MEETING MINUTES OF THE TWENTY-SIXTH MEETING
JOINT RTCA SPECIAL COMMITTEE 217
EUROCAE WORKING GROUP 44
18th through 22nd July 2016
Seattle, Washington, USA - Hosted by Boeing

Executive Summary

RTCA SC-217 met jointly with EUROCAE WG-44 for the Twenty-Sixth Plenary at Boeing, Seattle, Washington, USA from the 18th through the 22nd of July 2016. The main objective of this meeting was to work on the revision of DO-201A/ED-77.

During the opening plenary session, the group addressed organizational items, approved the minutes from the 25th meeting, reviewed and approved the proposed meeting agenda for the 26th meeting, and reviewed the status of the action items. Brad Miller was announced as the new Designated Federal Officer (DFO).

The ISRA (Inter-SC Requirements and Agreements) with RTCA SC-206 Aeronautical Information and Meteorological Data Link Services was reviewed with the participation of Allan Hart, Co-Chair of SC-206. It was concluded that there was no further need to maintain the ISRA. It was decided to recommend closing the ISRA to the RTCA Secretariat.

Brian Gilbert presented a proposal for a document update process based on formal documentation. A method for proposing changes using papers was proposed – Working Paper (WP), Discussion paper (DP), and Information Paper (IP). The document update process was accepted. Going forward, all proposals will be made by preparing papers and submitting them to the Group in advance of the meeting. A process for tracking the document update progress, based on action items and associated papers, will be implemented.

Brad Miller gave a presentation on FAA AC20-153B, highlighting the new elements in the revised version.

During the working group session, the sub-teams reported on the progress on their respective actions and presented their input proposals. The following topics were covered:

- Typical issues with State data or procedures
- Background/PBN principles
- PBN Terminology
- Structure of the document
- Navigation specifications
- Rules for navigation data preparation
- Procedure encoding
- Applications
- RNP Data Block
- Data Quality Requirements (DQR) tables based on Data Catalogue
- Aeronautical information basics

The group discussed the inputs and made recommendations to the sub-teams for further development of the text proposals.

The meeting objectives were achieved; all foreseen agenda items were covered and good overall progress was made. Stéphane Dubet extended, on behalf of all Group members, high appreciation to Brian, and Boeing as a whole, for hosting the meeting and for the excellent organization.

The next meeting will take place from 28 November through 2 December 2016, in Bedford, Massachusetts, USA, hosted by MITRE. On the 28th of November there will be a working group session, for those who can attend; the opening plenary will be on the 29th of November.

1 Opening Plenary

Attendance List

Name	Company/Organization	Email
Brian Gilbert	Boeing	brian.d.gilbert@boeing.com
Cedric Cote*	Esterline CMC Electronics	cedric.cote@cmcelectronics.ca
Collin Ogden	Rockwell Collins	collin.ogden@rockwellcollins.com
Dan Lehman	US Navy	dan.lehman@navy.mil
David Baker	MITRE	dbaker@mitre.org
Diana Takata	FAA	diana.takata@faa.gov
Erik Ringnes	Honeywell	Erik.Ringnes@honeywell.com
Guy Copeland	FAA	guy.copeland@faa.gov
Jean-Paul Genottin	Airbus	jean-paul.genottin@airbus.com
Jeff Meyers	FAA	Jeffrey.Meyers@faa.gov
Jeff Plantinga	GE	Jeffrey.Plantinga@ge.com
Joe McGrath	Jacobs	Joseph.McGrath@jacobs.com
Kevin Carey	US Air Force	kevin.carey.1@us.af.mil
Kim Jordan	Universal Avionics	kjordan@uasc.com
Kyle Leonard	Honeywell	kyle.leonard@honeywell.com
LaDonna Handugan	The Boeing Company	ladonna.r.handugan@boeing.com
Marc Chenus	Thales	marc.chenus@fr.thalesgroup.com
Marvin White	FAA	marvin.e.white@faa.gov
Reuss Anderson*	Garmin	reuss.anderson@garmin.com
Sasho Neshevski	Eurocontrol	sasho.neshevski@eurocontrol.int
Scott Roesch	Honeywell	Scott.Roesch@Honeywell.com
Stephane Dubet	DGAC	stephane.dubet@aviation-civile.gouv.fr
Steve Young	NASA	steven.d.young@nasa.gov
Thomas Koebel	Airbus	thomas.koebel@airbus.com

*via Webex

Allan Hart, Co-Chair of SC-206, attended the meeting part time via WebEx for the agenda item on ISRA with SC-206.

