efficiently managing air safety

CAA-M-UAS001

Kenya Civil Aviation Authority

Unmanned Aircraft Systems – Manual of Implementing Standards

First Edition, 2020

Foreword

The Kenya Civil Aviation Authority is established under the Civil Aviation Act No. 21 of 2013 (as amended) with the mandate to economically and efficiently plan, develop and manage civil aviation, regulate and operate a safe civil aviation system in Kenya. The Authority recognizes the significant role that Unmanned Aircraft Systems can play in furthering the aspirations to grow the aviation sector as well as opening up the Kenyan economy for innovative exploitations with far reaching positive impact.

It is on this premise that the Authority championed the establishment of a regulatory framework to mainstream development of the UAS exploitation to offer tangible and cost effective solutions to traditional challenges. However, while the Authority welcomes the use of UAS, it is also important to note the significant safety and security challenges that UAS may pose if their use is not appropriately managed, controlled and coordinated. The Authority appreciates these challenges and embraces them with a desire to establish a system that facilitates realistic approach to managing them and allowing safe and secure utilization of UAS.

The regulatory framework in place regarding UAS; unlike the bulk of civil aviation regulations; is based on international best practice and guidance provided at the global level. It therefore requires comprehensive technical guidance to provide context for the implementation of the regulations. This is in realization that Kenya while having utilised UAS for some time, is on a learning curve in terms of their integration in our airspace.

The Authority has provided; in this Manual: comprehensive guidance to owners and operators of UAS on the regulatory requirements and how to meet the same in compliance with the applicable laws. It is therefore imperative that this manual be read together with the regulations.

Any suggestions for changes or amendments to this manual should be sent to:

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Definition of Terms

1. Unmanned Aircraft System- An unmanned aircraft and its associated components.
2. ADSB- (Automatic Dependent Surveillance Broadcast) is a surveillance technology in which an aircraft determines its position via satellite navigation and periodically broadcasts it, enabling it to be tracked
3. Certificate of Registration- a document issued by the Authority to a person who has legal right to own a UAS.
4. Dangerous Goods- Articles or substances which are capable of posing a risk to health, safety, property or the environment and which are shown in the list of dangerous goods in the Technical Instructions or which are classified according to those Instructions (Annex 18).
5. Instrument meteorological conditions (IMC)- are meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions (VMC).
6. Modification- A change in the physical characteristics of a UAS, accomplished either by a change in production specifications or by alteration of a UAS already produced.
7. Risk- the assessed potential for adverse consequences resulting from a hazard. It is the likelihood that the hazard's potential to cause harm will be realized.
8. Remote Aircraft Operator Certificate (ROC) - a certificate authorizing an operator to carry out specified UAS operations.
9. Remotely Piloted Aircraft (RPA) – an unmanned aircraft which is from a remote pilot station.
10. Safety Management Systems (SMS) – systematic approach to managing safety, including the necessary organizational structure, accountabilities, policies and procedures.
11. Unmanned Aircraft System (UAS) - any aircraft operating or designed to operate autonomously or to be piloted remotely without a pilot on board.
12. UAS Training Organization (UTO) – an approved institution authorized by the Authority to offer UAS training.

1.0 CHAPTER I – IMPORTATION, REGISTRATION AND DEREGISTRATION OF UAS

1.1 Eligibility to Own a UAS in Kenya

1.1.1 A person is qualified to own a UAS if that person is –

a. A Kenyan Citizen or resident in Kenya of minimum age of eighteen years;
b. A company registered in Kenya: or
c. The National Government or County Government

1.2 All applicants shall be required to create an online account for purposes of accessing UAS services.

1.2.1 Individual applicants shall be required to submit their personal identification documents and police clearance certificate issued within the last one year while companies shall submit the company registration documents.

1.2.2 The Authority will activate the account upon review of the application submitted and may request for additional information on documentation.

1.2.3 Account opening status shall be provided through the provided email.

1.3 Importation of UAS

1.3.1 Requirements

1.3.1.1 A person shall not import a UAS or its component without a permit issued by the Authority.

1.3.1.2 Requests for importation of UAS shall be submitted online in the prescribed format and upon payment of the applicable fee.

1.3.2 Process

1.3.2.1 Applications for importation of UAS shall be submitted to the Authority in the prescribed format. For purposes of this application, the Authority has provided an online system at www.kcaa.or.ke

1.3.2.2 Applications for an import permit shall be accompanied by the following documents:

a. Identification documents
b. Police clearance certificate
c. Company registration document (if applicable)

d. Photo of the UAS

1.3.2.3 The Authority shall undertake due diligence when reviewing any requests for importation in conjunction with relevant government agencies.

1.3.2.4 Approval shall be granted upon successful review by the Authority and be issued with import permit.

1.4 Registration of UAS

1.4.1 Requirements

a. An operator or owner of a UAS must register the UAS with the Authority.

b. Requests for registration of UAS shall be submitted online in the prescribed format and upon payment of the applicable fee.

1.4.2 Process

1.4.2.1 Applications for registration of UAS shall be submitted online at www.kcaa.or.ke

1.4.2.2 The application shall be accompanied by the following documents

a. Identification documents

b. Police clearance certificate

c. Company registration document (if applicable)

d. Photo of the UAS

e. Type Certificate of the UAS (if applicable)

f. Circuit diagram of the UAS (if applicable)

1.4.2.3 The Authority shall undertake due diligence when reviewing any requests for registration in conjunction with relevant government agencies.

1.4.2.4 Approval shall be granted upon successful review by the Authority and a certificate of registration shall be issued.

1.4.3 The authority shall establish and implement a system for Registration Identification of UAS in Kenya and the display thereof.

1.4.4 Display of registration marks

1.4.4.1 Every Kenyan-registered UAS must have an identification plate engraved, stamped or etched with its Registration Identification, in a way that such marking will not become detached or defaced from the UAS in the event of an accident or destruction of the UAS.

1.4.4.2 The identification plate must:

a. Be affixed to the UAS in a prominent position near the main hatch, entrance or compartment or affixed conspicuously to the exterior of the aircraft;

b. Be made of fireproof material of suitable physical properties;

c. The registration mark letters and hyphen must be printed/painted in Roman characters, in black on a yellow background. The height of the yellow background shall be at least 120% of the font height;

d. Be legible;

e. Displayed in such a manner that it will not interfere with the performance characteristics of the UAS;

f. Indicate the registration mark issued by the Authority which appears on the UAS certificate of registration; and

g. Be commensurate with the size of the UAS.

1.4.5 Location of the marking

1.4.5.1 The marks on a fixed wing UAS must appear on the bottom and top surface of each wing; and

1.4.5.2 On both sides of the fuselage between the wings and tail surfaces, or on the upper halves of the vertical tail surfaces.

1.4.5.3 For spherical UAS the marks must be proportional to the surface area in two places diametrically opposite one another.

1.4.5.4 For non-spherical UAS the marks must be proportional to the surface on each side.

1.4.6 Any modification to the specifications of registered UAS shall be subject to approval by the Authority

1.5 Variation of Certificate of Registration (C of R)

1.5.1 An owner of a UAS may apply to the Authority for variation, amendment or change of particulars contained therein.

1.5.2 The Authority may, at its own discretion may vary, amend or change the particulars contained in the C of R.

1.5.3 Applications for variation shall be made by filling in the application for registration form as appropriate to reflect the proposed changes.

1.5.4 Variations of a C of R shall be made by the Authority upon payment of the prescribed fee.

1.6 Deregistration of UAS

1.6.1 The authority may deregister or cancel the registration of a UAS:

a. Upon application of the UAS owner for purposes of registering the UAS in another state; or
b. Upon destruction of the UAS;
c. Upon its permanent withdrawal from use;
d. In the interest of national security.

1.6.2 Process

1.6.2.1 Applications for deregistration of UAS shall be submitted in the prescribed format stating the reason for deregistration of the UAS.

1.6.2.2 The Authority will, where applicable, deregister the UAS upon payment of the prescribed fee.

1.7 Export of UAS

1.7.1 Temporary Export

1.7.1.1 Temporary export is where a Kenyan registered UAS temporarily exits the country and returns without being registered in another State.

1.7.1.2 Owner or operator of a UAS who intends to temporarily export the UAS shall notify the Authority in a prescribed format and obtain approval.

1.7.1.3 Owners or operators of UAS temporarily exported out of Kenya shall ensure that they are conversant with regulations or applicable rules of the jurisdiction where they intend to operate.

1.7.1.4 UAS temporarily exported out of the country shall not be tampered with, modified or altered in any form or manner without the approval of the Authority.

1.7.1.5 The Authority may subject any UAS, temporarily exported out of the country, to inspection before the export and upon return.

1.7.2 Permanent Export

1.7.2.1 A person who intends to export a Kenyan registered UAS permanently shall notify the Authority and obtain a deregistration certificate. The process for deregistration of the UAS shall be as provided for in 1.6.2

1.8 Temporary Permit

1.8.1 Temporary import for private use

1.8.1.1 A UAS imported in Kenya for private use shall not be used for any activity involving reward or gain. This includes development of content aimed at publication for personal gain.

1.8.1.2 An owner of a UAS to be temporarily imported in Kenya shall apply to the Authority for approval of the temporary import in a prescribed format. The application shall be accompanied by:

a. Identification documents
b. Details of the UAS;
c. Valid visa for duration of stay (where applicable); and
d. Areas of operation of the UAS.

1.8.1.3 A UAS temporarily imported into Kenya for private use shall remain in the country for a specified duration (specified in the temporary import permit) and the Authority shall be notified when it is exported out of the country.

1.8.2 Temporary import for commercial use

1.8.2.1 A person shall not operate a UAS in Kenya without authorization from the Authority.

1.8.2.2 The Authority may, upon Application, grant a short term license to an applicant for a period not exceeding thirty (30) days renewable once.

1.8.2.3 The Authority may impose such terms and conditions as it deems fit and shall have regard to public interest and the need to provide reasonable protection for Kenyan Operators;

1.8.2.4 The Authority may refuse to grant an application for a short term license on the basis of regularity of short term operations under this regulation.

1.8.3 Process

1.8.3.1 Applications for registration of UAS shall be submitted online at www.kcaa.or.ke

1.8.3.2 The application shall be accompanied by the following documents

a. Identification document i.e. passport
b. Colour photograph of UAS (front and side, on the ground, occupying most of the image size)
c. Clear picture of the serial number of UAS
d. Copy of drone pilot license/certificate
e. Safety documentation containing at least emergency procedures in case of:
    i. Control failure
    ii. Engine failure
    iii. Accumulator issues
    iv. Command and control data link failure
f. Copy of a liability insurance document related to UAS operation
g. Type certificate (if applicable)

1.8.3.3 The application shall undergo the vetting and evaluation process

1.8.3.4 Approval shall be granted upon successful review.

2.0 CHAPTER II – CATEGORIZATION OF UAS

2.1 Considerations in UAS Operations:

2.1.1 In order to effectively ascertain the categorization of operations the Authority a safety risk assessment criteria shall be established. As a rule of thumb the following shall be the basis of such risk assessment:

a. Segregation:

i. This is the approached used to permit low risk operations, the key consideration being that all risks posed to other airspace users can be effectively mitigated through the exclusion of the operations from airspaces under use by other users not involved in the same operations or conventional air traffic;

ii. In order for an operation to be approved under low risk category, the inherent risks of the operation should be effectively mitigated by segregating such operations;

iii. The risk exposure for such operation should also be at such low levels that segregation alone is considered adequate to mitigate;

iv. No interaction with other traffic; not part of the operations; or conventional air traffic is anticipated and there is no need for active interaction with Air Traffic Services is expected from such operations.

Note:

1. *Segregation may be achieved in any portion of the air space provided that such airspaces are within the prescribed operating limitations of low risk operations and are away from aerodromes as defined;*
2. *Where segregation is provided for, all safety requirements are solely the responsibility of the operator of the UAS or group of UAS in whose name the approval/authorisation is granted; and*
3. *There would be no segregation of low risk operations from other UAS, persons or property on ground if such UAS, persons or property are part of the operations. However; all necessary care should be taken to ensure safety and security are not compromised at all times.*

b. Accommodation

v. This approach is used to facilitate operations where segregation is not feasible. This approach is adopted for Category B operations where confining the operations to a defined airspace devoid of any interactions with other UAs or conventional aircraft not part of the operation is not practical;

vi. Accommodation of UAS operations may at times require and benefit from greater operational flexibilities such as higher heights and wider areas of operations including operations not strictly confined to within visual line of sight as the operational needs maybe;

vii. In order for operations to be granted with higher operational control requirements including UAS pilot qualifications necessary to handle such operations. It is mandatory that operations in this category be undertaken by licensed UAS pilots; and

viii. UAS operated under the accommodation arrangement will require; as appropriate; Air Traffic Control approvals and/or a general notification to other airspace users of their activities and necessary safety considerations put in place to prevent unsafe situations arising from the operations.

c. Integration

ix. Integration of UAS operations in the air traffic system is the approach adopted to allow operations that are simultaneously conducted with manned air traffic;

x. Integration is permissible on the premise that the UAS is suitably equipped for operations to be undertaken without escalation of risk to other airspace users. For purposes of this provision, UAS to be integrated in the air traffic system shall be type certified and maintained in accordance with the provisions of this Manual to guarantee its integrity to sustain such operations;

xi. Pilots to undertake operations in this category shall also be licenses UAS pilots and hold relevant ratings for the UAS to be used in these operations.

