



| ICAO BANGKOK

UNITING AVIATION

APAC Regional Guidance for the Regulation and Safe Operation of UAS within National Airspace

15 September 2020

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Topics

- **UAS-related activities in APAC**
- **Asia/Pacific Unmanned Aircraft Systems Task Force Outcomes**
 - **Seamless ANS Plan – UAS Element**
 - **APAC Regional Guidance for the Regulation and Safe Operation of UAS within National Airspace**
- **ICAO Global Guidance**



- **APANPIRG/27** – Bangkok, Thailand, September 2016

...the incorporation of a specific UAS Block 1 (ASBU) element within the Asia/Pacific Seamless ANS Plan (2019) to ensure a more harmonized approach across the Asia/Pacific Region.

- ***Decision APANPIRG/27/17: Asia/Pacific Unmanned Aircraft Systems Task Force (APUAS/TF)***

Formed to *inter alia* develop the Seamless ANS Plan element, and associated guidance.



RPAS Workshop – Bangkok, Thailand, 12 – 23 November 2016 ([link](#))

- Background, ICAO RPAS Framework, Case Studies.

APUAS/TF/1 – April 2017 ([link](#))

APUAS/TF/2 – March 2018 ([link](#))

APUAS/TF/3 – March 2019 ([link](#))

DRONE ENABLE/2 (global event)

([link](#))





DRONE ENABLE **2021** ([link](#))

- (Delayed from 2020 due to COVID-19 pandemic)
- Rio De Janeiro, Brazil, 13 – 15 April 2021
- Theme: ***Addressing tomorrow's challenges today***
- Request for Information (RFI) deadline **25 September 2020**





APUAS/TF Outcomes

Background information and a **performance expectation** in the Asia/Pacific Seamless Air Navigation Services Plan **Version 3** (2019)

Preferred Aerodrome/Airspace and Route Specifications (PARS) Phase II
(*expected implementation by 07 November 2019*)

Unmanned Aircraft Systems

7.17 States should implement regulations supporting the integration of UAS operations in non-segregated airspace, using a risk-based approach and in accordance with the Asia/Pacific Regional Guidance for the Regulation of UAS, as a minimum.

INTERNATIONAL CIVIL AVIATION ORGANIZATION



ASIA/PACIFIC SEAMLESS ANS PLAN

Version 3.0, November 2019

This Plan was originally developed by the Asia/Pacific Seamless ATM Planning Group (APSAPG) and amended when appropriate by APANPIRG.

Approved by APANPIRG/30 and published by the
ICAO Asia and Pacific Office, Bangkok



APUAS/TF Outcomes

Asia/Pacific Regional Guidance for the Regulation and Safe Operation of UAS in National Airspace

- Version 1 (2019)

ICAO Asia/Pacific eDocuments web page

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ASIA/PACIFIC REGIONAL GUIDANCE FOR THE REGULATION AND SAFE
OPERATION OF UNMANNED AIRCRAFT SYSTEMS WITHIN NATIONAL
AIRSPACE

Version 1.0, August 2019

This Plan was developed by the Asia/Pacific Unmanned Aircraft Systems
Task Force (APUAS/TF)

Approved by ATM/SG/7 and published by the
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Asia/Pacific Guidance for Regulation of UAS

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ASIA/PACIFIC REGIONAL GUIDANCE FOR THE REGULATION AND SAFE OPERATION OF UNMANNED AIRCRAFT SYSTEMS WITHIN NATIONAL AIRSPACE

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Asia/Pacific Guidance for Regulation of UAS

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REGULATION AND SAFE OPERATION WITHIN NATIONAL AIRSPACE

UAS Systems



APAC Regional Guidance for the Regulation and Safe Operation of UAS within National Airspace

- **GENERAL REGULATORY GUIDANCE**

- **Definitions:** approved persons/organizations, authorities, autonomous mode operations, controlled aerodrome, controlled airspace, indoors operations, observer, populous areas, public safety operations, shielded operations, standard unmanned aircraft operating conditions, VLOS.
- **General Regulations:** Types of UA, operation over populous areas, operation near people, approvals, authorization or certification requirements, public education, dropping or discharging articles, right of way, weather and time of day limitations, maximum operating height, operations near aerodromes, operations in controlled airspace, segregated airspace, autonomous mode operations.



