RWANDA

CIVIL AVIATION AUTHORITY

ADVISORY CIRCULAR
RCAA-AC-UAS-21-001

UNMANNED AIRCRAFT SYSTEM (UAS) ADVISORY CIRCULAR IN COMPLIANCE WITH PART 27

PURPOSE

Rwanda Civil Aviation Authority (RCAA) Advisory Circular (AC) contains information advisory in nature to provide guidance about practices, and procedures resulting from rules promulgated by the Authority. This AC does not constitute a regulation. This AC does not change, add to, or delete regulatory requirements or authorize deviations from regulatory requirements.

This advisory circular provides advice on best practices to be observed when operating unmanned aircraft in accordance with RCARs Part 27 regulation.

This AC is not intended to cover every provision of RCARs Part 27. Rather, this AC is intended to provide guidance on those provisions where additional information may be helpful. Persons subject to RCARs Part 27 are responsible for complying with every applicable provision of RCARs Part 27, regardless of whether the provision is discussed in this AC or not.

BACKGROUND

The civilian use of unmanned aircraft system (UAS) has markedly increased in recent years. Research and development into the civilian applications of unmanned aircraft (UA) is a dynamic and rapidly evolving area. Control and guidance systems are now available that enable these aircraft to perform a variety of tasks that were previously unachievable, unreasonably expensive, or involved too much personal risk. Consequently, UA have an increasing presence in controlled and uncontrolled airspace.

Growth of UAS use is currently concentrated in smaller UA, similar to model aircraft in size, although not necessarily in performance. The purpose of this advisory circular is to provide guidance to assist operators in understanding how to comply with requirements of Part 27.

This advisory circular should be viewed as a dynamic document subject to amendment as more information is obtained with respect to UAS operations. Amendments will also be made in light of safety and technology advances in the UAS sector. This advisory circular does not provide exhaustive detail on what is required in respect to a particular type of UAS application, rather it is intended to guide operators preparing to make an application to the Rwanda Civil Aviation Authority for authorization to operate.

UAS operators are welcome to contact RCAA at info@caa.gov.rw, uas.ssp@caa.gov.rw for any inquiries regarding rules for UAS operations.

DEFINITIONS

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 single engine, including its cowlings or accessories, to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, 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: All aircraft in flight or operating on the maneuvering area of an aerodrome.

Air traffic control clearance: Authorization for an aircraft to proceed under conditions specified by an air traffic control unit.

Appropriate Authority:

(d) Regarding flight over the high seas: the relevant Authority of the State of Registry. Regarding flight other than over the high seas: the relevant Authority of the State having sovereignty over the territory being overflown.

Authority: The Rwanda Civil Aviation Authority.

Authorization: The formal permission granted to an applicant, from the Authority, allowing particular operations with limitations commensurate with the combined operational and system risk.

Automatic Dependent Surveillance – Broadcast (ADS-B): One method by which aircraft, aerodrome vehicles and other objects can automatically transmit and/or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link.
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.
Basic operations: Operations that are likely to fall under the lowest risk categories and likely require only registration of the UAS in addition to set restrictions for private use.
Beyond Visual-Line-of-Sight: Unmanned aircraft operations in which the remote pilot does not have to keep the unmanned aircraft within visual-line-of-sight at all times.
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.
Commercial operation of UAS: Any UAS operations for hire, profit, gain, remuneration or earnings.
Conspicuity: Quality of an aircraft (e.g. lighting or paint scheme) allowing it to be easily seen or noticed by others (e.g. by pilots, ATCOs, aerodrome personnel).
Continuing airworthiness: The set of processes by which an aircraft, engine, propeller or part complies with the applicable airworthiness requirements and remains in a condition for safe operation throughout its operating life.
Control area: A controlled airspace extending upwards from a specified limit above the earth.
Controlled airspace: Airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification.
Controlled flight: Any flight which is subject to an air traffic control clearance.
Control zone: Controlled airspace extending upwards from the surface of the earth to a specified upper limit.
Chief Remote Pilot: The pilot appointed by the employer to perform the duties and responsibilities of the Chief Remote Pilot.
Data link Communications: Form of communication intended for the exchange of messages via a data link.
Detect And Avoid (DAA): The capability to see, sense or detect conflicting traffic or other hazards and take the appropriate action.
Fatigue: A physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness, circadian phase, or workload (mental or physical activity) that can impair a crew member's alertness and ability to safely operate an aircraft or perform safety- related duties.
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 an unmanned aircraft the illusion of flying the aircraft from an on-board pilot's perspective.
Flight plan: Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.

