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March 19<sup>th</sup>, 2024  
 St Denis & Washington

<b>EUROCAE WG-78 Plenary # 39 / RTCA SC-214 Plenary # 49</b> <b>“Standards for Air Traffic Data Communication Services” - Minutes</b>
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<b>Date</b>	<b>February 26 – February 29, 2024</b>
<b>Place</b>	<b>Atlantic City, NJ, USA</b>
<b>Hosted by</b>	<b>Federal Aviation Administration (FAA)</b>

**Meeting Summary:**

The joint plenary of RTCA Special Committee 214 (SC-214) (#49) and EUROCAE Working Group 78 (WG-78) (#39) was held February 26 - February 29, 2024. The meeting was conducted as an in-person and WebEx meeting with the following attendees participating.

<b>Display Name</b>	<b>Company</b>
Alexander Engel*	EUROCONTROL
Armin Schlereth	DFS
Arndt Suendermann	DFS
Brandi Teel*	RTCA
Chris Young	Collins
Christophe Visee	EUROCONTROL
Christopher Jirucha*	Boeing
Claire Robinson*	Universal Avionics, Co-Chair SC-214
Dan Fontana*	FAA
Dongsong Zeng	MITRE
Dung Nguyen	Boeing
Edward San	FAA
Frank Lindenmayer	DFS
Frederic Bletrando*	Airbus
Hemang Sheth	Universal Avionics
Julian Schmidt	DFS
Luc Emberger*	Airbus, Co-Chair WG-78

Mark Patterson	FAA
Matt Wollert	L3 Harris
Moin Abulhosn*	FAA
Palen Elder	FAA
Pete Muraca*	FAA
Richard Kynard	Garmin
Rochelle Perera	Boeing, Secretary
Sandra Gnichwitz	DFS
Santi Ibarz	Airtel
Shelley Bailey*	NavCanada
Thomas Hess	DFS
Thomas Mustach	FAA
Viktor Jagasits*	EUROCONTROL
Vince McMenamy*	FAA
Wendy Gutierrez*	Collins
Wes Googe*	American Airlines
Willie Truong	Honeywell

\* Indicates attendance in person

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## 1. Welcome, Introductions and Administrative Remarks (Plenary)

The joint 49<sup>th</sup> Plenary of SC-214 / 39<sup>th</sup> Plenary of WG-78 was convened on February 26<sup>th</sup>, 2024 at 9:00 am EST by Chairs Claire Robinson (Universal Avionics) and Luc Emberger (Airbus). Welcoming remarks were made, followed by each attendee introducing themselves. RTCA anti-trust statement, proprietary policy and membership policy were read by Brandi Teel (RTCA). Alex Engel (EUROCAE) presented the EUROCAE IPR policy, participation policy, and the GDPR privacy policy.

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

The detailed agenda was reviewed and no changes were noted. Meeting minutes from SC-214 Plenary #48/WG-78 Plenary #38 were reviewed and approved.

## 3. ED-110B/DO-280B Change 2 Proposal Review & FRAC/OC Launch Decision (Plenary)

The group discussed the Proposed ED-110B/DO-280B Change 2 document. Editorial additions were made to the proposal document to add a table of contents, list of figures and list of tables to the document along with some minor grammatical fixes. Changes proposed are denoted with grey shading. After reviewing the document, the group agreed to proceed to FRAC/OC. Brandi Teel (RTCA) and Alex Engel (EUROCAE) will update the change to appropriate formats and aim for FRAC/OC on March 11, 2024. The goal will be to do comment resolution at the June meeting in Maastricht. This document is available in Aeropus under the applicable group meeting folder.

## 4. DO-351B/ED-229B ASN.1 Backward Compatibility Issue (Plenary)

Frederic Beltrando (Airbus) presented several issues identified with DO-351B/ED-229B which will require a change in order to ensure backward compatibility is maintained between implementations built to B2 Rev A and Rev B standards.

