



International Civil Aviation Organization

**Third Meeting of the ICAO Asia/Pacific Seamless ATM Planning Group
(APSAPG/3)**

Chennai, India, 21-25 January 2013

Agenda Item 4: Asia/Pacific Seamless ATM Status and Strategies

THE RECENT ACTIVITIES OF CHINA IN PROMOTING THE SEAMLESS ATM

(Presented by China)

SUMMARY

This paper presents the recent activities of China in promoting the seamless ATM.

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*

Global Plan Initiatives:

GPI-1 Flexible use of airspace

GPI-5 RNAV and RNP (Performance-based navigation)

GPI-6 Air traffic flow management

GPI-7 Dynamic and flexible ATS route management

GPI-17 Data link applications

GPI-21 Navigation systems

GPI-22 Communication infrastructure

1. INTRODUCTION

1.1 Aviation System Block Update (ASBU), as the initial roadmap towards seamless ATM, is initiated by ICAO as a programmatic framework to meet the global needs for airspace interoperability while maintaining its focus on safety. China has studied the requirement and suggestions of the ASBU guidance material, and introduced its content to all the ATC departments nationwide via video-conferences. Currently, many technologies in the ASBU have been applied at workplace scenarios or under research study. China also has her own plan in many fields in the development of CNS/ATM system. On studying and absorbing the content of ASBU, China is trying to harmonize the development plan with the global seamless ATM environment.

1.2 This information paper presents the introduction of some recent activities of China in promoting the seamless ATM.

2. DISCUSSION

2.1 The introduction of the research and application of Block0 and Black1 of ASBU in China.

2.2 Performance Improvement Areas - Airport Operations

2.2.1 Currently, about 30% of the airport terminal area has implemented RNAV procedures based on the Baro-VNAV technology. According to the China PBN Implementation Road Map, all the ILS/DME runways will have RNP approach ability, and RNAV-1 or RNP-1 will be implemented in the terminal areas. In addition, the GBAS test bench has been established in Linzhi(Nyingchi) Milin airport, and the GBAS system that to be put into practical operation is going to be established in Tianjin.

2.2.2 Airport Surface Movement Surveillance and Collaborative Decision Making (CDM) System have been successfully applied in practice in some hub airports like Beijing, Shanghai, Guangzhou and Chengdu, etc. to improve the airport operation efficiency.

2.3 Performance Improvement Areas - Globally Interoperable Systems and Data

2.3.1 China has begun research in the field of Aeronautical Information Concept Model (AICM) 4.5 since 2011 and has established a test database. China has also begun her research in the field of AICM 5.1. However, China has not tried to create a database for AICM 5.1 since the definition of this model has not been fully completed in ICAO. The researchers and engineers in the Aeronautical Information Service department have started to develop eAIP, eTOD, eChart system, which helps to ensure that the integrity classifications of all aeronautical data are achieved in order to assist the smooth transition to AIM.

2.3.2 AIDC has been implemented in some air traffic control areas in China, including Beijing-Shanghai, Xi'an-Chengdu, Guangzhou-Zhanjiang, etc. Quite a number of ATS units have started the coordination with their neighboring units for the application of AIDC in support notification, coordination, and transfer of control, and are going to implement the AIDC-based ATC transfer in the near future. Currently, China has not established AIDC application with neighboring countries, but Shanghai ACC has already begun the coordination with neighboring ATS unit in Japan and consider the possibility of AIDC application.

2.3.3 Through the technical cooperation with FAA and Boeing, China has come to understand SWIM principles. Currently, CAAC is supporting a technology program to conduct the SWIM research activities. The future application will first be tested in Beijing Capital International Airport to enhance the data sharing between ATM, Beijing Airport and the operators.

2.4 Performance Improvement Areas - Optimum Capacity and Flexible Flights

2.4.1 In the recent years, China has already established a number of basic Air Traffic Flow Management Systems to meet the requirement of traffic prediction nationwide, but these systems are not complete and need further upgrade. In the future, a national-level ATFM system will become one of the important parts of China's fundamental ATM system. At present, a strategic-level ATFM system and a few regional tactical-level ATFM systems are under development.

2.4.2 Civil Aviation ADS-B Implementation Plan of China has been published in November 2012. At present, ADS-B has been utilized as a surveillance source in some Non-Radar Surveillance routes in West China and South China Sea. According to the implementation plan, in the recent few years, more than 600 ADS-B ground stations will be established. Until 2020, all the Air Route areas

and Terminal areas in China will be covered by ADS-B, CAAC will establish ADS-B surveillance capability in all airspace in China(including airport surface movement surveillance).

2.4.3 Temporary routes are being widely used in China. At present, China has more than 120 temporary routes, up to 30000 km. The coordination mechanism between military use and civil use of the routes has been established. The temporary routes are released for civil use once the approval is obtained from the military, which notably improve the flexibility of the route network and bring benefits to the ATM.

2.5 Performance Improvement Areas - Efficient Flight Path

2.5.1 China has officially started providing data link services on FANS-L888 routes in Western China since 2001. The ADS-C and CPDLC have been used along L888 and Y2 route for a few years. In 2012, ATMB, CAAC have just completed the upgrade for all the hardware and software of CPDLC/ADS-C workstations. In the recent years, China comes to realize the importance of conducting data link performance monitoring. ATMB, CAAC has started to study the GOLD manual and investigate the availability of relevant data requested by further data analysis in 2012, and plans to submit a working paper to report our recent progress in this field in 2013.

2.5.2 The deployment of Continuous Descent Operation (CDO) technology offers a flexible continuous descent that improves descent flight path and delivers major environmental benefits without any adverse effect on safety. CAAC is supporting a CDO Implementation Program to start focus on this technology with prospective study and have conducted a few technical interchanges with Boeing. Currently, China has not made substantial progress in this field, and relevant research is still underway.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matters as appropriate.

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