



INTERNATIONAL CIVIL AVIATION ORGANIZATION

**TWENTY-SECOND MEETING OF THE
ASIA/PACIFIC AIR NAVIGATION PLANNING AND
IMPLEMENTATION REGIONAL GROUP (APANPIRG/22)**
Bangkok, Thailand, 5-9 September 2011
**Agenda Item 3: Performance Framework for Regional Air Navigation planning
and implementation**
3.5 Other Air Navigation Matters
**UPDATE ON NEW COMMUNICATION, NAVIGATION
SURVEILLANCE/ATM SYSTEM INITIATIVES IN INDIA**

(Presented by India)

SUMMARY

Airports Authority of India (AAI) is entrusted with the responsibility of providing Air Navigational Services (ANS) over the designated airspace. India has developed its plan in line with Global Air Navigation Plan developed by ICAO and has adopted the Global Planning Indicators (GPIs).

Keeping with the developments and availability of globally proven technology, AAI is implementing and commissioning new systems for enhancing efficiency.

The paper provides information on the new systems implementation programme in India and urges other States to share similar implementation programmes leading to system standardization.

This paper relates to Strategic Objectives:

*A: **Safety** – Enhance global civil aviation safety*

*C: **Environmental Protection and Sustainable Development of Air Transport** – Foster harmonized and economically viable development of international civil aviation that does not unduly harm the environment*

1. INTRODUCTION

1.1 Airports Authority of India (AAI) is entrusted with the responsibility of providing Air Navigational Services (ANS) over the designated airspace. The basis of the CNS plan is to meet the needs of the public, the stakeholders and the requirements of Air Traffic Management System.

1.2 In order to meet the strategic plan requirements for CNS/ATM Systems, a Futuristic Indian Air Navigation Systems (FIANS) has been formulated and is being implemented in phases.

1.3 Global Air Navigation Plan developed by ICAO (ICAO Doc 9750, Third Edition – 2007) as a strategic document to guide States for implementation of the global plan with horizon up to and beyond 2025 was taken into consideration.

1.4 Major airports are being upgraded to provide advanced CNS Systems in the near term while mid term plans for transition into GNSS Implementation is taking shape with the development of SBAS (GAGAN) in India.

2. DISCUSSION

2.1 Communication: Introduction of Departure Clearance and DATIS via Air-ground Data Link

2.1.1. In line with GPI -17 of ICAO Global Plan, India has procured systems at six major airports (Delhi, Mumbai, Kolkata, Chennai, Bangalore and Hyderabad) for implementation of pre-departure clearance (DCL), D-ATIS and VOLMET information.

2.1.2. 46 airports are being augmented with D-ATIS with data-out capability on AFTN to enable the transfer of METAR information to pilots via ACARS data link.

2.1.3. Remote Controlled VHF R/T has been commissioned along dense traffic routes to have positive contact with aircraft at FL 100 or above. Remote VHF has been provided at Bay of Bengal, Arabian Sea Oceanic areas also.

2.2 Automatic Message Handling Systems (AMHS)

India is in the process of changing over from AFTN to AMHS. The connectivity between airports at Delhi, Kolkata, Chennai and Mumbai is complete. There is a requirement of coordinated approach between neighboring States to integrate and implement a harmonization of systems for seamless communication between adjacent FIRs.

2.3 ATS Inter-facility Data Communication (AIDC)

ATS automation systems at Bangalore, Hyderabad, Mumbai, Delhi and Chennai are AIDC capable. Testing between these stations on specific routes is in progress. After carrying out required safety analysis, the process can be extended between FIRs.

2.4 Navigation -Procurement of GBAS at Chennai Airport:

2.4.1 Under US-India Aviation Cooperation Programme, India has embarked on provision of the first GBAS system in India. The pilot project will be assisted by FAA providing technical assistance for certification in coordination with the system manufacturer Honeywell. Honeywell will carry out the installation, testing and training at Chennai Airport. The project is planned to be completed by mid 2012. Success of the project will firmly put India on the GNSS Transition Plan.

2.4.2 India SBAS Programme (GAGAN) has commenced its final operations phase and will be operational by July 2013.

2.5 Enhanced Surveillance- Provisions

ADS –B:

2.5.1 In order to provide total redundant surveillance coverage, 14 ADS-B Stations are under procurement to augment situational awareness at airports not having Radar coverage. As newer aircraft operate within Indian skies, the capabilities can be fully harnessed to improve surveillance using ADS-B in areas where Radars have gaps and will provide as an additional surveillance backup.

2.5.2 ADS-B are planned to be located at medium level airports to provide additional surveillance capability for the airports.

New Radars:

2.5.3 In order to achieve a total Radar coverage over India, nine MSSR Radars have been installed and data integration to respective control centres is ongoing.

ASMGCS:

2.5.4 Advanced Surface Movement Systems have been commissioned at Delhi, Bangalore, Hyderabad, Mumbai, Chennai and Kolkata airports. The ground surveillance is provided through network of Multi lateration (MLATs) and Surface Movement Radars (SMRs) integrated with ATC Automation Systems.

2.5.5 In order to have seamless air traffic services over Chennai FIR, a state of the art ATC Automation System with multi Radar integration with ADS-B , ADS-CPDLC, has also been implemented with safety nets which will be commissioned shortly. The Systems are presently undergoing operational trials.

2.6 Air Traffic Training Simulators

In order to enhance ATCO skill competence, Non Radar Simulators are being installed at the training centers for ab-intio training. ATC Centers at Mumbai, Delhi, Kolkata and Chennai are being provided with integrated ATC Simulators for periodic skill enhancement.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the progress being made by India in implementing new CNS Systems to increase efficiency of Air Traffic Management in line with the Master Plans and Global Plans.

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