**Airbus Topic 1:** In DO-351B/ED-229B, due to erroneously moving the location of UM158R, the associated message reference number and parameter is different between Rev B and Rev A. This issue affects all uplinks UM158R through UM209R listed in Rev B. For example, in Rev A, UM159R has a message reference number of [405] whereas in Rev B the same uplink has a reference number of [406]. This will cause decoding issues and disallows backward compatibility. The proposal was to update ASN.1 (Chapter 5.1) and P/OICS (chapter B.4.3.3, Table M-4) to correct what was changed in rev B.

Additionally, the ASN.1 supplementary material will need to be updated. The group discussed this topic and agreed with the proposal and to add it to DO-351B/ED-229B Change 1.

**Airbus Topic 2:** DO-351B/ED-229B ASN.1 defines the VerticalRate parameter as an integer (0, -3000) whereas the Rev A documents define it as an integer (-3000, 3000). This results in implementations built to Rev B not sending a negative VerticalRate which is how descent rates are defined. The proposal was to fix this by making the range (-3000,3000) back in line with Rev A definition. It was also noted that this issue was on the list of topics to discuss at FRAC but there was no record of it actually being discussed. The group discussed and agreed to include this in Change 1.

**Airbus Topic 3:** ADSC-IR 39B requires sending a contract rejection with the reason code of “contract number already in use”. However, ASN.1 for ADS-C v3 does not include a reason code corresponding to “contract number already in use”. The proposal to address this is to add such a reason code. For this ASN.1 (chapter 5.2), ASN.1 supplementary material and P/OICS (chapter B.3.3.2, Table P-8) will have to be updated along with section 3.2.1.1 Table 3-2. It was noted that this was already agreed to during FRAC for DO-351B/ED-229B so it is just a matter of implementing it. The group agreed include this in Change 1.

## 5. TTR Timer (Plenary)

Viktor Jagasits (EUROCONTROL) presented an issue related to the lack of TTR timer in ATS B2. The lack of a TTR timer in B2 means that flight crews can respond to an uplink without any time limit (until a CDA change). In B1, which does have TTR, there is a value of 100 seconds, after which, flight crew can no longer respond to the uplink. A scenario of concern is when a message is uplinked, but a response is not received on the ground before its expiry. The controller does not know if the message was lost in the network (and therefore the pilot never saw it), received by the flight crew and just not responded to, or if the response was lost in the network. If the pilot did receive the uplink, they are able to respond much later than intended at which point the clearance may no longer be applicable. As the pilots are requested by ICAO procedures to act on the clearance upon receipt, they may initiate a trajectory change that is no longer valid if they see the clearance late and think it is still valid.

Shelley Bailey (NavCanada) stated that during GOLD discussions, pilots voiced being very concerned about being rushed when getting complex clearances. The pilot community in those meetings, including IFALPA, have said they did not want a TTR for oceanic airspace because of this reason. Additionally, as TBO clearances will be more complex, further time would be needed for review.

Dung Nguyen (Boeing) suggested an option of using a 100s value in a new TTR value. Once pilots receive the clearance and if they need more time, they would select STANDBY. This would result in all timers being cancelled allowing the pilots as long as they need to respond. This would also give the ground indication that the message was received and is being worked on. While the group generally looked favorably on this approach, Shelley Bailey (NavCanada) pointed out the need to validate this with the global community before moving forward. There was also group agreement that whatever change is implemented to address this, it should try to be future proof and provide the flexibility needed to operate in different types of airspaces. This may result in a new uplink message with a variable timer.

The discussion finished with agreement to continue working on this issue in telecons moving forward. As the change required to address this exceeds the scope of what can be achieved via a change document, this would not be included in Change 1.

## 6. DFS Use Case (Plenary)

Thomas Hess (DFS), Julian Schmidt (DFS), and Sandra Gnichwitz (DFS) presented two test scenarios which they utilize at DFS. An overview was also given on the template that DFS uses for these test scenarios. Using the DFS template as an example, the group discussed what should be the layout of our proposed template. The group spoke favorably in having an integrated template which has both ground and aircraft steps together, as it will help keep everything cohesive and each side will be aware

of what the other is doing. Additionally, the group agreed that referencing the applicable standards requirements at the top of each test case is better than interspersing them throughout.

