Rev B, Safety and Performance Standards for ATS Data Communications (SPR Standard).

3. Subgroup Status and Presentations

The subgroups provided status briefings in order to brief the plenary and discuss plans for the week.

Operational Subgroup (Thierry Lelievre, on behalf of Airbus)

Thierry presented the status of ops subgroup. He provided the following update:

At the date of this plenary, the group achieved:

- Significant progress on solving the remaining issues
- All SPR and B2 interop change proposals agreed have been integrated in the draft document (thanks to the Oct 2022 Editorial meeting)

As of today, 67 SPR Change Proposals already recorded with the following resolution status:

- 56 Change Proposals Integrated in SPR and when required in INTEROP)
- 2 related to Safety & Performance are still « In progress »
- No « OPEN »

Note: This represents more than 370 Changes in SPR and 274 Changes in INTEROP.

The proposed work plan for the next day session was:

- Conclude on remaining/open issues
- Discuss operational need associated with the 'Level / Speed constraint status change' (DFS)
- Use of UM321 REPORT [transfer constraints] [unit nameR]
- Keep or Remove UM63R CROSS [position] AT [level] AT [time] AT [speed]
- Keep or Remove UM260 to UM263 (CLIMB/DESCEND VIA [name instruction] AT [level])
- Definition and Use of UM271 CURRENT ATC UNIT [UnitNameR]
- Revise Range and Resolution for Vertical rate and Level variables (Need for Negative values)
- State on the B2 Rev B SPR Title (Plenary's decision)
- Agree on the B2 Rev A Backward Compatibility Definition and associated Interoperability Requirements
- Agree on the Air & Ground Configurations & Interoperability Schemes
- CPDLC Message Reference Number (MRN) Handling in ASN-1

The following ne topics were also added on the agenda:

- Issues with use of UM183 and UM148 (Eurocontrol)
- Review of the OPDLWG Position Paper about Phraseology Discrepancies (AT vs FOR, CONSTRAINT vs RESTRICTION) (Bjarni)
- Review the OPDLWG Position Paper about Flight Plan codes for data link (Shelley) (Linked to the Air & Ground Configurations & Interoperability Schemes)

Thierry also detailed how and which changes have been integrated in the document:

- In B2 SPR-INTEROP Standards, each change is clearly identified:
 - o All changes are « Red Lined »
 - o Editor's Comment provides the « Change reference », e.g. SPR CHGE#1, INTEROP CHGE#1 that refers to the Change in the Change Matrix
 - o All Change have been allocated with the Changes, e.g. SPR CHGE#1, INTEROP CHGE#1, to allow traceability with the changes in the B2 Rev B Change Matrix

- SPR Vol II has been Updated
 - o The Lists of SR and OR have been updated
 - o The SO allocation to SR has been revised

Reminder of RTCA/EUROCAE Publication Policy for REVISION of existing Standards:

- Revision SHALL NOT CONTAIN Track change / change's identification (e.g. Redlines)
- Nevertheless, naming conventions can be adopted in the B2 Rev B Standard to identify new OR/Orec, IR/Irec, CPLDC / ADS-C Messages and associated variables notably to support backward compatibility with B2 Rev A.
 - ⇒ « CLEAN » version of B2 Rev B Standards will be submitted for FRAC (no redline)
 - ⇒ « REDLINED » version of B2 Rev B Standard will be submitted for SC214/WG78 Internal Review

As a consequence, Thierry presented the detailed rules used in the document regarding addition, modification or removal of existing Requirements, Messages and Variables (refer to Thierry's presentation for more details).

Finally, Thierry provided an overview of all changes in the document, and a reminder of agreed backward compatibility policy (which has been anyway further discussed and clarify during the meeting).

Validation subgroup

Claire reported the status of the Validation subgroup work. The work is just getting started. Tom asked if there would be separate validation work on the aircraft and ground sides. Claire responded that the work would begin with the aircraft side. Further discussion was deferred to Thursday afternoon, time permitting. In accordance to our ToR we will create a Verification Test for the Aircraft System and the ATSU Ground System implemented with an ATN B1, FANS 1/A+, and B2 Data communication system. We plan to develop a Verification Test initially with a B2 equipped Aircraft System communicating a data message that will be loaded into the Aircraft's FMS, then use this as a template for all the other Tests.

IM Tiger Team (Joachim Hochwarth, GEAS)

Joachim presented the status of the tiger team subgroup. The work has been completed. Therefore, the work of the subgroup is done and requires no more updates.

