International Civil Aviation Organization
South American Regional Office
Seventh Virtual Meeting of the UAS/RPAS Focal Points of SAM and SRVSOP States (Lima, Peru, 9 May 2022)

Agenda Item 3: Progress made in the development of LARs UAS 100 and 101

PRESENTATION OF FINAL DRAFTS OF LARs UAS 100 AND 101

(Presented by the rapporteur of the UA CONOPS Working Group)

SUMMARY

This working paper presents for acceptance of the Seventh Virtual Meeting of the UAS/RPAS Focal Points of SAM and SRVSOP States, the final drafts of LARs UAS 100 and 101, which already include the comments by SAM and SRVSOP States.

References:

✓ ICAO model UAS regulations: Part 101

ICAO strategic objectives:	Safety

1. Introduction

1.1 At the Fourth meeting of UAS/RPAS Focal Points, the meeting deemed it necessary to first complete the surveys in order to define the open category and the LAR UA regulatory framework, and then develop the CONOPS for unmanned aircraft (UA), LARs 100 and 101, and Advisory circular 101-1. Accordingly, it formulated ***Conclusion RVPF-UAS-RPAS/4-04*** *- Approval of the work timetable for the final definition of the open category, definition of the LAR UAS regulatory framework, development of the CONOPS for unmanned aircraft (UA), and development of the LAR(s) UAS and the associated AC* (for more details, see Conclusion RVPF-UAS-RPAS/4-04 in the RVPF-UAS-RPAS/4 report).

1.2 Pursuant to the tasks assigned to the working group in charge of developing the model LAR UAS regulatory framework, the Sixth Meeting of Focal Points agreed to develop the new model LARs UAS 100 and 101 to help States become aware and establish regulatory guidance for UAS operations. This process started at the Third Meeting of Focal Points, where States took note of the need for these documents and were requested to submit their comments on the drafts sent through Workbook (TC 2) dated 30 August 2021.

1.3 The process has been carried out satisfactorily and LARs UAS 100 and 101, which are model regulations, are now being made available to States for their acceptance. These model regulations were developed to aid the SAM and SRVSOP States in the development of their national UAS regulations, and have been corrected and modified based on State inputs.

2. Analysis

2.1 The working group first worked on a Spanish version that would properly reflect the original ICAO model regulations in English, Parts 101 and 102. Based on this work and with the agreement of the States, it was decided to develop the LAR UAS 100, which defines the general requirements for LARs UAS 101 and 102, and LAR 101, which establishes the operational requirements for the open category. These documents are being submitted to the Seventh Meeting of the Focal Points for their acceptance. The development of LAR 102 and the ACs for LARs UAS 101 and 102 are still pending.

2.2 It should be noted that, in order to achieve this objective, it was necessary to hold several meetings on the airspace and AIG sections, with the participation of Brazil, Chile and the Secretariat.

2.3 In order to decide on the inclusion of the concept of Part 149 approved aviation organizations (AAO) in LARs UAS 100, 101 and 102, States were consulted, and responses were received from Argentina, Bolivia, Brazil, Chile, Panama, Peru, and Venezuela, most of which considered "not to include the concepts set forth in Part 149" for various reasons specific to the legal reality of each State, which preclude their incorporation into the national regulations.

3. Conclusion

3.1 **Appendices A and B** to this working paper present the final drafts of LARs UAS 100 and 101 for discussion and acceptance by the Seventh Virtual Meeting of the UAS/RPAS Focal Points of SAM and SRVSOP States.

4. Suggested action

4.1 The Seventh Virtual Meeting of the UAS/RPAS Focal Points of SAM and SRVSOP States is invited to:

a) take note of this working paper and its Appendices A and B; and

b) discuss and accept the LARs UAS 100 and 101 drafts contained in Appendices A and B to this working paper.