Flight recorder: Any type of recorder installed in the aircraft for the purpose of complementing accident/ incident investigation. In the case of unmanned aircraft system, it also includes any type of recorder installed in a remote pilot station for the purpose of complementing accident/incident investigation.
Flight time: The total time from the moment an aircraft first moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight.
Flight termination system: A system that when activated, terminates the flight of an unmanned aircraft.
Flight visibility: The visibility forward from the cockpit of an aircraft in flight.
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.
Geographical limitation: A restricted airspace volume defined through electronic map data.
Geofencing: Automatic function to limit the access of the UA to airspace areas or volumes provided as geographical limitations based on the UA position and navigation data.
Guidance Material (GM): Non-binding material developed by the Authority that helps to illustrate the meaning of a requirement or specification and is used to support the interpretation of the Regulation, Standard Scenarios, and outlines additional Acceptable Means of Compliance.
Handover: The act of passing piloting control from one remote pilot station to another.
Highly automated aircraft: An unmanned aircraft that does allow minimal pilot(s)' intervention in the management of the flight.
Highly automated operation: An operation during which an unmanned aircraft system is operating with minimal pilot intervention in the management of the flight.
Human performance: Human capabilities and limitations, which have an impact on the safety and efficiency of aeronautical operations.
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).
Landing area: That part of a movement area intended for the landing or take-off of aircraft.
Maintenance: The performance of tasks required to ensure the continuing airworthiness of an aircraft, including any one or combination of overhaul, inspection, replacement, defect rectification and the embodiment of a modification or repair.
Maintenance organization's procedures manual: A document which details the maintenance organization's structure and management responsibilities, scope of work, description of facilities, maintenance procedures, and quality assurance, or inspection systems. This document is normally endorsed by the head of the maintenance organization.

Maintenance program: A document which describes the specific scheduled maintenance tasks and their frequency of completion and related procedures, such as a reliability program, necessary for the safe operation of those aircraft to which it applies.
Maneuvering area: That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.
Movement area: That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the maneuvering area and the apron(s).
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.
Operational control: The exercise of Authority over the initiation, continuation, diversion or termination of a flight in the interest of the safety of the aircraft and the regularity and efficiency of the flight.
Operations manual: a manual containing procedures, instructions and guidance for use by operational personnel in the execution of their duties.
Operation specification: The Authorization, conditions and limitations within the UAS operator's certificate and subject to the conditions in the operation manual.
Operator: A person, organization or enterprise engaged in or offering to engage in an aircraft operation.
Private operation of UAS: UAS operation by individual or organization, for the recreational purposes and not intended for any commercial use.
Remote crew member: A crew member responsible of any duty essential to the operation of an unmanned aircraft system during a flight duty period.
Remote flight crew member: a licensed crew member responsible of any duty essential to the operation of an unmanned aircraft system during a flight duty period.
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.
Remote pilot station: The component of the unmanned aircraft system containing the equipment used to pilot the unmanned aircraft.
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.
Remote pilot station: the component of the unmanned aircraft system containing the equipment used to pilot the unmanned aircraft.
Risk mitigation: The process of incorporating defences or preventive controls to lower the severity and/or likelihood of a hazard and the projected consequences.
Rotorcraft: A power-driven heavier-than-air aircraft supported in flight by the reactions of the air on one or more rotors.

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.
Safety performance indicator: Data-based safety parameter used for monitoring and assessing safety performance.
Safety risk: The predicted probability and severity of the consequences or outcomes of a hazard.
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.
Standard Scenario: A description of a type of operation included in a certification specification issued by the Authority, for which an operational risk assessment has been conducted and mitigations identified that can be applied to a variety of applicants in satisfying Target Levels of Safety for approval.
State of Design: The State having jurisdiction over the organization responsible for the type design.
State of Manufacture: The State having jurisdiction over the organization responsible for the final assembly of the aircraft. State of Registry: The State on whose register the aircraft is entered.
State of the Operator: The State in which the operator's principal place of business is located or, if there is no such place of business, the operator's permanent residence.
State safety programme (SSP): An integrated set of regulations and activities aimed at improving safety.
Target Level of Safety (TLS): A generic term representing the level of risk which is considered acceptable in particular circumstances.
Testing Site: A specific geographical location designated by the Authority for UAS testing and flight operations, managed by the Rwandan government or delegated entity such as a UAS Club.
Type certificate: A document issued by a Contracting State to define the design of an aircraft type and to certify that this design meets the appropriate airworthiness requirements of that State.
Unmanned free balloon: Non-power-driven, unmanned, lighter-than-air aircraft in free flight.
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.
VFR flight: Flight conducted in accordance with the visual flight rules.

Visibility: For aeronautical purposes is the greater of-

(i) The greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognized when observed against a bright background;

(ii) The greatest distance at which lights in the vicinity of 1 000 candelas can be seen and identified against an unlit background.

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.

