

# ICAO MODEL UAS REGULATIONS

This document is an example that member States may consider for implementation to regulate the operation of Unmanned Aircraft Systems (UAS).

June 23, 2020

*Part 101 and  
Part 102*

## DESCRIPTION

These model regulations are a compilation drawn from current UAS regulations in effect in Vanuatu, New Zealand, Australia, Canada and the United States and are inclusive of usual and customary elements of other member States.

In this document, words and phrases indicating that the member State's Civil Aviation Authority (CAA) may wish to insert pertinent national requirements or otherwise align the reference to their existing regulatory structure are identified by brackets “[ ]”. States may further supplement these model regulations to include gyrogliders, parasails, balloons, kites, etc. by adding appropriate subparts.

These model regulations are limited to the certification and safe operations of UAS and do not address sanctions against violations of these provisions or discretionary topics specific to national consideration such as, for example, privacy, insurance, or economic authority.

Model regulations included herein are not intended to be prescriptive, mandatory, or construed in any way as to pre-empt individual States' legal structures. They are meant to offer model language for States to facilitate the establishment of UAS regulations. In developing this document, it was recognized that the specific national legislative requirements might not be the same for all States, and therefore the States are free to adapt the model regulations, as appropriate, to meet their specific needs. These model regulations do not supersede or replace applicable Annexes to the Chicago Convention. Also, whether the clauses included in this document should have the force of primary legislation (e.g., law) or secondary legislation (e.g., regulation, decree, decision, etc.) remains a matter for each State to decide in light of its existing domestic legislation.

The ICAO Model UAS regulations are accompanied by Advisory Circulars (AC) and guidance material to assist CAA personnel in the implementation and oversight of UAS operations. The ACs and guidance material serve as an example for ICAO member States to create, add or amend, existing or future national UAS guidance material by the respective CAA.

These model regulations and the accompanying guidance material are available for download on ICAO's public website: <https://www.icao.int/safety/UA/>. These documents are intended to be living documents and are subject to change without notice.

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## Subpart A — General Provisions

### 101.001 Applicability

This Part prescribes rules governing the operation of civil unmanned aircraft (UA) subject to this part in [specify country];

### 101.003 Definitions

In this Part the following definitions apply unless otherwise specified:

**Accident:** An accident associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which

- (a) a person is fatally or seriously injured as a result of:
  - being in the aircraft, or
  - direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
  - direct exposure to jet blast, *except* when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew, or
  
- (b) the aircraft sustains damage or structural failure which:
  - adversely affects the structural strength, performance or flight characteristics of the aircraft, and
  - would normally require major repair or replacement of the affected component, *except* for engine failure or damage, when the damage is limited to a single engine (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windcreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in the radome); or
  
- (c) the aircraft is missing or is completely inaccessible.

**Aerial work:** An aircraft operation in which an aircraft is used for specialized services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement.

**Aerodrome:** A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

**Aeronautical Information Publication (AIP):** A publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.

**Aircraft:** Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

**Air traffic service:** A generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service).

**Approved UA area:** A defined area as approved under 101.9.

**C2 Link:** The data link between an unmanned aircraft and a remote pilot station or control station that is used in the management of a flight.

**Detect and avoid (DAA):** The capability to see, sense or detect conflicting traffic or other hazards and take the appropriate action.

**First-person view device:** A device that generates and transmits a streaming video image to a control station display or monitor that gives the pilot of a unmanned aircraft the illusion of flying the aircraft from an on-board pilot's perspective.

**Flight termination system:** A system that when activated, terminates the flight of an unmanned aircraft.

**Fly-away:** In respect to a remotely piloted aircraft, an interruption or loss of the C2 link such that the remote pilot is no longer controlling the aircraft and the unmanned aircraft is not flying its preprogramed procedures in the predicted manner.

**Handover:** The act of passing piloting control from one remote pilot station to another.

**Incident:** An occurrence, other than an accident, associated with the operation of an aircraft that affects or could affect the safety of operation.

**Instrument meteorological conditions (IMC):** Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions (VMC).

**Notice to Airmen, NOTAM:** A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

**Operator:** A person, organization or enterprise engaged in or offering to engage in an aircraft operation. Note—In the context of remotely piloted aircraft, an aircraft operation includes the remotely piloted aircraft system.

**Remote pilot:** A person charged by the operator with duties essential to the operation of an unmanned aircraft and who manipulates the flight controls, as appropriate, during flight time.

**Remote pilot-in-command:** The remote pilot designated by the operator as being in command and charged with the safe conduct of a flight.

**Remotely piloted aircraft (RPA):** An unmanned aircraft that is piloted from a remote pilot station.

**Remotely piloted aircraft system (RPAS):** A remotely piloted aircraft, its associated remote pilot stations, the required command and control links and any other components as specified in the type design.

**Risk mitigation:** The process of incorporating defences or preventive controls to lower the severity and/or likelihood of a hazard and the projected consequences.

**Safety:** The state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level.

**Safety management system (SMS):** A systematic approach to managing safety, including the necessary organizational structures, accountability, responsibilities, policies and procedures.

**Segregated airspace:** Airspace of specified dimensions allocated for exclusive use to a specific user(s).

**Shielded operation:** means an operation of an aircraft within 100 m of, and below the top of, a natural or man-made object.

**State safety programme (SSP):** An integrated set of regulations and activities aimed at improving safety.

**Unmanned aircraft (UA):** an aircraft that is intended to be operated with no pilot onboard.

**Unmanned aircraft (UA) observer:** A trained and competent person designated by the operator who, by visual observation of the unmanned aircraft, assists the remote pilot in the safe conduct of the flight.