- END -

APPENDIX A

Regional Safety Oversight Cooperation System

Model Latin American Aeronautical Regulations

LAR UAS 100

General requirements for the operation of unmanned aircraft systems (UAS)

First edition
June 2022

LAR UAS 100

General requirements for the operation of unmanned aircraft systems (UAS)

Record of amendments to LAR UAS 100

Amendment No.	Date applicable	Date entered	Entered by

LAR UAS 100

General requirements for the operation of unmanned aircraft systems (UAS)

Amendments to LAR UAS 100

Amendment	Origin	Topics	Approved JG SRVSOP
First edition			

LAR UAS 100

General requirements for the operation of unmanned aircraft systems (UAS)

List of effective pages

Detail	Pages	Amendment	Dates
Preamble	iii to vi		June 2022
Chapter A: General requirements			June 2022

LAR UAS 100

General requirements for the operation of unmanned aircraft systems (UAS)

TABLE OF CONTENTS

LAR UAS 100

General requirements for the operation of unmanned aircraft systems (UAS)

PREAMBLE

Background

Due to the increasing number of unmanned aircraft (UA) operating in ***low-level*** airspace that could potentially conflict with manned aviation, the International Civil Aviation Organization (ICAO) was requested to develop a global baseline of provisions and guidance material for the appropriate harmonisation of regulations for unmanned aircraft systems (UAS) that fall outside the framework of international instrument flight rules (IFR).

To regulate the operations of UA and remotely piloted aircraft (RPA), the States of the ICAO South American (SAM) Region and of the Regional Safety Oversight Cooperation System (SRVSOP) started developing the strategic planning and the regulatory framework for these operations based on documents published by ICAO, regional organisations and States.

To this end, the SAM and SRVSOP States designated their UAS/RPAS focal points to carry out such planning and to develop the concept of operations (CONOPS) for UA and for UAS traffic management (UTM) and the associated LARs and guidance material.

In this context, the SAM and SRVSOP States defined the common technical requirements of the open category and the operational and administrative considerations to be taken into account in the development of their national regulations and guidance material related to this category.

In order to develop the strategic planning and the regulatory framework of the SAM Region and the SRVSOP, the following meetings of the UAS/RPAS focal points were held:

First meeting

The First Virtual Meeting of the UAS/RPAS Focal Points of SAM and SRVSOP States (RVPF-UAS-RPAS/1) was held on 26 February 2021, and proposed the following work programme:

- UAS/RPAS strategic planning of the Region;
- regulatory framework for UAS/RPAS operations; and
- roadmap for the conduction of these activities.

Work teams and a rapporteur for each group were appointed. Likewise, it was agreed that these work teams would meet independently and that, at the Second Virtual Meeting of the UAS/RPAS Focal Points (RVPF-UAS-RPAS/2), the progress achieved would be reported.

Second meeting

The Second Virtual Meeting of the UAS/RPAS Focal Points (RVPF-UAS-RPAS/2) was held on 26 April 2021, where the following conclusions were adopted:

- further development of the UA CONOPS structure;
- establishment and implementation of a technical and administrative coordination channel to deal with requests for international RPAS operations;
- acceptance of the structure and development of the UTM CONOPS;
- acceptance of the development of the UAS regulatory framework by parts; and
- postponement of the development of the RPAS regulatory framework.

Third meeting

The Third Virtual Meeting of the UAS/RPAS Focal Points (RVPF-UAS-RPAS/3) was held on 26 July 2021. The rapporteur of the task force in charge of developing the UA CONOPS proposed to the meeting to first define the open category before developing the UA CONOPS, which was accepted by the meeting. The meeting adopted the following conclusions:

- approval of the schedule of activities for further development of the UTM CONOPS for the SAM Region and the SRVSOP;
- approval of the work schedule for the definition of the open category;
- approval of the work schedule for the development of LAR 101 and CA 101-1; and
- adoption of the format for reporting international RPAS IFR operations.

Fourth meeting

The Fourth Virtual Meeting of the UAS/RPAS Focal Points (RVPF-UAS-RPAS/4) was held on 4 November 2021. This meeting reviewed: the progress made by the work team in charge of developing the UTM CONOPS and updating its work schedule; the progress made on the definition of the open category for unmanned aircraft systems (UA); the progress made on the draft LAR 101; and the progress made on draft Advisory Circular (AC) 101-1. After reviewing the working papers (WPs) presented, the meeting adopted the following conclusions:

- approval of the modified schedule of activities for the further development of the UTM CONOPS for the SAM Region and the SRVSOP;
- second survey with five (5) additional questions for the final definition of the open category;
- survey to define the LAR UAS regulatory framework; and
- approval of the work schedule for the final definition of the open category, definition of the LAR UAS regulatory framework, development of the CONOPS for unmanned aircraft (UA), and development of the LAR UAS(s) and associated AC.

