



NOTICE OF PROPOSED AMENDMENT 2019-06

Issue 01

Date of issue: 30 September 2019

SUBJECT:

CAR-UAM - URBAN AIR MOBILITY OPERATIONS

REFERENCE PUBLICATIONS:

CAR-UAM

REASON:

Following the evaluation of related activities within the scope of Urban Air Mobility and internal/external comments received after the publication of the "Notice of Proposed Amendment 2018-04 - CAR - Passenger Carrying Unmanned Aerial Systems (UAS) Operations - ISSUE 01", the GCAA has published a revised NPA that:

- Takes into account the content of NPA 2018-04;
- modifies the applicability and the whole structure of the regulation;
- contains AMCs and GMs to facilitate the interpretation and ensure compliance with the implementing rules.

Affected stakeholders:

N/A

SUBMISSION OF COMMENTS:

This NPA is published to announce to the public this new CAR and to entitle all concerned parties to:

- a) Review the attached proposed new regulation;
- b) Agree on the date of applicability for this CAR is set to 01st February 2020; and
- c) Submit comments on the new regulation through the GCAA website by 30th November 2019.

Comments must be submitted through the GCAA Website – E-Publication – Notice of Proposed Amendment, using the Action of "Submit NPA Feedback Request". Any comments submitted using other means will not be considered.

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



CAR-UAM

Urban Air Mobility Operations

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FORWORD

Purpose

- (a) Federal Decree Law No. 4 of 1996 and Federal Decree Law No. 20 of 1991, of the United Arab Emirates, establish the General Civil Aviation Authority (GCAA) as the Competent Authority with respect to civil aviation activities.

Note: A Competent Authority is any person or organization that has the legally delegated or invested authority, capacity, or power to perform a designated function. Similarly, once an authority is delegated to perform a certain act, only the Competent Authority is entitled to take accounts therefrom and no one else.

- (b) The GCAA is required, under article 6 of the General Civil Aviation Law, to implement international agreements in the field of aviation and by article 7 of the same Law, to promulgate policy for civil aviation and propose laws and regulations.
- (c) As the Competent Authority, the GCAA has implemented CAR-UAM to specify the requirements to be met for the grant of an Urban Air Mobility (UAM) Operator Certificate and for the continued validity of such a Certificate.
- (d) This UAM Operations Regulation can apply to aircraft with pilot on-board, remotely piloted or with various degrees of autonomy.
- (e) These regulations represent the minimum requirements designed to achieve an acceptable level of safety and security.

Interpretation

- (a) The use of the word “shall”, in these Regulations, means the requirement is mandatory.
- (b) The use of the word “should” does not mean that compliance is optional but rather that, where insurmountable difficulties exist, the Authority may accept an alternative means of compliance, provided that an acceptable safety risk assessment from the operator shows that the safety requirements will not be reduced below that intended by the requirement.
- (c) The terms ‘competent authority’, ‘authority’, or ‘GCAA’, may be used to refer to the General Civil Aviation Authority of the United Arab Emirates. The term ‘appropriate authority’, or ‘local aviation authority’ may be used to refer to the civil aviation authority of any individual Emirate within the UAE.
- (d) The term ‘certificate’, ‘Urban Air Mobility Operator Certificate’, or ‘UAM certificate’ refers to any certificate issued to a provider of Urban Air Mobility Operations covered under this Regulation.
- (e) The term ‘organisation’ refers to the organisation that is issued with the Urban Air Mobility Operator Certificate.

Implementing Rules (IR)

- (a) Are binding in their entirety and used to specify a high and uniform level of safety and uniform conformity and compliance.



AMC Acceptable Means of Compliance (AMC)

- (a) Are non-binding. The AMC serves as a means by which the requirements contained in the Implementing Rules can be met. However, applicants may decide to show compliance with the requirements using other means. Organisations may propose alternative means of compliance.
- (b) 'Alternative Means of Compliance' are those that propose an alternative to an existing AMC. Those Alternative Means of Compliance proposals must be accompanied by evidence of their ability to meet the intent of the IR.
- (c) Use of an existing AMC gives the user the benefit of compliance with the IR.

GM Guidance Material (GM)

- (a) Is non-binding explanatory and interpretation material on how to achieve the requirements contained in the IRs and the AMCs. It contains information, including examples, to assist the user in the interpretation and application of the requirements.

Documentation hierarchy

- (a) UAE Civil Aviation Law
- (b) UAE Civil Aviation Regulations
- (c) Other regulatory material published by the Authority
- (d) ICAO Annexes
- (e) ICAO Documents.

Note: Article 19 of the UAE Civil Aviation Law (1991) states that "The Chicago Convention and other protocols and agreements pertaining to civil aviation and its protection, of which the State is a party, shall be considered complementary to the provisions of this Law in as much as they do not contradict its provisions"

References

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Record of amendments

| Version | Date of Issue | Date of Applicability |
|---------|---------------|-----------------------|
| 1.0 | November 2020 | 1 January 2020 |

Summary of changes in this version

- (a) Initial issue.
 - (1) Significant changes from the NPA are as follows:
 - (2) //



SUBPART - DEF

TERMS AND DEFINITIONS (UAM.DEF)

UAM.DEF.001 Applicability of terms, definitions, & acronyms

The definitions within this subpart shall be applicable within CAR-UAM

UAM.DEF.010 Definitions

Alternate Vertiport.