APAC Regional Guidance for the Regulation and Safe Operation of UAS within National Airspace

- **GENERAL REGULATORY GUIDANCE**
 - **Operation of Unmanned Aircraft Beyond Visual Line of Sight:** requirements for specific approvals, height and distance limitations, position fixing and reporting, geo-fencing, command and control (C2), autonomous or degraded mode operations..



APAC Regional Guidance for the Regulation and Safe Operation of UAS within National Airspace

- **REGISTRATION AND IDENTIFICATION**

- Registration requirements and minimum details, identification markings.

- **CATEGORIES OF UNMANNED AIRCRAFT OPERATIONS**

- Risk-based approach:
 - Category A – *Low risk* UAS operations
 - Category B – *Regulated minimal risk* UAS operations
 - Category C – *Regulated acceptable risk* UAS operations



Low Risk UAS Operations

UAS Operations in Category A

7.49 Regulations should define *Category A – Low Risk Category UAS Operations* as those that may be operated without licences, operating certificates or similar permissions, and with no requirement for authorization. Typically, such operations:

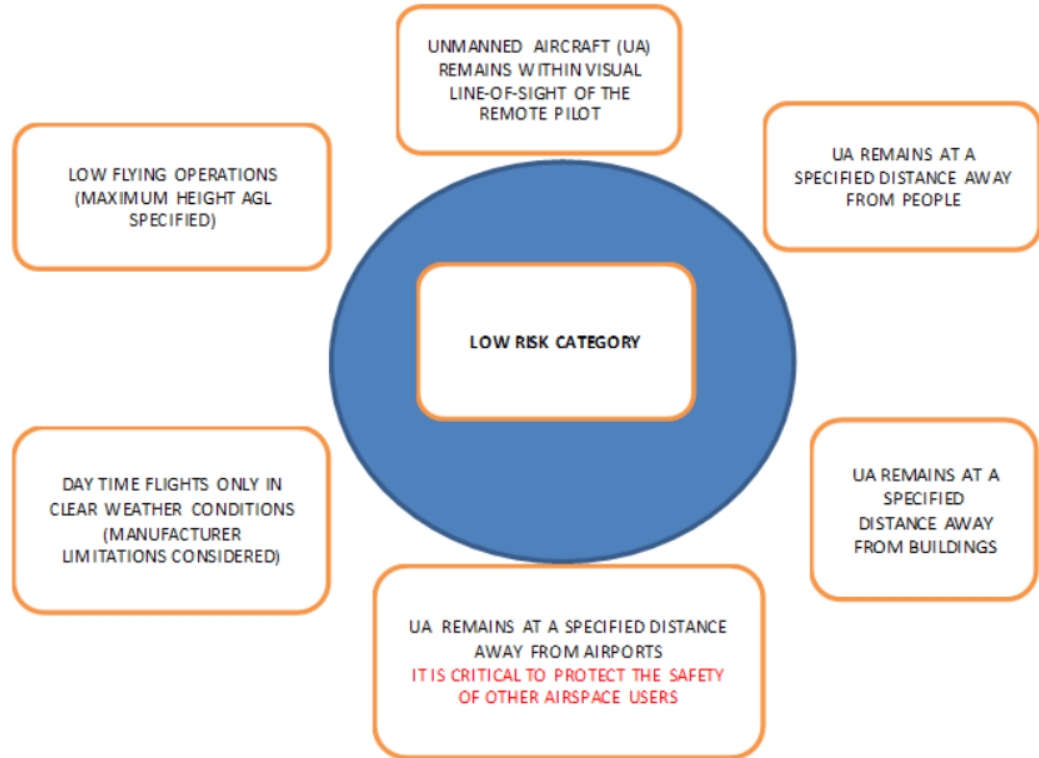
1. are unlikely to result in a fatality or cause serious injury to persons or damage to property on the ground;
2. do not require authorization by the regulatory authority or other approved organization delegated by the regulatory authority to approve UAS operations, except for operations:
 - a. within any prohibited, restricted or danger area, unless authorized by the appropriate authority; or
 - b. in any area where a public safety operation is being conducted, unless authorized by the appropriate authority.
3. are conducted only in airspace that is not normally used by other conventional aircraft;
4. require basic registration of the unmanned aircraft and the particulars of the operator and any person operating the controls of the unmanned aircraft;
5. require that educational material detailing the limitations for Category A operations is provided at the point of sale.