**Unmanned aircraft system (UAS):** An unmanned aircraft and its associated components.

**Visual line-of-sight (VLOS):** An operation in which the pilot or UA observer maintains direct unaided visual contact with the unmanned aircraft.

**Visual meteorological conditions (VMC):** Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima.

#### **101.005 Falsification, Reproduction or Alteration**

(a) No person shall make or cause to be made:

- (1) Any fraudulent or intentionally false record or report that is required to be made, kept, or used to show compliance with any requirement under this part; or
- (2) Any reproduction or alteration, for fraudulent purpose, of any certificate, authorization, record or report under this part.

(b) The commission by any person of an act prohibited under paragraph (a) of this section is a basis for any of the following:

- (1) Denial of an application for any remote pilot certificate or authorization;
- (2) Suspension or revocation of any certificate or authorization issued by the [Civil Aviation Authority (CAA)] under this part and held by that person; or
- (3) [A civil penalty].

#### **101.007 Inspection, Testing, and Demonstration of Compliance.**

- (a) A remote pilot or person manipulating the flight controls of a (UAS) shall, upon request, make available to the [CAA]:
  - (1) The remote pilot certificate; and
  - (2) Any other document, record, or report required to be kept under this part.
  - (3) The remote pilot, unmanned aircraft (UA) observer, owner, operator, or person manipulating the flight controls of a UA shall, upon request, allow the [CAA] to make any test or inspection of the UAS, the remote pilot, the person manipulating the flight controls of a UA, and, if applicable, the UA observer to determine compliance with this part.

### **101.009 Accident Reporting**

- (a) No later than [48 hours] after an operation that meets the criteria of either paragraph (1) or (2) of this section, a remote pilot shall report to the [CAA], in a manner acceptable to the [CAA], an operation of the UA involving at least:
  - (1) Serious injury to any person; or
  - (2) Damage to any property other than the UA that exceeds [an amount determined by the competent authority stated in the country's currency].

## **Subpart B — Operating Rules**

### **101.3 Applicability and Open Category**

- (a) This Part applies to:
  - (1) registration and operation of civil unmanned aircraft systems, and
  - (2) operations in the open category using a UA with a gross mass of [25 kg or less] on takeoff and throughout the duration of each operation under this category, including all items that are on board or otherwise attached to the aircraft and operated in accordance with Part 101.7.

### **101.5 Unmanned Aircraft Registration and Certificate of Registration**

- (a) Every person lawfully entitled to the possession of a UA who will operate a UA in [specify country] shall register that UA and hold a valid certificate of registration for that aircraft from:
  - (1) the [CAA] in compliance with [cite appropriate CAA registration rule]; or
  - (2) the appropriate aeronautical authority of a contracting State of ICAO; or
  - (3) the appropriate aeronautical authority of another State that is party to an agreement with the Government of [specify CAA country] which provides for the acceptance of each other's registrations.

### 101.7 Meaning of Standard Unmanned Aircraft Operating Conditions

- (a) A UA is operated in *standard unmanned aircraft operating conditions* if, during the operation:
  - (1) the UA is operated within the visual line-of-sight of the person operating the UA; and
  - (2) the UA is operated at or below [120 m (400 ft)] above ground level (AGL) by day; and
  - (3) the UA is not operated within [30 m] of a person, measured horizontally, who is not directly associated with the operation of the UA; and
- (b) the UA is not operated:
  - (1) in a prohibited area; or
  - (2) in a restricted area; or
  - (3) over a populated area; or
  - (4) within [4 km] of the movement area of a controlled aerodrome; and
- (c) the UA is not operated over an area where a fire, police or other public safety or emergency operation is being conducted without the approval of a person in charge of the operation; and
- (d) the person operating the UA operates only that UA.

### 101.9 Approval of Areas for Operation of Unmanned Aircraft

- (a) A person may apply to the [CAA] for the approval of an area as an area for the operation of:
  - (1) UA generally, or a particular category of UA;
    - (i) An approval has effect from the time written notice is issued to the applicant, or a later day, or day and time stated in the approval.
    - (ii) An approval may be expressed to have effect for a particular period (including a period of less than 1 day), or indefinitely.
  - (2) The [CAA] may impose conditions on the approval in the interests of the safety of air navigation.
  - (3) If the [CAA] approves an area under (1), it shall publish details of the approval (including any condition) in a NOTAM or on an aeronautical chart.
- (b) The [CAA] may revoke the approval of an area, or change the conditions that apply to such an approval, in the interests of the safety of air navigation, but the [CAA] shall publish details of any revocation or change in NOTAM or on an aeronautical chart.
- (c) The [CAA] shall also give written notice of the revocation or change:
  - (1) to the person who applied for the approval of the area; or

- (2) if that person applied for that approval as an officer of an organization concerned with UA and no longer holds that office, to the person who now holds the office.

### 101.11 Segregated Airspace

- (a) A person shall not operate a UA within segregated airspace unless the person has approval to do so from the administering authority responsible for the segregated airspace area.

### 101.13 Controlled Airspace

- (a) A person shall not operate a UA in controlled airspace without authorization from the ATC unit responsible for that airspace; and
- (b) A person shall not operate a UA in controlled airspace unless he or she:
  - (1) holds a relevant qualification for the use of an aeronautical radio;
  - (2) maintains a listening watch on a specified frequency or frequencies specified in the direction; and
  - (3) makes broadcasts on a specified frequency or frequencies and/or maintains other ways of communication requested by the ATC unit at the specified interval giving the specified information in the direction.
- (c) In paragraph (b), **relevant qualification** means any of the following qualifications:
  - (1) an aeronautical radio operator certificate;
  - (2) a remote pilot licence [or flight crew licence];
  - (3) an air traffic control licence;
  - (4) a military qualification equivalent to a licence mentioned in paragraph (c)(2) or (c) (3); or
  - (5) a flight service licence.