An alternate vertiport is where a UAMV would be able to land should it become either impossible or inadvisable to land at the vertiport of intended landing.

Urban Air Mobility (UAM) Operation

An Urban Air Mobility Operation includes:

- a) flights operating primarily in close proximity of populated urban areas, for the carriage by air of passengers, freight or mail, or any combination thereof for remuneration; and
- b) where the aircraft used is an Urban Air Mobility Vehicle (UAMV), which may be operated with pilot on-board, remotely piloted or with various degrees of autonomy.

Urban Air Mobility (UAM) Operator

An organisation certified for UAM operations within the terms specified in the Urban Air Mobility Operator Certificate issued Urban Air Mobility Vehicle (UAMV)

An aircraft with a Certificate of Airworthiness defined as “Small-Category Vertical Take-Off and Landing (VTOL)”, with a passenger seating configuration of 9 or less and a maximum certified take-off mass of 3175 kg (7000 lbs.) or less with lift/thrust units used to generate powered lift and control.

Note: This Urban Air Mobility (UAM) Operations applies to aircraft with pilot on-board, remotely piloted or with various degrees of autonomy; flight crew references therefore should be considered “as applicable”.

Vertiport

A defined area on a structure intended to be used wholly or in part for the arrival, departure and surface movement of Urban Air Mobility Vehicles.

UAM.DEF.020 Acronyms and Abbreviations

- (a) The Acronyms/Abbreviations used in this document have the following meanings:

XXXX ///



SUBPART - GEN GENERAL REQUIREMENTS (UAM.GEN)

SECTION 1 – CERTIFICATION

UAM.GEN.101 Scope & applicability

- (a) An 'Urban Air Mobility Operation' includes:
- (1) flights operating primarily in close proximity of densely populated urban areas, for the carriage by air of passengers, freight or mail, or any combination thereof for remuneration; and
 - (2) where the aircraft used is an Urban Air Mobility Vehicle (UAMV), which may be operated with pilot on-board, remotely piloted or with various degrees of autonomy.
- (b) An 'Urban Air Mobility Vehicle' (UAMV) includes:
- (1) An aircraft with a Certificate of Airworthiness defined as "Small-Category Vertical Take-Off and Landing (VTOL)", with a passenger seating configuration of 9 or less and a maximum certified take-off mass of 3175 kg (7000 lbs.) or less with lift/thrust units used to generate powered lift and control.
- (c) No organisation or person shall conduct an Urban Air Mobility Operation unless approved by the GCAA under this regulation.

GM1 UAM.GEN.101(a)(2)

This Urban Air Mobility (UAM) Operation applies to aircraft with pilot on-board, remotely piloted or with various degrees of autonomy; references to flight crew should therefore be considered "as applicable".

GM2 UAM.GEN101(c)

Private operations of a UAMV are prohibited without specific approval from the Authority

UAM.GEN.105 Urban Air Mobility Operator Certificate

- (a) An application for an UAM Operator Certificate or an amendment to an existing UAM Operator certificate shall be made in a form and manner established by the Authority, taking into account the applicable requirements of this regulation.
- (b) In order to obtain the certificate:
- (1) the organisation shall demonstrate compliance with the requirements set out in this Regulation; and
 - (2) the Authority must be satisfied that the granting of the certificate is not contrary to the interests of aviation safety.



AMC1 UAM.GEN.105(a) UAM Operator Certificate - Method of application

- (a) Applications for the certificate should be submitted through the GCAA E-Service System.
- (b) The application submitted to the Authority for consideration should be accompanied with the necessary documentation to demonstrate compliance with the regulations, including:
 - (1) Organisation Exposition;
 - (2) GCAA Security clearance;
 - (3) Safety Management System (SMS) Manual;
 - (4) Quality Management System (QMS) Manual;
 - (5) Security Management System Manual (SeMS);
 - (6) Training manuals, as applicable;
 - (7) Operations manuals, as applicable; and
 - (8) Any other documents as required by the GCAA.
- (c) The processing of the application is subject to successful payment of any fees as specified by the Authority.

UAM.GEN.110 Continued validity of a certificate

- (a) A certificate shall remain valid subject to:
 - (1) the organisation and their operations remaining in compliance with the law, and the applicable requirements set out in this Regulation in particular the exercise of the powers of the competent authority, and the handling of findings as specified in points UAM.GEN.210 and UAM.GEN.220 respectively;
 - (2) the certificate not having been surrendered, suspended or revoked.
- (b) Upon revocation or surrender, the certificate shall be returned to the Authority without delay.

