



**CIVIL AVIATION AUTHORITY OF ZIMBABWE**

**PART 180**

**REGULATIONS FOR REMOTELY PILOTED AIRCRAFT (RPA) /UNMANNED  
AERIAL VEHICLE SYSTEMS (UAVS).**

## **Description**

Part 180 prescribes:

- Regulations governing the registration, certification and operation of Remotely Piloted Aircraft /Unmanned Aerial Vehicles/ Drones hereinafter called RPA.
- This part establishes the regulations which will ensure registration & certification of RPA and that acceptable level of safety in the operation of RPA in Zimbabwe is established and maintained. Exemptions to this regulation may be granted to RPA and/or their operations pursuant to compliance with Part 1.4 of this regulation.



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## A. DEFINITIONS

For the purposes of Part 180, the following definitions shall apply:

- (1) **Regulations** - means the Civil Aviation (Air Navigation) Regulations as amended.
- (2) **Autonomous Operation** - means an operation during which an unmanned aircraft is operating without intervention in the management of the flight either by a given degree of remote control from an operator, located on the ground or in another vehicle,
- (3) **Fully Autonomous Operation** - means an operation during which an unmanned aircraft is operating without intervention in the management of the flight by on-board computers;
- (4) **Autonomous Unmanned Aircraft** - means an unmanned aircraft that does not allow intervention in the management of the flight;
- (5) **Beyond visual line-of-sight** - means an operation in which the remote pilot cannot maintain direct unaided visual contact with the remotely piloted aircraft to manage its flight and to meet separation and collision avoidance responsibilities visually;
- (6) **Class 1,2 & 3 Medical Certificates: means medical certificates issued in accordance with Statutory Instrument 140 of 2010, Civil Aviation (Air Navigation) (Amendment) Regulations, 2010 (No 1), Part 2, section 2.11.2.6, 2.11.2.7 and 2.11.2.8.**
- (7) **Class 4 Medical Certificate:** A category 4 medical is held by recreational pilots, and is obtained by filling out a self-declaration form with any medical doctor who is registered in terms of the Medical and Health Practitioners council established in terms of Health Professions Act Chapter 27:19.
- (8) **Command and control link** - means the data link between the remotely-piloted aircraft and the remote pilot station for the purposes of managing the flight;
- (9) **Communication link** - means a digital or analogue data link to transfer voice or data between the remote crew, air traffic control, airspace users and other data users;
- (10) **DATA link** - means the direct or indirect communication link from the remotely piloted aircraft (RPA);
- (11) **Extended visual line-of-sight** - means an operation below 400 feet above ground level in which an observer, maintains direct and unaided visual contact with the remotely piloted aircraft at a distance not exceeding 1000 m from the pilot;
- (12) **Extended visual line-of-sight operation** - means an operation below 400 feet above ground level, in which an observer assists in the direct unaided visual contact with the remotely piloted aircraft (RPA), in order to facilitate separation and collision avoidance requirements;
- (13) **Observer** - means a trained and competent person designated by the operator who, by visual observation of the remotely piloted aircraft, assists the remote pilot in the safe conduct of the flight;
- (14) **Payload** - means all the elements of an remotely piloted aircraft system (RPAS) that are not necessary for flight but that are carried for the purpose of fulfilling specific mission objectives;

- (15) **Private operation** - means the use of an remotely piloted aircraft (RPA) for an individual's personal and private purposes where there is no commercial outcome, interest or gain;
- (16) **Radio line-of-sight** - means a direct electronic point-to-point contact between a transmitter and receiver;
- (17) **Remote pilot** - means the person who manipulates the flight controls or manages the flight command instructions of a remotely piloted aircraft (RPA) during flight time;
- (18) **Ground station** - means the station at which the remote pilot manages the flight of the remotely piloted aircraft (RPA);
- (19) **Remotely piloted aircraft** - means an unmanned aircraft which is piloted from a Ground station, excluding model aircraft and toy aircraft as defined in this Part;
- (20) **Remotely piloted aircraft system** - means a set of configurable elements consisting of a remotely piloted aircraft, its associated Ground station(s), the required command and control links and any other system elements as may be required at any point during flight operation;
- (21) **Restricted Visual Line-of-Sight** - means an operation within 500 m of the remote pilot and below the height of the highest obstacle within 300 m of the remotely piloted aircraft (RPA), in which the remote pilot maintains direct unaided visual contact with the RPA to manage its flight and meet separation and collision avoidance responsibilities;
- (22) **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;
- (23) **Toy Aircraft** - means a product falling under the definition of aircraft which is designed or intended for use in play by children and shall not have capacity to carry surveillance equipment or any such accessories. Toy aircraft are operated within the restricted visual line of sight only;
- (24) **Hobby Aircraft:** means unmanned non-type certificated aircraft, operated only for sport and recreation, and not for hire or reward;
- (25) **Visual Line-of-Sight** - Means an operation in which the remote crew maintains direct visual contact with the aircraft to manage its flight and meet separation and collision avoidance responsibilities. This operation shall be below 400 feet above ground level in which the remote pilot maintains direct and unaided visual contact with the remotely piloted aircraft (RPA) at a distance not exceeding 500 m.

