International Civil Aviation Organization

MIDANPIRG/22 & RASG-MID/12 Meetings

(Doha, Qatar, 4 – 8 May 2025)

Agenda Item 5.3: ANS (AIM, PBN, AGA-AOP, ATM-SAR, CNS and MET)

Harmonizing Regional Air Navigation

(Presented by IATA)

SUMMARY

Cooperation and collaboration between the various ATM value chain participants is a key success factor in achieving a globally harmonized, interoperable and efficient Air Navigation System that supports the expected demand on an air traffic system with finite capacity

The ICAO global approach with the GANP and agreed ASBU timelines, urges ANSPs, Member States and international organizations to work together to make the optimum use of new and existing technologies to achieve the desired operational improvements, moving all stakeholders, in unison, towards a seamless airspace. Deployment timelines across regions, and even amongst States in the same region are, however, not harmonised with disparities across various areas.

This paper identifies airspace user priorities and the IATA position on these and the need for regional harmonised deployment these.

Action by the meeting is at paragraph 3.

REFERENCE

- **ICAO GANP**
- **IATA URATS**

1. INTRODUCTION

1.1 With expected double digit traffic growth, long haul flights, and new generation aircraft, Air Traffic Management (ATM) needs to be efficient, globally harmonized and interoperable to achieve safe, on-time, predictable operations with a low carbon footprint.

1.2 The International Civil Aviation Organization (ICAO) approved Global Air Navigation Plan - Doc 9750 (pdf) serves as a global policy, establishing clear linkages between technological developments and operational benefits.

1.3 Currently incompatibilities in operational concepts, technologies, aircraft equipage, and performance requirements create unsustainable business cases for airlines considering investment decisions.

1.4 Technological solutions must be derived in collaboration amongst all stakeholders to ensure functional compatibility with airborne systems and timeliness of implementation.

1.5 Cooperation and collaboration between the various ATM value chain participants is a key success factor in achieving a globally harmonized, interoperable and efficient Air Navigation System that supports the expect demand on an air traffic system with finite capacity.

2. DISCUSSION

2.1 The desired current and future ATM operational environment should allow for aircraft to operate safely and efficiently with a minimum number of avionics and performance changes, across different airspaces and across all regions.

2.2 Traditionally, air traffic control (ATC) systems have been developed and deployed individually by States/ANSP's mainly focusing on their own airspace requirements, creating distinct levels of service and capability across various regions.

2.3 The ICAO global approach with the GANP and agreed ASBU timelines, urges ANSPs, Member States and international organizations to work together to make the optimum use of new and existing technologies to achieve the desired operational improvements, moving all stakeholders, in unison, towards a seamless airspace.

2.4 Deployment timelines across regions, and even amongst States in the same region are, however, not harmonised with disparities across areas such as the below that are expected to bring real benefits to the overall Air Navigation System:

2.4.1 Air Traffic Flow Management (ATFM) and flexible use of airspace (FUA),

2.4.2 Flight & Flow in a collaborative environment (FF-ICE)

2.4.3 Trajectory based operations (TBO)

2.4.4 The transition from AIS to AIM

2.4.5 The deployment of SWIM architecture and services

2.4.6 The transition to digital, IP based ground/ground communications networks

2.4.7 Etc.

2.5 The MID region is not immune to these disparities, with some States having made fast progress in the deployment and implementation of modern technologies and services, whilst others remain constrained with legacy systems.

2.6 Currently the variances in technologies, aircraft equipage, and performance requirements across regions, and even States, significantly reduces the expected operational benefits and value add of investments made and creates unsustainable business cases for airlines considering further investment decisions.

2.7 The IATA User Requirements for Air Traffic Services (URATS) Volume 1 and Volume 2 provides guidance for airlines, States and ANSPs when determining infrastructure requirements and capabilities for air navigation services. It complements the ICAO GANP while stating IATA's positions on the various communication, navigation and surveillance technologies and operational concepts.

2.8 The following priorities and positions are highlighted:

2.8.1 Civil/Military ATM Cooperation (CMAC) – IATA Supports an increased CMAC as enabler for an efficient and predictable use of the airspace, where limited interoperability between civil and military systems exists, improving communication and cooperation processes.

2.8.2 Flexible Use of Airspace (FUA) – IATA supports the FUA concept as the enabler for a more efficient and predictable use of the airspace with the military, where full interoperability between civil and military systems is implemented supported by effective communication and cooperation processes. FUA should be considered as the final stage of CMAC.