UAM.GEN.120 Alternative Means of Compliance (AltMoC)

- (a) Alternative means of compliance (AltMoC) to the Acceptable Means of Compliance (AMC) adopted by the Authority may be used by the organisation to establish compliance with the requirements of this Regulation.
 - (1) When the organisation wishes to use an AltMoC, it shall, prior to implementing it, provide the Authority with a full description of the AltMoC. The description shall include any revisions to manuals or procedures that may be relevant, as well as an assessment demonstrating compliance with the requirements of this Regulation.
 - (2) The organisation may implement these alternative means of compliance subject to prior approval by the Authority and only upon receipt of such notification.



UAM.GEN.130 Demonstration of compliance

- (a) The organisation shall provide all the relevant evidence to demonstrate compliance with the applicable requirements of this Regulation at the request of the Authority.

ORO.GEN.125 Terms of approval and privileges of a certificate holder

- (a) UAM operator shall comply with the scope and privileges defined in the operations specifications attached to the operator's certificate.

SECTION 2 – OVERSIGHT ACTIVITIES

UAM.GEN.210 Facilitation and cooperation

- (a) For the purpose of determining compliance with the relevant requirements of the Regulations, the operator shall grant access at any time to any facility, aircraft, document, records, data, procedures or any other material relevant to its activity subject to certification and oversight, whether it is contracted or not, to the Authority.
- (b) An organisation shall facilitate planned and unplanned inspections and audits by the Authority and it shall cooperate as necessary for the efficient and effective exercise of the powers of the Authority.
- (c) An organisation shall facilitate the possession of electronic equipment provided to inspectors to support their oversight functions. This includes, computers, cameras and audio recording devices, provided by the Authority to support regulatory oversight activities
- (d) Access to the aircraft mentioned under (a) shall include the possibility to enter and remain in the aircraft during flight operations unless otherwise decided by the commander for the flight crew compartment in the interest of safety

UAM.GEN.220 Findings, corrective actions and preventive actions plan

- (a) After receipt of notification of findings from the Authority, the organisation shall:
- (1) identify the root cause of the non-compliance;
 - (2) define a corrective/preventive action plan acceptable to the authority;
 - (3) demonstrate corrective action implementation to the satisfaction of the Authority within the time period proposed by the operator and agreed with the Authority.

AMC

findings definitions and associated time period are specified in GCAA Audit Standards

UAM.GEN.230 Non-compliance and enforcement actions

- (a) Operators shall ensure compliance with any operational restrictions, suspension, or revocation in case of non-resolution of non-compliance;
- (b) Operators and their personnel shall not engage in, support, or conceal unsafe acts.



- (c) The Authority may impose restrictions, suspend, limit or revoke a certificate if the operator cannot demonstrate its capability to implement and maintain the appropriate safety standards.

UAM.GEN.240 Immediate reactions to a safety problem

- (a) A Level One (1) finding shall require immediate corrective or containment action by the organisation, the failure of which shall result in limitation, suspension, or revocation of the certificate, authorisation or license.
- (b) An organisation shall implement any safety measures, including safety directives, mandated by the Authority.

SECTION 3 – OCCURRENCE REPORTING AND INVESTIGATIONS

UAM.GEN.305 Occurrence reporting

- (a) The operator shall report to the competent authority, any accident, serious incident and occurrence as required by the Regulations.
- (b) Without prejudice to point (a) the operator shall report to the competent authority and to the organisation responsible for the design of the aircraft any incident, malfunction, technical defect, exceeding of technical limitations or occurrence that would highlight inaccurate, incomplete or ambiguous information contained in the aircraft 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) The reports referred in points (a) and (b) shall be made in a form and manner established by the competent authority and shall contain all pertinent information about the conditions known to the operator.
- (d) Reports shall be made as soon as practicable, but in any case within prescribed timeframe from the moment the operator identifying the condition to which the report relates, unless exceptional circumstances prevent this.
- (e) Where relevant, the operator 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. This report shall be produced in a form and manner established by the competent authority.
- (f) In the event of any accident or serious incident, the organisation shall secure all flight data and evidences relevant to the incident aircraft and provide every support the investigation which will be conducted by the GCAA Aircraft Accident Investigation (AAI) Sector.

AMC1 UAM.GEN.305(a)

- (a) Details of reportable occurrences are contained in CAAP 22.

UAM.GEN.320 Notification of security incidents

- (a) All security incidents/breaches and an act of unlawful interferences shall be reported immediately to the GCAA – AVSEC Department (Hotline/ROSB system).



- (b) All security incidents/breaches involving UAM shall be investigated by the UAM Operator and an investigation report shall be sent to the GCAA within 72 hours.