Safety/Performance Subgroup

The main topic of discussion was the path forward for the safety/performance work.

Theresa briefed the status and path forward for discussion.

It was agreed that the Safety & Performance group will put the priority on the editorial task for topics with an agreed resolution during its dedicated session. Objective was to deliver for the final plenary a Red Lined version ready for Internal review.

4. FRAC and OC preparation

EUROCAE (Alex Engel) and RTCA (Brandi Teel) briefed the process for EUROCAE Open Consultation (OC) and RTCA Final Review and Comment (FRAC) regarding the upcoming documents being worked by SC-214/WG-78.

All documents and presentation material reviewed during Plenary have been uploaded and are available in the applicable RTCA AerOpus documents folder.

5. Day 2 & 3 Non-Plenary Working Sessions

Day 2 and 3 consisted of further discussions by the subgroups. A summary of the discussions was reported during the Day 4 Plenary.

6. Day 4 Plenary Subgroup Debriefs (Plenary)

The operational subgroup, tiger team and interop subgroup gave summary reports of the discussion during the week.

The plenary held discussion of revisions to the title of the SPR document. There was a decision:

- to remove B2 from the SPR title
- Do not add "in all Airspace"

The title remains unchanged compared to the current RTCA and EUROCAE TORs.

Interop & Operational subgroup

Thierry presented a status of the work achieved during the Ops & Interoperability sessions.

The following remaining issues have been solved:

- Operational need associated with the 'Level / Speed constraint status change' (DFS)
- Keep or Remove UM63R CROSS [position] AT [level] AT [time] AT [speed]
- Keep or Remove UM260 to UM263 (CLIMB/DESCEND VIA [name instruction] AT [level])
- Definition and Use of UM271 CURRENT ATC UNIT [UnitNameR]
- Issues with use of UM183 and UM148 (Eurocontrol) (no change)

New operational topics were identified and agreed:

- Issues with use of UM183 and UM148 (Eurocontrol) -> no change
- Review of the OPDLWG PP about Phraseology Discrepancies (AT vs FOR, CONSTRAINT vs RESTRICTION) (Bjarni) -> B2 Rev B definition kept as is.
- Feedback on Assessment of the 4DT DataComm Demonstration (Task W) (Joachim) -> No impact on Rev B standards

Some discussions were still needed (discussion at the plenary or just after today):

- Review and Agree on the B2 Rev A Backward Compatibility Definition and associated Interoperability Requirements
- Review and Agree on the Air & Ground Configurations & Interoperability Schemes
 - Including the OPDLWG Position Paper about Flight Plan codes for data link (Shelley) (Linked to the Air & Ground Configurations & Interoperability Schemes)
- CPDLC Message Reference Number (MRN) Handling in ASN-1

Use of UM321 REPORT [transfer constraints] [unit nameR] was not finalized and still needed further work for agreement.

Revise Range and Resolution for Vertical rate and Level variables (Need for Negative values) was not discussed and postponed.

Safety & Performance subgroup

Luc presented a summary of the Safety & Performance subgroup discussions and decisions.

- RSP160 continuity allocations adjustments proposals considering difference in latency when EPP calculations are necessary:
 - Radek's proposal was accepted, pending some comments are taken into account
 - It was agreed that comments could be sent to Radek before end of the week and Radek would provide an updated version the following week for integration in the Red Lined version for internal review
 - Other changes proposed by Thomas were discussed without reaching an agreement on the proposed availability apportionment and will not be in the Red Lined document
- Inconsistencies regarding D-RNP safety hazard classification (5 instead of 4)
 - It was decided to change the values for D-RNP to make the document consistent, considering that the group has sufficient arguments to justify relaxing the severity assessment.
- Discussion on availability and continuity:
 - The different proposals (removal of efficiency criteria for availability, Andrew's proposals on availability definition and Thomas paper) have been discussed.
 - Without agreement on how to solve the possible inconsistencies in the document, it was decided to work on forewords (or note) explaining what are the assumptions made to definition RCP and RSP specifications and how to use it, if necessary with a local safety assessment to substantiate the acceptability of the actual availability and continuity performance in the context of the local airspace characteristics (e.g. traffic density, means of communication, relevant equipage levels, local automation and procedures)

(Keeping also in mind that the OSA and OPA described in this document is a general assessment for all environments and ATM operations that are identified in this industry standard and does not account for the specific characteristics of each ATM operation and environment combination)

An agreement on this text is expected to be reached as soon as possible to be included in the Red Lined version for review.
 - It was agreed to integrate the last up-to-date table proposal from Andrew (with the appropriate explanatory text)

IM Tiger Team

- IM Phraseology Validation
 - o Validated Currently (American Airlines & Controllers)
 - o Validated Internationally through SC 186/WG 51
- IM ASN.1 & Message Complexity
 - o Was discussed. IM ASN.1 may deserve to be simplified (very long and complex messages)
- Safety Considerations
 - o SC 186/WG 51 IM Safety Work
 - o Discussion with Frédéric for Data Comm Safety Considerations

7. FRAC Plan and Schedule

Thierry proposed a detailed plan for the FRAC.

