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March 4, 2022
St Denis & Washington

EUROCAE WG-78 Plenary # 31 / RTCA SC-214 Plenary # 39 “Standards for Air Traffic Data Communication Services” - Minutes
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Date	February 28 – March 4, 2022
Place	Washington, DC
Hosted by	RTCA

Meeting Summary:

The joint plenary of RTCA Special Committee 214 (SC-214) (#39) and EUROCAE Working Group 78 (WG-78) (#31) was held February 28 through March 4, 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>Feb 28</u>	<u>March 4</u>
Alexander Engel*	EUROCAE		X
Ana Beroiz	Eurocontrol	X	X
Anna Cagedemetrio	Eurocontrol	X	X
Andrew Ives	Inmarsat	X	X
Antonio Harrison Sanchez	ESA	X	X
Armin Shlereth	DFS	X	X
Arndt Suendermann	DFS	X	X
Bjarni Stefansson*	ISAVIA	X	X
Cindy Freud	MITRE	X	
Christophe Visee	Eurocontrol	X	X
Claire Robinson*	Universal Avionics	X	X
Clement Selles	Airbus		X
David Illan	ESSP	X	
David Lewin	NATS	X	X
Dongsong Zeng	MITRE	X	
Ed Hahn	ALPA	X	X

Edward San	FAA		X
Eric Mok*	Universal Avionics	X	X
Eric Sadon	DSNA	X	
Frank Lindenmeyer	DFS	X	X
Frederic Beltrando	Airbus	X	X
Gary Colledge	Inmarsat	X	X
Giulio Di Tillio	Airtel	X	
Gonzalo Prieto	ESSP	X	
Greg Saccone*	Boeing	X	X
Guillaume Molinier	Airbus		X
Joachim Hochwarth*	GE Aviation	X	X
Karan Hofmann*	RTCA	X	X
Kareem Shabaik	Boeing	X	X
Karsten Mikeska	DFS	X	X
Kathleen Kearns*	Alternasource	X	X
Kim Cardosi	DOT	X	
Lisa Bee	Inmarsat	X	
Luc Emberger*	Airbus	X	X
Macarena Martin Viton	Airbus		X
Madhu Niraula*	Collins	X	X
Mark Patterson	FAA	X	X
Matthew Wollert*	L3 Harris	X	X
Michael Hooper	Iridium	X	X
Mike Matyas	Boeing	X	
Moin Abulhosen*	FAA	X	X
Radek Zaruba	Honeywell	X	
Randy Bone*	MITRE	X	X
Rebecca Morrison*	RTCA	X	
Richard Kynard	Garmin	X	X
Sandra Shonbach	DFS	X	X
Shawn Silverman*	FAA	X	X
Shelley Bailey*	NavCanada	X	
Theresa Brewer	FAA	X	X
Thierry Lelievre*	Cap Gemini (on behalf of Airbus)	X	X
Thomas Hess	DFS	X	X
Thomas Mustach	FAA	X	X
Todd Kilbourne*	Mosaic ATM	X	X
Tracy Lennertz	DOT	X	X
Tyler Jeurgens*	L3 Harris	X	X
Viktor Jagasits	Eurocontrol	X	X
Vincent McMenemy	FAA	X	X
Willie Truong	Boeing	X	X

* Indicates attendance in person

1. Welcome, Introductions and Administrative Remarks (Plenary)

The joint 39th Plenary of SC-214 / 31th Plenary of WG-78 was convened in person at RTCA and via Webex on February 28th, 2022 at 9:00 am EST by Chairs Claire Robinson (Universal Avionics) and Luc Emberger (Airbus). RTCA and EUROCAE anti-trust statement, proprietary policy and membership policy were read by Karan Hofmann (RTCA). Welcoming remarks were then made, followed by an introduction of the new SC-214 secretary, Todd Kilbourne of Mosaic ATM, 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 38/WG-78 Plenary 30 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:

Please, find attached the update of the OPS Change Matrix including the 9 new OPS change proposals resulting for some of them from our Plenary#39 Session:

SG#27 - AIRBUS – Clarification on ATN B2 Definition (and Use) of Flight Plan Waypoints. The type of flight plan waypoint to be provided in some ADS-C reports and CDPLC Messages deserve consistency enhancement and clarification (Publhed waypoint, pilot inserted, system inserted).

See Airbus - ATS B2 Definition of Flight Plan Waypoints.ppt from AIRBUS.

To be presented/discussed during the Tomorrow's Joint Session (Clément).

SG#28 - AIRBUS – Add new triggering conditions to EPP Flight Plan change on event contract (Cruise FL / CI update). Ground trajectory predictors would need to know quickly when a change in predicted FMS Trajectory occurred. May be an issue in terms of system load.

To be presented/discussed during tomorrow's Joint Session (Clément).

SG#29 - SESAR PJ38/ASCIENDO – Accommodation of ADS-C Common Services (ACS) Concept in B2 Standards. ACS is expected to become the mainstream way for ground actors to deploy ADS-C in Europe, due to a range of technical, regulatory and cost efficiency reason. The concept of ACS (and ADS-C data sharing) is not yet well defined in Interoperability Standards for Baseline 2 (i.e. DO-351A/ED-229A), in particular issues exist at SPR level

See RTCA SC214 - EUROCAE WG78 - OPS SG - ACS Concept in B2 Standard - 23Feb22.ppt.

To be presented/discussed during the Tomorrow's Joint Session (Thierry)

SG#30 - BOEING (ICAO/AEEC) - The use of data in D-START/D-ENDs. It is proposed that the original DO-280B/ED-110B requirements be reverted to and included in the next revision to DO-351B/ED-229B. This would limit the inclusion of large messages in a D-START request as well as D-END request and response.

See POS-PL-BoeingMar2022_v2_Data in D-Start-D-End.doc from BOEING

Plenary #39 March22:

Rationale for the change in B2 should be checked. Nevertheless, the group agreed that distinguishing D-Start/D-End (establishment/termination of the connection) from operational data present advantages with regards of security and IPS. Discussion is forwarded to OPS SG.

SG#31 - EUROCONTROL – Vertical type/StartOfSpeedChange Clarification of Aircraft behavior. Fig B-9: Begin Acceleration/Deceleration to Descent Mach† → vertical-type(1) = startOfSpeedChange. From the presented data it seems like the speed value downlinked with the vertical type is associated to the cruise phase, not the descend phase.

See WG78_ED228A_24022022 Vertical Type (Start-End Speed change).ppt" from Eurocontrol

Plenary #39 March22:

SG agreed with the need for clarification. Discussion is forwarded to OPS SG.