7.50 Typically, Category A operations are limited to unmanned aircraft that are:



Low Risk UAS Operations

Example from the
ICAO UAS Toolkit
(more on this later):





Regulated Minimal Risk UAS operations

UAS Operations in Category B

7.52 Regulations should typically define Category B or *regulated minimal risk* UAS operations as those that:

1. are unlikely to result in a fatality or cause serious injury to persons or damage to property on the ground;
2. require that the operator and any person operating the controls of the unmanned aircraft complies with published regulations relevant to the operation;
3. require that the operator and any person operating the controls of the unmanned aircraft receives education or information on relevant basic aspects of conventional aviation and airspace management, obstacle limitation surfaces and PANS-OPS protection surfaces, and on regulations related to category B operations;
4. do not require authorization by the regulatory authority or other organization designated by the regulatory authority to approve UAS operations; and
5. may operate in airspace that may normally be used by other conventional aircraft, subject to observance of standard limitations specified in the regulations.

7.53 Typical conditions for Category B operations may include operation:



Regulated Acceptable Risk UAS operations

UAS Operations in Category C

7.55 Regulations should define Category C or *regulated acceptable risk* category UAS operations as those that:

1. May not be conducted under Categories A or B;
2. Require specific authorization by the regulatory authority or other organization delegated by the regulatory authority to approve UAS operations;
3. Require the operator to have an appropriate organizational structure and safety management system in place;
4. require that the operator has demonstrated, to the satisfaction of the regulatory authority, or by other approved organization, satisfactory knowledge of technical and operational aspects of unmanned aircraft operations approved by the regulatory authority;
5. may operate in airspace that may normally be used by other conventional aircraft, including controlled airspace and near or over aerodromes, subject to the conditions of the authorization.

7.56 Typically, authorization of Category C UAS operations specifically may require the operation to be limited to unmanned aircraft that:



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- **RESPONSIBILITIES OF APPROVED PERSONS OR ORGANIZATIONS**

- Persons issuing qualifications for UAS operations, appointing persons to give instruction, authorizing persons to notify ATS, inspecting and approving construction, modification or maintenance of UA.

- **CONTINGENCY PROCEDURES**

- Non-normal UAS operations, fail-safe systems, return-to-base trajectories, reporting degradations/failures to authorities, ATS and airport contingency response to UA.



The ICAO UAS Toolkit



ICAO COVID-19 Series Webinars (recorded)



Click on each image to find out more....



UAS & ICAO AVSEC

- ICAO EB 2020/38 (22 July 2020) disseminated stand-alone AVSEC guidance material regarding protection of civil aviation infrastructure against unmanned aircraft (to be incorporated into new 12th Edition of ICAO Security Manual, Doc 8973 – under final review).



UAS & ICAO AVSEC

- ICAO maintains internal coordination between ATB (AVSEC) and ANB on anything UAS/RPAS related, including AVSEC participation in the WG to the RPAS Panel, as well as with other relevant UN security entities and INTERPOL.



UAS & ICAO AVSEC

- The ICAO AVSEC Panel evaluates the global AVSEC Risk Context develops relevant guidance material, maintains directory of instances of Acts of Unlawful Interference and determines the need for SARPs - including in relation to UAS and RPAS.



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