ACRONYMS AND ABBREVIATIONS

GM = Guidance Material
IMC = Instrument Meteorological Conditions
MOR = Meteorological Optical Range
UOC = UAS Operator Certificate
SMS = Safety Management System
TLS = Target Level of Safety
UA = Unmanned Aircraft
UAS = Unmanned Aircraft System
VFR = Visual Flight Rules
VLOS = Visual Line-of-Sight
VMC = Visual Meteorological Conditions
SSR =Secondary Surveillance Radar
ATC = Air Traffic Control
RPAS = Remotely Piloted Aircraft System
AIP = Aeronautical Information Publication
DAA= Detect And Avoid
RPA= Remotely Piloted Aircraft
SSP= State Safety Program
CAA= Civil Aviation Authority
ICAO= International Civil Aviation Authority
AGL= Above Ground Level
NOTAM= Notice to Airmen
ANSP = Air Navigation Service Provider
AAO = Approved Aviation Organization
RCAA = Rwanda Civil Aviation Authority
CSV= Comma Separated Values
GPS= Global Position System

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SECTION 1: PART 27 REGULATION AND GENERAL INFORMATION

1.1 General Provisions

Part 27, Subpart A of RCAR's, details the general rules governing the UAS operations in the Republic of Rwanda, it covers the applicability, definitions as well as abbreviations & acronyms used in part 27. It also describes the classifications and categorization of UAS accepted in Rwanda and the repercussions of falsification or alteration of documents.

Subpart A describes the use of Aeronautical radios by UAS operators as well as UAS accident reporting. Each UOC holder is required to submit a quarterly safety performance report on incidents and accidents in the format provided in APPENDIX 2 of this advisory circular.

This part also specifies the Registration procedures and requirements to Register your UAS in Rwanda as per Appendix 1 to regulation 27.015. The following are the requirements to complete UAS registration:

(a) Complete the security process from the competent security agencies.
(b) Copy of National Identification or company registration certificate in case it's for a company or organization.
(c) Proof of ownership of the UAS.
(d) Relevant manuals of the UAS.
(e) Copy of insurance policy of the UAS.
(f) Serial number of the UAS.
(g) Proof of payment of registration fees.

If UAS has a registration from another country the applicant is requested to submit it to the Authority for validation.
This subpart states requirements of Inspection, Testing and Demonstration of Compliance by UAS operators. Additional documentation may be required by the Authority whenever necessary for safe operations.

1.2 Operating rules

Subpart B of Part 27 regulation describes basic rules governing the operations of unmanned aircraft system (UAS) in the Republic of the Rwanda. This includes the Meaning of Standard Unmanned Aircraft Operating Conditions, Aircraft mass limits, dropping of particles, remote pilot license/certificate requirements and approved person or organizations that are permitted to perform the functions in Appendix 3 to part 27.

Operators have an overarching obligation to minimize hazards to persons, property and other aircraft. Hence, the operator or supervisor of an operator must be aware of the airspace restrictions, classifications and designations made under subpart B of part 27 regulation. This includes airspace, weather and day limitations, approval of areas for operation and right of way. Without airspace knowledge, an operator may put other airspace users or people on the ground at risk. This knowledge can be obtained through training and awareness conducted by the Authority or any other approved organization.

Finally, subpart B specifies different UAS operations that are conducted in Rwanda and this includes visual line of sight operations (VLOS), beyond visual line sight operations (BVLOS), night operations, operations over and near people and operations in restricted areas. Subpart B specifies what is included in the special operations and what is required to operate under conditions stipulated in part 27.155.

1.3 Unmanned aircraft pilot certification

Part 27 subpart C of RCAR's, provides guidance and requirements for a remote pilot certificate in the Republic of Rwanda. It covers the applicability, eligibility, notice to holder to show cause and cancellation of remote pilot license/certificate.

In addition to requirements stipulated under subpart C, the following requirements shall be met when applying for a remote pilot license/certificate;

(a) Having successfully completed the security vetting process.
(b) Class 3 medical certificate.
(c) Criminal Record certificate.
(d) Copy of National Identification.
(e) Ability to read, write, speak, and understand English.
(f) Proof of Payment of any applicable fees.

This subpart also specifies the condition that might be placed on a remote pilot license/ certificate holder in Rwanda for renewal of an expired License/certificate. A remote Pilot License/certificate shall be valid for 12 months and the applicant will fulfil the following conditions for renewal of the License.

(a) Re-upload a renewed Medical certificate.
(b) Re-upload a renewed criminal record certificate if requested by RCAA.
(c) Any document requested by RCAA.
(d) Proof of payment of applicable fees.

1.4 Unmanned aircraft system operator certificate

Part 27 subpart D RCAR's, provides guidance for meeting the requirements of an unmanned aircraft system (UAS) authorization and unmanned aircraft system operator certificate (UOC) which is under the specific category in the Republic of Rwanda. It covers the applicability, functions and duties of the chief remote pilot, specific category operations, issuance of UAS operator certificate and privileges of UAS operator certificate holder.

