International Civil Aviation Organization

MIDANPIRG Airspace Management Working Group

First Meeting (ASM WG/1)
(Doha, Qatar, 1 – 2 October 2024)

Agenda Item 5: ASM Challenges and Enhancements

ENHANCING MID AIRSPACE OPERATIONS

(Presented by IATA)

SUMMARY

This paper highlights the need for modernizing airspace management through the implementation of Civil – Military ATM Cooperation (CMAC), Flexible Use of Airspace (FUA), Direct Route Operations (DRO), User Preferred Routes (UPR) and Free Route Airspace (FRA). These concepts will significantly enhance the efficiency of airspace operations, reduce environmental impact, and support more flexible and optimized flight paths.

Action by the meeting is at paragraph 3.

1. INTRODUCTION

1.1 The evolution of air traffic management is essential for addressing the increasing demands for airspace efficiency and safety in an ever-changing aviation landscape. This working paper explores established approaches that significantly enhance the utilization of airspace, thereby improving operational efficiency and minimizing environmental impact while accommodating diverse flight trajectories and optimizing airspace access for all users.

2. DISCUSSION

2.1 In light of this, several established concepts are essential for enhancing airspace efficiency and ensuring seamless operations within the air traffic management framework.

2.2 Civil-Military ATM Cooperation (CMAC) plays a vital role in ensuring safe and harmonious international aviation operations. It facilitates a common regulatory framework and air traffic services to accommodate both civil and military airspace requirements. When military operations necessitate airspace use, effective coordination and planning are essential to avoid unnecessary segregation or restrictions while maintaining safety.

2.3 To support this, ATM systems must be integrated and globally interoperable, meeting established safety standards throughout all flight phases. providing for optimum economic operations, environmentally sustainable, and meeting national security requirements. Furthermore, CMAC acts as a key enabler of Flexible Use of Airspace (FUA), facilitating the effective sharing of limited airspace resources.

2.4 IATA support an increased Civil/Military ATM Cooperation (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.

2.5 Flexible Use of Airspace (FUA) is a concept that promotes the shared use of airspace between civil and military operations, reflecting a more holistic approach to airspace management. By enabling the flexible allocation of airspace based on real-time usage rather than rigid national boundaries, FUA enhances the efficiency and predictability of airspace utilization.

2.6 The FUA concept is recognized as essential for achieving optimal airspace utilization, emphasizing the importance of seamless interoperability between civil and military systems. Effective communication and cooperation processes are critical to realizing the full potential of FUA, ensuring that the needs of both military and civil aviation are adequately addressed.

2.7 IATA support 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 Direct Routing Operations (DRO) consist of a series of direct routes between specific waypoints that can be flight planned (not tactical). DRO is an extension of the concept of published en-route Directs across the flight information region (FIR). Within the airspace where DRO is applied, flights remain subject to ATC, and pilots will adhere to the relevant publications for each State as stipulated in the relevant documents.

2.9 IATA support safe and efficient DRO wherever applicable and beneficial, IATA reinforces 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.

2.10 Free Route Airspace (FRA) is a key module of the ASBU framework, specifically module B1-FRTO, and is part of the MID ASBU plan. FRA allows operators to plan routes from defined entry to exit points, enhancing operational flexibility and efficiency. Airlines can achieve significant reductions in fuel consumption and emissions through this approach.

2.11 User Preferred Routes (UPR) represent an innovative approach to flight planning, allowing operators to select routes based on real-time operational needs. This concept has been successfully implemented in the African region, with 18 States adopting UPR. As these States become comfortable with UPR, there is significant potential for transitioning this practice into Free Route Airspace (FRA).

2.12 IATA support UPR, which is seen as the way to allow the AU gain more control over its trajectory. UPR needs to be supported by upskilled ATC personnel and an ATM System capable of handling complex flows and route conflictions. The ATM System should also be fitted with enhanced tracking and monitoring capability.

2.13 IATA 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.

2.14 The development of ATM-CNS infrastructure across the MID region positions the industry to transition to improved safety and efficiency in air traffic management. Implementing FRA in a phased and coordinated manner will ensure a straightforward, safe, and environmentally friendly approach that maximizes operational effectiveness while addressing increasing air traffic demands.

2.15 A key long-term objective would be to facilitate the implementation of cross-border FRA, maximizing flight efficiency and operational flexibility.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) advocate for enhanced civil-military coordination and cooperation for the seamless application of FUA in the MID Region;

b) encourage States and ANSPs to collaborate closely on cross-border FRA implementation and improve ATM system capabilities;

c) urge MID States to implement Direct Route Operation (DRO) as soon as possible, as a commitment to the initial steps towards achieving net zero CO_2 emissions by 2050; and

d) propose specific city pairs for the implementation of Direct Route Operations (DRO) in accordance with ASBU Block 0/1 and work collaboratively on establishing these routes.

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