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Agenda Item 24: Aviation Safety and Air Navigation Priority Initiatives

METEOROLOGICAL SERVICES IN SUPPORT OF AIR TRAFFIC FLOW MANAGEMENT

(Presented by China)

EXECUTIVE SUMMARY

This paper presents China's meteorological service capabilities to support the Asia-Pacific regional air traffic flow management (ATFM) cooperation. It introduces the meteorological information that China provides for ATFM, including the historical, real-time and forecast data for typhoons, thunderstorms, turbulence, icing and space weather across the region and on major routes. The purpose of this paper is, by outlining the need of meteorological (MET) service for Asia-Pacific regional ATFM cooperation and the current capabilities of MET service provision in China, to invite the Assembly to encourage aeronautical meteorological service providers to actively cooperate in regional hazardous weather coordination, as well as share meteorological data to better serve the regional ATFM collaboration mechanism.

<i>Strategic Goals:</i>	This working paper relates to Strategic Goal of <i>Every Flight is Safe and Secure</i> .
<i>Financial implications:</i>	The activities referred to in this paper are expected to be undertaken with the resources available in the 2026-2028 Regular Budget and/or from extra-budgetary contributions as guided by the ICAO Business Plan 2026-2028.
<i>References:</i>	Not applicable.

1. INTRODUCTION

1.1 Some Asia-Pacific air traffic flow management (ATFM) entities plan to carry out coordinated regional ATFM operations to better match air traffic flow with airspace capacity, ensure aviation safety, and improve operational efficiency in the region.

1.2 Meteorological services will serve as a critical component within the regional ATFM cooperation framework.

¹ English and Chinese versions provided by China.

1.3 China remains committed to improving aeronautical meteorological services in Asia, particularly in enhancing the issuance of harmonized Significant Meteorological Information (SIGMET). Since 2018, through the Asian Hazardous Weather Coordination Platform (<https://www.aamets.com>), China has organized regular coordination on hazardous weather among the meteorological watch offices (MWOs) in the region, while continuously collecting user feedback to improve and update the platform.

1.4 In the future, China will continue to cooperate with other meteorological service providers in the Asia-Pacific region through the Hazardous Weather Coordination Platform to support regional ATFM cooperation.

2. DISCUSSION

2.1 To support the operational coordination of the Asia-Pacific ATFM cooperation mechanism, China has developed the collaborative convective forecast product (CCFP) which has been integrated into its ATFM system, in addition to collaborating with neighboring States on SIGMET coordination to improve the consistency and harmonization of regional hazardous weather information.

2.2 To enhance the accuracy and effectiveness, the aviation meteorological center of ATMB, CAAC collaborates with seven regional MET centers of regional ATMBs, domestic ATFM units and airlines to develop CCFP, which has a positive effect on ATFM enhancement. Issued three times a day (22UTC, 06UTC, 10UTC), each CCFP provides convection forecasts for the next 2, 4, 6 and 8 hours, covering China's primary periods of convective weather activity.

2.3 During different ATFM phases in China which include strategic, pre-tactical and tactical phase, meteorological departments also provide other historical, real-time and forecast meteorological information to meet diverse ATFM needs, focusing on significant weather phenomena such as typhoons, thunderstorms, turbulence, icing and space weather.

2.4 Historical meteorological data, primarily comprising retrospective analyses of significant weather events (e.g., typhoons, thunderstorms) affecting aviation operations over a defined historical period, is used to evaluate meteorological service effectiveness in ATFM and support the optimization of the collaboration mechanism.

2.5 The main real-time and forecast meteorological information provided for China's ATFM typically includes:

- a) Typhoon evolution - projected tracks, intensity changes, and affected areas for both existing and developing systems;
- b) Convective weather - predicted timing, coverage areas, and associated cloud-top heights of thunderstorms;
- c) In-flight hazards - forecast intensity and spatial distribution of turbulence and icing conditions; and
- d) Space weather impacts - expected severe space weather events with potential aviation operational effects.

2.6 Regional meteorological information sharing is crucial for strengthening ATFM collaboration.