



*International Civil Aviation Organization*

**CNS/MET SG/7 and CNS/ATM/IC SG/10**

Bangkok, Thailand, 15 – 21 July 2003

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**Agenda Item 2: Review**

**1) action on the reports of CNS/MET/SG/6 and CNS/ATM/IC/SG/9 meetings**

**ACTION PLAN FOR IMPROVEMENT OF VHF COVERAGE AND  
IMPLEMENTATION OF ADS/CPDLC IN INDIA**

(Presented by India)

**SUMMARY**

This information paper presents the progress on implementation of CNS/ATM facilities in Indian Airspace.

**1. INTRODUCTION**

- 1.1 The 9<sup>th</sup> meeting of APANPIRG Sub-group CNS/ATM/IC/SG/9 reviewed and identified in the Air navigation field in ASIA/PAC region and listed deficiencies in Appendix A to Agenda Item 8 of the report.
- 1.2 The status on improvement and enhancement of VHF coverage over Indian airspace is presented in this paper.

**2. PROGRESS**

**2.1 RCAG**

**2.1.1 Enhancement of VHF coverage over Indian airspace in the Oceanic region**

To enhance the ACC coverage of Mumbai and Trivandrum airport over Arabian Sea, RCAG/VSAT at Agatti (An island in Arabian Sea) controlled from Mumbai and Trivandrum airport and RCAG at Porbandar controlled from Mumbai airport were installed and commenced operation in Oct. 2001 for users.

RCAG VHF Station at Vishakapatnam and Port Blair controlled by both Chennai and Kolkata to enhance the VHF coverage of ACC Chennai and Kolkata was established in October/November 2000.

With the above measures taken by India, long pending deficiency of inadequate VHF coverage over the Oceanic region under the responsibility of India has been overcome to a great extent.

**2.1.2 Enhancement of VHF coverage over Indian airspace in the Landmass region**

As an immediate measure, ACC coverage of Delhi is being enhanced by installing RCAG/VSAT at Khajuraho to be controlled from Delhi.

As a long term measure, AAI has planned to network all Indian airports including civil enclave using VSAT technology through Dedicated Satellite Communication Network (DSCN). Transponders in one of the INSAT Satellite will be used for this purpose.

DSCN is a solution to upgrade all the land lines through Geo-stationary Satellite which will provide higher speed and more efficient service.

DSCN shall have the capability of operating RCAG. This capability shall be used to enhance the VHF coverage over Indian airspace especially over land mass area.

## 2.2 **ADS/CPDLC**

### **Automatic dependent surveillance (ADS)/ Controller pilot data link Capability (CPDLC)**

2.2.1 ADS/CPDLC at Kolkata and Chennai airports using air-ground link through SITA network is in operation for FANS-1 users.

2.2.2 There is a plan to provide ADS/CPDLC at Delhi and Mumbai airport by integration with Flight data processing system (FDPS)/ Radar data processing system (RDPS) automation system at these airports. The air-ground linkage for this application shall be provided through a data link service provider. The target date for implementation is expected by end of 2004.

## 2.3 **COM facilities**

### 2.3.1 VHF Digital link

AAI is in the process of replacing old VHF transmitters and receivers at major airports with new transmitters and receivers having capability of VDL Mode 2 upgradeable to VDL Mode 3 and 4. The installation is likely to be completed by end of Dec. 2003.

The new VHF transmitter and receiver shall be used for air-ground communication primarily for voice communication in first instance and would be used for air-ground data communication using VDL mode as and when SARPs are finalized by ICAO and Airlines operator are ready with the compatible systems.

### 2.3.2 HF Data link

The HF Transmitters having capability of data link are being provided in place of existing HF transmitters and receivers used for MWARA at Delhi /Mumbai / Kolkata / Chennai and Trivandrum airports. The supply of equipment has already commenced and installation expected to be completed by end of Dec. 2003.

HF data link shall be used as and when airline operators are ready with the compatible avionics.

## 3. **ACTION BY THE MEETING**

3.1 The meeting is invited to take note of the information contained in this paper.

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