## **B. ABBREVIATIONS**

- (1) **ATSU** - means Air Traffic Service Unit;
- (2) **ATZ** – Approach Terminal Zone;
- (3) **BVLOS** - means beyond visual line of sight;
- (4) **CAMU** - means Central Airspace Management Unit;
- (5) **C2** - means command and control link;
- (6) **CAR** - means Civil Aviation Regulations;
- (7) **CTR** – means Control Terminal Region;
- (8) **E-VLOS** - means extended visual line of sight;
- (9) **FUA** - means Flexible Use of Airspace;
- (10) **IS** – means Implementing Standards;
- (11) **MTOW** - means maximum take-off weight
- (12) **OpSpec** - means Operational Specifications;
- (13) **RLA** - means an RPA letter of approval;
- (14) **RLOS** - means radio line-of-sight;
- (15) **RMT** - means remotely piloted aircraft system (RPAS) maintenance technician;
- (16) **ROC** - means remotely piloted aircraft system (RPAS)operator’s certificate;
- (17) **RPA** - means remotely piloted aircraft;
- (18) **RPAS** - means remotely piloted aircraft system;
- (19) **RPL** - means a remote pilot licence;
- (20) **GS** – means Ground station;



- (21) **R-VLOS** - means restricted visual line of sight;
- (22) **VLOS** - means visual line-of-sight.
- (23) UAVs – An unmanned aerial vehicle system(UAVs), commonly known as a drone and also referred to as unpiloted aerial vehicle and a remotely piloted aircraft(RPA) by the International Civil Aviation Organisation(ICAO), is an aircraft without a human pilot aboard

## **PART 1: GENERAL PROVISIONS**

### **Applicability**

01.1.1 This Part applies to:

- a) Class 1 and 2 of remotely piloted aircraft, unless otherwise approved by the Authority; and
- b) Persons acting as owners, operators, observers, pilots and in the performance of maintenance of RPA.

01.1.2 For the purposes of this part, RPA may be operated for:

- a) Commercial operations;
- b) Corporate operations;
- c) Non-profit operations; and
- d) Private operations.

01.1.3 This Part does not apply to:

- a) Fully Autonomous RPA, Toy and Hobby aircraft, unmanned free balloons and their operations or other types of aircraft which cannot be managed on a real-time basis during flight;
- b) A model aircraft;

### **Private operations**

01.2.1 Private operations of RPA shall be conducted only in R-VLOS with a Class 1A or 1B RPA.

### **Grouping and classification**

01.3.1 RPAs shall be grouped in accordance with the classifications as prescribed in the Implementing Standards (IS) for Registration of RPA.

### **Directives**

01.4.1 The Authority may, from time to time, issue directives which are necessary for safe and secure operation of RPA.

### **RPA Sales or re-sale**

01.5.1 No RPA shall be sold within Zimbabwe unless the seller has, by way of a packaging label, or in the case of the resale thereof, by way of written notification, notified the buyer of the requirements as prescribed in the IS for Registration of RPA currently in force.

### **RPA/ Hobby Aircraft and Non-Type Certificated/ Model aircraft Associations**

- 01.6.1 All RPA to which this Part does not apply must be operated under the auspices of some association
- 01.6.2 There shall be a constitution to bind members of any Association carrying out same aviation activities in Zimbabwe
- 01.6.3 The constitution shall be approved by the Authority
- 01.6.4 The constitution shall give effect to the formation and maintenance of an Association
- 01.6.5 Aviation Associations shall register with the Authority
- 01.6.6 Associations activity shall, by whatever name called, include:
- a) Hobby/ Model aircraft operators
  - b) Model/ amateur aircraft manufacturers/ builders
  - c) RPA manufacturers/ builders
  - d) Non-Type certificated aircraft manufacturers/ builders;
- 01.6.7 The Association shall be directed a board duly elected by its members and approved by the Authority
- 01.6.8 The Association board shall convene an Annual General meeting and submit their safety related resolutions, thereafter, for approval by the Authority
- 01.6.9 The Authority may delegate some of its functions to the Association Board

### **Software Validation**

- 01.7.1 The Authority shall carry out software validation through the following means or combination of methods:
- a) Demonstration
  - b) Designation
  - c) Liaison with other Contracting States Civil Aviation Authorities that would have done such validation processes

## **PART 2: APPROVAL AND REGISTRATION**

### **Remotely Piloted Aircraft System (RPAS) letter of approval**

- 02.1.1 No RPA shall be operated within Zimbabwe, unless such RPA has been issued with a letter of approval (RLA) by the Authority.
- 02.1.2 An application for the issuing or renewal of an RLA shall be made to the Authority in a form and manner prescribed by the Authority. In addition, the application shall be accompanied by the appropriate fee as in the current schedule of fees.
- 02.1.3 The Authority shall issue an RLA if the applicant complies with the requirements prescribed in the IS for Continuing Airworthiness, Operations and Maintenance of RPA.
- 02.1.4 An RLA shall be valid for a period of 12 months upon first application, then a period of 3 years thereafter

### **Remotely Piloted Aircraft System (RPA) system safety**

- 02.2.1 An applicant for the issue of an RLA, shall provide the Authority with:
  - a) Documentation regarding the standard to which the RPA was designed; or
  - b) Equivalent documentation that demonstrates a level of safety acceptable to the Authority; or
  - c) Documentation demonstrating system safety as prescribed in the requirements as prescribed in the IS for Continuing Airworthiness, Operations and Maintenance of RPA.
- 02.3.1 Altimeter.
  - (a) Except as provided in the IS for Continuing Airworthiness, Operations and Maintenance of RPA, an RPA shall be equipped with an altimetry system or equivalent that is capable of displaying to the operator on the RPS, the altitude and height of the RPA above ground level.
  - (b) An RPA that is not equipped with an altimetry system or equivalent shall be operated under R-VLOS only.

### **Temporary Loss of RLA**

#### 02.3.2 Failure to maintain a RPA in an airworthy condition

Any failure to maintain a RPA in an airworthy condition as defined by the appropriate requirements mandated by the Authority and manufacturer of the RPA shall render the RPA ineligible for operation until restored to an airworthy condition.

