



**International Civil Aviation Organization  
Western and Central Africa Office  
Second Meeting of the Central Atlantic FIR Satellite  
Network (CAFSAT) Management Committee (CNMC/2)**

CNMC/2 - WP/07B

22/10/12

Dakar, Senegal, 06 - 08 November 2012

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**Agenda Item 6: CAFSAT modernization and re-engineering**

**Lisbon and Santa Maria CAFSAT stations upgrade**

(Presented by Portugal)

**Summary**

This information paper presents information on upgrade of Lisbon and Santa Maria CAFSAT stations.

**1 Background**

In order to increase availability of the stations (i.e. during preventive maintenance actions), NAV Portugal decides to implement an ISDN backup in the satellite link Santa Maria – Lisbon.

To implement the ISDN backup a contract was signed with the company that supplied to NAV Portugal the Lisbon and Santa Maria CAFSAT stations.

**2 Discussion**

**2.1 Scope of works**

Taking into account that part of existing equipment is no long in production it was decided to upgrade the stations with new equipment, in particular:

- The Memotec 1000x frame relay switch was removed.
- One Nuera F 200 multiplexer was removed.
- New NetPerformer equipment was installed. One SDM-9230 and two SDM-8400 equipments were installed in both stations.

In order to ensure compatibility of Lisbon station with Casablanca and Las Palmas stations all voice and data services with those stations were transferred to one Nuera F200 multiplexer.

For same reason one Nuera F200 multiplexer remains in Santa Maria stations to ensure compatibility with Las Palmas and Sal stations.

Training, documentation update and update of M&C sub-system, were included in the contract.

## 2.2 ISDN backup

When the satellite link between Lisbon station and Santa Maria station is broken longer than 60 seconds, an automatic call is setup at ISDN link. That value is adjustable from 1 to 1,000 seconds. When satellite link is re-establish, the call at ISDN link remains for 300 seconds. After that period the call at ISDN link is automatically released. That value is adjustable from 1 to 1,000 seconds.

NetPerformer SDM-9230 has capability for two ISDN links.

Supervision sub-system (M&C) is monitoring the ISDN links and generates an alarm in case of ISDN links malfunction.

## 2.3 Completion

Site acceptance tests were completed on October 22<sup>nd</sup> 2010. Since that date stations have been working without problems.

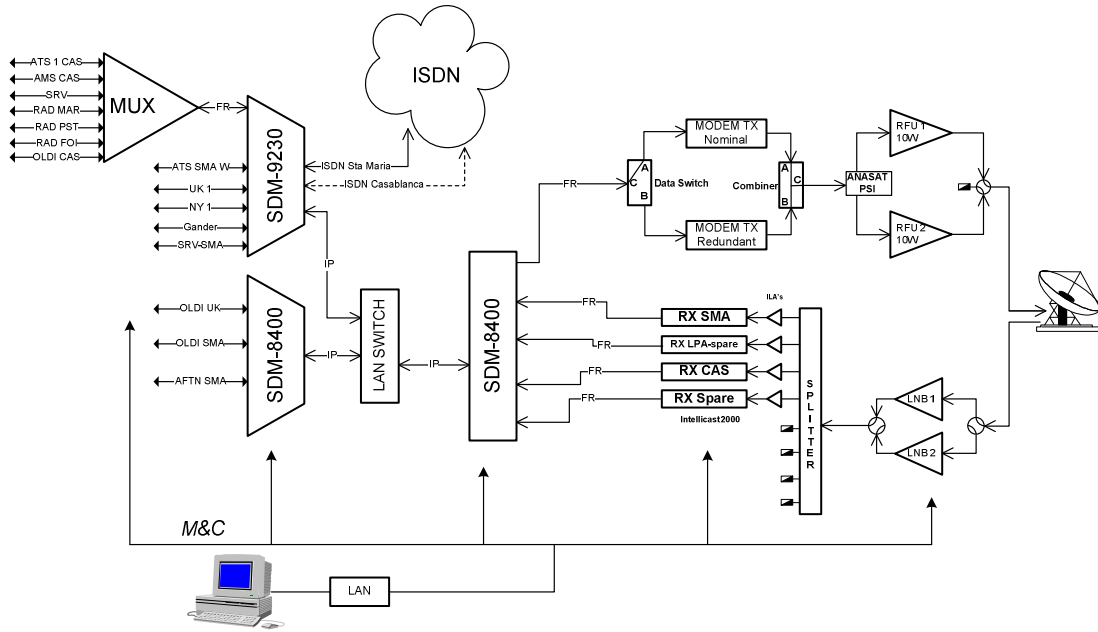
## 2.4 Diagrams

The diagrams of Lisbon and Santa Maria CAFSAT stations are attached.

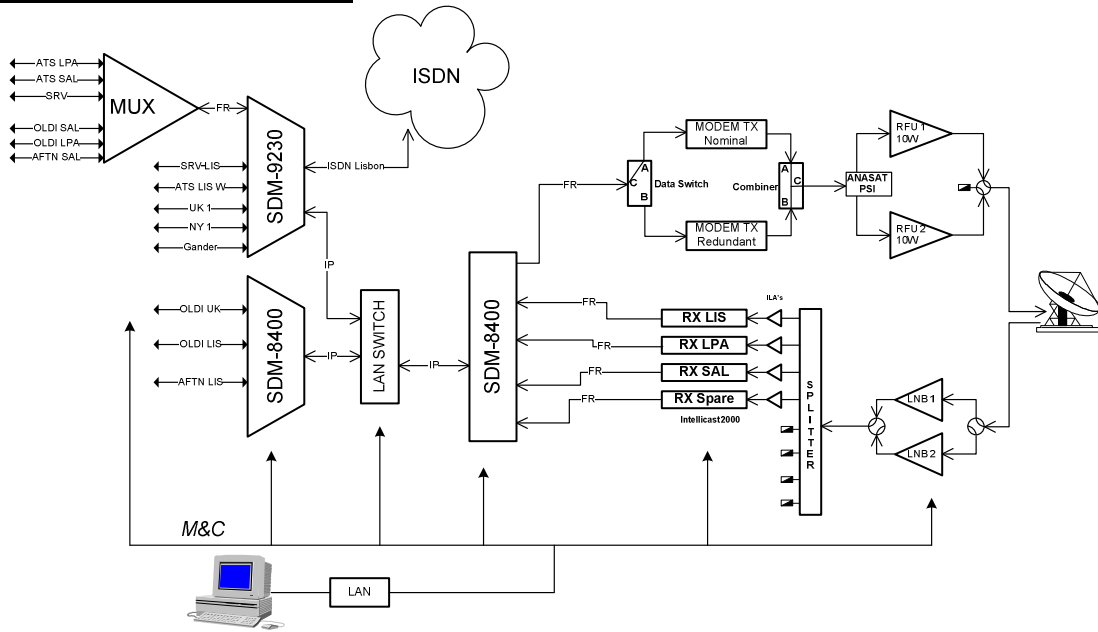
## 3 **Suggested action**

Meeting is invited to note the information of this WP.

**Lisbon CAFSAT station diagram**



**Santa Maria station diagram**



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