2.1.2 These considerations therefore form the general basis for the categorization of UAS. The categorization is based on use rather than the equipment with the understanding that the equipment capability determines its use.

2.2 Categorization of UAS

2.2.1 Category A (low risk).

a. Provided that operations are conducted within Visual line-of-sight (VLOS) only;
b. Specified distances from aerodromes and people;
c. Maximum height of 400ft above ground level (AGL); and
d. Flights shall take place upon notification to the Authority.

2.2.2 Category B (medium risk/regulated lower risk).

a. This category of operation would require an operational authorization from an Aviation Authority prior to the flight(s) taking place;
b. Appropriate limitations/restrictions would be applied based on the type of operation, complexity of the UAS and the specific qualifications and experience of operating personnel;
c. Approval for the operation would be based on analysis of a safety risk assessment and any mitigations employed to reduce any risks to an acceptable level;
d. This category encompasses operations where the risk to persons being overflown is greater than what would be permitted in Category A, or involves sharing the airspace with other manned or unmanned aircraft; and
e. The operations shall be conducted within defined limitations (e.g. Visual line-of-sight (VLOS).

2.2.3 Category C (high risk/regulated)

a. UAS operations in this category shall be conducted in any airspaces not classified as prohibited, restricted or danger and shall be subject to ATC instructions and guidance and at heights and lateral distances from any persons, buildings or objects as prescribed in the Civil Aviation (Rules of the Air) Regulations. All operations under this category shall be approved or authorized by the Authority.
b. UAS operations in this category may be conducted within BVLOS provided that the RPA has the required capabilities and is fitted with appropriate equipment and the pilot is suitably qualified and holds appropriate ratings for such an operation.
c. UAS in operated in this category shall be issued with a Certificate of Airworthiness by the Authority based on the type Certificate issued by the State of design/manufacture.

d. Personnel operating UAS in this category shall be in possession of a valid license issued by the Authority.

2.3 Safety Risk Assessment

2.3.1 The operator shall complete a risk assessment for each type of proposed operation in order to mitigate risks when operating within Categories A, B or C. During the risk assessment, the following areas shall be considered:

a. Area of Operations:

b. The proposed operational area, including, but not limited to: airspace, aerodromes, restricted areas (e.g. National Key Points, strategic installations, national parks or protected areas); Obstacles (buildings, infrastructure, power lines, towers, etc.) and populated areas including events;

c. Weather conditions – day, visual meteorological conditions:

d. Operations shall only be undertaken in such conditions as is permissible by the UAS capabilities and the nature of operations;

e. UAS Equipment: In order to ensure safe and secure operations, UAS shall only be utilised for categories and conditions that the equipment on the UAS are designed to sustain. It is the responsibility of the UAS owner or operator to ensure that the operational environment is suitable for the equipment available.

2.3.2 The operator and/or remote pilot shall possess knowledge and skill to sustain safe operations as well as be familiar with the rules and restrictions for operations within their proposed respective category and possess an appropriate skill level commensurate with the proposed operation.

2.4 Authorisations and Approvals to Operate

2.4.1 A person shall not operate A UAS without authorization from the Authority.

2.4.2 Applications for authorization to operate shall be submit in the prescribed format.

2.4.3 The application shall be accompanied with the following documents:

a. Identification documents

b. Registration certificate of the UAS

c. Evidence of adequate third party insurance cover

d. Remote Pilot license/ certificate (as applicable)

e. Specific areas and dates of operation

2.4.4 The application shall undergo the vetting and evaluation process

2.4.5 Authorization shall be granted upon successful review.

3.0 CHAPTER III– ASSEMBLY & MANUFACTURE OF UAS

3.1 Assembly of UAS

3.1.1 All assembly of UAS shall be conducted in accordance with the manufacturer's specifications acceptable to the Authority.

3.1.2 The assembly records shall be kept as prescribed in chapter IV of this manual.

4.0 CHAPTER III – AIRWORTHINESS OF UAS

4.1 Maintenance of UAS Airworthiness

4.1.1 The UAS must not be operated unless it is inspected and maintained in accordance with the applicant's Authority accepted inspection and maintenance procedures

4.1.2 The applicant must establish and maintain aircraft maintenance records

4.1.3 No person may operate the subject UAS unless within the preceding 12 calendar months the UAS has had a condition inspection performed according to the Authority's accepted Programme, applicant's Inspection and Maintenance Program.

4.1.4 The condition inspection must have found the UAS to be in a condition for safe operation

4.1.5 The inspection will be recorded in the UAS maintenance records

4.1.6 Only those individuals trained and authorized by the applicant and acceptable to the Authority may perform the inspections and maintenance required by the UAS operating limitations

4.1.7 Inspections and maintenance of the UAS must be recorded in the UAS maintenance records

4.1.8 Inspection entries must contain the following, or similarly worded, statement: "I certify that this UAS was inspected on (date), in accordance with the scope and detail of the (applicant name) Inspection and Maintenance Program, and was found to be in a condition for safe operation"

4.1.9 Maintenance record entries must include a description of the work performed, the date of completion for the work, the UAS's total time-in-service, and the name and signature of the person performing the work

4.1.10 UAS instruments and equipment required to be installed must be inspected and maintained in accordance with the requirements of the applicant's Inspection and Maintenance Program. Any maintenance or inspection of this equipment must be recorded in the UAS maintenance records

4.1.11 No person may operate the subject UAS unless the altimeter system and transponder have been tested within the preceding 12 calendar months, Altimeter system and altitude reporting equipment tests and inspections, ATC transponder tests and inspections. These inspections will be recorded in the UAS maintenance records

4.2 UAS Modifications.

4.2.1 Software and System Changes.

a. All software and system changes will be documented as part of the normal maintenance procedures and will be available for inspection.

b. All software and system changes must be inspected and approved per (applicant name) maintenance program dated (insert date).

c. All software changes to the aircraft and control station are categorized as major changes, and must be provided in summary form at the time they are incorporated.

4.2.2 Major Modifications.

a. All major modifications, whether performed under the experimental certificate, C of A, or other authorizations, that could potentially affect the safe operation of the system, must be documented and provided to the Authority before operating the aircraft under this certificate.

b. Major modifications incorporated under C of A or other authorizations need to be provided only if the aircraft is flown under these authorizations during the effective period of the experimental certificate.

4.2.3 Submission of Modifications.

a. All information requested must be provided to the Authority.

5.0 CHAPTER V – REMOTE AIRCRAFT OPERATOR CERTIFICATE (ROC) GUIDANCE AND PROCEDURE

5.1 The certification procedure described in this manual details the five phase process for the issuance of Remote Aircraft Operator Certificate (ROC). The five certification phases include:

a. Pre – application phase
b. Formal application phase
c. Document evaluation phase
d. Inspection and evaluation phase
e. Certification phase

5.2 Phase I – Pre-Application Phase

5.2.1 Initial Enquiry

a. Initial enquiries about certification or requests for application may come in various formats from individuals or organizations. These enquiries may be in writing or in the form of meetings with the Authority personnel.

5.2.2 Applicant Orientation

a. After Initial Enquiry, the Inspector provides the applicant with form: KCAA/ASSR/ROC-001. The completed form will be submitted to the Authority for processing in conjunction with relevant government agencies.
b. Where the government agencies do not issue clearance or approval, the applicant shall be notified of the lack of approval in writing.

5.2.3 Preliminary Discussion

a. On receipt of the clearance or approval, the assigned Inspector will contact the applicant and briefly explain the requirements of the Authority that the applicant must meet in the certification process.
b. The applicant will be given the UAS PASI (Form KCAA/ASSR/UAS-ROC-001).
c. A completed UAS PASI form should be submitted to the Authority and precedes the Pre Application meeting.

5.2.4 Unmanned Aircraft System (UAS) Pre-Application Statement of Intent (PASI) FORM

a. If the UAS PASI is unacceptable, the reasons for its unacceptability shall be described in Section 2 of the form. The Authority shall notify the applicant by letter, that the UAS PASI is unacceptable for the reasons detailed in section 2 of the form and that a new UAS PASI is required. A copy of the rejected UAS PASI shall be retained in the Authority office files.

b. If the form is acceptable, the Authority determines the complexity of the applicants proposed operation and constitutes a team to conduct the certification.

c. One team member will be designated as the Certification Project Manager and will serve as the primary spokesperson and will be responsible for the co-ordination of all certification activities.

5.2.5 Pre-Application Meeting

a. The certification team will meet before the pre application meeting and review the UAS PASI and assemble an application information package to give to the applicant.

b. The applicant's key personnel will be required to attend the pre-application meeting where the inspector will discuss the certification process in depth. Emphasis will be placed on the expectations of the Authority, what the applicant should expect from the Authority and the sequence of events.

c. It is essential during the pre-application meeting that the applicant has a clear understanding of the form, content and documents required for the formal application. The CPM shall ensure that the applicant understands that the formal application must be complete and acceptable or the entire formal application will be rejected.

d. At the end of the meeting, the inspector will give the applicant an Application Information Package. The application package will consist of:

i. Form: KCAA/ASSR/UAS-ROC-003 UAS Operator Certification Job Aid and Schedule of Events; and

ii. Form: KCAA/ASSR/UAS-ROC-005 Operations Specifications.

5.2.6 Conclusion of Pre-Application Phase

a. The pre application phase is closed by issuance of a letter to the applicant.

5.3 Phase II – Formal Application Phase

5.3.1 The Formal Application Phase shall be preceded by the submission of an Application Package. The application package should include:

a. Application form or letter: It serves as a formal application for the ROC process.

b. UAS Operator Certification Job Aid and Schedule of events: All target dates should be included.

c. Key Management personnel resumes and relevant certificates

d. Initial statement of compliance. (to be automated)

e. Documents of purchase, lease, contracts, or letters of intent of UAS, premises etc.

f. Security Clearance already received in pre-application phase.

g. List of UAS to be operated (make, model and series): If any authorizations that require special equipment are requested then those equipped UAS must be identified.

5.3.2 Manuals: The following manuals shall be submitted as part of the application package:

a. Operations Manuals Part A(General information), Part B (Standard Operating Procedures for each type of UAS), Part C (Routes and Operational areas) and Part D (Training);

b. Safety Management Systems and Quality Manual;

c. User Manual for each type of UAS;

d. Security Manual; and

e. Dangerous Goods Manual (where applicable).

5.3.3 Rejection of The Formal Application Package

a. In the event that the formal application package has incomplete information or its quality is unacceptable, the package must be returned in a timely manner with an explanation of the deficiencies before any further review is conducted.

5.3.4 Formal application meeting

a. After determining that the applicant has submitted all the required attachments with the formal application, the inspector checks to see that the attachments are complete

enough to permit a more thorough evaluation in order to proceed to the document evaluation phase.

b. The CPM then schedules for a formal application meeting with the applicants.

c. The objectives of the formal application meeting are:

i. To resolve questions or issues concerning the applicant's package;

ii. To resolve scheduling date conflicts;

iii. To respond to questions from the applicant;

iv. To reinforce the certification process;

v. To reinforce open communication and working relationship;

vi. To determine acceptability of the package based on meeting results; and

vii. Ensure that the Authority team members and all of the applicant's key management personnel are in attendance.

5.3.5 Acceptance of Formal Application package

a. Upon conclusion of a successful Formal Application Meeting the CPM provides the applicant with a letter acknowledging receipt and acceptance of the form al application;and

b. Ensures that the applicant understands that acceptance of the formal application packa ge does not constituteacceptance or approval of any of the separate attachments.

5.4 Phase III – Document Evaluation Phase

5.4.1 In this phase, the applicant's manuals and other related documents and attachments are carefully and thoroughly reviewed and either approved, accepted or rejected. This review ensures both conformity to the applicable regulations and safe operating practices.

5.4.2 The certification team members will conduct evaluation of the submitted document/manuals using the appropriate orders, forms and checklists:

5.4.3 Discrepancies

5.4.3.1 Upon evaluation, any discrepancies found in any document will be recorded and discussed with the applicant on options for their resolution. The applicant will be informed that the certification process will not continue until all discrepancies are

resolved. If the discrepancies cannot be resolved or the certification process is stopped, the applicant will be informed in writing of all the discrepancies observed.