2.8.3 Direct Routing Operations (DRO) - Safe and efficient DRO wherever applicable and beneficial are supported by IATA, reinforcing that no additional requirement for a specific navigation performance on direct segments should be required and that RNAV 5 specifications would be suitable

for DRO within a specific volume of airspace.

2.8.4 Free Route Airspace (FRA) - Support the FRA concept which will move from current route network structures to free route airspace availability, offering significant opportunities to AU. Where the FRA is implemented, these improvements should provide considerable savings and traffic predictability thanks to more stable trajectories. ANSPs should expedite capabilities within ATM automation systems to enable safe operations in FRAs. These capabilities include, for example, route adherence monitoring and conflict detection functions. Considering regional specificities, cross-border FRA with the maximum freedom of evolution should be pursued as the goal to provide optimum flight efficiency.

2.8.5 Air Traffic Flow Management (ATFM) - Support and promote the implementation of basic ATFM functionalities and procedures by States and ANSPs. For ANSPs having capacity balancing issues, there are a number of tools and systems already available on the market, as well as best practices contained within guidance materials. IATA also supports and promotes the fuel burn reduction benefits received from mature Long-Range Air Traffic Management (LR-ATFM) programs to improve the demand-capacity management by an extension of the current time horizon of regional ATFM implementations. Thus, major traffic flows could be efficiently managed across ATM regions with a long-range situational awareness (more transparent traffic management) enabled by an early provision of target times over a waypoint.

2.8.6 Aeronautical Information Management (AIM) - Supports the effective implementation of ICAO defined Aeronautical Information Management with the following minimum main requirements:

2.8.7 Implementation of an effective certified quality management system for aeronautical information managers and service providers ensuring continuous review and improvement.

2.8.8 Implementation of robust aeronautical information management regulation that supports and enables aeronautical information originators, managers and users in the origination, production, supply, and access to data.

2.8.9 Implementation of effective aeronautical information management processes across the aeronautical information data chain ensuring timely and equitable access to aeronautical information that conforms to defined data quality attributes and user requirements.

2.8.10 Implementation of globally harmonised standardised templates/formats for aeronautical information products and services.

2.8.11 Implementation of electronic data management and exchange based on the defined Aeronautical Information Exchange Model (AIXM).

2.8.12 Advocates for the implementation of globally agreed governance principles and communication infrastructure (see URATS Vol 2 CNS).

2.8.13 Implementation of a transition AIS/AIM process characterised by the increasing application of the SWIM interoperable services.

2.8.14 Full cost recovery for Aeronautical Information should be facilitated through Air Navigation Charges and AU should not carry any additional separate costs associated to accessing required aeronautical information.

2.9 The below tables indicate the IATA position on CNS technology deployment

2.9.1 Surveillance

Technology / Application	Support	Maintain	Neutral	Do not support
5G/6G	X See Note 1			
ADS-B IN	X See Note 2			
ADS-B OUT	X			
ADS-C	X			
MLAT			X	
PAR				X
PSR				X See Note 3
Space-based ADS-B	X See Note 4			
SSR Mode A/C		X		
SSR Mode S	X			
TIS-B	X			

2.9.2 Communication

Technology / Application	Support	Maintain	Neutral	Do not support
LTE/5G/6G	X See Note 3			
AeroMACS				X
AFTN		X		
AIDC	X			
AMHS		X		
ATN IPS	X			
CPDLC	X			
Digital-ATIS	X			
DCL	X			
HF Voice	X See Note 1			
HFDL		X See Note 2		
Inmarsat Global Xpress	X			
Iridium CERTUS			X	
IRIS			X	
LDACS	Supported by a limited number of airlines pending outcome of the certification process			
SATVOICE	X			
Space-based VHF Comm			X	
SWIM	X			
VDL Mode 0/ACARS		X		
VDL Mode 2		X		
VDL Mode 3				X
VDL Mode 4				X
VHF Voice	X			
VSAT	X			

2.9.3 Navigation

Technology / Application	Support	Maintain	Neutral	Do not support
ABAS	X			
DFMC	X See Note 1			
DME		X See Note 2		
GBAS	X			
GNSS	X			
ILS	X			
MLS				X
NDB				X See Note 3
PBN	X			
SBAS	See Note 4			
TACAN				X
VOR		X See Note 2		
WGS-84	X			

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.

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