Administration & Agenda

The joint RTCA SC-217 and EUROCAE WG-44 Twenty-Sixth Plenary meeting was opened by Brian Gilbert (RTCA SC-217 co-chairman) and Stéphane Dubet (RTCA SC-217 co-chairman and EUROCAE WG-44 chairman).

Brian welcomed the participants and shared logistical information for the meeting facilities. Round-table introductions were given by each attendee.

The group approved the minutes from the 25th meeting with no comments, reviewed and approved the proposed meeting agenda for the 26th meeting, and reviewed the status of the action items.

Brad Miller was announced as the new Designated Federal Officer (DFO), replacing Diana Takata.

Stéphane presented the EUROCAE IPR Policy Call and the EUROCAE membership policy, with regard to participation in EUROCAE Working Groups. Brian showed the RTCA Proprietary References Policy and the RTCA membership policy for the group to read.

Brad Miller, as Designated Federal Official, read the Public Meeting Announcement in accordance with the Federal Advisory Committee Act.

ISRA with SC-206

The ISRA (Inter-SC Requirements and Agreements) with RTCA SC-206 Aeronautical Information and Meteorological Data Link Services was reviewed with the participation of Allan Hart, Co-Chair of SC-206. It was concluded that there was no further need to maintain the ISRA. It was decided to recommend closing the ISRA to the RTCA Secretariat.

Document update process

On behalf of the Document Editor, Stephen Moody, Brian presented a proposal for a document update process based on formal documentation. A method for proposing changes using papers was proposed – Working Paper (WP), Discussion paper (DP), and Information Paper (IP). The document update process was accepted. Going forward, all proposals will be made by preparing papers and submitting them to the Group in advance of the meeting. A process for tracking the document update progress, based on action items and associated papers, will be implemented.

FAA AC 20-153B

Brad gave a presentation on the recently published FAA AC20-153B, highlighting the new elements in the revised version:
- The AC provides means of acceptance for all safety-related databases
- It is not just for LOAs anymore; it also covers airworthiness approvals
- Alternative means are available for 36 months

Although a number of new elements have been included in the revised issue, DO-200A and DO-200B are not considered fundamentally different.

2 Working Group session

2.1 *Sub-teams report-outs*

Proposal on how to address RNP AR through RNP Data Block (Action 25-04)

Jeff M. presented the work of the action team. As PBN relies on the "correctness" of navigation data, SC-217 needs to define a standard for protecting navigation information from source up to aircraft proprietary formats. Data that is not protected causes errors, reduces safety, and requires more expensive data processes (e.g., for RNP AR). The proposed strategy was to focus on PBN in order to eliminate the need for airline/user processes that verify navigation data against source in Authorization Required procedures, and to reduce the need for manual process checks of some data. A standard means of protecting the data needs to be defined, possibly, in a dedicated technical appendix to DO-201B/ED-77A. It was agreed that the action team would continue the analysis and make a proposal for the next plenary meeting.

Typical issues with State data or procedures (Action 25-06)

David presented information on issues related to lack of consistency in AIP data, with examples of problems related to accuracy, temporality, WGS-84, NOTAMS, and coding of procedures prescribed in AIP. The group also discussed a potential need to consider obstacles that are already in the standard. David took notes of the discussion; the questions could become action items but this still needs to be confirmed with all concerned parties, especially Type 1 data service providers (which were not represented during this meeting). The group agreed that such issues do exist and are relevant. It was concluded that the action team would continue the work and should come back to the committee with proposals to alleviate the issues.

Appendix on PBN terminology (Action 25-07)
Sasho presented the first draft proposal. It was decided to introduce a reference to the text in the introduction (Chapter 1).

Review of draft texts on Applications

- **Background/Navigation specifications (Action 25-10), combined with Background and PBN principles including new concepts (Action 25-19)**

Sasho presented the first draft proposal. The text was reviewed by the group. It was agreed to keep the proposed Figure and to add summaries of the Navigation Specifications from ICAO Doc. 9613. It was decided to revise the structure. An action was recorded to incorporate the changes agreed from the plenary review and to produce a WP for the next plenary meeting.

- **Flight Management Systems (Action 25-11)**

Scott presented the draft text. It included text on take-off and landing performance computation, lateral and vertical guidance, terminal, en-route and approach procedures, and Flight Planning / Mission planning. The proposal was discussed. It was agreed that the team should prepare a DP for the next plenary meeting.

