



## **CAR OPS 4**

# **REMOTELY PILOTED AIRCRAFT SYSTEM (RPAS) OPERATIONS**

**FOREWORD**

**CONTENTS**

**REVISION RECORD**

**LIST of EFFECTIVE PAGES**



*This Page Intentionally Left Blank*



## FOREWORD

1. The Civil Aviation and Maritime Navigation Authority (L'Autorità per l'Aviazione Civile e la Navigazione Marittima) of the Republic of San Marino is known in these regulations as the “Authority”
2. CAR OPS 4 addresses Remotely Piloted Aircraft used in segregated airspace.
3. The following must be noted;
4. The editing practices used in this document are as follows:
  - (a) ‘Shall’ is used to indicate a mandatory requirement.
  - (b) ‘Should’ is used to indicate a recommendation.
  - (c) ‘May’ is used to indicate discretion by the Authority, the industry or the applicant, as appropriate.
5. ‘Will’ indicates a mandatory requirement.

*Note: The use of the male gender implies the female gender and vice versa.*

6. Paragraphs and sub-paragraphs with new, amended and corrected text will be enclosed within square brackets until a subsequent amendment is issued.



*This Page Intentionally Left Blank*



**REVISION RECORD**

| <b>REVISION NO.</b> | <b>EFFECTIVE DATE</b> | <b>ENTERED BY</b><br><i>(Hardcopy only)</i> |
|---------------------|-----------------------|---|
| Initial Issue       | 01 March 2016         | N/A   |
| Rev 01              | 01 June 2016          |   |
| Rev 02              | 01 July 2019          |   |
| Rev 03              | 01 January 2020       |   |
| Rev 04              | 01 January 2021       |   |
| Rev 05              | 01 July 2021          |   |
| Rev 06              | 01 January 2022       |   |
|                     |                       |   |
|                     |                       |   |
|                     |                       |   |
|                     |                       |   |
|                     |                       |   |



**LIST OF EFFECTIVE PAGES**

i 01 Jan 22  
 ii 01 Jan 22  
 iii 01 Jan 22  
 iv 01 Jan 22  
 v 01 Jan 22  
 vi 01 Jan 22

**Subpart A**

A-1 01 Jan 22  
 A-2 01 Jan 22  
 A-3 01 Jan 22  
 A-4 01 Jan 22  
 A-5 01 Jan 22  
 A-6 01 Jan 22

**Subpart B**

B-1 01 Jul 21  
 B-2 01 Jul 21  
 B-3 01 Jul 21  
 B-4 01 Jul 21

**Subpart C**

C-1 01 Jan 20  
 C-2 01 Jan 20  
 C-3 01 Jan 20  
 C-4 01 Jan 20  
 C-5 01 Jan 20  
 C-6 01 Jan 20

**Subpart D**

D-1 01 Mar 16  
 D-2 01 Mar 16  
 D-3 01 Mar 16  
 D-4 01 Mar 16  
 D-5 01 Mar 16  
 D-6 01 Mar 16

**Subpart E**

E-1 01 Mar 16  
 E-2 01 Mar 16

**Subpart F**

F-1 01 Mar 16  
 F-2 01 Mar 16

**Subpart G**

G-1 01 Jun 16  
 G-2 01 Jun 16

**Subpart H**

H-1 01 Jul 21  
 H-2 01 Jul 21  
 H-3 01 Jul 21  
 H-4 01 Jul 21

**Subpart I**

I-1 01 Jul 21  
 I-2 01 Jul 21  
 I-3 01 Jul 21  
 I-4 01 Jul 21

**Subpart J**

J-1 01 Mar 16  
 J-2 01 Mar 16

- End -



## CONTENTS

### SUBPART A APPLICABILITY

|           |  |     |
|-----------|--|-----|
| OPS 4.001 | Applicability .....                                    | A-1 |
| OPS 4.002 | Categorisation of RPAS .....                           | A-1 |
| OPS 4.003 | Exemptions .....                                       | A-1 |
| OPS 4.004 | Compliance with laws, regulations and procedures ..... | A-2 |
| OPS 4.005 | Dangerous goods .....                                  | A-2 |
| OPS 4.006 | Use of alcohol and psychoactive substances .....       | A-2 |
| OPS 4.007 | Definitions .....                                      | A-2 |

|                            |   |     |
|----------------------------|---|-----|
| Appendix 1<br>to OPS 4.004 | Request for authorisation to fly over another State ..... | A-5 |
|----------------------------|---|-----|

### SUBPART B OPERATOR CERTIFICATION AND SUPERVISION

|           |  |     |
|-----------|--|-----|
| OPS 4.101 | Applicability .....                        | B-1 |
| OPS 4.102 | General Rules for RPAS Certification ..... | B-1 |
| OPS 4.103 | Application Requirements .....             | B-2 |
| OPS 4.104 | Recognition of ROC .....                   | B-2 |
| OPS 4.105 | Contents of the ROC .....                  | B-2 |

### SUBPART C OPERATIONAL MANAGEMENT

|           |   |     |
|-----------|---|-----|
| OPS 4.201 | Responsibilities of the RPA Operator .....                | C-1 |
| OPS 4.202 | Staff Positions and Requirements .....                    | C-1 |
| OPS 4.203 | Competence of Personnel .....                             | C-2 |
| OPS 4.204 | Responsibilities of the Remote Pilot-in-Command .....     | C-2 |
| OPS 4.205 | Transfer of Remote PIC Responsibility during Flight ..... | C-3 |
| OPS 4.206 | Remote Flight Crew Member Training Programmes .....       | C-3 |
| OPS 4.207 | Fatigue Management .....                                  | C-4 |
| OPS 4.208 | Support Personnel .....                                   | C-4 |
| OPS 4.209 | Safety Management System .....                            | C-4 |

### SUBPART D FLIGHT OPERATIONS

|           |   |     |
|-----------|---|-----|
| OPS 4.301 | Applicability .....                               | D-1 |
| OPS 4.302 | Operating Facilities .....                        | D-1 |
| OPS 4.303 | Operational Criteria .....                        | D-1 |
| OPS 4.304 | Flight Preparation .....                          | D-1 |
| OPS 4.305 | In-flight Procedures .....                        | D-3 |
| OPS 4.306 | Duties of remote Pilot-in-Command .....           | D-4 |
| OPS 4.307 | Flight operations officer/Flight dispatcher ..... | D-5 |
| OPS 4.308 | In-flight Fuel Management .....                   | D-5 |

### SUBPART E AIRCRAFT PERFORMANCE OPERATING LIMITATIONS

|           |                     |     |
|-----------|---------------------|-----|
| OPS 4.401 | Applicability ..... | E-1 |
| OPS 4.402 | General .....       | E-1 |



**SUBPART F AIRCRAFT INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS**

|           |  |     |
|-----------|--|-----|
| OPS 4.501 | Applicability .....                                  | F-1 |
| OPS 4.502 | General .....  | F-1 |
| OPS 4.503 | Instruments, equipment and documentation - RPS ..... | F-1 |
| OPS 4.504 | Noise Certification .....                            | F-1 |
| OPS 4.505 | Pressure-altitude Reporting Transponder .....        | F-1 |

**SUBPART G AIRCRAFT COMMUNICATION AND NAVIGATION EQUIPMENT**

|           |                                    |     |
|-----------|------------------------------------|-----|
| OPS 4.601 | General .....                      | G-1 |
| OPS 4.602 | Communication equipment .....      | G-1 |
| OPS 4.603 | Navigation equipment .....         | G-1 |
| OPS 4.604 | Performance Based Navigation ..... | G-1 |
| OPS 4.605 | Command & Control (C2).....        | G-2 |

