



ASSEMBLY — 40TH SESSION

TECHNICAL COMMISSION

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

THE NEED FOR DETAILED PROCEDURES AND GUIDANCE IN CONDUCTING  
OVERSIGHT OF UAS OPERATIONS

(Presented by Indonesia)

EXECUTIVE SUMMARY

This paper presents the unmanned aircraft systems (UAS) operation in Indonesia that describes the granting procedures for a UAS operator permit and the proposed oversight mechanism for UAS operations within Indonesian airspace.

**Action:** The Assembly is invited to:

- a) urge the specified body to provide detailed procedures and guidance in conducting oversight for UAS operations; and
- b) share other Member States experience to be used as lessons learned for UAS management effectiveness.

<i>Strategic Objectives:</i>	This working paper relates to the Safety, Air Navigation Capacity and Efficiency Strategic Objectives.
<i>Financial implications:</i>	-
<i>References:</i>	ICAO Annex 1 — <i>Personnel Licensing</i> ICAO Annex 2 — <i>Rules of the Air</i> ICAO Annex 10 — <i>Aeronautical Telecommunications</i> ICAO Annex 11 — <i>Air Traffic Services</i> ICAO Doc 10019, <i>Manual on Remotely Piloted Aircraft Systems (RPAS)</i> ICAO Cir 328, <i>Unmanned Aircraft Systems (UAS)</i>

## 1. INTRODUCTION

1.1 The increase of UAS operations especially for small UAS or drone for recreational and commercial use is a condition that every country has to deal with and cannot be avoided in recent years. Tremendous population of drones forced every country to manage the operation not to endanger human, property, and civil aviation.

1.2 In order to maintain aviation safety, Indonesia developed procedures for drone operation through national legislation and procedures which contain some restrictions similar to other countries. Indonesia requires drones to be registered and marked in order to identify them in case they are lost or causing damages and to obtain operation approval issued by the Director General of Civil Aviation (DGCA).

1.3 Indonesia established several ministerial regulations for drone operations since 2015, these regulations set up the general provisions for registration, identification, operating rules, certifications and law enforcement.

## 2. DISCUSSION

### *Process in the Issuance of UAS Operation Approval*

2.1 For drone operation on regular or scheduled based is conducted by proposing reserved airspace to facilitate the drone management and supervision. Those are conducted in order to maintain safety as well as to accommodate the needs of drone operators. The principle of flexible use of airspace (FUA) was applied to this airspace reserved for UAS operation.

2.2 The regulation mandates the operator of the drone with a weight less than 25kg to follow these steps:

- a) provide documentations required to the process that contain the description of operator's information and contact number, airborne system specifications, ground system specifications, type and purpose of flight operations, flight plans, operation procedures and manual, emergency procedures, drone pilot competency, insurance for the third party, etc.;
- b) apply a recommendation letter to AirNav Indonesia as the air navigation services provider (ANSP) or other relevant agencies to use their airspace; and
- c) apply an airworthiness permit to DGCA of Indonesia, once it is approved then eligible to fly within uncontrolled airspace up to 400ft above the ground. Any changes or cancellations to the flight plan approved by DGCA, has to be requested seven days prior to the day of operation. During the day of operation, the drone operator shall coordinate and subject to the ATS unit concerned.

2.3 For operator that operates drone with a weight over 25kgs, these rules apply:

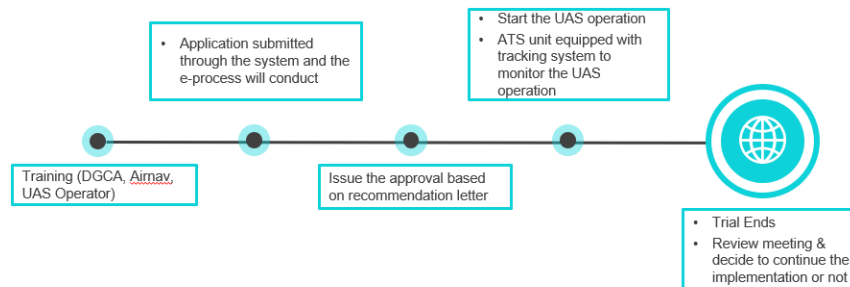
- a) the drone has to have restricted aircraft type certificate from DGCA; and
- b) 14 days prior to operate, the drone operator shall request a permit to DGCA by providing the documentations required to the process that contain the description of

operator's information and contact number, airborne system specifications, ground system specifications, type and purpose of flight operations, flight plans, operation procedures and manual, emergency procedures, drone pilot competency, insurance for the third party, etc.