5.4.4 Conclusion of document evaluation Phase

5.4.4.1 The document evaluation phase is closed by issuance of a letter to the applicant.

5.5 Phase IV – Demonstration And Inspection Phase

5.5.1 General

5.4.4.1 An operator will be required to demonstrate their ability to comply with regulations and safe operating practices before beginning actual commercial operations.

5.4.4.2 The demonstration phase shall be carried out after satisfactory document evaluation phase and shall include practical performance of activities and/or operations while being observed by Authority inspectors. This includes on-site evaluations of UAS maintenance equipment and support facilities.

5.4.4.3 During these demonstrations and inspections, the Authority evaluates the effectiveness of the policies, methods, procedures, and instructions as described in the operator's manuals and other documents. Emphasis is placed on the operator's management effectiveness during this phase. The systems will be inspected to ensure the following:

a. Employees are familiar with the procedures and capable of performing their assigned duties;
b. Facilities can support the operation requested;
c. Procedures are followed;
d. Record keeping system to ensure that the Civil Aviation Regulations requirements are met;
e. A system for reporting serious defects or un-airworthy conditions; and
f. The number of personnel is sufficient to satisfy the volume and type of work to be performed.

5.4.4.4 If discrepancies are noted, a meeting shall be scheduled with the applicant to review discrepancies in detail, a written copy of the discrepancies shall be filled in the appropriate certification file.

5.4.4.5 The assigned CPM will notify the applicant in writing of identified discrepancies and the applicant be required to take corrective action with respect to the identified discrepancies before certification process can continue.

5.4.4.6 Each discrepancy and corrective action must be fully documented and recorded in the certification file.

5.5.2 Conclusion of demonstration and inspection Phase

5.5.2.1 The demonstration and inspection phase is closed by issuance of a letter to the applicant.

5.6 Phase V – Certification Phase

5.6.1 General

5.5.2.1 Once the applicant meets the regulatory requirements of the Civil Aviation Regulations, the Authority will issue a certificate with the appropriate applicant's specifications and ratings.

5.5.2.2 The CPM confers with the team members to ensure all certification requirements have been completed in a satisfactory manner. If there any significant unsatisfactory items, the applicant is notified and they must be corrected before the issue of the ROC certificate and Operations Specifications.

5.5.2.3 If the certification is unsuccessful, due to either applicant termination or the failure of an inspection the person responsible for safety oversight will be briefed and letters will be written to the applicant describing the reasons.

5.6.2 Conclusion of certification Phase

5.5.2.1 The certification phase is closed by issuance of an ROC with its associated operation specifications to the applicant.

6.0 CHAPTER VI – SAFETY MANAGEMENT

6.1 A safety management system (SMS) is a systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures.

6.2 Even though the generic Safety Management principles were initially focussed on manned aviation, it has been recognised that this system applies to UAS as it contributes to the overall safety of operations and thus reduce the risk of it causing harm to persons or property. A good understanding of these principles, and the employment of a risk-oriented approach, will help to ensure safe and reliable UAS operations.

6.3 Minimum standards for a safety management system

6.3.1 The holder of a Remote Aircraft Operators Certificate shall establish a safety management system in a format acceptable to the Authority, for the control and supervision of the services covered by the operation. The safety management system (SMS) will be developed in accordance with the scope, size and complexity of the operator.

6.3.2 UAS training organizations shall demonstrate how they intend to manage safety during operations of UAS.

6.3.3 A UAS operator shall have a system for safety management that includes:

a. Safety Policy and objectives:

i. A safety policy on which the system for safety management is based. The safety policy and safety policy procedures shall be relevant to the applicant's organizational goals and the expectations.

ii. A documented Emergency Response Plan (ERP) appropriate for identified system failures and emergencies. This shall include operating procedures and checklists, for normal/abnormal/ emergency situations:

iii. The UAS operator shall document all processes required to establish and maintain the safety management system. A separate SMS manual is required, while other safety documents may be kept electronically.

b. Safety Risk Management:

i. A process for risk management that identifies hazards to aviation safety and that evaluates and manages the associated risks.

ii. To ensure that the appropriate resource is allocated to mitigate identified risk, a register of all controls should be maintained alongside the risk register.

c. Safety Assurance:

i. Hazards, incidents and accidents are internally reported and analyzed and action is taken to prevent recurrence;

ii. Goals for the improvement of aviation safety are set and the attainment of these goals are measured;

iii. There is a safety management program that includes conducting internal audits and regular reviews of the system for safety management; and

d. Safety Promotion:

i. Training that ensures personnel are competent to fulfil their safety responsibilities.

ii. Procedures and means of communication of safety information.

6.4 Emergencies and System Failures

6.4.1 At the minimum, the following emergency scenarios should be documented, with procedures for handling them –

a. loss of autopilot (fatal error)
b. loss of flight control due to servo failure, if applicable
c. loss of propulsion power
d. loss of engine power (one engine out), if applicable
e. low battery voltage, if applicable
f. loss of navigation components (heading or altitude)
g. loss of Global Navigation Satellite System
h. loss of data link (radio control link failure)
i. loss of remote pilot station (remote pilot station communication failure)
j. loss of power of remote pilot station
k. loss of remote pilot/RPA observer communication
l. dealing with structural damage
m. any other failure modes or scenarios other than those listed above that can endanger safe flight, shall be identified, described and managed in a safe manner.

6.5 Safety Risk Assessment

6.5.1 This is the process of conducting an objective assessment of the UAS's potential hazards, which should include:

a. Identification of UAS functions
b. Systems that assist with the identification of failure conditions
c. Management and mitigations of the failure conditions
d. A list of alarms and methods for troubleshooting

6.6 Fail-safe features

6.6.1 Degradation of performance and failures will require procedures for dealing with situations to ensure consistent and appropriate application of warnings, both visual and auditory. This may include procedures to be followed by the remote pilot in case of malfunctions or failure, information of flight termination feature, etc.

6.6.2 The procedures must ensure that:

a. The design provides good error detection and recovery;
b. The design is fail-safe and protects against inadvertent operator actions that could instigate a catastrophic failure;
c. In the event of degraded or total breakdown in the communication link the status of the lost link will be displayed to the operator. Ideally the expected
d. Planned reactions of the UAS to the situation will also be displayed to the operator; and
e. These operating procedures should be designed to be intuitive, not ambiguous and reinforced by training as required.

6.7 Safety Requirements

6.7.1 A clear understanding of the scope of any autonomous operation and its automated sub-systems is key to safe operations. The following safety issues should be addressed before undertaking any operations:

a. The operator is trained and competent in operating their UAS equipment.
b. The operator understands the airspace risks associated with the area of operation and has a collision avoidance plan.
c. The operator conducts a safety assessment for every operation.

6.8 Fatigue and stress

6.8.1 Fatigue and stress are contributory factors which are likely to increase the propensity for human error. Therefore, to ensure that vigilance is maintained at a satisfactory level in terms of safety, consideration must be given to the following:

a. Crew duty times;
b. Regular breaks;
c. Rest periods;
d. Health and Safety requirements;
e. Handover/Take Over procedures;
f. The crew responsibility and task/cognitive workload (including the potential for 'boredom'); and
g. Ability to mitigate the effects from non-work areas (e.g. financial pressure causing anxiety).

6.8.2 The work regime across the crew must take this into account. Where required, an effective Fatigue Reporting System should be implemented within the organisation to increase awareness of fatigue or stress risks and mitigate them accordingly.

6.9 Safety Reporting

6.9.1 The purpose of occurrence reporting is to improve aviation safety by ensuring that relevant safety information is reported, collected, stored, protected, exchanged, disseminated and analysed. Organisations and individuals with a good air safety culture will report effectively and consistently. Every occurrence report is an opportunity to identify root causes and prevent them contributing to accidents where people are harmed.

6.9.2 The safe operation of UAS is as important as that of manned aircraft. Injuries to third parties, or damage to property, can be just as severe. Proper investigation of each accident, serious incident or other occurrence is necessary to identify causal factors and to prevent repetition. Similarly, the sharing of safety related information via good reporting is critical in reducing the number of future occurrences.

a. Mandatory Occurrence Reporting- The Pilot-In-Command or flight crew member or operator shall report the following safety information to the Authority through the KCAA e-services:

i. Aviation accidents as soon as possible but at least within 24 hours since the time of the accident;

ii. Serious incidents as soon as possible but at least within 48 hours since the time of the incident/serious incident; and

iii. Incidents and other safety related occurrences as soon as possible but at least within 72 hours since the time of the incident.

b. Voluntary reporting

i. Voluntary reporting facilitates the collection of information on actual or potential safety deficiencies thus contributing to the identification and implementation of safety improvement measures. Voluntary reporting also enables the identification of hazards and unsafe conditions that have not yet caused an incident.

ii. Any person can make a voluntary UAS safety report on the KCAA e-services portal (https://eservices.kcaa.or.ke/Pages/QuickLinks.aspx) without the requirement to login.

Note:

All operators shall have access to the KCAA e-services through provision of credentials (username, password) for log-in.

7.0 CHAPTER VII – PERSONNEL LICENSING

7.1 All UAS personnel responsible for safety of flight must be knowledgeable, trained, experienced and otherwise qualified in their respective duties. These qualifying requirements are manifest in personnel licences issued by the Licensing Authority.

7.2 Remote pilots are required to undergo aviation medical examination, training and demonstrate competency before being licensed. The training requirements and degree of competency required depends on the complexity of the UAS being flown and the purpose of flight.

7.3 Required certificate, ratings and qualifications for Remote Pilot Licence eligibility requirements

7.4 Student Pilot Licence

7.4.1 To be eligible to receive and log flight instructions towards qualifying for a remote pilot license, a person must be in possession of a valid Student Remote Pilot Licence.

a. To be eligible for issue of Student Pilot Licence, an applicant shall be:
b. At least eighteen years of age;
c. Able to demonstrate the ability to read, speak, write, and understand the English language; and
d. In possession of a valid Class 1, 2 or 3 Medical Certificate issued under the Civil Aviation Regulations.

7.5 Remote Pilot Licence

7.5.1 A person shall not act as a remote pilot unless that person holds:

a. a remote pilot licence;
b. a rating for the specific UAS type or is operating under the supervision of a rated remote pilot for the purpose of qualifying for the rating;
c. the required knowledge for the type of UAS;
d. a current Class 1, 2 or 3 medical assessment;
e. be not less than 18 years of age;

7.5.2 A person undergoing training to qualify for a remote pilot licence or rating shall not:

a. act as solo remote pilot of an UAS:

i. unless under the supervision of, or with the authority of, an authorized UAS instructor; or

ii. On an international UAS flight.

b. Form a part of the crew of a commercial UAS flight.

7.6 Knowledge requirements

7.6.1 An applicant for a remote pilot licence shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of the certificate holder, in the following subjects:

7.6.2 Air law;

a. Rules and regulations relevant to the holder of a remote pilot licence; rules of the air; appropriate air traffic services practices and procedures;

b. Rules and regulations relevant to flight under VFR; related air traffic services practices and procedures;

c. Rules and regulations relevant to flight under IFR for Category C operations; related air traffic services practices and procedures; aeronautical information services procedures;

7.6.3 UAS general knowledge;

a. Principles of operation and the functioning of engines, systems and instruments;

b. Operating limitations of the relevant category of UAS and engines; relevant operational information from the flight manual or other appropriate document;

c. Use and serviceability checks of equipment and systems of appropriate UAS;

d. Maintenance procedures for airframes, systems and engines of appropriate UAS;

e. For rotorcraft and powered-lifts, transmission (power trains) where applicable;

f. Use, limitation and serviceability of avionics, electronic devices and instruments necessary for the control and navigation of a UAS in instrument meteorological conditions;

g. Flight instruments; gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments;

h. UAS general knowledge: principles of operation and function of systems and instruments; use and serviceability checks of equipment and systems of appropriate UAS; procedures in the event of malfunctions;

i. C2 link general knowledge: different types of C2 links and their operating characteristics and limitations; use and serviceability checks of C2 link systems; procedures in the event of C2 link malfunction;

j. Detect and avoid capabilities for UAS;

7.6.4 Flight performance, planning and loading;

a. Effects of loading and mass distribution on UAS handling, flight characteristics and performance; mass and balance calculations;

b. Use and practical application of take-off, landing and other performance data;

c. Pre-flight and en-route flight planning appropriate to UAS operations under IFR; preparation and submission of air traffic services flight details under VFR and IFR; appropriate air traffic services procedures; altimeter setting procedures;

d. In the case of rotorcraft and powered-lifts, effects of external loading on handling;

7.6.5 Human performance;

a. Human performance relevant to UAS and instrument flight, including principles of threat and error management.

7.6.6 Meteorology;

a. Interpretation and application of aeronautical meteorological reports, charts and forecasts; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;

b. Aeronautical meteorology; climatology of relevant areas with respect to the elements having an effect on aviation; the movement of pressure systems, the structure of fronts, and the origin and characteristics of significant weather phenomena which affect take-off, en-route and landing conditions;

c. Causes, recognition and effects of icing; frontal zone penetration procedures; hazardous weather avoidance;

d. In the case of rotorcraft and powered-lifts, effects of rotor icing (as appropriate); and

e. In the case of high altitude operations, practical high altitude meteorology, including interpretation and use of weathers reports, charts and forecasts; jetstreams.