Action Vicktor (Joachim) to provide amendment to fig B-9.

SG#32 - EUROCONTROL – Vertical type/EndOfSpeedChange Clarification of Aircraft behavior. B-10: Initial Cruise Speed Reached‡ (only exists if initial cruise speed not reached by top of climb) → vertical-type(1) = endOfSpeedChange. B-12: End of Deceleration → vertical-type(1) = endOfSpeedChange. The endOfSpeedChange can be at a speed-constrained waypoint but also at other points in descent. It is provided in EPP only if available..

See WG78_ED228A_24022022 Vertical Type (Start-End Speed change).ppt" from Eurocontrol

Plenary #39 March22:

SG agreed with the need for clarification. Discussion is forwarded to OPS SG

Action Vicktor (Joachim) to provide amendment to fig B-10/B-12

SG#33 – ICAO OPDLG – ENR-2 Description – Inconsistency with PANS/ATM Airspace Characteristics. Airspace characteristics has been changed in PANS ATM and make the ENR-2 airspace description inconsistent notably on Separation Minima. It is proposed to make ENR-2 airspace description more realistic and consistent with PANS ATM, See referenced document for change proposal

See POS-PL-00x -Four issues with ED228A_DO350A from GOLD-PANSATM (Bjarni)" from ICAO OPDLG.

Plenary #39 March22:

SG agreed with ensuring consistency with PANSATM of ENR-2 description. Best way is to get rid of separation minima reference and just keep reference to PANS ATM. Discussion is forwarded to OPS SG.

SG#34 – ICAO OPDLG – ENR-2 Description – Inconsistency with PANS/ATM Airspace Characteristics. Airspace characteristics has been changed in PANS/ATM and make the ENR-2 airspace description inconsistent notably on Separation Minima. It is proposed to make ENR-2 airspace description more realistic and consistent with PANS/ATM, see referenced document for change proposal.

See POS-PL-00x -Four issues with ED228A_DO350A from GOLD-PANSATM (Bjarni)" from ICAO OPDLG.

Plenary #39 March22:

The referenced text is descriptive material and cannot contain shall requirement. Proposal is to replace may by "will" in this text and to change the recommendation CPDLC ORec-12 into a "shall" requirement. Discussion is forwarded to OPS SG.

SG#35 – ICAO OPDLG – Handling of Open CPDLC Message upon CPDLC Termination request. There is now a discrepancy with the new GOLD for the case of open uplink messages at the time of data link connection transfer. The GOLD Project Team felt that, in cases of open uplink messages at the time of data communication transfer, it was best to transfer the connection expeditiously to enable the R-ATSU to get the CPDLC connection and task the transferring controller with coordinating any open uplink messages with the receiving controller. This was considered a better option than having the T-ATSU hold on to the connection and continue working the aircraft in the R-ATSU airspace until the open messages were resolved. The following is in the draft new GOLD.

See POS-PL-00x -Four issues with ED228A_DO350A from GOLD-PANSATM (Bjarni)" from ICAO OPDLG.

Plenary #39 March22:

All agreed with the proposed use case in order to cover/be consistent with GOLD behavior. Nevertheless, open question is "does it replace the 2 behaviors describes in the ACM table (before the termination request is sent) or is it an additional case when the CPDLC termination is confirmed? Is the 2 Behaviors in ACM table operationally suitable? Discussion is forwarded to OPS SG.

It has been also noted that:

the OPDLWG Air Ground Project Team (A-G PT) is in the process of reviewing all CPDLC messages with the aim of ensuring that there is no discrepancy between the PANS/ATM, GOLD and ED-228A/DO-350A. This may result in some changes to ED-228A/DO-350A.

IM Tiger Team has also some B2 change proposals to be reviewed during this week. To be presented/discussed during the Tomorrow's Joint Session (Randy).

A bunch of editorials comments will be also submitted to OPS SG soon.

Safety/Performance Subgroup (Theresa Brewer, FAA)

Theresa Brewer discussed the slide for the subgroup briefing, filename: *SC214_WG78_Plenary 39 Safety-Performance Subgroup Update.pdf*.

She reviewed the subgroup action list and listed the papers and presentations for review in the subgroup this week:

1. Paper–Alignment of Safety requirements (base SR and allocated SR) between ICAO PBCS Manual Ed3 and Industry Standard ED-228/DO-350 next revision –Frederic Beltrando
2. Paper–Revised RCP130 and RSP160 ACSP Allocation Proposal –Andrew Ives
3. Presentation–“B2 RCP & RSP definition Issues” –Radek Zaruba
4. Presentation–Appendix D.7.5 of ED-228A –Christophe Visee

IM Tiger Team (Randy Bone, MITRE)

Randy presented a few status slides to the group regarding ongoing work with the tiger team. There was minimal discussion and questions. The status of the team will be further briefed at the end of the week.

Boeing Paper Discussion (Greg Saccone, Boeing)

Greg explained the main thrust of the paper to reduce the size of the messages used to initiate connections. Main objective would be to avoid the need for segmentation, which would be complex in particular with ATN/IPS and associated security session management. There was discussion related to what types and sizes of messages are used in D-START and D-END. Ana Beroiz agreed to take an action to get average size of EPP messages from Eurocontrol.

4. Day 2 & 3 Non-Plenary Working Sessions

Day 2 and 3 consisted of further discussions by the subgroups. The operational subgroup discussions are detailed in the next section.

5. Operational Group Discussion

The following is a summary of the discussions on Tuesday, March 1.

Clarification on Fly Plan Waypoint Definition and use

- ⇒ See “Airbus - ATS B2 Definition of Flight Plan Waypoints.pdf” from Airbus for more detailed description of the issue
- As per B2 Requirements, Lat/lon are provided for all waypoints in each of ADS-C Data Group containing waypoint information (e.g. projected profile, EPP,...)
- **Issues & Action & proposed resolution:**
 - **Provision of Waypoint Name:**
 - As per current B2 standard, the waypoint name is provided not only to published waypoint but also for some waypoints along with the lateral path which have been inserted by the pilots or by the FMS. Those waypoints and their name (which can be specified with up to 7 characters) are not known by ATC.
 - The proposed resolution is to provide Name only for published waypoints/waypoints from Navigation Database. This proposal will also solve the issue related to the length (number of character) of waypoint name which is expressed as 1-5 characters only in B2 standard.
- ⇒ **Action ALL: to consider acceptability of the proposed resolution for Waypoint name issue**
 - **Flight Plan Waypoint definition:**
 - It is not clear if the ‘FMS Lateral Route’ should provide or not an exhaustive list of the waypoint types to be considered as ‘Flight plan waypoint’ (i.e. if the “flight plan waypoints” are “only” NDB waypoints and “flight crew or data link defined waypoints” or if other waypoint types have to be considered as “flight plan waypoint”
 - According to the resolution of the Waypoint name issue above, the definition of Flight plan waypoint and associated lateral type will have to be updated with the associated requirement notably OR-18, OR-19
 - **Waypoints to be provided in EPP:**
 - It is not clear that what waypoint has to be provided as part of ● CPDLC route downlinks (DM24R / DM40R / DM59R) ● ADS-C Projected Profile data group ● ADS-C EPP data group.
- ⇒ **Action ANSPs to review waypoint table in the presentation and to confirm which “FMS flight plan waypoint” they consider as necessary to receive as**