Subpart D applies to operators who are required by the authority to obtain an activity permit for each activity based on categorization under Part 27.205 and should provide the following information;

(a) Flight Information which includes:
    1. Activity Type.
    2. Start Date.
    3. End Date.
(b) Mission Title and Description.
(c) Remote Pilot License of pilot in command of the activity.
(d) Location Name and Description.
(e) Proof of payment of applicable fees.

The application for UAS operator certificate shall meet requirements in part 27.210 through 27.265. The authority may impose additional requirements if deemed necessary for improving safety.

The UOC holder is required to implement a Safety Management System as per part 27.270 in order to maintain an acceptable level of safety performance.

1.5 Requirements for manufacturer

Requirements related to design, manufacture, modification of UAS are stipulated in part 27.275 through 27.300 under subpart E.

1.6 Security requirements for UAS operator

Security and privacy requirements related to UAS operations in Rwanda are specified in part 27.305 through 27.345 under subpart F.

SECTION 2: APPENDICES

APPENDIX 1: Frequently Asked Questions.

2.1. How to declare a UA upon arrival?

(a) The owner of the UAS will declare his UAS to Rwanda national police at the point of entry in the country.

(b) After the declaration of the drone, the Rwanda National police will retain the UAS and provide a seizure form to the owner.

(c) The owner will then start the registration process for the UAS through the drone portal

2.2. How to Create a drone portal account (Register a new user)?

a) Go to the RCAA website.
b) Go to Online services on the website.
c) Go to the drone portal.
d) Create a drone portal account by going to "register a new user".
e) Fill the user registration form and submit it using registration button
f) You will receive account confirmation email.
g) Return to the drone portal and login in using the username and password received.
h) Complete the registration form by uploading the required documents and submit using the update button.
i) Click the applicant information button on the WELCOME TO RCAA UAS PORTAL.
j) Fill out the organization form by choosing from the listed organizations or;
k) If the organization is not listed, choose the New organization/individual and fill and save the form.
l) Complete the address information form.
m) Go to home page of RCAA UAS PORTAL you'll be able to find the modules (Applicant Information, UAS Registration, Pilot Certificate and Activity permit).

2.3. How to register a UAS on the drone portal?

a) After having created a drone portal account.
b) Login using your credentials.
c) Click on the UAS registration module.
d) Fill out the UAS registration request form by selecting your UAS or;
e) Select UAS not available if you are registering a new UAS.
f) Fill out organization UAS form and save.
g) Select your registered UAS on the UAS registration request form and complete the rest of the form.
h) If the application is approved, the owner of the account will be sent a certificate of registration for their UAS.
i) The owner of the UAS will provide a copy of their registration certificate as well as the seizure form given to them at the point of entry into the country to be able to obtain his/her UAS.

2.4. How to apply for pilot certificate?

a) After having created a drone portal account.
b) Login using your credentials.
c) Click on pilot certificate module.
d) Fill and save the pilot registration request form.
e) If the application is approved, the owner of the account will be sent a remote pilot certificate.

2.5. How to request for an Activity permit?

a) After having created a drone portal account.
b) Login using your credentials.
c) Click on activity permit module.
d) Complete the Activity permit-clearence form.
e) Fill in the activity permit- location form.
f) If the application is approved, the owner of the account will be sent an activity permit as a link via their email.

2.6. How to know the fees to pay?

(a) Go to the RCAA RCAA website.
(b) Go to Online services from the website.
(c) Go to the drone portal.
(d) Go to the new drone charges.

2.7. What is the RCAA account number when paying for any charges?

(a) Go to the RCAA website.
(b) Go to Online services from the website.
(c) Go to the drone portal.
(d) Go to the new drone bank accounts.

2.8. How to acquire the class 3 medical certificate?

The operator will contact RCAA via UAS.SSP@caa.gov.rw to request for recommendation to be examined by the appropriate aviation medical doctor.

2.9. How to apply for UOC?

(a) Formally apply to RCAA requesting for a UOC via this email: info@caa.gov.rw.
(b) Submit the documents requested by RCAA as per part 27.
(c) RCAA will review the documents submitted by the operator and provide a feedback.
(d) Other required steps shall be provided by the Authority.

2.10. What is the remote pilot certificate renewal procedure?

(a) Go to the RCAA website.
(b) Go to Online services from the website.
(c) Go to the drone portal.
(d) Use the remote pilot certificate module found on the portal to apply for renewal certificate.

2.11. What is the UOC certificate renewal procedure?

(a) The applicant will apply for renewal of their UOC certificate as per part 27 subpart D to the Authority on month before the expiry date via info@caa.gov.rw.

2.12. If an applicant wanted to operate a UA which is not in these categories/ special operations what will be the procedure?