2.4 The process for the issuance of UAS operation approval, recently conducted manually by submission of the hardcopy and not integrated for some entities. Based on that situation, Indonesia developing the electronic/digital process so that the process will be conducted more efficiently.

2.5 DGCA, Airnav Indonesia and UAS operators will collaborate to conduct two months trial of e-process in issuing UAS approval (July to September 2019). It will be more efficient by cut off the manual coordination between DGCA, Airnav Indonesia and UAS operators that was conducted manually. And also provide the tracking system in air traffic services (ATS) unit to monitor the UAS operation.

2.6 Throughout the two months period, the stakeholder will work together continuously to review the UAS ecosystem in Indonesia, how to manage and make it more effective by sharing knowledge and know-how from regulator, operator and air navigation provider.



### ***UAS Operation within Indonesian Airspace***

2.7 Current situations with widespread of drone applications require the Regulator and ANSP to adapt its rule making processes and monitoring of drone operations to the latest possible extent as necessary.

2.8 Furthermore, Indonesia will develop procedures for drone/UAS operation to fly above 500ft for commercial use, and allow drone to fly in the controlled airspace with special permit by comply with the communication requirement with air traffic control (ATC) and navigation specification requirements or by implement non-segregated operation.

2.9 The decision has not been made whether drones will take place on segregated airspace or utilize existing ATS route network, most probably allocate segregation of operation time in order not to infringe civil aviation.

2.10 It will require in-depth analysis and safety assessment to ensure safety operation of civil aviation purpose.

2.11 In the beginning of 2019, DGCA had issued approval for trial flight of delivery drone. It was conducted after completed the risk assessment process. It will be initial step in facing the demand of

delivery drone. In the fourth quarter of 2019, the flag carrier of Indonesia proposes to have some drone operation for delivery cargo with specified weight.

### ***Oversight Mechanism of UAS Operation***

2.12 Some cases are reportedly caused by UAS operation, such as the operation of UAS in final approach area while the manned aircraft is in the approach phase.

2.13 To ensure that UAS operation is safe for the manned aircraft operations, the State shall develop a proper oversight mechanism for UAS operations within their airspace. The scope should cover (at least) personnel that operate the UAS operation, the conformity of UAS operation with the approval and the law enforcement.

2.14 The mechanism required is the establishment of guidance that clearly defines the scope, the personnel qualifications and also the methodology in conducting the oversight activities.

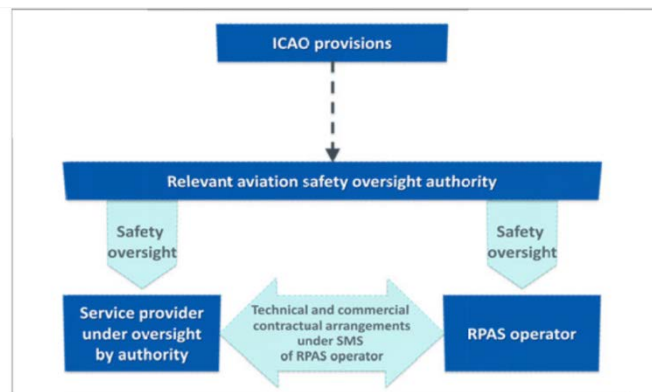


Figure 6-1. Oversight by aviation safety oversight authority

Illustration from ICAO Doc 10019, *Manual on Remotely Piloted Aircraft Systems (RPAS)*

2.15 Nowadays, Indonesia is developing oversight mechanism of UAS operations. The scope of the oversight (but not limited to these activity) are the conformity of the UAS operation with the approval issued by DGCA, with the NOTAM issued for the operation, with the registration, operator certification and remote pilot certificate and also the conformity of security clearance for UAS operation in the specified areas or airspace.

2.16 DGCA Indonesia in collaboration with other entities (Indonesian Air Force, Drone Association, etc.) will conduct the oversight activities.

2.17 Indonesia will enforce the UAS operators that meet conditions such as sovereignty infringements, endanger aviation safety, security and the vital object, the operation without an approval or not appropriate with the scope in the approval.

2.18 The enforcement is consisting of some activities such as the punishment burden (criminal) and the imposition of administrative sanction. But for some cases assertive action such as frequency jamming, forcing the UAS to exit the areas or airspace, dropped the UAS in the secure area or by using technology such as antidrone.