SUBPART - ORG ORGANISATION REQUIREMENTS (UAM.ORG)

SECTION 1 – MANAGEMENT AND KEY PERSONNEL

UAM.ORG.105 Management system

- (a) The operator shall establish, implement and maintain a management system that includes:
- (1) clearly defined lines of responsibility and accountability throughout the operator, including a direct safety accountability of the accountable manager;
 - (2) a description of the overall philosophies and principles of the operator with regard to safety, referred to as the safety policy;
 - (3) the identification of aviation safety hazards entailed by the activities of the operator, their evaluation and the management of associated risks, including taking actions to mitigate the risk and verify their effectiveness;
 - (4) maintaining personnel trained and competent to perform their tasks;
 - (5) documentation of all management system key processes, including a process for making personnel aware of their responsibilities and the procedure for amending this documentation;
 - (6) a function to monitor compliance of the operator with the relevant requirements. Compliance monitoring shall include a feedback system of findings to the accountable manager to ensure effective implementation of corrective actions as necessary; and
 - (7) any additional requirements that are prescribed by the Authority
- (b) The management system shall correspond to the size of the operator and the nature and complexity of its activities, taking into account the hazards and associated risks inherent in these activities.
- (c) In the case that the organisation also holds a certificate for other aviation activities, it shall ensure that the management system covers all activities in the scope of its certificates.

AMC1 UAM.ORG.105 Safety Management System (SMS)

- (a) The organisation should maintain a safety management system (SMS) that complies with CAR Part X:

UAM.ORG.110 Personnel requirements

- (a) The operator shall appoint an accountable manager, who has the authority for ensuring that all activities can be financed and carried out in accordance with the applicable requirements. The accountable manager shall be responsible for establishing and maintaining an effective management system.
- (b) A person or group of persons shall be nominated by the operator, with the responsibility of ensuring that the operator remains in compliance with the applicable requirements. Such



person(s) shall be ultimately responsible to the accountable manager. Such person or group of persons shall be acceptable to the Authority.

- (c) The operator shall have sufficient qualified personnel for the planned tasks and activities to be performed in accordance with the applicable requirements.
- (d) The operator shall maintain appropriate experience, qualification and training records to show compliance with point (c).
- (e) The operator shall ensure that all personnel are aware of the rules and procedures relevant to the exercise of their duties.
- (f) All personnel engaged in the operation shall undergo a security background check.

AMC1 UAM.ORG.115(b) Post holders of essential positions

(a) An organisation should ensure the following 'Post Holder' roles are continually occupied by appropriately qualified and experienced persons:

(1) 'Operations', who shall:

- (i) have appropriate knowledge and experience relevant to the service certificate and associated privileges sought;
- (ii) be responsible for the service implementation, maintenance, documentation, performance, effectiveness and oversight of the organisation;
- (iii) be a principle communicator with the Authority in relation to audits and service provision issues relating to the service operational system; and
- (iv) be ultimately responsible to the accountable manager.

(2) 'Training', who shall:

- (i) have appropriate knowledge and experience relevant to the service certificate and associated privileges sought;
- (ii) be responsible for the training system implementation, maintenance, documentation, performance, effectiveness and oversight of the organisation;
- (iii) be a principle communicator with the Authority in relation to audits and service provision issues related to the training system; and
- (iv) be ultimately responsible to the accountable manager.

(3) 'Safety', who shall:

- (i) have appropriate Safety Management System knowledge and experience;
- (ii) be responsible for the Safety Management System implementation, maintenance, documentation, performance, effectiveness and oversight of the organisation;
- (iii) be a principle communicator with the Authority in relation to audits and Safety Management System issues; and
- (iv) be ultimately responsible to the accountable manager.



(4) 'Security', who shall:

- (i) have appropriate Security Management System knowledge and experience;
- (ii) be responsible for the Security Management System implementation, maintenance, documentation, performance, effectiveness and oversight of the organisation;
- (iii) be a principle communicator with the Authority in relation to audits and Security Management System issues; and
- (iv) be ultimately responsible to the accountable manager.

(5) 'Quality', who shall:

- (i) have appropriate Quality Management System knowledge and experience;
- (ii) be responsible for the Compliance Monitoring and Quality Assurance System implementation, maintenance, documentation, performance, effectiveness and oversight of the organisation;
- (iii) be a principle communicator with the Authority in relation to audits and Quality Management System and compliance issues; and
- (iv) be ultimately responsible to the accountable manager.

(6) 'Maintenance', who shall:

- (i) have appropriate knowledge and experience regarding maintenance activities;
- (ii) be responsible for the implementation, maintenance, documentation, performance, effectiveness and oversight of the maintenance activities of the organisation;
- (iii) be a principle communicator with the Authority in relation to maintenance issues; and
- (iv) be ultimately responsible to the accountable manager.

(7) 'CAMO', who shall:

- (i) Have appropriate knowledge and relevant qualification about the type of UAM being operated.
- (ii) Be responsible for all continuing airworthiness function and airworthiness of the UAMV.
- (iii) Be principle communicator with the authority in relation to airworthiness of UAMV.
- (iv) Be ultimately responsible to the accountable manager.

(b) The roles, authority, responsibilities and accountabilities of the person or group of persons occupying the above mentioned positions shall be reflected in their respective job description.