7.6.7 Navigation;

a. Air navigation, including the use of aeronautical charts, instruments and navigation aids; an understanding of the principles and characteristics of appropriate navigation systems; operation of UAS equipment;

b. Use, limitation and serviceability of avionics and instruments necessary for control and navigation;

c. Use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids; and

d. Principles and characteristics of self-contained and external-referenced navigation systems; operation of UAS equipment.

7.6.8 Operational procedures;

a. Application of threat and error management to operational performance;

b. Interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations and instrument procedure charts for departure, en-route, descent and approach;

c. Altimeter setting procedures;

d. Appropriate precautionary and emergency procedures; safety practices associated with flight under VFR; obstacle clearance criteria;

e. Operational procedures for carriage of freight; potential hazards associated with dangerous goods and their management;

f. Requirements and practices for safety briefings to remote flight crew members;

g. In the case of rotorcraft, and if applicable, powered-lifts, settling with power; ground resonance; retreating blade stall; dynamic rollover and other operating hazards; safety procedures associated with flight in VMC;

h. Operational procedures for handovers and coordination;

i. Operational procedures for normal and abnormal C2 link operations; and

j. Principles of flight related to the operation of UAS.

7.6.9 Radiotelephony: communication procedures and standard phraseology; action to be taken in case of communication failure; use of radiotelephony apparatus.

7.6.10 An applicant for a remote pilot licence shall successfully demonstrate the ability to perform, as remote PIC of the appropriate UAS category and associated RPS, the relevant procedures and maneuvers with the competency appropriate to the privileges granted.

7.6.11 The demonstration shall be made to a UAS flight examiner designated by the Authority.

7.7 Skill requirements

7.7.1 An applicant for a Remote Pilot Licence with a VLOS or BVLOS category ratings shall have completed:

a. Not less than 5 hours of flight time as pilot of UAS that includes:

i. Familiarization with UAS system,

ii. Preparation for flight and actions thereafter,

iii. Take-off,

iv. Right hand and left hand turns while maintaining altitude,

v. Speed changes,

vi. Climbing and descending,

vii. Engine failure and actions thereafter,

viii. Approaches and landing, and

ix. Emergency procedures.

b. A person shall document and record the training and aeronautical experience used to meet the requirements for a remote pilot licence described in (7.5) above in a manner acceptable to the Authority.

c. For the purposes of meeting the requirements of the Civil Aviation Regulations, an applicant for a remote pilot licence shall enter the following information for each flight or lesson logged:

i. date;

ii. total flight time;

iii. location where the aircraft departed and arrived, or the location where the lesson occurred;

iv. type and identification of aircraft, as appropriate;

v. the name of the authorized instructor;

d. Pass a practical skill test.

7.8 Conversion of a foreign UAS Pilot Licence

7.8.1 A person who holds a current remote pilot licence issued by another Contracting State may apply and be issued an equivalent licence with the appropriate ratings, if the applicant:

a. Has a licence which is not under an order of revocation or suspension by the country that issued the licence;

b. Meets all the Authority's standards for that licence;

c. Holds a valid Class 3 Medical Certificate issued by the contracting State that issued the licence; and

d. Demonstrates the ability to read, speak, write, and understand the English language in accordance with the language proficiency requirements contained in the Second Schedule to these Regulations, if required.

7.8.2 An applicant for a remote pilot licence under this regulation shall submit their licence and Medical Certificate in the English language or accompanied by an English language translation certified by a sworn translator and both must be signed by an official or representative of the foreign authority that issued the licence and all documents submitted under this requirement must be notarized by a notary public or his equivalent in the state of origin.

7.8.3 The applicant shall be required to pass the air law examination for conversion of a foreign remote pilot licence within a period of six months preceding the date of application for the licence.

7.8.4 The Authority has prescribed the minimum passing grade for the air law knowledge test as 70%.

7.8.5 The Authority shall verify the authenticity of the foreign remote pilot licence, ratings and authorizations presented for conversion with the State of issuance.

7.8.6 The applicant shall present his application on the prescribed form, along with a valid Class 1, 2 or 3 medical certificate issued under the Civil Aviation (Personnel Licensing) Regulations.

7.8.7 The applicant shall be required to pay the prescribed fee for the processing of the application.

7.9 Special conditions

7.9.1 In the case of introduction of new UAS or RPS in an operator's fleet, when compliance with the requirements established by the Authority is not possible, the Authority may consider issuing a specific authorization giving privileges for UAS instruction. Such an authorization should be limited to the instruction flights necessary for the introduction of the new type of UAS or RPS.

7.9.2 The validity period for this authorization shall be for the instruction sort only.

7.9.3 All applicants for UAS Pilot licence for Category C operations shall be required to meet the English Language Proficiency requirements as required by the Civil Aviation (Personnel Licensing) Regulations.

8.0 CHAPTER VIII – TRAINING ORGANIZATION

8.1 Authorization to provide training and instruction in UAS operation shall be granted in the form of a UAS Training Organization (UTO) Certificate and the holder of a UTO certificate shall provide training in UAS operation and in line with the conditions specified on the UTO certificate.

8.2 The UTO will follow the five phase certification process below:

a. Pre – application phase
b. Formal application phase
c. Document evaluation phase
d. Inspection and evaluation phase
e. Certification phase.

8.3 PRE-APPLICATION PHASE

8.3.1 Initial Enquiry

8.3.1.1 Initial enquiries about certification or requests for application may come in various formats from individuals or organizations.

8.3.1.2 These enquiries may be in writing or in the form of meetings with the Authority personnel.

8.3.2 Applicant Orientation

8.3.2.1 After Initial Enquiry, the Inspector provides the applicant with form: KCAA/ASSR/UAS-TRNG-001.

8.3.2.2 The completed form will be submitted to the Authority for processing in conjunction with relevant government agencies.

8.3.2.3 Where the government agencies do not issue clearance or approval, the applicant shall be notified of the lack of approval in writing.

8.3.3 Preliminary Discussion

8.3.3.1 On receipt of the clearance or approval, the assigned Inspector will contact the applicant and briefly explain the requirements of the Authority that the applicant must meet in the certification process.

8.3.3.2 The applicant will be given the UAS PUTOPS (Form _ KCAA_ASSR_UAS-TRNG-002 (PUTOPS FORM)

8.3.3.3 A completed UAS PUTOPS form should be submitted to the Authority and precedes the Pre Application meeting.

8.3.4 Prospective UAS Training Organization (UTO) Pre-Assessment Statement (PUTOPS) FORM

8.3.4.1 PUTOPS is a form that provides all relevant information about the prospective holder of a UTO certificate.

8.3.4.2 The PUTOPS form must be acceptable to the Authority.

8.3.4.3 If the form is acceptable, the Authority determines the complexity of the applicants proposed operation and constitutes a team to conduct the certification.

8.3.4.4 One team member will be designated as the Certification Project Manager and will serve as the primary spokesperson and will be responsible for the co-ordination of all certification activities.

8.3.4.5 If the PUTOPS is unacceptable, the reasons for its unacceptability shall be described in section 2 of the form. The Authority shall notify the applicant by letter, that the PUTOPS is unacceptable for the reasons detailed in section 2 of the form and that a new PUTOPS is required. A copy of the rejected PUTOPS shall be retained in the Authority office files.

8.3.5 Pre-Application Meeting

8.3.5.1 The certification team will meet before the pre application meeting and review the PUTOPS and assemble an application information package to give to the applicant.

8.3.5.2 The applicant's key personnel will be required to attend the pre-application meeting where the inspector will discuss the certification process in depth. Emphasis will be placed on the expectations of the Authority, what the applicant should expect from the Authority and the sequence of events.

8.3.5.3 It is essential during the pre-application meeting that the applicant has a clear understanding of the form, content and documents required for the formal application. The CPM shall ensure that the applicant understands that the formal application must be complete and acceptable or the entire formal application will be rejected.

8.3.5.4 At the end of the meeting, the inspector will give the applicant an Application Information Package. The application package will consist of:

a. Form: KCAA/ASSR/UAS-TRNG-003 UTO Certification Job Aid and Schedule of Events.

8.3.6 Conclusion of Pre-Application Phase

a. The pre application phase is closed by issuance of a letter to the applicant.

8.4 FORMAL APPLICATION PHASE

8.4.1 The Formal Application Phase shall be preceded by the submission of an Application Package. The application package should include:

a. Application form or letter: It serves as a formal application for the UTO process.
b. UTO Certification Job Aid and Schedule of events: All target dates should be included.
c. Key Management personnel resumes and relevant certificates
d. Initial statement of compliance. (to be automated)
e. Documents of purchase, lease, contracts, or letters of intent of UAS, premises etc.
f. Security Clearance already received in pre-application phase.
g. List of UAS to be operated (make, model and series): If any authorizations that require special equipment are requested then those equipped UAS must be identified.

8.4.2 Manuals: The following manuals shall be submitted as part of the application package:

a. Operations Manuals A(General information) B(Standard Operating Procedures for each type of UAS) C(Routes and Operational areas) and D(Training)
b. Safety Management Systems and Quality Manual
c. User Manual for each type of UAS
d. Security Manual

8.4.3 Rejection of The Formal Application Package

8.4.3.1 In the event that the formal application package has incomplete information or its quality is unacceptable, the package must be returned in a timely manner with an explanation of the deficiencies before any further review is conducted.

8.4.4 Formal application meeting

8.4.4.1 After determining that the applicant has submitted all the required attachments with the formal application, the inspector checks to see that the attachments are complete enough to permit a more thorough evaluation in order to proceed to the document evaluation phase.

8.4.4.2 The CPM then schedules for a formal application meeting with the applicants.

8.4.4.3 The objectives of the formal application meeting are:

a. To resolve questions or issues concerning the applicant's package
b. To resolve scheduling date conflicts
c. To respond to questions from the applicant
d. To reinforce the certification process
e. To reinforce open communication and working relationships
f. To determine acceptability of the package based on meeting results
g. Ensure that the Authority team members and all of the applicant's key management personnel are in attendance.

8.4.5 Acceptance of Formal Application package

8.4.5.1 Upon conclusion of a successful Formal Application Meeting the CPM provides the applicant with a letter acknowledging receipt and acceptance of the formal application and

8.4.5.2 Ensures that the applicant understands that acceptance of the formal application package does not constituteacceptance or approval of any of the separate att achments.

8.4.6 Conclusion of Formal-Application Phase

a. The formal-application phase is closed by issuance of a letter to the applicant.

8.5 DOCUMENT EVALUATION PHASE

8.5.1 In this phase, the applicant's manuals and other related documents and attachments are carefully and thoroughly reviewed and either approved, accepted or rejected. This review ensures both conformity to the applicable regulations and safe operating practices.

8.5.2 The certification team members will conduct evaluation of the submitted document/manuals using the appropriate orders, forms and checklists.

8.5.3 Discrepancies

8.5.3.1 Upon evaluation, any discrepancies found in any document will be recorded and discussed with the applicant on options for their resolution. The applicant will be informed that the certification process will not continue until all discrepancies are resolved. If the discrepancies cannot be resolved or the certification process is stopped, the applicant will be informed in writing of all the discrepancies observed.

8.5.4 Conclusion of document evaluation Phase

a. The document evaluation phase is closed by issuance of a letter to the applicant.

8.6 DEMONSTRATION AND INSPECTION PHASE

8.6.1 General

a. An operator will be required to demonstrate their ability to comply with regulations and safe operating practices before beginning actual training.
b. The demonstration phase shall be carried out after satisfactory document evaluation phase and shall include practical performance of activities and/or operations while being observed by Authority inspectors. This includes on-site evaluations of UAS maintenance equipment and support facilities.
c. During these demonstrations and inspections, the Authority evaluates the effectiveness of the policies, methods, procedures, and instructions as described in the operator's manuals and other documents. Emphasis is placed on the operator's management effectiveness during this phase.
d. The systems will be inspected to ensure the following:
   i. Employees are familiar with the procedures and capable of performing their assigned duties;
   ii. Facilities can support the operation requested;
   iii. Procedures are followed;
   iv. Record keeping system to ensure that the Civil Aviation Regulations requirements are met;
   v. A system for reporting serious defects or un-airworthy conditions; and
   vi. The number of personnel is sufficient to satisfy the volume and type of work to be performed.

e. If discrepancies are noted, a meeting shall be scheduled with the applicant to review discrepancies in detail, a written copy of the discrepancies shall be filled in the appropriate certification file.

f. The assigned CPM will notify the applicant in writing of identified discrepancies and the applicant be required to take corrective action with respect to the identified discrepancies before certification process can continue.

g. Each discrepancy and corrective action must be fully documented and recorded in the certification file.