#### 02.3.3 Damage Sustained

When a RPA has sustained damage, the Authority shall judge whether the damage is of a nature such that the aircraft is no longer airworthy as defined by the appropriate design, specifications and manufacturer's documents

### **Accessory Equipment**

02.3.4 All accessory equipment mounted on the RPA shall:

- (a) Be approved in the design, specifications and manufacture of the RPA
- (b) Will be approved by the Authority after evaluation of a technical request for any accessories not covered in the original design, specification and manufacturer documents

### **Reporting of Failures, Malfunctions and Defects**

02.3.5 Requirement to report

Owners or operators of RPA over 20kg MTOW (all RPA above 2kgs with any serious incidents/accidents should be reported) shall as soon as practical, but in any case within 24 hours, report to the Authority any failures, malfunctions, or defects in flight that result in at least the following:

- (a) Fire to the propulsion system, any shut down, flameout or seizure, where applicable, internal or external to the propulsion system, over speed, propeller feathering, FOD ingestion, fuel leakage, premature change of propulsion units and other condition prescribed by the Authority;
- (b) RPA component that causes accumulation or circulation of smoke, vapour, or toxic or non-toxic fumes in any compartment;
- (c) Where applicable, brake system components failure that result in loss of brake actuating force when the RPA is in motion on the ground;
- (d) RPA structure that requires major repair; Cracks, permanent deformation, or corrosion of aircraft structure, if more than the maximum acceptable to the manufacturer or the Authority;
- (e) RPA components or systems malfunctions that result in taking emergency actions during flight (except action to shut down an engine);
- (f) Each interruption to a flight caused by known or suspected technical difficulties or malfunctions;
- (g) Abnormal vibration or buffeting caused by a structural or system malfunction, defects, or failure; and a failure or malfunction of more than one attitude, airspeed, or altitude instrument during a given operation of the aircraft.

### **Information to be contained in the Report**

02.3.6 The information in the report made in terms of subsection 02.3.5 shall include:

- (a) Aircraft serial number;
- (b) Model
- (c) Where applicable propulsion model, type and serial number
- (d) Nature of the failure, malfunctions, or defects.

## **Registration and marking**

- 02.4.1 No RPA to which this Part applies shall be operated within the Zimbabwe, unless
- a) Such RPA has been issued with a certificate of registration by the Authority;  
or
  - b) The person operating such RPA has registration or other documentation from the State from which the RPA originates or from a country in which there is in force an agreement between the Government of Zimbabwe and the Government of that country, which makes provision for the flight in or over Zimbabwe of an RPA originating from that country
- 02.4.2 An RPA registered on the Zimbabwe Civil Aircraft Register shall be deemed to have Zimbabwean nationality.
- 02.4.3 An application for a certificate of registration shall be:
- a) In a form and manner prescribed by the Authority and
  - b) Accompanied by the fee prescribed in the relevant schedule of fees.
- 02.4.4 The Authority shall register an RPA; issue a certificate of registration and a registration mark if the applicant complies with the requirements of this section. The Authority shall maintain a register of all RPA registered in terms of this section.
- 02.4.5 The format and specification of the nationality mark designated for use on RPA shall be as prescribed in the requirements as prescribed in the IS for Registration of RPA currently in force.
- 02.4.6 If the holder of a certificate of registration transfers to another person ownership of the RPA, such holder shall, within 30 days, notify the Authority of such transfer on the appropriate form.
- 02.4.7 If an RPA flies within or over Zimbabwe in contravention of 2.4.1 (a) and (b) an offence would have been committed.
- 02.4.8 Subject to the provisions of this section, an RPA shall be considered not registered or continue not to be registered in Zimbabwe if it appears to the Authority that:
- (a) The RPA is registered outside Zimbabwe and that such registration outside Zimbabwe is not cancelled upon the RPA being registered in Zimbabwe; or
  - (b) A person who is not qualified in terms of section 02.4.11 holds an interest in that RPA as defined in this Part.
  - (c) It would be detrimental to the public interest for the RPA to be or to continue to be registered in Zimbabwe.
- 02.4.9 The certificate of Registration of an RPA or any other document relating to the status of an RPA issued by the Authority shall be in English language.
- 02.4.10 The certificate of registration of the RPA or any other document relating to the status of an RPA issued by the Authority will be issued in a form, size and manner as shall be prescribed by the Authority.

## **Registration Eligibility**

- 02.4.11 The following persons shall be qualified to hold a legal or beneficial interest in an RPA registered in Zimbabwe by a way of ownership or a share therein:

- (a) Zimbabwean citizens or permanent residents of Zimbabwe or such other persons as the Minister may approve; and
- (b) Companies, Organizations or Institutions whose principal place of business in Zimbabwe or such other corporate bodies as the Minister may approve; and
- (c) Partnerships and voluntary associations whose principal place of business is in Zimbabwe or such other partnerships or voluntary associations as the Minister may approve.

### **Temporary Importation of RPAs**

02.4.12:

- a) No person may temporarily import an RPA for the purposes of private, corporate or commercial use unless that person:
  - i. applies to the Authority at least 30 days before the day of the temporary importation, stating the following information:
    - Full name and address of owner/operator of the RPA;
    - Country where the RPA is registered and its use;
    - Model, serial number and manufacturer of RPA;
    - Weight of the RPA;
    - Specifications of the RPA;
    - Purpose of the temporary importation;
    - Period of the intended temporary importation
    - Details of the place where the RPA will be operated in Zimbabwe;
  - (ii) upon entry of the RPA into Zimbabwe, obtains a temporary import permit (TIP) from the Zimbabwe Revenue Authority. The TIP shall be issued on the basis of an RPA Clearance Certificate issued by the Authority;
- b) An RPA Clearance Certificate to be submitted to the Authority shall not be more than 3 calendar months from the date of issue.