**SUBPART H AIRCRAFT MAINTENANCE**

|           |  |     |
|-----------|--|-----|
| OPS 4.701 | Applicability .....                          | H-1 |
| OPS 4.702 | Operator’s Maintenance Responsibilities..... | H-1 |
| OPS 4.704 | Maintenance Programme.....                   | H-1 |
| OPS 4.705 | Maintenance Records .....                    | H-2 |
| OPS 4.706 | Modifications and Repairs.....               | H-2 |
| OPS 4.707 | Maintenance Release .....                    | H-3 |
| OPS 4.708 | Technical Log.....                           | H-3 |
| OPS 4.709 | Continuing Airworthiness Information .....   | H-4 |

**SUBPART I MANUALS LOGS & RECORDS**

|           |   |     |
|-----------|---|-----|
| OPS 4.801 | Applicability .....   | I-1 |
| OPS 4.802 | Flight manual.....  | I-1 |
| OPS 4.803 | Operations Manual .....   | I-1 |
| OPS 4.804 | Journey Log Book .....  | I-1 |
| OPS 4.806 | Minimum Equipment List .....  | I-3 |
| OPS 4.807 | Documents held by the RPAS Operator.....                                  | I-3 |
| OPS 4.808 | Documents held at the RPS(s).....   | I-3 |
| OPS 4.809 | Documents carried on board the RPA .....                                  | I-4 |
| OPS 4.810 | Documents at or in close proximity of the RPA Ground Operations Area..... | I-5 |
| OPS 4.811 | Record Keeping.....   | I-5 |

**SUBPART J SECURITY**

|           |  |     |
|-----------|--|-----|
| OPS 4.901 | Security of Aircraft and Station.....        | J-1 |
| OPS 4.902 | Reporting Acts of Unlawful Interference..... | J-1 |



**SUBPART A****GENERAL****OPS 4.001 Applicability**

- (a) CAR OPS 4 applies to remotely piloted aircraft (RPA) operated in accordance with a RPAS operator certificate (ROC) issued by the Authority.
- (b) Model aircraft operated in the territory of San Marino are not classified as remote piloted aircraft for the purpose of these regulations provided the aircraft;
  - (1) weighs less than 25 kg; and
  - (2) operates below 120 metres (400 ft) above ground level; and
  - (3) operates outside 1000 metres of an operating airfield; and
  - (4) operates to a maximum range of 500 metres with visual line of sight (VLOS); and
  - (5) would not jeopardise the safety of people on the ground.
- (c) Model aircraft unable to comply with (b) above, shall be required to be authorised under Subpart B of these regulations.

**OPS 4.002 Categorisation of RPAS**

RPA shall be categorised as follows;

- (a) MTOM
  - (1) 25 kg or less;
  - (2) 25 – 150 kg;
  - (3) Greater than 150 kg.
- (b) Operation
  - (1) “Open” for (a)(1) operations in segregated San Marino airspace only;
  - (2) “Specific” for (a)(1) and (a)(2) operations in segregated San Marino airspace only;
  - (3) “Certified” for (a)(3) operations in segregated airspace worldwide.

**OPS 4.003 Exemptions**

- (a) The Authority may grant an exemption from the provisions of civil aviation regulations when satisfied that there is a need and subject to compliance with any supplementary condition the Authority considers necessary in order to ensure an acceptable level of safety in the particular case.
- (b) Exemptions shall be entered on the operations specifications of the ROC.

**OPS 4.004 Compliance with laws, regulations and procedures**

(See Appendix 1 to OPS 4.004)

- (a) No remotely piloted aircraft shall be flown over the territory of San Marino without special authorisation by the Authority and in accordance with the terms of such authorisation.
- (b) No remotely piloted aircraft holding a San Marino Certificate of Registration shall be flown over the territory of an ICAO Contracting State without special authorisation by that State and in accordance with the terms of such authorisation.
- (c) The remote pilot-in-command shall comply with the laws, regulations and procedures of the State in which operations are conducted.
- (d) The request for authorisation referred to in (a) above shall be made to the appropriate authorities of the State(s) in which the RPA will operate in accordance to Appendix 1 to OPS 4.004 not less than seven days before the date of the intended flight unless otherwise specified by the State.

**OPS 4.005 Dangerous goods**

- (a) Dangerous goods shall only be transported by the operator approved by the Authority except when they are not subject to the Technical Instructions in accordance with Part 1 of those Instructions.
- (b) The remote pilot-in-command shall report without delay to the Authority and the appropriate authority of the State of occurrence in the event of any dangerous goods accidents or incidents.

**OPS 4.006 Use of alcohol and psychoactive substances**

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

*Note: Refer also to CAR OPS 0.040 on psychoactive substances.*

**OPS 4.007 Definitions**

In addition to the definitions stated in CAR DEF, the following definitions apply to the use of remotely piloted aircraft.

***Autonomous aircraft.*** An unmanned aircraft that does not allow pilot intervention in the management of the flight.

***Autonomous operation.*** An operation during which a remotely piloted aircraft is operating without pilot intervention in the management of the flight.



### ***Category of operation***

- (a) 'Open' category (low risk): Authorisation required by the Authority. Safety is ensured through compliance with operational limitations, mass limitations as a proxy of energy, product safety requirements and a minimum set of operational rules.
- (b) 'Specific' category (medium risk): Authorisation by the Authority, following a risk assessment performed by the operator. A manual of operations lists the risk mitigation measures.
- (c) 'Certified' category (higher risk): Authorisation required by the Authority. Requirements comparable to those for manned aviation. Oversight by the Authority (issue of licences and approval of maintenance, operations, training, ATM/ANS and aerodromes organisations, design and approval of foreign organisations).

***Command and control (C2) link.*** The data link between the remotely piloted aircraft and the remote pilot station for the purposes of managing the flight.

*[Note: Command and control (C2) link may also be referred to as C2 Link in these regulations.]*

***Conspicuity.*** Quality of an aircraft (e.g. lighting or paint scheme), allowing it to be easily seen or noticed by others (e.g. by pilots, ATCOs, aerodrome personnel).

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

***Flight duty period.*** A period which commences when a remote crew member is required to report for duty that includes a flight or a series of flights and which finishes when the remote crew member's duty ends.

***Flight recorder.*** Any type of recorder installed in the aircraft for the purpose of complementing accident/incident investigation. In the case of remotely piloted aircraft, it also includes any type of recorder installed in a remote pilot station for the purpose of complementing accident/incident investigation.

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

***[Lost C2 Link decision time.*** The maximum length of time permitted before declaring a lost C2 Link state during which the C2 Link performance is not sufficient to allow the remote pilot to actively manage the flight in a safe and timely manner appropriate to the airspace and operational conditions.

***Lost C2 Link state.*** The state of the RPAS in which the C2 Link performance has degraded, as a result of a C2 Link interruption that is longer than the lost C2 Link decision time, to a point where it is not sufficient to allow the remote pilot to actively manage the flight in a safe and timely manner.]

***Model aircraft.*** An aircraft, the total weight of which does not exceed 25 kg (55 lbs) that is mechanically driven or launched into flight for recreational purposes and that is not designed to carry persons or other living creatures.

***Operator (Remote Piloted Aircraft System)*** means the means a person, organisation or enterprise engaged in or offering to engage in a remote piloted aircraft operation.

*Note: In the context of remotely piloted aircraft, an aircraft operation includes the remotely piloted aircraft system (RPAS).*



**Operations specifications.** The authorisations, conditions and limitations associated with the RPAS operator certificate and subject to the conditions in the operations manual.