Internal review:

Objective

- DO-350B / ED-228B Safety & Performance Requirements – Vol. I & II
- DO-351B / ED-229B B2 Rev B Interoperability Requirements – Vol. I & II
- ⇒ READY FOR FRAC / OPEN CONSULTATION at Next Plenary #42 (End of January 2023)

DO-352B / ED-231B B2 Rev B with FANS 1/A Accommodation

DO-353B / ED-230B B2 Rev B with B1 Backward Compatibility

- ⇒ May be ready slightly after depending on the available effort.

It was agreed that in any case the 4 documents will be published at the same time
Note: The 4 documents may be available at the same time, if the work on PICS/compliance tables can be simplified (i.e. no need to update the tables that are not used by anyone). Action to all to inform Thierry if they have a need for maintaining the P/OICS Tables in the Baseline 2 Rev B INTEROP Vol II Standard.

Will be posted on Aeropus by 21st of November:

- B2 Rev B SPR & INTEROP Change Matrix – 21th November 2022.xls
- DO-350B-ED228B Vol. I - Draft for Internal Review - 21th November 2022_Redlined.pdf
- DO-350B-ED228B Vol. II - Draft for Internal Review - 21th November 2022_Redlined.pdf
- DO-351B-ED229B Vol. II - Draft for Internal Review - 21th November 2022_Redlined.pdf
- And B2 Rev B Internal Review Comment Matrix Template.xls

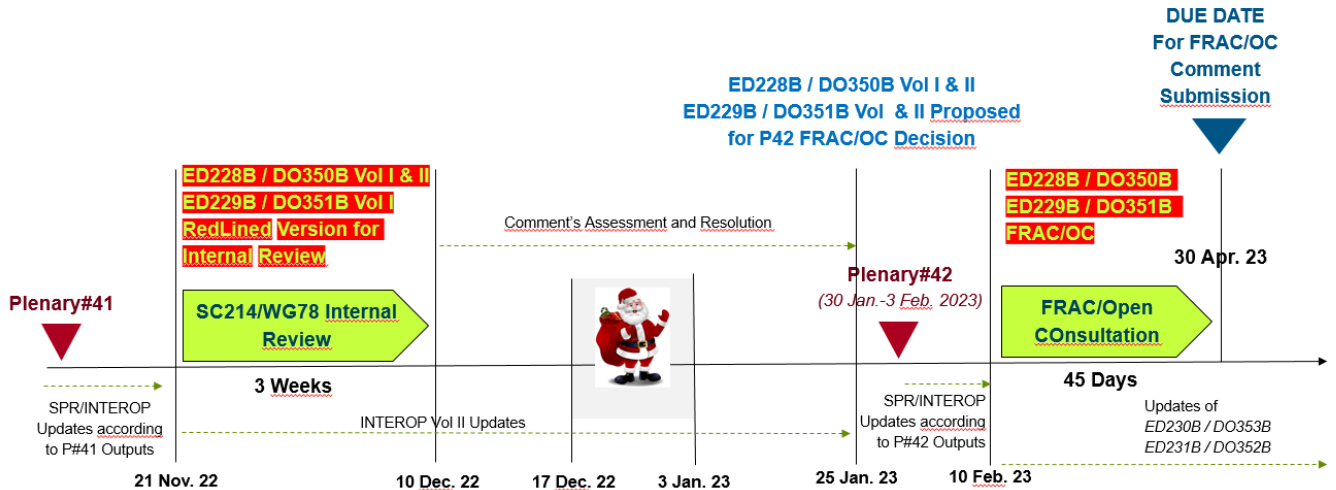
Comments are expected by 10th of December (Only open to SC214/WG78 Members)

To submit the comments: Use the B2 Rev B Internal Review Comment Matrix Template.xls (to ease the consolidation into a master comment matrix)

FRAC:

Overall planning agreed:

Roadmap to FRAC/Open Consultation



8. Any Other Business (Plenary)

Luc opened the floor for any new business. No new business was discussed.

