



Agenda Item 3: Activities for the development of the air navigation systems/services
3.3 Communications, Navigation and Surveillance (CNS)

STATUS OF THE VHF/AMS COMMUNICATIONS IN THE REPUBLIC OF CUBA

(Presented by Cuba)

SUMMARY

This working paper contains a description of the work carried out by Cuba within the VHF/AMS communications framework, and the status of its implementation.

References:

- National Plan for the Transition to the CNS/ATM systems of the Republic of Cuba.
- GREPECAS/13 Meeting Report. Santiago, Chile, 14 – 18 November 2005.

1. Introduction

1.1 The Aeronautical Mobile Service (AMS) covers the speech communications between the aircraft pilots and air traffic controllers, which are communications related to the safety and regularity of flights, demonstrating the need to provide special attention from the aeronautical administrations. Since 2003, the execution of the new Area Control Centre (ACC Havana) and its communications system modernization has made possible a significant improvement in the VHF/AMS communications handling which support the air traffic management in the Havana FIR. In this new investment framework, the majority of the equipment was replaced by other with digital technology and will provide a possibility for VHF data links (VDL).

1.2 In addition to the above, the National Plan for the Transition to the CNS/ATM systems in the Republic of Cuba was recently completed, at the same time this document is ruled by the Regional Plan and guarantees the necessary budgetary planning for the implementation of programmes with a progressively modernization of the diverse CNS/ATM technologies installed in our Country, in which the VHF/AMS radio-communications network stations covering the Havana FIR are located.

2. Discussion

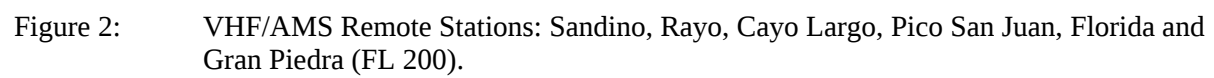
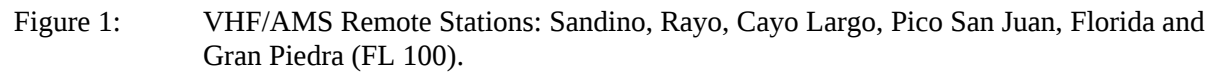
2.1 In accordance with the VHF/AMS extended coverage implemented in Cuba, the ATS air-ground speech communications are supported effectively through the VHF/AMS radio-communications equipment installed in different airports in the Country (Table No. 1), in the Area Control Centre in Havana and in the VHF/AMS remote stations at a national level (Figures 1 and 2).

VHF/AMS Equipment installed			
No.	Place/Airport	QTY TX	QTY RX
1	José Martí	8	8
2	Gerona	2	2
3	Cayo Largo	3	3
4	Varadero	8	8
5	Cienfuegos	2	2
6	Trinidad	2	2
7	Santa Clara	2	2
8	Ciego de Ávila	2	2
9	Cayo Coco	6	6
10	Camagüey	8	8
11	Tunas	2	2
12	Holguín	8	8
13	Moa	2	2
14	Bayamo	2	2
15	Manzanillo	4	4
16	Santiago de Cuba	8	8
17	Guantánamo	2	2
18	Baracoa	2	2
19	Maisí	2	2
TOTAL		77	77

Table No. 1: *VHF/AMS radio-communication equipment installed in the aeronautical units of ATM system in the Republic of Cuba.*

2.2 The equipment detailed in Table No. 1, is planned to be totally and gradually replaced during the next 5 years, and according to its useful life. This modernization is contemplated within the National Plan for the Transition to the CNS/ATM systems of the Republic of Cuba.

2.3 The current VHF/AMS remote stations network (Remote Stations) is supported with equipment installed in 6 positions (main stations), spread all over the Cuban Territory (Figures 1 and 2). Based on this, a total coverage is provided in the Cuban FIR with high level of reliability and availability.



2.4 The VHF/AMS remote stations are currently used for the ATS communications in an analogue form. The handling, remote control and monitoring (RCMS) is performed from the Havana ACC through the same voice multiplexed channels with FSK to 300 bps transmissions. The majority of the equipment installed in these positions (Table No. 2) allows the implementation of VDL Mode 2 technology (HARRIS equipment), with a plan to totally replace the equipment remained (TELERAD equipment) during the next 5 years (2006-2010). Also, this modernization is contemplated in the National Plan for the Transition to the CNS/ATM systems of the Republic of Cuba.

No.	Remote Stations	TELERAD	HARRIS	TOTAL
1	Sandino	4	10	14
2	Rayo	-	14	14
3	Cayo Largo	-	4	4
4	Pico San Juan	-	14	14
5	Florida	6	6	12
6	Gran Piedra	6	10	16
TOTAL		16	58	84

Table No. 2: *VHF/AMS radio-communication equipment installed in the remote stations network covering the Havana FIR.*

2.5 Based on the *Regional Strategy for updating evolutionary implementation of the air-ground data links Plan*, adopted by GREPECAS in its Conclusion 13/72, our country considers that there are still no conditions for the planned implementation in Table CNS 2A of the FASID, referring to the implementation in 2006 (06/06) of two VHF in Mode 2 channels (VDL-M2) for the radar area control service up to FL 450 (ACC-SR-U / Havana MUHA).

2.6 From 2006–2007, it is planned to carry out in Cuba, discreet VDL-M2 tests, which are initially aimed for the implementation of the D-ATIS application at the José Martí International Airport (MUHA). CPDLC trials and demonstrations will be held simultaneously and it is possible that ACARS based applications will be implemented.

3. Conclusion

3.1 The Cuban Civil Aviation Administration (IACC), through its air navigation service provider, ECASA and under its responsibility in VHF/AMS, guarantees coverage of the entire FIR efficiently and effectively according to the indexes of Availability and Reliability recommended by ICAO, maintaining and applying the introduction of new technologies in accordance with the National Plan for the Transition to the CNS/ATM systems.

4. Suggested actions

4.1 The meeting is invited to:

- a) take note of the contents of this Working Paper;
- b) recognize the importance in maintaining a solid and stable VHF/AMS system in support of the air traffic management, and
- c) take into consideration the proposal to update the CAR/SAM Table CNS 2A of the FASID that the IACC will arrange with the ICAO NACC Regional Office.

- END -