**specified frequency** for particular airspace means a frequency specified from time to time in AIP or by ATC as a frequency for use in the airspace.

**specified information** for particular airspace means information specified from time to time in AIP or by ATC as information that must be broadcast in the airspace.

**specified interval** for particular airspace means the interval specified from time to time in AIP or by ATC as the interval at which broadcasts must be made while in that airspace.

- (d) The CAA may direct, in regard to a particular UA or type of UA, that a person must not operate the UA, or a UA of that type, unless he or she:
  - (1) holds a relevant qualification for the use of an aeronautical radio; and

- (2) maintains a listening watch on a specified frequency or frequencies specified in the direction; and
- (3) makes broadcasts on a specified frequency or frequencies and/or maintains other ways of communication requested by the ATC unit at the specified interval giving the specified information in the direction.

(e) In this regulation, the person must comply with all directions issued.

#### **101.15 Airspace Knowledge**

(a) This rule applies to a person who operates any of the following:

(1) a UA.

(b) A person to whom this rule applies shall:

(1) ensure that before each flight, the person is aware of the airspace designation under [Part 71 (airspace regulations)] and any applicable airspace restrictions in place in the area of intended operation; or

(2) conduct the operation under the direct supervision of a person who is aware of the airspace designation under [Part 71 (airspace regulations)] and any applicable airspace restrictions in place in the area of intended operation.

#### **101.17 Hazard and Risk Minimization**

(a) A person operating any of the following shall take all practicable steps to minimize hazards to persons, property and other aircraft:

(1) a UA.

#### **101.19 Dropping of Articles**

(a) A person operating any of the following shall not allow any object to be dropped in flight if such action creates a hazard to other persons or property:

(1) a UA.

#### **101.21 Approved Person or Organization (AAO)**

(a) In this Subpart, an approved person or organization (AAO) means a person or organization having appropriate expertise in the design, construction or operation of a UA, or appropriate knowledge of airspace designations and restrictions, and who has been approved by the [CAA] to perform one or more of the following specified functions and further defined in [Part 149]:

(1) issuing a remote pilot qualification for operating a UA;

(2) appointing persons to give instruction to operators of UA;

- (3) authorizing a person to notify the air navigation service provider, for the issuance of a NOTAM, of a UA operation;
- (4) authorizing the construction or modification of a UA greater than [15 kg];
- (5) inspecting and approving the construction of a UA greater than [15 kg]; or
- (6) authorizing the operation of a UA greater than [15 kg].

### **101.23 Aerodromes**

- (a) A person shall not operate a UA on or within [4 km] of—
  - (1) an uncontrolled aerodrome, unless:
    - (i) the operation is undertaken in accordance with an agreement with the aerodrome operator; and
    - (ii) each remote pilot has a UA observer in attendance while the aircraft is in flight; and
    - (iii) the UA is not operated at a height of more than [120 m (400 ft)] AGL unless the operator has been approved by the [CAA] to operate the UA above [120 m (400 ft)] AGL; and
  - (2) a controlled aerodrome, unless it is operated in accordance with an authorization from the relevant air traffic control (ATC) unit; and
  - (3) any aerodrome, unless the person:
    - (i) is the holder of, or is under the direct supervision of the holder of, a remote pilot qualification issued by an approved person or approved aviation organization; or
    - (ii) is under the direct supervision of a person appointed to give instruction in the operation of a UA by an approved person or approved aviation organization; or
    - (iii) is the holder of a remote pilot licence or certificate issued under 102.1.
- (b) Paragraph (a) does not apply to an operation that is conducted:
  - (1) outside of the boundary of the aerodrome; and
  - (2) in airspace that is physically separated from the aerodrome by a barrier that is capable of arresting the flight of the UA.

### **101.25 Airspace**

- (a) A person operating a UA shall:
  - (1) unless operating in segregated airspace, not operate in airspace within [30 m], measured horizontally, of a person who has not given consent for the UA to operate over them;

- (2) maintain observation of the surrounding airspace in which the aircraft is operating for other aircraft; and
  - (3) not operate the UA at any height above [120 m (400 ft)] AGL except in accordance with paragraph (c).
- (b) Nothing in paragraph (a) requires a person to obtain consent from any person if operating:
- (1) under the authority of an approved aviation organization; and
  - (2) in airspace used by that organization.
- (c) A person operating a UA more than [4 km] from an aerodrome boundary and above [120 m (400 ft)] AGL shall ensure that the operation remains within [Class G airspace (uncontrolled airspace)] and shall:
- (1) operate in segregated airspace designated for that purpose; or
  - (2) ensure that at least [24 hours] before the operation, a person authorized by an approved person or approved aviation organization, notifies the air navigation service provider (ANSP), for the issuance of a NOTAM, containing the following information:
    - (i) the name, address, and telephone number of the operator;
    - (ii) the location of the proposed operation;
    - (iii) the date, time and duration of the proposed operation;
    - (iv) the maximum height AGL proposed for the UA operation.

