



## INTERNATIONAL CIVIL AVIATION ORGANIZATION

Western and Central Africa Office

Third Meeting of the Central Atlantic FIR Satellite Network (CAFSAT) Management Committee (CNMC/2)  
(Dakar, Senegal, 15-16 July 2013)**Agenda Item 6: CAFSAT Modernization and Re-engineering**

(Presented by the secretariat)

SUMMARY
The purpose of this paper is to review the status of the current developing or planned projects by CAFSAT States/organization to conduct the modernization of the Network and revise if necessary the roadmap for a harmonized modernization and re-engineering exercise.
<b>Action by the meeting is at paragraph 3.</b>
<b>References :</b> Terms of Reference of CNMC Report on CNMC/2 <b>Related ICAO Strategic Objectives: A: Safety; B: Air Navigation Capacity and Efficiency</b> <b>Related ICAO Bloc 0 Modules: B0 10/PIA3-PBN En Route Trajectories; B0 25/PIA2-AIDC, B0 30/PIA2-AIM, B0 40/PIA4-Datalink and B0 105/PIA2-MET</b> <i>Note: References can be downloaded from <a href="http://www.icao.int/wacaf">www.icao.int/wacaf</a>.</i>
Related ICAO Strategic Objectives A & C.

**1. Introduction**

In the framework of its terms of reference CNMC 1<sup>st</sup> meeting agreed to undertake common harmonized actions aiming to ensuring a soft modernization and re-engineering exercise in order to guarantee the Quality of the current Services and prepare the integration of new CNS/ATM applications in the Network.

**2. Discussion**

2.1 CNMC 1<sup>st</sup> meeting considered that the network has been operating since and recognized that it modernization and re-engineering should be initiated through an harmonized approach that should involve all the stakeholders in order to ensure seamless provision of Aeronautical fixed service (AFTN, ATS/DS) supported by the Network along the EUR/SAM corridor while interfacing with AFI for a safer Air navigation service provision.

2.2 Moreover, the meeting also recognized that the forthcoming implementation of CNS/ATM components with time critical or sensitive applications (Automation of ATM in the frame of ICAO New Flight Plan Format, Sharing Surveillance data, Implementation of AMHS...) may require the modernization/re-engineering of the current VSAT Networks taking into consideration the flexibility gained with the emerging technologies and bearing in mind the necessity to ensure a comprehensive safety of the data across the Networks and a costs effectiveness of the operation for the VSAT managers.

2.3 The principle of the development of a Roadmap for CAFSAT joint technical evaluation and re-engineering presented by Spain was adopted by the meeting through its conclusion 01/7 that reads as follows:

**Conclusion 1/07: Development of a Roadmap for CAFSAT joint technical evaluation and re-engineering**

*That:*

*In accordance with ICAO guidance materials (Annexe X, Vol 1, Attachment F: Guidance material concerning reliability and availability of radiocommunications and navigation aids; ICAO Guidelines on Performance of Very Small Aperture Terminal (VSAT) Networks), CNMC member states develop a Roadmap for a Joint Technical Evaluation and re-engineering in the view of ensuring an efficient and optimized modernization of CAFSAT Network taking into consideration:*

- e) *Required service performance level of the network to support the operation and development of sensitive current and forthcoming CNS/ATM components;*
- f) *CAFSAT interoperability with its neighboring networks;*
- g) *Maintenance fundamental parameters governing service availability, continuity and integrity such as: reliability, turn over statistics, maintenance personnel expertise;*
- h) *Cost-effectiveness;*

2.4 This roadmap should lead to the development of Terms of Reference of CAFSAT Network modernization and re-engineering exercise comprising the clear definition of the operational requirements with a service level performance assessment process, maintenance personnel training, turn over requirement and cost effectiveness.

2.5 It may be reminded that Spain was nominated to lead the Joint Technical Team and members were requested to forward their focal point to the Team leader.

Since then the modernization/development on the network has continue to be undertaken.

As example Portugal has conducted an upgrade of Lisbon and Santa Maria nodes, Brazil is in the process of modernizing the Recife station, when Angola intends to provide Luanda with a CAFSAT node in coordination with Brazil project.