The group discussed the value of having an operational use case associated with each verification test case. The group agreed that having some context associated with each verification test case will be beneficial, but the level of detail still needs to be defined. Brandi Teel (RTCA) and Alex Engel (EUROCAE) stated that once the scenario template has been agreed upon, it could be made available by both groups as supplementary material.

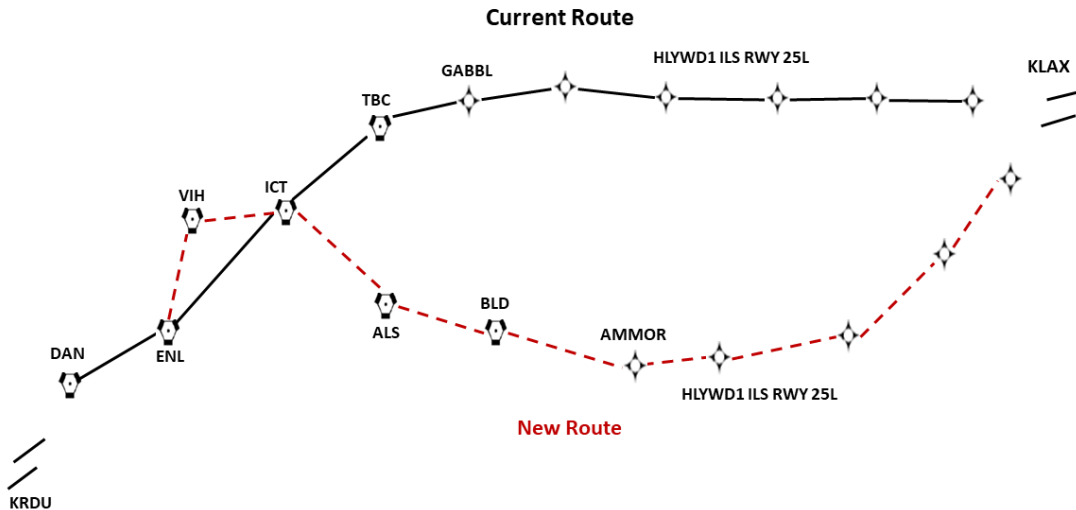
The group then discussed the importance of getting ground station suppliers such as Thales engaged in this group's work as it is important to have their input and also keep them apprised of what is being expected. An action was taken to reach out to those suppliers.

## **7. Historical issues Discussion (Plenary)**

Dan Fontana (FAA) went over a presentation on issues they have seen over there years while implementing the FAA DataComm program. Claire Robinson (Universal) commented that a lot of time and care was put into clarifying some of these issues in the Rev B version of B2 standards. The presentation noted that some of the issues were due to problems with specific avionics whereas others were due to ambiguity in the standards. Shelley Bailey (NavCanada) commented that many of these lessons learned were incorporated into the latest revision of GOLD as well. Dung Nguyen (Boeing) said that another cause of many issues is using the wrong uplink for a scenario. So, it is important to use the uplink as it is intended to be used. Lastly, the group discussed how this really needs global input from as many ANSPs as possible in order to adequately capture inputs from a variety of airspaces.

## **8. FAA UM79/UM80 Scenario Template proposal (Plenary)**

The group discussed a template for UM79 test case currently being used by FAA DataComm. There was a long discussion on how to identify examples in a template, whether to use specific waypoint and procedure names or keep it generic. Thomas Hess (DFS) was strongly in favor of keeping it generic due to specific waypoint and procedure names not being available to use for testing in all areas. Others preferred to use a specific example so it is clear how it should be formatted. The group agreed to include a specific example but include words to say that this is just an example of what information the messages should include and does not mean the same information must be used when executing the test cases. Some test cases, where it makes sense, will also include an accompanying diagram to visually show what is happening to the flight plan. This will be incorporated into the use case description section for each scenario. An example of such a diagram from a FAA DataComm UM80 test is shown below:



The group also concluded that for any such diagrams, the naming of the waypoints and procedures will match the example in the test case scenario. However, there will be a note included which states that the actual layout of the diagram (i.e. orientation, leg type, etc.) will not match the actual approach plates and navigational display layout. For example, a procedure in this diagram may be depicted as a set of direct legs between waypoints whereas in the actual procedure there may be holds, RF legs etc.