### **101.27 Visual Line-of-Sight Operations**

- (a) This rule applies to the following types of aircraft:
- (1) a UA.
- (b) A person shall not operate a UA to which this rule applies in:
- (1) any area in which the person's view of the surrounding airspace in which the UA will operate is obstructed; or
  - (2) meteorological conditions that obstruct the person's ability to maintain visual line-of-sight of the aircraft.
- (c) A person who operates a UA to which this rule applies shall at all times:
- (1) maintain visual line-of-sight with the UA or be in direct communications with a UA observer that maintains visual line-of-sight with the UA; and
  - (2) be able to see the surrounding airspace in which the UA is operating; and

- (3) operate the UA below any cloud base.
- (d) For the purposes of this rule, visual line-of-sight means a straight line along which the remote pilot or UA observer has a clear view and which may be achieved with the use of:
  - (1) spectacles, contact lenses, or a similar device used for vision correction of the user to no better than normal vision but not the use of an electronic, mechanical, electromagnetic, optical, or electro-optical instrument; or
  - (2) a first person view system and a trained and competent UA observer who maintains:
    - (i) visual line-of-sight of the UA; and
    - (ii) sight of the surrounding airspace in which the UA is operating; and
    - (iii) has direct communication with the person who is operating the UA.

### **101.29 Weather and Day Limitations**

- (a) A person shall not operate a UA:
  - (1) in or into a cloud; or
  - (2) at night; or
  - (3) in conditions other than visual meteorological conditions (VMC);
    - (i) unless permitted by another provision of this Part, or in accordance with an air traffic control clearance.
- (b) 101.29(a) does not apply if the person holds an authorization under regulation 102.13 allowing these operations.

### **101.31 Night Operations**

- (a) A person shall not operate a UA at night unless the operation is:
  - (1) indoors; or
  - (2) a shielded operation.
- (b) 101.31(a) does not apply if the person holds an authorization under regulation 102.13 allowing these operations.

### **101.33 Right-of-Way**

A person who is operating a UA shall give way to and remain clear of all manned aircraft on the ground and in flight.

### **101.35 Operation Over and Near People**

No person shall operate a UA over a person unless that person is:

- (a) Directly participating in the operation of the UA; or
- (b) Located under a covered structure or inside a stationary vehicle that can provide reasonable protection;
- (c) Directly associated with the operation of the UA or the UA is operated no closer than [30 m], measured horizontally from a second person not directly associated with the operation of the UA.
  - (1) 101.35 (c) does not apply if the second person is standing behind a fixed wing UA while the fixed wing UA is taking off;
- (d) 101.35 (a), (b), or (c) do not apply if:
  - (1) the person has consented that the UA is allowed to fly over or near him or her; and
  - (2) the UA is operated no closer than [15 m], measured horizontally, of him or her.

#### **101.37 Aircraft Mass Limits**

- (a) A person shall not operate a UA with a gross mass of more than [25 kg].
- (b) A person shall not operate a UA with a gross mass of between [15 kg] and [25 kg] unless the UA, and any modification made to it, is:
  - (1) constructed under the authority of, or inspected and approved by, an approved person or approved aviation organization defined in rule 101.21; and
  - (2) operated under the authority of an approved person or approved aviation organization defined in rule 101.21; or
  - (3) meets the requirement of 102.301.

#### **101.41 Requirement for a Remote Pilot Licence**

- (a) No pilot certification is required for operations under Part 101 unless flights are conducted on or within [4 km] of an aerodrome. Flights within [4 km] of an aerodrome require:
  - (1) knowledge of the use of aeronautical charts and airspace.

#### **101.43 Prohibited UAS Operations**

- (a) No person shall operate a UA in such a careless or reckless manner as to endanger or be likely to endanger aviation safety or the safety of any person or property.
- (b) No person shall operate a UA while operating a moving vehicle, vessel or manned aircraft.

## **101.45 Alcohol or Drugs [Part 91, reference to (general aviation operating regulations)]**

- (a) No person shall act as a remote pilot, flight crew member or a UA observer
  - (1) within [8 hours] after consuming an alcoholic beverage;
  - (2) while under the influence of alcohol; or
  - (3) while using any drug that impairs the person's faculties to the extent that aviation safety or the safety of any person is endangered or likely to be endangered.

## **Subpart C — Part 102 Unmanned Aircraft Remote Pilot Certification**

### **102.0 Applicability**

This Part applies to airmen certification for civil unmanned aircraft systems.

### **102.1 Eligibility for Remote Pilot Licence**

- (a) The [CAA] may issue a remote pilot licence to the applicant if he or she is [16] years of age and has passed:
  - (1) an aeronautical knowledge examination within the meaning of [Part 61 (certification of pilots)] for a licence under [Part 61]; or
  - (2) an aviation licence theory examination taken to be an equivalent requirement for the issuance of a remote pilot licence; or
  - (3) the theory component of a remote pilot training course; or
  - (4) the theory component of a course conducted in a foreign country which the [CAA] is satisfied is equivalent to the theory component of a remote pilot training course; and
- (b) The [CAA] may issue a remote pilot licence to the applicant if he or she has completed:
  - (1) a remote pilot training course in the operation of a category of the UA that he or she proposes to operate; or
  - (2) a training course in the operation of a category of UA that he or she proposes to operate conducted by the UA's manufacturer or an agent of the manufacturer; or
  - (3) a flight test conducted by the [CAA] for the purposes of this subparagraph; and
  - (4) has demonstrated the competencies required for the safe operation of the applicable type of UA and associated UA control station, under standard UA operating conditions.
- (c) A person is taken to have satisfied the conditions in paragraph (a)(1) who holds or has held:
  - (1) a flight crew licence; or

- (2) a military qualification equivalent to a flight crew licence; or
  - (3) a foreign remote pilot licence and qualification equivalent to the [specify country] remote pilot licence requirements and meets the [specify country] security requirements of the [CAA]; or
  - (4) an air traffic control licence or a military qualification equivalent to an air traffic control licence.
- (d) An application may be made to the [CAA (specify title of office for appeals)] for review of:
- (1) a decision refusing to issue, cancelling, suspending or varying a licence; or
  - (2) a decision imposing a condition on a licence.

