EUROCAE WG-78 Plenary # 32 / RTCA SC-214 Plenary # 40 "Standards for Air Traffic Data Communication Services" - Minutes	

Date	*June 7-10, 2022*
Place	*Brussels, Belgium*
Hosted by	*EUROCONTROL*

Meeting Summary:

The joint plenary of RTCA Special Committee 214 (SC-214) (#40) and EUROCAE Working Group 78 (WG-78) (#32) was held June 7-10, 2022. The meeting was conducted as an in-person and WebEx meeting with the following attendees participating (* indicates in person attendance).

Name	Company	June 7	June 10
Alexander Engel*	EUROCAE	X	X
Alexandre Quentin	Apsys-Airbus	X	
Ana Beroiz*	EUROCONTROL	X	X
Andrew Ives	Inmarsat	X	
Anna Cagedemetrio*	EUROCONTROL		X
Antonio Harrison Sanchez	ESA	X	X
Armin Schlereth	DFS	X	X
Bjarni Stefansson*	ISAVIA	X	
Brandi Teel*	RTCA	X	X
Catherine Gandolfi	EASA	X	X
Christophe Visee	EUROCONTROL	X	
Claire Robinson*	Universal Avionics	X	X
Clement Selles	Airbus	X	
Daniel Mihoci	EASA	X	
David Illan	ESSP	X	
Dongsong Zeng	MITRE	X	

Dung Nguyen*	Boeing	X	X
Eric Sadon	DSNA	X	
Ferdinand Dijkstra	FerWay		X
Frederic Beltrando	Airbus	X	X
Gary Colledge	Inmarsat	X	X
Gonzalo Prieto	ESSP		X
Greg Saccone*	Boeing	X	X
Guillaume Molinier	Airbus		X
Isabelle Herail	EUROCONTROL	X	
Jean Boucquey	EUROCONTROL	X	X
Joachim Hochwarth	General Electric	X	
Kirk Kolek	Collins	X	
Lori Sipper	Collins		X
Luc Emberger*	Airbus	X	X
Mark Patterson	FAA	X	X
Michael McDowell	Collins	X	
Mike Matyas	Boeing	X	
Moin Abulhosn	FAA	X	
Nico de Gelder	NLR	X	X
Olivier Chauvet	Airbus	X	X
Radek Zaruba	Honeywell	X	X
Randy Bone*	MITRE	X	X
Richard Kynard	Garmin	X	
Sandra Schönbach	DFS	X	X
Shelley Bailey*	NavCanada	X	X
Theresa Brewer	FAA	X	X
Thierry Lelievre*	Cap Gemini (on behalf of Airbus)	X	X
Thomas Mustach	FAA	X	X
Todd Kilbourne	Mosaic ATM	X	X
Tom Judd	Honeywell	X	
Tomonori Tsuruzono	IATA	X	X
Viktor Jagasits	EUROCONTROL	X	X
Vincent McMenamy	FAA	X	X
Willie Truong	Honeywell	X	

* Indicates attendance in person

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1. Welcome, Introductions and Administrative Remarks (Plenary)

The joint 40th Plenary of SC-214 / 32nd Plenary of WG-78 was convened in person at EUROCONTROL and via Webex on June 7th, 2022 at 9:00 am CET 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.

Meeting minutes from SC-214 Plenary 39/WG-78 Plenary 31 were reviewed and approved with no changes.

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.

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

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, Airbus)

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

Status of B2 Change proposals

- **37 change proposals recorded in the B2 Change Matrix**
  - **9 new Changes Proposal from ICAO, Boeing Airbus**
  - **+ 3 forwarded to PERF SG (Ch#21, Ch#24, Ch#25)**
  - **ICAO, FAA, ROT, and Editorial comments are expected soon**

✓ Most of the new Change Proposals and « Working » Change Proposals have been assessed !!!
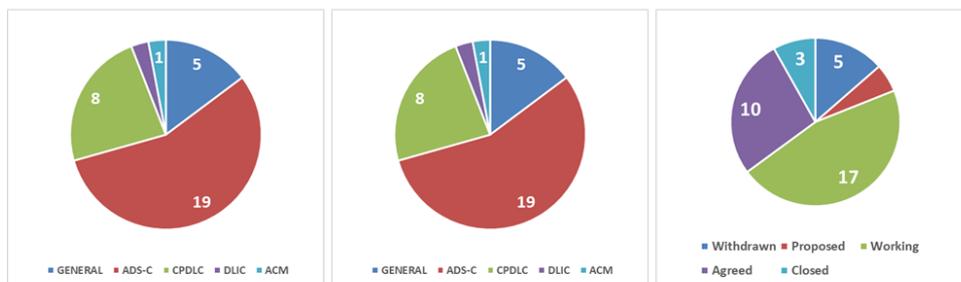
- **Proposed** – Not yet addressed by SG
- **Working** – Operational Rationale under SG assessment
- **Agreed** – Operational Rationale agreed and B2 change to be worked
- **Closed** – Operational Rationale and B2 change agreed. Ready for B2 Integration by Editor

