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TECHNICAL COMMISSION

Agenda Item 23: Global Aviation Safety and Air Navigation Plans

ACCELERATING GLOBAL GOVERNANCE OF THE INFORMATION INTEROPERABILITY FRAMEWORK

(Presented by China)

EXECUTIVE SUMMARY

This paper outlines China's progress in participating in the implementation of system wide information management (SWIM) in the Asia-Pacific Region, as well as its domestic approach and preliminary plans for implementing SWIM. It presents recommendations for enhancing global interoperability of SWIM to facilitate its worldwide implementation and improve information interoperability among member states and various regions.

<i>Strategic Goals:</i>	This paper relates to Strategic Goal of <i>No Country Left Behind</i> .
<i>Financial implications:</i>	No financial implications.
<i>References:</i>	Annex 3 — <i>Meteorological Service for International Air Navigation</i> Annex 10 — <i>Aeronautical Telecommunications</i> Annex 15 — <i>Aeronautical Information Service</i> Doc 8126, <i>Manual of Aeronautical Information Services</i> Doc 9965, <i>Manual on Flight and Flow — Information for a Collaborative Environment (FF-ICE)</i> Doc 10039, <i>Manual on the System-wide Information Management (SWIM) Concept</i> Doc 10203, <i>Manual on the System-wide Information Management (SWIM) Implementation</i>

¹ English and Chinese versions provided by China.

1. INTRODUCTION

1.1 According to Global Air Navigation Plan (GANP) and Aviation System Block Upgrades (ASBU), there is a growing consensus in global civil aviation operations that SWIM serves as the foundational support for AMET (Advanced Meteorological Services), DAIM (Digital Aeronautical Information Management), and FF-ICE (Flight-Flow Information for a Collaborative Environment), ultimately enabling Trajectory-Based Operations (TBO). SWIM is a critical technology and infrastructure for establishing an "information-centric operation" model in global civil aviation, playing a pivotal role in the industry's digital transformation.

1.2 The Civil Aviation Administration of China (CAAC) attaches great importance to the advancement and application of SWIM, actively engaging in regional cooperation while promoting domestic implementation. In regional cooperation, China participates in the Asia-Pacific SWIM Task Force (TF) and, as a key member of the SWIM Implementation Pioneer Group (SIPG), contributes to the development and validation of the Asia-Pacific regional SWIM prototype. China collaborates with other member states/administrations to refine the regional SWIM architecture and formulate technical standards, facilitating the local implementation of SWIM and building a collaborative information environment in the Asia-Pacific region. In domestic implementation, CAAC has established a nationwide IP-based network and integrated core business systems for flight planning, air traffic flow management, aeronautical information, and meteorological information. Trials of SWIM have been conducted in non-critical business areas. On this basis, we plan to accelerate the implementation of SWIM in order to provide high-quality aeronautical information services for stakeholders and further enhance safety and efficiency.

2. DISCUSSION

2.1 As a key component of GANP and ASBU, the global aviation information interoperability implementation framework consists of three levels: Global-Regional-National. ICAO sets global standards, various regions coordinate for regional collaboration, and member states adopt customized solutions based on their local environment and capabilities. The provision and application of SWIM information services illustrate this structure:

- a) Global Level: Based on Annex 3, Annex 15, Doc 8126, Doc 9965, and Doc 10203, a minimum common set of global SWIM information services has been preliminarily defined, including FF-ICE, AMET, and DAIM enabled by SWIM.
- b) Regional Level: The Asia-Pacific region is deliberating on the Asia-Pacific Common Information Service to establish a regional minimum common set of SWIM information services, primarily covering flight-flow, meteorological, aeronautical, and surveillance services.
- c) National Level: According to the preliminary implementation plan of China, SWIM information services will be rolled out in phases: starting with low-complexity scenarios (e.g., meteorological information publication, air traffic flow management measures), gradually progressing to core business scenarios (e.g., flight plan filing, digital NOTAMs), and ultimately expanding to all operational phases and scenarios.

2.2 This example highlights the multi-tiered architecture of the current global SWIM ecosystem, which is being implemented across nations and regions. Ensuring effective integration across

SWIM's domains and sub-domains is critical to avoiding fragmentation and reducing implementation costs. Additionally, global technical specifications are needed to safeguard the secure operation of legacy systems and protect existing infrastructure investments, ensuring a smooth transition between old and new information delivery mechanisms and lowering implementation costs.

2.3 To ensure global aviation information interoperability, the following measures are proposed to accelerate the governance of a unified information interoperability framework:

- a) Request relevant panels to clarify the minimum common sets of flight, meteorological and aeronautical information services at the global level, and refine roadmaps for developing global common information services.
- b) Establish version management and update mechanisms for information exchange models in relevant business areas to align with changes in minimum common sets of information services and ensure close linkage between technical standard evolution and operational requirements.
- c) Address interoperability of technical infrastructure across global and regional scales (e.g., global message routing and identity authentication standards) to minimize interoperability barriers caused by technological heterogeneity and reduce operational risks and costs.
- d) Strengthen communication and collaboration among regions and member states on information interoperability framework planning, technical roadmaps, and testing, to foster coordinated development pathways.
- e) Develop specific technical standards and guidelines for the transition from AMHS to SWIM, facilitating smooth implementation and safety while accelerating SWIM adoption.

3. CONCLUSION

3.1 The Assembly is requested to note the content presented in this paper.

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