



International Civil Aviation Organization

WORKING PAPER

A39-WP/405
TE/180
15/9/16
(Information paper)
English and Chinese only¹

ASSEMBLY — 39TH SESSION

TECHNICAL COMMISSION

Agenda Item 36: Aviation safety and air navigation implementation support

CHINA'S IMPLEMENTATION OF ASIA/PACIFIC SEAMLESS ATM PLAN

(Presented by the People's Republic of China)

EXECUTIVE SUMMARY

This paper describes China's efforts to implement the ICAO and its Asia Pacific Office's Aviation System Block Upgrades and Asia/Pacific Seamless ATM Plan, and elaborates on the top-level arrangement, execution and implementation progress. In particular, it gives detailed information on the implementation objectives and performance of the 10 highest priorities identified in the Asia/Pacific Seamless ATM Plan.

<i>Strategic Objectives:</i>	This paper relates to the Safety and Air Navigation Capability and Efficiency Strategic Objectives.
<i>Financial implications:</i>	none
<i>References:</i>	ASIA/PACIFIC SEAMLESS ATM PLAN v1.0

¹ English and Chinese versions provided by the People's Republic of China.

1. INTRODUCTION

1.1 The Asia/Pacific Seamless ATM Plan is the implementation of ICAO's Aviation System Block Upgrades in the Asia Pacific region. It aims to achieve seamless ATM operations in the Asia Pacific region through the development and deployment of an ATM solution that can guarantee air transport safety and efficiency in this region. The plan provides a framework for transitioning to a seamless ATM environment, including the implementation objectives, action plan and priorities to meet the future demands on performance.

1.2 A resolution was adopted at the 25th meeting of the Asia Pacific Air Navigation Planning and Implementation Regional Group that required all member states or regions to start reporting the progress of the implementation of the Asia Pacific Seamless ATM Plan in own state or region via ICAO website since November 2014. The purpose of the move is to identify difficulties and problems in the implementation process through Regional Picture and help the Asia Pacific Air Navigation Planning and Implementation Regional Group and various working groups and task groups under it to improve their work.

1.3 In light of the requirements by ICAO and its Asia Pacific Office, CAAC is actively pushing ahead with the coordinated implementation of Aviation System Block Upgrades (ASBU) and Asia Pacific Seamless ATM Plan (APAC Seamless ATM) in China in accordance with the overall development plan for civil aviation in China, and works to ensure a smooth connection between the domestic plan and the two guiding documents above.

2. BASIC FACTS

2.1 In January 2015, CAAC Air Traffic Regulation Department issued the Development and Implementation Strategy for Aviation System Block Upgrades (ASBU) in China, which is CAAC's strategic document on Aviation System Block Upgrades used to guide China's ASBU efforts in the future, maintain consistency with ICAO's plan and implementation of the global navigation system, and ensure the interoperability of the air navigation system between China and other countries in the region.

2.2 In June 2015, CAAC Air Traffic Management Bureau issued the Notice on the All-around Promotion of the Implementation of Aviation System Block Upgrades Plan, and set up a multi-departmental and cross-disciplinary ASBU Implementation Working Committee mainly responsible for studying and deploying the implementation of ASBU in the ATM system, coordinating to resolve key or major problems in the implementation process, and overseeing the performance of the ASBU implementation plan. Besides, it also set up the ASBU Implementation Office in charge of coordinating the development of the ATM system's ASBU implementation plan, rounding up on the execution of the ATM system's implementation plan, overseeing the implementation of the working committee's decisions, and tracking the global ASBU implementation.

2.3 According to the requirement, China reported twice on the progress of the implementation of Asia Pacific Seamless ATM Plan in the first and third quarter, 2015. From February to May 2016, the ASBU Implementation Office conducted an extensive and meticulous survey nationwide of the 45 implementation objectives in the Asia Pacific Seamless ATM Plan to get more detailed knowledge on the implementation of the Aviation System Block Upgrades and Asia Pacific Seamless ATM Plan by various regions in the country.