*Note: The Authority issues an RPA Clearance Certificate in terms of conditions stated in the IS for registration of RPA.*

### **Vetting of Owners or / Operators prior to registration of RPA**

02.4.13 The Authority will require the vetting of owners / or operators in terms of the laws of Zimbabwe.

## **PART 3: PERSONNEL LICENSING**

### **General**

- 03.1.1 No person shall act as a remote pilot, except when undergoing a skills test or receiving flight instruction, unless he or she is in possession of a valid remote pilot licence (RPL) in the relevant category.
- 03.1.2 A remote pilot licence may be issued for the following categories:
- a) RPL (A): Remote Pilot Licence (Aeroplane);
  - b) RPL (MR): Remote Pilot Licence (Multi-rotor).
- 03.1.3 The Operator shall have a weight endorsement on the ROC and individual pilots shall have the following ratings endorsements on their personal certificate/licence:
- a) VLOS: visual line-of-sight operations;
  - b) E-VLOS: extended visual line-of-sight operations;
  - c) B-VLOS: beyond visual line-of-sight operations;

### **Requirements for the issue of an RPL**

- 03.2.1 An applicant for an RPL shall:
- a) Not be less than 18 years of age;
  - b) (i) Hold at least a valid Class 4 medical certificate for B-VLOS operations or operations involving RPA classified as Class 3 or higher; or (ii) for all other classes or types of operation, submit a self-declared medical assessment report as prescribed in the requirements as prescribed in the IS for Continuing Airworthiness, Operations and Maintenance of RPA involving RPA classified as Class 2 or lower - provided that an applicant who cannot meet the requirements of the medical assessment shall submit a Class 4 medical certificate;
  - c) Hold at least a restricted Certificate of Proficiency in Radiotelephony (Aeronautical);
  - d) Provide proof of the ability to speak the English language at proficiency level 4 or higher, as prescribed in the IS for Continuing Airworthiness, Operations and Maintenance of RPA.
  - e) Where required, have completed the flight training referred to in this Subpart;
  - f) Have passed the theoretical knowledge examination referred to in this Subpart; and
  - g) Have passed the skill test referred to in this Subpart.
- 03.2.2 An application for an RPL must be made to the Authority on the appropriate form within 30 days of completing the practical skill test.

### **Theoretical knowledge examination**

- 03.3.1 The theoretical knowledge examination applicable to the category of licence sought must be passed within 90 days preceding the skill test.

- 03.3.2 The theoretical knowledge examination shall be conducted at a test centre accredited by the Authority, except as provided for in the requirements as prescribed in the Zimbabwe Civil Aviation Regulations currently in force
- 03.3.3 The syllabi as well as other requirements for the examination shall be as prescribed in the IS for Continuing Airworthiness, Operations and Maintenance of RPA.
- 03.3.4 Approval shall be obtained from the Authority before any foreign theoretical training or theoretical knowledge examination is undertaken if such training or knowledge is to be accredited towards a Zimbabwean Remote Pilot Licence (RPL).

### **Flight training**

- 03.4.1 The flight training syllabi for the different categories of licence shall be as prescribed in the IS for Continuing Airworthiness, Operations and Maintenance of RPA.
- 03.4.2 The organisation conducting the training shall issue a certificate stating that flight training has been successfully completed.
- 03.4.3 All flight training shall be conducted with an aircraft of the same category for which the licence is sought.
- 03.4.4 Approval shall be obtained from the Authority before any foreign flight training is undertaken if such training is to be accredited towards a Zimbabwean remote pilot licence (RPL).

### **Skill test**

- 03.5.1 The skill test for an RPL shall be conducted within 60 days of completing the flight training by an examiner accredited by the Authority.
- 03.5.2 The skill test shall be conducted with an aircraft of the same category for which the licence is sought.
- 03.5.3 The holder of the remote pilot licence (RPL) shall submit the skill test form to the Authority within 30 days of the skill test.
- 03.5.4 The skill test shall include the applicable sections for the extended visual line of sight (E-VLOS) and beyond visual line of sight (B-VLOS) ratings if one or more of these ratings are sought.

### **Revalidation check**

- 03.6.1 An RPL is valid until the last day of the 24th month from the date of issue or renewal.
- 03.6.2 A revalidation check shall be conducted in the 90 day period before the expiry date of the validity period by an examiner accredited by the Authority.
- 03.6.3 The revalidation check shall be conducted in an aircraft of the same category for which the licence is held.
- 03.6.4 If a revalidation check is completed more than 90 days before expiry or within 36 months of the expiry of an RPL, the remote pilot licence (RPL) shall be re-issued from the date of the check for the normal 24 month period.
- 03.6.5 The holder of a remote pilot licence (RPL) shall submit the revalidation check form to the Authority within 30 days of the revalidation check.



## **Pilot logbook**

- 03.7.1 The holder of remote pilot licence (RPL) must maintain a record of all his or her flight time, instrument time, simulation time and instruction time.
- 03.7.2 Where electronic logbooks are used, the electronic data must be printed on paper at least every 90 days and the printed pages filed sequentially in a binder.
- 03.7.3 The pilot must retain all pilot logbooks for at least 60 months from the date that person no longer holds a valid pilot licence.
- 03.7.4 The holder of an RPL must make the logbook available for inspection upon a request by the Authority

## **PART 4: REMOTELY PILOTED AIRCRAFT SYSTEM (RPAS) OPERATOR CERTIFICATE**

### **General requirements**

- 04.1.1 No person shall operate an RPA in terms of this Part unless such person is the holder of:
- a) In the case of commercial, corporate and non-profit operations, a valid RPA Operator's Certificate (ROC) including the Operations Specifications attached thereto; and
  - b) In the case of commercial operations, an Air Services Permit issued in terms of the Civil Aviation Act Chapter 13:16.

### **Application**

- 04.2.1 An application for the issuance of a ROC or renewal or an amendment thereto, shall be:
- a) made to the Authority on the appropriate form;
  - b) accompanied by:
    - i. The appropriate fee as prescribed in approved schedule of fees;
    - ii. A copy of the certificate of registration of each RPA to be operated;
    - iii. A copy of the RLA for each device to be operated; and
    - iv. For an initial issue, an original operations manual required by this Part.
- 04.2.2 No RPA shall be registered under more than one ROC.

