



International Civil Aviation Organization

**The Second Meeting of the APANPIRG ATM Sub-Group
(ATM /SG/2)**

Hong Kong, China, 04-08 August 2014

Agenda Item 4: ATM Systems (Modernization, Seamless ATM, CNS, ATFM)

NEW HA NOI FIR AIR TRAFFIC CONTROL CENTER

(Presented by Viet Nam)

SUMMARY

This information paper presents an overview of the new air traffic control center in Ha Noi FIR in terms of project and new ATM automation system.

1. INTRODUCTION

1.1 Since 2007, Viet Nam has started to study and establish a project to build the new Ha Noi Air Traffic Center equipped with the modern technical system to overcome the limitations of the current system and infrastructure as well as providing services for approach control operations of Cat Bi airport and ATC services for airspace delegated by ACC Ho Chi Minh.

1.2 A new Ha Noi ATCC had been constructed at the new location and a new full-functioned ATM system has been installed.

2. DISCUSSION

Expected stages of starting the new in Ha Noi FIR

2.1 Ha Noi Air Traffic Control Center (ATCC) was built at a new location in the southeast of the Noi Bai International Airport. The distance from Noi Bai International Airport to ATCC Ha Noi is about 30km. Ha Noi ATCC was expected to be put into operation from November 2014 in 03 phases as follows:

- Phase 1 is expected to start from 11 December 2014: Ha Noi ATCC will be put into operation officially with the new facility and equipment systems. The responsibility to providing ATC services remains at the current status (as published in AIP Viet Nam).
- Phase 2 is expected to start from 02 April 2015: Ha Noi ATCC will take over the responsibility from Ho Chi Minh ACC to provide ATC services in sector 1 of Ho Chi Minh FIR.
- Phase 3 is expected to start from June 2015: Ha Noi ATCC will implement ATC operations in 4 sectors and support to provide ATC services of Ho Chi Minh ACC in contingency situations.

Overview of the new ATM automation system

2.2 The ATM automation system functions are as follows:

- Multi Sensor Tracking System (MSTS): The system is capable of processing and integrating flight plan data from radar stations PSR primary, secondary SSR (Mode A, C, S) and the ADS-B surveillance station into a target signal integrated with flight plan information and other information.
- Air Ground Data Processing (AGDP): Receive and process data serve not address communication between the pilot and controller by CPDLC data (Controller - Pilot Data Link Communication). The system allows controller to perform PDC (Pre-Departure Clearance) before take-off.
- Flight Data Processing (FDP): The system features integrated information on flight progress information obtained from multiple sources. This information is displayed on the monitor and contain these functions: to calculate the extrapolated position of aircraft, the ability to identify conflicts, automatic processing of secondary radar SSR code, AIDC messages etc and assist controller in the data link communication to adjacent facilities.
- Flight plan processing*, which includes the following functions:
 - Flight plan checking.
 - Database flight plan updated.
 - 4D trajectory calculation.
 - Aircraft position extrapolation.
 - Phase of flight plan shifted handled.
 - Database repetitive flight plan management (RPL - Repetitive Flight Plan)
 - Non-repetitive flight plan management.
 - Secondary radar codes management.
 - Flight Plan Conflict Probe (FPCP) or Medium Term Conflict Detection (MTCD).
 - Created and printed strip electronic.

*FPL, AIDC, NOTAM messages processing.

- Human Machine Interface (HMI): The purpose of the HMI is to provide information to controller from all available sources in the system (radar, ADS-B, flight planning) on a unified screen.
- Safety Net Monitoring and Alerting Processing (SNMAP): The system provides the following warning function:
 - Warning when receiving emergency codes (codes 7500, 7600, 7700) from the SSR equipment of aircraft or receiving the emergency message.
 - Short Term Conflict Alert (STCA).
 - Danger or Restricted Area Infringement Warning (DAIW).
 - Minimum Safe Altitude Warning (MSAW).
 - Route Adherence Monitoring (RAM).
 - Cleared Level Adherence Monitoring (CLAM).

- Medium Term Conflict Detection (MTCD) or Flight Plan Conflict Function alert (FPCF).
- MET information handled into the controller display.
- Arrival manager (AMAN).
- Recording: The information included:
 - The information and data that the system has received from sources such as: The target radar, ADS-B and messages that the system has received and sent.
 - The information related to the alert, warning system.
 - The actions of controller actions in the operating process.
- Playback: Playback function allows playback of previously recorded information on a number of simultaneous HMI position to analyze the incident happened. System performs time synchronization when reviewing videotapes and audiotapes related.
- Database management (DBM): This function allows offline editing data to provide the system.
- Control and monitoring system (CMS): This function allows the monitoring and management of the technical state of the whole system.
- SIM: The training system includes training positions that are similar to the controller position exploitation. These positions can operate in training mode and when needed, may be transferred to work as the executive positions.
- Test and Evaluation platform: This function finds the cause of the defect blocks being exploited and processes solutions; inspecting and evaluating new applications before officially put into operation.
- Redundancy for Ho Chi Minh ACC.

3. ACTION BY THE MEETING

The meeting is invited to:

- a) note the information in this paper and the efforts of Viet Nam to improve the new ATM automation system; and
- b) discuss any relevant matters as appropriate.

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