



ASSEMBLY — 38TH SESSION

TECHNICAL COMMISSION

Agenda Item 35: Air Navigation —Implementation Support

**IMPLEMENTATION OF SURVEILLANCE IN ASECNA AREA: IMPLEMENTATION
OF AN AFI REGION COLLABORATIVE FRAME**

(Presented by the Agency for the Safety of the Air Navigation in Africa and Madagascar (ASECNA))

EXECUTIVE SUMMARY	
The present working paper reviews the efforts undertaken by ASECNA for improvement of the flight safety within the implementation of its surveillance Plan in which visualization means of air traffic are planned for the ATS centres.	
<i>Strategic Objectives:</i>	This working paper relates to the Safety, and Environmental Protection and Sustainable Development of Air Transport Strategic Objectives.
<i>Financial Implications:</i>	The activities referred to herein will be undertaken through the resources of ASECNA Services and Equipment Plan and/or from extra budgetary contributions.
<i>References:</i>	Annex 10 to the <i>Convention on International Civil Aviation</i> 12th Air Navigation Conference APIRG 18, Conclusion 18/34 – AFI strategy for surveillance ICAO Doc 9924, AN/474, <i>Manual on aeronautical surveillance</i> ICAO Doc 9750, <i>Air Navigation Plan</i> ANSP3, Cotonou, 25-26 of November 2010

1. INTRODUCTION

1.1 ASECNA is in charge to manage an integrated large airspace of 16 million of km² of its 17 States, and to provide air navigation services to users mainly composed by airliners.

1.2 ASECNA airspace is composed of five (5) FIR/UIR (Antananarivo, Brazzaville, Dakar, Ndjamenana and Niamey) crossed by many traffic trends where those from Europe to South America (EUR/SAM corridor) and from Europe to Africa and to Indian Ocean, are most significant. Else, due to its size and position, ASECNA airspace is adjacent to 18 other FIRs of AFI Region.

(3 pages)

¹ English and French versions provided by ASECNA.

1.3 With the incoming growing and complex air traffic and in the frame of PBN implementation, Strategic Orientations Plan of ASECNA has included control services improvement supported by surveillance means for all the airspace for safety and capacity enhancement purpose.

1.4 The strategic Orientations Plan also foresee airspace management rationalization and reorganization aimed to build single sky as indicated in Cotonou Declaration during 3rd meeting of AFI ANSP, 25 and 26 November 2010.

1.5 This document reviews all actions undertaken and planned by ASECNA for its airspace surveillance plan, elaborated in accordance with AFI surveillance strategy. Means involved in this surveillance plan enable a frame of collaborative surveillance data exchange for global improvement of safety.

2. **FIRST STEP OF THE PROJECT: EQUIPMENT OF MAIN CENTRES**

2.1. In the first phase of the project, ASECNA started to equip main centers (Dakar, Abidjan, Niamey, Brazzaville and N'Djamena) composed by radars and ADS-C/CPDLC facilities. The objectives of the projects were to:

- a) provide traffic visualization to ATCO;
- b) verify observance of separation criteria;
- c) improve aircraft localization for SAR; and
- d) anticipate in service surveillance provision adequately designed for area with high traffic

2.2. Then, all this centres except Antannarivo were being equipped with secondary radars and ADS_C/CPDLC facilities. For traffic coordination purpose, all centres were equipped with ATM systems including flight data processing systems.

3. **NEXT STEP OF THE PROJECT**

3.1 ASECNA foresees to improve control services with surveillance means for all its airspace and to move gradually towards radar and ADS-B based control.

3.2 For this and by end of year 2012, ASECNA started the second phase of its project aimed to provide eleven (11) secondary radars associated with eleven (11) ATM systems including FDPS for the remaining centres.

3.3 The following Centres are concerned:

- a) for the radars : Nouakchott (Mauritanie), Bamako (Mali), Bissau (Guinée Bissau), Ouagadougou (Burkina), Niamtougou (Togo), Cotonou (Bénin), Douala (Cameroon), Libreville (Gabon), Bangui (Centrafrique), Moroni (Comores) and Antananarivo (Madagascar);

- b) for ATM systems: Nouakchott, Bamako, Bissau, Ouagadougou, Lomé (Togo), Cotonou, Douala, Libreville, Bangui, Moroni and Malabo; and
- c) planned to end on October 2014, the project takes into account safety analysis and telecommunications network development for surveillance data exchange between ASECNA centres and with neighbours.

3.4 The project includes training programme for operational and maintenance staffs, in order to achieve successful implementation.

4. PERSPECTIVES

4.1 Thanks to fruitful collaboration between ASECNA and its Indian Ocean neighbours Seychelles and “La Reunion”, ADS-B test was performed on this area. On the operational way, tangible benefits were unanimously acknowledged even by airspace users than ANPS.

4.2 ASECNA intends to use this ADS-B technology to complete its airspace coverage. This will be possible by ADS-B and VHF/VSAT antennas co-location and, transmission of data from ADS-B stations to ACCs will be secured by ASECNA telecommunications network (AFISNET).

4.3 In order to achieve future ATM objectives, and in the frame of ASBU implementation, mainly Modules **B0 84**–“Initial surveillance capability” and **B0-102** –“Baseline ground-based safety nets”, ASECNA is engaged to face new challenges to support global interoperability and harmonization.

5. CONCLUSION

5.1 The Assembly is invited to take note of the improvement and the enhancement of surveillance means in the airspaces managed by ASECNA and encourage States and/or Organizations to develop and propose adapted mechanisms of cooperation to fill the discontinuities in surveillance to improve air navigation safety in AFI airspace.