### **Validity**

- 04.3.1 An ROC shall be valid for 12 months from the date of issue unless:
- a) It is surrendered by the holder thereof; or
  - b) It is suspended by an authorised officer, inspector or authorised person or cancelled by the Authority.
- 04.3.2 The holder of an ROC shall, at least 60 days immediately preceding the date on which such certificate expires, apply for the renewal of such certificate.
- 04.3.3 The holder of an ROC which is cancelled shall, within seven days from the date on which the ROC is cancelled, surrender such document to the Authority.

### **Duties of the holder of an ROC**

- 04.4.1 The holder of an ROC shall:
- a) Conduct the activities granted by such certificate and ensure compliance with the provisions authorised therein;
  - b) Ensure compliance with any other requirements which the Authority may impose;
  - c) Report to the Authority any changes directly or indirectly related to the ROC that may affect continued validity of the certificate or approval or safety of persons and property; and
  - d) Ensure that the RPA operation is conducted in a safe manner.

- e) For operations approved for E-VLOS, the operator shall:
  - i. Make use of at least one observer who shall not be younger than 18 years of age; and
  - ii. Ensure that each observer has completed the training prescribed by the operator and as approved by the Authority in their operations manual.

### **Operations manual**

- 04.5.1 An ROC holder shall develop for approval by the Authority, an operations manual containing all the information required to demonstrate how such operator will ensure compliance with the regulations and how safety standards will be applied and achieved during such operations.
- 04.5.2 An ROC holder shall set out the type and scope of operations, including the manner in which each type of an RPA and operation will be safely conducted.
- 04.5.3 The operations manual, or system of manuals, should reflect all operational and legislative activities and obligations which the ROC holder is obliged to meet, such that the content is commensurate with the size and scope of the operation.
- 04.5.4 The operator shall submit amendments to the Authority for approval:
  - i. Prior to a change in any proposed aspect, type or scope of the operator's operation;
  - ii. Where the operations manual no longer meets the requirements of these regulations or associated technical standards;
  - iii. On determining that any part or component thereof is, or becomes, inadequate; or
  - iv. As required by the Authority.
- 04.5.5 Upon the approval of the operations manual amendments by the Authority, the operator shall make such changes available to all persons engaged in the operation, deployment, handling, security, transportation and storage of any RPA operated by such ROC holder and ensure that they are made aware, and where necessary trained in accordance with any relevant aspect relating to such amendment.
- 04.5.6 The structure and contents of the operations manual shall be as prescribed in the IS for Continuing Airworthiness, Operations and Maintenance of RPA.

### **Documentation and records**

- 04.6.1 An RPA operator shall establish a system of record-keeping that allows adequate storage and reliable traceability of all activities developed, covering in particular:
  - i. Lines of responsibility and accountability;
  - ii. Safety policy;
  - iii. Identification of aviation safety hazards encountered by the activities of the operator, assessment and mitigation of the associated risks, including taking actions and verifying their effectiveness;
  - iv. Personnel training and competence;
  - v. Quality, safety and security management records.
- 04.6.2 The format of the records shall be specified in the ROC holder's operations manual.

04.6.3 Records shall be stored for at least 2 years in a manner that ensures protection from damage, alteration and theft.

### **Safety management**

04.7.1 The holder of an ROC shall establish a safety management system commensurate with the size of the organisation or entity and the complexity of its operations.

04.7.2 The safety management system established in terms of these Regulations shall include:

- a) A process to identify actual and potential safety hazards and assess the associated risks;
- b) A process to develop and implement remedial action necessary to maintain an acceptable level of safety;
- c) Provision for continuous and regular assessment of the appropriateness and effectiveness of safety management activities.

### **Security**

04.8.1 The holder of an ROC issued under this Part shall:

- a) Conduct background checks on all personnel recruited for deployment, handling and storage of any RPA;
- b) Conduct criminal record checks every 24 months on all personnel employed in the deployment, handling, and storage of RPA;
- c) Ensure that RPA not in use are stored in a secure manner to prevent and detect unauthorised interference or use;
- d) Ensure that the RPA is protected from acts of unlawful interference;
- e) Ensure that the RPA is stored and prepared for flight in a manner that will prevent and detect tampering and ensure the integrity of vital systems;
- f) Designate a security coordinator responsible for the implementation, application and supervision of the security controls; and
- g) Ensure that all personnel employed in the deployment, handling, and storage of RPA have received security awareness training as prescribed in Zimbabwe Aviation regulations currently in force.

04.8.2 The holder of an ROC shall include in the operations manual referred to in the IS for Continuing Airworthiness, Operations and Maintenance of RPA on security aspects of the RPA operations.

### **Surveillance, safety and security audits and inspections**

04.9.1 An applicant for the issuance of an ROC shall permit an authorised officer, inspector or authorised person to carry out such safety and security inspections, audits and oversight as may be necessary to verify the validity of any application made in the IS for Continuing Airworthiness, Operations and Maintenance of RPA on security aspects of the RPA operations.

04.9.2 The holder of an ROC issued in terms this Part shall permit a person authorized by the Authority to carry out such safety and security inspections, audits and oversight,

including safety or security inspections and audits of its partners, suppliers or subcontractors, as may be necessary to determine continued compliance with the provisions of regulations and the privileges granted by the certificate.

### **Register of operating certificates**

04.10.1 The Authority shall maintain a register of all certificates issued in terms of this subpart.

### **Transferability**

04.11.1 An ROC issued in terms of this Part shall not be transferable.

### **Insurance**

04.12.1 An ROC holder shall at all times be adequately insured for third party liability.

## **PART 5: RPA OPERATIONS**

### **Weather conditions**

05.1.1 No person shall operate an RPA in weather conditions that do not allow unobstructed visual contact to be maintained with the RPA by other airspace users and by the operator unless in B-VLOS or night operations approved by the Authority in their operations manual.