Fifth meeting

The Fifth Virtual Meeting of the UAS/RPAS Focal Points (RVPF-UAS-RPAS/5) was held on 15 December 2021. This meeting was presented with the following: the results of the second survey conducted for the definition of the open category and the results of the survey conducted for the definition of the regulatory framework for unmanned aircraft (UA). After reviewing the working papers (WPs) presented, the meeting adopted the following conclusions:

- acceptance of the final definition of the open category for SAM and SRVSOP States; and
- acceptance of the LAR UAS regulatory framework for the open and specific categories.

Sixth meeting

The Sixth Virtual Meeting of the UAS/RPAS Focal Points (RVPF-UAS-RPAS/6), was held on 3 March 2022. The meeting was presented with the following: the progress made on the final draft of the UTM CONOPS for consideration of the meeting and the final draft of the UA CONOPS for its approval. After reviewing the working papers (WPs) presented, the meeting adopted the following conclusions:

- Acceptance of the 45-day deadline for reviewing the draft UTM CONOPS
- Acceptance of the concept of operations (CONOPS) for unmanned aircraft (UA)

Seventh meeting

The Seventh Virtual Meeting of the UAS/RPAS Focal Points (RVPF-UAS-RPAS/7) was held on 9 May 2022. The final drafts of LAR UASs 100 and 101 and the UTM CONOPS were presented at this meeting. After reviewing the working papers (WPs) presented, the meeting adopted the following conclusions:

- Acceptance of the concept of operations (CONOPS) for UAS traffic management (UTM)
- Acceptance of LAR UASs 100 and 101

LAR UAS 100

General requirements for the operation of unmanned aircraft systems (UAS)

BIBLIOGRAPHY

ICAO

ICAO model regulations Part 101 and Part 102, Subpart A - General provisions

ICAO model advisory circular (AC) 101-1

SAM

CONOPS for unmanned aircraft in the SAM Region

CONOPS for unmanned aircraft traffic management (UTM) in the SAM Region

---

Chapter A: General requirements

100.001 Applicability

(a) This regulation prescribes the requirements governing the operation of civil unmanned aircraft (UA) operating under this regulation and the following Latin American Aeronautical Regulations (LARs):

(1) LAR 101 for UAS operations in the open category; and

(2) LAR 102 for UAS operations in the specific category.

100.005 Definitions

In this regulation and in LARs 101 and 102, the following definitions apply unless otherwise specified:

(a) **Accident with unmanned aircraft:** An occurrence associated with the operation of an unmanned aircraft, which takes place between the time the aircraft is ready to move for the purpose of flight until such time as it comes to rest at the end of flight and the primary propulsion system is shut down, in which:

(1) a person is fatally or seriously injured as a result of:

(i) direct contact with any part of the aircraft, including parts which have become detached from the aircraft; or

(ii) direct exposure to jet blast; or

(iii) in the event of a collision with a manned aircraft, any person on board the manned aircraft who suffers fatal or serious injuries.

(2) the aircraft sustains substantial damage or damage that adversely affects its structural strength, performance or flight characteristics as a result of collision with another manned or unmanned aircraft.

(3) significant damage is caused to third party property as a result of a collision.

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

(b) **Unmanned aircraft (UA):** An aircraft that is intended to be operated with no pilot on board.

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

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

(e) **Approved UA area**: A defined area as approved under 101.015.

(f) **Accident investigation authority (AIA)**: Designates the entity responsible for accident and incident investigation in the State.

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

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

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

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

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

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

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

(n) **Remote pilot station:** The component of a remotely piloted aircraft system containing the equipment used to pilot the remotely piloted aircraft.

(o) **Operator:** A person, organisation or enterprise engaged in or offering to engage in an aircraft operation. In the context of remotely piloted aircraft, an aircraft operation includes the remotely piloted aircraft system.

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

(q) **Serious incident**: An incident involving circumstances indicating that there was a high probability of an accident, that is associated with the operation of an aircraft and that, in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move for the purpose of flight until such time as it comes to rest at the end of flight and the primary propulsion system is shut down.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

100.010 Falsification, reproduction or alteration

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

(1) any fraudulent or intentionally false record or report that is required to be made, kept, or used to show compliance with any requirement under this regulation and LARs 101 and 102; or

(2) any reproduction or alteration, for fraudulent purpose, of any certificate, authorisation, record or report under this regulation and LARs 101 and 102.

