



WORKING PAPER

ASSEMBLY — 41ST SESSION

EXECUTIVE COMMITTEE

Agenda Item 24: Technical Assistance Programme

**A CASE FOR CONTINUED STRATEGIC DEVELOPMENT OF THE UAS OVERSIGHT
MECHANISM FOR SMALL AND DEVELOPING STATES**

(Presented by Guyana and supported by Argentina, Bolivia (plurinational State of), Brazil, Chile, Colombia, Dominican Republic, Ecuador, El Salvador, Guatemala, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela)

EXECUTIVE SUMMARY

Statistical data has shown that unmanned aircraft systems/remotely piloted aircraft systems (UAS/RPAS) technology is expanding at a phenomenal rate. Whilst this expansion is welcomed and has brought forth numerous benefits to society, there are critical gaps and associated challenges that have simultaneously materialized for small and developing States. This working paper highlights these gaps and the resulting challenges in the current global and national UAS/RPAS ecosystem, and proposes viable solutions to combat it.

Action: The Assembly is invited to:

- a) note the content of this working paper; and
- b) request ICAO to continue to provide guidance material, capacity-building and technical assistance to small and developing States, specifically in the areas of:
 - 1) UAS capacity building for management;
 - 2) monitoring capacity and capability ;
 - 3) security and counter UAS technology; and
 - 4) training and development

<i>Strategic Objectives:</i>	This working paper relates to the Safety Strategic Objectives.
<i>Financial implications:</i>	N/A
<i>References:</i>	Doc 10019, <i>Manual on Remotely Piloted Aircraft Systems (RPAS)</i> Circ 328, <i>Unmanned Aircraft Systems (UAS)</i>

1. INTRODUCTION

1.1 There are numerous civilian and commercial uses of unmanned aircraft systems (UAS) (drones) which have transformed civil protection, asset delivery, commercial and entertaining activities.

1.2 According to the Global UAS market forecast, 2020-2025, the worldwide UAS market is projected to grow at a significant compound annual growth rate (CAGR) of 13.27 per cent. Market analysis and forecast data also shows the development of several drone-manufacturing companies. The global UAS market was estimated to reach USD 27.4 billion in 2021, with a projection of USD 58.4 billion by 2026, at a CAGR of 16.4 per cent from 2021 to 2026 (Research and Markets Limited, 2020).

1.3 Segregated under four major regions, namely North America, Europe, Asia-Pacific, and the Rest-of-the-World, the global UAS market has grown considerably based on the usage of drones for critical activities including inspection, surveying, educational use, transport and logistics, agricultural spraying, military use and healthcare. Based on the specific application, the UAS market has been classified into the following categories - military, commercial, government and law enforcement, and consumer (Research and Markets, 2021).

1.4 Civil Aviation Authorities have now increased their regulatory oversight of unmanned aircraft. For some States, UAS is an existing matter, however, for small States, this is a new matter for which regulatory capacity is now being built to provide efficient and effective safety and security oversight, with work in progress on economic oversight.

1.5 ICAO must be commended for its leadership on addressing the matters concerning UAS, especially work with the Remotely Piloted Aircraft Systems Panel (RPASP), which spearheads the coordination and development of ICAO Standards and Recommended Practices (SARPs) related to unmanned aviation. Based on these procedures and guidance material, it is understood that the RPASP's primary aim is to facilitate a safe, secure, and efficient integration of Remotely Piloted Aircraft (RPA) into nonsegregated airspace and aerodromes. However, notwithstanding these efforts, there continues to be a gap between the rate of UAS development and the civil aviation authority's (CAA) capacity to provide adequate oversight.

1.6 The Guyana's experience has shown that the development of UAS has not only become the fastest growing segment of the aviation sector but has also increased in technical complexity and capabilities. For the period September 2017- May 2022 the number of UAS in the country has increased by 176.51 per cent. Whilst this expansion is welcomed and has brought forth numerous benefits, these developments however, have created safety, security and privacy challenges. Drone-related incidents have also been recorded near airport facilities.

1.7 In Guyana, most applications for UAS include security surveillance, aerial photography/filming, aerial inspections/image collection, agriculture for crop monitoring and inspection/spraying, aerial mapping/photogrammetry/land surveying. However, recreational use of this technology still represents the largest segment of UAS applications sent to the Guyana CAA.

2. DISCUSSION

2.1 Some of the areas where continuous capacity building is needed are:

- a) UAV capacity building for management
- b) monitoring capability
- c) security dimensions
- d) governing legislation and regulatory framework
- e) training and development

2.2 A well-resourced UAS/RPAS/Drones Department with enhanced capability within the CAA is necessary to address the rapid expansion of UAS technology. Limited capacity can make the task of providing effective regulatory oversight difficult and stymie monitoring and oversight activities of the industry. It also hinders development of CAA in-house expertise, thereby creating a gap between regulator and industry.

2.3 Insufficient monitoring and oversight mechanisms in a State, particularly when there is a large inflow and high usage of drones can lead to high cases of unauthorized use, which poses a safety and security threat to the civil aviation system and to a country's sensitive infrastructure. This issue has been known to materialize when there is inadequate monitoring of UAS operations.

2.4 In contrast to its numerous benefits, there is the inherent risk of individuals exploiting UAS technology for malicious purposes and criminal activities. Given the increase in UAS, there is also increased incidences of unauthorized operations, some of which have resulted in critical security breaches within controlled airspace. Unregulated actions pose a significant threat to the operations at airports. Limited mitigation measures for detection and response to UAS threats, also contribute to poor security resilience at airports.

2.5 Robust regulations with adequate capacity at the CAA to implement these regulations is needed. CAAs must find additional resources to address robust oversight of UAS operations among its already competing demands for funding, particularly for its routine regulatory oversight activities. This is a challenge for small States.

2.6 Training and development is critical for successful oversight mechanisms. Training builds the capacity and competency that leads to higher productivity and better performance of a CAA's Inspectorate to carry out their oversight obligations and responsibilities. Given the pace of this rapidly expanding industry, there is need to train CAA personnel on trends, policies, and advancements within the UAS industry to close the gap between CAA capability and industry growth.

3. CONCLUSION

This working paper provides the experience of small and developing States as it relates to UAS and calls on ICAO to recognise these challenges which may not only be unique to small and developing States but also to the developed States. This working paper also emphasizes the need for ICAO to take appropriate action to assist small and developing States to close the gap between UAS industry growth and CAA oversight capacity.