



## **NOTICE OF PROPOSED AMENDMENT 2017-10**

**Issue 01**

**Date of issue: 22<sup>nd</sup> October 2017**

**SUBJECT:**

CAR UAS - UNMANNED AIRCRAFT SYSTEM (UAS) OPERATION

**REFERENCE PUBLICATIONS:**

N/A

**REASON:**

In 2016, the GCAA has issued CAR-UAS to regulate organisations that operate Unnamed Aircraft System (UAS) within Emirates FIR. Following its implementation, the GCAA has observed that the current UAS regulatory framework is a bit fragmented and requires better integration to facilitate its implementation and understanding by the concerned organisations and individuals.

The new proposed rule has been designed to regulate registration of Unnamed Aircraft, the authorisation of operators of UAS (i.e. conducting operations for (1a) Commercial purposes, (1b) Non-commercial activities purposes other than recreational, (2) Experimental and Research and Development, (3) Flight Display with UAS and (4) Demonstration Flights with UAS) and their operations within Emirates FIR.

**RECOMMENDATIONS:**

This notice is published to amend the current UAS regulations (CAR-UAS) to the public this regulation and to entitle all concerned parties to:

1. Review the attached proposed regulation; and
2. Agree on the date of applicability for those changes set to 15 February 2018; and
3. Submit their comments on the changes and date of applicability online through the GCAA website by 15 December 2017.

Comments must be submitted through the GCAA Website – E-Publication – Notice of Proposed Amendment, using the Action of “Submit NPA Feedback Request.”

Comments and Responses may be viewed in the Comments Response Document CRD pertaining to this NPA on the GCAA website.

**CONTACT:**

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# **CAR-UAS**

## **UNMANNED AIRCRAFT SYSTEM (UAS)**

### **OPERATION**



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## **UAS.001 SCOPE**

This CAR prescribes the requirements to be met by person or organisation operating UA for the purpose of:

- a) commercial and non-commercial activities;
- b) experimentation and research and development activities;
- c) Flight Display with UA; and
- d) Demonstration flights.

## **GM to UAS.001**

### **1. GENERAL**

This CAR does not apply to:

- a) Recreational operations of UA (Recreational activities are regulated by CAR PART II – Chapter 10.);
- b) UA operated by military, Ministry of Interiors and police forces unless the intended flight will be undertaken in an airspace that requires GCAA approval. In such case, only requirement UAS.040 will apply; and
- c) UA intended for carriage of passengers.

### **2. COMMERCIAL AND NON-COMMERCIAL ACTIVITIES**

- a) This category is for all organization/operators who would like to operate UAS/drones in the UAE for commercial purposes or for special operations e.g. photography, aerial survey, etc.
- b) Commercial organisation which is involved in all types of commercial operation and which receives reward/payment for its activities.
- c) Non-commercial is an entity involved in non-commercial operations, which includes all types of activities for their own need.

### **3. EXPERIMENTATION AND RESEARCH & DEVELOPMENT**

This includes the following activities:

- a) UA Research & Development;
- b) Conduct UA flights to develop new technology;
- c) Install new equipment;
- d) Experiment new use of UA;
- e) Scientific and academic research purposes.

### **4. UA FLIGHT DISPLAY**

This includes the following activities:

- a) Competitions that are held by organisations to award developers of novel UA technologies.
- b) Drone flight show



## 5. DEMONSTRATION FLIGHT

A demonstration flight may be required for marketing and selling purposes related to UA.

### UAS.005 MEANS OF COMPLIANCE

When a person or organisation wishes to use an alternative means of compliance to the acceptable means of compliance (AMC), it shall prior to implementing it, and provide for GCAA acceptance, a full description of the alternative means of compliance.