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

(1) denial of an application for any remote pilot certificate or authorisation; or

(2) suspension or revocation of any certificate or authorisation issued by the CAA under this regulation and LARs 101 and 102 and held by that person.

100.015 Inspection, testing, and demonstration of compliance

(a) A remote pilot shall, upon request, make available to the CAA:

(1) the remote pilot licence, if this is required by the type of operation; and

(2) any other document, record, or report required to be kept under this regulation and LARs 101 and 102.

(b) The remote pilot, unmanned aircraft (UA) observer, owner, operator, or person manipulating the flight controls of a UA shall, upon request, allow the CAA to make any test or inspection of the UAS to determine compliance with this regulation and LARs 101 and 102.

100.020 Accident and serious incident reporting

(a) A pilot-in-command of an aircraft and any operating personnel involved in an accident/serious incident, or the operator, or the owner or operations personnel or if that aircraft is lost, shall report the accident or serious incident immediately and directly to the Accident Investigation Authority (AIA).

(b) Reporting under paragraph (a) of this section shall be in a manner acceptable to the AIA and shall, as far as possible, contain at least the following data:

(1) the date and time of the accident or serious incident;

(2) the nature of the accident or serious incident;

(3) details of the aircraft;

(4) the name of the operator or owner of the aircraft;

(5) place of occurrence or location;

(6) type of operation;

(7) point of departure of the aircraft;

(8) number of persons killed or seriously injured as a result of the accident or in the case of a serious incident, number of persons with other types of injury; and

(9) details of aircraft damage.

100.025 Preservation of site, aircraft, contents and records

(a) An operator or any operations personnel shall take all necessary precautions for the preservation of the site, aircraft, wreckage, records and its contents after an accident/serious incident.

(b) No person shall access, interfere with or remove an aircraft and its contents, except as previously coordinated and authorised by the AIA.

APPENDIX B

Regional Safety Oversight Cooperation System

Model Latin American Aeronautical Regulations

LAR UAS 101

Operation of unmanned aircraft systems (UAS) in the open category

First edition
June 2022

LAR UAS 101

Operation of unmanned aircraft systems (UAS) in the open category

Record of amendments to LAR UAS 101			
Amendment No.	**Date applicable**	**Date entered**	**Entered by**

LAR UAS 101

Operation of unmanned aircraft systems (UAS) in the open category

Amendments to LAR 101			
Amendment	**Origin**	**Topics**	**Approved by JG SRVSOP**
First edition			June 2022

LAR UAS 101

Operation of unmanned aircraft systems (UAS) in the open category

List of effective pages

Detail	Pages	Amendment	Dates
Preamble	iii to vi		June 2022
Chapter A: Operation requirements			June 2022

Operation of unmanned aircraft systems (UAS) in the open category

TABLE OF CONTENTS

LAR UAS 101

Operation of unmanned aircraft systems (UAS) in the open category

PREAMBLE

Background

Due to the increasing number of unmanned aircraft (UA) operating in ***low-level*** airspace that could potentially conflict with manned aviation, the International Civil Aviation Organization (ICAO) was requested to develop a global baseline of provisions and guidance material for the appropriate harmonisation of regulations for unmanned aircraft systems (UAS) that fall outside the framework of international instrument flight rules (IFR).

To regulate the operations of UA and remotely piloted aircraft (RPA), the States of the ICAO South American (SAM) Region and of the Regional Safety Oversight Cooperation System (SRVSOP) started developing the strategic planning and the regulatory framework for these operations based on documents published by ICAO, regional organisations and States.

To this end, the SAM and SRVSOP States designated their UAS/RPAS focal points to carry out such planning and to develop the concepts of operations (CONOPS) for UA and for UAS traffic management (UTM) and the associated LARs and guidance material.

En este marco, los Estados SAM y del SRVSOP, definieron los requisitos técnicos comunes de la categoría abierta y las consideraciones operacionales y administrativas a tener en cuenta en el desarrollo de sus reglamentos y materiales de orientación nacionales relacionados con esta categoría.

In order to develop the strategic planning and the regulatory framework of the SAM Region and the SRVSOP, the following UAS/RPAS focal point meetings were held:

First meeting

The First Virtual Meeting of the UAS/RPAS Focal Points of SAM and SRVSOP States (RVPF-UAS-RPAS/1) was held on 26 February 2021, and proposed the following work programme:

- UAS/RPAS strategic planning of the Region;
- regulatory framework for UAS/RPAS operations; and
- roadmap for the conduction of these activities.