(a) Formally apply to RCAA requesting to operate via this email: info@caa.gov.rw.
(b) Submit the documents requested by RCAA.
(c) RCAA will review the documents submitted by the operator and provide a feedback.
(d) Other required steps shall be provided by the Authority.

2.13. What will be the application process when setting up a UAS manufacturing Industry?

A person/organization intending to manufacture UAS in Rwanda shall seek authorization from the Authority as per part 27.280 through 27.285 Subpart E.

2.14. What will be the application process when setting up an AAO?

The applicant shall formally apply to RCAA in accordance with part 27 regulation in appendix 3.

2.15. How do UAS operators report Incidents and Accidents?

(a) The operators should report the incidents or accident to the Authority and ATC within 24 hours via UAS.SSP@caa.gov.rw using the incident and accident reporting form in APPENDIX 5.

2.16. What are the penalties associated with illegal use of UAS in Rwanda?

LAW N°20/2018 OF 29/04/2018 ESTABLISHING REGULATIONS GOVERNING CIVIL AVIATION	Content	Prison sentence	Fines
Article 99	Operating unmanned aircraft without authorization	3 - 5 years	5000000 frw - 10000000 frw
Article 100	Operating unmanned aircraft in prohibited or restricted areas	3 - 5 years	5000000 frw – 10000000 frw
Article 101	Using an unmanned aircraft for taking photographs on a prohibited area or an individual without a permit	3 - 5 years	5000000 frw – 10000000 frw
Article 102	Failure to declare unmanned aircraft on arrival at the airport or at the border	3 – 6 months	1000000 frw – 2000000 frw
Article 103	Failure to notify on manufacturing, assembling or testing of civil unmanned aircraft	3 – 6 months	1000000 frw – 2000000 frw
Article 104	Owning an unregistered unmanned aircraft	3 – 6 months	1000000 frw – 2000000 frw
Article 105	Failure to display unmanned aircraft registration mark	1 – 2 months	500000 frw – 1000000 frw
Article 106	False declaration for registration process and obtaining permit or certificate for unmanned aircraft	3 -5 years	5000000 frw - 10000000 frw
Article 107	Unlawful interference of unmanned aircraft operations	2 – 3 years	5000000 frw - 10000000 frw
Article 108	Mounting a lethal weapon or a toxic substance on an unmanned aircraft	10 – 15 years	15000000 frw – 20000000 frw

For further information, please visit LAW N°20-2018 OF 29.04.2018 ESTABLISHING REGULATIONS GOVERNING CIVIL AVIATION. This can be found on the RCAA website.

2.17. What does Rwanda consider in classifying UAS operations?

(a) UAS classification must consider both the intended operation, proposed system and area of operation.

2.18. Where are there likely to be low flying aircraft and what can I do to operate safely in these areas?

Low flying aircraft are generally located near airports, in airspace used for pilot training or when conducting an operation that requires flight below the minimum safe altitude. To operate in these areas, the operator has to have prior consent to use an area for a flight or a series of flights, through requesting an activity permit from the authority and contact ATC.

2.19. What are the restricted areas in Rwanda?

a) Strategic Installation (oil and gas reserves, power plants, Atomic and Nuclear power stations, etc)
b) Radar Sites.
c) High Tension Cables.
d) Communication Masts.
e) Highways.
f) Stadium.
g) Prisons.
h) Police Stations.
i) Military barracks (National Defense and security Installations).
j) Courts of Law.
k) Scenes of Crime, scene of accident, bush fire, forest fire, and other scenes as defined by RNP.
l) Any other specified area(s) by appropriate authority.

2.20. What is the basic content of a concept of operation for UAS operation in Rwanda?

The basic content of a concept of operation for UAS operations can be found in the form attached to this AC as APPENDIX 3.

2.21. What circumstances may lead to Expedited UAS Authorization?

The circumstances that may need an Expedited Authorization include;

a) Firefighting.
a) Search and Rescue.
b) Law Enforcement.
c) Utility or Other Critical Infrastructure Restoration.
d) Incident Awareness and Analysis.
e) Humanitarian Aid Deliveries.
f) Damage Assessments Supporting Disaster Recovery.
g) Media Coverage Providing Crucial Information to the Public.

2.22. What are the requirements to apply for an Expedited UAS Authorization?

To apply for an authorization through this process you must have a current remote pilot licence/certificate, a UAS registration certificate and a UAS Operator Certificate (UOC).

2.23. How to apply for Expedited Authorization?

To apply for an Expedited Authorization, use the form in APPENDIX 4.

2.24. Application for a establishment of UAS training Organization

The following procedure shall apply for any applicant intending to establish an Unmanned Training Organization

For any applicant intending to establish Unmanned Training Organization shall follow the form in Appendix 6. Procedures of establishing a UTO are as follows;

Phase 1: Pre-Application

a) Pre-application meeting is arranged between the training organization and the Authority to discuss the application requirements.