### **Landing on roads**

05.2.1 No person shall use a public road as a place of landing or take-off of an RPA, except:

- (a) By the holder of an ROC and as approved by the Authority; and
- (b) When approved by the relevant local authority.

### **Controlled airspace**

05.3.1 No RPA may be operated in controlled airspace, except by the holder of an ROC and as approved by the Authority in the operators' operations manual.

05.3.2 The Authority may approve an RPA operation in controlled airspace as contemplated in Civil Aviation (Air Traffic Services) Regulations currently in force, only in

- (a) VMC in an ATZ and CTR below 400feet; and
- (b) Subject to compliance with the conditions prescribed in the Zimbabwe Civil Aviation Regulations currently in force

05.3.3 In order to avoid collisions:

- a) RPAs operating in controlled airspace shall have the same ability to automatically detect-and-avoid traffic/ obstacles, as other aircraft while moving through the air.

## **Releasing object or substance**

05.4.1 No object or substance shall be released, dispensed, and dropped, delivered or deployed from an RPA except by the holder of an ROC and as approved by the Authority in the operators' operations manual.

## **Dangerous goods**

05.5.1 No person may use an RPA to carry dangerous goods as cargo, except by the holder of an ROC and as approved by the Authority in the ROC holder's Operations Specifications.

05.5.2 The provisions of the Civil Aviation (Air Navigation) Regulations relating to carriage of dangerous goods, with the necessary changes, apply to the conveyance of dangerous goods by an RPA.

## **Accidents and incidents**

05.6.1 All accidents and incidents involving an RPA shall be reported as prescribed in Civil Aviation (Investigation of Accidents and Serious Incidents) Regulations currently in force, where there is:

- a) Any injury or death to a person;
- b) Damage to property; or
- c) Destruction of the RPA beyond economical repair.

05.6.2 All incidents involving an RPA, where loss of control occurred, shall be reported to the holder of the ROC.

## **Consumption of alcohol and drugs**

05.6.3 No remote pilot, observer or RMT shall:

- a) Consume alcohol less than 8 hours prior to reporting for duty;
- b) Commence a duty period while the concentration of alcohol in any specimen of blood taken from any part of his or her body is more than 0,02 grams per 100 millilitres;
- c) Consume alcohol or any psychoactive substance during the duty period or whilst on standby for duty; or
- d) Commence duty period while under the influence of alcohol or any psychoactive substance having a narcotic effect.

## **5.8 Operational Requirements**

5.8.1 A prospective operator of an RPAS shall develop the C2 performance requirements safety case for approval by the Authority.

5.8.2 The following C2 functions shall be considered for the safety case:

- (a) Downlink
  - (i) Data link quality

- (b) Telemetry
  - (i) RPA flight dynamics
  - (ii) Situation awareness/ Link health telemetry (for BVLOS operations)
  - (iii) Flight data recording and logging
- (c) Uplink
  - (i) Flight Control Systems
  - (ii) RPA control
  - (iii) Automatic Identification System update (for BVLOS operations)
  - (iv) RPA hand over

5.8.3 The RPA operator shall present the target values of the C2 Performance requirements that were obtained from the safety case of the C2 functions to the Director.

- (a) Continuity
- (b) Integrity
- (c) Availability
- (d) Latency of the C2 data link.

### **Precautions and safety considerations**

- 05.9.1 No person shall operate an RPA unless
- (a) The RPA is in a fit-to-fly condition;
  - (b) The pilot is the holder of a licence issued in terms of this Part;
  - (c) The RPA station is compatible and interoperable with the aircraft it is connected to in all phases of flight; and
  - (d) The RPA is being controlled by only one RPS at any given time.
- 05.9.2 No person shall operate an RPA in a negligent or reckless manner so as to endanger the safety of any person, property or other aircraft in the air or on the ground.
- 05.9.3 The operator shall, in the best interest of safety, ensure that certain RPA operations are supplemented with additional personnel for non-flying duties, such that the remote pilot can maintain control and situational awareness in respect to positioning and collision avoidance.

### **General restrictions**

- 05.10.1 No person shall operate an RPA unless they have in their possession:
- a) A valid RPA Pilot Licence;
  - b) A copy of the ROC and associated Operation Specifications;
  - c) The certificate of registration for each RPA in operation;
  - d) A copy of the RLA; and
  - e) User manual for the RPA and the remote pilot station.
- 05.10.2 Except as approved by the Authority, no RPA shall:
- a) Tow another aircraft;
  - b) Perform aerial or aerobatic/ roll in an emergency to avoid collision;

- c) Be flown in formation or swarm;
- 05.10.3 Except by the holder of an ROC, and as approved by the Authority, no RPA shall be operated:
- a) Above 400 feet above the surface;
  - b) Within a radius of 3 Nautical Miles from an controlled or / uncontrolled aerodrome;
  - c) Within restricted or prohibited airspace; or
  - d) Adjacent to or above a nuclear power plant, prison, police station, crime scene, court of law, national key point or strategic installation.

### **Beyond visual line-of-sight**

- 05.11.1 An RPA shall not be operated beyond visual-line-of-sight unless by the holder of an ROC and as approved by the Director in the operations manual.
- 05.11.2 The Authority may approve B-VLOS operation subject to the operator meeting the requirements prescribed in the Zimbabwe Civil Aviation Regulations currently in force
- 05.11.3 Approved B-VLOS operations may only be conducted in VMC, below 400ft above surface level, unless otherwise approved by the Authority.

