International Civil Aviation Organization

Twenty - First Meeting of the ICAO Aeronautical Information Services – Aeronautical Information Management Implementation Task Force (AAITF/21)

Bangkok, Thailand, 19 - 22 May 2026

Agenda Item 6: Any Other Business

APPLICATION RESEARCH AND EXPLORATION OF ARTIFICIAL INTELLIGENCE IN AERONAUTICAL INFORMATION

(Presented by China)

SUMMARY

This paper presents the relevant work of China's civil aviation in applying artificial intelligence, particularly Large Language Models (LLMs) in aeronautical information services. It introduces several application scenarios, including PIB abstract generation, AIP intelligent question-answering system, and NOTAM issuance assistance tools. The paper also outlines the challenges encountered and discusses potential future developments. The experience gained may provide useful reference for other States in the Asia/Pacific region.

1. INTRODUCTION

1.1 In recent years, China's civil aviation has been continuously promoting the digitalization of aeronautical information services. With the development of air traffic control, airline operations, and other related businesses, higher requirements have been put forward for the digitalization level, data quality and information timeliness of aeronautical information. Aeronautical information services are required to meet both high-quality standards of data integrity and rapid response to operational needs.

1.2 At the same time, artificial intelligence technologies have developed rapidly. In particular, Large Language Models (LLMs) have demonstrated strong capabilities in natural language understanding and text processing, and have been widely deployed in multiple industries.

1.3 Currently, the core aeronautical information products, such as Aeronautical Information Publication (AIP), AIP Amendment (AIP AMEND), AIP Supplement (AIP SUP) and Notice to Airmen (NOTAM), are still primarily text-based and designed for manual interpretation. The large amount of unstructured information may pose challenges for efficient interpretation and operational use by aeronautical information officers, air traffic controllers and flight crews.

1.4 In this context, China's civil aviation has conducted research and practical exploration on the application of LLMs in aeronautical information services, aiming to improve information processing efficiency and ensure flight operation safety.

2. DISCUSSION

2.1 **Pre-flight Information Bulletin (PIB) Abstract Generation.** A dedicated model has been developed to process NOTAMs and generate PIB abstracts. In addition to providing the complete PIB, the system produces a 3 to 5-page summary of the key safety- related information. This approach improves situational awareness for flight crews and reduces pre-flight briefing time, thereby enhancing operational efficiency.

2.2 **Development of AIP Intelligent Question-Answering System.** By leveraging the question-answering interaction capabilities of LLMs, China's civil aviation has attempted to develop an AIP intelligent question-answering system. This system can reduce the time spent by the crew and related personnel in consulting AIP documents. Through natural language queries, it helps users quickly obtain the required information and improves information retrieval efficiency.

2.3 **Development of NOTAM Issuance Assistance Tools.** LLM technology has been applied to support the NOTAM issuance process through several assistance functions, including recommendation for item E content based on historical NOTAM data, text intelligent verification by comparing with similar historical NOTAM, and format and content consistency checks. These functions help improve NOTAM standardization, reduce human-induced inconsistencies, and enhance the overall quality of NOTAM issuance.

2.4 **Challenges Faced and Future Development.** The application of artificial intelligence in aeronautical information services is still at an exploratory stage. At present, large language models have problems such as data hallucinations and unstable outputs, which bring challenges to practical business operation. Preliminary testing under controlled conditions indicates a high level of consistency; however, further validation is required for operational deployment. All AI-generated outputs are subject to verification to ensure compliance with ICAO provisions and to maintain operational safety. The CAAC is willing to collaborate with other States to further explore the safe, reliable and effective application of artificial intelligence in aeronautical information management.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper.

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