INTERNATIONAL CIVIL AVIATION ORGANIZATION

First Meeting of the Africa - Indian Ocean Aviation System Planning and Implementation Group (AASPG/2)

Livingstone, Zambia, 2 - 6 November 2026

Agenda Item 4: Implementation of air navigation goals, targets and indicators, including the priorities set in the regional air navigation plan

Accelerating the Implementation of Digital Aeronautical Meteorological Information Exchange in the AFI region

(Presented by the International Air Transport Association, IATA)

SUMMARY
This Working Paper highlights the importance of digital aeronautical meteorological (MET) information exchange as an enabler of safe, efficient and sustainable air navigation operations within the AFI region and beyond. While progress is being made globally towards the digitalisation of aeronautical MET information, implementation across the AFI region remains uneven. As aviation continues its transition towards increasingly data-centric operational environments, the availability of machine-readable digital aeronautical MET information will become essential for achieving regional aviation safety and air navigation performance objectives. The Paper invites the AASPG to recognise digital aeronautical MET information exchange as a critical component of regional air navigation modernisation and to encourage coordinated implementation activities throughout the AFI region. Action by the Meeting is in paragraph 4.

References:

- Global Air Navigation Plan (GANP) (Doc 9750)
- ICAO Annex 3, *Meteorological Service for International Air Navigation*
- Procedures for Air Navigation- Meteorology (PANS-MET- ICAO Doc 10157)
- Manual on System Wide Information Management (SWIM) Concept (ICAO Doc 10039)
- Manual on SWIM Implementation (ICAO Doc 10203)
- Report of the IIM/SG9 Meeting

Strategic Goals	*A - Every Flight is Safe and Secure* *C - Aviation Delivers Seamless, Accessible, and Reliable Mobility for All*

1. INTRODUCTION

1.1 Aeronautical meteorological (MET) services are fundamental to the safety, regularity, efficiency and predictability of international air transport operations worldwide. Airline operators and other aviation users rely on quality-assured, cost-effective aeronautical

MET data and information, products and services for all phases of flight, including for strategic planning, flight dispatch, tactical operational decision-making, air traffic flow management and contingency management.

1.2 Consistent with ICAO's Global Air Navigation Plan (GANP) (Doc 9750) and its aviation system block upgrades (ASBU) methodology, the aviation industry is undergoing a progressive transition from legacy text-based information exchange towards contemporary digitally-based information services that support greater automation, interoperability and system-wide information sharing. Against this backdrop, and consistent with recent and forthcoming amendments to ICAO Annex 3, *Meteorological Service for International Air Navigation* and *Procedures for Air Navigation Services – Meteorology* (PANS-MET) (ICAO Doc 10157), aeronautical MET services are evolving from traditional text-based and graphical products towards machine-readable digital information that is capable of direct ingestion into and integration with operational systems, including flight management systems of airlines.

1.3 The implementation of digital aeronautical MET information exchange will support multiple objectives, including enhanced situational awareness, improved decision-making and increased operational efficiency. Also, the evolution towards information-sharing environments will provide more optimal support to advanced air navigation concepts such as trajectory-based operations (TBO).

1.4 As the AFI region advances the implementation of regional aviation safety and air navigation priorities, the availability and interoperability of digital aeronautical MET information should be viewed as a key enabler for achieving regional performance objectives.

2. DISCUSSION

2.1 Operational Need

2.1.1 Airlines increasingly employ sophisticated operational systems that optimise flight planning, monitor operational risks, support flight dispatch functions and facilitate collaborative operational decision-making. These systems derive maximum benefit when aeronautical MET information is available in structured, machine-readable formats that can be readily integrated with other operational data sources, such as aeronautical information and flight-and-flow information.

2.1.2 Digital aeronautical MET information provides opportunities to:

a) improve the accuracy and timeliness of operational decision-making;

b) reduce manual data entry and interpretation;

c) improve consistency of information supplied and used across organisational and national boundaries;

d) support the integration of aeronautical MET information into future, digital-ready air traffic management environments; and

e) improve utilisation of aeronautical MET information within airline operational control systems.

2.1.3 As States in the AFI region progressively implement aviation system improvements based on identified regional needs and aligned with GANP/ASBU, the ability to exchange

aeronautical MET information digitally will become increasingly important for maintaining interoperability across aviation stakeholders, both within and beyond the AFI region.