The slides for this overview are found at the following link: BASELINE 2 OPS SG Status and Progress - 7 June 2022.

IM Tiger Team (Randy Bone, MITRE)

Randy presented status slides regarding ongoing work within the Tiger Team. There were minimal discussion and questions. The status of the actions of the team will be further briefed at the end of the week after Operational Subgroup input.

Presentation: Airbus presented the paper entitled *ROT topic presentation to SC-214/WG-78* to the plenary. The paper was discussed, and actions and resolutions were documented in the Ops subgroup records. Some of the questions discussed were: Is this ROT capability part of the IER service? What is the safety impact, and is it compatible with the IER service? How do

you prevent runway incursions? Is runway condition a necessary input for the ROT calculation? There are two conditions to use ROT: 1) minimum equipment list, 2) non contaminated runway. Tom Mustach mentioned that we should consider the safety assessment currently being performed for the Update to Volume II of the SPR. There was an action to review the safety assessment once it is available. Move discussion to the Operational and Safety/Performance Project Teams.

ASN.1 Backward Compatibility Discussion

Thiery reviewed his latest slides on this subject.

There was discussion about what is in the standards versus what is implemented. There is B2 RevB with and without IM/PTM/DRNP. There was discussion about which of the four options presented at the last plenary should be chosen. It was recommended that we choose the option that B2 with two CPDLC/ADS-C versions (i.e. V4 & V5 for CPDLC and V3 & V4 for ADS-C). V4 should be backward compatible with V2. But a ground system with V4 cannot get V4 functionality out of a V2 aircraft. The interop designation B2 does not state which version. Rev B should encompass Rev A functionality. V2 and V4 would have the same services but V4 would have some additional improvement over a V2 implementation. The logon in CM will verify whether the aircraft is V2 versus V4. The group finally agreed which ASN.1 versions will be managed in parallel in Rev B. The following depicts the solution.

FANS 1/A

- ATCTwoWayDataLinkCommunications ASN.1

ATN B1

- CPDLC Message Set Version1 ASN.1

~~Initial B2~~ Superseded by Rev A

- ~~CPDLC Message Set Version2 ASN.1~~
- ~~ADS-C Message Set Version1 ASN.1~~

B2 rev A

- CPDLC Message Set Version2 ASN.1
- ADS-C Message Set Version1 ASN.1

~~when DRNP and IM are supported~~ Superseded by Rev B

- ~~CPDLC Message Set Version3 ASN.1~~
- ~~ADS-C Message Set Version2 ASN.~~

B2 rev B (Backward compatibility with Rev A):

- CPDLC Message Set Version4 ASN.1
- ADS-C Message Set Version3ASN.1

when DRNP and IM/PTM are supported

- CPDLC Message Set Version5 ASN.1
- ADS-C Message Set Version4ASN.1

ATS Verification Test Standards

Claire briefed the current thinking on the verification test standard methodology. Her slides are available on AerOpus, Verification Test Standard Proposal. Claire proposed to start writing the B2 verification tests, one test per service to start with, one test for airborne and one test for

ground. The tests should be designed to exercise the requirements in the SPR (e.g. 5.2.10 or Annex A of DO-350/ED-228) No new requirements are intended to be created as part of the test standard. Do we need a list of operational scenarios provided? We test the system or test the scenarios. We need a stress test. We missed this in B1. One issue could lead to other issues. With a modern Software Defined Radio (SDR) we may not need to do flight tests, can possibly do it through simulations. The aircraft must meet interop requirements. Greg mentioned that he cannot define behavior as expected without derived requirements such as a runway dependent STAR. There can be lots of interpretations of how to implement that. Therefore, we may need derived requirements. It depends on how you define "as expected." We can start with one test per service to jump in and see if it is useful. Greg stated that the key is the FMS loading. Claire stated that we should get the basis of test from the FAA or other ANSPs. We need a volunteer to be editor. See a previous presentation from Pete Muraca. Frederick mentioned that there is no specific requirement of how to display the message in the cockpit. An action was created to get FAA and ANSPs test cases. It was recommended that we start the meetings of the verification subgroup and work with the new editor. Clair posed two questions to the group: 1) for an aircraft level test, what environment is acceptable? 2) What airborne system can be used during airborne component test? Dung mentioned that we will most certainly have to deal with derived requirements.