**Remote crew member.** A crew member charged with duties essential to the operation of a remotely piloted aircraft system during a flight duty period.

**Remote cruise relief pilot.** A remote flight crew member who is assigned to perform remote pilot tasks during cruise flight, to allow the remote pilot-in-command to obtain planned rest.

**Remote flight crew member.** A licensed crew member charged with duties essential to the operation of a remotely piloted aircraft system during a flight duty period.

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

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

**Remote pilot station.** The component of the remotely piloted aircraft system containing the equipment used to pilot the remotely piloted aircraft.

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

*Note: Unless exempted, an RPA is subject to other CARs where “aircraft” is stated.*

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

**Remotely piloted aircraft system operating manual.** A manual, acceptable to the State of the Operator, containing normal, abnormal and emergency procedures, checklists, limitations, performance information, details of the RPA and each associated RPS model and other material relevant to the operation of the remotely piloted aircraft system.

*Note: The remotely piloted aircraft system operating manual is part of the required operations manual.*

**Rest period.** A continuous and defined period of time, subsequent to and/or prior to duty, during which remote crew members are free of all duties.

**RPA observer.** A trained and competent person designated by the operator who, by visual observation of the remotely piloted aircraft, assists the remote pilot in the safe conduct of the flight.

**RPAS operator certificate (ROC).** A certificate authorising an operator to carry out specified RPAS operations.

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

**Visual line-of-sight (VLOS) operation.** An operation in which the remote pilot or RPA observer maintains direct unaided visual contact with the remotely piloted aircraft.



**Appendix 1 to OPS 4.004**  
**Request for Authorisation to Fly over Another State**  
**(See OPS 4.004)**

1. Unless otherwise specified by the State(s), the request for authorisation shall include the following:
  - (a) name and contact information of the operator;
  - (b) RPA characteristics (type of aircraft, maximum certificated take-off mass, number of engines, wing span);
  - (c) copy of certificate of registration;
  - (d) aircraft identification to be used in radiotelephony, if applicable;
  - (e) copy of the certificate of airworthiness;
  - (f) copy of the RPAS operator certificate;
  - (g) copy of the remote pilot(s) licence;
  - (h) copy of the aircraft radio station licence, if applicable;
  - (i) description of the intended operation (to include 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/frequency of flight;
  - (j) take-off and landing requirements;
  - (k) RPA performance characteristics, including:
    - (1) operating speeds;
    - (2) typical and maximum climb rates;
    - (3) typical and maximum descent rates;
    - (4) typical and maximum turn rates;
    - (5) other relevant performance data (e.g. limitations regarding wind, icing, precipitation); and
    - (6) maximum aircraft endurance;
  - (l) communications, navigation and surveillance capabilities:
    - (1) aeronautical safety communications frequencies and equipment, including:
      - (i) ATC communications, including any alternate means of communication;



- (ii) [C2 Link(s) including performance parameters and designated operational coverage area;]
  - (iii) communications between remote pilot and RPA observer, if applicable;
- (2) navigation equipment; and
  - (3) surveillance equipment (e.g. SSR transponder, ADS-B out);
- (m) detect and avoid capabilities;
  - (n) emergency procedures, including:
    - (1) communications failure with ATC;
    - (2) [C2 Link(s) failure; and]
    - (3) remote pilot/RPA observer communications failure, if applicable;
  - (o) number and location of remote pilot stations as well as handover procedures between remote pilot stations, if applicable;
  - (p) document attesting noise certification that is consistent with the provisions of ICAO Annex 16, Volume 1, if applicable;
  - (q) confirmation of compliance with national security standards in a manner that is consistent with the provisions of ICAO Annex 17, to include security measures relevant to the RPAS operation, as appropriate;
  - (r) payload information/description; and
  - (s) proof of adequate insurance/liability coverage.
- 2. When certificates or other documents identified in paragraph 1. above are issued in a language other than English, an English translation shall be included.
  - 3. After authorisation has been obtained from the appropriate State(s), air traffic services notification and coordination shall be completed in accordance with the requirements of the State(s).

*Note: A request for authorisation does not satisfy the requirement to file a flight plan with the air traffic services units.*

**SUBPART B****OPERATOR CERTIFICATION AND SUPERVISION****OPS 4.101 Applicability**

This Subpart applies to all RPA operations as defined in Subpart A

**OPS 4.102 General Rules for RPAS Operator Certification**

- (a) The Authority shall establish a system for both the certification and the continued surveillance of the operator to ensure that the required standards of operations established in these regulations are maintained.

*Note: The scope of certification and supervision includes RPA operations and use of one or more RPS located at one or more sites.*

- (b) An operator shall not operate a remotely piloted aircraft otherwise than under, and in accordance with, the terms and conditions of a RPAS Operator Certificate (ROC).

*Note: Unless otherwise specified, reference to an RPAS Operator Certificate includes the operations specifications associated with the RPAS Operator Certificate.*

- (c) An applicant for an ROC, or variation of an ROC, shall allow the Authority to examine all safety aspects of the proposed operation.
- (d) An applicant for an ROC, and for the continued validity of a ROC, must satisfy the Authority that he/she is able to conduct safe operations by the RPAS operator demonstrating an adequate organisation, method of control and supervision of flight operations, training programme as well as ground handling and maintenance arrangements consistent with the nature and extent of the operations specified and commensurate with the size, structure and complexity of the organisation.
- (e) An operator shall grant the Authority access to his/her organisation, remotely piloted aircraft, remote pilot station, and shall ensure that, with respect to maintenance, access is granted to any associated maintenance organisation.
- (f) The operator must have nominated an Accountable Manager acceptable to the Authority who has corporate authority for ensuring that all operations and maintenance activities can be financed and carried out to the standard required by the Authority.
- (g) The operator must have nominated persons, accountable to the Accountable Manager, with the responsibility for ensuring the operator remains in compliance with San Marino regulations.
- (h) The operator of RPA greater than 150 kg must establish and maintain a Safety Management System acceptable to the Authority.
- (i) The operator of RPA of 150 kg or less must conduct a risk assessment of the proposed operation.
- (j) An operator will not be granted a ROC, or a variation to a ROC, and that ROC will not remain valid unless the Authority is satisfied that the operator can comply with these regulations.

**OPS 4.103 Application Requirements**

- (a) Unless otherwise agreed, the application for an initial issue, variation and renewal of a ROC must be submitted at least;
- (1) RPA of 25 kg and below - 7 days before the date of intended operation; or
  - (2) RPA greater than 25 kg - 60 days before the date of intended operation
- (b) An operator shall ensure that the following information is included in the initial application for a ROC and, when applicable, any variation or renewal applied for:
- (1) the official name and business name, address and mailing address of the applicant;
  - (2) a description of the proposed operation including area of operation;
  - (3) a description of the management organisation, including the name of the Accountable Manager and the names of nominated personnel responsible for flight operations, the maintenance system, crew training and ground operations together with their qualifications and experience;
  - (6) Operations Manual for specific or certified categories;
  - (6) Safety Management System Manual for certified category or risk assessment for other categories;
  - (8) Technical Log for RPAs with a MTOM greater than 150 kg, if applicable;
  - (9) Minimum Equipment List, if applicable;
  - (10) Maintenance Programme for RPAs with a MTOM greater than 25 kg; and
  - (11) Contractual agreements with any service providers involved in the operation.
- (b) The operator must notify the Authority as soon as practicable of any changes to the above information submitted.

**OPS 4.104 Recognition of ROC**

A ROC issued by an ICAO Contracting State shall be recognised, provided that the requirements under which the certificate was issued are consistent with these regulations.

