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WORKING PAPER

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ASSEMBLY — 39TH SESSION

TECHNICAL COMMISSION

Agenda Item 33: Aviation safety and air navigation monitoring and analysis

**OPERATION AND REGULATION OF SMALL AND LIGHT
UNMANNED AIRCRAFT**

(Presented by the People's Republic of China)

EXECUTIVE SUMMARY

This working paper presents the main challenges that China faces in the regulation of unmanned aircraft. A cloud-and-network-based regulatory system has now been set in place for civil unmanned aircraft on the basis of the management by category approach. Through extension of the model of cloud-based regulation, a system of jointly-executed regulation will come into existence on the strength of the internet, big data and user applications as the framework to govern the operations of low and slow-going small and light unmanned aircraft.

Action: The Assembly is invited to:

- a) acknowledge the applicability of categorization of unmanned aircraft and facilitate the standardization of the criteria for such categorization;
- b) promote the cloud-based unmanned aircraft system for the regulation of small and light unmanned aircraft as a model for adoption by Member States; and
- c) study and establish a world-wide sharing mechanism for integrating essential operational data of unmanned civil aircraft in the airspace in order to provide safety assurances for global operations of manned aircraft.

<i>Strategic Objectives:</i>	This working paper relates to the Safety Strategic Objective.
<i>Financial implications:</i>	N/A
<i>References:</i>	Annex 1

¹ Chinese version provided by China.

1. INTRODUCTION

1.1 To respond to the challenges posed by the rapid development of unmanned aircraft to the public and national security, strike a balance between safety and efficiency and ensure the healthy development of the unmanned aircraft industry, the Civil Aviation Administration of China (CAAC) has introduced a cloud-based regulatory system for unmanned aircraft based on commercial competition to meet the regulatory needs of various competent government agencies. Under this system, all stakeholders, as users of applications, have access to data and information restricted by their respective mandate, thus forming a seamless regulatory chain for small and light unmanned aircraft.

2. DISCUSSION

2.1 Low-altitude (below 1500 meters) and slow-going small unmanned aircraft constitute a key category that calls for regulation with concentrated resources.

2.2 It is a model whereby the government regulates cloud-based service providers and service providers provide services to end-user unmanned aircraft. Basic flight data of registered unmanned aircraft are transmitted using conventional signal carriers either via ground stations or directly to the cloud system.

2.3 Unmanned aircraft, at the production stage, should be equipped with functions and restrictions such as active feedback, passive feedback and electronic fencing, to ensure that they are capable of uploading basic data to the unmanned aircraft cloud and taking avoidance actions based on safety factors.

2.4 The cloud system will develop applications and assign restrictions on access to data as required by different categories of users, such as the military, the police, national security agencies, civil aviation traffic controllers and insurance companies.

2.5 Unmanned aircraft are, as determined by category, managed either by industrial associations or the CAAC. Industrial associations issue accreditation certificates while the CAAC issues licences. Information thereon is fed into the unmanned aircraft cloud system.