### **102.3 Application for a Remote Pilot Licence**

- (a) An individual may apply to the [CAA], [in writing (or specify customary means)], for a remote pilot licence to operate a UA.
- (b) An application for a remote pilot licence shall include the following information:
  - (1) details of any flight crew licence, air traffic control licence or flight service licence that the applicant holds (including details of ratings, endorsements and qualifications);
  - (2) details of any military qualification the applicant holds that is equivalent to a licence mentioned in paragraph (a);
  - (3) details of any aeronautical experience of the applicant;
  - (4) details of any of the following examinations the applicant has passed (other than any examination passed in gaining a licence mentioned in paragraph (a)):
    - (i) an aeronautical examination within the meaning of [Part 61, (certification of pilots)];
    - (ii) an aviation licence theory examination that is taken as an equivalent requirement for the issuance of a remote pilot licence under regulation [cite specific regulation, if applicable];
- (c) if the applicant does not hold a licence mentioned in paragraph (a), details of any aeronautical radio operator certificate that the applicant holds;
- (d) details of the applicant's experience in operating UA;
- (e) evidence of the completion of any training course in UAS operation that the applicant has undertaken.

### **102.5 Conditions on Remote Pilot Licence**

- (a) The [CAA] may place a condition on a remote pilot licence that would:
  - (1) allow the person to operate UA of only a specified make and model;

- (2) limit the areas where he or she may operate a UA; or
  - (3) allow him or her to operate a UA only in VMC.
- (b) It is a condition of a remote pilot licence that the licence holder shall not operate a UA above [120 m (400 ft)] AGL or within [4 km] of the movement area of an aerodrome, unless he or she holds at least one of the following qualifications:
- (1) an aeronautical radio operator certificate;
  - (2) a flight crew licence;
  - (3) an air traffic control licence;
  - (4) a military qualification equivalent to a licence mentioned in paragraph (b) or (c);
  - (5) a flight service licence.
- (c) It is a condition of a remote pilot licence that a UA shall be operated within the visual line-of-sight of the licence holder unless he or she has passed:
- (1) an aeronautical knowledge examination (within the meaning of [Part 61] certification of pilots) for the issuance of an instrument rating under [Part 61];
  - (2) an aviation licence theory examination that is taken to be an equivalent requirement for the issuance of an instrument rating;
  - (3) an approved examination; and either:
    - (i) holds both a UAS operator certificate and an authorization under regulation 102.25 to operate the UA beyond the person's visual line-of-sight; or
    - (ii) is a member of a UA operator's personnel and the UA operator holds both a UAS operator certificate and an authorization under regulation 102.25 for the operator's personnel to operate a UA beyond their visual line-of-sight.
- (d) It is a condition of a remote pilot licence that the licence holder shall not operate more than one UA at a time unless:
- (1) he or she holds an approval under regulation 102.25 to operate more than one UA at a time; and
  - (2) the conditions imposed on the approval are complied with.

### **102.9 Notice to Holder of Remote Pilot Licence to Show Cause**

- (a) The [CAA] may give a show cause notice to the holder of a remote pilot licence if there are reasonable grounds for believing that there are facts or circumstances that would justify the cancellation of the licence under regulation 102.11.

- (b) A show cause notice shall:
  - (1) tell the holder of the licence of the facts and circumstances that, in the [CAA]’s opinion, would justify the cancellation of the licence under regulation 102.11; and
  - (2) invite the holder of the licence to show in writing, within a reasonable time stated in the notice, why the licence should not be cancelled.
- (c) A show cause notice may state that the licence is suspended if the [CAA] reasonably considers that there may be a serious risk to the safety of air navigation if the licence were not suspended.
- (d) If a show cause notice states that the licence is suspended, the licence is suspended from when the notice is given to the holder.
- (e) The [CAA] may, at any time, revoke the suspension.
- (f) If the approval is suspended and the [CAA] has not dealt with it under regulation 102.11 within [90 days] after the day it is suspended, the suspension lapses at the end of that period.

#### **102.11 Cancellation of Remote Pilot Licence**

- (a) The [CAA] may cancel a remote pilot licence by written notice to the holder of the licence, if:
  - (1) the [CAA] has given to the holder a show cause notice under regulation 102.9 in relation to it;
  - (2) the [CAA] has taken into account any representations made, within the period stated in the notice, by or on behalf of the holder; and
  - (3) there are reasonable grounds for believing that the holder:
    - (i) has operated a UA in contravention of these Regulations or of a condition of the licence;  
or
    - (ii) has operated the UA negligently or carelessly; or
    - (iii) in operating the UA, has recklessly endangered human life or property.
- (b) If the [CAA] has given a show cause notice under regulation 102.9 to the holder of a remote pilot licence and the [CAA] decides not to cancel the licence, the [CAA]:
  - (1) shall tell the holder in writing of the decision; and
  - (2) shall, if the holder’s licence is suspended under that regulation, revoke the suspension.

### **Subpart D — Part 102 Unmanned Aircraft System Authorization or Unmanned Aircraft System Operator Certification (UOC)**

#### **102.13 Applicability**

(a) This Part applies to the following:

- (1) a person who operates a UA other than in accordance with Part 101; and
- (2) a person who operates a UA in accordance with Part 101 and who wishes to apply for a UAS operator certificate (UOC).

### **102.15 Requirement for Certificate**

A person shall not operate a UA other than in accordance with Part 101 except under the authority of and in accordance with the terms of a valid UAS authorization or UOC issued by the [CAA] in accordance with this Part.

