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INTERNATIONAL CIVIL AVIATION ORGANIZATION

WESTERN AND CENTRAL AFRICA OFFICE

Thirteenth Meeting of the FANS I/A Interoperability Team (SAT/FIT/13)

Durban, South Africa, 4-5 June 2018

Agenda Item 3: Review of ADS/CPLC programs and implementation activities in SAT FIRs

ADS-C/CPDLC IMPLEMENTATION IN ASECNA FIRS

(Presented by ASECNA)

SUMMARY
This working paper presents the state of implementation of ADS-C/CPDLC in ASECNA FIRs and relating performance and operational issues.
REFERENCE(S): • Doc 9869, Doc 10037.
Related ICAO Strategic Objective(s): A, B & E

1. INTRODUCTION:

Air Navigation Service Providers (ANSPs) and users are invited to take necessary action to apply the technical and operational guidance provided in the Second Edition of Doc 9869 (Performance Based Communication and Surveillance (PBCS) Manual and the Global Operational Datalink (GOLD) Manual (Doc 10037).

In accordance with regional recommendations and in order to improve air navigation services, ASECNA took the decision to implement ADS-C/CPDLC in several centers, since 2002.

2. DISCUSSION:

2.1. Implementation

Since 2002, ASECNA started to implement ADS-C and CPDLC systems in several centers, including

Dakar, Abidjan, Antananarivo, Brazzaville, Niamey and Ndjamena.

Systems deployed include the following functionalities:

- Flight Data Processing System (FDPS),
- Automatic Flight Data Processing (AFDP),
- Flight Plan Air Situation Display (FPASD)

A Flight Data Operator (FDO) position dedicated to wrong filed flight plans correction, as well as a simulator system for the on-job training are also implemented.

The table below summarize the implementation status:

Centers	Implementation Date	Status	Operation Date
Antananarivo	2002	Full Operational	19/02/2004
Ndjamena	2007	Full Operational	05/04/2012
Dakar	2005	Full Operational	24/09/2009
Niamey	2007	Full Operational	01/07/2010
Abidjan	2009	Full Operational	01/07/2010
Brazzaville	2009	Full Operational	05/04/2012
EAMAC	2006	Training system	-

2.2 Performance

2.2.1 Global FANS Datalink traffic: Below are presented the results compiled in 2017:

Centers	**ASA** Aircom Service Availability		**USR** Uplink Success Rate= 1		**UDT** Uplink messages Delivery Time	
	VHF Service via DHP	**Satellite Service via DHP**	**VHF Service**	**Satellite Service**	**FANS (< 120s)**	**FANS (< 360s)**
Abidjan	97.37%	**100.0%**	100.0%	**100.0%**	**98.58%**	**99.84%**
Dakar	95.56%	**100.0%**	100.0%	**99.98%**	**99.33%**	**99.96%**

2.3 Operational considerations

- Most of the aircraft flying within Dakar Oceanic airspace are now ADS-C/CPDLC equipped (More than 90%); This have improved the provision of air navigation services in this airspace where flexible (iflex) and random routing(AORRA) operations are performed.
- Nevertheless, some aircraft are not equipped or don’t use ADS-C/CPDLC even when they are equipped and this could be a challenge for the implementation of new airspace concepts such as RNP4 in the SAT Region;

- Some ANSPs in the SAT region are engaged in a process of implementation of space base ADS-B which is an emergent technology that could be a serious candidate for air traffic surveillance in the oceanic airspace to support the implementation of new airspace concept when the technical specifications and standards will be matured.

3. ACTION BY THE MEETING:

3.1 The meeting is invited to:

- Take note of the information communicated above;
- Encourage airlines to equip and use ADS/C and CPDLC;
- To consider the emerging CNS technologies such as Space base ADS-B in the planning of CNS and ATM systems in the SAT area.

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