9. Review of Action Items (Plenary)

The action item list was reviewed and updated as necessary. Items which were deemed complete were closed out. It was reminded that the subgroups will maintain their own action item list for working group action items.

The current open plenary action items are:

Item Number	Assigned during:	Action	Assigned to	Due Date	Status	November 2022 Plenary notes
5	July 2021 plenary	Agenda item 2.a.iii.5- Message set and SPR modifications: Look over the document submitted by Joachim Hochwarth in 2017. Submit working paper with more context if determined to be needed.	Joachim Hochwarth	Feb 2022 plenary	Closed	Joachim would like more time to update analysis. Suggest reviewing at June 2022 Plenary 6/9/22: checking with Joachim on status Joachim to provide update on Thursday 10 Nov 22. no impact to B2 Rev B requirements, Therefore AI Closed on 10 Nov 22.
42	Mar 2022 plenary	Provide inputs/preference on the presented ASN.1 compatibility and version discussion	Everyone	June 2022 plenary	Closed	6/7/22: Discussed at Plenary and Ops subgroup level. Still open. On Monday 7 Nov 22 decided to close AI and discuss in subgroups on 8 or 9 Nov 22
43	Mar 2022 plenary	Create a comparison of the functional differences (such as the CPDLC message set differences) between the different ANS.1-versions Rev A and Rev B Services	Operational Subgroup	June 2022 plenary	Closed	6/7/22: This will be a huge effort. More applicable to the Interoperability subgroup. Still Open. Push to next Plenary. 7 Nov 22 - Remain Open discuss on 8 Nov 22. Differences identified, AI closed on 10 Nov 22.
44	Mar 2022 plenary	Reach out to the TAC/PMC to ask for clarification on the B2 mandate(s)/implementations specifically about CPDLC and specification revisions	Luc and Claire	June 2022 plenary	Open	6/7/22: waiting to hear from EASA rep on TAC. Still open. 7 Nov 22 - Remain open requires more discussion.
45	June 2022 Plenary	Leadership to reach out to the FAA and other ANSPs for existing test/operation, scope conversations	Luc and Claire	November 2022 plenary	Open	7 Nov 22 - remain open
47	June 2022 Plenary	Airbus to provide the safety assessment performed on the ROT change that was presented to the safety and performance subgroup for review.	Luc	November 2022 Plenary	Open	7 Nov 22 - not ready to update safety assessment; need more information
48	June 2022 Plenary	UM148 WHEN CAN YOU EXPECT, get feedback from pilots/human factors	Shelley and Tomonori	November 2022 Plenary	Open	7 Nov 22 - will close on Thursday; will discuss on 8 Nov 22
49	June 2022 Plenary	What is in scope and out of scope of the current standards documents update	Luc and Claire	November 2022 Plenary	Closed	7 Nov 22 - the scope is in TOR therefore close this action item
50	June 2022 Plenary	Review the RSP concept definition and monitoring plan. Seek feedback from all ANSPs on their opinions.	Luc and Claire	November 2022 Plenary	Closed	AI closed 10 Nov 22. Open new AI 51.
51	November 2022 Plenary	Survey to provide opinion on whether tables in DO-351, vol. 2 are useful.	All	December 2022	Open	
52	November 2022 Plenary	Review Radek's proposal	All	Monday November 14, 2022	Open	
53	November 2022 Plenary	Work on new text for availability and continuity clarification	S&P Subgroup	Monday November 14, 2022	Open	
54	November 2022 Plenary	Solicit members for support of final editorial work	All	November 2022	Open	

The above items listed as closed were closed during this plenary session. The plenary action items are listed in a separate Excel file that can be found on AerOpus.

10. Upcoming Schedule (Plenary)

Luc summarized the schedule discussion from earlier in the day. In order to fit with the agreed plan for FRAC preparation, the next plenary will be January 30 through February 3, 2023 and will be held in person only at Collins, Melbourne, FL. There will be anyway virtual options for those who cannot travel, in particular for the plenary sessions.

The current schedule is maintained on AerOpus in the directory /SC214 Standards for Air Traffic Data Communication/Schedule.

11. Adjourn

The meeting was adjourned on November 10th, 2022 at 2:00pm PST.

Note: The meeting continued with 2 parallel sessions, to continue progressing on Interoperability / Backward compatibility and on Safety & Performance topics resolution.

Todd Kilbourne
Secretary, SC-214

CERTIFIED as a true and accurate summary of the meeting.

Claire Robinson
Chair, SC-214

Luc Emberger
Chair, WG-78