Phase 2: Formal Application

a) Formal application letter by the Training Organization to DG via Info@caa.gov.rw accompanied with any other documents required by the Authority such as those indicated in the UTO form in Appendix 6.

Phase 3: Document Evaluation

a) The document evaluation phase will involve the detailed examination of all documentation and manuals provided by the applicant to establish that every aspect required by the Authority is included and adequately covered.

Phase 4: Demonstration and Inspections

a) Inspections in this phase will involve training facility inspections conducted by the Authority and any other inspection needed. Inspection during classroom and practical training
a) Evaluation of training materials/documents

Phase 5: Certification Phase

a) The certification phase is closed by issuance of a UTO certificate with its associated operation specifications to the applicant.
b) The certification phase is the conclusion of the training organization certification phase when Authority has determined that the UTO is in compliance with training organization requirements established by the Authority.

2.25. What is the manufacturing standard procedure in Rwanda?

Applicants requesting to be accepted as UAS manufacturers in Rwanda will follow the procedures below.

Phase 1: Pre-Application

a) Pre-application meeting is arranged between the manufacturer and the Authority to discuss the application requirements.

Phase 2: Formal Application

a) Formal application letter by the manufacturer to DG via Info@caa.gov.rw accompanied with required documents according to part 27 subpart E (Manufacturer declaration, means compliance, Operational manual, and any other document requested by the authority).

Phase 3: Document Evaluation

a) The document evaluation phase will involve the detailed examination of all documentation and manuals provided by the applicant to establish that every aspect required by the regulations is included and adequately covered.

Phase 4: Demonstration and Inspections

a) Inspections in this phase will involve manufacturing facility inspections of the operational control and any other inspection needed.
b) Demonstrations will involve demonstration of the operational control system and demonstration flights. A minimum of five demonstration tests should be done in presence of an RCAA inspectors.

- **Processes to be used will include;**

a) Testing site assessment and approval by the Authority- the Manufacturer shall propose a testing site to the Authority for approval.
b) Manufacture process – Test of the design and the integrity of the drone basing on their submitted operational manual and subpart E of part 27.

The Authority will formally communicate the outcome of the document evaluation phase and the manufacture process. If the evaluation indicates certain requirements were not met, the manufacturer will have to comply with the requirements before moving to the next step.

c) Operational process – They will submit their CONOPs and safety case in accordance with part 27.
d) Trial operation – The operator will operate in accordance with their CONOPS and safety case during a 3 months' trial period which will be monitored by the authority.

After the operational and the trial operation process the manufacturer will develop a report on the trial operations before full acceptance.

Phase 5: Acceptance Phase

a) The acceptance phase is the conclusion of the manufacture acceptance phase when Authority has determined that the UAS being operated is in compliance with safety requirements established by the Authority.
b) By accepting the Manufacturer declaration through a letter of acceptance, the Authority will be accepting a self-certification of the manufacturer that the UAS complies with a performance standard and ensures the UAS meets the appropriate safety level for a category of operation. The Authority will establish minimum safety levels (design or technical) to which manufacturers must demonstrate compliance.

APPENDIX 2: Quarterly periodic safety performance report on incidents and accidents.

Rwanda Civil Aviation Authority	RCAA-Form-SP-UAS001
	Quarterly periodic safety performance report on incidents and accidents form

Date	Incident/accidents	Location (GPS Coord.)	Root Cause	Detailed root cause	Effect	CAP (corrective action plan)

APPENDIX 3: Concept of Operation form to apply for UAS Operation

Rwanda Civil Aviation Authority	RCAA-Form-CONOPS-UAS001
	Concept of Operation form to apply for UAS Operation

Application for UAS Operation Authorization

The completion of this form provides information considered as a concept of operation.

Section I: Introduction

Provide a brief description of the proposed operation (e.g. emergency health delivery, damage assessment, search and rescue, public welfare, media coverage, etc.)

Section II: Applicant/Operator Information

Company Name	
Address	
City	
Postal code	
Company phone number	
Company email address	
Country	
Point of contact (POC) last/first name	
POC direct mobile phone number	
POC email address	

Section III: Airspace & Services

Define geographic location and boundaries (provide geographic information in readable exchange format (CSV e.g GPS coordinates, District,	