- (c) For organisations that are certified for more than one service, the organisation may establish separate post holders for (a)(2)-(7) above for each service type.
- (d) No person shall be permitted to occupy one of the positions mentioned under (a) without the approval of the Authority.
- (e) Organisations shall allocate Post Holder roles to personnel in a manner that ensures effective internal oversight and avoids conflict of interest.

UAM.ORG.120 Security Management System (SecMS)

- (a) Organisations shall, as an integral part of their management system as required in UAM.ORG.105, establish a security management system to ensure:
 - (1) the security of their facilities and personnel so as to prevent unlawful interference with the provision of services;
 - (2) the security of operational data they receive, or produce, or otherwise employ, so that access to it is restricted only to those authorised.
- (b) The security management system shall define:
 - (1) the procedures relating to security risk assessment and mitigation, security monitoring and improvement, security reviews and lesson dissemination;
 - (2) the means designed to detect security breaches and to alert personnel with appropriate security warnings;
 - (3) the means of controlling the effects of security breaches and to identify recovery action and mitigation procedures to prevent re-occurrence.
- (c) Organisations shall ensure the security clearance of their personnel, if appropriate, and coordinate with the relevant civil and military authorities to ensure the security of their facilities, personnel and data.
- (d) Organisations shall take the necessary measures to protect their systems, constituents in use and data and prevent compromising the network against information and cyber security threats which may have an unlawful interference with the provision of their service.

UAM.ORG.130 Facility requirements

- (a) An operator shall have facilities allowing the performance and management of all planned tasks and activities in accordance with the applicable requirements.

UAM.ORG.140 Liability and insurance cover

- (a) The organisation shall have in place arrangements to cover liabilities related to the execution of their tasks in accordance with the applicable law.
- (b) The organisation shall have insurance to cover the occupants and third party liability.
- (c) The method employed to provide the cover shall be appropriate to the potential loss and damage in question, taking into account the legal status of the providers concerned and the level of commercial insurance cover available.



SECTION 2 – DOCUMENTATION, RECORDS, & CHANGE MANAGEMENT

UAM.ORG.205 Organisation Exposition

- (a) The operator shall maintain an organisation exposition containing the following:
- (1) Detailed description of the intended operation;
 - (2) Details of the vertiports to be used in the operation;
 - (3) The key personnel, their role and responsibilities and the facilities;
 - (4) The qualifications, training, competency and medical requirements for pilots and any other persons engaged in the operations;
 - (5) The procedures for controlling, amending and distributing the exposition;
 - (6) The process / procedure for the identification and management of the known and likely hazards and the associated risks to people, property and other aircraft of the proposed operation, as accepted by the Authority; and
 - (7) Any other process / procedures required to comply with this regulation.
- (b) The exposition shall explain how the UAM Operator will comply with this and all other applicable regulations.

UAM.ORG.210 Changes to the exposition

- (a) The changes to the exposition may only be carried out with prior approval of the Authority except minor changes as agreed with the Authority in the exposition.
- (a) Any minor change in exposition carried out by the UAM Operator shall be notified to the Authority within 10 working days.

UAM.ORG.215 Change management

- (a) Any change affecting:
- (1) the scope of the certificate or the operations specifications of an operator; or
 - (2) any of the elements of the operator's management system as required in UAM.ORG.105 shall require prior approval by the competent authority.
- (b) For any changes requiring prior approval, the operator shall apply for and obtain an approval issued by the Authority. The application shall be submitted before any such change takes place, in order to enable the Authority to determine continued compliance with the Regulation and to amend, if necessary, the operator certificate and related terms of approval attached to it.

The operator shall provide the competent authority with any relevant documentation.

The change shall only be implemented upon receipt of formal approval by the competent authority in accordance with CAR.OPS 3.185.

The operator shall operate under the conditions prescribed by the competent authority during such changes, as applicable.



UAM.ORG.220 Record-keeping

- (a) The operator shall establish a system of record-keeping that allows adequate storage and reliable traceability of all activities developed in a way accepted by GCAA.
- (b) The format of the records shall be specified in the operator's procedures.
- (c) Records shall be stored in a manner that ensures protection from damage, alteration and theft.

UAM.ORG.225 Flight Records

- (a) The flight record shall contain following for each flight consisting:
 - (1) Registration markings of the UAMV.
 - (2) Date and commencement time of the flight.
 - (3) Departure and arrival destinations / landing sites.
 - (4) Flight duration.
 - (5) Flight paths and altitudes
 - (6) Any flight commands received from the Command Center.
- (b) The above records shall be made available to the Authority for the inspection on as required basis.



