



WORKING PAPER

ASSEMBLY — 41ST SESSION

TECHNICAL COMMISSION

Agenda Item 31: Aviation Safety and Air Navigation Standardization

HARNESSING DRONE TECHNOLOGY IN AFRICA – SUCCESSES AND CHALLENGES

(Presented by the African Civil Aviation Commission (AFCAC) on behalf of 54 Member States¹)

EXECUTIVE SUMMARY

The paper discusses proposals for harnessing drone technology in Africa and the successes realised and challenges met.

During the fourth consecutive edition of ICAO's Drone Enable Symposium it was acknowledged that traditional aviation continues to undergo a fundamental evolution in light of the increasingly widespread use of unmanned aircraft systems, or UAS, as well as related modernization trends associated with digital communications and the emergence of advanced air mobility operators and other new entrants. As standards setters, ICAO's efforts in supporting this dynamic growth are being guided by the priority to ensure the safety, security, efficiency and sustainability of the aircraft and operations.

Action: The Assembly is invited to:

- a) direct ICAO to prioritize the development and harmonization of Regulations, policies, and procedures aimed at regulating drone activity in the region;
- b) request ICAO and industry partners to formulate and implement promotion activities for the use of drone technologies and to encourage knowledge and information sharing as enablers of drone advancement;
- c) request ICAO and other stakeholders to collectively develop programmes and strategies for addressing current gaps identified in the effective implementation of drone operations and for the promotion of drone activity;
- d) urge Member States to encourage and promote the use of unmanned aircraft systems (UAS) to optimize benefits of their subsidized operational and maintenance costs as well as the advantages associated with their mobility; and
- e) request ICAO, in collaboration with aviation training organizations, to develop and conduct different capacity building/training programmes and activities for the different personnel dealing with UAS.

<i>Strategic Objectives:</i>	This working paper relates to the Safety and Air Navigation Capacity and Efficiency Strategic Objectives.
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¹ Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Eritrea, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Togo, Tunisia, Uganda, United Republic of Tanzania, Zambia and Zimbabwe.

<i>Financial implications:</i>	Resources are needed to support programs and activities aimed at regularizing and promoting the operations of drones and training
<i>References:</i>	Africa Drone Forum Doc 10004, <i>Global Aviation Safety Plan</i>

1. INTRODUCTION

1.1 Unmanned aircraft systems (UAS) are a new component of the aviation system, one which ICAO, States and the aerospace industry are working to understand, define and ultimately integrate. The safe integration of UAS into non-segregated airspace will be a long-term activity with many stakeholders adding their expertise on such diverse topics as licensing and medical qualification of UAS crew, technologies for detect and avoid systems, frequency spectrum (including its protection from unintentional or unlawful interference), separation standards from other aircraft, and development of a robust regulatory framework.

1.2 Unmanned aircraft (UA) including drones are, indeed, aircraft; therefore, a number of existing Standards and Recommended Practices (SARPs) and guidance apply to a very great extent. The complete integration of UAS in various airspace classes and at aerodromes will, however, necessitate the development of UAS-specific SARPs and guidance to supplement those already existing.

1.3 The African Drone Forum was a timely multi-stakeholder engagement programme that took place in 2020 in Rwanda, a country already using drone technology to improve the lives of its citizens. The Forum showcased the latest drone technology and convened experts and regulators together in a Symposium. Several benefits of drone technology were discussed during the forum, and these cut across most of the States in Africa. The benefits include mobility, cost friendliness, efficiency, speed, and flexibility of operations.

1.4 The successes associated with drones include increased and faster access to medical care through expedited transfer of vaccines and other medication, improved agriculture through use of drones for agricultural activities including pest control, education through faster and more secure distribution of exams and other critical scholastic materials, etc.

1.5 Increased drone flights have their challenges, which include heightened public concerns regarding safety, security, and privacy issues. There is need to integrate drone operations safely and efficiently within the existing airspace and to provide for safe and appropriate landing areas for these drones.

1.6 There are also several gaps in the regulatory regime governing the use of drones in the Region. These include capacity and personnel training gaps, which are contributing to the hinderance of growth in drone technology in Africa.

2. DISCUSSION

2.1 ICAO has made efforts to develop SARPs as a framework for guiding the operations of UAS.

2.2 Similarly, Regional Safety Oversight Organizations (RSOOs) and States alike have developed regulations, policies, and procedures for the regulation of drone activities in their Regions. There is therefore, a need to harmonize these regulations to ensure uniformity.

2.3 The ICAO Task Force on UAS for Humanitarian Aid and Development (TF-UHAD) aims to take advantage of drones' capabilities to perform humanitarian aid and development tasks. Collaboration and cooperation are also an essential tool for optimization of resources, both human and financial, through the pooling of experts and collective capacity building programmes.

2.4 Drones offer a starting point for a radically new model of low-cost, fast, and futuristic transportation.

2.5 Transforming mobility infrastructure can provide rural towns and villages with access to modern services such as emergency aid, commercial goods, and medical supplies. This will benefit industries like agriculture, mining, construction, and livestock.

3. **CONCLUSION**

3.1 Recognizing and optimizing the current and futuristic opportunities associated with drones is an important step towards achieving cost friendly transportation in Africa. There is, therefore, a need to harness the benefits associated with drone technology.

3.2 The development and harmonisation of regulations and policies associated with drone technology will ensure smooth integration of UAS in controlled airspace.

3.3 Increasing cooperation and collaboration between ICAO, Member States, and RSOOs on activities aimed at increasing aviation safety as well as capacity building activities is critical.

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