part of: • CPDLC route downlinks (DM24R / DM40R / DM59R) • ADS-C Projected Profile data group • ADS-C EPP data group.

Provision of Hold information

⇒ See “A130_ADS-C holding requirements for WG-78 Dec 2021.pptx” from NATS for more detailed description of the change proposal

⇒ See “HOLD Team feedback and conclusion.docx” copied from Joachim’s e-mail

○ **Issues & Action & proposed resolution:**

▪ **Provision of Entering/Exiting the holding pattern:**

- The group agreed with the HOLD team conclusion that entering or exiting the holding pattern events are too short-lived to be meaningful. The FMS often won’t know about entering or exiting the holding pattern until immediately (on the scale of a few minutes) before the flight crew acting on ATC instructions
- From an ATC perspective, the data is operationally valuable within these timeframes – of course, the earlier the better, but even as close as a few tens of seconds before the a/c sequences the holding waypoint the ATCO still has time to intervene, so the data still has value in safety-related conformance monitoring processes. [David Lewin]
- Later, towards the end of the Ops meeting yesterday, Willie had a chance to look more into the behavior of their FMSs with regards to entering (not inputting) a holding pattern. As it turns out, we somehow had it all backwards: The FMS will assume that the aircraft will enter the holding pattern by default. So it’s an opt-out and not opt-in. This is probably because the holding pattern is part of the clearance, for instance when it’s manually terminated (ARINC 424 HM Leg) as part of a procedure. Greg also confirmed and so did I last night after digging in some more. The only holding patterns that get automatically skipped are altitude-terminated ones (HA Leg) when the altitude is predicted to be reached before the entry waypoint. [Joachim Hochwarth]

▪ **Provision of an indication that the a/c is engaged to continue to fly the holding pattern:**

- The group agreed with the HOLD team proposal to add the “engaged” Hold indication as a new Boolean into the TrajectoryIntentStatus parameter as follow:
- I think we agreed that there is no need for a periodic contract, but that a demand contract option may be useful (but the event contract would be the routine way of downlinking the data) [David Lewin]
- I think Thierry just included my summary email from the hold team in the attached *.docx, but we concluded that this requires a little bit more follow up on how to set the “in hold” flag (it’ll likely just can be as we had originally recommended). However, it shouldn’t necessarily be a complete back to the drawing board with regards to REQ 4.
- Clement was also going to look a bit further into the four-minute discrepancy you’ve been observing between the two current EPP implementations. He said that there’s no ETA discrepancy

on the LEGS pages which are based on the same predictions as the data used in the EPP. [Joachim Hochwarth]

TrajectoryIntentStatus ::= SEQUENCE

```
{
  lateralFlightManaged    BOOLEAN,
  verticalFlightManaged   BOOLEAN,
  speedManaged            BOOLEAN,
  timeManaged             BOOLEAN,
  ...
  holding,                 BOOLEAN
}
```

- This Boolean will be set to “engaged” when the pilot will armed the hold function and “disengaged” when the pilot will disengaged the hold function. This will be performed respectively before sequencing the entry point and the exit point of the hold.
- It was mentioned that PJ38 is already discussing to revise the TrajectoryIntentStatus for clarification. These discussions are at an early stage only and will be presented to SC-214/WG-78 at some point. This could all be combined in a clear and concise manner

▪ **Provision of Hold information:**

- The group agreed with the HOLD team conclusion that including a holding pattern in the EPP would be very tricky. So it was proposed to create a new report that contains the same information as follow:

HoldatwaypointR ::= SEQUENCE

```
{
  Position          [0]    PositionR,
  holdspeedlow     [1]    Speed                OPTIONAL,
  level            [2]    WaypointLevelConstraint OPTIONAL,
  holdspeedhigh    [3]    Speed                OPTIONAL,
  directionSide    [4]    DirectionSide        OPTIONAL,
  degrees          [5]    Degrees              OPTIONAL,
  eFCtime         [6]    Time                  OPTIONAL,
  legtype          [7]    LegTypeR             OPTIONAL
}
```

Where legtype is:

LegTypeR ::= CHOICE

```
{
  distance          [0]    LegDistanceR,
  time              [1]    LegTimeR
}
```

- The group also agreed that this Hold report shall be completed in order to comply with the 3 types of hold that an A/C may fly

⇒ **Action Joachim/David to propose update of HOLD report in order to comply with the 3 possible types of HOLD.**

- **Type of ADS-C contract to request Hold information:**
 - The group agreed with requesting the hold report only using the TrajectoryIntentStatus Change event. A change to the HOLDING Boolean from disengaged to engaged will trigger the sending of an EPP Report with the hold report. A change to the HOLDING Boolean from engaged to disengaged will trigger the sending of an EPP only.
 - The group agreed with no need for demand and periodic contract to get the hold report
 - **Different FMS behaviors of how holding pattern is currently represented in the EPP:**
 - *Discussion is on-going.*
 - **IMPORTANT** : *The above proposal will have to evolve according to the different FMS Behavior regarding the Holding Pattern activation.*
- ⇒ **Action HOLD Team** to assess the impact of different behavior on this proposal and to provide updates

▪ **Report from IM Tiger Team**

- Randy presented Change proposals related to the IM Service consolidation
- ⇒ *See Slides 11 to 21 in “IM data comm req v6.1 comment resolution review 2020-02- v1-2.ppt” from Randy*
- The group agreed that the Changes to the requirements are being tracked in the Tiger Team document and Tiger Team Co-Leads will submit all changes as a set in one document (versus many rows in an Excel change matrix)

Tomorrow, we will continue the Review of Actions.