SUBPART – OPS OPERATIONS REQUIREMENTS (UAM.OPS)

SECTION 1 – GENERAL

UAM.OPS.105 Operator responsibilities

- (a) The operator is responsible for the operation of the aircraft in accordance with the applicable regulations and operating authorisations.
- (b) Every flight shall be conducted in accordance with the provisions of the operations manual.
- (c) The operator shall establish and maintain a system for exercising operational control over any flight operated under the terms of its certificate.
- (d) The operator shall ensure that its aircraft are equipped and its crews are qualified as required for the area and type of operation.
- (e) The operator shall ensure that all personnel assigned to, or directly involved in, ground and flight operations are properly instructed, have demonstrated their abilities in their particular duties and are aware of their responsibilities and the relationship of such duties to the operation as a whole.
- (f) The operator shall establish procedures and instructions for the safe operation of each aircraft type, containing ground staff and crew member duties and responsibilities, for all types of operation on the ground and in flight. Those procedures and instructions shall not require crew members to perform any activities during critical phases of flight other than those required for the safe operation of the aircraft. During critical phase, procedures and instruction shall limit interaction with the flight crew.
- (g) The operator shall ensure that all personnel are made aware that they shall comply with the laws, regulations and procedures of the UAE and that are pertinent to the performance of their duties.
- (h) The operator shall establish a checklist for each aircraft type to be used by crew members in all phases of flight under normal, abnormal and emergency conditions in order to ensure that the operating procedures in the operations manual are followed. The design and the usage of checklists shall observe human factors principles and take into account the latest relevant documentation from the design approval holder.
- (i) The operator shall specify flight planning procedures to provide for the safe conduct of the flight based on considerations of aircraft performance, other operating limitations and relevant expected conditions on the route to be followed and at the aerodromes or operating sites concerned. These procedures shall be included in the operations manual.
- (j) The operator shall establish and maintain dangerous goods training programmes for personnel as required by the technical instructions. Such training programmes shall be commensurate with the responsibilities of personnel. Training programmes of operators performing Commercial Air Transport (CAT), whether they transport dangerous goods or not, and of operators conducting



operations other than CAT referred to in points (b), (c) and (d) of point ORO.GEN.005 that transport dangerous goods shall be subject to review and approval by the competent authority.

- (k) Notwithstanding point (j), operators shall ensure that the flight crew has received an appropriate dangerous goods training or briefing, to enable them to recognise undeclared dangerous goods brought on board by passengers or as cargo.

UAM.OPS.110 Operational requirements

- (a) The holder of the certificate is authorized to perform the operations specified in the operations specification and the organisation exposition.
- (b) A UAMV shall be operated in compliance with the operating limitations specified in the flight manual or equivalent issued by the manufacturer or the exposition.

GM1 UAM.GEN.110(a) Contents of an Operations Specification

- (a) The UAM Certificate will be issued with an Operations Specification containing the following details:
- (1) Address and principal base of operations.
 - (2) The privileges of the operator including types of operations permitted.
 - (3) model and description, MSN and registration of every UAMV that is authorized for use.
 - (4) Identification of areas of operations.
 - (5) Any additional condition that the Authority determines is necessary in the interest of aviation safety and security.

UAM.OPS.115 Registration of UAMV

- (a) A UAMV shall be registered with the GCAA and display A6 nationality and registration.
- (b) The registration mark shall consist of four alpha-numeric starting with capital letter 'Q' followed by three characters assigned by the GCAA under (a) above, for example: A6-QABC.

AMC1 UAM.OPS.115 Display of registration marks

- (a) The size and location of nationality and registration marks shall be in accordance with CAR PART V Chapter 1.

SECTION 2 – AIRWORTHINESS

UAM.OPS.205 General airworthiness requirements

- (a) A UAMV shall not be operated unless the UAMV design and manufacture has been recognized by the Authority
- (b) The UAMV continuing airworthiness is the responsibility of the operator and the serviceability of both operational and emergency equipment shall be ensured by:



- (1) The accomplishment of preflight inspections;
- (2) The rectification in accordance with the data specified by the manufacture, as applicable, of any defect and damage affecting safe operation, taking into account the manufacture operation data such as MMEL and configuration deviation list, when applicable;
- (3) The accomplishment of all scheduled maintenance tasks required by manufacture maintenance program;
- (4) The accomplishment of any applicable:
 - (i) AD issued by the State, the competent authority has accepted the aircraft design;
 - (ii) Operational directive with a continuing-airworthiness impact; and
 - (iii) Any measure mandated by the competent authority in immediate reaction to a safety concern;
- (5) The accomplishment of modifications and repairs in accordance with manufacturer's data.

UAM.OPS.210 Maintenance requirements

- (a) The UAM Organisation is responsible for the Maintenance of the UAMV and shall ensure the following:
 - (1) The maintenance facilities and personals are approved / accepted by the Authority and the facilities are kept in the working condition.
 - (2) The maintenance is performed in accordance with the Manufacturer's instructions accepted by the Authority.
 - (3) The records of defects and rectifications are maintained.
 - (4) The maintenance organization has capability of performing the scope of maintenance assigned by the operator.
 - (5) The UAMV is released to service in a way accepted by GCAA.

UAM.OPS.215 Minimum equipment requirements

- (a) A UAMV shall not operate unless it is equipped with the type and number of instruments and equipment required by this regulation. All required equipment shall be operative, unless otherwise covered by an approved Minimum Equipment List (MEL)
- (b) A UAMV shall have a communication system capable of providing continuous two-way communications between the occupant and the UAM Command Center.