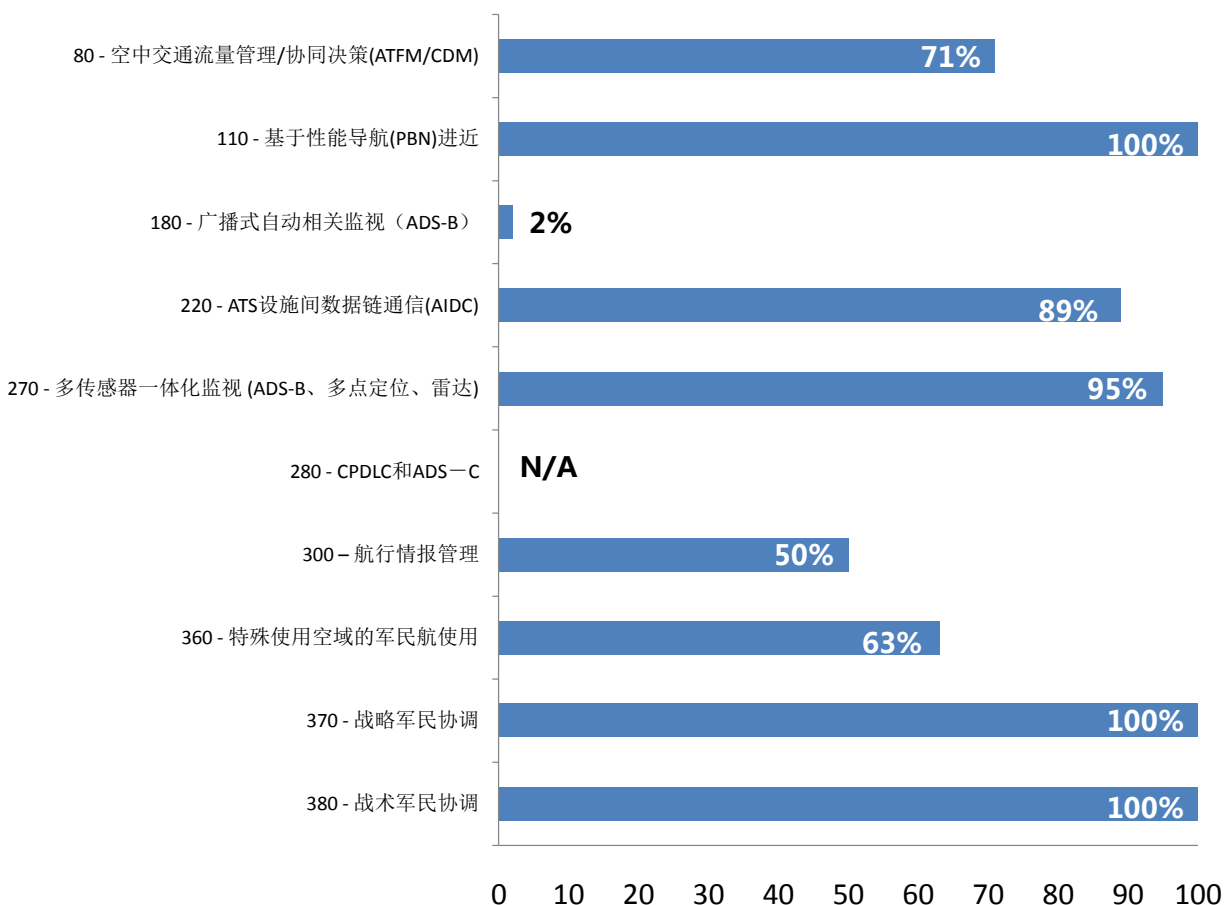
2.4 It's noteworthy that the Asia Pacific Seamless ATM Plan defines high-density international airports as those with 100,000 scheduled movements per annum or more, whose number in

China increased from 8 (excluding Hong Kong) in 2012 to 10 in 2016 (Beijing, Shanghai Hongqiao, Shanghai Pudong, Guangzhou, Shenzhen, Kunming, Chengdu, Xi'an, Chongqing, and Hangzhou). As a result, the progress indicator may show a decline relative to data previously reported.

3. IMPLEMENTATION PROGRESS

3.1 China expects to update its implementation progress on Asia Pacific Seamless ATM Plan on ICAO website in the second quarter of 2016.

3.2 The performance on the 10 highest-priority implementation objectives identified in the Asia Pacific Seamless ATM Plan is shown below:



3.2.1 80-Air Traffic Flow Management/Collaborative Decision-Making (ATFM/CDM)

Reference ASBU Module: B0-NOPS

Implementation Objective: High-density flight information regions that support the busiest traffic flows and major airports in Asia Pacific should implement the Collaborative Decision-Making (CDM)-enabled Air Traffic Flow Management (ATFM) to increase capacity. ASBU-related module: B0-NOPS

Performance: There are a total of 7 high-density flight information regions in China, 5 regional management centres within which have already adopted the traffic flow management system, i.e. flight information regions in Beijing, Shanghai, Guangzhou, Wuhan and Kunming.

3.2.2 110-Performance-based Navigation (PBN) Approach

Reference ASBU Module: B0-APTA

Implementation Objective: if applicable, all high-density airports with instrument runway service should be equipped with a) precision approach, or b) Approach Procedure with Vertical Guidance (APV), which can be RNP approach vertically guided by the barometric altimeter (Baro-VNAV) or Satellite Navigation Augmentation System (SBAS or GBAS); c) if APV is not applicable, the straight-line RNP approach with lateral navigation can be used.

Performance: There are a total of 10 high-density airports with instrument runways in China, and there are 10 airports capable of precision approach (ZBAA, ZSSS, ZSPD, ZGGG, ZGSZ, ZPPP, ZUUU, ZLXY, ZUCK, ZSHC), all of which are currently using the mixed-operations model without enforcing the PBN approach procedure.