Sector, Cell and Village)	
List proposed class(es) of airspace	
Describe airspace characteristics (controlled, uncontrolled, special use, etc.)	
Will segregated airspace be requested?	
Section IV: Unmanned Aircraft Specifications	
1. Attach drawings or photographs of the unmanned aircraft	
2. Attach specifications	
a) UA length, diameter, wingspan	
b) Gross weight	
c) Aircraft type	
d) Payload carriage capability	
e) Thrust system: electric, battery, reciprocating piston or turbine.	
f) Motor or engine specification	
g) Propeller specifications	
h) Maximum operating altitude	
i) Maximum cruise speed	
j) Fuel type	
k) Battery system and backup	
l) Unique features/appliances/termination system such as parachute	
m) Endurance (time)	
n) Range (distance)	
o) Mtr's specified operating limitations (wind, temperature, air density, precipitation, vibration, icing, lightning, electromagnetic interference (EMI))	
p) Detect and avoid (DAA) system for BVLOS Operations	

Section V: Flight Conditions	
1. What meteorological conditions are planned:	
a) Visual Meteorological Conditions (VMC)	
b) Instrument Meteorological Conditions (IMC)	
c) Maximum crosswind component	
2. What line-of-sight operations are planned:	
a) Visual line-of-sight (VLOS)	
b) Beyond visual line-of-sight (BVLOS)	
Section VI: Crew and Personnel	
1. Identify crew and support personnel	
2. Detail the role(s) of the crew and support personnel	
3. Specify role changes during contingency or emergency operations	
4. Identify the training level for each crew member including those preparing/handling dangerous goods	
Section VII: Ground Station and Support Equipment	
1. Describe the control station configuration	
2. Describe physical security of the control station	
3. Describe control station software applications	
4. Describe data collection software	
5. Describe support equipment	
6. Describe any alert schemes (advisory, caution, warning)	
7. Describe the flight termination system	
Section VIII: C2 Link	
1. Describe the C2 Link functions between the UA and control station	
2. Describe how software updates are checked	
3. Describe the electronic security of the C2 Link	

4. Specify contingency procedures for lost C2 Link or loss of positive control	
5. Describe any real time, situational awareness features	
6. Describe how communications between remote pilot and ATC will occur	
7. Describe any additional communication links	
Section IX: Execution of Operation	
1. Describe preflight preparation	
2. Flight plan details (time, distance, fuel/battery usage)	
3. Include details for each phase of flight	
4. Describe communications between the remote pilot and UA observer(s)	
5. Contingency procedures for loss of communication with remote flight crew members	
6. Describe the number of handover procedures between control stations	
7. Explain the level of automation of the UA to be used	
8. Describe flight over people not participating in the operation	
9. Describe off-set distances from people or obstructions	
10. Describe procedures for violation of geographic volumes	
11. Describe emergency recovery procedures including carriage of dangerous goods recovery	
12. Describe accident/incident reporting procedures	
Section X: Risk Assessment	
1. Operational Risk Assessment (ORA) and associated mitigation measures	

APPENDIX 4: Expedited Authorization form

Rwanda Civil Aviation Authority	**RCAA-Form-EXP-UAS001**
	Expedited Authorization Form

Expedited Authorization for Urgent UAS Operations

Request Form

Basic Qualifications
• The requesting operator must possess a current UAS registration, a UAS Operator Certificate and a remote pilot licence/certificate • The UAS operation must support an emergency response or other effort being conducted to address urgent circumstances and that will benefit the public • The requested RCAA approval cannot be secured via normal processes in time to meet urgent operational needs
Operator Information Mandatory entry
Operator Organization (e.g., agency or company)
Operator Address
Operator Point-of-Contact (including name, office and mobile phone numbers and email)
Remote Pilot and UA Observers (including names, mobile phone numbers, and emails)
Type of UAS

Documentation	
If the requested UAS operation will be flown under a pre-existing authorization, attach it and provide the authorization number below.	
If the requested UAS operation is in accordance with Part 27, please provide the remote pilot license number below.	
Requested Flight Details	
Enter the date(s) of the proposed UAS operation (e.g., 18/03/2021 or 18/03/2021 to 28/03/2021)	
Enter the times of the proposed UAS operation (be sure to confirm time zone; e.g., 1200L-1400L daily)	
Enter the location of the proposed flight (reference the nearest city or town, province or region)	
Enter the distance and direction from the nearest airport and its location indicator (e.g., 10 NM W of XXX)	
Requested altitude of UA flight:	
Enter GIS details defining location of proposed flight	
For those flights remaining within a general contiguous area, which can be described as a circular polygon, provide the latitude and longitude, expressed as degrees/minutes/seconds, of the center of that area and the radius of that same area (e.g., XX:XX:XXN / XXX:XX:XXW - .25NM radius)	
For those flights remaining within a general contiguous area, which cannot be easily described as a circular polygon,	