### **Night operations**

- 05.12.1 An RPA may not be operated at night except:
- a) In R-VLOS operation; or
  - b) By the holder of an ROC, and as approved by the Authority in terms of Part (2) of this AIC.
- 05.12.2 The holder of an ROC intending to operate an RPA at night, shall, as a minimum have each RPA approved under their ROC for night operations subject to compliance with the requirements prescribed in the Civil Aviation Authority of Zimbabwe (CAAZ) Policy document for light RPA.
- 05.12.3 An RPA may not be operated at night in controlled airspace except as approved by the General Manager.

### **Operations in the vicinity of people**

- 05.13.1 No person shall operate an RPA directly overhead any person or group of people or within a lateral distance of 30 m from any person, unless:
- a) The operator is the holder of an ROC and the operation has been approved by the Authority in their operations manual; or
  - b) Such person is the operator of the RPA or such person is under the direction of the operator of the RPA; or
  - c) Such person or group of people forms part of the operations of the RPA, and is under control of the operator of the RPA, and adequate provisions have been made for their safety.

### **Operations in the vicinity of property, structures and buildings**



05.14.1 No RPA shall be operated within a lateral distance of 30m from any structure or building, unless:

- a) The operator is a holder of an ROC and the operation has been approved by the Authority in their operations manual; or
- b) Permission is obtained from the owner of such structure or building.

05.14.2 An operator conducting an operation as contemplated in subsection 5.14.1 above, shall take such measures as are necessary to ensure the safety of all persons on the ground accessing such building or in the vicinity of such structure.

### **Operations in the vicinity of aerodromes and public roads**

05.15.1 No person shall operate an RPA over an aerodrome, or an aerodrome's approach path, or a public road or along the length of a public road or at a distance of less than 30m from a public road unless:

- a) such person is the holder of an ROC and the operation has been approved by the Authority in the operator's operations manual;
- b) reasonable care has been taken to ensure the safety of road users and pedestrians in the event of loss of control of the RPA.

05.15.2 No public road is to be used for Launch and Recovery (LAR) of a RPA without the relevant approvals from the Authority

### **Radio communication requirements**

05.16.1 If operations are to be conducted within the 3 nautical miles boundary of an aerodrome, except for R-VLOS operations, no RPA shall be operated unless the pilot has a functioning air-band radio in his possession, tuned to the frequency or frequencies applicable to the ATSU providing services or controlling such area or airspace or to aircraft in such area or airspace.

05.16.2 The air-band radio shall have the required output and be configured in such a way that the range, strength of transmission and quality of communication extends beyond the furthest likely position of the RPA from the pilot.

05.16.3 For VLOS, E-VLOS and B-VLOS operations, the pilot shall, using the registration of the RPA as a call-sign, make the required radio calls, indicating the altitude, location and intended operation of the RPA in that area and at such intervals as are required in order to ensure adequate separation from other aircraft is maintained.

05.16.4 For approved RPA operations in controlled airspace, the pilot shall maintain radio contact, using the registration of the RPA as a call-sign, with the relevant ATSU, and acknowledge and execute such instructions as the ATSU may give at any time during the operation of the RPA.

05.16.5 The Authority is responsible for the allocation of the operating frequency to users in the Microwave band

05.16.6 All RPA operators shall apply to the Authority for Microwave band frequency allocation

## **Pre-flight preparation**

05.17.1A pilot shall complete the pre-flight preparations prior to each flight, as prescribed in the IS for Continuing Airworthiness, Operations and Maintenance of RPA.

## **Duties of the pilot**

05.18.1 The pilot is accountable for safe operation of the RPA.

05.18.2 The pilot of an RPA shall, on each flight, operate such aircraft in accordance with the manual.

05.18.3 The pilot of an RPA is responsible for separation and avoidance of the RPA from other aircraft and any other obstacles and hazards.

05.18.4 The pilot of an RPA shall pilot such RPA in a manner so as to minimize hazards to persons and property on the ground, and other aircraft in the air.

05.18.5 The pilot shall ensure that at least one observer is used for E-VLOS operations.

## **Flight operations**

05.19.1 The RPAS shall be operated in such a way that safe separation from other aircraft is maintained and that adequate obstacle clearance is ensured, during all phases of the flight.

05.19.2 The pilot of an RPA shall ensure that the Launch and Recovery (LAR) area is safe and of the appropriate dimensions, free from obstacles and has adequate surface conditions, with regard to the type of operation, the size of the aircraft, the aircraft's performance and external factors.

## **Right of way**

05.20.1 An RPA shall give way to manned aircraft.

05.20.2 The RPA shall avoid passing over, under or in front of manned aircraft, unless it passes well clear and takes into account the effect of aircraft wake turbulence.

05.20.3 When two aircraft are approaching head-on or approximately in a way that there is danger of collision, each aircraft shall alter its heading to the right.

05.20.4 When two aircraft are converging at approximately the same level, the aircraft which has the other aircraft on its right, shall give way.

05.20.5 An aircraft which is being overtaken has the right of way, and the one overtaking shall alter its heading to keep well clear.

05.20.6 RPA is to descend by a minimum of 100 feet as soon as a manned aircraft is detected in the immediate vicinity to ensure separation

## **Use of time**

**05.21.1** For the purposes of reporting and recording time, Co-ordinated Universal Time (UTC) shall be used and shall be expressed in hours and minutes and, when required, seconds of the 24-hour day beginning at midnight.

05.21.2 A pilot shall have a time piece synchronised with UTC prior to operating an RPA in controlled airspace and at such other times during the flight as may be necessary.

05.21.3 Wherever time is utilised in the application of data link communications, it shall be accurate to within 1 second of UTC.

### **Flight folio**

05.22.1 The owner or operator of an RPA shall ensure that the RPA has a flight folio or any other similar document which meets the requirements of and contains the information as prescribed in the Zimbabwe Civil Aviation Regulations currently in force, and the flight folio shall be accessible at the remote pilot station all times during flight.

