



SAT/21/ IP/01

**INTERNATIONAL CIVIL AVIATION ORGANIZATION**  
**TWENTY ONE MEETING ON THE IMPROVEMENT OF AIR TRAFFIC SERVICES**  
**OVER THE SOUTH ATLANTIC**

**Lisbon, Portugal, 06 to 10 June 2016**

(Presented by ASECNA)

This paper informs the meeting about ADS-B implementation in Dakar center.

**Agenda Item 3: Communication Navigation Surveillance (CNS)**

**1. Context**

ASECNA has implemented an ADS-B station in Dakar center since March 2015. INDRA company is the main provider. Installation was fully completed in February 2016 and maintenance staff has already received from INDRA experts an On Job Training and have also participated to the installation.

Added to the existing MSSR (Monopulse Secondary Surveillance Radar), this new surveillance system is helpful for air traffic controllers. To locate aircrafts, it gives more accurate position. It provides specific information such as identification, position, velocity, altitude.

Covering around 300 NM, ADS-B system allows air traffic controller to locate aircrafts in en-route, approach and landing areas.

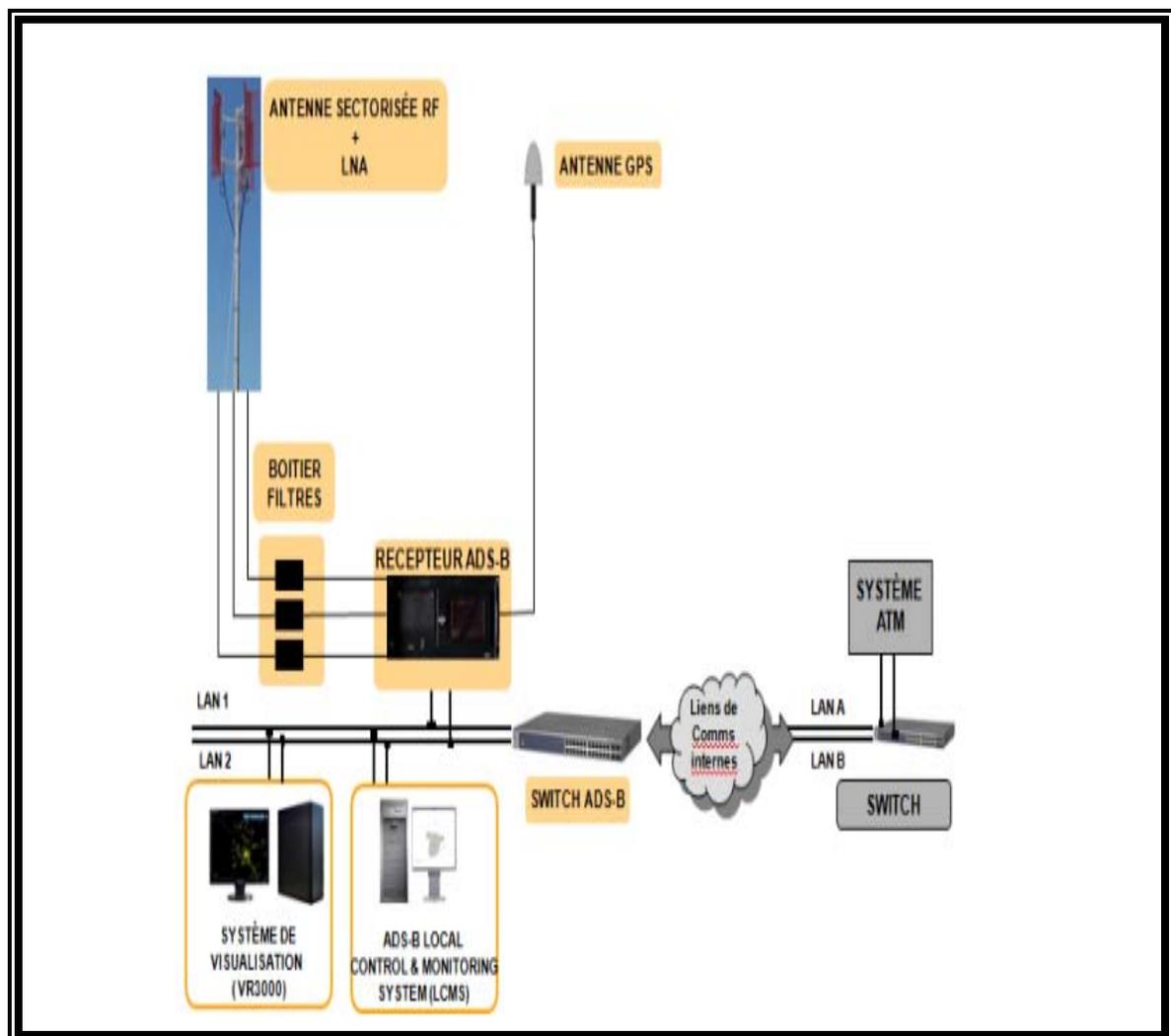
ADS-B is still in experimentation and is well appreciated. Safety studies are conducted on site and submitted to the CAA for final approval before operational use. A large survey was conducted during twelve (12) months. In this period, many aircrafts were regularly and successfully able to exchange data through the system (Mauritania Airways, air Côte d'Ivoire, Ethiopian Airways, Asky, Royal Air Maroc, Tunisair, Arik, South Africa Airways, Air France, Delta Airlines, Brussels Airline, Air Portugal, Iberia, Lufthansa, Alitalia, Corsair British Airways, Air Europa, Air Argentina). A complete database is available.