**OPS 4.105 Contents of the ROC**

- (a) The RPAS operator certificate and its associated operations specifications shall define the operations for which an operator is authorised.
- (b) The ROC shall contain at least the following:
- (1) the State of the Operator and issuing authority;
  - (2) the ROC number and its expiration date;





- (3) the RPAS operator name, trading name (if different) and address of the principle place of business;
  - (4) the date of issue and the name, signature and title of the authority representative;
  - (5) the location where the contact details of operational management can be found;
- (c) The operations specifications associated with the RPAS operator certificate shall contain at least the following information;
- (1) the description of the types of operations authorised;
  - (2) the type(s) or model(s) of RPA authorised for use;
  - (3) the models and locations of RPS authorised for use;
  - (4) the authorised base of operations, segregated areas of operation, or segregated routes;
  - (5) limitations, including height (AGL) restrictions and obstacle proximity; and
  - (6) exemptions.



*This Page Intentionally Left Blank*



## SUBPART C

### OPERATIONAL MANAGEMENT

#### OPS 4.201 Responsibilities of the RPAS Operator

- (a) The RPAS operator is responsible for the safe conduct of all operations.
- (b) The RPAS operator shall comply with these regulations regarding its operation.
- (c) The RPAS operator shall be responsible for contracting services from providers (e.g. communications service providers), as necessary, to carry out its operations.
- (d) An RPAS operator shall ensure that all employees are familiar with the laws, regulations and procedures applicable to the performance of their duties, prescribed for the areas to be traversed, the aerodromes to be used and the air navigation facilities relating thereto.
- (e) RPAS operator procedures must not allow remote flight crew members to perform any activities during critical phases of flight other than those required for the safe operation of the RPAS.
- (f) The RPAS operator, or a designated representative, must have responsibility for operational control.
- (g) The RPAS operator shall designate and authorise one remote pilot to act as remote PIC.

*Note: In some cases, such as ultra-long duration flights where it is impractical for one person to be remote PIC continuously, the RPAS operator, if approved by the Authority, may establish appropriate policies and procedures in the Operations Manual for the transfer of remote PIC responsibilities. In these cases, only one remote pilot may hold remote PIC responsibility at any given time.*

- (h) The RPAS operator shall designate other members of the remote flight crew as necessary.
- (i) The RPAS operator shall ensure operational control is delegated to the remote pilot-in-command, or to a flight operations officer/flight dispatcher if an operator's approved method of control and supervision of flight operations requires the use of flight operations officer/flight dispatcher personnel.
- (j) When contracting or purchasing services as part of its activity, the RPAS operator shall ensure that such services or products conform to these regulations.
- (k) The RPAS operator may procure Command and Control links from a communications service provider, subject to approval of the Authority.

#### OPS 4.202 Staff positions and requirements

The RPAS operator shall:

- (a) appoint an Accountable Manager, who has the authority for ensuring that all activities can be financed and carried out in accordance with the applicable regulations and requirements.



- (b) nominate a person or group of persons with the responsibility for ensuring that the operator remains in compliance with the applicable regulations. Such person(s) shall be ultimately responsible to the accountable manager;
- (c) have sufficient qualified and competent personnel for the planned tasks and activities to be performed in accordance with the applicable requirements;
- (d) maintain appropriate experience, qualification and training records to show compliance with (c); and
- (e) ensure that all personnel are familiar with the rules and procedures applicable to the performance of their duties.

#### **OPS 4.203 Competence of personnel**

- (a) A RPAS operator shall ensure its personnel are properly qualified and competent to perform their allocated tasks and discharge their responsibilities. Such personnel should have the necessary set of competencies and the related knowledge, skills and attitudes, such as:
  - (1) theoretical knowledge;
  - (2) practical skill; and
  - (3) attitudes commensurate with the scope of their duties in relation to RPAS operations.
- (b) A RPAS operator shall;
  - (1) ensure that each remote flight crew member assigned to duty on a RPA with MTOM greater than 25 kg holds a valid remote pilot licence issued, or rendered valid by the State of Registry;
  - (2) ensure that remote flight crew members are properly rated; and
  - (3) be satisfied that remote flight crew members are competent to carry out assigned duties.
- (c) An RPAS operator shall establish initial and recurrent training to ensure continuing competence of its personnel. These programmes should be addressed to all personnel assigned to, or directly involved in, ground and flight operations and ensure that all personnel have demonstrated their competence in their particular duties and are aware of their responsibilities and the relationship of such duties to the operation as a whole.

#### **OPS 4.204 Responsibilities of the Remote Pilot-in-command**

- (a) The remote pilot-in-command shall have responsibility over one aircraft only at any given time for;
  - (1) operational control; and
  - (2) the operation of the aircraft in compliance with CAR OPS 0 (Rules of the Air); and
  - (3) the disposition of the aircraft while in command; and



- (4) the operation of the aircraft in such a manner as to minimize hazards to persons, property or other aircraft; and
  - (5) the safe and effective handover of piloting control from one remote pilot or remote station to another.
- (b) If an emergency situation which endangers the safety or security of the aircraft or persons necessitates the taking of action which involves a violation of local regulations or procedures, the remote pilot-in-command shall notify the appropriate local authority without delay. If required by the State in which the incident occurs, the remote pilot-in-command shall submit a report on any such violation to the appropriate authority of such State; in that event, the remote pilot-in-command shall also submit a copy of it to the Authority. Such reports shall be submitted as soon as possible and normally within 3 days.
- (c) The remote pilot-in-command shall hold a valid remote pilot licence commensurate with the flight rules and appropriate to the category of aircraft and the duties to be performed by that person.
- (d) The licence in (c) shall have been issued, or rendered valid by the Authority as the State of Registry of the remotely piloted aircraft.
- (e) When operating a RPA greater than 25 kg a remote pilot shall;
- (1) hold a current medical class II assessment;
  - (2) have in his/her possession a valid remote pilot licence issued, or rendered valid by the Authority;
  - (3) meet the requirements for recent experience established by the licensing authority.

#### **OPS 4.205 Transfer of remote PIC responsibility during flight**

The procedures in the Operations Manual for any transfer of remote PIC responsibilities, handovers between remote pilots (including internal and external pilots), whether at collocated or widely spaced RPS, shall identify whether or not the remote PIC responsibility is transferred coincident with the handover of the RPA.

#### **OPS 4.206 Remote flight crew member training programmes**

- (a) An RPAS operator shall establish and maintain an RPAS training programme, approved by the Authority, which ensures that all remote flight crew members acquire and maintain the competencies to perform their assigned duties in terms of knowledge, skills and attitude. The training programme shall consist of training in the RPS model(s) from which the remote pilot will fly the specific RPA type(s) and should include:
- (1) knowledge and skills related to the RPA operational procedures for the intended area of operation;
  - (2) remote flight crew coordination and handover procedures, if applicable;
  - (3) abnormal and emergency situations or procedures (e.g. loss of C2 link, flight termination);
  - (4) methods to maintain situational awareness of the RPA's environment; and



- (5) human performance aspects related to crew resource management, threat and error management (TEM) and automation or human-machine interface (HMI) which are unique to unmanned aviation.
- (b) Training shall be given on a yearly recurrent basis and must include an assessment of competence.

#### **OPS 4.207 Fatigue management**

RPAS operators whose organisations include operation shifts and crew scheduling schemes shall establish policies and procedures for flight and duty time, operation shift schedules and crew rest periods based on scientific principles. Such policies and procedures shall be documented in the operations manual and may include:

- (a) training and education on personal and operational fatigue-related risks and countermeasures;
- (b) implementation of mitigations where necessary and monitoring of their effectiveness; and
- (c) continued review of fatigue-related risks through safety management processes.

