



**Item 8  
of the Agenda:            Other matters**

**INTEGRATION OF EFFORTS TO MITIGATE THE RISK ASSOCIATED WITH THE USE OF AIRSPACE TO CAUSE HARM USING UNMANNED AIRCRAFT SYSTEMS**

Working Paper presented by Colombia, "*The Country of Beauty*"

**SUMMARY**

In this working paper, Colombia proposes that ICAO/SAM promote standards and recommended practices for the safe management and use of airspace by integrating the efforts of South American states. The objective is for ICAO, through its regional planning groups, to establish regulations and standards to unify criteria among states and mitigate the risk of airspace being used for terrorist purposes through unmanned aircraft. These strategies are essential for the proper use of emerging technologies in unmanned aviation, enhancing airspace control, operational and physical security, and fostering a sustainable and reliable development of the aeronautical sector.

**References:**

- Circular 328 AN/90: Unmanned Aircraft Systems (UAS) - December 2011.
- ICAO Model UAS Regulations: Parts 101 and 102 - June 2020, and Part 149 – June 2020.
- Advisory Circular (AC) 101-1: Unmanned Aircraft Systems (UAS) 25 kilograms or less - Operating in accordance with Part 101 rules - June 2020.
- Advisory Circular (AC) 102-1: Unmanned Aircraft Systems Operations – Certification - June 2020.
- Advisory Circular (AC) 102-37: Unmanned Aircraft Systems (UAS) carrying Dangerous Goods - June 2020.
- Concept of Operations (CONOPS) for Unmanned Aircraft Systems (UAS) – UAS CONOPS – ICAO SAM - March 2023.
- Part 4 - Annex 6 - International Operations - Remotely Piloted Aircraft Systems (RPAS) - July 2024.

**ICAO Strategic Objectives:**

- *Operational Safety*
- *Air Navigation Capacity and Efficiency*
- *Security and Facilitation*

## 1. Introduction

1.1 The rapid advancement of unmanned aircraft technologies has created unprecedented opportunities in various sectors such as agriculture, entertainment, logistics, and surveillance, among other practical applications for society. However, it has also introduced significant risks, particularly in domestic, regional, and international security, as unmanned aircraft systems have been directly involved in activities intended to cause harm.

1.2 To date, the lack of specific regulations and clear standardizations has allowed for the manufacturing, sale, and use of unmanned aircraft capable of transporting hazardous payloads, including explosives. This has led to documented cases of the misuse of unmanned aircraft, resulting in damage to infrastructure and harm to people on the ground.

1.3 To address these challenges, the ICAO SAM Office is urged to develop guidelines or recommendations that establish a common framework to minimize and/or control the likelihood of harmful acts involving unmanned aircraft. This framework will serve as a basis for ICAO Member States to adopt these standards and recommended practices in a harmonized and safe manner while respecting their sovereign rights over their airspace.

## 2. Discussion

2.1 The irrational use of unmanned aircraft systems for harmful acts has been evident in various global events. Therefore, it is crucial for ICAO to issue guidelines and standards that define the necessary procedures for controlling advanced technologies with specific payload and autonomous flight capabilities. This would serve as a mitigation measure to prevent the use of airspace for terrorist purposes through unmanned aircraft systems.

2.2 Colombia proposes four key strategies for the effective implementation of measures to mitigate the potential misuse of unmanned aircraft in such activities. These strategies are designed to address both regulatory and technical aspects necessary to ensure the safe and efficient integration of these technologies into airspace. The following are the proposed strategies:

### 2.2.1 Establish the necessary regulations to control the production of unmanned aircraft systems based on their capabilities

It is proposed to create a robust regulatory framework that establishes the necessary parameters to generate control over the production and distribution of unmanned aircraft systems, considering key aspects such as payload capacities, the technologies these aircraft have, and the airspace zones accessible for their operation. The implementation of this regulation is crucial to ensure that aspects such as manufacturing processes, practical applications for society, and control over unmanned aircraft systems are carried out safely and efficiently, from the design phase to practical use.

### 2.2.2 Develop standards for the control of sale and registration of unmanned aircraft systems

The creation of specific standards for the control of sale and registration of unmanned aircraft systems in a centralized database, supervised by each civil aviation authority of each country, and shared in a global common database, is proposed. Additionally, it is suggested to create a system that standardizes, integrates, and regulates the purchase activities of unmanned aircraft systems, including the verification of the buyers' background.

### 2.2.3 **Control of access and scheduled use of airspace**

There is a need to promote the development of detection and neutralization technologies for drones in critical areas, such as airport infrastructures, areas of interest for each ICAO member state, and especially over vital and critical infrastructure and people. Detailed work is required to establish, for each civil aviation authority, No-Fly Zones for unmanned aircraft systems, which, when integrated with regulations for the sale and registration of unmanned aircraft systems, aim to ensure that, from manufacturing processes and specifically in the scheduling of airspaces where manufacturers allow unmanned aircraft systems to operate, the possibility of carrying out terrorist acts is minimized.

It is also proposed to encourage the use of technological systems known as anti-drone systems to limit and control the use of airspace in areas defined as No-Fly Zones, also establishing alert (geo-awareness) and restriction (geofencing) capabilities for unmanned aircraft systems operators.

### 2.2.4 **International cooperation**

The creation of an information exchange mechanism regarding incidents and malicious acts performed with unmanned aircraft systems and emerging control strategies carried out by each aviation authority is considered very important. Likewise, it is deemed important to establish agreements that allow coordinating efforts in research, detection, and neutralization of threats, particularly those related to risk actions or activities that affect the operational safety of aviation, aviation infrastructure, and overall human safety.

## 3. **Suggested Actions**

### 3.1 The meeting invites:

- a). States to familiarize themselves with the airspace control and management strategies of regional countries, analyzing the methodologies and technologies used to minimize the risk of terrorist acts involving unmanned aircraft systems, in order to develop robust regulatory frameworks aligned with ICAO guidelines, aiming to provide solutions that reduce the likelihood of malicious acts related to the use of unmanned aircraft systems.
- b). To recommend that member states develop and implement strategies to manage airspace in a way that promotes the development of unmanned aviation under safe operational standards, while simultaneously providing control measures for the operation of unmanned aircraft systems, starting from the manufacturing and commercialization processes to the actual operation, while educating all stakeholders on the importance of establishing procedures that ensure the safe use of airspace.