▪ **SG#4 : Provide EPP upon Sequencing Next Waypoint**

- **Action Ana:** to discuss internally if it could be acceptable to receive only the basic group and projected profile (not the full EPP). On-Going.
- **Action Ana:** to share use case/log information with the group

OPS SG Session: No feedback from ANSPs. The Change proposal remains working until further operational inputs. No change to B2 ADS-C Capabilities is envisaged for the time being.

▪ **SG#5 : Extend monitoring of ADS-C event contract “EPP tolerance” (only one waypoint today) on a waypoints list and/or time window**

- **Action Arndt:** To provide rationale for this EPP Tolerance change Event on multiple waypoints part of EPP Window => on-going

OPS SG Session : Ana presented the rationale for monitoring of ADS-C event contract “EPP tolerance” on several waypoints part of the EPP Window. The need is to set EPP Tolerance event on multiple waypoints part of the EPP Window with different Tolerance values.

Discussion is on-going to clarify on which type of EPP Waypoint the Tolerance event could be set and how the ground system will identify the waypoints on which it will be set (using name? lat/lon?...)

- **SG#7 : Create an ADS-C event contract to trigger a Speed Schedule report on specific event for this group (or add the Speed Schedule group in EPP event report)**
 - **Action Ana** to investigate if more rationale is available (in particular in the VLD report) for new ADS-C event contract to trigger a Speed Schedule
- **SG#11 : Consistency of Departure Clearance Procedure with ICAO PANSATM / GOLD**
 - *No change to B2 Standard identified*
 - **Action Bjarni** to check consistency of Baseline 2 DCL with PANS ATM and GOLD DCL Procedure => To prepare paper with GOLD and B2 material for review next week.
- **SG#15: ADS-C reporting of holding intent**
 - **Action GE/Airbus/Boeing** to assess the possible implementation on FMS side. (Dedicated Webex last Thursday 24)
 - Action Fred: to provide note for rationale => on-going

The following is a summary of the discussions on Wednesday March 2, 2022.
Please, find bellow status/conclusions resulting for our today's OPS Session:

- **SG#5 Extend monitoring of ADS-C event contract "EPP tolerance" (only one waypoint today) on a waypoints list and/or time window**
 - Ana presented the rationale for monitoring of ADS-C event contract "EPP tolerance" on several waypoints part of the EPP Window with different tolerance values for each of selected waypoints.
 - **Issues & Action & proposed resolution:**
 - **Which type of EPP Waypoint the EPP Tolerance event could be set?**

To avoid airborne complexity, the OPS sub-group recommends that each of Lateral type waypoints and Vertical type waypoints may be elected for a EPP Tolerance Event. Up to the ground to select the waypoints on purpose on which it wants to set up an EPP Tolerance event (e.g. Top Of Climb, Top of Descent,...). Nevertheless, the selected waypoint should be part of the specified EPP Window.

- **How many EPP Waypoint the Tolerance event could be set on?**

The OPS sub-group recommends that an EPP Tolerance Event could be set to up to 4 waypoints simultaneously for one EPP Event Contract. From an airborne perspective and considering that the A/C system is able to support up to 4 ADS-C Connection with one EPP Event contract on each, the A/C will have to be able to monitor Tolerance event on up to 16 Waypoints! This also may lead to issues on Network Capacity and Airborne system performance.

Action ANSPs: To assess if setting Tolerance event on a maximum of 4 waypoints par EPP event contract is suitable for thire operational needs and if this maximum could be reduced (e.g. up to 2 wpts?)

Action Airborne implementers: To assess if setting Tolerance event on a maximum of 4 waypoints par EPP event contract is suitable

- **How to avoid triggering to often EPP Tolerance Event / sending too often EPP Report?**

Some of waypoint parameters (location, Altitude, Speed, ETA) may vary continuously. To avoid A/C system to generate too often EPP Reports, the OPS sub-group recommends to fix a minimum value for each type of EPP Tolerance events.

Action Viktor: To figure out the required threshold minima to trigger each of each type of EPP Tolerance Events based upon assessment of EPP data from real flights in Europe.

It has been also noted that a study about Variability of flight data has been performed in SESAR Project PJ31 based on EPP Periodic contract with a 5 min time Period. This could also be useful for the OPS Sub-Group to assess those statistics in order to figure out relevant threshold minima.

Action Anna (from PJ31): To share with OPS Team members the relevant statistics on Variability of Flight data.

- **How the waypoint will be identified, waypoint in the EPP Tolerance Event contract request?**

Each of the waypoint in the EPP Tolerance Event contract request will be identified with:

- The WPT Name and its Location (Lat/lon) when it is NavDB Waypoint
 - The Location (Lat/lon) when it is lateral waypoint not from NavDB
 - The Vertical Type(s) and its Location (Lat/lon) when it is a Vertical type waypoint
- **Under which conditions a EPP Tolerance event contract will be accepted/rejected by the A/C system?**

Guillaume (Airbus) presented the current behavior of the Airbus B2 ADS-C implementations which limit the setting of EPP Tolerance Event contract to only one waypoint as per current B2 Standards.

The EPP Tolerance Event is rejected when:

- The A/C system does not support the request EPP Tolerance Event (as per current B2 requirements)
- a WPT Name is provided in the request and :
 - The WPT Name does not match any WPT name in the EPP Sequence of waypoint previously sent.
 - The WPT Location in the request is beyond 6Nm radius from the identified WPT (with the same WPT Name) in the EPP Sequence of waypoints previously sent.
- a WPT Name is not provided in the request and:
 - The WPT Vertical type(s) does not match the vertical types of the identified WPT in the EPP Sequence of waypoints previously sent. Note: *The WPT on the route may contains more than the vertical types provided in the request.*
 - The WPT Location in the request is beyond 6Nm radius from the identified WPT in the EPP Sequence of waypoints previously sent.

For all other cases, the EPP Tolerance Event is accepted

The OPS sub-group recommends to adopt Airbus philosophy in order to accept or to reject an EPP Tolerance Event request.

- **Partial Acceptance of an EPP Tolerance event contract request when one event contract on one waypoint is not suitable?**

The capability of EPP Tolerance Event contract on multiple waypoints raises the issue related to the partial vs full rejection/acceptance of an EPP Tolerance Event contract request when is not suitable for at least one specified waypoint in the request. The OPS sub-group recommends to partially accept the EPP Tolerance Contract in that case responding with an ADS-C Non-Compliance Notification indicating the waypoint(s) on which the EPP Tolerance event has not been set and the reason.

Action Thierry: To make proposal for change in ADS-C Non Compliance Notification to support partial acceptance of EPP Tolerance event contract request on multiple waypoints.

