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Western and Central African Office - Dakar

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Agenda Item 4: System performance monitoring and maintenance

ADS-C/CPDLC operations in Abidjan airspace

Presented by Abidjan ACC

SUMMARY

This working paper outlines ADS-C/CPDLC operations in Abidjan airspace

1. INTRODUCTION

Within the framework of constantly improving the quality of service provided to air transport users, ASECNA began to carry out, since 2001, an ambitious and realistic programme of transition to the ICAO CNS/ATM new system in some of its major centres. Thanks to this policy, an automated Flight Data Processing System (FDPS) and an Air Situation Display (ASD), in combination with the Automatic Dependant Surveillance by Contract (ADS-C) and Controller-Pilot Data Link Communications (CPDLC) were installed in Abidjan in 2009.

These modern means of traffic management were also a timely solution since Abidjan was implementing the AORRA Phase 3 with HF as the only means of communications with aircraft flying up to 1100NM from the Ivorian coasts.

2. DIFFERENT STEPS UNDERTAKEN IN ABIDJAN CENTRE PRIOR TO ADS/CPDLC IMPLEMENTATION

From the installation of the ADS/CPDLC to its full operational phase, Abidjan Centre was submitted, as shown in the table below, to a specific planning designed and carried out by ASECNA Headquarters in Dakar in order to meet the required deadlines.

Period	Steps	Comments
October 2009 - December 2009	Theoretical sessions	All the ATCOs involved
January 2010	Instructors' training	Provided by Headquarters
February 2010	Simulations designing	Under Headquarters' supervision
March 2010 – May 2010	Practical sessions	Conducted by Instructors under Headquarters' supervision
June 2010	Pre-operational phase	Prior to full operational phase
July 2010	Full operational phase	Following an AIP supplement publication

3. *NEIGHBOURING CENTRES' ADS/CPDLC EQUIPMENT STATUS*

Abidjan ATS centre is surrounded by seven main adjacent centres. But not all of them are ADS/CPDLC equipped, as displayed in the table below:

Adjacent centres	ADS/CPDLC status	Comments
Dakar	Equipped	Since 2009
Atlantico	Equipped	Since 2010
Accra	Equipped	Since 2012
Bamako	Non equipped	Planned for 2014
Ouagadougou	Non equipped	Planned for 2014
Roberts	Non equipped	
Luanda	Non equipped	

4. *MAIN AIRLINES INVOLVED IN ADS/CPDLC OPERATIONS WITH ABIDJAN CENTRE*

Apart from some irregular flights, the table below shows the main airlines involved in ADS/CPDLC operations with Abidjan Centre:

Airlines	Flight numbers
South Africa Airways	SAA056, SAA057, SAA203, SAA204, SAA207, SAA208
Delta Airlines	DAL26, DAL27, DAL134, DAL135, , DAL200, DAL201
Emirates Airlines	UAE247, UAE248, UAE261, UAE262
Qatar Airways	QTR921, QTR922
Atlas Air	GTI100, GTI101, GTI8616
Air France	AFR702, AFR703, AFR704, AFR705
Cargolux	CLX716, CLX717
Brussels Airlines	BEL231, BEL251, BEL255, BEL256
Etihad Airways	ETD190, ETD191
Angola Airlines	DTA702

5. *SOME DIFFICULTIES ENCOUNTERED IN ADS/CPDLC OPERATIONS*

While managing the traffic with ADS/CPDLC means, some challenges have arisen, and are summarized in the following table:

Centres or Airlines	Type of problems
Accra Control	Non-interopability between Abidjan and Accra systems

	Unavailability of some FPLs: DAL134, DAL135, SAA056
	Non termination of ADS services (END SERVICE) by ATCOs
	Late coordination of some flights by ATCOs: UAE261, UAE247, QTR921
	Non transmission of common boundary coordinates and estimate by Accra ACC's ATCOs during traffic coordination
Atlantico Control	Unavailability of FPLs: QTR922 Interoperability : what about Atlantico's system
Luanda Control	Unavailability of FPLs: GTI101 No reply to RQP messages
UAE, QTR	Non insertion of the Abidjan FIS boundary coordinates in the FPLs by Dispatch Pilots' late LOGON (outside the slot of 45 to 15 minutes) No initiative for pilot manual connection when expected Pilots' direct LOGON to Atlantico from Accra

6. *SOME ADVANTAGES OFFERED BY ADS/CPDLC OPERATIONS*

ADS/CPDLC operations in Abidjan airspace have shown many advantages, including:

- ✓ The comfort gained in comparison to the use of HF;
- ✓ The accuracy provided in case of emergency situations or SAR operations occurrences;
- ✓ The possibility of AIDC coordination instead of using ATS/DS means between adjacent centres (tests in progress between Abidjan and Dakar).

7. *RECOMMANDATIONS*

Given the advantages offered by the use of ADS/CPDLC in traffic management, and the difficulties encountered with some airlines and adjacent centres, we recommend:

- ✓ The harmonization of Accra and Abidjan AGDP systems ;
- ✓ The full availability (100%) of flight plans for any traffic originating from one of the adjacent centres and a quick reaction from some adjacent centres to RQP messages;
- ✓ The implementation of ADS/CPDLC in the centres which are not yet equipped ;
- ✓ The full compliance to ADS/CPDLC procedures by adjacent centres and airlines in respect of Abidjan FIS design ;
- ✓ The compliance to AORRA procedures by airlines when submitting their FPL