Work teams and a rapporteur for each group were appointed. Likewise, it was agreed that these work teams would meet independently and that, at the Second Virtual Meeting of the UAS/RPAS Focal Points (RVPF-UAS-RPAS/2), the progress achieved would be reported.

Second meeting

The Second Virtual Meeting of the UAS/RPAS Focal Points (RVPF-UAS-RPAS/2) was held on 26 April 2021, where the following conclusions were adopted:

- further development of the UA CONOPS structure;
- establishment and implementation of a technical and administrative coordination channel to deal with requests for international RPAS operations;
- acceptance of the structure and development of the UTM CONOPS;
- acceptance of the development of the UAS regulatory framework by parts; and
- postponement of the development of the RPAS regulatory framework.

Third meeting

The Third Virtual Meeting of the UAS/RPAS Focal Points (RVPF-UAS-RPAS/3) was held on 26 July 2021. The rapporteur of the task force in charge of developing the UA CONOPS proposed to the meeting to first define the open category before developing the UA CONOPS, which was accepted by the meeting. The meeting adopted the following conclusions:

- approval of the schedule of activities for further development of the UTM CONOPS for the SAM Region and the SRVSOP;
- approval of the work schedule for the definition of the open category;
- approval of the work schedule for the development of LAR 101 and CA 101-1; and
- adoption of the format for reporting international RPAS IFR operations.

Fourth meeting

The Fourth Virtual Meeting of the UAS/RPAS Focal Points (RVPF-UAS-RPAS/4) was held on 4 November 2021. This meeting reviewed: the progress made by the work team in charge of developing the UTM CONOPS and updating its work schedule; the progress made on the definition of the open category for unmanned aircraft systems (UA); the progress made on the draft LAR 101; and the progress made on draft Advisory Circular (AC) 101-1. After reviewing the working papers (WPs) presented, the meeting adopted the following conclusions:

- approval of the modified schedule of activities for the further development of the UTM CONOPS for the SAM Region and the SRVSOP;
- second survey with five (5) additional questions for the final definition of the open category;
- survey to define the LAR UAS regulatory framework; and
- approval of the work schedule for the final definition of the open category, definition of the LAR UAS regulatory framework, development of the CONOPS for unmanned aircraft (UA), and development of the LAR UAS(s) and associated AC.

Fifth meeting

The Fifth Virtual Meeting of the UAS/RPAS Focal Points (RVPF-UAS-RPAS/5) was held on 15 December 2021. This meeting was presented with the following: the results of the second survey conducted for the definition of the open category and the results of the survey conducted for the definition of the regulatory framework for unmanned aircraft (UA). After reviewing the working papers (WPs) presented, the meeting adopted the following conclusions:

- acceptance of the final definition of the open category for SAM and SRVSOP States; and
- acceptance of the LAR UAS regulatory framework for the open and specific categories.

Sixth meeting

The Sixth Virtual Meeting of the UAS/RPAS Focal Points (RVPF-UAS-RPAS/6), was held on 3 March 2022. The meeting was presented with the following: the progress made on the final draft of the UTM CONOPS for consideration of the meeting and the final draft of the UA CONOPS for its approval. After reviewing the working papers (WPs) presented, the meeting adopted the following conclusions:

- Acceptance of the 45-day deadline for reviewing the draft UTM CONOPS
- Acceptance of the concept of operations (CONOPS) for unmanned aircraft (UA)

Seventh meeting

The Seventh Virtual Meeting of the UAS/RPAS Focal Points (RVPF-UAS-RPAS/7) was held on 9 May 2022. The final drafts of UAS 100 and 101 LARs were presented at this meeting. After reviewing the working papers (WPs) presented, the meeting adopted the following conclusions:

- Acceptance of the concept of operations (CONOPS) for UAS traffic management (UTM)
- Acceptance of UAS 100 and 101 LARs

LAR UAS 101

Operation of unmanned aircraft systems (UAS) in the open category

BIBLIOGRAPHY

ICAO

ICAO model regulations Part 101 and Part 102

ICAO model advisory circular (AC) 101-1

SAM

CONOPS for unmanned aircraft in the SAM Region

CONOPS for unmanned aircraft traffic management (UTM) in the SAM Region

---

Chapter A: Operation requirements

101.001 Applicability

(a) This regulation applies to:

(1) registration; and

(2) operations in the open category using an unmanned aircraft (UA) with a gross mass of less than 25 kg on take-off and throughout the duration of the operation, including all items that are on board and/or attached to the aircraft, and the UA is operated under Section 101.010.

