



WORKING PAPER

SPECIAL AFRICA-INDIAN OCEAN (AFI) REGIONAL AIR NAVIGATION (RAN) MEETING

Durban, South Africa, 24 to 29 November 2008

Agenda Item 6: Development of a set of comprehensive work programmes in the air navigation field, aimed at improving efficiency of the air navigation system (Efficiency Committee)

OVERVIEW OF ASECNA SURVEILLANCE PLAN

(Presented by Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Equatorial Guinea, France, Gabon, Guinea-Bissau, Madagascar, Mali, Mauritania, Niger, Senegal, Togo, ASECNA Member States)

SUMMARY

This paper gives a progress report on the implementation of the aeronautical surveillance plan in ASECNA area. Between the three main components of the surveillance systems, SSR and ADS-C/CPDLC, are basically implemented in ASECNA FIRs giving a good opportunity for a collaborative surveillance data exchange in the AFI area. These systems complexity and cost may require appropriate coordination methods of the efforts in the frame of CNS/ATM implementation.

Action by the meeting is in paragraph 3.

1. INTRODUCTION

1.1 In the CNS/ATM components implementation framework ASECNA planned since year 2000 to purchase secondary surveillance radar (SSR) and automatic dependent surveillance — contract/controller-pilot data link communications (ADS-C/CPDLC) equipments and systems in her main centres: Ivato, N'djamena, Niamey, Dakar, Abidjan and Brazzaville.

1.2 The main objective is to overcome the lack of air navigation surveillance in theses FIRs and therefore to increase air navigation safety in the area.

1.3 In this context, the effective implementation of the surveillance systems could not be done without a cooperative/proactive approach with the airline users and a deep evaluation of the technical, operational and financial aspects of the project.

1.4 The yearly technical ASECNA/IATA panels allowed taking into account the real requirements of the users.

2. DISCUSSION

2.1 Implementation of secondary surveillance radars in ASECNA FIRs

2.1.1 The implementation of the SSR systems in ASECNA centres is one the components of an integrated CNS/ATM plan achievement.

2.1.2 The first centre to be equipped is N'djamena in the "Reacen" integrated project for the modernization of the whole Regional Control Centre.

2.1.3 The second phase is related to Niamey, Dakar, Abidjan and the third to Brazzaville.

2.1.4 N'Djamena is fully operating since 10 May 2007.

2.1.5 SSR is installed and are on trials in Niamey, Abidjan and Dakar.

2.1.6 Their full operational phase is planned to begin after a complete training for air traffic controllers and maintenance teams. Brazzaville SSR equipments are in the site acceptance step. These radars are designed Monopulse with an S Mode option for the data link.

2.2 Implementation of ADS-C/CPDLC in ASECNA FIRs

2.2.1 Far in the past (1996) ASECNA has been making ADS-C trials with an ACARS data link system based on a Personal Computer (ADS-C PC). These trials were conducted with former Air Afrique airline. By year 2004 a full ADS-C/CPDLC was purchased and installed in Antananarivo FIR.

2.2.2 The integrated Surveillance Plan for ASECNA includes ADS-C/CPDLC system for N'Djamena, Niamey, Dakar, Abidjan (already installed).

2.2.3 An ATS AIRCOM Service Agreement with SITA has been signed and provides ACARS data link for ADS-C/CPDLC in these centres likely year.

2.2.4 Because of the critical aspect of the data link to be performed by ACARS it was advisable for ASECNA:

- a) to deal with the Aircom service provider in order to set service performance level; and
- b) to seek for an alternate technical solution using the opportunities provided by AFISNET capability (AFS and AMS).

2.2.5 SSR and ADS-C/CPDLC implementation provides real opportunities for ANSP to share surveillance radar or ADS-C/CPDLC data to enhance air navigation safety particularly at FIR boundaries, pending the availability and the integrity of communication facilities.

2.2.6 Due to surveillance equipments and software complexity and cost, it should be advisable for AFI States/organizations:

- a) to look for the best way for a regional cooperative relationships towards the vendors, through for example an Association /Sub group of the AFI ANSP Surveillance Systems Customers; and
- b) to enhance the programs for operational and maintenance teams exchanges.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information provided above;

- b) discuss, amend and endorse ASECNA proposals regarding cooperation for the surveillance systems interoperability for data and application exchanges; and
- c) take a suitable conclusions/decision related to the subject.

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