AMC1 UAM.OPS.215(a)

- (a) A UAMV shall be equipped with:
 - (1) Instruments and equipment required by applicable airworthiness design standards.
 - (2) A system to monitor the cabin during flight.



- (3) A system to provide present location information of the UAMV to the Command Center.
- (4) Position lights.
- (5) Anti-collision lights.
- (6) Compartment lights.
- (7) Cabin temperature indicator and control.
- (8) Means of recording time in hours, minutes, and seconds.
- (9) Means to provide UAMV battery / fuel status to the UAM Command Center
- (10) Seats with seat belt provision for each passenger.
- (11) A lockable door mechanism which ensures onboard passengers are not able to open the door whilst the aircraft is in operation, unless the aircraft is on ground in an emergency condition
- (12) Any mission specific equipment for the type of operations approved.

SECTION 3 – COMMAND AND CONTROL

UAM.OPS.305 Command centre

- (a) A CAT UAM Command Center shall be equipped with a means of:
 - (1) monitoring and recording the actual position of the UAMV;
 - (2) monitoring and recording the UAMV battery and fuel status;
 - (3) providing an alert to Operator if the battery / fuel status falls below operational requirements;
 - (4) monitoring system for UAMV;
 - (5) effective communications with: Police, and Search and Rescue units.
 - (6) monitoring and recording the UAMV Flight Control Systems.
 - (7) emergency over-ride, remote pilot control system (If deemed operationally necessary).

SECTION 4 – VERTIPOINTS

UAM.OPS.405 Vertiports - General

- (a) Unless an emergency situation requires otherwise, a UAMV shall only take-off and land at vertiports authorised by the Authority.

AMC1 UAM.OPS.405 Vertiport approval

- (a) The landing site operator should follow UAE Heliport Regulation for surface level operations.



- (b) The landing site operator should convene a design and development meeting with the Authority for the landing site planning and design approval.
- (c) Landing site designs shall be submitted to the Authority prior to construction commencing.
- (d) The UAM Operator shall submit the following take-off / landing site details to the Authority for approval review:
 - (1) selection of a site which the operator considers to be satisfactory, taking account of the applicable UAMV size, weight, performance requirements and site characteristics (for example: physical size, markings, lighting, and obstacle restrictions).
 - (2) Approach and take-off flight paths.
 - (3) Surface conditions.
 - (4) Public protection and security.
 - (5) Rescue and fire emergency response.
 - (6) Site Management, including routine inspections, maintenance, refueling/ recharging facilities and incident reporting process.
- (e) The Authority may conduct landing site inspections once construction is completed and before operations can commence.

UAM.OPS.410 Vertiport staffing

- (a) Vertiports shall be attended by sufficient personnel to ensure the safe and secure operation during all phases of UAM operation.

UAM.OPS.415 Publication of vertiport information

- (a) The organisation shall ensure all approved vertiport information is published in the UAE AIP.

AMC1 UAM.OPS.415

- (a) The information on vertiport sites should be notified to the AIS Department Sheikh Zayed Air Navigation Centre for publishing in the UAE AIP.

SECTION 5 – FLIGHT OPERATIONS

UAM.OPS.505 Flight operations - General

- (a) All UAM operations shall be conducted as per the exposition approved by the GCAA.
- (b) A UAMV shall be operated in compliance with the operating limitations specified in the Commercial Air Transport UAM flight manual or equivalent issued by the manufacturer or the exposition.
- (c) A UAM Operator shall not operate a UAMV unless it is equipped with the type and number of instruments and equipment required by this regulation.



- (d) UAM shall not be operated unless all equipment is operative. A flight with an inoperative equipment may only be conducted with the approval from the GCAA.

UAM.OPS.510 Areas of operation

- (a) A UAMV shall only be operated in the areas, or along routes designated for the operations and under the conditions as approved by the Authority.
- (b) The operating altitudes and flight requirements for all phases of flight of a UAMV shall be based on a safety risk assessment, conducted by the UAM Operator, which is deemed acceptable by the GCAA, to ensure that the UAMV may be operated to an acceptable level of safety in all potential aircraft flight modes or weather conditions.

AMC1 UAM.OPS.510(a) Area of operation approvals

- (a) Requests for areas, or routes to be considered shall be submitted for approval through the GCAA airspace change process.

UAM.OPS.515 Operational staffing

- (a) The following areas shall be appropriately manned at all times during the UAM operation:
- (1) UAM Command Center
 - (2) Planned take-off and landing vertiports.
 - (3) Alternate landing vertiports.

UAM.OPS.520 Air traffic services

- (a) A UAM Operator shall ensure compliance with all ATS requirements for the applicable airspace.
- (b) A UAMV shall comply with any ATC clearances and instructions.

AMC1 UAM.OPS.520(a) Communication, navigation, and surveillance

- (a) When operating in non-segregated airspace appropriate surveillance and communication equipment which is interoperable with current ATM system shall be required.
- (b) For operations in segregated airspace, Para (a) is recommended.
- (c) The equipment in (a) or (b) shall be approved by the Authority.