101.005 Unmanned aircraft registration and certificate of registration

(a) Every person lawfully entitled to the possession of a UA who will operate the UA in accordance with the requirements of LAR 101 shall register that UA and hold a valid certificate for that aircraft from:

(1) the CAA;

(2) the appropriate aeronautical authority of a contracting State of ICAO; or

(3) the appropriate aeronautical authority of another State that is party to an agreement with the CAA of a State that provides for the acceptance of each other´s registrations.

101.010 Conditions for the operation of unmanned aircraft in the open category

(a) An UA will be operated in the open category:

(1) within the visual line-of-sight of the person operating the UA;

(2) at or below a height of 400 ft (122 m) above ground level (AGL);

(3) when the person operating the UA is only operating that UA; and

(4) in accordance with Section 101.065;

(b) An UA will not be operated:

(1) in a prohibited area;

(2) in a restricted area; or

(3) over an area where a fire, police or other public safety or emergency operation is being conducted, without the approval of a person in charge of the operation.

101.015 Approval of areas for operation of unmanned aircraft

(a) A person may apply to the CAA for the approval of an area as an area for the operation of:

(1) UA generally, or a particular category of UA.

(i) An approval has effect from the time written notice is issued to the applicant, or a later day, or day and time stated in the approval.

(ii) An approval may be expressed to have effect for a particular period (including a period of less than 1 day) or indefinitely.

(2) The CAA may impose conditions on the approval in the interests of the safety of air navigation.

(3) If the CAA approves an area under (a) (1) of this section, it shall publish details of the approval (including any condition) in a NOTAM, AIP supplement or amendment, as appropriate.

(b) The CAA may revoke the approval of an area, or change the conditions that apply to such an approval, in the interests of the safety of air navigation; likewise, the CAA shall publish details of any revocation or change in NOTAM or on an aeronautical chart.

(c) The CAA shall also give written notice of the revocation or change:

(1) to the person who applied for the approval of the area; or

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

101.020 Airspace

(a) A person shall not operate a UA:

(1) within segregated airspace unless the person has approval to do so from the administering authority responsible for the segregated airspace area.

(2) in controlled airspace (A, B, C, D and E) without authorisation from the ATS unit responsible for that airspace;

(3) in controlled airspace unless he or she:

(i) holds a relevant qualification for the use of a radio transmitter;

(ii) maintains a listening watch on a frequency or frequencies specified in the instructions of the ATS unit; and

(iii) makes broadcasts on a specified frequency or frequencies and/or maintains other ways of communication requested by the ATS unit at the specified interval giving the information specified in ATS instructions.

(b) The CAA may direct, with respect to a particular UA or type of UA, that a person shall not operate that UA, or that type of UA, unless the person complies with the requirements of paragraph (a) (3) of this section.

(c) A person operating a UA shall:

(1) maintain observation of the surrounding airspace in which the aircraft is operating for other aircraft; and

(2) make sure that the UA does not operate above 400 ft (122 m) AGL.

(d) The person to whom this section applies shall comply with all of the requirements set forth herein.

(e) For the purposes of this section, the following definitions apply:

(1) ***Relevant qualification*** means any of the following qualifications:

(i) a radio transmitter operator licence;

(ii) a remote pilot licence (or flight crew licence);

(iii) an air traffic controller licence; or

(iv) a military qualification equivalent to a licence mentioned in (1) (ii) and (1) (iii) of this paragraph.

(2) ***Segregated airspace*** means airspace of specified dimensions allocated for exclusive use of one or more specific users, with operations that cannot be safely integrated with those of other airspace users.

(3) ***Specified aeronautical frequency*** for a particular airspace means a frequency specified in the AIP or by ATS as a frequency for use in the airspace.

(4) ***Specified information*** for a particular airspace means information specified in the AIP or by ATS as information that must be broadcast in the airspace.

(5) ***Specified interval*** for a particular airspace means the interval specified in the AIP or by ATS as the interval at which broadcasts must be made while in that airspace.