- **SG#15 ADS-C reporting of HOLDING Intent & Data**

⇒ See “AI30_ADS-C holding requirements for WG-78 Dec 2021.pptx” from NATS for more detailed description of the change proposal

⇒ See “HOLD Team feedback and conclusion.docx” copied from Joachim’s e-mail

- The OPS Sub-Group discussed the impact of variation of FMS Behavior regarding the hold and then revisited the proposed way-forward and conclusion on HOLDING topic as agreed during the last OPS session.

- **Issues & Action & proposed resolution:**

- **Provision of Entering/Exiting the holding pattern:**

- The group agreed with the HOLD team conclusion that entering or exiting the holding pattern events are too short-lived to be meaningful. The FMS often won’t know about entering or exiting the holding pattern until immediately (on the scale of a few minutes) before the flight crew acting on ATC instructions

- **Provision of an indication that the a/c is engaged to continue to fly the holding pattern:**

- The group agreed with the HOLD team proposal to add the “engaged” Hold indication as a new Boolean into the TrajectoryIntentStatus parameter as follow:

TrajectoryIntentStatus ::= SEQUENCE

```
{
  lateralFlightManaged    BOOLEAN,
  verticalFlightManaged   BOOLEAN,
  speedManaged           BOOLEAN,
  timeManaged            BOOLEAN,
  ...
  holding,                BOOLEAN
}
```

- This Boolean will be set to “engaged” when the pilot will armed the hold function and “disengaged” when the pilot will disengaged the hold function. This will be performed respectively before sequencing the entry point and the exit point of the hold.

- It was mentioned that PJ38 is already discussing to revise the TrajectoryIntentStatus for clarification. These discussions are at an early stage only and will be presented to SC-214/WG-78 at some point. This could all be combined in a clear and concise manner

- **Provision of Hold information:**

- The group agreed with the HOLD team conclusion that including a holding pattern in the EPP would be very tricky. So it was proposed to create a new report, the HOLD Report, that will contain the information as follow:

HoldatwaypointR ::= SEQUENCE

```
{
  Position                [0]    PositionR,
  holdspeedlow           [1]    Speed                OPTIONAL,
  level                   [2]    WaypointLevelConstraint  OPTIONAL,
```

holdspeedhigh	[3]	Speed	OPTIONAL,
directionSide	[4]	DirectionSide	OPTIONAL,
degrees	[5]	Degrees	OPTIONAL,
eFCtime	[6]	Time	OPTIONAL,
legtype	[7]	LegTypeR	OPTIONAL

}

Where legtype is:

LegTypeR ::= CHOICE

```
{
  distance [0] LegDistanceR,
  time [1] LegTimeR
}
```

- The group also agreed that this Hold report shall be completed in order to comply with the 3 types of hold that an A/C may fly
- ⇒ **Action Joachim/David to propose update of HOLD report in order to comply with the 3 possible types of HOLD.**
 - **How to request the Hold Report/Information:**
 - The group agreed that HOLD Report can be requested by the ground in two options:
 - Use of ADS-C Event Contract requesting HOLD Report
 - Use of Flight Plan Change event contract requesting to send HOLD Report when the new route containing the Hold procedure is activated. Upon activation of the new route containing the Hold procedure, the A/C system will send the EPP Report (as per current B2 standards) and the HOLD Report.
 - The group agreed with no need for periodic contract to get the hold report.
 - The HOLD entry/exit indication is also provided by using the EPP TrajectoryIntentStatus Event contract which is triggered when the HOLD is engaged (entry) or disengaged (Exit).
 - ⇒ **Action Thierry to propose modifications to ADS-C Flight Plan change event contract to allow HOLD report request.**
- **SG#29 Accommodation of ADS-C Common Services (ACS) Concept in B2 Standards.**
 - ⇒ *See “RTCA SC214 - EUROCAE WG78 - OPS SG - ACS Concept in B2 Standard - 02 March 2022.pptx” from Airbus for more detailed description of the change proposal*
 - The OPS Sub-Group revised the proposed change to B2 SPR in order to accommodate the ACS Concept.
 - ⇒ **Action Thierry to revise the Fig 1-1 in order to clearly reflect that the Common Datalink Services will be shared by several ATSU's .**
 - This will be presented at Plenary for Plenary approval on Friday

▪ **SG#11 Departure Clearance Procedure**

⇒ See “Departure Clearance summary.docx” from Bjarni (Isavia) for more detailed description of the change proposal

- Bjarni (ISAVIA) presented the results of his assessment of DCL Procedure in GOLD and in B2 ED228/DO350.
- Three changes have been identified:
 - The GOLD Requirement XXXX is missing RTEU-24 UM266 AT (position) CLEARED TO (position) VIA (route) as part of the DCL messages
 - In B2 SPR, The Pilot response to the DCL Clearance will have to added in Fig 3-13 Overview of DCL Exchange in B2 SPR
 - In B2 INTEROP The Fig A 7.2 will have to be corrected with removal of OCL references

⇒ **Action Thierry to capture in change matrix the comment on B2 Standards .**

▪ **SG#10 Provides Airport & Runway Information in ADS-C EPP**

- AIRBUS Feedback: FMS does not always know the runway. Only when the Missed Approach Point (MAP) matches with the runway. If not the last waypoint provided in the EPP sequence of waypoints will the MAP with its predicted data
- The OPS Sub-Group agreed with getting rid of EPP OR for mandatory provision of runway and to add the following explanation:

“Note: The last point for which the FMS runs predictions (i.e. determines information such as ETA and fuel remaining) is either the runway, the Missed Approach Point (MAP), or Final End Point (FEP) when the MAP is beyond the runway. This all depends on whether a runway is selected, and there are some FMSs where you don’t even have to enter a destination airport, which is rare, though. The MAP/FEP are, obviously, only included in the EPP if an approach has been selected.”

6. Safety/Performance Subgroup

The schedule for this subgroup for the week was

Tuesday, 3/1

1300-1500 EST - Frederic Beltrando - Alignment of Safety requirements (base SR and allocated SR) between ICAO PBCS Manual Ed3 and Industry Standard ED-228/DO-350 next revision

1500-1530 EST - BREAK

1530-1700 EST - Radek Zaruba - “B2 RCP & RSP definition Issues”

Wednesday, 3/2

0900-1030 EST - Andrew Ives - Revised RCP130 and RSP160 ACSP Allocation Proposal

1030-1100 EST - BREAK

1100-1200 EST - Christophe Visee - Appendix D.7.5 of ED-228A

7. 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.