TORs Scope Discussion

Luc and Claire discussed the current TORs and what is agreed to be in scope versus out of scope. In particular, many Safety & Performances topics are open (feedbacks from Com service providers, ANSPs, Honeywell/ICAO PTSAT,...) and more work is required than was originally anticipated in the schedule and scope of work, which could impact the deliverable dates. It was reminded that the current schedule is driven by the European CP1 mandate milestones. Luc stated that this justifies the aggressive schedule to publish the new Rev B in June of 2023 as stated in the TORs. Europe has a mandate that it needs to support, with an important maturity gate ending in 2023. Tom stated that the ICAO 9878 ed 3 PBCS Manual should be compatible with SC-214/WG78. Claire said to be specific about modifications. Changes suggested are described in a paper submitted to the S&P subgroup. The CP1 mandate is scheduled for 2027. Clarifications and guidance have been requested by the group to EASA prior to the meeting and are expected as soon as possible. This discussion will need to be continued.

Safety/Performance Subgroup (Theresa Brewer, FAA)

Theresa Brewer gave the update on the S&P subgroup. The slides are available on AerOpus.

4. Day 2 & 3 Non-Plenary Working Sessions

Day 2 and 3 consisted of further discussions by the subgroups.

5. Subgroup Debriefs (Plenary)

The subgroup and tiger team leaders then provided a debrief for the group.

Operational Subgroup- Thierry Lelievre (Airbus):

Thierry provided a summary of ops subgroup progress for the week. His slides are available at AerOpus.

The plenary discussed and agreed to drop UM89 from further consideration. The action item is closed at the plenary level. Dung stated that Boeing is in the process of deleting UM89 from their ASN.1 implementation due to problems with it. Nevertheless, the group understands the need and suggests maturing it and investigating a more relevant solution.

Victor Jagasits presented a briefing on incidents related to UM148. Victor's briefing can be found on AerOpus.

An action item was created regarding UM148 WHEN CAN You ACCEPT.

The Performance/Safety Subgroup- Theresa Brewer (FAA):

Theresa briefed the subgroup status.

The Safety requirements update (presented by Airbus-Frederic), in order to align ICAO PBCS Manual next edition and EUROCAE/RTCA documentation, has been deemed mature for addition in the standards (one comment solved on ADS-C Server concept).

The group discussed the summary of the proposed changes to RSP160. All the proposals may have a significant impact on the standards. An important action was reminded for the ANSPs to clarify and agree on their monitoring needs to help guide the discussion going forward. No resolution at this time.

The questions about the OSA/OHA in the SPR were discussed again (e.g link between continuity values and safety requirements, etc…). The discussion shows that significant work would be necessary to solve the questions (no obvious and low impact answer).

Inmarsat presented an updated proposal for the latency apportionment, using margins but not impacting the E2E values. It was agreed to draft the Inmarsat proposal in the standard.

DFS presented again the Transaction Time issue (Responder time too long for the controller). Several points of the DFS proposal refer to the difficulty for humans to achieve the 99.9% continuity requirement. Theresa Brewer recommended that we consult human factors SMEs to assess these proposals. The leadership will follow-up with the OPDLWG human factors SMEs. We agreed that it will be difficult to solve the issue now (no easy solution at low impact), and it could be a topic for a next version. But the concern is understood. As proposed by DFS in the presentation, There could be local implementations of lower Responder time (Notes/clarifications to be included in the standard; to be noted that it would be in line with the modification of the safety requirement allocated to the ground and dealing with the response before ETRCMP (SR-GD-CPDLC-14A), as proposed for alignment with PBCS, even if it is understood that harmonization and clarification of the impacts/consistency with the OHA/OSA should be an objective (a change in the safety assessment could allow to change the continuity value, while changing the Responder time would NOT impact the continuity value).

The group discussed the summary of the proposed changes to RSP160. All the proposals may have a significant impact on the standards. An important action was reminded for the ANSPS to clarify and agree on their monitoring needs. No resolution at this time.

The chairs took an action to discuss a way forward with the leadership of the OPDLWG.