101.025 Airspace knowledge

A person to whom this requirement applies shall:

(a) ensure that before each flight, the person is aware of the airspace designation and classification under LAR 211 and any applicable airspace restrictions in place in the area of intended operation; or

(b) conduct the operation under the direct supervision of a person who is aware of the airspace designation under LAR 211 and the corresponding AIP, and of any applicable airspace restrictions in place in the area of intended operation.

101.030 Hazard and risk minimisation

A person operating a UA shall take all practicable steps to minimise hazards to persons, property and other aircraft.

101.035 Dropping of articles

A person operating a UA shall not allow any object to be dropped in flight if such action may create a hazard to other persons or property.

101.040 Aerodromes

(a) A person shall not operate a UA on or within the established boundaries of:

(1) an uncontrolled aerodrome, unless:

(i) the operation is undertaken in accordance with an agreement with the aerodrome operator;

(ii) each remote pilot has a UA observer in attendance while the aircraft is in flight.

(2) a controlled aerodrome, unless it is operated in accordance with an authorisation from the relevant ATS unit.

(3) any aerodrome, unless the person:

(i) is the holder of, or is under the direct supervision of the holder of, a remote pilot qualification that is acceptable to the CAA;

(ii) is under the direct supervision of a person appointed to give instruction in the operation of a UA by a person or organisation acceptable to the CAA; or

(iii) is the holder of a remote pilot licence or certificate issued under 102.05.

(b) Paragraph (a) of this section does not apply to an operation that is conducted in airspace that is physically separated from the aerodrome by a barrier that is capable of arresting the flight of the UA.

101.045 Visual line-of-sight (VLOS) operations

(a) A person shall not operate a UA to which this requirement applies in:

(1) any area in which the person´s view of the surrounding airspace in which the UA will operate is obstructed; or

(2) meteorological conditions that obstruct the person´s ability to maintain visual line-of-sight of the aircraft.

(b) A person who operates a UA to which this requirement applies shall at all times:

(1) maintain visual line-of-sight with the UA or be in direct communications with a UA observer that maintains visual line-of-sight with the UA;

(2) be able to see the surrounding airspace in which the UA is operating; and

(3) operate the UA below any cloud base.

(c) For the purposes of this section, visual line-of-sight means a straight line along which the remote pilot or UA observer has a clear view and which may be achieved with the use of spectacles, contact lenses, or a similar device used for vision correction of the user to no better than normal vision but not the use of an electronic, mechanical, electromagnetic, optical, or electro-optical instrument.

101.050 Weather and day limitations

(a) A person shall not operate a UA:

(1) in or into a cloud;

(2) at night; or

(3) in conditions other than visual meteorological conditions (VMC), unless permitted by another provision of this regulation, or in accordance with an air traffic control clearance.

101.055 Night operations

(a) A person shall not operate a UA at night unless the operation is:

(1) indoors; or

(2) a shielded operation.

101.060 Right-of-way

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

101.065 Operation over or near people

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

(1) directly participating in the operation of the UA;

(2) located under a covered structure or inside a stationary vehicle that can provide reasonable protection; or

(3) directly associated with the operation of the UA or the UA is operated no closer than 30 m, measured horizontally from a second person not directly associated with the operation of the UA.

(4) (a) (3) does not apply if the second person is standing behind a fixed wing UA while the fixed wing UA is taking off;

(b) (a) (1), (a) (2) or (a) (3) of this section do not apply if:

(1) the person has consented that the UA is allowed to fly over or near him or her; or

(2) the UA is operated by the police, fire brigade, civil defence or other public institution authorised by the CAA.

101.070 Knowledge for acting as a remote pilot

For operations under LAR 101 conducted within the established boundaries of an aerodrome, the remote pilot shall have knowledge of the use of aeronautical charts and of the airspace.

101.075 Prohibited UAS operations

(a) No person shall operate a UA in such a careless or reckless manner as to endanger or be likely to endanger aviation safety or the safety of any person or property.

(b) No person shall operate a UA while operating a moving vehicle, vessel or manned aircraft.

101.080 Drugs

(a) No person shall act as a remote pilot, member of a flight operation or a UA observer:

(1) within 8 hours after consuming an alcoholic beverage;

(2) while under the influence of alcohol; or

(3) while using any drug that impairs the person´s faculties to the extent that aviation safety or the safety of any person is endangered or likely to be endangered.