3.2.3 180-Automatic Dependent Surveillance-Broadcast

Reference ASBU Module: B0-ASUR

Implementation Objectives: all Class S high-altitude controlled airspace and Class T airspace of high-density airports should be designated as exclusive or non-exclusive (if applicable) ADS-B airspace, and 1090ES datalinks and ADS-B capable of DO-260/260A and 260B are required to be operated and used.

Performance: there are only 5 routes in China that currently use ADS-B for (experimental) route operations, namely, H12, L642, M771, H15, and Z1. By the end of 2017, 310 ADS-B ground stations will have been built for ADS-B surveillance coverage of airspace nationwide.

3.2.4 220-ATS Interfacility Data Communications (AIDC)

Reference ASBU Module: B0-FICE

Implementation Objective: the ATM system should support the AIDC capability (version 3.0 and above) between ATC entities, where there's a handover of control, and should at least enable AIDC messages as follows: ABI, EST, ACP, TOC, and AOC.

Performance: there are 9 flight information regions in China, 8 of which now have at least one AIDC port between the regional management centre within the region and neighbouring regional management centres, i.e. flight information regions of Beijing, Shenyang, Shanghai, Guangzhou, Wuhan, Sanya, Kunming and Lanzhou. Urumqi flight information region plans to adopt AIDC in 2016.

3.2.5 270-Multi-sensor Integrated Surveillance (ADS-B, Multilateration, Radar)

Reference ASBU Module: regionally specific

Implementation Objective: ADS-B (with the adoption of 1090ES) or multilateration or radar surveillance system should cover all Class S airspace, if possible. Data derived from the ATIS surveillance system should be entered into the operational ATM aircraft scenario display system after being integrated.

Performance: most of airspace in China has realized the adoption and display of surveillance data in the ATM operations system through ADS-B, multilateration, or radar surveillance system. Only Hailaer and Aksu have no surveillance means and still use the procedure control.

3.2.6 280-Controller-Pilot Data Link Communications (CPDLC) and Automatic Dependent Surveillance-Contract (ADS-C)

Reference ASBU Module: B0-TBO

Implementation Objective: Automatic Dependent Surveillance-Contract (ADS-C) and Controller-Pilot Data Link Communications (CPDLC) should be provided in Class R airspace to support PBN-based separation.

Performance: There's no Class R airspace in China as defined in the airspace classification of Asia Pacific Seamless ATM Plan. There are CPDLC and ADS-C applications only on route L888 and some routes within the Urumqi flight information region.

3.2.7 300-Aeronautical Information Management

Reference ASBU Module: B0-DATM

Implementation Objective: With phase-1 and phase-2 implementation of the AIS-AIM (i.e. transition from aeronautical information service to aeronautical information management) roadmap, ATM system should be supported by the digitalized aeronautical information management (AIM) system.

Performance: China has completed elements P03, P04, P05 and P17 of the first phase, partially completed elements P08 and P11 of the second phase, as required in the AIS-AIM roadmap. Besides, elements P16, P18 and P20 of the third phase have also been completed.

3.2.8 360-Military-Civil Use of Special Use Airspace

Reference ASBU Module: B0-FRTO

Implementation Objective: a) Only by fully considering the impact on civil aviation traffic can the airspace management authority designate the special use airspace (SUA), and it should ensure the special use airspace: is used for purposes defined for it; is used on a regular basis; should be as small as possible in size, which also applies to the internal buffer zone within the special use airspace used to contain relevant activities; should function on the principle of flexible use of airspace (FUA) (level-1 ASBU priority) as appropriate; is only launched when used; and b) the special use airspace should be reviewed on a regular basis to ensure its classification, size, launch notification and launch period accurately reflect the activities that impact the airspace and the scope and time of such activities.

Performance: Due to the special airspace management system in China, there's only about 25% airspace available for use by civil aviation within the 9 flight information regions nationwide, and the remaining is controlled by the air force, portions of which are special use airspace (SUA) that provide qualified airspace use flexibility in the way of opening temporary routes. According to preliminary statistics, there

are 168 special use airspaces for the sake of the flexible use of airspace (FUA), accounting for 63% of the total.

3.2.9 370-Strategic Military-Civil Coordination

Reference ASBU Module: Regionally specific

Implementation Objective: All countries should set up a national-level military-civil aviation agency for coordination between the military and civil aviation.

Performance: China plans to establish the “Military-Civil Aviation Management In-Depth Integration and Development Leadership Group” in 2016 to boost the strategic coordination between military and civil aviation activities.

3.2.10 380-Tactical Military-Civil Coordination

Reference ASBU Module: Regionally specific

Implementation Objective: All countries should ensure a formal military-civil aviation liaison mechanism is established for tactical response.

Performance: China has already established separate formal military-civil aviation liaison mechanisms for tactical response in various regions.

4. **SESSION ACTION**

4.1 The session is advised to take note of the information provided in this document.

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