The group completed the UM79 test case example and moved on to working on a UM80 test case example, again utilizing the test scenario from the FAA DataComm as a starting point. The group will continue work to finish the UM80 scenario at subsequent meetings.

## 9. Usage Plans From ANSPs (Plenary)

Wendy Gutierrez (Collins) presented on what type of information is desired from all ATSU in order for avionics manufacturers and OEMs to prioritize what functionality is tested. There are an exponential number of combinations and data values which could be used by an ATSU and it is impossible to test them all, especially in the allotted development time. If each ATSU could provide a list of messages they are intending to use and how they will use it (i.e. B2 message uM256 concatenated with uM183), manufacturers can prioritize testing these combinations. It is important to get inputs from ATSU all over the world in order to ensure avionics perform as expected for all of the different variations of ground usage implementations.

Boeing and Airbus agreed that this would be very useful for implementers. Shelley Bailey (NavCanada) pointed out that while this type of information should be in AIPs, the level of detail included is high level. Additionally, we should expect that we will not get this level of input from every ANSP. Rochelle Perera (Boeing) commented that having this list does not mean that the entirety of the functionality would not be implemented. The avionics will support fully functionality per the standards, but other ANSPs can take a look at this set of uplinks and expect all the avionics to support and work the same way.

The group agreed this would be helpful however there needs to be more discussion and understanding of how inputs would be obtained from ATSU, who and how to update the scenario list and where it would be hosted.

## 10. Garmin ASN.1 Issue Presentation (Plenary)

Richard Kynard (Garmin) presented DO-351B/ED-229B ASN.1 Issues Garmin discovered during their development process:

**Garmin Topic 1:** The ADSNonCompliance element syntax has a missing comma(,) after extensibility for the elements introduced in Rev B. Without the comma, it will cause compiling of this data to fail. The group agreed that the inclusion of the comma should be added to the Change 1.

**Garmin Topic 2:** For the ADSReject element, when attempting to compile the syntax, the compiler fails when processing "RejectReasonDetailsB". Changing the first upper case letter to lower case (i.e. RejectReasonDetailsB to rejectReasonsDetailsB) allows the compiler to succeed. The group agreed to include these two edits in Change 1 which includes updating the applicable supplementary materials for both issues.

## 11. B2 Test Scenarios (Plenary)

Viktor Jagasits (EUROCONTROL) shared a list of B2 message they have implemented at MUAC as well as which ones are used in concatenation with other messages. Viktor emphasized that they expect to use freetext more, especially once TBO procedures are implemented. It will be important to evaluate how implementations handle freetext, both with and without response attributes and concatenated with other messages.

The group then discussed starting with a B2 service and attempt to define messages used for that service in order to create a B2 specific verification test case. The group decided to start with Position Report as that is fairly straightforward. Shelley Bailey (NavCanada) will reach out to contacts in the Pacific region who currently use this service often and may have identified issues which we can use to create the test. Boeing took an action to create a draft B2 Position Report scenario to discuss at a future meeting.

## 12. Collins DO-350B/DO-351B Clarification Questions (Plenary)

Wendy Gutierrez (Collins) presented issues they have found during their development process.

**Collins Topic 1:** DO-351B defines AircraftIdentificationO and PositionRNamedInstruction. However, they are not used anywhere. The group was not familiar with the history associated with these items so an action was assigned to Airbus to investigate.

**Collins Topic 2:** Same as presented by Garmin regarding the missing comma (,) in the syntax and was agreed upon to include in the Change.