- **35 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)**
 - **Editorial comments are expected soon**

Most of the change proposals have been assessed.

The following is a review of the Ops Change Proposals:

- **SG#4 : Provide EPP upon Sequencing Next Waypoint**
 - **Action Ana:** to discuss internally if it could be acceptable to receive only the basic group and projected profile (not the full EPP) . On-Going.
 - **Action Ana:** to share use case/log information with the group

OPS Sub-Group [March22]: : No feedback from ANSPs. Receive only the basic group and projected profile may satisfy ANSPs operational needs. No change to B2 Standard No change to B2 ADS-C Capabilities unless opposing from ANSP'.

- **SG#5 : Extend monitoring of ADS-C event contract “EPP tolerance” (only one waypoint today) on a waypoints list and/or time window**

OPS Sub-Group [March22]: : Proposal for EPP Tolerance event on maximum of 4 waypoints part of the EPP Window with different Tolerance values. Aircraft may partially accept the EPP Tolerance request if at least one waypoint is suitable. Minimum threshold is required for Tolerance event to avoid sending EPP every second.

- **Action ANSPs:** To assess if setting Tolerance event on a maximum of 4 waypoints par EPP event contract is suitable for thire operational needs and if this maximum could be reduced (e.g., up to 2 wpts?)
- **Action Airborne implementers:** To assess if setting Tolerance event on a maximum of 4 waypoints par EPP event contract is suitable
 - **Action Viktor:** To figure out the required threshold minima to trigger each of each type of EPP Tolerance Events based upon assessment of EPP data from real flights in Europe.
 - **Action Anna (from PJ31):** To share with OPS Team members the relevant statistics on Variability of Flight data.
 - **Action Thierry :** To make proposal for change in ADS-C Non-Compliance Notification tu support partial acceptance of EPP Tolerance event contract request on multiple waypoints.

- **SG#7: Create an ADS-C event contract to trigger a Speed Schedule report on specific event for this group (or add the Speed Schedule group in EPP event report)**

OPS Sub-Group [March22]: : ANSP's confirmed need for monitoring change in Speed Schedule data although they don't evolve so much during a flight (more static data than dynamic). More assessment is required with airborne experts on speed schedule.

- **SG#10 Provides Airport & Runway Information in ADS-C EPP**

OPS Sub-Group [March22]: Due to unavailability of runway information in some cases, the proposal is to not mandate the provision of runway in the EPP Sequence of waypoint, and to add in Annex B EPP Provision, an EPP-OR for the runway naming convention when the runway is provided and the following explanatory note:

“Note: The last point for which the FMS runs predictions (i.e. determines information such as ETA and fuel remaining) is either the runway, the Missed Approach Point (MAP), or Final End Point (FEP) when the MAP is beyond the runway. This all depends on whether a runway is

selected, and there are some FMSs where you don't even have to enter a destination airport, which is rare, though. The MAP/FEP are, obviously, only included in the EPP if an approach has been selected."

▪ **SG#11 : Consistency of Departure Clearance Procedure with ICAO PANSATM / GOLD**

OPS Sub-Group [March22]: Bjarni (ISAVIA) presented the results of his assessment of DCL Procedure in GOLD and in B2 ED228/DO350.

Two B2 "editorials" changes have been identified:

- In B2 SPR, The Pilot response to the DCL Clearance will have to added in Fig 3-13 Overview of DCL Exchange in B2 SPR
- In B2 INTEROP The Fig A 7.2 will have to be corrected with removal of OCL references

▪ **Action Thierry to capture in change matrix the comment on B2 Standards.**

• **SG#15: Add ADS-C capabilities for reporting of holding intent and information**

OPS Sub-Group [March22]: : Proposal for New ADS-C Data group (HOLD Profile) which can be requested either using a demand contract or an event contract specifying the Trajectory Intent Status Change event. A new HOLD Boolean will be added to the Trajectory Intent Status to indicate that a hold is activated or not activated in the active flight plan. When this HOLD Boolean is set to activated and a Trajectory Intent Status Change event is in place, then the A/C will send an EPP Report and the new HOLD Report.

- **Action Joachim/David to** propose update of HOLD report in order to comply with the 3 possible types of HOLD.
- **Action Thierry to** propose modifications to ADS-C Flight Plan change event contract to allow HOLD report request

▪ **SG#27 Clarification on ATN B2 Definition (and Use) of Flight Plan Waypoints**

OPS Sub-Group [March22]: Review of "Airbus - ATS B2 Definition of Flight Plan Waypoints.pdf" from Airbus. Proposed resolution is to provide Waypoint Name only for (published) waypoints from Navigation Database when provided in the ADS-C EPP / ADS-C Projected Profile. For all other waypoints (e.g. pseudo points) in the ADS-C EPP / PP, the waypoint name will not be provided. This proposal will also solve the issue related to the length (number of character) of waypoint name which is expressed as 1-5 characters only in B2 standard.

- **Action ALL:** to consider acceptability of the proposed resolution for Waypoint name issue

It is not clear if the 'FMS Lateral Route' should provide or not an exhaustive list of the waypoint types to be considered as 'Flight plan waypoint' (i.e. if the "flight plan waypoints" are "only" NDB waypoints and "flight crew or data link defined waypoints" or if other waypoint types have to considered as "flight plan waypoint". According to the resolution of the Waypoint name issue above, the definition of Flight plan waypoint and associated lateral type will have to be updated with the associated requirement notably OR-18, OR-19

- **Action ANSPs** to review waypoint table in the presentation and to confirm which "FMS flight plan waypoint" they consider as necessary to receive as part of: • CPDLC route downlinks (DM24R / DM40R / DM59R) • ADS-C Projected Profile data group • ADS-C EPP data group.

▪

▪ **SG#28 Add new triggering conditions to EPP Flight Plan change on event contract (Cruise FL / CI update)**

Not addressed

- **SG#29 Accommodation of ADS-C Common Services (ACS) Concept in B2 Standards.**

OPS Sub-Group [March22]: Revised the proposed change to B2 SPR in order to accommodate the ACS Concept:

- **Action Thierry** to revise the Fig 1-1 in order to clearly reflect that the Common Datalink Services will be shared by several ATSUs .

=> *See Dedicated slides in this OPS Sub-Group Report*

- **SG#30 Avoid Use of data in D-START/D-ENDs.**

OPS Sub-Group [March22]: Proposal is to avoid sending data in D-Start/D-End (establishment/termination of the connection). It worthes to distinguish D-Start/D-End (establishment/termination of the connection) from operational data and presents advantages with regards of security and IPS. Rationale for the change in B2 (compared to B1) should be checked.