#### **OPS 4.208 Support personnel**

- (a) The RPAS operator, if utilising dispatch services, shall ensure that the training and competency of the flight dispatchers is commensurate with the duties they are assigned.
- (b) The RPAS operator shall be responsible for designating any other support personnel necessary for the safe conduct of its operation.

*Note: This may include RPA observers, ground station technicians and other ground support crew for launch and recovery, etc.*

- (c) The RPAS operator is responsible for ensuring that the training and competency of these individuals is commensurate with the duties they are assigned.

*Note: A person should not act as an RPA observer unless that person has undergone a competency-based training on visual observer duties concerning RPA VLOS operations.*

#### **OPS 4.209 Safety Management System (SMS)**

- (a) For a RPA greater than 150 kg a RPAS operator shall implement a safety management system acceptable to the Authority, which is commensurate with the size of the service provider and the complexity of its aviation products or services that as a minimum:
  - (1) identifies safety hazards;
  - (2) ensures that remedial action necessary to maintain an acceptable level of safety is implemented;
  - (3) provides for continuous monitoring and regular assessment of the safety level achieved;
  - (4) aims to make continuous improvement to the overall level of safety; and
  - (5) coordinates with the emergency response plans of those organisations with which it would interface.



- (b) A safety management system shall clearly define lines of safety accountability throughout the operator's organisation, including a direct accountability for safety on the part of senior management.
- (c) The system shall include an occurrence reporting scheme to enable the collation and assessment of relevant incident and accident reports in order to identify adverse trends or to address deficiencies in the interests of flight safety. The scheme shall protect the identity of the reporter and include the possibility that reports may be submitted anonymously.
- (d) The system shall be documented in a manual acceptable to the Authority.
- (e) For a RPA 150 kg or less a RPAS operator shall conduct a safety risk assessment using Safety Management System (SMS) principles.



*This Page Intentionally Left Blank*



**SUBPART D****FLIGHT OPERATIONS****OPS 4.301 Applicability**

This Subpart applies only to operations using RPA with a MTOM greater than 150 kg.

**OPS 4.302 Operating facilities**

- (a) The RPAS operator shall ensure that a flight will not be commenced unless it has been ascertained by every reasonable means available that the ground, space, air and/or water facilities available and directly required on such flight, for the safe operation of the RPAS, are adequate for the type of operation under which the flight is to be conducted and are adequately operated for this purpose.
- (b) An RPAS operator shall ensure that any inadequacy of facilities observed in the course of operations is reported, including to the concerned ATS provider, if applicable, without undue delay.

**OPS 4.303 Operational Criteria****(a) Operating instructions — ground**

- (1) A remotely piloted aircraft shall not be taxied on the movement area of an aerodrome unless the person at the controls is an appropriately qualified remote flight crew member; and
- (2) is fully competent to taxi the aircraft;
- (3) is qualified to use the radio if radio communications are required; and
- (4) has received instruction from a competent person in respect of aerodrome layout, and where appropriate, information on routes, signs, marking, lights, ATC signals and instructions, phraseology and procedures, and is able to conform to the operational standards required for safe aircraft movement at the aerodrome.

**(b) Aerodrome operating minima**

- (1) Instrument approach operations shall be classified based on the designed lowest operating minima below which an approach operation shall only be continued with the required visual reference as stated in the ROC operations specifications
- (2) The remote pilot-in-command shall not operate to or from an aerodrome using operating minima lower than those which may be established for that aerodrome by the State in which it is located, except with the specific approval of that State.

**OPS 4.304 Flight preparation****(a) Remote Pilot-in-Command Responsibilities**

A flight shall not be commenced until the remote pilot-in-command is satisfied that:

- (1) the aircraft is airworthy, duly registered and that appropriate certificates are valid;



- (2) the instruments and equipment installed in the aircraft are appropriate, taking into account the expected flight conditions;
- (3) any necessary maintenance has been performed in accordance with Subpart G of this Part;
- (4) the mass of the aircraft and centre of gravity location are such that the flight can be conducted safely, taking into account the flight conditions expected;
- (5) any load carried is properly distributed and safely secured; and
- (6) the aircraft operating limitations, contained in the flight manual, or its equivalent, will not be exceeded.

*Note: The remote pilot-in-command should have sufficient information on climb performance with all engines operating to enable determination of the climb gradient that can be achieved during the departure phase for the existing take-off conditions and intended take-off technique.*

(b) **Flight planning**

Before commencing a flight the remote pilot-in-command shall be familiar with all available meteorological information appropriate to the intended flight. Preparation for a flight away from the vicinity of the place of departure, and for every flight under the instrument flight rules, shall include:

- (1) a study of available current weather reports and forecasts; and
- (2) the planning of an alternative course of action to provide for the eventuality that the flight cannot be completed as planned, because of weather conditions.

(c) **Meteorological**

- (1) A flight shall not be commenced unless current meteorological weather or reports, or a combination of current reports and forecasts, indicate that the meteorological conditions along the route or that part of the route to be flown at the appropriate time, be such as to enable compliance with the visual flight rules or instrument flight rules, as applicable.
- (2) A flight to be operated in known or expected icing conditions shall not be commenced unless the aircraft is certificated and equipped to cope with such conditions.
- (3) A flight to be planned or expected to operate in suspected or known ground icing conditions shall not take off unless the aircraft has been inspected for icing and, if necessary, has been given appropriate de-icing/anti-icing treatment. Accumulation of ice or other naturally occurring contaminants shall be removed so that the aircraft is kept in an airworthy condition prior to take-off.

(e) **Destination alternate aerodromes**

For a flight to be conducted in accordance with the instrument flight rules, at least one destination alternate aerodrome shall be selected and specified in the flight plans, unless:



- (1) the duration of the flight from the departure aerodrome, or from the point of in-flight re-planning, to the destination aerodrome is such that, taking into account all meteorological conditions and operational information relevant to the flight, at the estimated time of use, a reasonable certainty exists that;
  - (i) the approach and landing may be made under visual meteorological conditions; or
  - (ii) separate runways are usable at the estimated time of use of the destination aerodrome with at least one runway having an operational instrument approach procedure;
- (2) the aerodrome of intended landing is isolated; and
  - (i) a standard instrument approach procedure is prescribed for the aerodrome of intended landing;
  - (ii) a point of no return has been determined; and
  - (iii) a flight shall not be continued past the point of no return unless available current meteorological information indicates that the following meteorological conditions will exist at the estimated time of use:
    - (A) a cloud base of at least 300 m (1 000 ft) above the minimum associated with the instrument approach procedure; and
    - (B) visibility of at least 5.5 km (3NM) or of 4 km (2NM) more than the minimum associated with the instrument approach procedure.

*Note: Separate runways are two or more runways at the same aerodrome configured such that if one runway is closed, operations to the other runway(s) can be conducted.*

**(g) Fuel and oil requirements**

A flight shall not be commenced unless, taking into account both the meteorological conditions and any delays that are expected in flight, the remotely piloted aircraft carries sufficient fuel and oil to ensure that it can safely complete the flight with a final reserve fuel as defined in the Operations Manual;

*Note: Nothing shall preclude amendment of a flight plan in-flight, in order to re-plan the flight to another destination, provided that all requirements can be complied with from the point where the flight is re-planned.*

**OPS 4.305 In-flight procedures**

**(a) Aerodrome operating minima**

- (1) A flight shall not be continued towards the aerodrome of intended landing, unless the latest available information indicates that at the expected time of arrival, a landing can be effected at that aerodrome or at least one destination alternate aerodrome, in compliance with the operating minima established.