8.6.2 Conclusion of demonstration and inspection Phase

a. The demonstration and inspection phase is closed by issuance of a letter to the applicant.

8.7 CERTIFICATION PHASE V

8.7.1 General

a. Once the applicant meets the regulatory requirements of the Civil Aviation Regulations, the Authority will issue a certificate with the appropriate applicant's specifications and ratings.

b. The CPM confers with the team members to ensure all certification requirements have been completed in a satisfactory manner. If there any significant unsatisfactory items, the applicant is notified and they must be corrected before the issue of the UTO certificate and Operations Specifications.

c. If the certification is unsuccessful, due to either applicant termination or the failure of an inspection the person responsible for safety oversight will be briefed and letters will be written to the applicant describing the reasons.

8.7.2 Conclusion of certification Phase

a. The certification phase is closed by issuance of a UTO certificate with its associated operation specifications to the applicant.

8.8 Requirements For Unmanned Aircraft Systems Training Organization (UTO)

8.8.1 Organization

a. A UTO organization must have the following required management personnel, approved by the Authority:
   i. An Accountable Manager
   ii. Head of Safety
   iii. Head of Quality
   iv. Head of Security
   v. Head of Training

b. The Authority may approve positions, other than those listed, if the UTO is able to demonstrate that it can conduct the training with the high standard under the direction of fewer management personnel due to the:
   vi. Nature of training conducted;
   vii. Number of students; and
   viii. Location of training.

8.9 A UTO shall prescribe the duties and qualification of the personnel designated as responsible for planning, performing and supervising the training of the personnel referred to in 8.10 below.

8.10 A UTO shall have key personnel with responsibilities for the operations of the UTO as well as ensuring compliance with applicable Civil Aviation Regulations. These personnel include:

8.10.1 Accountable Manager-

a. Will be the Chief Executive and ensure that all training commitments are financed and carried out to the standard prescribed in the Civil Aviation Regulations and any additional requirements defined by the Authority; and
b. May delegate in writing to another person within the organization the overall approval management responsibility.
c. Possess knowledge of the Civil Aviation (Unmanned Aircraft Systems) regulations and other materials published by the Authority relating to UAS operations and training.

8.10.2 Quality Manager:

a. Will have the primary role of monitoring activities in the field of training, that the standards prescribed in the Civil Aviation Regulations and any additional requirements defined by the Authority;
b. Be responsible for ensuring that the Quality Assurance Program is properly implemented, maintained and continuously reviewed and improved;
c. Possess technical qualifications in aviation recognized by the Authority;
d. Have at least three years' experience in training in aviation;
e. Have successfully completed a training in quality management recognized by the Authority.

8.10.3 Safety Manager shall:

a. Have the primary role of providing guidance and direction for the planning, implementation and operation of the UTO's Safety Management System (SMS);
b. Develop and conduct continuous hazard identification and safety risk assessment and the UTO's operations;
c. Have successfully completed a training in Safety Management recognized by the Authority;
d. Have proven experience in the aviation environment.

8.10.4 Head of Training

a. Shall have overall responsibility for ensuring satisfactory integration of flying training, synthetic flight training and theoretical knowledge instruction and for supervising the process of individual students;
b. Shall have experience in training as Instructor for UAS and possess a sound managerial capability;
c. Must have good interpersonal and communication skills, be technically competent and a person of integrity, be impartial in carrying out tasks, be tactful, have good understanding of human nature and possess the ability to get along with other people.

Note:

The posts of the Head of Training and the Quality Manager may be combined. In this case, the quality audits shall be conducted by an independent personnel.

8.10.5 Instructor qualification

a. An instructor to be used for flight training must hold an instructor rating or authorization issued by the Authority;

b. A UTO shall ensure that all instructional personnel receive initial and continuation training appropriate to their assigned tasks and responsibilities; the training program for instructional personnel shall include training in knowledge and skills related to human performance;

8.10.6 Training specifications

a. The Authority may approve the following courses:

i. Remote Pilot License Course

ii. Remote Pilot Certificate Course

iii. Remote Pilot Instructor's Course

iv. Any other relevant course as the Authority may decide.

8.10.7 Training curriculum

8.10.8 The training curriculum should have the following subjects:

a. Air Law

b. Meteorology

c. Navigation

d. Radio Telephony

e. UAS theory of flight

f. Battery Procedures

g. Flight Planning

h. Human Performance

i. UAS Safety Risk Assessment

8.11 Record keeping

8.11.1 A holder of a UTO certificate shall have a system to maintain and retain the following records for a minimum period of five years from the date of completion of training:

a. Details of training provided to individual students;

b. Detailed and regular progress reports from instructors including assessments, and regular progress tests and examinations;

c. Trainee information, including, names, courses, certificate held, expiry dates of medical certificates and if applicable, ratings.

8.11.2 A UTO shall maintain a system for recording the qualifications and training of instructional and examining staff, where applicable;

8.11.3 Records of qualifications and training of instructors and examiners shall be retained for a minimum period of ten years after the instructor or examiner ceases to perform a function for the training organization;

8.11.4 A UTO shall submit training records and reports as required by the Authority;

8.11.5 The format of the student training records shall be specified in the training manual.

8.12 Unmanned Aircraft Systems Training Organization (UTO) Certification Process

8.12.1 Applications for UTO Certification shall be made at least 60 days before the intended date of commencement of the training. Such applications shall be made to:

The Director General

Kenya Civil Aviation Authority

P.O Box 30163 – 00100

NAIROBI

info@kcaa.or.ke or rpas@kcaa.or.ke

8.12.2 Applications for UTO Certification shall be made in a prescribed format and accompanied by:

a. A statement showing that the minimum qualification requirement for each management position are met;

b. A description of the minimum qualifications and ratings for each instructor;

c. The proposed training specifications requested by the applicant;

d. A description of training equipment that the applicant proposes to use including the aircraft, the synthetic trainers including any special equipment used for each phase of training;

e. A listing of the sites at which flights originate, if applicable, and a description of the applicant's training facilities, equipment and qualifications of personnel to be used;

f. A training program, including manuals, curricula, outlines, courseware, procedures and documentation to support the type of training proposed;

g. A description of quality control measures proposed;

h. A description of a record keeping system that will identify and document the details of training, qualification, and licensing of students, instructors and evaluators; and

i. A statement of compliance showing how the applicant has met all applicable requirements in the Civil Aviation Regulations.

j. Qualifications of the trainer(s) (including comprehensive details on where the qualifications were obtained, regulatory regime under which the qualifications were obtained and the currency of the qualifications);

k. Details of the equipment/UAS to be used for training (ownership and/or status of registration);

l. Location where the training is to be conducted;

m. A comprehensive syllabi/curriculum of the training including tests to be administered and the pass/fail criteria.

8.12.3 Unmanned Aircraft Systems Training Organization (UTO) Certification shall be subject to applicable regulatory charges issued by the Authority.

8.12.4

8.12.5 Training to be offered by the manufacturer of UAS equipment shall be considered as type specific training.

8.12.6

8.12.7 Such manufacturer training shall not be considered as credit towards granting of UAS Pilots Certificate/License

8.12.8 A person shall not act either as remote PIC or as a remote co-pilot of an UAS unless that person is the holder of a remote pilot license, containing the ratings suitable for the purpose of executing the operation.

8.12.9 A person should not act as an UAS observer unless that person has undergone a competency-based training on visual observer duties concerning UAS E-VLOS operations.

9.0 CHAPTER IX – OPERATIONAL REQUIREMENTS

9.1 Obligation Of UAS Owner Or Operator

9.1.1 An Unmanned Aircraft System owner or operator shall—

a. Be responsible for the safe conduct of its operations;

b. Comply with all requirements, terms and conditions established by the Authority regarding its operation;

c. Be responsible for contracted services from providers including communications service providers, as necessary, to carry out its operations;

d. Be responsible for operational control of the Unmanned Aircraft System;

e. Ensure that it is registered in accordance with the provisions of these Regulations; and

f. Ensure secure storage of the Unmanned Aircraft System or components thereof at all times.

9.1.2 Unless otherwise specified by the Authority a request for authorization for operation of Unmanned Aircraft System shall include the following—

a. Name and contact information of the operator;

b. Unmanned Aircraft System characteristics (type of aircraft, Maximum certificated take-off mass, number of engines and wing span);

c. Copy of certificate of registration of the Unmanned Aircraft System;

d. Aircraft identification to be used in radiotelephony, if applicable;

e. Copy of the certificate of airworthiness if applicable;

f. Copy of the Unmanned Aircraft System operator certificate, if applicable;

g. Copy of the Remote pilot(s) license, if applicable;

h. Copy of the aircraft radio station license, if applicable;

i. Description of the intended operation including the type of operation or purpose, flight rules, Visual Line-of Sight (VLOS) operation, if applicable, date of intended flight(s), point of departure, destination, cruising speed(s), cruising level(s), route to be followed, duration or frequency of flight; take-off and landing requirements;

9.1.3 Unmanned Aircraft System performance characteristics, including—

a. Operating speeds;

b. Typical and maximum climb rates;

c. Operating frequencies;

d. Typical and maximum descent rates;

e. Typical and maximum turn rates;

f. Other relevant performance data including limitations regarding wind, icing and precipitation; and maximum aircraft endurance; communications, navigation and surveillance capabilities;

9.1.4 Aeronautical safety communications frequencies equipment, including—

a. ATC communications, including any alternate means of communication;

b. Command and control (C2) links;

c. Performance parameters and designated operational coverage area;

d. Communications between remote pilot and Remote Piloted Aircraft (RPA);

e. Remote Piloted Aircraft observer, if applicable;

f. Navigation equipment;

9.1.5 Surveillance equipment, including Secondary Surveillance Radar transponder and Automatic Dependent Surveillance- Broadcast (ADSB);

9.1.6 Detect and avoid capabilities;

9.1.7 Emergency procedures, including:

a. Communications failure with Air Traffic Control (ATC);

b. C2 failure;

c. Remote pilot or remote piloted aircraft observer

d. Communications failure, if applicable;

e. Number and location of remote pilot stations as well as handover procedures between remote pilot stations, if applicable;

f. Document attesting noise certification, if applicable;

g. Confirmation of compliance with the Civil Aviation (Security) Regulations;

h. Payload information or description; and

i. Proof of adequate insurance coverage.

9.1.8 Unmanned Aircraft System shall meet the performance and equipment carriage requirements for the specific airspace in which the flight is to operate.

9.1.9 Where documents identified in 15.2 above are issued in a language other than English, the Unmanned Aircraft System operator or owner shall ensure that an English translation is included and provide a certificate of translation.

9.2 Limitations

9.2.1 A person shall not operate an Unmanned Aircraft System—

a. At above 400 feet Above Ground Level (AGL) and within 50 meters of any person, vessel, vehicle or structure which is not under the control of the person in charge of the Unmanned Aircraft System, unless approved by the Authority

b. Except with the authorization of the Authority;

c. In conditions other than Visual Meteorological Conditions (VMC); unless the pilot is duly rated, the System meets required specifications and is approved by the Authority.

d. At night, unless specifically cleared by the Authority on a case by case basis;

e. Where cameras, imaging devices or other sensors capture information, pictures or videos extending beyond the prescribed area of approved operation, and such information shall not be reproduced, processed, shared, distributed or published.

9.3 Prohibitions

9.3.1 A person shall not operate an Unmanned Aircraft System in a negligent or reckless manner.

9.3.2 A person operates an Unmanned Aircraft System in a "negligent" or "reckless" manner where that person—

a. In the course of operation, endangers other aircraft, persons or property;

b. Operates in a prohibited, a restricted and danger areas, the particulars of which have been duly published in the Kenya Aeronautical Information Publication (AIP), except in accordance with the conditions of the restrictions or by permission granted by the Authority; or

c. Operates in or around strategic installations, Air Navigation Service facilities, high tension cables and communication masts, prisons, police stations, courts of law, scenes of crime, schools and hospitals except in accordance with the conditions of the restrictions or by permission granted by the Authority.

9.3.3 The Authority in consultation with the Cabinet Secretary responsible for matters relating to internal security, may by notice prohibit the use of Unmanned Aircraft System in any specific area in Kenya for any period in the interest of national security.

10.0 CHAPTER X – CARRIAGE OF DANGEROUS GOODS BY UAS

10.1 General

10.1.1 The carriage of dangerous goods on UAS is prohibited under the Civil Aviation (Unmanned Aircraft Systems) Regulations. UAS owners and/or operators are therefore cautioned against taking on board or causing to be carried on board a UAS any form of dangerous goods.

10.1.2 For purposes of this Manual Dangerous Goods shall be as defined in the ICAO Manuals for Safety Transport of Dangerous Goods by Air except any such items or components necessary for the operation of UAS including batteries or fuels.

