International Civil Aviation Organization

Twentieth Meeting of the ICAO Aeronautical Information Services – Aeronautical Information Management Implementation Task Force (AAITF/20)

Chitose, Japan, 9 – 13 June 2025

Agenda Item 4: AIS-AIM Updates

INTRODUCTION TO THE PRODUCTION AND QUALITY MANAGEMENT WORK OF AERONAUTICAL CHARTS IN CHINA

(Presented by CHINA)

SUMMARY

This paper presents the relevant work of China in aspects of aeronautical chart production, publication, and quality control, as well as the future plans.

1. INTRODUCTION

1.1 The Aeronautical Information Service Center(AISC) of ATMB.CAAC is responsible for the production and publication of aeronautical charts within China. Due to the continuous commissioning of new airports (about an average of 7 per year), frequent expansion projects such as the addition of new runways at airports, occasional large-scale adjustments to airspace and air routes, and the promotion of new operational technologies like the Point Merge System (PMS) and Continuous Climb Operations/Continuous Descent Operations (CCO/CDO), the quantity of aeronautical charts and the number of revisions have been growing at a high rate. As of now (April 17, 2025), there are about a total of 2.8 thousand aeronautical charts. In the whole year of 2024 (13 AIRAC amendments), the number of aeronautical chart revisions was approximately 5.3 thousand aeronautical charts. These relevant situations have put forward great requirements and challenges for the production and quality control of aeronautical charts in China.

1.2 In order to further enhance the safety margin and reduce the risks of using the wrong chart, misinterpreting the chart, or flying the wrong procedure, China has planned to gradually optimize and adjust the style of China's flight procedure charts starting from AIRAC AMDT Nr.3/25 (refer to AIP China AIC Nr. 04/25). It is expected that the redrawing of more than 10 thousand aeronautical charts for all airports will be completed within three years. The quantity of aeronautical charts in China and the workload of revisions will further increase.

1.3 The traditional manual production mode of aeronautical charts can no longer meet the operational needs. China has currently preliminarily completed the construction of an Aeronautical Information Management (AIM) production system based on Aeronautical Information Exchange Model (AIXM) 5.1 and is gradually transitioning towards digital operation. AISC continuously promotes research and optimization in the production of aeronautical charts and related quality control to meet relevant operational requirements and improve service quality.

2. DISCUSSION

2.1 **Data Quality Control.** AISC has launched a digitized raw data collection system to improve the quality of raw data. AISC has embedded process control modules and data verification rules during the data maintenance stage, it conducts data verification and validation in accordance with the requirements of aeronautical data quality, enhancing the ability to monitor data quality. In the future, an enhanced function of real-time presentation of key data (WYSIWYG, what you see is what you get) will be developed. This function will be used to assist personnel in developing situational awareness during the data collection and production process and to improve the ability of quality control.

2.2 **Chart Production Automation.** AISC has successfully implemented data-driven cartographic functions for chart production. The primary objective is to minimize manual intervention production processes, thereby reducing the risks associated with aeronautical chart data quality and enhancing production efficiency. Currently, En-route charts, Standard Arrival Charts (STAR), and Standard Departure Charts (SID) are fully generated in a data-driven fashion. The data-driven generation rate for Instrument Approach Charts has reached 90%, while that for Airport Charts and Parking Position Charts is around 10%. In the future, continuous research and development efforts will be made to further improve the automation level of relevant cartographic functions.

2.3 **Chart Quality Control.** AISC strictly implements the control of the aeronautical chart production process in accordance with the management procedures of the Quality and Safety Management System (QSMS) to ensure the quality of aeronautical chart production. AISC also has developed a function in the system that automatically checks the quality of aeronautical charts based on aeronautical data, which is used to assist in enhancing the ability of chart quality control. In the future, the AISC will continue to expand the associations of aeronautical chart data model based on the AIXM data model, further improving the system's ability and level to automatically verify aeronautical charts.

2.4 **Future Plans.** AISC will continue to promote the development of digitization of aeronautical charts, and ultimately achieve the real-time generation of aeronautical charts based on data at the application side, so as to meet the relevant requirements of future digital operations and improve operational efficiency.

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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