



ASSEMBLY — 40TH SESSION

TECHNICAL COMMISSION

Agenda Item 30: Other issues to be considered by the Technical Commission

**DEVELOPMENT AND PROMULGATION OF PERFORMANCE-BASED REGULATIONS
OF UNMANNED AIRCRAFT SYSTEMS (DRONES)**

(Presented by Rwanda)

EXECUTIVE SUMMARY

The on-going collaboration of the United Nations (UN) 2030 Agenda and ICAO's No Country Left Behind (NCLB) programme is a key indicator to their commitment to better living through Sustainable Development. UN Sustainable Development Goals (SDG) 2: "End hunger, achieve food security and improved nutrition and promote sustainable agriculture"; SDG 3: "Ensure healthy lives and promote well-being for all at all ages"; and SDG 9: "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation", are the key goals that the State of Rwanda has focussed on in relation with unmanned aircraft systems (UAS) operation in line with ICAO as recognised in its Strategic Objectives.

This paper outlines the stages and current status of Rwanda in its development and promulgation of UAS performance-based regulations and addressing SDG's 2, 3 and 9 for the safe and legal operation of UAS within the State of Rwanda.

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| <i>Strategic Objectives:</i> | This working paper relates to the Safety and Air Navigation Capacity and Efficiency Strategic Objectives. |
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| <i>Financial implications:</i> | None |
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| <i>References:</i> | Doc 10019, <i>Manual on Remotely Piloted Aircraft Systems (RPAS)</i> Advisory Circular 328 <i>Unmanned Aircraft Systems</i> Doc 9859, <i>Safety Management Manual (SMM)</i> |
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1. INTRODUCTION

1.1 In 2015, the Rwanda government focussed on agriculture, health and innovation improvement in line with ICAO and UN SDG 2: Zero hunger, 3: Good health and well-being and 9: Industry, Innovation and Infrastructure with the consideration of available resources.

1.2 **Agriculture**

1.2.1 In 2014, an estimated 90 per cent of the population of the State farmed in a non-automated manner, and agriculture constituted an estimated 32.5 per cent of Gross Domestic Product (GDP). There was a priority to increase crop yields by better management of fertilizers and water, identify unhealthy crops as fast as possible to take appropriate action and more efficient use of manpower while considering the many varying mountains and hills ranging from 950 m to 4500 m high in a land area of 26 338 kilometers square. Improvement in agriculture will bring social economic development to the State and UAS was found to be one of the most efficient solutions to achieved set goals in addition to existing practices. (Source: CIA Fact Book, 2014).

1.3 **Health**

1.3.1 The government was faced with a challenge of transportation of life saving products to patients in rural parts of the country, considering very difficult terrain often inaccessible during the rainy season, in a timely manner. To accomplish this, the initial right medical product for transportation had to be based on using a product that had a high value for the recipient yet without any market value resale. The Ministry of Health recognized this need thus blood was chosen as blood donation is 100 per cent voluntary and non-remunerated, life shelves of some products can be as short as 5 days and all hospitals in Rwanda get blood products from branches of the National Centre for Blood Transfusion only and at no cost. Due to the complexity of stock management of blood products (blood group and rhesus) for each hospital, and temperature management for blood components, and the ability to avoid wastage/expiry, Rwanda had to innovate on how to deliver blood products for patients. UAS were the most efficient proposed solution. To date, various additional medical products are delivered by UAS.

2. **IMPLEMENTATION OF UAS PERFORMANCE-BASED REGULATIONS**

2.1 After the identification of sectors (agriculture and health initially) in need of UAS technology, and the availability of operators to provide such services, Rwanda set up a drone steering committee with the objective to streamline the UAS industry and the Drone Technical Advisory Committee to look in detail at the possibilities of conditions of implementation of UAS in the country. Regular meetings were scheduled and conducted by the regulator, with service providers, operators, security organs, various government offices and end users with specific objectives that included but not limited to:

- a) understanding the needs of the end users;
- b) gap analysis regarding regulations and operations;
- c) understanding each other's perspective;
- d) checking availability of resources and gaps to be filled; and
- e) implementation plan for UAS operations.

2.2 A collaborative decision-making was made leading to the revision of the regulations. An implementation plan was then submitted that included a testing period of operation.

3. **OUR JOURNEY**

- a) Ad hoc Drone Steering Committee Meeting of Main Stakeholders 2015
- b) Drone Technical Advisory Committee established - January, 2016
- c) Creation of a dedicated inspectorate for UAS February, 2016
- d) Promulgation of Regulations - May, 2016
- e) First UAS operator approved for operations testing for Beyond Visual line-of-sight (BVLOS) - July, 2016
- f) First UAS operator approved for commercial operations for visual line-of-sight (VLOS) October, 2016
- g) Amended UAS regulations to include BVLOS May, 2017
- h) First UAS operator approved for commercial BVLOS August, 2017
- i) Beta version of the Drone Portal-November, 2018
- j) Amended UAS regulations-February, 2019
- k) Rwanda Civil Aviation Authority (RCAA) Drone Portal launched-March, 2019.

3.1 To date, in Rwanda we have recorded more than 10 000 UAS flights a year.

4. **CONCLUSION**

4.1 Rwanda's development, promulgation and implementation of the UAS regulation to foster safety in aviation has been on-going for over 5 years. In this time, it has proven that when properly managed, in a collaborative manner, UAS can operate safely in the airspace without any serious incidents or accident.

4.2 Currently, the challenge is harmonisation of regulations and availability of Standards and Recommended Practices (SARPs), especially considering the increase in variety of UAS use case, diversity of equipment, experience and expertise shared across States.

4.3 It is imperative for States to collaborate in the development of SARPs for UAS operations, since it has been proven that usage of UAS brings added value to people's lives. In many instances, usage of UAS is more efficient, thus the need for their operation will continue to grow.