



INTERNATIONAL CIVIL AVIATION ORGANIZATION

AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP  
TWENTENTH MEETING (APIRG/19)  
(Yamoussoukro, Cote d'Ivoire, 30 November - 2 December 2015)

**Agenda Item 2.7: Other Air Navigation Matters**

**OPERATIONAL DATA LINK FAMILIARIZATION SEMINAR, NAIROBI, 2-6 NOVEMBER  
2015: OUTCOMES AND RECOMMENDATIONS**

*(Presented by Secretariat)*

**SUMMARY**

This paper presents outcome of an Operational Data Link Familiarization Seminar that was held in Nairobi, Kenya from 2 to 6 November 2015, as part of the support to States in the implementation of automatic dependent surveillance – contract (ADS-C) and controller-pilot data link communications (CPDLC) in the AFI Region. The Seminar particularly addressed the need for training and identified actions to be recommended to APIRG to support systematic implementation of CPDLC/ADS-C in the Region including raising awareness, development of a Regional Implementation Plan for CPDLC and ADS-C as elements of ASBU Modules adopted by APIRG, as well as national and regional approach to effective application of ICAO guidance material in particular the Performance Based Communication and Surveillance Manual (PBCS Doc 9869) and the Global Operational Datalink (GOLD) Manual (Doc 10037). Accordingly, the working paper proposes a conclusion in order to facilitate progress in the implementation work of APIRG.

**Action by the meeting is at paragraph 3.**

**REFERENCE(S):**

- APIRG/13 Report
- APIRG/17 Report
- APIRG/17 Report
- State Letter Ref.: SP 52/4-15/44 dated 12 June 2015

**Applicable ASBU Modules:**

**B0-TBO:** Improved Safety and Efficiency through the initial application of En-Route Data Link

**B0-FICE:** Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration

Related ICAO Strategic Objective(s): **A and B**

**1. INTRODUCTION**

1.1 ICAO, in collaboration with the Federal Aviation Administration (FAA) and International Air Transport Association (IATA), held an Operational Data Link Familiarization Seminar in Nairobi, Kenya from 2 to 6 November 2015. The Seminar was hosted by the Kenyan Civil Aviation Authority (KCAA) at the Eastern African School of Aviation (EASA).

1.2 The purpose of the Seminar was to support ADS-C and CPDLC implementation in the AFI Region, consistent with ICAO Global Air Navigation Plan Aviation System Block Upgrade (ASBU) Block 0, following observations by the AFI Tactical Action Group (TAG) of number of Unsatisfactory Condition Reports (UCRs) in which shortcomings in the use of CPDLC/ADS-C was identified to be causal or contributing factor. The Seminar particularly addressed the need for training.

1.3 Forty three (43) participants from Angola, Ghana, Kenya, Namibia, Republic of South Africa, Seychelles, Somali, Somalia, Tanzania, and Uganda attended the seminar and concluded on recommendations to raise the awareness and promote the development of an APIRG CPDLC/ADS-C Implementation Plan.

1.4 This paper provides information on the Seminar and invites the APIRG to consider the outcome of recommendations of the Seminar.

## 2. DISCUSSION

### *Background*

2.1 The meeting will recall that at its Thirteenth Meeting in June 2001 in Sal, Cape Verde, the Group adopted Conclusion 13/78: *En-route (FIR) Aeronautical Surveillance Plan for the AFI Region*, which identified a number of FIRs that should implement various surveillance systems including ADS-C as well as ATS Automation Systems including CPDLC.

2.2 At its Seventeenth Meeting in Burkina Faso, August 2010, the Group adopted Conclusion 17/25: *Implementation of CPDLC*, calling on States to implement CPDLC procedures for en-route operations in their managed oceanic and remote continental airspace. The APIRG/17 meeting also acknowledged that Required Communication Performance (RCP) being a performance specification serves as one possible safety net in airspace planning. It was agreed that the AFI Region should adopt RCP guidelines for planning towards the safe reduction in separation standards based on RNAV10 (RNP10) and RNP4 PBN navigation specifications.

2.3 In view of the above, the APIRG/17 Meeting adopted Conclusion 17/26: *Implementation of RCP Concept*, calling on States to take advantage of RCP concept stated in ICAO Doc 9869 to improve the provision of aeronautical mobile service (AMS), and ICAO to support the implementation of the RCP concept through Regional Seminars and Workshops. The Eighteen Meeting of the Group, in Kampala Uganda, 27-30 March 2012 adopted the Global Operational Data Link Document (GOLD) in replacement of the previous FANS 1/A Operations Manual, for operational use related to CPDLC in AFI Region.

2.4 Information shared at the abovementioned Operational Data Link Familiarization Seminar in Nairobi, Kenya from 2 to 6 November 2015 indicated that as reflected in **Appendix A** to this working paper, 13 AFI States had implemented CPDLC, and 15 others were in various stages of implementation. The Group also noted the implementation of CPDLC in the EUR/SAM Corridor (Atlantico, Canaries and Dakar Oceanic FIRs) by Brazil and Spain.