10.1.3 Owners and/or operators of UAS shall take all necessary precaution to ensure that no dangerous goods are carried on board a UAS.

10.1.4 Any incidents where it is suspected that dangerous good have been carried on boards UAS shall be reported to the Authority within the incident reporting timelines. Such reports shall include the form and nature of the dangerous goods.

10.2 Training and sensitization

10.2.1 In order to ensure that there is adequate information and sensitization regarding dangerous goods operators of UAS are required to ensure that they receive training in the area of dangerous good.

10.2.2 Such training shall be aimed at providing information and knowledge to facilitate the identification of what potentially constitutes dangerous goods and allow for their isolation.

10.2.3 Such training shall only be recognised by the Authority is conducted within a Training Organisation approved by the Authority and with requisite capacity (capability) to conduct such training and conducted by suitably qualified persons.

10.3 Authorisations

10.3.1 In exceptional circumstances UAS operators with justifiable reasons may apply to the Authority for authorisation to transport dangerous goods. Such applications shall be made before the actual transport of dangerous goods.

11.0 CHAPTER XI – AIR TRAFFIC SERVICES

11.1 Integration of UAS by the Air Navigation Service Provider

11.1.1 In order to safety allow for the simultaneous use of the airspace by UAS and conventional manned air traffic, the regulations require that the Air Navigation Service Providers (ANSPs) to develop procedures for the integration of UAS in the air traffic system. These procedures shall be submitted to the Authority for acceptance and publicised for information to all airspace users.

11.1.2 The ANSPs should use a safety management approach to determine how to integrate UAS within their airspace by including a hazard identification and risk management assessment associated with the types of operations anticipated. This might include the airspace design, volume and complexity of traffic, operating procedures, meteorological conditions, etc.

11.1.3 The following should be considered by ANSPs in developing their respective UAS integration plans:

a. Traffic complexity

The operation of UAS within an airspace may increase the complexity of the traffic. If multiple UAS are in a particular area concurrently, the complexity may increase more significantly than the introduction of multiple manned aircraft. ANSPs should consider, on a case-by-case basis, whether the characteristics of the UAS operation, including flight performance, communications methods, etc., can be supported without additional resources or procedures.

b. Latency of RPA response

RPA response times to control instructions issued by the ATCO may be longer than those of manned aircraft in the airspace. The effects of this should be assessed to determine whether ATCOs can plan and issue instructions in an acceptable timeframe to obtain the desired actions.

c. Conspicuity

Owing to the relatively small size and low conspicuity of some UAS, it may be difficult for ATCOs, pilots of manned aircraft and other remote pilots to acquire visual contact with the UAS. It may also be difficult to give conditional clearances or

effectively pass traffic information to other airspace users with reference to the UAS. This may affect the number and type of clearances issued and subsequently the operational safety and efficiency of the airspace. ATS authorities and ANSPs should be mindful of this when granting permission for UAS operations to be integrated into non- segregated airspace.

d. Non-standard method of communication

For small UAS, due to RLOS challenges, the remote pilot may need to communicate with ATC through means other than the published VHF/HF radio frequency (RF) for the airspace in which the UAS will be operating. Prior to approving use of a non-standard method of communication, the ANSP should assess the implications on the overall traffic situation for the airspace and on the ATCO's ability to effectively manage different methods of communication.

e. UAS sensitive to hazardous meteorological conditions

Small UAS may be more sensitive to hazardous meteorological conditions due to their low MTOM and, more specifically, the wing/power loading of the aircraft.

f. Acceptance by airspace users and ATCOs

There may be compatibility issues in terms of operating procedures and demands for airspace access between manned and unmanned aircraft operators. It is recommended that stakeholder forums should be conducted to address this knowledge gap for ATCOs and airspace users to ensure mutual awareness of UAS performance characteristics and the types of operation they will be conducting, etc. UAS operators will need to actively participate in these forums to share information and contribute to the effective integration of UAS.

11.2 Flight Planning

11.2.1 Approval of Areas for Operation of Unmanned Aircraft

a. The UAS operator shall apply to the Authority for the approval of an area of operation for a particular category of UAS whereby:

i. An approval shall have an effect from the time written notice is issued to the applicant, or a later day, or day and time stated in the approval.

ii. An approval may be expressed to have effect for a particular period

b. Each approval will be subject to conditions imposed by the Authority in the interests' safety of air navigation. Such approvals may be published in a suitable manner.

c. The Authority may vary, suspend or revoke the approval of an area, or change the conditions that apply to such an approval, in the interests of the safety of air navigation. The Authority will also give written notice of the variation, suspension or revocation:

i. to the person who applied for the approval of the area and operation; or

ii. if that person applied for that approval as an officer of an organization concerned with UAS and no longer holds that office, to the person who now holds the office.

d. The Authority may publish details of any such variation, suspension or revocation in suitable format.

11.3 Limitations

11.3.1 Limitations for use and operation of UAS are set forth in the regulations, further, the Authority may establish necessary limitations for each approval/authorisations to be granted for use of UAS in accordance with this Manual of Standards.

11.3.2 Operators of UAS shall at all times comply with the regulatory limitations as well as any other conditions or limitations imposed in the approval/authorisation.

11.3.3 The ANSP shall be notified of all additional limitations imposed on any approval/authorisation.

11.4 Weather

11.4.1 Before each deployment the operator will have to ensure that he/she gathers enough information to become familiar with the weather situation existing throughout the area of deployment.

11.4.2 The operator shall utilize the Authority's approved weather sources (from the Kenya Meteorological Department) to obtain the latest and most current weather conditions. If deemed necessary, an anemometer should be utilized in order to better estimate the wind speed and determine if it is within the capabilities of the airframe being flown.

11.4.3 Operators are required to use the Beaufort scale when making deployment decisions in regards to wind conditions. No flight is allowed when wind exceeds a level four (4) on this scale. The weather conditions reported for the operation shall be recorded in the pre-flight checklist.

11.4.4 The remote pilot should review all available meteorological information pertaining to the operation and performance limitations of the UAS. Particular attention should be given to such conditions as:

a. surface visibility;
b. wind direction/speed;
c. hazardous meteorological conditions including cumulonimbus and turbulence; and
d. Upper air temperature.

11.4.5 For category A and B Operations conducted within visual line of sight operators of such UAS shall ensure that operations are conducted within meteorological conditions prescribed by the manufacturer.

11.4.6 For Category C operations within controlled airspaces UAS operators shall ensure that meteorological information used to support the operation is obtained from approved sources in accordance to the Civil Aviation (Meteorological Service for Air Navigation) Regulations.

11.5 Aerodromes

11.5.1 No operations of an Unmanned Aircraft System will be allowed:

a. within ten (10) kilometres of an aerodrome from the aerodrome reference point for code C, D, E and F aerodromes;
b. within seven (7) kilometres of an aerodrome from the aerodrome reference point for code A and B aerodromes;
c. on approach and take-off paths;
d. within the vicinity of navigation aids;
e. within the aerodrome traffic zone; and
f. Within terminal traffic holding patterns.

11.5.2 Once an approval is granted by the Authority for an Unmanned Aircraft System operation at an aerodrome, the Authority may:

a. impose operating restrictions on the approval in the interest of safety;
b. publish details of the approval in the appropriate Aeronautical Information Product;
c. Revoke or change the conditions that apply to such approval and publish details of any revocation or change in conditions in the appropriate element of the Aeronautical Information Product.

11.6 Pre-flight Planning

11.6.1 Before the execution of any operation the UAS operator is requested to: -

a. Familiarize with all available information concerning the deployment including, but not limited to, the weather conditions, hazards, reporting of incidents, deployment goals, etc.
b. Ensure that the location for take-off and emergency landing is adequate for a safe deployment.
c. Ensure that they are aware of their surroundings in the event that an emergency landing is necessary. This includes the ability to recover the UAS.
d. Utilize pre-flight and post-flight checklists to ensure the highest level of safety for deployment.

11.6.2 Pre-flight planning should include consideration of alternate aerodromes/recovery sites, as appropriate, in the event of an emergency or meteorological-related contingency.

11.6.3 Adequate fuel/energy reserves should be included in pre-flight preparation such that the UAS can deviate from a landing/recovery at the planned location, proceed safely to the alternate aerodrome/recovery site, and execute an approach and landing.

11.6.4 Before selecting an alternate recovery/landing location, the remote pilot should consider, at a minimum, the adequacy of fuel/energy reserves, the reliability of C2 links with the UAS, ATC communications capability as necessary and meteorological conditions at the alternate.

11.6.5 UAS operators will need to file flight plans in accordance with the Civil Aviation (Rules of the Air) Regulations.

11.6.6 Assignment of the UAS type designators will need to be established and incorporated in the Aircraft Type Designators (Doc 8643). Until this is done, "ZZZZ" should be entered in item 9 of the flight plan form and the UAS type specified in item 18, as per Doc 4444, PANS-ATM requirements.

11.6.7 Flight details of UAS that are entering a controlled airspace shall be submitted to the nearest ATS reporting office.

11.6.8 All UAS Pilots are strongly advised, regardless of his formal obligations, to obtain an approval from the Authority for every operation to be conducted. In addition to the approval UAS operators shall be required to:

a. For category A and B operations the pilot is required to file the operation details via the UAS flight details form.

b. For category C the UAS pilot shall be required to complete the KCAA flight plan form and submit the same to the nearest ATS reporting office.

Note: No UAS operation shall commence before the flight details and/or flight plan has been approved by the Authority.

11.6.9 Submission of flight plan details will help to capture the intentions regarding the flight and make the same available to the Air Traffic Services, and ultimately could be used as a basis for any Search operations that might become necessary.

11.6.10 The UASS operator should establish procedures to ensure a seamless operation

11.6.11 throughout the duration of the flight, including remote pilots who can carry out the responsibilities for the different phases of the flight such as take-off, climb, cruise, approach and landing, all of which should be included in the operations manual.

11.6.12 All Unmanned Aircraft System flights in controlled airspace shall be required to file flight plans before operations. Flights by Unmanned Aircraft System in uncontrolled airspace shall at all times comply with the applicable rules of the air.

11.6.13 In the event of a flight cancellation, the operator or remote pilot shall notify the nearest Air Traffic Control (ATC) units to where the flight plan details were submitted. An Unmanned Aircraft System pilot shall ensure that Air Traffic Control (ATC) is made aware of any operations that shall take place in areas which are likely to affect manned and controlled air traffic.

11.6.14 Flight plans shall be submitted 2 hours before the estimated take off time of a flight. At the time of filing the flight plan the approval from the Authority for the UAS operation shall be specified in item 18 (for category C operations).

11.6.15 For category C operations, a delay of one hour in excess of the estimated time of departure for a controlled UAS flight the flight plan should be amended or a new flight plan submitted and the old flight plan cancelled, whichever is applicable.

11.6.16 For Category C operations the UAS pilot must file the KCAA Flight Plan for:

a. any flight or portion thereof to be provided with air traffic control service;

b. any IFR flight within advisory airspace;

c. any flight within or into designated areas, or along designated routes, when so required by the appropriate ATS authority to facilitate the provision of flight information, alerting and search and rescue services;

d. any flight within or into designated areas, or along designated routes, when so required by the appropriate ATS authority to facilitate coordination with appropriate military units or with air traffic services units in adjacent States in order to avoid the possible need for interception for the purpose of identification;

e. any flight across international borders.

11.6.17 The first ATS reporting unit receiving UAS flight details or flight plan, or change thereto, shall:

a. check it for compliance with the format and data conventions;

b. check it for completeness and, to the extent possible, for accuracy;

c. take action, if necessary, to make it acceptable to the air traffic services; and

d. indicate acceptance of the flight plan or change thereto, to the originator.

11.7 Compliance with ATC Instructions

11.7.1 In order to ensure safety of air traffic all UAS operated under Category C which is subject to air traffic services shall be treated as conventional aircraft. In this regard the UAS pilot is expected to comply with the ATC instructions promptly when issued.

11.7.2 UAS must also be able to comply with ATC instructions and with equipment requirements applicable to the class of airspace within which they intend to operate. The following provisions shall apply to UAS operators when operating in controlled airspace. The UAS shall:

a. be operated in such a manner as to minimize hazards to persons, property or other aircraft.

b. be required to comply with ATC clearances and instructions.

c. at all times comply with the applicable rules of the air.

11.7.3 The issuance of air traffic control clearances by air traffic control units constitutes authority for an aircraft to proceed only in so far as known air traffic is concerned. ATC clearances do not constitute authority to violate any applicable regulations for promoting the safety of flight operations or for any other purpose; neither do clearances relieve a pilot-in-command of any

responsibility whatsoever in connection with a possible violation of applicable rules and regulations.

11.7.4 The UAS flight crew shall read back to the air traffic controller the ATC clearances and instructions which are transmitted by voice. The following items as applicable shall always be read back:

a. ATC route clearances;

b. clearances and instructions to enter, land on, take off from, hold short of, cross and backtrack on any runway; and

c. runway-in-use, altimeter settings, SSR codes, level instructions, heading and speed instructions and, whether issued by the controller or contained in ATIS broadcasts, transition levels.

