

*International Civil Aviation Organization*

## INFORMATION PAPER (IP/10)



ICAO

ICAO ASIA AND PACIFIC (APAC)  
THIRTIETH MEETING OF THE METEOROLOGY  
SUB-GROUP (MET SG/30)

Bangkok, Thailand, 20 - 24 July 2026

**Agenda Item 8: Research, Development and Other Initiatives****METEOROLOGICAL SERVICES IN SUPPORT OF  
LOW-ALTITUDE ECONOMY DEVELOPMENT**

(Presented by Hong Kong, China)

**SUMMARY**

This paper presents Hong Kong Observatory's progress in developing meteorological services to support Low-Altitude Economy (LAE) operations enabled by Advanced Air Mobility (AAM). It outlines the importance of Sandboxes, which provide important and first-hand experience for the development of meteorological service support. The paper also highlights the need for the SWIM concept, MET/ATM/UTM integration and regional collaboration from the MET service perspective to ensure safe and efficient LAE operations across all altitudes.

**1. INTRODUCTION**

1.1 At its 41st and 42nd Sessions, the ICAO Assembly recognised the need for globally harmonised frameworks to support Advanced Air Mobility (AAM) development. The ICAO Secretariat subsequently established the Advanced Air Mobility Study Group to address rapid technological advancements and their potential impact on the aviation ecosystem.

1.2 Since 2024, Hong Kong, China has been developing the Low-Altitude Economy (LAE) to unlock low-altitude airspace as a new driver for economic growth. Managing this airspace with “safety and efficiency” in mind requires establishing an effective, intelligent, and digitalised infrastructure, including meteorological services.

1.3 The Hong Kong Observatory (HKO), as the designated meteorological authority, is planning to provide comprehensive low-altitude airspace meteorological monitoring and forecasting services. The meteorological service to be provided will align with the National 15th Five-Year Plan.

**2. DISCUSSION**Sandboxes

2.1 To steer LAE initiatives, the Working Group on Developing Low-Altitude Economy was established in Hong Kong, China in 2024. The Government launched the Regulatory Sandbox and Sandbox X (“Sandbox”) in 2025 to foster innovation and facilitate testing of potential application scenarios.

### Meteorological Service Support

2.2 HKO collaborates with venue partners and Sandbox participants to install meteorological equipment for monitoring low-altitude airspace in key testing areas, including landing/take-off zones and flight routes. A prototype web platform for meteorological services has been developed to support LAE operations by integrating weather observations and forecasts (winds, precipitation, etc.), enabling continuous weather risk assessment before and during low-altitude flights.

2.3 The prototype platform began testing in mid-2025 and currently has over 40 users, covering government drone teams, Sandbox applicants and LAE stakeholders. It continues to be optimised through an agile development approach, flexibly adapting to specific MET requirements of various LAE projects, e.g., cross-boundary flights and unmanned aircraft traffic management (UTM) systems.

### SWIM Concept

2.4 LAE operators span diverse applications across a wide range of drone manufacturers, models, and requirements—unlike traditional commercial aircraft. Different weather data formats are used by different in-house systems of LAE operators. With participating in the “Sandbox” projects, HKO understands the importance of applying SWIM concepts as guiding frameworks for developing standards, infrastructure, and governance relating to meteorological information for LAE. An interoperable environment is essential to address the thousands of unique demands from the LAE sector and reduce development effort.

### MET/ATM/UTM Integration

2.5 ATM/UTM integration is a critical issue that will become increasingly necessary alongside the expected rapid development of LAE. To ensure consistency and future seamless integration across civil aviation, general aviation, and LAE operations, HKO advocates harmonising MET support with both ATM and UTM systems.

### Regional Collaboration

2.6 Similar discussions were raised by Hong Kong, China at ICAO APAC MET/R WG/15 and SWIM TF/11, gaining considerable attention from participants in various countries and territories who encounter similar challenges regarding the lack of a common 'language' for meteorological information in AAM/LAE. Given LAE's distributed, diversified, and highly flexible nature, a boundaryless sky demands harmonised and interoperable support across all altitudes and use cases, yet too many restrictive regulations / standards may inhibit the full potential. Aeronautical MET service providers should prepare for this rapid development, start preparations early, coordinate with stakeholders, and develop effective collaborative and discussion channels with the LAE industry.

## **3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information contained in this paper.; and
- b) share information and best practices on meteorological services for AAM/LAE.

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