- (2) An instrument approach shall not be continued below 300 m (1 000 ft) above the aerodrome elevation or into the final approach segment unless the reported visibility or controlling RVR is above the aerodrome operating minimum.
- (3) If, after entering the final approach segment, or after descending below 300 m (1 000 ft) above the aerodrome elevation, the reported visibility or the touchdown RVR falls below the specified minimum, the approach may be continued to DA/H or MDA/H. In any case, an aircraft shall not continue its approach-to-land beyond a point at which the limits of the aerodrome operating minima would be infringed.

(b) **Weather reporting by remote pilots**

When weather conditions likely to affect the safety of other aircraft are encountered, they shall be reported as soon as possible.

(c) **Hazardous flight conditions**

Hazardous flight conditions encountered, other than those associated with meteorological conditions, shall be reported to the appropriate aeronautical station as soon as possible. The reports so rendered should give such details as may be pertinent to the safety of other aircraft.

(d) **Remote flight crew members at duty stations**

- (1) Take-off and landing.

All remote flight crew members shall be at their stations as stated in the Operations Manual.

- (2) En route.

All remote flight crew members shall remain at their stations except when their absence is necessary for the performance of duties in connection with the operation of the aircraft or for physiological needs.

(e) **Instrument approach procedures**

- (1) One or more instrument approach procedures designed to support instrument approach operations shall be approved and promulgated by the State in which the aerodrome is located to serve each instrument runway or aerodrome utilized for instrument flight operations.
- (2) Aircraft operated in accordance with the instrument flight rules shall comply with the instrument approach procedures approved by the State in which the aerodrome is located.

**OPS 4.306 Duties of remote pilot-in-command**

- (a) The remote pilot-in-command shall be responsible for the operation, safety and security of the aircraft from the time the propulsion unit is started until the propulsion unit is shut down and any rotor/propeller blade has stopped.
- (b) Where an external pilot is utilised for taxi and take-off, he/she shall be responsible for the operation and safety of the aircraft whilst under his/her direct control until handed back to the pilot-in-command under an approved procedure in the Operations Manual.



- (c) The remote pilot-in-command shall be responsible for ensuring that a flight will not be commenced if any remote flight crew member is incapacitated from performing duties by any cause such as injury, sickness, fatigue or the effects of any psychoactive substance;
- (d) The remote pilot-in-command shall be responsible for notifying the nearest appropriate authority by the quickest available means of any accident involving the aircraft that results in serious injury or death of any person or substantial damage to the aircraft or property.
- (e) The remote pilot-in-command of an aircraft shall notify the operator and the Authority as soon as practicable, or within 72 hours, of any event which constitutes an occurrence as described below and which comes to that person's attention in the exercise of that person's functions.
  - (1) any incident relating to such an aircraft or any defect in or malfunctioning of such an aircraft or any part or equipment of such an aircraft, being an incident, malfunctioning or defect endangering, or which if not corrected would endanger, such an aircraft or any person; or
  - (2) any defect in or malfunctioning of any facility on the ground used or intended to be used for purposes of or in connection with the operation of such an aircraft, being a defect or malfunctioning endangering, or which if not corrected would endanger, such an aircraft or its occupants; or
  - (3) any incident in flight in which the remote pilot-in-command of an aircraft has reason to believe that the aircraft has been in collision with one or more than one bird.

#### **OPS 4.307 Flight Operations officer/Flight dispatcher**

Should any person be assigned as a flight operations officer/flight dispatcher, an operator shall ensure that person is trained and maintains familiarisation with all features of the operation which are pertinent to their duties, including knowledge and skills related to Human Factors.

#### **OPS 4.308 In-flight Fuel Management**

- (a) The remote pilot-in-command shall continuously ensure that the amount of usable fuel remaining on board to ensure it is not less than the fuel required to proceed to an aerodrome (or helicopter landing site, if applicable) where a safe landing can be made with the planned final reserve fuel remaining.

*Note: The protection of final reserve fuel is intended to ensure safe landing at any aerodrome (or heliport or landing location) when unforeseen occurrences may not permit a safe completion of an operation as originally planned.*

- (b) The use of fuel after flight commencement for purposes other than originally intended during pre-flight planning shall require a re-analysis and, if applicable, adjustment of the planned operation.
- (c) An operator shall establish policies and procedures in the Operations Manual to ensure that fuel checks and fuel management are performed.



*This Page Intentionally Left Blank*

**SUBPART E****AIRCRAFT PERFORMANCE OPERATING LIMITATIONS****OPS 4.401 Applicability**

This Subpart applies only to operations using RPA with a MTOM greater than 150 kg.

**OPS 4.402 General**

- (a) A remotely piloted aircraft shall be operated;
  - (1) in compliance with the terms of its certificate of airworthiness and within the approved operating limitations contained in its flight manual; and
  - (2) within the operating limitations prescribed by the certifying authority and the Authority, as the State of Registry; and
  - (3) if applicable, within the mass limitations imposed by compliance with the applicable noise certification Standards in Annex 16, Volume I, unless otherwise authorised in exceptional circumstances for a certain aerodrome or a runway where there is no noise disturbance problem, by the competent authority of the State in which the aerodrome is situated.
- (b) Placards, listings, instrument markings, or combinations thereof, containing those operating limitations prescribed by the Authority, as the State of Registry, for visual presentation shall be displayed in the remote pilot station.
- (c) The remote pilot-in-command shall determine that aircraft performance will permit the take-off and departure to be carried out safely.
- (d) The remote pilot-in-command shall not operate the aircraft over the congested areas of cities, towns or settlements or over an open-air assembly of persons, if in the event of an engine failure a landing cannot be made without causing undue hazard to persons or property on the ground.



*This Page Intentionally Left Blank*



**SUBPART F****AIRCRAFT INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS****OPS 4.501 Applicability**

This Subpart applies to all RPA regardless of weight category for segregated airspace only.

**OPS 4.502 General**

The instruments, equipment and flight documents prescribed in the following paragraphs shall be installed or carried, as appropriate, according to the aircraft used and to the circumstances under which the flight is to be conducted. The prescribed instruments and equipment, including their installation, shall be acceptable to the Authority.

**OPS 4.503 Instruments, equipment and documentation – Remote pilot station**

- (a) A remote pilot station shall be equipped with instruments which will enable the remote flight crew to control the flight path of the aircraft, carry out any required procedural manoeuvres and observe the operating limitations of the aircraft in the expected operating conditions.
- (b) A remote pilot station shall have access to the following manuals, charts and information:
  - (1) the flight manual or other documents or information concerning any operating limitations prescribed for the aircraft by the Authority;
  - (2) current and suitable charts for the route of the proposed flight and all routes along which it is reasonable to expect that the flight may be diverted;
  - (3) procedures, as prescribed in ICAO Annex 2, for remote pilots-in-command of intercepted aircraft;
  - (4) visual signals for use by intercepting and intercepted aircraft, as contained in CAR OPS 0;
  - (5) the journey log book for the aircraft;

**OPS 4.504 Noise Certification**

All remotely piloted aircraft required to comply with the noise certification standards of ICAO Annex 16 shall carry a document attesting noise certification in the English language.

**OPS 4.505 Pressure-altitude reporting transponder**

Where required by the segregated airspace being flown, remotely piloted aircraft shall be equipped with a secondary surveillance radar (SSR) transponder with all the required capabilities.



*This Page Intentionally Left Blank*



## SUBPART G

### AIRCRAFT COMMUNICATION AND NAVIGATION EQUIPMENT

#### OPS 4.601 Applicability

This Subpart applies only to operations using RPA with a MTOM greater than 25 kg.