11.7.5 Other clearances or instructions, including conditional clearances, shall be read back or acknowledged in a manner to clearly indicate that they have been understood and will be complied with.

11.7.6 The controller shall listen to the read-back to ascertain that the clearance or instruction has been correctly acknowledged by the flight crew and shall take immediate action to correct any discrepancies revealed by the read-back.

11.8 Integration Of UAS Operations into ATM Procedures

11.8.1 The general requirements for ATC communications, to and from the remote pilot, shall be same as for manned aviation operating in the same airspace. In addition to very high frequency (VHF) voice, this may also include the requirement to support ATC data link.

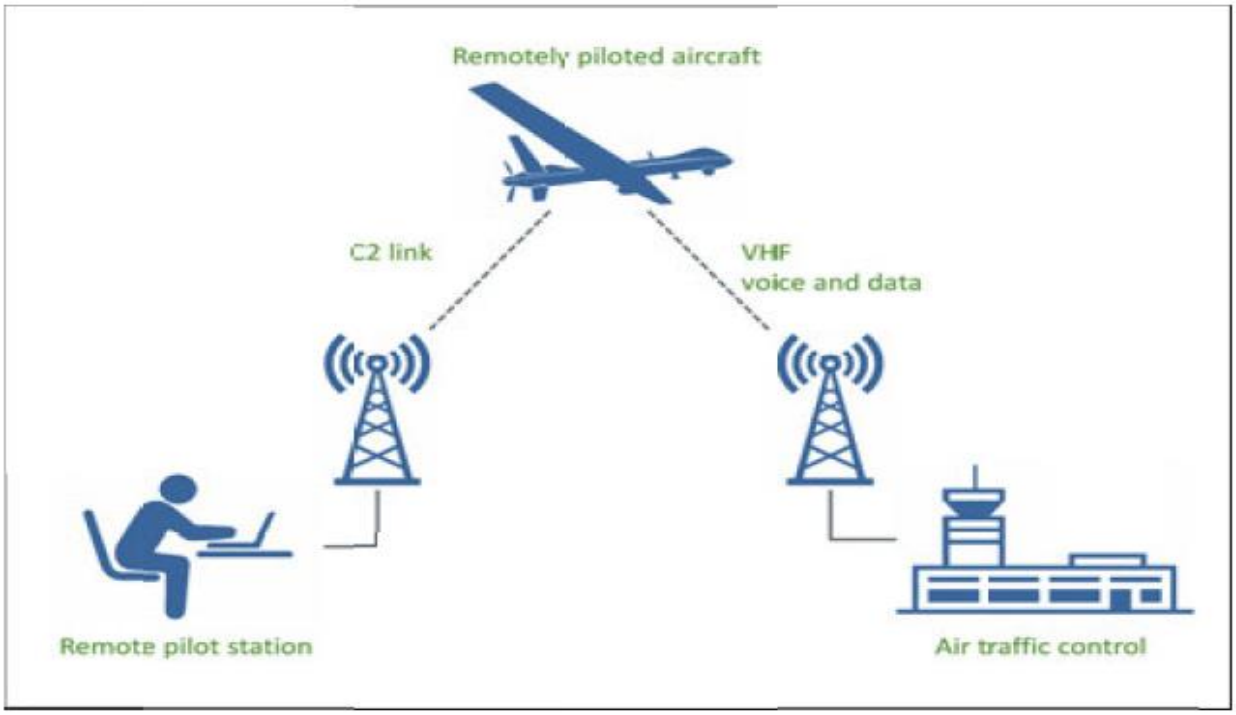
11.8.2 Whichever architecture is employed, the ATC communications function will be expected to meet the required communication performance specified for the airspace in which the UAS is operating. In the case that ATC communications are relayed via the UAS, a reversion/backup means of communication with ATC may be required in order to mitigate any failure of the UAS relay function.

11.8.3 The communications links between ATC and remote pilot, RPS and UAS may be implemented by any network service that meets the required communications performance, e.g. a private network or a service provided by a third party.

11.8.4 The various options for providing voice and data communications between ATC units and the remote pilot are divided in two main groups:

a. via the UAS, which is transparent to ATC and requires no additional infrastructure or equipment in the ATC unit. This approach also has the advantage that it is compatible with existing ATC operations across the globe. However, it may require more communications bandwidth on the C2 link to support the ATC voice and data relay between the UAS and the remote pilot; or

b. via a new broadcast, private or networked communications link, directly between the ATC unit and the remote pilot.



11.8.5 Integration Requirements

a. UAS operators are required to operate within existing regulations and arrangements and shall not have an automatic right to airspace use if safety provisions cannot be met or guaranteed.

b. In order to integrate with other airspace users, UAS operators must ensure that their aircraft exhibit an equivalent level of compliance with rules and procedure that apply to manned aircraft.

c. UAS operators are required to recognize and meet the expectations of other airspace users, which are:

i. that the routine flight for any UAS in the Nairobi Flight information region will not increase the risk to the other existing airspace users: and

ii. Existing (manned aircraft) users will have preference for the use of such an airspace.

d. Special equipment (e.g. transponders) mandated for manned aircraft in certain classifications of airspace shall also be fitted to UAS intended for use in such airspace. Such equipment should be regarded as a minimum. Standard Operating Procedures are required and will include:

i. Take-off and landing procedure;

ii. Loss of two-way radio/datalink communication; and

iii. Emergency procedure following critical system failure.

e. Individual Air Traffic Services (ATS) units may provide services within clearly defined geographic boundaries (such as a specific portion of airspace) or may provide services within a general area (for example, in the vicinity of an aerodrome).

f. The rules pertaining to aircraft flight and to the air traffic service provided will be determined by a number of factors (including airspace categorization, weather conditions, aircraft flight rules and type of air traffic rules and type of aircraft service unit).

g. It is important that those managing UAS operations shall be familiar with the relevant rules and procedures applicable within any airspace through which the aircraft will be flown.

h. UAS operation are expected to be transparent to ATS providers. The UAS pilot will be required to comply with any air traffic control instruction or a request for information made by an ATS unit in the same way and within the same time frame that the pilot of a manned aircraft would.

11.8.6 Integration Principles

a. Introduction

i. The integration of UAS in non-segregated airspace will be a gradual process that builds upon technological advances and development of associated procedures. The process will begin with limited access to airspace, and while some UAS may eventually be able to seamlessly integrate with manned flights, many may not.

ii. Addition of any new type of airspace user into the existing air navigation system, will require consideration of the need to minimizing risk to all airspace users. The Air navigation service provider will need to apply safety management principles and analyses to the introduction of UAS operations. These principles and analyses should reflect on-going developments in UAS capabilities.

iii. UAS operations must conform to the existing airspace requirements. These airspace requirements include, but are not limited to, communication, navigation and surveillance requirements, separation from traffic and distances from clouds.

b. Controlled airspace

i. In order for UAS to be integrated into non-segregated controlled airspace, the UAS must be able to comply with existing ATM procedures. In the event that full compliance is not possible notification in writing to the ATM provider shall be made by the UAS operator. The ATM provider shall take appropriate action like development of new procedures in consultation with the UAS operator and representatives of other airspace user groups. Any new ATM procedures should be kept as consistent as possible with those for manned flights to minimize disruption of the ATM system.

c. Uncontrolled airspace

i. In order for UAS to be integrated into non-segregated uncontrolled airspace, the UAS will need to be able to interact with other airspace users, without impacting the safety or efficiency of existing flight operations.

d. Airspace requirements

i. The operational and equipage requirements of UAS shall be governed, as per manned aviation, by the class of airspace in which they will be operating. These provisions shall apply to category C operations.

e. Take-off and landing phases

i. UAS may be operated in either VLOS or BVLOS, and the associated IFR restrictions applicable to manned aircraft will apply. These operations may also be conducted within VLOS or BVLOS depending on the capability and category of the UAS involved. The

operator shall receive and review the meteorological conditions in which the UAS is operating during these phases, in order to ensure it is indeed operating in accordance with applicable flight rules.

ii. For purposes of enhancing safety of the air navigation services system, no VFR UAS operations shall be allowed above 10,000ft.

f. En-route phase

i. The operational, equipage and performance requirements imposed on the UAS will depend upon the class of airspace through which it will be transiting and any additional requirements prescribed for the airspace or operation (e.g. RVSM, PBN, 8.33 KHz channel spacing capable radio equipment etc).

g. Visual Flight Rules (VFR)

i. The remote pilot or UAS operator must be able to assess the meteorological conditions throughout the flight. In the event the UAS, on a VFR flight, encounters IMC and it is not equipped or approved then appropriate action must be taken.

h. Instrument Flight Rules (IFR)

i. UAS must be equipped with suitable instruments and with navigation equipment appropriate to the route to be flown.

11.8.7 Communication, Navigation and Surveillance (CNS)

a. Introduction

i. Functionality and performance requirements for UAS should ideally be equivalent to those established for manned aircraft and appropriate to the airspace within which the UAS is operated and where ATS is being provided. The performance and equipage requirements will be determined by factors associated with the operating environment which may include classes of airspace, proximity to heavily populated areas, terrain, etc.

b. Transponder operations

i. UAS shall have to adhere to the transponder operating rules in the same way as manned aircraft and as required by the class of airspace within which they are operating.

c. UAS unique procedures

i. It is expected that UAS will use Mode A code 7700 or equivalent ADS-B emergency mode for those emergencies that are common to manned aircraft (e.g. engine failure), but consideration must also be given to those circumstances that are unique to UAS (e.g. flight termination). The procedures addressing coordination with ATC relating to transition from one code to another need to be clearly identified to ensure a common understanding and expectations of how the UAS will operate in a given situation.

11.8.8 Flight Rules

a. Right-of-way

i. As with manned aircraft, UAS shall be required to comply with the Civil Aviation (Rules of the Air) Regulations on the right-of-way rules and remain-well-clear of other aircraft. They must avoid passing over, under or in front of other aircraft, unless it passes well clear and takes into account the effect of aircraft wake turbulence. Owing to the relatively small size and low conspicuity of some UAS, it may be difficult for pilots of manned aircraft and other remote pilots to visually see the UAS.

b. UAS performance requirements

i. The performance characteristics of the UAS will require additional consideration when planning their integration within the ATM system, as their performance characteristics will affect how ATS providers manage their integration with conventional traffic. For example, high-altitude, long-endurance (HALE) UAS that typically operate at lower speeds in climb to and descent from high flight levels, pass through levels at which manned aircraft are cruising at high speeds. This speed differential may pose separation challenges in a mixed environment.

ii. Control instruction response times (e.g. the length of time between ATC issuing an instruction, the remote pilot complying with the instruction and the UAS responding to the inputs) may affect the controller's ability to support UAS operations if an inordinate amount of resources are allocated to a single aircraft. This can also be a result of other performance characteristics such as climb, descent or turn rate that may differ substantially from those of conventional aircraft. Thus, it will be essential that the ATCO be aware of and anticipate these potential underperformances and plan accordingly.

iii. The ATCO must have a general knowledge of UAS performance characteristics and be familiar with specific characteristics of UAS operating in the airspace. The following performance characteristics should be considered:

(a) speed;

(b) climb, descent or turn rates;

(c) wake turbulence;

(d) endurance;

(e) latency; and

(f) Effect of bank angle on C2 and ATC communications link capability and reliability.

c. ATM procedures

i. The absence of an on-board pilot will necessitate some unique procedures in the integration of UAS into non-segregated airspace. To the greatest extent practicable, procedures should be identical to those developed for manned aircraft.

ii. Some of the issues that will need to be addressed to integrate UAS flights include the following:

(a) flight planning:

(1) UAS type designators;

(2) phraseology (to be used with/by ATC);

(b) VFR flight:

(1) separation standards;

(2) right-of-way rules;

(c) IFR flight:

(1) separation standards;

(2) right-of-way rules;

(d) contingency and emergency procedures:

(1) C2 link failure;

(2) ATC communications failure with remote pilot; and

(3) Intercept procedures/compliance with air defense.

d. Controller training

i. ATCOs need to adapt to emerging technologies and new regulations that affect both airspace and aircraft performance characteristics. The introduction of UAS into non-segregated airspace will require a comprehensive training programme that provides

ATCOs with the necessary knowledge and tools to ensure the safe integration of UAS into the ATM system. This training should include the inherent differences between UAS and conventional manned aircraft, from performance characteristics to remote pilot communications and contingency/emergency procedures.

ii. The following generic training outline provides areas of UASS knowledge that should be considered and addressed in a comprehensive ATCO training programme:

(i) UASS system information:

1. terminology/phraseology;
2. UASS architecture: UAS, RPS, C2 link, ATC communications methods, remote pilot, UAS observer;
3. UAS performance characteristics:
   a. speed, climb, descent and turn rates;
   b. wake turbulence implications;
   c. operating altitudes;
   d. minimum line-of-sight altitude;

(ii) operational characteristics:

1. DAA capability;
2. direct control, autopilot control versus waypoint control;
3. VLOS versus BVLOS operation;
4. RPS handover procedures (internal/external);
5. transparency to ATC;
6. remote pilot human performance capabilities related to ATC;

(iii) concepts of operation;

(iv) types of operation;

(v) operational specificities:

1. priorities;
2. flight plan elements/filing;
3. aerodrome procedures;
4. taxiing;
5. wing walker concept;
6. remote pilot control;
7. launch/take-off;

8. automatic take-off/landing systems;
9. climb out/shuttle climb procedures;
10. airspace transit procedures;
11. recovery;
12. circuit;
13. landing;

(vi) civil versus military operations;

(vii) UAS-specific airspace/procedure requirements:

1. ability to accept visual separation clearances;
2. general ATC procedures requirements;
3. cross-border implications;
4. separation standards and traffic information;
5. conflict alert capability;

(viii) communications:

1. C2 link;
2. radiotelephony procedures;
3. response times;
4. RLOS versus satellite/relay (ground-based or airborne);
5. ATC data link versus voice;

(ix) contingency/emergency scenarios:

1. contingency operations;
2. power supply issues; and
3. Emergency procedures.