05.22.2 The flight folio shall be kept up-to-date and maintained in a legible manner by the remote pilot.

05.22.3 All entries shall be made immediately upon completion of the occurrence to which they refer.

05.22.4 In the case of maintenance being undertaken on the RPA, the entry shall be certified by the person responsible for the maintenance.

05.22.5 Without detracting from the generality of the Civil Aviation (Air Navigation) Regulations currently in force, the remote pilot shall:

- a) Maintain fuel or charging records to enable the Authority to ascertain that, for each flight under his or her control, the requirements of regulation are complied with;
- b) Enter the fuel, charging and oil records referred to in the Zimbabwe Civil Aviation Regulations currently in force in the flight folio; and
- c) Maintain oil records to enable the Authority to ascertain that trends for oil consumption are such that an RPA has sufficient oil to complete each flight.

05.22.6 The Flight Folio shall incorporate the following information for each flight in the form of a flight folio;

- (a) Aircraft registration;
- (b) Date;
- (c) Names (of) flight crew members;
- (d) Duty assignment of flight crew members;
- (e) Place of departure;
- (f) Place of arrival;
- (g) Time of departure (off-block time);
- (h) Time of arrival (on-block time);
- (i) Hours of flight;
- (j) Nature of flight;
- (k) Incidents, observations (if any);
- (l) Signature of remote pilot;
- (m) The current maintenance statement giving the aircraft the aircraft maintenance status of what maintenance, scheduled or out of phase, is due;
- (n) All outstanding deferred defects which affect the operation of the aircraft;
- (o) Fuel and oil used (if applicable);
- (p) Fuel and oil uplift (if applicable);
- (q) Battery charge status (beginning and end of the flight, if applicable)

## **Power reserves**

05.23.1 During VLOS operations, the remote pilot shall ensure that the aircraft has enough fuel or electrical charge to complete the flight, plus a reserve of at least 10%.

05.23.2 During B-VLOS operations, the remote pilot shall ensure that the aircraft has enough fuel or electrical charge to complete the intended flight plus a reserve of at least 10%.

## **First aid kits**

05.24.1 No owner or operator of an RPA shall operate the aircraft unless a first aid kit consisting of the medical supplies as prescribed in the Civil Aviation (Air Navigation) Regulations currently in force shall be available within the remote pilot station. A single kit may be used to comply with these requirements.

05.24.2 The owner or operator shall carry out periodical inspections of the first aid kit to ensure that, as far as practicable, the contents thereof are in a condition necessary for their intended use.

05.24.3 The contents of the first aid kit shall be replenished at regular intervals, in accordance with instructions contained on their labels, or as circumstances require.

05.24.4 The first aid kit shall be readily accessible to all crew members involved in the operation.

## **Hand-held Fire Extinguishers**

05.25.1 No owner or operator of an RPA shall operate the RPA unless:

- a) A hand-held fire extinguisher is available at the Ground station.
- b) A hand-held fire extinguisher suitable for use with electronic equipment and any power generating equipment in use is available in the Ground station;

## **PART 6: MAINTENANCE**

### **Continued system maintenance**

- 06.1.1 An RPA shall be compliant with the manufacturer's instructions for continued equipment maintenance through actions or inspections.
- 06.1.2 The owner shall submit to the Authority for approval, a maintenance programme for the RPA.

### **RPAS maintenance**

- 06.2.1 The maintenance on an RPA or any component thereof shall be carried out by the following persons:
- a) In respect of an RPA classified as a Class 3 and higher, the holder of a valid RMT authorization; or
  - b) In respect of an RPA classified as Class 2 and lower, the ROC holder: provided that the holder can demonstrate to the satisfaction of the Authority, its ability to perform the required maintenance on the RPA.

### **Issuing of an RMT authorisation**

- 06.3.1 An applicant for the issuing or renewal of an RMT authorisation shall:
- a) Be not less than 18 years of age; and
  - b) Be a Zimbabwean citizen or in possession of a valid permanent residence permit or valid temporary work permit with a letter of employment; and
  - c) Shall have successfully completed appropriate training, provided by:
    - (i) An organisation approved by the competent authority in the country where the training organisation is located;
    - (ii) Training provided by an approved original equipment manufacturer; or
    - (iii) A training facility approved by the Authority; or
  - d) Demonstrate to the Authority, the ability to perform maintenance functions where no training for the particular RPA is offered or available.
- 06.3.2 An application for the issuing of an RMT authorisation shall be made to the Authority in the appropriate form and accompanied by the appropriate fee as prescribed in the current schedule of fees.
- 06.3.3 The Authority shall issue an RMT authorisation if the applicant complies with the requirements prescribed in the IS for Continuing Airworthiness, Operations and Maintenance of RPA.
- 06.3.4 The holder of an RMT authorization shall not exercise privileges other than the specific privileges for which the authorization is issued.
- 06.3.5 An RMT authorisation shall be valid for a period of 24 months.

### **RMT logbook**

- 06.3.6 Any person responsible for maintenance of RPA shall maintain a personal logbook and shall record therein all work carried out on an RPA and its components.

06.3.7 The form of and information to be contained in a logbook, and the manner in which such logbook shall be maintained, as follows:

- (a) Full name
- (b) Identification number
- (c) Name of employer
- (d) Record of all technical courses attended
- (e) Date of maintenance
- (f) Type and make of RPA (e. g multi-rotor)
- (g) Work carried out (inspection, repair, overhaul etc)
- (h) Signature of Quality Assurance Personnel.

06.3.8 No alterations of a logbook shall be made once it is signed off by a designated person.

**Short title and commencement**

Part 180 Regulation for Remotely Piloted Aircraft (RPA) /Unmanned Aerial Vehicles (UAVS) comes into effect on the date of publication in the Government gazette.