### UAS.010 ABBREVIATIONS AND DEFINITIONS

For the purposes of this Chapter, the following abbreviations and definitions apply:

#### 1. Abbreviations

- (1) TRA: Telecommunications Regulatory Authority
- (2) UA: Unmanned Aircraft
- (3) VLOS: Visual Line of Sight
- (4) UOA: UA Operator Authorisation
- (5) FIR: Flight Information Region

#### 2. Definitions

- (1) **Commercial Activities:** an UA operation conducted for remuneration or hire.
- (2) **Congested Area:** any area of a city, town or settlement which is substantially used for residential, industrial, commercial or public recreational purposes.
- (3) **Controlled Airspace:** An airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification.
- (4) **Drone Fly Zone:** Airspace indicated on the GCAA UAE Drone Map Application as Drone Fly Zone from surface to 400 feet, indicating that drones may be operated in this area.
- (5) **Exterior Building Airspace:** Airspace within 20 meters of the edges of a building located outside any airport boundary fence
- (6) **Non-segregated Airspace:** Any airspace other than segregated airspace.
- (7) **Interior Building Airspace:** space inside a closed building, or within the interior area of a closed stadium,
- (8) **Operational Control:** The exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of safety.
- (9) **Operator:** An organisation engaged in the operation of a UA, other than for recreation.
- (10) **Prohibited Area:** An Airspace of defined dimensions designated by the Competent Authority (GCAA), above the territory of the UAE, within which the flight of any aircraft, including UA is prohibited.



- (11) **Restricted Area:** An airspace of defined dimensions, above the territory of the UAE, within which the flight of aircraft is restricted in accordance with certain specified conditions.
- (12) **Segregated Airspace:** Airspace of specified dimensions allocated for exclusive use to specific user(s)
- (13) **Sense and Avoid:** The capability to sense or detect conflicting traffic or other hazards and take the appropriate avoiding action
- (14) **Special UA Zone:** Airspace defined by GCAA to permit UA operations within defined lateral and vertical airspace limits, during defined time periods. Special UA Zones are published on the GCAA Website [www.gcaa.gov.ae](http://www.gcaa.gov.ae) and are indicated on the GCAA UAE Drone Map
- (15) **Unmanned Aircraft (UA):** An aircraft operated with no pilot on board. A UA may be remotely piloted or autonomously piloted. Radio Controlled (RC) Aircraft fall also under this definition
- (16) **UA Pilot:** The person who manipulates the flight and engine controls of a UA during flight time.
- (17) **Visual Meteorological Conditions (VMC):** Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima.
- (18) **VLOS Operation:** An operation in which the UA Operating Crew maintains direct visual contact with the UA to manage its flight and meet separation and collision avoidance responsibilities.
- (19) **Flight Information Region (FIR):** An airspace of defined dimensions within which flight information service and alerting service are provided.

#### UAS.015 APPLICATION FOR UOA

The application for a UA Operator Authorisation (UOA) or an amendment to an existing UOA shall be made in a form and manner established by the GCAA.

Applicants for an initial UOA shall provide the GCAA with documentation demonstrating how they will comply with this CAR.

#### AMC to UAS.015

##### 1. COMMERCIAL AND NON-COMMERCIAL ACTIVITIES

The required process and documents are as following:

- (a) Apply for security clearance for the organization through the [GCAA website](#).
- (b) Submit Application Letter to: [drones@gcaa.gov.ae](mailto:drones@gcaa.gov.ae) along with the following details:
  - A description of the proposed operation
  - Management Commitment Statement
  - List of the unmanned aircraft type with serial number, colour and mass in KG

*Note: The Application Letter should be formatted in company letterhead signed by an authorized representative.*

- (c) Subscription to GCAA E-Publication through the [GCAA website](#): (the applicant should provide evidence of such subscription).



## 2. EXPERIMENTATION AND RESEARCH & DEVELOPMENT

The required process and documents are as following:

- (a) Application Letter to be submitted to [drones@gcaa.gov.ae](mailto:drones@gcaa.gov.ae) along with the following details:
- A description of the proposed operation
  - Management Commitment Statement
  - List of the unmanned aircraft type with serial number, colour and mass in KG.

*Note: The Application Letter should be formatted in company letterhead signed by an authorized representative.*

- (b) Subscription to GCAA E-Publication through the [GCAA website](#): (the applicant should provide evidence of such subscription).

## 3. UA FLIGHT DISPLAY

The required process and documents are as following to be submitted to [drones@gcaa.gov.ae](mailto:drones@gcaa.gov.ae):

- (a) Application Letter along with the following details:
- A description of the proposed operation
  - Statement of compliance with GCAA requirements

*Note: The Application Letter should be formatted in company letterhead signed by an authorized representative.*

- (b) A copy of trade license of the organization.
- (c) Subscription to GCAA E-Publication through the [GCAA website](#): (the applicant should provide evidence of such subscription.)