- **Action ALL:** To check is in current implementations operational Data are provided within D-Start/D-End indications.

- **SG#31 startOfSpeedChange Clarification for common behavior**

OPS Sub-Group [March22]: Agreed with the need for clarification.

- **Action Viktor (Joachim)** to provide amendment to fig B-9

- **SG#32 endOfSpeedChange Clarification for common behavior**

OPS Sub-Group [March22]: Agreed with the need for clarification

- **Action Viktor (Joachim)** to provide amendment to fig B-10/B-12

- **SG#33 ENR-2 Description - Separations minima inconsistency with PANS/ATM Airspace Characteristics**

OPS Sub-Group [March22]: Agreed with ensuring consistency with PANSATM of ENR-2 description by getting rid of separation minima references and just keep reference to PANS ATM for separation.

- **Action Bjarni** to provide text amendment

- **SG#34 FMS Load Capability of EXPECT Messages**

OPS Sub-Group [March22]: the referenced text is descriptive material and cannot contain shall requirement. Proposal is to replace may by "will" in this text and to change the recommendation CPDLC ORec-12 into a "shall" requirement.

- **Action Bjarni** to provide text amendment

- **SG#35 Handling of Open CPDLC Messages upon CPDLC Termination request**

OPS Sub-Group [March22]: All agreed with the proposed use case in order to cover/be consistent with GOLD behavior. Nevertheless, open question is "does it replace the 2 behaviors describes in the ACM table (before the termination request is sent) or is it an additional case when the CPDLC termination is confirmed? Is the 2 Behaviors in ACM table operationally suitable.

=> *Discussion is on going*

Thierry discussed the accommodation of the ADS-C Common Services Concept in the B2 Standard. Next he presented a schedule to address the remaining change proposals.

Note to all OPS Subgroup members:

- **To check if you change proposals are well recorded in the Current OPS SPR Change Matrix**
- **As soon as possible to provide the remaining Change Proposals, if any**
- **To provide outputs to your action items**

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

The following information is extracted from the summary briefing located on AerOpus.

Alignment of Safety requirements (base SR and allocated SR) between ICAO PBCS Manual Ed3 and Industry Standard ED-228/DO-350 next revision

Frederic presented a revision to this paper that was presented at the last meeting

There were no comments received prior to the meeting

The subgroup reviewed and concluded on all of the open items

Action–Frederic, Bjarni and Mike to finalize material

Action–all interested to send comments to Frederic by Friday, 11 March

B2 RCP & RSP definition Issues –Radek Zaruba

One proposal for revising D.6.1 allocations diagram and description OPTION 1: Address the outlined issues and revise the section to better define practically usable measurement points.

OPTION 2: Shorten the section so that it just refers to PBCS for details and push the revisions / updates to PBCS.

The group (Eurocontrol, Airbus) commented that measurements points do not need to match exactly the RCTP boundaries allocation. Changing this allocation may raise responsibilities issues (e.g. who is going to be responsible for the airborne radio performance).

Another proposal to revise the RSP-160 definition in section 6 (diagram, text, tables) and possibly appendices D and F for consistency.

Action–all to review and provide comments to Radek by Friday, 18 March

Action–Theresa to coordinate meeting with Radek and Andrew Yang from SITA for D.6.1. proposal

Action–Radek and Theresa to coordinate all interested to progress two proposals

Revised RCP130 and RSP160 ACSP Allocation Proposal

Andrew Ives presented a paper with proposals in reference to PSG-6 regarding the adjustment of RCTP

One error was identified in the published value of 95% value for RCTP (20 sec and should be 21 sec) Fixed in the proposed options

No effect on allocations

It was noted that the RCTP ATSU and RCTP CSP are noted as recommendations vs. requirements in RCP130 but not in RCP240 and RCP400. The group agreed to take away the note and make these values requirements consistently in all RCP specifications

The group agreed to Option 1 in the paper, to increase the CSP allocation, through an increase to ATSP and RCTP without affecting the end-to-end allocation or need to revisit the safety assessment

Action–Andrew to review available data and refine proposed values for Option 1 and bring back to the group

Christophe noted that the change of the RCTP ET value (currently 32s) will affect the ‘tr’ timer in ED-229A (section 4.1). The point of view of interop and/or Ops people on the increase of RCTP and change in ‘tr’ timer would be welcome. The two following requirements will need to be update in section 4.1.2.2 of ED-229A (there may be more, but further research is needed): CPC-IRec4 and CPC-IRec2.

Appendix D.7.5 of ED-228A

Christophe proposed the replacement of the existing guidance with a more practical methodology

It was noted that this guidance is not widely used in practice

The group agreed that Christophe could move forward with developing a change proposal for D.7.5

Action–Christophe to prepare change proposal and bring back to group at next meeting in early April

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

Randy briefed the IM concept. The complete briefing can be found on AerOpus.

The proposed changes to the standards are:

Aligned with planned IM phraseology based on recent operational feedback

- Changed use of “INTERVAL SPACING” for Interval Management in messages to “SPACING”
- Removed “CLEARED INTERVAL SPACING” from messages
- Changed “planned termination point” in messages and variables to “planned cancellation point”
- Changed “achieve-by point” in messages and variables to “crossing point”

Aligned with planned IM ops and removed the ability to:

- Start IM at a future position, altitude, or time
- Conduct IM off two aircraft
- Conduct IM off an aircraft behind
- Space “At or Greater Than” the spacing goal
- Provide FIM equipment safety bounds

Added ability to accommodate a partial, follow-on clearance

Changes led to message, variable, and OR deletion as well as message and OR additions (no variable additions)

Summary of the work for the week:

Reviewed eight topics from Tiger Team (TT) needing Ops SG feedback prior to proposing requirements changes

- Names for IM-AACD and IM-PTM and the associated variables; Sample IM Message Inclusion in Data Comm Documents; Need for an Assigned Spacing Goal (ASG) Kilometer Option; Logic for Lead Aircraft Identification Use in Messages; Verification Testing; Timing of Controller Knowledge of Aircraft IM and Data Comm Capabilities; Managing the Proposed Changes from the TT

Key Outcomes: The TT will...

- Change the names for the services and variables as proposed. Should not be a problem for the ASN.1.

- Include sample messages in the SPR but need to determine best location.
- Write the IM components of verification testing as the broader process is defined and material comes together for the full set of data comm requirements.
- Continue coordination with Ops SG on the submission of TT proposed changes, but current plan is to share the full set in a master document (and potentially a summary review).

