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ICAO CP-OPDLWG UPDATE

Written by Markus Johnston

SUMMARY
This report provides an update on the current progress of work being undertaken by the ICAO Communications Panel – Operational Data Link Working Group (CP-OPDLWG).

1. INTRODUCTION

1.1 The OPDLWG meets twice a year holding weeklong meetings. Outside of this, work is progressed by smaller project teams.

1.2 There are currently four major project streams in OPDLWG, namely Air-Ground Data Link, Ground-Ground Data Link, Performance Based Communications & Surveillance (PBCS) and Voice Communications by Data Link. An update for each project steam is provided below.

2. AIR-GROUND DATA LINK

2.1 The OPDLWG is continuing to develop the 2nd Edition of the Global Operational Data Link (GOLD) Manual (Doc 10037) and additional changes are being made to incorporate the introduction of ATN B2 Rev B; ATN B2 Rev B – FANS 1/A accommodations; and ATN B2 Rev B – B1 backward compatibility as included in RTCA/Eurocae Documents DO-350B/ED-228B; DO-351B/ED-229B; DO-352B/ED-230B; DO-353B/ED-231B.

2.2 Rigorous discussions are currently taking place relating to pilots regularly reacting improperly to RTEU-6/UM79 CPLDC route segment revision messages – CLEARED TO (position) VIA (route clearance) – by proceeding direct to the (position) and not loading the (route clearance) element. Recommendations are currently being drafted to recommend better display of this message in the flight deck on new future aircraft and also standardised FREE TEXT appendices for existing aircraft.

2.3 OPDLWG is discussing a clarification for the GOLD relating to the use of CPDLC for issuing SIDs and STARs, that being that the vertical part of the procedure does not become valid until an appropriate vertical clearance is issued. This is somewhat complicated as the requirement to include a level instruction with every SID/STAR issuance in voice phraseology is open to interpretation in the PANS and some

ANSPs have implemented the SID/STAR voice phraseologies differently to others. It is therefore proving challenging to use this ruleset to develop guidance for data link.

2.4 The OPDLWG is working to simplify Chapter 1 of the GOLD as much of the content is quite technical and in-depth for an overview chapter. Some of the subsections are well in excess of 10 pages in length, while some paragraphs are decimalised to eight sub-sub-sections (e.g. 1.2.5.3.4.15.20.4) which may result in readability and context being lost. The simplification of Chapter 1 is expected to result in some content being moved to more relevant locations in the GOLD and rationalising of the content retained in the introductory chapter.

2.5 Once this work has been completed and the final draft of GOLD is ready, the OPDLWG will conduct a final review of and identify any further proposals for amendment to Annexes and PANS as they relate to changes to the GOLD.

3. GROUND-GROUND DATA LINK

3.1 The OPDLWG is working on a proposal for amendment to provisions contained in Annexes and PANS relating to Ground-Ground Data Link which is being prepared by the IFATCA member. Generally, most provisions are in a good state, however there are some keys items which need to be addressed.

3.2 Specifically amended destinations in Coordinate Negotiate messages and the operational response messages, there is inconsistent use of the term used to describe the destination of the aircraft prior to the amendment. There are also inconsistent requirements as to whether the operational response shall or may (optionally) contain the destination prior to the amendment. Further, there is no detail on which destination is to be included in a Coordinate Cancel message due to an amended destination.

3.3 There is also a sub-section which describes coordination environments specifically as either surveillance or procedural. With the advent of technologies such as space-based ADS-B these previously clear delineations are no longer representative of today's environments. For example, remote/oceanic airspace where surveillance is provided by space-based ADS-B whilst communications are provided by CDPLC backed up by SATVOICE or HF. Therefore, more generic coordination environment descriptors are being considered.

4. PERFORMANCE BASED COMMUNICATIONS & SURVEILLANCE (PBCS)

4.1 The OPDLWG is continuing the drafting of Edition 3 of the Performance-Based Communications and Surveillance (PBCS) Manual (Doc 9869). This edition will incorporate significant changes and additional guidance material which reflects lessons learned during initial implementations and better addresses the actual capabilities of available technologies.

4.2 The complexity of this update is significant as it will also incorporate the contents of PBCS Monitoring and Reporting Guidance (NAT Doc 011) as, to date, this is the only substantial guidance material that has been produced. This means that lessons

learned in the North Atlantic implementation will be made available to other regions as PBCS monitoring is introduced with the goal being global harmonisation.

4.3   There is still a significant of work to be completed on the draft PBCS Manual and more areas of improvement are being identified. Given the demand for this, OPDLWG is looking to finalise Edition 3 as soon as practicable so that this can be progressed through the ANC and be published. Work will then immediately commence on Edition 4 to capture the remaining items which require attention.

5.   VOICE COMMUNICATIONS BY DATA LINK

5.1   There is considerable work being conducted in the Voice Comms space by OPDLWG across three sub-project teams, namely SATVOICE Manual, Dual SATCOM and New Voice Specification.

5.2   SATVOICE Manual

5.2.1.   The OPDLWG is currently developing global guidance material for the implementation of Satellite Voice (SATVOICE) to ensure that the Regions, States and Industry implement SATVOICE solutions to an acceptable standard and using a harmonised approach. It is envisaged that SATVOICE as an approved Long Range Communication System (LRCS) will provide benefits including performance-based separation standards in remote/oceanic airspace when combined with ADS-B and minimum equipment list (MEL) relief by requiring aircraft fitted with SATVOICE to only have one HF Radio fitted.

5.2.2.   The Satellite Voice Operations Manual (SVOM) has matured greatly and will shortly be circulated among other ICAO Panels and Working Groups for inter-panel coordination.

5.3   Dual SATCOM

5.3.1.   The OPDLWG is tasked with developing guidance material on using dual independent Satellite Communication (SATCOM) systems as a sole means of LRCS as an alternative to carrying any HF Radio. Work in this area is just beginning and is expected to be ongoing for some time.

5.4   New Voice Specification

5.4.1.   The OPDLWG was presented with a proposal for the creation of new Voice RCPs following ANC approval of a new Job Card to "Develop RCP Parameters and Specifications for Voice Communications". Working titles for these parameters are RCP V1 (e.g. VHF) and RCP V2 (e.g. SATCOM). Whilst the examples are given and currently available technology is somewhat playing a part in their development, the expected end-state is that the RCPs will be technology agnostic meaning that they can be applied to future voice communications as technologies are developed.

5.4.2. A set of assumptions has been drafted to help distinguish the differences between Voice RCPs and existing Data RCPs. OPDLWG is currently discussing Integrity Requirements and Quality Requirements as they relate to a Voice RCP and whether the requirements as they relate to AMS(R)S or RCP400vro are appropriate benchmarks. There is also considerable discussion relating to the use of Diagnostic Rhyme Test (DRT), Perceptual Objective Listening Quality Analysis (POLQA) and Perception Evaluation of Speech Quality (PESQ) as potential appropriate measures of voice quality.

6. CONCLUSION

6.1 The OPDLWG is meeting in June and November this year to continue progressing the work outlined in this report.

6.2 I would like to take this opportunity to personally thank Civil Air (Australia) and IFATCA for supporting this work and my membership on OPDWLG.

7. RECOMMENDATIONS

7.1 It is recommended that this report be accepted as information paper.

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