- **Runway safety applications (Action 25-12)**

Jean-Paul presented the draft text. It included text on Runway Overrun Awareness and Alerting systems. The proposal was discussed. It was agreed that the team should prepare a WP for the next plenary meeting.

- **Navigation display functions (Action 25-13)**

Brian presented the draft text. Jeff M. referred to a study report on Data Driven Charting (DDC) which has been published recently. It was agreed to review the report in order to determine if there are any drivers for navigation data quality, notably integrity and completeness, stemming from the report. It was agreed to produce a WP for next plenary meeting.

- **Landing systems (e.g. GLS, ILS, LPV) (Action 25-14)**

Cedric presented the draft text covering operational concept and benefits. The proposed text was discussed. It was agreed to prepare a WP for the next plenary meeting.

- **Simulation (Action 25-16)**

Input from Jens was discussed by the group. It was agreed to prepare a WP for the next plenary meeting.

- **Radio-navigation/communication systems (Action 25-17)**

Cedric presented the draft text covering operational concept and benefits. The proposed text was discussed. It was agreed to prepare a WP for the next plenary meeting.

Conclusion on applications

It was concluded that the work on the application descriptions should continue based on the first text proposals taking into account the outcome of the discussions during the meeting. It was agreed that the

applications will be grouped in a dedicated appendix. Scott took an action to draft an introductory text for the appendix.

Structure of the document (Action 25-18)

DP-25-18A prepared by the action team was reviewed. The group discussed the proposed changes and made recommendations for further development. It was agreed to continue the work and to prepare a WP for the next plenary meeting.

Rules for navigation data preparation (Action 25-20)

Scott presented the proposal. There is a need to determine if there will still be value in keeping the section on Calculation (2.2). Since DO-201A was published, the calculation conventions and formulas have been published in ICAO material. This information is considered useful for data originators. It needs to be checked with data service providers if they would see it useful to retain this text in DO-201B/ED-77A. It was decided to remove Appendix D in DO-201B/ED-77A. A decision will have to be made as to whether Section 2.2 will be kept. Regarding Appendix I – it needs to be checked with respect to the EUROCONTROL documents and tools that are referenced.

Data Quality (Action 25-21)

Jeff M. reported on the results of the subgroup work. ICAO Data Catalogue values (but not format) will be used as the starting point. They will be reviewed and may be challenged in some cases, if deemed too loose or too stringent. The values will be formatted in a set of data quality requirements tables. The tables will be organised per theme (aerodrome, airspace, etc.) or per data type (e.g. Latitude/Longitude, distances, etc.), or a mix of the two (i.e. per theme with sub-classification then per data item); this remains an open question at this stage.

It was agreed that the DQR tables will include accuracy and integrity requirements. For resolution, the same statement as the one in DO-272D will be used (resolution shall support the accuracy requirements). For integrity, the group agreed to keep the « routine / essential / critical » classification and the text of 2.1.6.5, and change "assurance level" to "DPAL".

DQR currently focus on numerical values, however, there are a lot of textual data items for which there are no accuracy requirements but there are integrity requirements, e.g. airport code, turn direction, etc. These need to be covered in DO-201B/ED-77A DQR tables.

It was agreed that the scope of DO-201B/ED-77A should be:
1. Items that are both in the ICAO Data Catalogue **and** ARINC 424
2. Other items in the ICAO Data Catalogue that are **not** in ARINC 424, and that the group agrees meet our definition of Navigation Data
3. Other items in A424 that are **not** in the ICAO Data Catalogue
4. Other items that are **neither** in ICAO Data Catalogue **nor** in ARINC 424, and that the group agrees meet our definition of Navigation Data

Detailed review of the data items and values in the following DQR tables took place:

- Procedures
- Aerodrome (parts of it)
- Navigation Aids (Navaids)
- Routes
- Airspace

There will be a need to consider DDC applications which may drive requirements on data. DDC is considered as an important enabler to support new functionality for the end users. DQR tables will be compiled separately from the "core" tables, using all data of the Data Catalogue not used for the core. The core data will also be part of DDC tables, but potentially with different DQRs. The group identified what data elements in the ICAO data catalogue belonged to the core or what was considered DDC only.

Aeronautical Information basics (Action 25-23)

Brian presented the draft text on behalf of Torsten Domrös. The proposal was discussed. Sasho took the action to check with Sam van der Stricht and Scott Wilson from EUROCONTROL if text on SWIM and navigation data can be drafted, similar to what was added in DO-272D. The need to discuss NOTAM information with data providers was identified. On names and identifiers, the suggested approach was to start with ICAO provisions, identify issues, and propose solutions. It was agreed that the action team should do the necessary analysis and should propose solutions to the issues.

