



International Civil Aviation Organization

MIDANPIRG/18 and RASG-MID/8 Virtual Meeting

(15-22 February 2021)

Agenda Item 5: 5.2.6 Specific Air Navigation issues

ESTABLISHMENT OF A REGIONAL UTM TASK FORCE

(Presented by United Arab Emirates)

SUMMARY

This paper presents the need for a regional task force to collaborate in response to the rapid growth of the use of Remotely-piloted aircraft system (RPAS). Action by the meeting is at paragraph 3.1.

REFERENCES

- [1] ICAO Guidance - UTM - A Common Framework with Core Boundaries for Global Harmonisation - Edition 3 V1.2
- [2] Global Air Navigation Plan (GANP) - Sixth Edition, 2019
- [3] Asia/Pacific Regional Guidance for the regulation and safe operations of Unmanned Aircraft Systems within National Airspace, 2019

1. INTRODUCTION

1.1 The emergence of Remotely-piloted aircraft system (RPAS) with new applications and new aircraft operations is changing the way airspace is configured and managed. Unmanned Traffic Management (UTM) is now a critical component to enabling these new aerial vehicles to safely enter and share the airspace.

1.2 Due to the use of advanced technologies, these vehicles make use of new types of flight profiles and capabilities and generally operate at much lower altitudes, which current airspace and air traffic management systems were not designed to accommodate.

1.3 It is therefore required to address these shortfalls in design and system performance as well as to enhance structures and systems to support and manage the new demands for airspace monitoring and management by means of an Unmanned Traffic Management (UTM) System.

1.4 A UTM is a networked collection of systems and services that communicate together based on common rules. Rather than relying on centralised control, UTM frameworks are expected to use the principle of distributed authority, which opens up the system to more service providers providing flexibility and futureproofing as the market evolves and adapts to needs of the industry. It further should be developed

utilising Performance Based Standards which will allow a technology independent system able to adapt to future industry development requirements.

1.5 The UAE recognises the increased demand for UTM in the region. This increase in demand is leading to an increase in airspace infringements, increased unauthorised RPAS operations which are introducing an increased safety and security hazard noticeable across the region and worldwide.

1.6 To support a coordinated and appropriate development of the UTM capabilities of States, collaboration of the State entities on a regional level is deemed to be essential.

2. DISCUSSION

2.1 The use of Remotely-piloted aircraft system (RPAS) is growing rapidly, and the Middle East is no exception. While this is at present dominated by military and defence segment, RPAS are finding increasing commercial applications in various domains including real-time monitoring, providing wireless coverage, remote sensing, search and rescue, civil infrastructure inspection, delivery of goods, security and surveillance, precision agriculture, etc.

2.2 The rapid growth in the usage of RPAS results from advancements in technology and Artificial Intelligence and reductions in size, risks, and costs that remotely operated/autonomous systems offer. With many new commercial applications emerging at rapid rates, commercial drones are already experiencing a massive increase in sales and registration.

2.3 As unmanned operations continue to grow, ATM systems will need to shift to a more scalable model: a digital system that can monitor and manage increased activity. This has to support the smooth integration of the existing ATM infrastructure and the new distributed UTM ecosystem.

2.4 ICAO has published UTM Guidance documentation [1] intended to provide a framework and core capabilities of a “typical” UTM system to States that are considering the implementation of a UTM system. It is recognised that this framework does not propose or endorse any specific UTM system design or technical solutions to address the UTM challenge; instead, its aim is to provide an overarching framework for such a system.

2.5 Furthermore, it is to be noted that, in the 6th edition of the Global Air Navigation Plan [2] critical block upgrades for the UTM some two block upgrades refer to UTM (DAIM-B2/4 and NOPS-B2/7). While the DAIM block upgrade has already reached the maturity stage “validated”, the critical block upgrade for network operations can only be considered a placeholder.

2.6 Overall, the available guidance material for UTM implementation offers a basic starting point, while the rapid growth of the Remotely-piloted aircraft system (RPAS) creates an urgency for the states to plan and start the implementation of their UTM systems. Failure to address the need for UTM will result in uncontrolled UAV traffic growth with associated uncoordinated operational management and splintered system implementation which will exacerbate in the known risks to the aviation industry. A late implementation of a managed UTM will then be even more challenging as this will impinge on stakeholders already invested in running operations.

2.7 The UTM challenge is very demanding for the States due to limited experience as well as the present unavailability of ready-to-use solutions. Therefore, a qualified level of collaboration is deemed beneficial. Following the example of the ICAO Asia Pacific Region to implement the APUAS/TF (Asia/Pacific Unmanned Aircraft System Task Force), MIDANPIRG should consider the creation of a Task Force to facilitate regular exchange on a regional level concerning the planning and implementation of UTM.

2.8 The UTM task force shall provide the platform for the UTM specialists of the States to promote the development of common policies, regulations, standards and implementation strategies for the UTM system and to share best practices and lessons learned in order to expedite UTM in a harmonised manner. A key element of the task force is to monitor, assist and coordinate the progress of the UTM implementation in the States.

2.9 The task force shall address aspects of policy, regulation standards and system implementation of the UTM, UTM and ATM systems integration, use of Remotely-piloted aircraft system (RPAS) traffic surveillance, effective communication, education of stakeholders, safety management and reporting of occurrences. This shall include sharing experiences, best practices and lessons learned.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) Discuss the need for regional collaboration in the domain of UTM and the benefits that can be achieved through a task force.
- b) Decide on the initiation of a UTM task force at the regional level, as suggested in 2.7.
- c) agree to the following Draft Conclusion:

Why	the rapid growth of the use of Remotely-piloted aircraft system (RPAS) in the region imposes a challenge to implement UTM ecosystem with only limited experience.
What	To establish a regional UTM taskforce under MIDANPIRG for the purpose of collaboration to address the UTM challenge
Who	The States/MIDANPIRG
When	To the convenience of MIDANPIRG

DRAFT MIDANPIRG CONCLUSION 18/XX: ESTABLISHMENT OF A REGIONAL UTM TASK FORCE

The meeting recognizes the rapid growth of the use of Remotely-piloted aircraft system (RPAS) in the region is a challenge that requires the States to collaborate in order to come to a mature solution for all stakeholders. In order to expedite this, a dedicated regional UTM Task Force/ Expert Group shall be initiated to strengthen the collaboration of States and stakeholders for orderly growth of unmanned air traffic.