#### OPS 4.602 Communication equipment

- (a) Where required by the airspace being flown, RPS shall be equipped with radio communication equipment capable of conducting two-way communication with those aeronautical stations and on those frequencies to meet airspace requirements.
- (b) When more than one communications equipment unit is required, each shall be independent of the other or others to the extent that a failure in any one will not result in failure of any other.
- (c) For flights in defined portions of airspace or on routes where an RCP type has been prescribed, an RPS shall, in addition to the requirements specified above;
  - (1) be provided with communication equipment which will enable it to operate in accordance with the prescribed RCP type(s); and
  - (2) be authorised by the Authority as the State of Registry for such operations.

#### OPS 4.603 Navigation equipment

- (a) The RPS shall be equipped with navigation equipment that will enable an RPA to proceed in accordance with:
  - (1) the ATS flight plan, if applicable; and
  - (2) the applicable airspace requirements.
- (b) RPS shall have sufficient navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment shall allow safe navigation in accordance with (a), or an appropriate contingency action, to be completed safely.
- (c) On flights in which it is intended the RPA to land in IMC, the RPS shall be equipped with navigation equipment capable of providing guidance of the RPA to a point from which a visual landing can be performed. This equipment shall be capable of providing such guidance for each aerodrome at which is intended to land and for any designated alternate aerodromes.

#### OPS 4.604 Performance Based Navigation

For operations where a navigation specification for performance-based navigation has been prescribed, a RPS shall, in addition to the requirements specified in OPS 4.603:

- (a) be provided with navigation equipment which will enable it to operate in accordance with the prescribed navigation specification(s); and
- (b) be authorised by the Authority, as the State of Registry, for such operations.

**OPS 4.605 Command & Control (C2)**

- (a) The Command and Control (C2) link capability shall provide the reliability and integrity levels required for safe flight from take-off through landing under all operating conditions.
- (b) The RPAS shall use data links that can be assured to meet communication transaction time, continuity, availability and integrity levels appropriate for the airspace and operation.



## SUBPART H

### AIRCRAFT MAINTENANCE

*Note: For the purpose of this chapter “aircraft” includes: engines, propellers, power transmissions, rotors, components, accessories, instruments, equipment and other apparatus.*

#### **OPS 4.701 Applicability**

- (a) A RPA with a MTOM of 150 kg and below shall be maintained in an airworthy condition in accordance with the manufacturer’s instructions and a record of all maintenance, modifications and repairs shall be retained for a period of 15 months.

*Note: The remainder of this Subpart is not applicable to a RPA with a MTOM of 150 kg and below.*

- (b) A RPA with a MTOM greater than 150 kg shall be maintained in accordance with this Subpart.

#### **OPS 4.702 Operator’s maintenance responsibilities**

- (a) The RPAS operator shall ensure that;
- (1) the aircraft is maintained in an airworthy condition; and
  - (2) the operational equipment necessary for an intended flight is serviceable; and
  - (3) the certificate of airworthiness of the aircraft remains valid.
- (b) The RPAS operator shall not operate the aircraft unless it is maintained and released to service under a system acceptable to the Authority.
- (c) When the maintenance release is not issued by an approved maintenance organisation, the person signing the maintenance release shall be licensed in accordance with CAR LIC.
- (d) The RPAS operator shall ensure that the maintenance of the RPAS is performed in accordance with a maintenance programme accepted by the Authority as the State of Registry.

#### **OPS 4.704 Maintenance programme**

- (a) An operator shall provide, for the use and guidance of maintenance and operational personnel concerned, a maintenance programme, acceptable to the Authority as the State of Registry, containing the information required by (d) below.
- (b) The design and application of the operator’s maintenance programme shall observe Human Factors principles.
- (c) Copies of all amendments to the maintenance programme shall be furnished promptly to all organisations or persons to whom the maintenance programme has been issued.
- (d) The maintenance programme shall contain, but is not limited to, the following:
- (1) maintenance tasks and the intervals at which these are to be performed based on the RPA, RPS, C2, and other components of the RPAS;



- (2) a continuing structural integrity programme (SIP);
  - (3) procedures for deviating from (a) and (b) above for tasks that do not have mandatory designations from the State of Design; and
  - (4) condition monitoring and reliability programme descriptions for RPA, RPS, launch/recovery equipment and other essential components.
- (e) Maintenance tasks and intervals that have been specified as mandatory in approval of the type design, or changes to the maintenance programme, shall be identified as such.

*Note: The maintenance programme should be based on maintenance programme information made available by the State of Design or by the organization responsible for the type design, and any additional applicable experience.*

#### **OPS 4.705 Maintenance records**

- (a) The RPAS operator must ensure that records associated with the maintenance of all components of the RPAS are received from the maintenance organisation and retained in accordance with the RPAS operator's approved procedures, and applicable State regulations.
- (b) The following maintenance records should be kept by the RPAS operator for a minimum period of 90 days after the unit to which they refer has been permanently withdrawn from service:
  - (1) the total time in service (hours, calendar time and cycles, as appropriate) of the RPAS and all associated life limited components;
  - (2) the current status of compliance with all applicable mandatory continuing airworthiness information;
  - (3) appropriate details of modifications and repairs;
  - (4) the time in RPAS service (hours, calendar time and cycles, as appropriate) since the last overhaul of the aircraft or its components subject to a mandatory overhaul life;
  - (5) the current status of the RPAS's compliance with the maintenance programme; and
  - (6) the detailed maintenance records to show that all requirements for the signing of a maintenance release have been met.
- (c) The detailed maintenance records should be kept for a minimum period of one year after the signing of the maintenance release to show that all requirements for the signing of a maintenance release have been met.
- (d) In cases where the State of Registry and State of the Operator are different, the RPAS operator shall ensure that appropriate records for the RPA, RPS and launch/recovery equipment are available at each relevant location for inspection by the competent authority.

#### **OPS 4.706 Modifications and repairs**



- (a) The RPAS operator shall ensure that all modifications and repairs carried out on the RPAS components are in compliance with airworthiness requirements acceptable to the Authority.
- (b) The RPAS operator shall establish procedures to ensure that the substantiating data supporting compliance with the airworthiness requirements are retained for a minimum period of one year.

#### **OPS 4.707 Maintenance release**

- (a) The RPAS operator must not operate the RPAS unless it is maintained and released to service by a maintenance organisation
- (b) A maintenance release shall be completed and signed, as prescribed by the Authority, as the State of Registry, to certify that the maintenance work performed has been completed satisfactorily and in accordance with data and procedures acceptable to the State of Registry. The conditions for the certification of a release to service are defined in CAR GEN Subpart C.

*Note: In the case of RPAS, this may involve the use of separate log books for each RPA and RPS.*

- (c) A maintenance release shall contain a certification including:
  - (1) basic details of the maintenance performed;
  - (2) the date such maintenance was completed;
  - (3) when applicable, the identity of the approved maintenance organisation; and
  - (4) the identity of the authorised person or persons signing the release.

#### **OPS 4.708 Technical log**

- (a) The operator of a remotely piloted aircraft shall provide a technical log for the RPAS which has provision for recording:
  - (1) the name of the operator; and
  - (2) the registration and designation of the aircraft; and
  - (3) record of RPAS utilisation including total time (daily, hours, cycles sectors) as applicable including those cycles, such as landings, pressure cycles, engine power ranges, which affect the life of an aircraft or component; and
  - (4) records of fuel and oil; and
  - (5) the maintenance status of the RPAS, the identity of the next scheduled inspection, including date/hours/cycles at which any other out of phase maintenance/inspection is required; and
  - (6) any defects or abnormal occurrences found during or following a flight; and details of rectification of defects occurring between scheduled inspections including the certificate of release to service for any rectification; and
  - (7) details of any deferred rectification including any inoperative RPA/RPS equipment with which the aircraft is permitted to be flown under the applicable CARs relating to the



operation of the aircraft; and

- (8) the pre-flight inspection signature; and
  - (9) the time spent in particular engine power ranges where the use of such engine power affects the life of the engine, engine component or engine module; and
  - (10) the number of landings where landings affect the life of an aircraft or aircraft component.
- (b) The content of the Technical Log may be altered from the above if alternative methods of recording this data acceptable to the Authority are used.
- (c) The Technical Log shall be kept in hard copy form or in electronic coded form provided that this form allows for the preservation and retrieval of information.