Status: TT believes the majority of the changes are documented and should be finalized in the next version of the TT document. Will write another version then be ready for review / discussion and incorporation into DO-350/ED-228 and DO-351/ED-229 documents at the meeting in June.

INTEROP Subgroup

Thierry presented a summary of the INTEROP ASN.1 Discussion (Backward Compatibility)

Thierry's slides are available at AerOpus.

Four options were discussed:

- **1st Option** : Maintain existing ASN-1s and generate a new ones for B2 Rev B
⇒ 16 ASN.1
- **2nd Option**: Replace B2 Rev A ASN-1s by a new one for B2 Rev B with a full replacement of IM/PTM/DRNP ASN.1 parts
- **3rd Option**: Leave B2 Rev A ASN-1s, create new B2 Rev B with a full replacement of ASN.1 parts (With and without IM/PTM/DRNP)
- **4th Option**: Leave B2 Rev A ASN-1s, create new B2 Rev B with a full replacement of ASN.1 parts, handle DRNP/IM/PTM capabilities in FPL indicator (single B2 Rev B message set for CPDLC and ADS-C) => No ASN.1 version without IM/PTM/DRNP

See the slides for detailed explanation of each option.

The Conclusions for the discussion were presented as follows:

- There are significant benefits for air and ground if B1/B2 accommodation can be handled on the ground (repeated below)
 - Greatly simplifies aircraft implementation
 - Should not impact FDP processing on the ground – same data is provided to populate messages
 - Should not impact ground station HMI – can be done seamlessly to controllers
 - Enable transition to TBO/B2 services when ground is ready – message set already in place
 - B1/B2 interoperability from the ground perspective
 - 5+ years until the mandate to roll this out
 - No standards impacts (unless this becomes interop...)
- The content of B2 Rev B is strongly dependent of the Ground implementers strategy. It is recommended to take appropriate action to clarify as soon as possible the 2027 B2 Mandate details and associated implementation plans

8. ASN.1 Backward compatibility

Thierry Lelievre (Airbus) and Greg Saccone (Boeing) summarized a discussion that occurred during the non-plenary work time about how to manage ASN.1 versions and backward compatibility. The options were summarized as:

- 1st Option: Maintain existing ASN-1s and generate a new ones for B2 Rev B
 - 16 ASN.1 versions

- 2nd Option: Replace B2 Rev A ASN-1s by a new one for B2 Rev B with a full replacement of IM/DRNP ASN.1 parts
- 3rd Option: Leave B2 Rev A ASN-1s, create new B2 Rev B with a full replacement of ASN.1 parts (With and without IM/DRNP)
- 4th Option: Leave B2 Rev A ASN-1s, create new B2 Rev B with a full replacement of ASN.1 parts, handle DRNP/IM/PTM capabilities in FPL indicator (single B2 Rev B message set for CPDLC and ADS-C)
 - No ASN.1 version without IM/ DRNP

After reviewing the proposals, Bjarni Stefansson (Isavia) asked for a comparison of the ASN.1 changes from rev A to rev B. Thierry Lelievre (Airbus) confirmed that, to date, the ASN.1 changes are primarily in ADS-C and the IM-related CPDLC messages.

The group agreed that maintaining 16 separate ASN.1 versions (for CPDLC and ADS-C) is not an ideal path forward. However, there was extensive discussion on what the expectations are for aircraft and ground implementations. While ADS-C is mandated in support of 4D Trajectory, B2 CPDLC is not addressed. The group agreed that further clarification would aid the discussion, and the leadership took the action to seek additional guidance on the mandate.

Since there are currently aircraft flying that are certified to rev A of the standards and compliant with the mandate, Clement Selles (Airbus) expressed concern that some of the options would force the operators to upgrade their avionics to Rev B to remain compliant. Ed Hahn (ALPA) stated that operators need to understand the evolution of these standards and that IATA should be a part of the discussion (no IATA representatives were in attendance). There was consensus that it is unlikely an avionics manufacturer will ever certify a B2 application that supports IM and D-RNP to revision A of the standard.

Alexander Engel (EUROCAE) reminded the group that the SC-214 and WG-78 ToRs specify that ground systems compliant with revision A of the standards will be able to support aircraft certified to revision B.

The discussion concluded with the group agreeing option 2 appears to be the best going forward, though this still needs to be confirmed.

9. Any Other Business (Plenary)

Thierry Lelievre (on behalf of Airbus) had the opportunity to propose an update of the Fig 1-1 and associated text in order to better reflect that the Common Datalink Services will be shared by several ATSUs. The proposal was deemed very clear and agreed by the participants. Thierry will update the document accordingly.

10. 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	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
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	Update due date to June meeting.
35	Dec 2021 plenary	Allocate proposals in Boeing paper to applicable subgroup for further discussion or finalization	Boeing	Feb 2022 plenary	Mike Matyas has sent emails on allocating these items, Claire to confirm
36	Dec 2021 plenary	Examine B2 requirements for applicability to verification test	Verification subgroup	June 2022 plenary	During the plenary discussion the group decided to postpone this discussion to the June 2022 Plenary to allow more time to complete the analysis.
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	Need additional time, push to June Plenary
38	Dec 2021 plenary	Review DO-328B/ED-195B to understand changes incorporated due to new validation activities.	Boeing	Feb 2022 plenary	Need additional clarification, push to June
39	Mar 2022 plenary	Reach out to Eurocontrol for average size of EPP messages	Ana Berioz, Eurocontrol	June 2022 plenary	This information will be used in the discussion with D-START etc initiated by Greg Saccone of Boeing
42	Mar 2022 plenary	Provide inputs/preference on the presented ASN.1 compatability and version discussion	Everyone	June 2022 plenary	
43	Mar 2022 plenary	Create a comparison of the functional differences (such as the CPDLC message set differences) between the different ANS.1 versions	Operational Subgroup	June 2022 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	

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

11. Upcoming Schedule (Plenary)

Claire Robinson (Universal) summarized the schedule discussion from earlier in the day. The next group meeting will be the week of April 11-15, 2022, virtual only. The next plenary will be June 7-10, 2022 and will be held in person. There will be virtual options for those who cannot travel.

2022											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Plenary, Feb 28-Mar 4, In Person, Washington, DC		April 11-15 (non-plenary), virtual		Jun 7-10, Plenary Europe, Brussels				Oct 3-7, Plenary US, location TBD		

12. Adjourn

The meeting was adjourned on March 4th, 2022 at 12:15pm EST.

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