2.2 Regional Implementation Challenges

2.2.1 It is recognised that the AFI region encompasses States with varying levels of operational capability, infrastructure maturity and implementation readiness. While progress is being made in many areas of aviation modernisation, the implementation of digital aeronautical MET information exchange capabilities remains uneven.

2.2.2 At the ninth meeting of the AASPG Infrastructure and Information Management Subgroup Meeting (IIM/SG/9), held in Dakar, Senegal,j from 3 to 7 August 2026, States and industry were urged to "*follow implementation plans, strengthen SWIM/IWXXM readiness, participate in regional and global planning, and prepare for the transition to future MET information services*". [IIM/SG/9 report, §3.5.35 refers.]

2.2.3 Implementation challenges within States often arise from differing levels of technical readiness, resource and capacity constraints (including insufficient or sustainable funds), competing national implementation priorities, limited regional coordination mechanisms, varying levels of awareness of operational benefits, and challenges associated with achieving interoperability across technical domains such as MET, AIS and CNS.

2.2.4 Such challenges are, of course, not unique to aeronautical MET; they are representative of broader implementation issues that frequently arise during the deployment of aviation system improvements. Consequently, regional coordination and collaboration can demonstrably assist States, their service providers and aviation users in progressing implementation activities

2.3 Benefits to Regional Air Navigation Performance

2.3.1 Digital aeronautical MET information exchange contributes directly to the objectives of performance-based aviation systems by improving the quality, reliability, accessibility and usability of aeronautical MET information experienced by aviation users, including airlines. Moreover, potential benefits include:

a) enhanced flight safety through improved access to operationally relevant MET and other environmental information such as volcanic ash and space weather;

b) improved flight efficiency through optimisation of routes and operational procedures;

c) greater consistency in information available to airspace users operating across multiple flight information regions (FIR);

d) improved support for operational collaborative decision-making (CDM);

e) enhanced resilience during significant or high-impact weather events, including those that may be linked to climate change; and

f) improved integration of aeronautical MET information within other information-sharing environments.

2.3.2 From an IATA perspective, achieving these benefits requires coordinated action among State civil aviation authorities, air navigation service providers (ANSP), aeronautical MET service providers, airlines, airports and other relevant aviation stakeholders,

including commercial suppliers of flight management systems. Implementation activities undertaken in isolation may not (likely will not) realise the full benefits of digital information exchange, both regionally and inter-regionally.

2.4 Opportunities for regional collaboration

2.4.1 The existence of the AASPG and its contributory bodies, specifically IIM/SG, provides an opportunity to facilitate regional awareness, coordination and monitoring of implementation progress associated with digital aeronautical MET information exchange.

2.4.2 Without creating significant additional reporting burdens, existing regional coordination mechanisms could (and should) better support the identification of common implementation challenges, exchange of best practices and lessons learned, promotion of interoperable implementation approaches, monitoring of regional implementation progress, and collaboration between aviation stakeholders involved in air navigation modernisation initiatives.

2.4.3 Such activities would support the broader objectives of regional aviation safety and air navigation planning while also help to ensure that aeronautical MET information services continue to evolve in line with aviation user requirements, including those of IATA and its member airlines.

3. CONCLUSION

3.1 Digital aeronautical MET information exchange represents an important enabler of future aviation operations and supports the achievement of regional aviation safety and air navigation performance objectives.

3.2 While implementation maturity varies across the AFI region, opportunities exist to strengthen regional coordination, share implementation experience and promote harmonised approaches that improve interoperability among aviation stakeholders.

3.3 IATA believes that continued regional attention to digital aeronautical MET information exchange will contribute positively to the safety, efficiency, sustainability and resilience of aviation operations throughout the AFI region and support broader regional aviation modernisation initiatives.

4 ACTION BY THE MEETING

4.1 The meeting is invited to:

a) recognise digital aeronautical MET information exchange as a key enabler of regional aviation safety and air navigation performance objectives;

b) encourage States of the AFI region plus relevant international organisations and regional bodies to continue implementation activities supporting the transition towards digital aeronautical MET information exchange;

c) invite relevant AASPG contributory bodies, such as IIM/SG, to identify common implementation challenges affecting interoperability and information exchange across the region and actions to overcome the challenges;

d) encourage the sharing of implementation experiences and best practices among States and stakeholders; and

e) support continued collaboration among State civil aviation authorities, air navigation service providers, aeronautical MET service providers, airlines, airports and other aviation stakeholders in advancing digital aeronautical MET information exchange capabilities within the AFI region.

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