11.9 Emergencies and Contingencies

11.9.1 Emergency landing/ditching locations

a. UAS flight planning should include provisions for emergency landing of the UAS in locations that minimize the safety risks to people or property on the ground. Remote pilots, unlike pilots of manned aircraft in visual conditions, have little chance to observe actual details on the ground in the vicinity of their aircraft during an emergency.

b. They must therefore rely to a much greater extent on preplanning emergency scenarios that may occur along their intended route of flight.

c. When selecting emergency landing locations, the remote pilot should consider the following conditions:

i. terrain, ground obstructions, population density, open air assemblies of people; and

ii. Landing/ ditching areas including accessibility for recovery or fire suppression.

11.9.2 Loss of C2 link

a. Flight planning should include provisions for loss of the C2 link and should be in accordance with guidance contained in the flight manual and/or operations manual. Procedures for the loss of the C2 link for UAS conducting controlled flights should be pre-approved by the ATC units involved in each portion of the flight planned route, if so stipulated by the ANSP(s). Remote pilots must notify the ATC unit immediately upon the procedures being activated for any flight under ATC control or any flight that may affect other ATC controlled flights, manned or unmanned.

11.9.3 Interception operations

a. UAS operators must comply with Annex 2 Standards regarding intercept operations.

12.0 CHAPTER XII – INSURANCE

12.1 Insurance shall be in place to provide financial compensation when the safety management systems has failed to prevent an accident or a loss has been suffered due to an unforeseen event.

12.2 The levels of insurance will be as follows:

12.2.1 A UAS shall be insured at all times to a minimum amount equivalent seventeen special drawing rights per kilogram in respect of cargo weight authorized by the certificate of airworthiness applicable to the UAS or manufacturer's specifications.

12.2.2 In respect of third party liability, minimum insurance coverage will Be: (TO BE PROVIDED)

12.2.3 In respect of hull insurance, minimum insurance coverage will be:(TO BE PROVIDED)

12.3 The minimum amounts of coverage required for cargo and third party liability may be insured for a combined single limit of insurance per any one occurrence.

12.4 The following UAS documents must be submitted together with the appropriate supporting documents for purposes of issuance of the appropriate insurance cover:

a. Proof of Registration of UAS with KCAA
b. Ownership documents
c. The UAS Insurance Proposal Form
d. Such other documents as may be required by the insurance company.

13.0 CHAPTER XV – SECURITY

13.1 General Requirements

13.1.1 An Unmanned Aircraft System operator or owner shall not use a System equipped with an Imaging Device to conduct Surveillance on or take an Image of a person without that person's written consent

13.1.2 An Unmanned Aircraft System operator or owner shall not use a System equipped with an Imaging Device to record an image of privately owned or leased real property or of the owner, tenant, occupant, invitee, or licensee of such property with the intent to conduct surveillance on the individual or property captured in the image in violation of such person's reasonable expectation of privacy without his or her written consent.

13.1.3 A person is presumed to have a reasonable expectation of privacy on his or her privately owned real property, licensed or leased property if that person is not observable by persons located at ground level in a place where they have a legal right to be.

13.1.4 An Unmanned Aircraft System equipped with an imaging device may with the approval of the Authority be used for the purpose of—

a. Mapping and evaluating the earth's surface, including terrain and surface water bodies and other features;
b. Investigation of forests and forest management;
c. Search and rescue; or
d. Investigation of vegetation or wildlife.

13.1.5 The owner or operator of a System equipped with an imaging device shall comply with any other law relating to protection of privacy or data.

13.1.6 An Unmanned Aircraft System operator or owner shall not operate the System in a manner that constitutes nuisance to the public, a person or to the property of another.

13.2 Security Procedures

13.2.1 A Remote Aircraft Operators Certificate holder shall not operate an Unmanned Aircraft System without operator security procedures approved by the Authority.

13.3 Process

13.3.1 The approval process of the security procedures shall be in accordance with the Civil Aviation (Security) Regulations. UAS Security procedures checklist shall be used for review and approval of the procedures.

13.3.2 An Unmanned Aircraft System operator shall specify the security measures, procedures and practices for:

a. The operator to protect pilots and facilities from acts of unlawful interference;

b. The securing of the premises used for preparing, storing, parking including remote piloted aircraft system ground station at all times against unauthorized access;

c. Protection of critical information technology and communication systems used for operations purposes from interference that may jeopardize the security of civil aviation;

d. Protection of flight documents;

e. Checks and searches of specific areas and accessible compartments of the interior and exterior of an Unmanned Aircraft System;

f. Identification and resolution of suspicious activity that may pose a threat to civil aviation—

i. At a remote pilot station;

ii. On a remote piloted aircraft system; and

iii. Any facility under the control of the remote piloted aircraft system operations.

g. System log in and off and logging of the activities of the UAS;

h. Responding to and reporting incidents of hijacked, stolen, missing, renegade RPAS or any suspicious activity involving any UAS;

13.4 Requirement

13.4.1 Background Checks

a. The holder of a Remote Aircraft Operators Certificate shall:

i. Conduct background checks on all personnel recruited for deployment, handing and storage of any Unmanned Aircraft System;

ii. Conduct criminal record checks every 24 months on all personnel employed in the deployment, handling, and storage of an Unmanned Aircraft System;

13.5 Process

13.5.1 Background checks shall be conducted by the Remote Aircraft Operators Certificate holder to all personnel recruited for deployment, handing and storage of any Unmanned Aircraft System using the model background check form.

13.6 Requirement for the Storage and protection of Unmanned Aircraft System

13.6.1 Remote Aircraft Operators Certificate holder shall:

a. Store an Unmanned Aircraft System that is not in use in a secure manner to prevent and detect unauthorized interference or use;
b. Protect an Unmanned Aircraft System from acts of unlawful interference;
c. Store and prepare for the flight of an Unmanned Aircraft System in a manner that will prevent and detect its tampering;
d. Protect the integrity of vital systems of an Unmanned Aircraft System;

13.7 Process

13.7.1 RPAS operators shall ensure that:

a. Access to remote pilot stations is strictly controlled to mitigate the risk of unlawful interference;
b. The aircraft is properly stored and prepared for flight in a manner that will prevent and detect tampering and ensure the integrity of vital components;
c. The software and datalink communications are protected "from hacking, spoofing and other forms of interference or malicious hijack.

13.8 Requirement

13.8.1 Designation of a security coordinator and training of personnel, a Remote Aircraft Operators Certificate holder shall:

a. Designate a security coordinator responsible for the implementation, application and supervision of the security controls; and
b. Train all personnel employed in the deployment, handling, and storage of an Unmanned Aircraft System as may be specified by the Authority.

13.8.2 Responsibility of the holder of a Remote Aircraft Operators Certificate be responsible for the security of such system operations including associated facilities, personnel and equipment. The UAS is not operated:

a. In a manner that endangers other aircraft, persons or property;
b. In prohibited areas;
c. In security restricted areas;
d. At or in the vicinity of commercial airports and aircraft without authorization;
e. In restricted, danger areas or any other area notified by the Authority except with the permission of and in accordance with any conditions imposed by the Authority;

13.8.3 The UAS is not used:

a. To convey prohibited items, arms or weapons;
b. For conveyance of explosive, incendiary, chemical, biological or nuclear materials;
c. For unauthorized surveillance or photography.

13.8.4 Any component of the RPAS that is no longer usable is completely disabled or destroyed to prevent unauthorized persons from reviving it for illegal use;

13.8.5 Comply with any security directives or circulars issued by the Authority or government security agencies and the relevant provisions of this Programme for purposes of safeguarding civil aviation and the public from acts of unlawful interference.

13.9 Acts of unlawful interference with civil aviation

13.9.1 An operator or owner of an Unmanned Aircraft System shall have response procedures for operations personnel for threats and incidents involving Unmanned Aircraft Systems operations;

13.9.2 No person shall interfere with duly authorized operation of an Unmanned Aircraft System or intercept an Unmanned Aircraft System in any manner whatsoever.

13.9.3 Any person who unlawfully interferes with duly authorized operation of an Unmanned Aircraft System commits an offence and shall be liable, upon conviction, to a fine not exceeding two million shillings or to imprisonment for a term not exceeding three years, or to both.

13.9.4 Process

a. Where the Authority has reason to believe that an unmanned aircraft is being operated in a manner that contravenes any provision of these Regulations; that poses a serious and an imminent risk to safety of the public; or that prejudices national security, the Authority may exercise all or any of the powers in the Civil Aviation (Unmanned Aircraft Systems) Regulations for the purpose of:

i. Preventing further contravention of any provision of these Regulations;

ii. Preventing or stopping any actual or imminent

iii. Occurrence that endangers or threatens to endanger

iv. The safety of the public; or

v. Safeguarding national security.

b. The authority shall direct any person whom the Authority reasonably believes to be involved in the operation of an Unmanned Aircraft System:

i. To end the flight or land it, safely in the fastest practicable way; or

ii. To fly the aircraft in the manner specified by the Authority; with such assistance and by such force as is necessary

iii. To assume control of the Unmanned Aircraft System or fly it or to end the flight or land it safely in the fastest practicable way; or

iv. To confiscate the Unmanned Aircraft System and any component thereof or other thing, that the Authority believes on reasonable grounds to be evidential material; or needs to be seized to prevent its concealment, loss or destruction, or its use in committing, continuing or repeating an offence under the Act or the Regulations.

v. The powers granted to the Authority under Civil Aviation (Unmanned Aircraft Systems) Regulations may be exercised by the national security agencies.

vi. The relevant government or law enforcement agency responding to an incident shall take all measures necessary to safeguard civil aviation and/or the public from any UAS operation that is operated illegally or is being used to commit an act of unlawful interference. Such measures shall include seizing control or destruction of the UAS, arrest and prosecution of the operator(s).

13.10 Reporting of security incidents

13.10.1Requirement

a. Reports on acts of unlawful interference shall be promptly submitted to the Authority in accordance with the Civil Aviation (Security) Regulations. Every operator is required, where an act of unlawful interference occurs, to immediately notify the Authority, in accordance with the Civil Aviation (Security) Regulations.
b. The nearest law enforcement agency shall be notified of the ownership and operation of UAS for purposes of coordination in the event of any incident(s);

13.10.2Process

a. Any individual, entity or UAS operator shall promptly report any incident, or suspicious activity related to a UAS operation to the nearest police station and/or the Authority.
b. Mandatory reporting of security incidents shall be submitted to the Authority as follows
c. A preliminary written report, within fifteen days after the occurrence of an act of unlawful interference, including sabotage, threats, hijacks, and incidents; and
d. A final written report, upon completion of investigations, but within thirty days after the occurrence of an act of unlawful interference, including sabotage, threats, hijacks, and incidents.
e. Download the form for formally reporting security incidents, complete and send it to mavsec@kcaa.or.ke
f. Aviation security-related incidents may also be reported anonymously by individuals including UAS operator staff and members of the public to mavsec@kcaa.or.ke

13.10.3Risk Assessment and Quality Control

a. The Threat and Risk Assessment Committees (TRACs) shall regularly evaluate and report to the Authority, National Civil Aviation Security Committee and Airport Security Committees as appropriate, any security threats and risks posed by the activities of UAS.
b. An Unmanned Aircraft System shall be subject to security inspection at any time during its operations by the Authority without prior notification to the operator.

13.11 Consumption of psychoactive substances

13.11.1 An operator or owner of an Unmanned Aircraft System shall implement mechanisms to ensure that Unmanned Aircraft System pilot or observer are tested for psychoactive substances before or during tour of duty.