SC-186 Tiger Team – Randy Bone and Joachim Hochwarth:

Randy briefed the status of the Tiger Team after Operational Subgroup discussions. He stated the Tiger Team believes the IM data comm requirements updates are very mature and can be incorporated in the master SPR and Interop documents. The Tiger Team will work with the document editors to start incorporating the material.

6. Any Other Business (Plenary)

Claire and Luc proposed changes to the upcoming plenary schedule. A detailed planning to meet the expected schedule was proposed, including milestones for the draft documents. To meet these targets, it was decided to have an editing working session on Rev B in October (17-21) . The next plenary is moved to November (7-10). Boeing offered to host both sessions, the first in Long Beach, CA and the next in Seattle, WA.

Viktor Jagasits presented "MUAC ADS-C presentation at WAC Madrid.pptx" on the current implementation of B2 ADS-C at MUAC and the plans for the future.

7. 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 Num	Assigned during:	Action	Assigned to	Due Date	Status	March 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		Joachim would like more time to update analysis. Suggest reviewing at June 2022 Plenary 6/9/22: checking with Joachim on status
20	October 2021 plenary	In ED-228A/DO-350A, evaluate the note for ADSC-OR 1 to make sure it is clear that an aircraft should support *at least* 4 connections.	Operational working group	Feb 2022 plenary	Closed	Update due date to June meeting. 6/7/22: reported that Boeing submitted paper for review in Ops subgroup. Plenary action is closed
35	Dec 2021 plenary	Allocate proposals in Boeing paper to applicable subgroup for further discussion or finalization	Boeing	Feb 2022 plenary	Closed	Mike Matyas has sent emails on allocating these items, Claire to confirm 6/7/22: Clair confirmed. Plenary action closed
36	Dec 2021 plenary	Examine B2 requirements for applicability to verification test	Verification subgroup	June 2022 plenary	Closed	During the plenary discussion the group decided to postpone this discussion to the June 2022 Plenary to allow more time to complete the analysis. 6/7/22: will be discussed during June meetings 6/10/22: action superceded by new AI 45
37	Dec 2021 plenary	Re-examine DO-350A/ED-228A Figure 3-3 for what is necessary for a transfer and what actually needs to be displayed to the flight crew in order to reduce nuisance messages and potentially reduce network load (Ref Pilot Reported Issues presentation	Operational subgroup	Feb 2022 plenary	Closed	Need additional time, push to June Plenary 6/7/22: This item was tranferred to Ops subgroup for dicussion. Plenary action closed.
38	Dec 2021 plenary	Review DO-328B/ED-195B to understand changes incorporated due to new validation acitivities.	Boeing	Feb 2022 plenary	Closed	Need additional clarification, push to June 6/7/22: still under review within Boeing. 6/10/22: Boeing has reviewed. AI is closed
39	Mar 2022 plenary	Reach out to Eurocontrol for average size of EPP messages	Ana Berioz, Eurocontrol	June 2022 plenary	Closed	This information will be used in the discussion with D-START etc initiated by Greg Saccone of Boeing 6/7/22: this information was provided. Plenary action closed.
42	Mar 2022 plenary	Provide inputs/preference on the presented ASN.1 compatability and version discussion	Everyone	June 2022 plenary		6/7/22: Discussed at Plenary and Ops subgroup level. Still open.
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		6/7/22: This will be a huge effort. More applicable to the Interoperability subgroup. Still Open. Push to next Plenary.
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		6/7/22: waiting to hear from EASA rep on TAC. Still open.
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		
46	June 2022 Plenary	Action related to discussion of removing UM89			Closed	
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		
48	June 2022 Plenary	UM148 WHEN CAN YOU EXPECT, get feedback from pilots/human factors	Shelley and Tomonori	November 2022 Plenary		
49	June 2022 Plenary	What is in scope and out of scope of the current standards documents update	Luc and Claire	November 2022 Plenary		
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		

The plenary action items are listed in a separate Excel file that can be found on AerOpus.

8. Upcoming Schedule (Plenary)

Claire Robinson (Universal) summarized the schedule discussion from earlier in the day. The next group meeting will be the week of October 17-21, 2022, in person only at Boeing, Seattle,

WA. The next plenary will be Nov 7-10, 2022 and will be held in person at Boeing, Long Beach, CA. There will be virtual options for those who cannot travel.

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

9. Adjourn

The meeting was adjourned on June 10th, 2022 at 12:00pm CET.

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