### **102.17 Functions and Duties of the Chief Remote Pilot**

(a) The functions and duties of a chief remote pilot are as follows:

- (1) ensuring the operator's UA operations are conducted in accordance with the civil aviation regulations;
- (2) maintaining a record of the qualifications held by each person operating a UA for the operator;
- (3) monitoring the operational standards and proficiency of each person operating a UA for the operator; and
- (4) maintaining a complete and up-to-date reference library of operational documents required by the [CAA] for the types of operations conducted by the operator.

### **102.19 Specific Category Operations**

(a) *Remote Pilot requirements.* To conduct operations in the specific category, a remote pilot shall hold a remote pilot licence.

(a) *Eligibility.* To be qualified to conduct operations in the specific category, the UAS shall:

- (1) be designed, produced, or modified such that it does not contain any safety defects identified by the [CAA];
- (2) display a label indicating eligibility to conduct operations in the specific category (in English, legible, and permanently affixed to the UA);
- (3) have current remote pilot operating instructions that apply to the operation of the UAS. The person who designed, produced, or modified the UAS shall make available the instructions upon sale, transfer, or use of the UA by someone other than the person who designed, produced, or modified the UAS. Such instructions shall address, at a minimum:
  - (i) a system description that includes the required UAS components, any system limitations, and the declared category or categories of operation;
  - (ii) modifications that will not change the ability of the UAS to meet the requirements for the category or categories of operation the UAS is eligible to conduct; and

- (iii) instructions that explain how to verify and change the mode or configuration of the UA, if they are variable;
- (4) operate only after the person who designed, produced, or modified the UAS has received notification that the [CAA] has accepted the Declaration of Compliance for that UAS in accordance with 102.307 or received an approval from an approved aviation organization; and
- (5) have a current aircraft registration in accordance with Part [(cite appropriate CAA registration rule)].

#### **102.21 Authorization to Operate an Unmanned Aircraft**

- (a) Before operating a UA other than in accordance with Part 101, a person shall apply for a UAS authorization or UOC.
- (b) A person who operates a UA in accordance with Part 101 may apply for a UOC.
- (c) A person in (a) shall apply by:
  - (1) submitting an application to the [CAA] in accordance with [CAA] requirements; and
  - (2) pay the appropriate fee specified in regulations made under [specify regulation, if applicable].
- (d) An application shall include:
  - (1) the name and address for service in [specify country] of the applicant;
  - (2) the details of the operation for the UAS authorization or UOC;
  - (3) the applicant's application as required by the [CAA]; and
  - (4) any other information relating to the application as may be required by the [CAA].
- (e) A person who operates a UA in accordance with (a) or (b) shall apply for a UAS authorization or UOC in accordance with 102.23.

#### **102.23 Application for a UAS Authorization or UAS Operator Certificate**

- (a) An applicant for a UAS authorization or UOC shall provide the [CAA] with an application that is acceptable to the [CAA].
- (b) The application shall address the following matters, having regard to the nature, degree and risk of the intended operation:
  - (1) the identification of a person(s) who will have primary responsibility for any part of the operation;
  - (2) the identification of any person(s) who is to have or is likely to have control over the exercise of the privileges under the certificate;
  - (3) details of the physical locations to be used in the operation;

- (4) an operational risk assessment that:
    - (i) identifies the known and likely consequences to hazards to people, property and other aircraft of the proposed operation;
    - (ii) includes a description of the measures that will be implemented to mitigate or manage the risk;
  - (5) procedures for reporting information to the [CAA] including incidents and accidents;
  - (6) operating requirements for personnel licensing, qualifications, training and competency including remote pilot and remote flight crew qualifications, training or medical requirements;
  - (7) details of the number and specifications of the aircraft to be used, including any identification system used on the aircraft (for example color schemes, unique identification numbers, markings);
  - (8) details of the control system to be used to pilot the aircraft;
  - (9) procedures for the maintenance of aircraft and measures to ensure continued airworthiness;
  - (10) inflight procedures, including minimum distances from persons or property;
  - (11) procedures for handling cargo, including dangerous goods, or dropping items, if such operations are intended;
  - (12) the manufacturer's Declaration of Compliance or approval from an AAO;
  - (13) procedures for controlling, amending and distributing the application; and
  - (14) any other approvals that are required to conduct the proposed operation.
- (c) The [CAA] may require only those matters in paragraph (b) that the [CAA] considers are appropriate in the particular circumstances to be contained in the application.
- (d) The application shall remain acceptable to the [CAA].

#### **102.25 Issuance of UAS Authorization or UAS Operator Certificate**

- (a) The [CAA] may issue a UAS authorization or a UOC to a person who has applied under rule 102.23.
- (b) When issuing a UAS authorization or a UOC under paragraph (a), the [CAA] may:
  - (1) impose requirements on the UAS and may specify procedures to be followed by the operator of any UA that are operated under the authority of the UAS authorization or UOC;
  - (2) specify any additional conditions that the [CAA] considers necessary in the interest of aviation safety; and

- (3) after considering the type of UA to be used, determine that any UA to be operated under the UAS authorization or UOC shall display identification markings in accordance with [cite appropriate CAA markings rule], if the [CAA] considers that it is necessary in the interest of aviation safety.

#### **102.27 UAS Authorization or UAS Operator Certificate**

- (a) If the [CAA] issues a UOC under rule 102.25, the certificate shall be issued with an authorization containing the details described in paragraph (b).
- (b) The UOC shall include:
  - (1) details of the physical location of the certificate holder's principal base of operations;
  - (2) the certificate holder's address for service in [specify country];
  - (3) a list of any business names under which the certificate holder is approved to operate;
  - (4) the privileges and operations that the operator is permitted to perform, including:
    - (i) the number, type and description, including, if applicable, the serial number and registration, of every UA that is authorized for use; and
    - (ii) identification of the geographical areas of operations approved by the [CAA]; and
    - (iii) any exemption issued from any requirement of this or any other Part; and
    - (iv) any additional condition that the [CAA] determines is necessary in the interest of aviation safety.