UAM.OPS.530 Propulsion fuel and/or batteries

- (a) A flight shall not be commenced unless, taking into account both the meteorological conditions and any delays that are expected in flight, the UAMV carries sufficient fuel to ensure that it can safely complete the flight. In addition, a reserve shall be carried to provide for contingencies.

AMC1 UAM.OPS.530

- (a) For any flight, the fuel carried shall be at least the amount to allow the UAMV to:
- (1) fly to the landing site to which the flight is planned;



- (2) have reserve fuel of 25% of total fuel capacity; and
- (3) have an additional amount of fuel to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the Authority.

UAM.OPS.540 Meteorological information

- (a) A UAM Operator shall ensure that all UAMV operations are conducted in meteorological conditions which have been determined through safety risk assessment, acceptable to the GCAA, as suitable to enable safe flight operations.
- (b) A UAMV shall be operated based on the weather forecast received from appropriate meteorological sources.
- (c) A UAM Operator shall plan, and perform the flight using meteorological information obtained from aviation meteorological sources.

SECTION 6 – SECURITY

UAM.OPS.605 Civil Aviation Safety Programme

- (a) The organisation shall comply with National Civil Aviation Security Programme and other national aviation security requirements.
- (b) The Authority may impose additional security requirements based on a risk assessment.

UAM.OPS.610 Physical security

- (a) The Systems for controlling access to the UAMV, and landing areas shall be put in place in order to prevent unauthorized entry and protection from unlawful interference.
- (b) The Command Centre shall utilize mechanism for controlling access rights.

UAM.OPS.615 Cybersecurity

- (a) The data link shall be protected against hacking, spoofing and other forms of interference or hijacking.

UAM.OPS.620 Restricted areas

- (a) UAM flights are not permitted over restricted areas unless a special permission is granted by the Authority.
- (b) No person is allowed to capture images / videos of restricted areas unless specifically authorized by the Authority.

UAM.OPS.630 Suspension of operations

- (a) A UAM Operator, on becoming aware of any hazardous condition which may result in an unacceptable risk to safe or secure operations, shall suspend or restrict operations until the risk is removed or mitigated to a level determined acceptably safe or secure by the operator.



SECTION 7 – PASSENGER SAFETY

UAM.OPS.710 Passenger requirements

- (a) The organisation shall ensure that:
- (1) passengers comply with any instruction given by the operator.
 - (2) passengers occupy a seat and fasten safety belt at all times while inside the UAMV.
 - (3) Passengers do not drop any object during the flight.

UAM.OPS.720 Passenger information signs and instructions

- (a) Each UAMV shall be equipped with the following bilingual (Arabic and English) signs or placards visible to the Passenger:
- (1) No Smoking.
 - (2) Fasten safety belts.
 - (3) Emergency exits including location of any tools to enable emergency exit.
 - (4) Loadings.
 - (5) Emergency related instructions
 - (6) any additional restrictions and prohibitions.
- (b) The organisation shall ensure that each passenger has been informed about:
- (1) The location and means for opening the passenger entry doors and emergency exits, and the restrictions and permitted use of the emergency exit.
 - (2) The location and use of survival and emergency equipment for the passenger use.
 - (3) The use of portable electronic devices.
 - (4) Procedures in the case of an emergency landing.
 - (5) Emergency communication with the Command Centre.

UAM.OPS.730 Portable electronic devices (PED)

- (a) No occupants in a UAMV shall operate a cell-phone or other PEDs that is designed to transmit electro-magnetic energy unless a safety risk assessment is conducted by the UAM Operator and acceptable to the Authority.

UAM.OPS.740 Dangerous Goods

- (a) Carriage of dangerous goods on the UAMV is forbidden unless authorised by the Authority.

UAM.OPS.750 Emergency equipment

- (a) A UAMV shall be equipped with:
- (1) First aid kits specified in CAR OPS 1 that are readily accessible to the passenger for the treatment of injuries likely to occur in flight or in minor accidents.



- (2) A hand-held fire extinguisher.
- (3) An appropriate tool as mean for breaking out of the aircraft for emergency evacuation.
- (4) Life vest for each occupant for flights over water.
- (5) Portable Emergency Locator Transmitter (ELT).

UAM.OPS.760 Emergency alerting procedures

- (a) A UAM Operator shall have methods in place to remotely monitor the UAM operation and status of safety-critical systems at all times during a flight.
- (b) A UAM Operator shall have a communication system in place, which enables effective communication with: Police, Search and Rescue Units, in the event of an emergency situation.
- (c) In the event that an emergency situation does or may exist, the UAM Operator shall notify the relevant search and rescue units immediately with the following information:
 - (1) The UAMV registration mark.
 - (2) The model of UAMV
 - (3) The route including, departure point, intended landing point, and last known position of the UAMV.
 - (4) Details of the emergency.
 - (5) The total number of passengers.
 - (6) Any additional information that may assist search and rescue operations.

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