#### 4. DEMONSTRATION FLIGHT

The required process and documents are as following:

##### 4.1 UAE based organisation

Wishing to perform AD-HOC demonstration flights to demonstrate the unmanned aircraft capabilities (for example to potential buyers) should submit their application by email to [drones@gcaa.gov.ae](mailto:drones@gcaa.gov.ae) which is composed of:

(a) an Application Letter along with the following details:

- i. A description of the proposed operation
- ii. Management Commitment Statement
- iii. List of the unmanned aircraft type with serial number, colour and mass in KG.

*Note: The Application Letter should be formatted in company letterhead signed by an authorized representative.*

(b) A copy of trade license of the organization.

##### 4.2 Non-UAE based organisations

Wishing to perform AD-HOC demonstration flights to demonstrate the unmanned aircraft capabilities (for example to potential buyers) should submit their application by email to [drones@gcaa.gov.ae](mailto:drones@gcaa.gov.ae) which is composed of:

(a) an Application Letter along with the following details:

- i. A description of the proposed operation
- ii. Management Commitment Statement
- iii. List of the unmanned aircraft type with serial number, colour and mass in KG.

*Note: The Application Letter should be formatted in company letterhead signed by an authorized representative.*

(b) A copy of trade license of the organization.

(c) Invitation from a local potential buyer

(d) UA registration certificate from the foreign authority if available

(e) Applicant's passport copy

##### GM to UAS.015

GCAA may authorise the UAE based organisation to contract a non-UAE based UA Operator if there is no UAE UA operator capable of performing the requested mission. In such case, the UAE based organisation should apply for a UOA and it will hold full responsibility over the contracted non-UAE UA operator.





#### **UAS.020 GENERAL PROVISIONS**

No person or organisation shall operate UA within the Emirates Flight Information Region (FIR) for the purposes specified in UAS.001 unless:

- a) The UA is registered with the GCAA or unless otherwise agreed by the GCAA; and
- b) The operations have been authorised by the GCAA in accordance with this regulation.

#### **UAS.025 OPERATORS' RESPONSIBILITIES**

- a) Operators shall ensure that every flight is conducted in accordance with the provisions of this CAR and applicable laws (including the Civil Aviation Law of the UAE) this includes but not limited to the following requirements:
  - i. Operators shall not operate UA in a manner which may cause safety risks to other individuals/properties or aircraft;
  - ii. Operators shall ensure that the UA Pilot gives way to other aircraft at all times and land the UA whenever hearing or sighting another aircraft in the vicinity of the UA operation;
  - iii. Operators shall ensure that no flight contravenes intentionally or unintentionally the privacy of others;
  - iv. Operators shall determine and maintain a defined Minimum Safety Distance for operation of any UA from persons not directly involved in flying the UA and from fixed or mobile objects. The Minimum Safety Distance shall not be less than 50 meters unless prior authorisation has been obtained from the GCAA;
  - v. No UA shall be used to carry persons;
  - vi. Operators shall ensure that no flights is for recreational purposes; and
  - vii. Operators shall ensure that no flights is for commercial activities unless authorised.
- b) Operators shall obtain the necessary agreement from the owner(s) of a property that the UA will overfly or fly nearby. In the case of a public area or residential area, approval from the local municipality shall be obtained.
- c) Operators shall ensure that UA(s) are stored securely, and released for pilots use in a controlled and documented manner.
- d) Operators shall establish and maintain a system for exercising operational control over any flight operated under the terms of its UOA ensuring safe initiation, continuation, diversion and termination of flight.
- e) Operators shall be responsible for ensuring that the UA is fit for the intended flight. Operators shall ensure that all instruments and equipment required for a safe operation, are available and serviceable and maintained in accordance with manufacturer and operator's maintenance instructions. In the case of Flight Displays with UA, this responsibilities may be transferred to the UA pilot; if so then this transfer shall be documented.