**OPS 4.709 Continuing airworthiness information**

- (a) The RPAS operator shall ensure that a RPAS is maintained and operated in accordance with applicable regulations of CAR AIR, CAR GEN and CAR 21 and is in a condition for safe operation at any time during its service life.
- (b) The RPAS operator shall ensure that the information resulting from maintenance and operational experience with respect to continuing airworthiness is transmitted to the organisation responsible for type design of that aircraft.



**SUBPART I****MANUALS LOGS & RECORDS****OPS 4.801 Applicability**

This Subpart applies only to operations using RPA with a MTOM greater than 25 kg.

**OPS 4.802 Flight manual**

The aircraft flight manual shall be updated by implementing changes made mandatory by the Authority as the State of Registry.

**OPS 4.803 Operations Manual**

- (a) An RPAS operator shall provide an operations manual, approved by the Authority, for the use and guidance of the RPAS operations personnel concerned.
- (b) The operations manual shall be amended or revised as is necessary to ensure that the information contained therein is kept up to date. All such amendments or revisions shall be issued to all personnel that are required to use this manual.
- (c) The RPAS operator shall provide a copy of the operations manual together with all amendments and/or revisions, for review and acceptance and, where required, approval.
- (d) The RPAS operator shall incorporate in the operations manual such mandatory material as the Authority may require.
- (e) The operations manual, which may be issued in separate parts corresponding to specific aspects of operations, shall be organised in the following structure:
  - (1) general;
  - (2) RPAS operating information for each RPA type operated, which includes each associated RPS model, containing the normal, abnormal and emergency procedures relating to the operation of all the relevant systems associated with the operation of each RPA and of the checklists to be used.
  - (3) areas, routes and aerodromes; and
  - (4) training.

*Note: The design of RPAS operating manuals should observe human performance principles.*

**OPS 4.804 Journey log book**

A journey log book shall be maintained for every aircraft engaged in international air navigation in which shall be entered particulars of the aircraft, its crew and each journey.

The aircraft journey log should contain the following items:

- (a) aircraft nationality and registration;



- (b) date;
- (c) crew member names and duty assignments;
- (d) departure and arrival points and times;
- (e) purpose of flight;
- (f) observations regarding the flight; and
- (g) signature of the remote pilot-in-command.

#### **OPS 4.806 Minimum Equipment List**

Where a master minimum equipment list (MMEL) is established, the operator shall include in the operations manual a minimum equipment list (MEL) approved by the Authority, as the State of Registry of the aircraft, which will enable the remote pilot-in-command to determine whether a flight may be commenced or continued from any intermediate stop should any RPAS instrument, equipment or systems become inoperative.

#### **OPS 4.807 Documents held by the RPAS operator**

The following documents, manuals and information specific to the RPAS operator, shall be available, in the authentic form, at the location of the RPAS operator's operational management or other location specified by the Authority:

- (a) ROC;
- (b) operations specifications relevant to the RPA and RPS models, associated with the ROC;
- (c) operations manual, including the RPAS operating manual and the RPS manual;
- (d) RPA/RPAS flight manual;
- (e) third party liability insurance certificate(s) according to the provisions of Regulation (EC) no. 785/2004;
- (f) the certificate of registration of each RPA;
- (h) C of A of each RPAS;
- (i) certificates of any additional RPAS components, if applicable;
- (j) all radio station licence(s), if applicable;
- (k) all noise certificates, if applicable;
- (l) notification of special loads, if applicable; and
- (m) cargo manifests, if applicable.

#### **OPS 4.808 Documents held at the RPS(s)**



- (a) Documents, manuals and information, including, but not limited to the following, shall be available at the RPS(s) planned to be used during the flight:
- (1) operations manual including the MEL, CDL, RPAS operating manual and RPS manual;
  - (2) RPA/RPAS flight manual;
  - (3) operations specifications relevant to the RPA and RPS models associated with the ROC;
  - (4) journey log book for the RPA;
  - (5) maintenance log book and technical log book for both the RPA and RPS;
  - (6) details of the filed, current, ATS and operational flight plans, if applicable;
  - (7) current and suitable aeronautical charts for the route of flight and all routes along which it is reasonable to expect that the flight may be diverted, including departure, arrival and approach charts for all relevant aerodromes/heliports;
  - (8) information concerning search and rescue services for the area of the intended flight;
  - (9) notice to airmen (NOTAM) and aeronautical information service (AIS) briefing documentation;
  - (10) meteorological information;
  - (11) fuel requirements, fuel load and records;
  - (12) cargo manifests and information on dangerous goods, if applicable;
  - (13) mass and balance documentation; and
  - (14) any other documentation that may be pertinent to the flight or required by the State(s) involved in the operation.
- (b) Technical information regarding the RPAS (e.g. journey and maintenance log books, flight plan changes and fuel status) must be updated and all pertinent information conveyed to successive remote pilots. Electronic log books should be updated as soon as practicable during or immediately after the flight segment of each remote pilot.
- (c) The format (e.g. electronic) of the documents listed above must be acceptable to the Authority and to all other States involved in the operation.

#### **OPS 4.809 Documents carried on board the RPA**

- (a) The following documents must be available on board each RPA on international flights:
- (1) ROC (certified true copy);
  - (2) Certificate of registration of the RPA (certified true copy);
  - (3) C of A of the RPAS (certified true copy);



- (4) licences of each remote pilot involved in the current flight (certified true copies);
  - (5) journey log book;
  - (6) operations specifications;
  - (7) cargo manifests and information on dangerous goods, if applicable;
  - (8) noise certificate, if applicable; and
  - (9) aircraft radio station licence (certified true copy).
- (b) The format (e.g. electronic) of the documents listed above must be acceptable to the Authority and to all other States involved in the operation.

**OPS 4.810 Documents at or in close proximity of the RPA ground operations area**

Documents, manuals and information, including, but not limited to the following, shall be available at or in close proximity of the RPA ground operations area(s):

- (a) RPA flight manual, or pertinent subset thereof; and
- (b) cargo manifests and information on dangerous goods, if applicable;

**OPS 4.811 Record-keeping**

- (a) An RPAS operator shall establish a system of record-keeping that allows adequate storage and reliable traceability of all activities developed, covering at a minimum:
- (1) operator's organisation;
  - (2) SMS;
  - (3) personnel training and competence verification;
  - (4) documentation of all management system key processes;
  - (5) maintenance records; and
  - (6) security management records.
- (b) Records shall be stored in a manner that ensures protection from damage, alteration and theft.

**SUBPART J****SECURITY****OPS 4.901 Security of aircraft and station**

- (a) The operator shall be responsible for ensuring the security of the aircraft before, during and after an operation.
- (b) The operator shall be responsible for ensuring that only authorised persons have access to the remote pilot station.

**OPS 4.902 Reporting acts of unlawful interference**

Following an act of unlawful interference, the remote pilot-in-command shall submit a report of such an act to the designated local authority.



*This Page Intentionally Left Blank*