**Collins Topic 3:** The latitude/Longitude definition for D-taxi does not match the other latitude/longitude definitions in the document. It is unclear what the ground would expect. The group noted that the D-taxi definition did not change in Rev B, so that difference must have been there for a while. Pete Muraca (FAA) commented that it is currently in the FAA road map. The FAA was assigned an action item to follow up on implementation plans for D-Taxi services. The group attendees were not familiar with the background associated with these parameters so an action was assigned to Airbus and the FAA to investigate

**Collins Topic 4:** Collins asked for further clarification on DO-350B section 6.1.2.3.1. This section addresses sending a downlink including Basic and Hold information. Wendi Gutierrez (Collins) asked if the intent was to downlink information about the HOLD that just became inactive, or the next HOLD in the flight plan. Frederic Beltrando (Airbus) commented that the intent of this was to be the "next hold" in your active flight plan because the ground would not be concerned with a hold that the aircraft is leaving.

**Collins Topic 5:** Collins inquired if IM and PTM will be utilized by 2027? If not, when might it be? The group agreed, including the FAA, that IM/PTM will not be implemented by 2027. Frederic Beltrando (Airbus) pointed out that in order to support IM, there is further work required such as development of the FIM system.

### **13. Summary of Recommended Inclusions to DO-351/ED-229 Change 1 (Plenary)**

Claire Robinson (Universal) presented a summary of DO-351/ED-229 topics discussed and which would be included in Change 1. The following issues discussed during the meeting were agreed to by the group for inclusion in DO-351B/ED-229B Change 1:

Airbus Topic 1: Erroneous CPDLC message numbering

Airbus Topic 2: ADS-C Vertical Rate edit to include (-3000, 3000)

Airbus Topic 3: Additional rejection reason code for "contract number already in use"

Garmin Topic 1: ADSNonCompliance element syntax has a missing comma(,)

Garmin Topic 2: ADSReject element syntax needs to start with lowercase R

The following items were noted needing immediate investigation as to determine if they can be included in Change 1:

Collins Topic 1: AircraftIdentificationO and PositionRNamedInstruction not being used anywhere

Collins Topic 3: The latitude/Longitude definition for D-taxi does not match the other latitude/longitude definitions

Any additional proposals to be included in Change 1 will be discussed at a telecon on March 15<sup>th</sup>, 2024.

### **14. ToR Updates (Plenary)**

Claire Robinson (Universal) shared the RTCA ToR Revision 21 updates. The approved documents were deleted and the FRAC due date and Change date were updated for DO-280B Change 2. DO-351B Change 1 was added to the ToR. Additionally, high level description of the changes to be included in Change 1 was added. The group approved the RTCA ToR. Luc Emberger (Airbus) shared the EUROCAE ToR. Corresponding changes were added to this document. The group agreed to approve the EUROCAE ToR Changes. The updated ToR will be submitted to the RTCA PMC and EUROCAE TAC for approval.

### **15. Any Other Business (Plenary)**

Claire Robinson (Universal) opened the floor for any new business. No other business was brought up for discussion.

### **16. Review of Action Items (Plenary)**

Rochelle Perera (Boeing) reviewed the action items collected during this meeting. The group discussed and agreed to the dates and names associated with each item.

### **17. Upcoming Schedule (Plenary)**

- March 20, 2024- Virtual Plenary for DO-351B/ED-229B Change 1 to initiate FRAC/OC
- June 10-14, 2024- Plenary, Maastricht
- October 14-17, Plenary, Location TBD

## **18. Adjourn (Plenary)**

The meeting was adjourned on February 29<sup>th</sup>, 2024 at 12:00pm EST. All documents and presentation material reviewed during Plenary have been uploaded and are available in the applicable RTCA Aeropus documents folder

Rochelle Perera  
Secretary, SC-214

**CERTIFIED** as a true and accurate summary of the meeting.

Claire Robinson  
Chair, SC-214

Luc Emberger  
Chair, WG-78