3 Closing Plenary

The action items list was reviewed. The following table contains a list of all open action items.

Ref #	Member/Team Assigned	Task Description
25-04	Jeff Meyers, David Baker, Erik Ringnes	Elaborate a proposal on how the group can address RNP AR through RNP Data Block
25-06	Torsten Domrös, Martin Zilling, David Baker, Ralf Sieprath	Prepare a joint presentation on typical issues with State data or procedures.
25-07	Sasho Neshevski	Prepare a draft appendix containing terminology related to PBN procedures, based on the ICAO PBN Manual
25-08	Sasho Neshevski	Liaise with EASA about latest status of EASA PBN IR
25-09	Stéphane Dubet	Prepare, in liaison with EUROCONTROL, a draft of the requirements tables, based on the Data Catalogue.
25-10	Sasho Neshevski	Prepare draft text on applications - Background / Navigation specifications.
25-11	Scott Roesch, Erik Ringnes	Prepare draft text on applications - Flight Management Systems
25-12	Jean-Paul Genottin, Brian Gilbert	Prepare draft text on applications - Runway safety applications
25-13	Brian Gilbert, Collin Ogden	Prepare draft text on applications - Navigation Display functions
25-14	Cedric Cote	Prepare draft text on applications - Landing Systems (e.g. GLS, ILS, LPV)
25-15	Kevin Cary	Prepare draft text on applications - Flight / Mission PLanning Systems
25-16	Jens Schulte	Prepare draft text on applications - Simulation

Ref #	Member/Team Assigned	Task Description
25-17	Cedric Cote	Prepare draft text on Radionavigation / communication systems
25-18	**Steve**, Diana, Daniel, Burak, Brian	Draft text on Structure of the document - Prepare propositions for a new structure - Consider structure of e.g. ED99/DO272 - Adoption of requirements identification - Introduction and intended audience - Scope (navigation data)
25-19	**Sasho**, Jeff M. , Erik, LaDonna	Draft text on Background and PBN principles (1.1-1.2) including new concepts
25-20	Martin, **Scott**, Sasho	Draft text on Rules for navigation data preparation - Geodesy and conventions (2.1.2.-2.1.3) - Calculations (2.2)
25-21	Stéphane, **Brad, Jeff M.**, Jens, Kim, Steve, LaDonna, Ben, Ralf, Cedric, David, Marc Chenus	Draft text on Data quality - DQR tables (2.1.4-2.1.6) - Quality management - ref. to DO-200B (2.1.7)
25-22	Steve, Erik, Cedric, **Kevin,** David, Kyle	Draft text on Procedure encoding - Path terminators (ARINC 424) basics (3.1.3) - Considerations for encoding of procedures in DB (3.1.1, 3.1.2, 3.2 and 3.3) including for new RNP DB
25-23	Stéphane, **Torsten**, Diana, Ralf, Sasho, Martin, Brian	Draft text on Aeronautical information basics (2.3. - 2.4) (Annex 15, ICAO)
26-01	Sasho Neshevski	Track the progress of document changes, based on Working Papers
26-02	Scott Roesch	Draft an introductory text for the appendix on the applications

The next meeting will take place from 28 November through 2 December 2016, in Bedford, Massachusetts, USA, hosted by MITRE. On the 28th of November there will be a working group session for those who can attend; the opening plenary will be on the 29th of November.

The following dates and potential locations for the subsequent meetings were set as follows:
- 28th meeting: 27 February – 3 March 2017 (pending confirmation) in Toulouse, France (Back up – Brussels).
- 29th meeting: 19 - 23 June 2017 Location USA (TBD)

The Co-chairs wrapped-up the meeting. The meeting objectives were achieved, all foreseen agenda items were covered, and good overall progress was made.

Stéphane extended, on behalf of all Group members, high appreciation to Brian, and Boeing as a whole, for hosting the meeting and for the excellent organization.
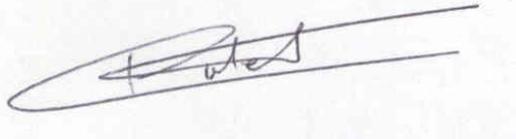
Certified as a true and accurate summary of the meeting.

Sasho Neshevski
Secretary, RTCA SC-217, EUROCAE WG-44

Brian Gilbert   Stéphane Dubet
Chairman, RTCA SC-217   Chairman, EUROCAE WG-44