2.6 During the SAT/17 meeting held in Las Palmas Spain from 18 to 20 April Spain reported on the difficulties encountered to find contact person in SAT States to respond to the request for comments on the reengineering preparation activities. The Secretariat reminded the meeting with the importance for each State to nominate a contact person to handle the re-engineering exercise as called upon by decision SAT/16/05 (Establishment of a Joint Technical Team for CAFSAT Network evaluation and re-engineering) and it was decided through **Decision SAT17/04: Nomination of contact persons for the joint technical team for CAFSAT evaluation and re-engineering**,

**That:**

**“SAT concerned members communicate to Spain (Team Leader) the name and the title of their designated contact person for the joint technical team for CAFSAT evaluation and re-engineering no later than end of April 2012”.**

2.7 Spain also reported to SAT 17 on the initiatives taken for the development of the CAFSAT Network evaluation and re-engineering exercise. It was recalled that a draft Document for CAFSAT evaluation and re-engineering had been circulated by Spain among concerned SAT members for consolidation but by the time being, no contribution was received back from members. Spain also presented an initial schedule for CAFSAT evaluation and re-engineering future activities.

2.8 SAT/17 agreed under decision SAT17/05, that the document will be the Reference Working Document and will be examined point by point and link by link establishing the best technical configuration for the Network by this current CNMC meeting to be convened. The reference Working Document is attached in **Appendix A** to this Working Paper and decision SAT17/05 reads as follows:

***Decision SAT17/05: CAFSAT Reengineering Roadmap and Reference Document***

**That:**

- a) **The CAFSAT Reengineering schedule and its Reference Working Document developed by Spain are approved as presented to SAT states.**
- b) **CNMC members follow up and provided Spain with the adequate additional information for the development of the project**

It is expected that with the inputs from all States, a final roadmap that will include all CAFSAT nodes new design, equipment and configuration and a global implementation plan schedule and tasks will be developed and approved.

2.9 Based on the above CNMC second meeting held in Dakar from 06 to 08 November 2012 agreed that in order to ensure the continuity of service operating on CAFSAT, the implementation of phase 1 of the roadmap for CAFSAT re-engineering consisting on the replacement of the obsolete base band components of the nodes appears to be a matter of urgency. After discussion by the meeting on a possible foreseen schedule the facilities providers draft a provisional planning as attached at **Appendix B**.

2.10 On 24 May 2013 the Secretariat received an E-Mail from Mr. **Angel Crespo Pérez** from Spain indicating his resignation as leader/chairman of the “Joint Technical Team for CAFSAT evaluation and re-engineering due to current AENA’s strategy coming from a severe budget restriction that will not enable him to attend this CMNC third meeting.

2.11 Spain also reported to have launched a project aimed at evolving the baseband architecture to be aligned with the technical proposal presented in CNMC 2nd meeting. AENA analyzed the technical design in order to fit the proposed general architecture to its specific scenario with two CAFSAT stations (main and backup/contingency) and planned to complete the project by 1st quarter 2014.

### **3. Action by the meeting:**

The meeting is invited to:

- a) Take note of the above information
- b) Discuss and amend as necessary the foreseen schedule for CAFSAT Network Modernization and re-engineering;
- c) Take note of the vacancy of Team Leader for the Joint Team for CAFSAT modernization and re-engineering following the resignation of Spain and accordingly nominate a new Team Leader for the Joint Team;

## Appendix A

### ROADMAP FOR CAFSAT REENGINEERING

(Proposed by Spain)

	<b>Roadmap Date</b>	<b>Item</b>	<b>Responsible</b>
1	3 <sup>rd</sup> quarter 2012	Meeting of CNMC group – Reference Document	ICAO meeting invitation
2	4 <sup>th</sup> quarter 2012	States internal analysis and presentation of draft implementation schedule	CAFSAT States
3	1 <sup>st</sup> quarter 2013	Global implementation plan schedule and tasks	ICAO/CNMC Rapporteur
4	2 <sup>nd</sup> quarter 2013	Migration/Reconfiguration Start	CAFSAT States

1. Meeting of CNMC group – Reference Document

In that meeting the CNMC should study the document point by point and link by link establishing the best technical configuration for the Network in any case. All Technical issues should be debated in that meeting between States experts on the matters

2. States internal analysis and presentation of draft implementation schedule

Each State will analyse internally the best way to accomplish with schedule and requirements approved in the CNMC meeting and will send ICAO/CNMC Rapporteur a report regarding the State status to accomplish the general schedule

3. Global implementation plan schedule and tasks

Taking into account the inputs from all States (reports) ICAO and CNMC Rapporteur will agree on a final roadmap that will include all CAFSAT nodes new design, equipment and configuration. A final draft will be send to all Sates for approval.

4. Migration/Reconfiguration Start

Following the approved plan schedule the installation/implementation will start. A CNMC meeting previous to this point would be desired