ADS-B data are now integrated in TOPSKY, the automated ATM equipment providing flight plan.

## 2. Architecture of the ADS-B station

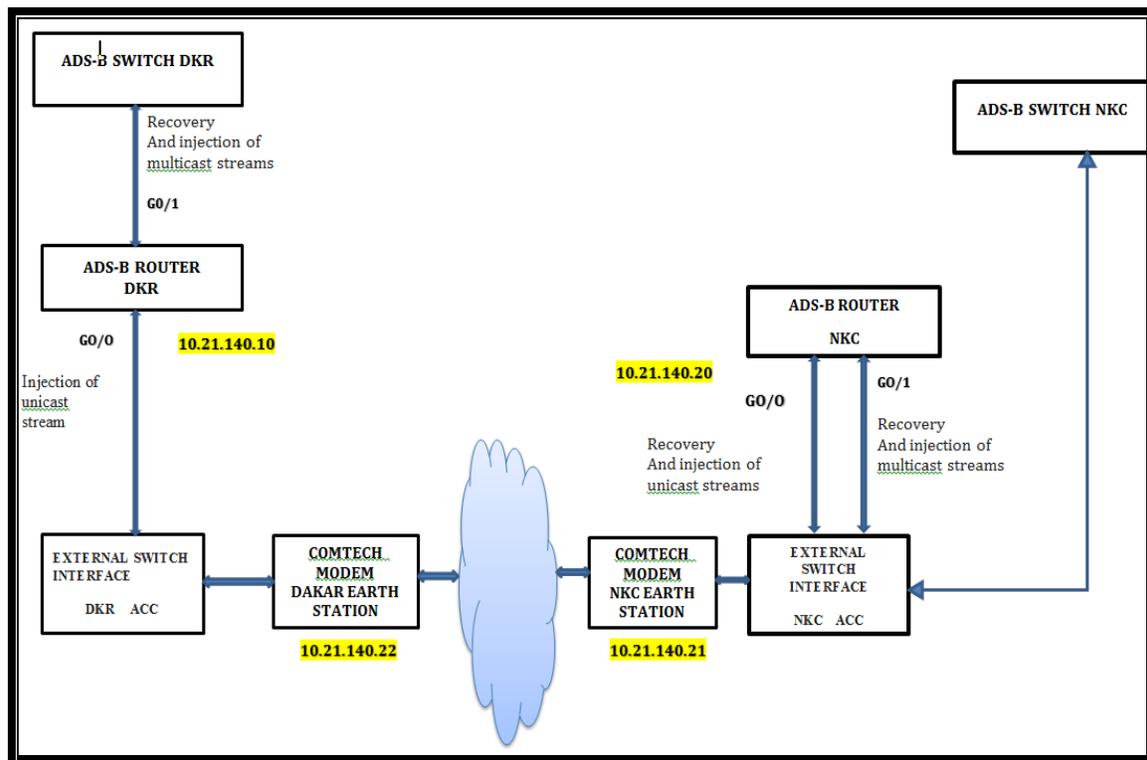
- 01 LNA antenna which integrates tree sectorized antannas
- 01 GPS antenna
- Visual Radar graphic system (**VR 3000**) : to display ADS-B data
- ADS-B local control and monitoring system(**LCMS**): to supervise and control operating parameters, to manage alarms and reports, to analyze statistics.
- ADS-B routers

### Interconnection Dakar ADS-B / Dakar TOPSKY



ASECNA plan to extend ADS-B in many centers. Nouakchott is recently equipped and will soon be connected to Dakar. Technicians are finalizing the routers configuration in order to connect Dakar ADS-B to Nouakchott ADS-B. Data can be exchanged between the two centers and this will allow controllers to have a better view of the traffic. In case of failure of one station, the remote system can supply it as a backup. Redundancy benefit is offered.

### Interconnection Dakar ADS-B / Nouakchott ADS-B



### 3. Action by the meeting

The SAT/21 meeting is invited to take note of this information provided in this working paper.

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