#### **102.29 Privileges of Authorization or Operator Certificate Holder**

- (a) The holder of a UAS authorization or UOC is authorized to perform the operations specified in the accompanying UAS authorization or UOC.
- (b) Unless the application required by rule 102.23 specifies otherwise, the holder of a UAS authorization or UOC is not required to comply with Civil Aviation Rule Parts [cite those regulations the CAA deems appropriate; usually certain manned aviation Part 91 general operating regulations].

#### **102.31 Duration of UAS Operating Certificate**

- (a) When issuing or renewing a UOC under this Part, the [CAA] shall specify a date on which the UAS operator certificate will expire.
- (b) The [CAA] shall not specify a date under paragraph (a) for a UOC that is later than [3] years after the date on which the certificate was issued.

#### **102.33 Conditions for Operation for a UAS Authorization or a UAS Operator Certificate**

- (a) A holder of a UAS authorization or UOC shall comply with:

- (1) Part 101, to the extent the requirements of Part 101 are consistent with the operations specified in the UAS authorization or UOC;
  - (2) the conditions imposed by the [CAA] on the UAS authorization or UOC; and
  - (3) the application required by rule 102.23.
- (b) The certificate holder is responsible for ensuring that any personnel involved in an operation conducted under the authority of the UAS authorization or UOC are notified of and comply with the requirements of paragraph (a).

### **102.35 Changes to Application**

- (a) Each holder of a UAS authorization or UOC shall:
- (1) ensure that the application is amended:
    - (i) so that it remains a current description of the authorization or operator certificate holder's operation;
    - (ii) to ensure continued compliance with any [Civil Aviation Rules] that have been adopted under rule 102.23(c);
  - (2) provide the [CAA] with a copy of each amendment to the application as soon as practicable after the amendment is incorporated into the application; and
  - (3) make such amendments to the application as the [CAA] considers necessary in the interest of aviation safety.
- (b) If a holder of a UAS authorization or UOC proposes to change any of the following, prior acceptance by the [CAA] is required:
- (1) the identification of any person who is to have or is likely to have control over the exercise of the privileges under the authorization or operator certificate; and
  - (2) the identification of locations from which the authorization or operator certificate holder conducts UA operations.

### **102.37 Renewal of Certificate**

- (a) A holder of a current UOC who wishes to continue to exercise the privileges of the operator certificate beyond its date of expiration shall apply for the renewal of the operator certificate by completing the application in accordance with 102.23.

### **102.39 Record Retention of UAS Operator Certificate**

- (a) Each holder of a UOC shall maintain:
- (1) A record containing the names of the remote pilots and other crew members involved in each flight, in respect of the system, the time of each flight or series of flights; and

- (2) A record containing maintenance action, modification or repair performed on the system, including:
  - (i) name of person performing the work;
  - (ii) the dates work was performed;
  - (iii) in the case of modification, the manufacturer, model and description of parts or equipment modifying the system; and
  - (iv) if applicable, any instruction provided to complete the work.
- (b) Each owner of a UAS who transfers ownership to another person shall, at the time of transfer, deliver to that person all records referred to in paragraph (a)(2).
- (c) Each owner of a UAS shall ensure that the records referred to in subsection (a)(1) and (a)(2)
  - (1) are made available to the [CAA] on request and are retained for a period of:
    - (i) for the records referred to in paragraph (a)(1), 12 months after the day they are created;
    - (ii) for records referred to in paragraph (a)(2), 24 months after the day they are created.

#### **102.41 Notice to Certified UAS Operator to Show Cause**

- (a) The [CAA] may give a show cause notice to a certified UAS operator if there are reasonable grounds for believing that there are facts or circumstances that would justify the cancellation of the authorization under regulation 101.43.
- (b) A show cause notice shall:
  - (1) tell the holder of the facts and circumstances that, in the [CAA's] opinion, would justify the cancellation of the certification under regulation 101.43; and
  - (2) invite the operator to show in writing, within a reasonable time stated in the notice, why the certification should not be cancelled.
- (c) A show cause notice may state that the certification is suspended if the [CAA] reasonably considers that there may be a serious risk to the safety of air navigation if the authorization were not suspended.
- (d) If a show cause notice states that the certification is suspended, the certification is suspended from when the notice is given to the holder.
- (e) The [CAA] may at any time revoke the suspension.
- (f) If the approval is suspended and the [CAA] has not dealt with it under regulation 101.43 within [90 days] after the day it is suspended, the suspension lapses at the end of that period.

### **102.43 Cancellation of UAS Operator's Certification**

- (a) The [CAA] may cancel a UOC by written notice to the operator, if:
  - (1) the [CAA] has given to the operator a show cause notice under regulation 101.41 in relation to it;
  - (2) the [CAA] has taken into account any representations made, within the period stated in the notice, by or on behalf of the operator; and
  - (3) there are reasonable grounds for believing that:
    - (i) the operator has operated a UA in contravention of these Regulations or of a condition of the certification; or
    - (ii) a person engaged or employed by the operator has operated a UA negligently or carelessly; or
    - (iii) a person engaged or employed by the operator, in operating a UA, has recklessly endangered human life or property.
- (b) If the [CAA] has given a show cause notice under regulation 102.41 to a certified UAS operator and determines to revoke the show cause notice:
  - (1) the operator will receive notification in writing of the decision; and
  - (2) shall, if the operator's certification is suspended under that regulation, revoke the suspension.