- f) Operators shall assess and authorise UA Pilots before they can operate under their UOA. The assessment shall determine if UA Pilots:
- i. are fit for operating the UA safely;
  - ii. are qualified for the intended operation;
  - iii. can operate with strict adherence to applicable laws, regulations and procedures;
  - iv. have minimum required age of:
    1. 21 years-old when engaged in commercial activities or UA flight display; or
    2. 18 years-old when engaged in others activities.
- g) Operators shall ensure that all personnel assigned to, or directly involved in operations remain free from any conditions which may impair their capacity to perform their duties.
- h) Operators shall notify changes concerning accountable person, operator name, address or contact details, type of UA, fleet size or any change that could impact the safety of the operations to the GCAA prior to implementing the change.
- i) Operators shall ensure that no operation is undertaken unless:
- i. latest updated information about authorised flying airspaces (through the UAE drone application) is obtained;
  - ii. authorised flying airspaces are appropriately disseminated to the concerned persons;
  - iii. requirement of UAS.035 and UAS.040 are complied with;
  - iv. public safety including emergency contingencies to cover failure scenarios is assured;
  - v. UAs are registered within the GCAA, including those that are under importation into the UAE. Registration shall be made prior to importation.
- j) Operators shall retain for at least 24 months any records that could serve:
- vi. Operators to demonstrate their compliance with this CAR and applicable laws;
  - vii. The GCAA and Operators in the course of an investigation;
  - viii. To establish responsibilities and hence liability between Operators, UA Pilots and other parties.

Records shall be stored in a manner that ensures protection from damage, alteration and theft.

**GM to UAS.055 (h) (v)**

Registration is a pre-requisite for customs clearance purposes.



#### **GM to UAS.055 (a)**

When Operators are engaged in Commercial Activities then Operators should establish procedures and instructions for the safe operation of UA, containing staff duties and responsibilities, for all types of operation. The procedures should not contravene the requirements stipulated in this CAR. The procedures should be easily accessible to concerned staff and should state clear roles and responsibilities of the operator and the UA Pilot.

For Operators engaged in other activities than Commercial Activities, the GCAA may accept that such procedures and instructions are not documented as long as Operators can ensure that the above mentioned principles are met.

#### **GM to UAS.055 (j)**

Records could be but not limited to:

1. Flight missions logs containing:
  - a) Date of the flight
  - b) Route information/ GPS coordinates
  - c) Time of start and End of Flight
  - d) Name of Pilot
  - e) Observations / incidents/ equipment failure
  - f) GCAA operation Approval, if applicable
  - g) all Experimental Pilot Authorisations has issued to its members
  - h) UA details under its responsibilities with the following characteristics: UA model, UA serial number, UA weight, UA main colour.
2. Operators engaged in Flight Displays with UA should in addition maintain the record of every Flight Display's details. The details should at least contain the following: Flight Displays (i.e. refer to GM to UAS.001) type, date and location, list of participated drones and pilots.
3. UA Pilots authorisation and assessment.

#### **UAS.030 OCCURRENCE REPORTING**

- a) The operator shall report to the GCAA, and to any other organisation required by the GCAA to be informed, any accident, serious incident and occurrence as defined in applicable occurrence reporting regulations.
- b) Without prejudice to paragraph (a) the organisation shall report to the GCAA and to the organisation responsible for the design of the UA any incident, malfunction, technical defect, exceeding of technical limitations and any occurrence that would highlight inaccurate, incomplete or ambiguous information contained in the manufacturer data or other irregular circumstance that has or may have endangered the safe operation of the aircraft and that has not resulted in an accident or serious incident.



- c) Without prejudice to applicable accident and incident investigation and safety occurrence reporting regulations, the reports referred in paragraphs (a) and (b) shall be made in a form and manner established by the GCAA and contain all pertinent information about the condition known to the organisation.
- d) Reports shall be made as soon as practicable, but in any case within 72 hours of the organisation identifying the condition to which the report relates, unless exceptional circumstances prevent this.
- e) Where relevant, the organisation shall produce a follow-up report to provide details of actions it intends to take to prevent similar occurrences in the future, as soon as these actions have been identified.