provide the latitude and longitude, expressed as degrees/minutes/seconds, of the vertices of the general area starting with the most northerly point and then progressing clockwise (e.g., (XX:XX:XXN / XXX:XX:XXW; XX:XX:XXN / XXX:XX:XXW; XX:XX:XXN / XXX:XX:XXW)	
For those flights following an extended route, provide the latitude and longitude, expressed as degrees/minutes/seconds, of the key waypoints of the route, and, as appropriate provide the width of the route (e.g., XX:XX:XXN / XXX:XX:XXW; XX:XX:XXN / XXX:XX:XXW ; XX:XX:XXN / XXX:XX:XXW ; XX:XX:XXN / XXX:XX:XXW - .25NM wide)	
Nature and Description of Event	
Select the type of event	**Description of event**
Firefighting Law Enforcement Search and Rescue	
Local / National / Natural Disaster	
Other (specify below)	
Additional remote flight crew	
Dangerous Goods	
List the dangerous goods to be carried including quantities and packaging. Attach the operator's Dangerous Goods Standard Operating Procedures (DG-SOP).	
Contacting the CAA	
For more information regarding UAS operation contact 250726925976 or email to UAS.SSP@caa.gov.rw	

APPENDIX 5: UAS Accident and Incident Reporting form

Rwanda Civil Aviation Authority	**RCAA-Form-IR-UAS004**
	UAS ACCIDENT AND INCIDENT REPORTING FORM **(For initial report of UA Accident or Incident)**

Report Number (Office Use)		Date and Time (UTC)		Name of Reporting Party:			
Telephone:				Address:			
Phase of Operation (Take off, cruising, landing etc):				Location of Accident (GPS Coord.):			
UA Reg. Number: UA serial Number:				Make / Model:			
Remote Pilot:				Telephone:			
UA Damage (tick the appropriate box below)				Any person affected on ground (tick the appropriate box below)			
Destroyed	Major	Minor	Other	Fatal	Major	Minor	Nil
UA fire?				Any property affected on the ground (circle the appropriate)			
Yes ☐		No ☐		Yes ☐		No ☐	

Description of Accident or Incident including the likely root cause and any possible damage to property on ground:		
Witnesses? Yes / No (If Yes, provide contact details of each witness).	Names:	Contact details
Submitted by:	This report shall be submitted direct to UAS.SSP@caa.gov.rw and inform ATC by the quickest means but no later than 24hours.	

APPENDIX 6: Unmanned Aircraft Training Organization Form

Rwanda Civil Aviation Authority	RCAA-UTO-Form-UAS001
	Unmanned Aircraft Training Organization Form

APPLICATION FOR ISSUE/ RENEWAL OF UNMANNED AIRCRAFT SYSTEM TRAINING ORGANIZATION	
SECTION 1	
1. NAME AND ADDRESS OF UTO	
(a) Name and mailing address of company (include business name if different from company name)	(b) Address of the principal (main) base where operations will be conducted.
(c) Name and address of Satellite 1	(d) Name and Address of Satellite 2
2. MANAGEMENT PERSONNEL	
Name	**Management Position**

3. TYPES OF TRAINING COURSES AND LOCATION	
Specific Training Course(s)	**Training Location (Main Base or Satellite by Name)**

4. APPENDICES	
Details of proposed training curricula, training equipment, training facilities, qualifications of training and testing personnel, evaluation plans, record keeping system and quality control system are described in the following Appendices to this application as shown by the ticked box:	
Subject	**Appendix**
☐ Proposed Training Curricula/Syllabuses and Courseware	A
☐ Training Equipment/Device	B
☐ Training Facilities	D
☐ Qualifications of Instructors	E
☐ Evaluation Plans	F
☐ Recordkeeping System	G
☐ Quality Control System	H

5. ATTACHMENTS AND ADDITIONAL INFORMATION		
Accompanying Attachments		**Attachment**
	Training Procedures Manual	1
	List of Training functions	2
	Schedule of Events	3
	Contracts or Letters of Intent	4
	Resumes of Management Personnel	5
	Vital information Data Forms	6
	Safety Management Systems and Quality Manual	7
	Security Manual	8
	Operations manual including (General information, Standard operating procedures for each type of UAS, Routes and operational areas (if applicable))	9

Additional Information:

6. STATEMENT BY ACCOUNTABLE MANAGER

The details in this form, its Appendices and accompanying documents are in support of my (our) application for an Approved Unmanned Aircraft Systems Training Organization. I (We) shall notify the Authority within 10 working days of any change made in the assignment of persons to the required management positions in the UTO.

Name_____Position_____Signature_____Date_____.

Name_____Position_____Signature_____Date_____.

SECTION 2 - TO BE COMPLETED BY THE **RCAA** OFFICE.	
Acceptance or Denial	
☐ Application Accepted **Note:** Acceptance of this application does not constitute approval or acceptance of individual Appendices Attachments which will be evaluated during the approval assessment.	☐ Application Denied - Reasons for Denial:
Recommendations	
UAS Inspector_____Signature_____Date_____	

Silas UDAHEMUKA

DIRECTOR GENERAL

RWANDA CIVIL AVIATION AUTHORITY