### **102.45 Compliance with UAS Operator's Practices and Procedures**

- (a) Persons who are employed by an operator or who assist with an operator's operation shall comply with the operator's documented practices and procedures.

### **102.49 Safety Management System**

- (a) A UAS operator shall have a system for safety management that includes:
  - (1) a safety policy on which the system for safety management is based;
  - (2) a process for risk management that identifies hazards to aviation safety and that evaluates and manages the associated risks;
  - (3) safety assurance measures that ensure:
    - (i) hazards, incidents and accidents are internally reported and analysed and action is taken to prevent recurrence;

- (ii) goals for the improvement of aviation safety are set and the attainment of these goals are measured;
  - (iii) there is a safety management program that includes conducting internal audits and regular reviews of the system for safety management; and
- (4) training that ensures personnel are competent to fulfil their safety responsibilities.
- (b) The operator shall document all processes required to establish and maintain the system for safety management.
  - (c) The operator’s system for safety management shall be commensurate with the size of the organization, the nature and complexity of the activities undertaken by the operator, and the hazards and associated risks inherent in the activities undertaken by the operator.

## **Subpart E — Requirements for Manufacturer**

### **102.301 Applicability**

This Part applies to any manufacturer who intends to declare the demonstrated capabilities of their UA to the [CAA] for a specific operation.

### **102.305 Means of Compliance**

- (a) To meet the requirements of 102.307(a)(1)(ii) for operations for a specific UAS, the means of compliance shall consist of data (tests, analysis, industry consensus standards) and the results or justification used to demonstrate the UAS meets the predetermined level of safety the [CAA] has established as acceptable.
- (b) An applicant requesting [CAA] acceptance of a means of compliance shall submit the following information to the [CAA] in a manner specified by the [CAA]:
  - (1) Detailed description of the means of compliance; and
  - (2) Justification, including any substantiating material, showing that the means of compliance establishes achievement of or equivalency to the predetermined safety level<sup>1</sup>.

### **102.307 Manufacturer Declaration**

- (a) For each model of UAS that is intended to conduct any operation, the manufacturer shall provide the [CAA] with a declaration in accordance with subsection (1).
  - (1) the manufacturer’s declaration shall:

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<sup>1</sup> As described in the Introduction to the ICAO Model UAS Regulations, each State will need to establish minimum safety levels (design or technical) to which manufacturers must demonstrate compliance. It is recommended the minimum safety levels be provided in an advisory circular or other guidance document for ease of amendment.

- (i) specify the manufacturer of the UAS, the model of the system, the maximum take-off weight of the UA, the operations that the UA is intended to undertake and the category of UA, such as fixed-wing aircraft, rotary-wing aircraft, hybrid aircraft or lighter-than-air aircraft; and
  - (ii) specify that the system meets the means of compliance applicable to the operations for which the declaration was made.
- (b) The manufacturer's declaration is invalid if:
- (1) the [CAA] has determined that the model of the UA does not meet the terms set out in the means of compliance, or
  - (2) the manufacturer has notified the [CAA] of an issue related to the design of the model under section 102.309.

### **102.309 Notice to the [CAA]**

- (a) A manufacturer that has made a declaration to the [CAA] under section 102.307 shall notify the [CAA] of any issue related to the design of the model of the UAS that results in the system no longer meeting the technical requirements set out in the means of compliance referred in subparagraph 102.305(b)(2), as soon as possible after the issue is identified.

### **102.311 Documentation**

- (a) A manufacturer that has made a declaration to the [CAA] in respect of a model of a UAS under section 102.307 shall make available to each owner of that model of system:
  - (1) a maintenance program that includes:
    - (i) instructions related to the servicing and maintenance of the system; and
    - (ii) an inspection program to maintain system readiness;
  - (2) any mandatory actions the manufacturer issues in respect of the system;
  - (3) a UAS operating manual that includes:
    - (i) a description of the system;
    - (ii) the ranges of weights and centers of gravity within which the system may be safely operated under normal and emergency conditions and, if a weight and center of gravity combination is considered safe only within certain loading limits, those load limits and the corresponding weight and center of gravity combinations;
    - (iii) with respect to each flight phase and mode of operation, the minimum and maximum altitudes and velocities within which the aircraft can be operated safely under normal and emergency conditions;
    - (iv) a description of the effects of foreseeable weather conditions or other environmental conditions on the performance of both the system and the UA;
    - (v) the characteristics of the system that could result in severe injury to crew members during normal operations;

- (vi) the design features of the system and their associated operations that are intended to protect against injury to persons not involved in the operations;
- (vii) the warning information provided to the remote pilot in the event of a degradation in system performance that results in an unsafe system operating condition;
- (viii) procedures for operating the system in normal and emergency conditions; and
- (ix) assembly and adjustment instructions for the system.

#### **102.313 Record Retention for Manufacturer**

- (a) A manufacturer that has made a declaration to the [CAA] in respect of a model of a UAS under section 102.307 shall keep, and make available to the [CAA] on request:
  - (1) a current record of all mandatory actions in respect of the system; and
  - (2) a current record of the results of and the reports related to the verifications that the manufacturer has undertaken to ensure that the model of the system meets the technical requirements applicable to the operations for which the declaration was made.
- (b) The manufacturer shall keep the records referred to in subsection (a)(1) for the greater of:
  - (1) two years following the date that manufacturing of that model of UAS permanently ceases, and
  - (2) the lifetime of the UA that is an element of the model of system referred to in paragraph (a).

— END —