#### **AMC to UAS.030**

The following list while not exhaustive includes types of incidents involving UA Operations, which shall be reported to the GCAA by [email to](#):

- a) Crashes resulting in any injury or fatality to a person, damage to property, damage to UA, interferences in signal or control of UA.
- b) Experiences a near miss with a manned aircraft or other UA;
- c) Collides with a building or structure;
- d) Operates without appropriate GCAA approval;
- e) Penetrates controlled airspace without an ATC Clearance;
- f) Conducts photography without an appropriate security approval;
- g) Operation which results in a public nuisance.
- h) Penetrates No flying Zone without appropriate GCAA Approval.
- i) Any other applicable occurrence as prescribed by CAAP 22

#### **UAS.035 UA OPERATING LIMITATIONS**

The following limitations shall apply to any operation unless a specific approval is issued by the GCAA:

- a) Operations shall be limited to day time;
- b) Operations shall be limited to VLOS operations and VMC;
- c) Operations shall be limited to 400 ft height above the ground;
- d) Operations shall be limited to UA with a maximum take-off mass of 25kg;
- e) Operations shall not be conducted in:
  - i. prohibited , restricted or congested areas;
  - ii. the vicinity of crowds or above them;
  - iii. controlled airspace;
  - iv. zones declared as “No Fly Zone”;
  - v. a perimeter within 8 km of UAE airports outer fence, heliports, helicopter landing sites or airfields;
- f) Operations shall be performed within the design capability and envelop of the UA.

#### **GM to UAS.035**

To obtain such specific approval, the operator should conduct a safety and security risk assessment.



#### **UAS.040 AIRSPACE APPROVED FOR UAS OPERATIONS**

A UA operator intending to operate in Emirate FIR shall obtain an UAS Operational Approval prior to any flight, unless the intended flight will be conducted within:

- a) **Interior Building space** subject to obtaining prior approval from the building owner/ operator and relevant local authorities.
- b) **Exterior Building Airspace** subject to obtaining prior approval from the building owner/ operator and relevant local authorities. If a heliport is associated with the building, prior approval shall be obtained from the heliport operator.
- c) **Drone Fly Zone** subject to following all GCAA Regulations and obtaining prior approval from private land owners and relevant local authorities if applicable.
- d) **Special UA Zone** subject to **compliance with** defined lateral and vertical airspace limits and defined time periods.

#### **AMC to UAS.040**

Any UA Airspace Approval Application should be submitted through the GCAA E-Services and should include information related to:

- (a) intended route/ coordinates
- (b) times and dates of the flights

Application should be provided 2 weeks before the intended flight/Flight Displays.

#### **GM to UAS.040**

For UA Operations requiring an UAS Operational Approval, during the review process, the GCAA will determine if segregated airspace is necessary, dependent on location, altitude and timing of requested UA Flights

#### **UAS.045 SECURITY RULES**

The operators shall ensure compliance with any security requirement mandated by the GCAA or any other agencies and in particular:

- a) No Dangerous Good shall be transported by air unless permitted by the GCAA.
- b) The use of aerial photographic apparatus installed on the UA shall not be permitted without a prior authorization by the [GCAA](#).



#### **UAS.050 UA TECHNICAL SPECIFICATIONS AND EQUIPMENT**

- a) The operator shall demonstrate to GCAA that the technical specification and equipment of UA are appropriate for the intended flight
- b) The operator shall ensure that based on the following UA weight categories, the minimum equipment is present and managed in a serviceable condition.

#### **GM to UAS.050**

The following technical specification/technology/equipment may be required:

##### **1. Operation in Segregated Airspace**

- a) Geo-fencing technology
- b) Frequency Band Restrictions (29.7-47.0 MHz- max power 10 mW OR 2400-2500 MHz max power 100 mW).

##### **2. Operation in non-Segregated Airspace**

- c) Geo-fencing technology
- d) Surveillance System compatible with the ATM System
- e) Voice Communication System Compatible with the ATM System
- f) Sense and avoid equipment
- g) Geo-fencing Software.
- h) Frequency Band Restrictions (29.7-47.0 MHz- max power 10 mW OR 2400-2500 MHz max power 100 mW).

*Note: if operating outside the above specific frequency band and powers, approval from TRA is required.*

#### **UAS.055 UA OPERATOR AUTHORISATION CONTINUED VALIDITY**

- a) The UA Operator Authorisation (UOA) shall be valid for one year and its validity is subject to:
  - i. The operator remaining in compliance with the applicable requirements and conditions stipulated in the authorisation.
  - ii. The GCAA being granted access to the operator facilities and its records and documents; and
  - iii. The UOA not being surrendered, suspended or revoked.
- b) Upon revocation, the UOA shall be returned to the GCAA without delay.