2.5 While the above implementation progress has been noteworthy, the APIRG has over the years noted the slow pace of implementation of CPDLC/ADS-C in the AFI region and has reiterated APIRG Conclusion 17/26 requesting ICAO to support the implementation of the Required Communication Performance (RCP) concept through regional seminars and workshops.

#### ***Operational Data Link Familiarization Seminar***

2.6 The meeting may wish to note that the Operational Data Link Familiarization Seminar in Nairobi, Kenya from 2 to 6 November 2015, amongst others, covered the following:

- a) Briefing on implementation and current operational situation from Kenya, Tanzania, Angola, Seychelles, Uganda, Ghana, Somalia, Namibia.
- b) Introduction to Data Link, relationship to ICAO Global Air Navigation Plan and new Annex/PANS provisions, guidance material, benefits.
- c) Preparation for Data Link Implementation, ANSP and Operator.
- d) Implementation issues, challenges, lessons learned, highlighting key issues from States, airspace users and communication service provider (CSP).
- e) Update of information on the status of implementation.
- f) Hands-on exercise on implementation planning and follow up activities to improve CPDLC/ADS-C operational performance.

2.7 The Seminar was briefed on the developments regarding GOLD whose transformation to an ICAO GOLD Manual (Doc 10037) has since reached final editing stages, as well as the concept of PBCS. Doc 9869 has since taken the name *Performance-based Communication and Surveillance (PBCS)* and expanded to include required surveillance performance (RSP) and a PBCS framework for applying RCP/RSP specifications in relation to aircraft equipage, air traffic services, etc. Some provisions of the pre-Doc 10037 are transferred to the PBCS Manual. In addition, consequential amendments will be made in applicable Annexes of the Chicago Convention and supporting documents.

2.8 State Letter Ref.: SP 52/4-15/44 dated 12 June 2015 has since been circulated requesting comments on proposals for amendments of Annexes 4, 6, Parts I, II and III, 10, Volumes II and III, 11, 15, PANS-ABC (Doc 8400) and PANS-ATM (Doc 4444) relating to Data Link Initiation Capability (DLIC), CPDLC, ADS-C, PBCS and Satellite Voice (SATVOICE). The deadline for comments was 14 September 2015, and the new provisions are expected to be applicable in November 2016.

2.9 The Seminar shared common experiences on the lack of formal, structured training at training institutions in the AFI Region, which presented implementation challenges including delays and uncertainties in systems performance. Many systems reached the operational status without undergoing evaluation based on specific operational parameters. Lack of effective application of ICAO Doc 9869, national and regional monitoring also resulted in continuing uncertainties in systems performance, with safety implications as has been identified by the TAG. Lack of monitoring however, made it difficult to improve performance.

*Outcome of the Seminar; Recommended for APIRG consideration*

2.10 As part of its outcome the Seminar stressed on the following:

- a) Training for controllers, technicians, managers, and supervisors, as appropriate.
- b) The need to implement PBCS monitoring, to collect operational data, assess CPDLC/ADS-C services and improve service performance as problems are found. It was acknowledged that PBCS monitoring will most likely require ANSPs to modify their automation to collect and retain operational data in accordance with the PBCS Manual (Doc 9869) and to establish a central reporting agency (CRA) for the AFI region.
- c) Establishing a regional central reporting agency to address system performance on a regional basis, ensuring harmonization and interoperability.
- d) Taking advantage of CPDLC implementation to facilitate automatic/silent handovers of air traffic between air traffic services units, in order to reduce traffic coordination failures and accordingly improve safety.

2.11 The Seminar also recognized and highlighted the need for cooperative effort at regional level and to involve all stakeholders (e.g. operators, CSPs, aircraft manufacturers, avionics suppliers).

2.12 Given the above, the APIRG may wish to consider the following Conclusions:

**CONCLUSION 20/XX – MEASURES TO SUPPORT CPDLC/ADS-C IMPLEMENTATION IN THE AFI REGION**

**That:**

- a) **a Project on AFI Region CPDLC/ADS-C Implementation Planning Continuous Improvement (CPDLC/ADS-C IPCI) is adopted; and**
- b) **a Project Team be established with specific terms of reference and comprising appropriate operational and technical experts to:**
  - i. **develop a project management plan for the implementation of CPDLC and ADS-C in the AFI Region**
  - ii. **develop a proposal to address the training needs in the AFI Region**
  - iii. **coordinate the establishment of a central reporting agency for the AFI region**

**CONCLUSION 20/XX - IMPLEMENTATION OF ICAO PBCS MANUAL (DOC 9869) AND GOLD MANUAL (DOC 10037)**

**That:**

- (a) **States, air navigation service providers (ANSPs) and airspace users take necessary action to apply the technical and operational guidance provided in Second Edition of Doc 9869 (Performance Based Communication and Surveillance (PBCS) Manual) and the First Edition Global Operational Datalink (GOLD) Manual (Doc 10037) once published; and**
- (b) **States and ANSPs that have already implemented CPLDC/ADS-C review their systems performance using PBCS Manual and take immediate action where remedial measures are necessary**

**3. Action by the Meeting**

3.1 The meeting is invited to:

- (a) note the information in this paper;
- (b) provide guidance as necessary; and
- (c) endorse the Conclusions under paragraph 2.12 of this working paper.

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