



TECHNICAL GUIDANCE MATERIAL FOR PART 101 – PERSONNEL LICENSING

SUBJECT: Technical Guidance Material for Part 101 - Personnel Licensing

EFFECTIVE DATE: 11 March 2024

1. APPLICABILITY

This Part applies to the issuing, revalidating and re-issuing of South African remote pilot licences and ratings, designation of examiners, validation and conversion of foreign remote pilot licence and ratings, approval of FSTDs, and matters related thereto.

2. PURPOSE

The purpose of this document is to ensure standardization of licensing procedures and to list the minimum requirements for obtaining any applicable licence and/or rating.

3. REFERENCE

- i. ICAO Annex 6
- ii. Civil Aviation Regulations
- iii. Part 71
- iv. Part 101

4. LIST OF DEFINITIONS AND ABBREVIATIONS USED IN THIS DOCUMENT

4.1. Definitions

TERMINOLOGY	DESCRIPTION
Aeronautical Information Circular	means circular containing information which does not qualify for the origination of a NOTAM or for inclusion in the AIP issued by the Director in terms of regulation 11.01.2;
Beyond visual line-of-sight	means an operation in which the remote pilot cannot maintain direct unaided visual contact with the remotely piloted aircraft to manage its flight and to meet separation and collision avoidance responsibilities visually;

Flight	means from the moment an aircraft commences its take-off until the moment it completes its next landing
Pilot flying	means a pilot whose primary task is to control and manage a flight path and whose secondary task is to perform non-flight path related actions including radio communications, aircraft systems, other operational activities, and monitoring crew members;
Remote pilot	means the person who manipulates the flight controls or manages the flight command instructions of a RPA during flight time;
Remotely piloted aircraft	means an unmanned aircraft which is piloted from a remote pilot station, excluding model aircraft and toy aircraft as defined in this Part;
Remotely piloted aircraft system	means a remotely piloted aircraft, its associated remote pilot station, required C2 Link and any other component as specified in a type design;

4.2. Abbreviations

ABBREVIATION	MEANING
AIC	Aeronautical Information Circular
ATC	Air Traffic control
ATPL	Air transport pilot license
CPL	Commercial pilot license
FSTD	Flight simulation training device
ICAO	International Civil Aviation organization
MPL	Multi crew pilot license
PPL	Private pilot license
RPA	Remotely piloted aircraft
RPAS	Remotely piloted aircraft system
RPS	remote pilot station
SACAA	South African civil aviation Authority

5. REQUIREMENTS SUBPART 3 LICENSING AND COMPETENCIES

OVERVIEW

5.1. Remote pilots are fundamental to the safe operation of RPAS. They have the same basic responsibilities as pilots of manned aircraft for the operation of the aircraft in accordance with the rules of the air, and the laws, regulations and procedures of the States in which operations are conducted. However, the competencies of these individuals will have to be carefully reviewed to ensure the knowledge, skills and attitude are relevant for these new types of operations.

5.1.1. This chapter provides guidance materials concerning harmonized remote pilot licencing. In ICAO Annex 1, multiple types of pilot licences (private pilot licence (PPL), commercial pilot licence (CPL), multi-crew pilot licence (MPL) and airline transport pilot licence (ATPL)) are addressed. The remote pilot is a new category of aviation professional. Unlike manned aviation, a single remote pilot licence which covers all types of scenarios is expected to be developed. This licence will be annotated with ratings, limitations

- and endorsements, as appropriate.
- 5.1.2. The guidance presented in this document represents the culmination of best practices and procedures, used in prior RPAS approvals and is acceptable to the SACAA, from government agencies, industry and other stakeholders. It should be noted that the material presented in this chapter is a recommended harmonized approach to remote pilot licensing and RPA observer competency. Because RPAS are a new part of aviation, each application for remote pilot licensing should be assessed by the regulator on its own technical merits and may require unique authorizations which are based on the specific needs or capabilities of the RPAS in question.
 - 5.1.3. The guidance of this chapter does not apply to persons flying toys or model aircraft when these systems are used exclusively for sport or recreational purposes. However, these persons must comply with regional or national legislation, ordinances, restriction or other agreed upon guidance regarding the flight of model aircraft and/or toys.
 - 5.1.4. Licensing of air traffic controllers will not be affected by the introduction of RPAS introduced within an ATC environment, additional training requirements specific to different types of RPAS characteristics could be required for ATC personnel including, inter alia, performance, behaviour, communication, operating limitations and emergency procedures.
 - 5.1.5. It should be further noted that due to the rapid evolution of RPAS technology, this guidance material will be subject to continuous review and will be updated when appropriate.

5.2. FUNDAMENTALS

- 5.2.1. There are many categories of aircraft, among them aeroplanes, airship, free balloons, gliders, helicopters and powered- lift. Aircraft from each of those categories can potentially be remotely piloted. For manned aircraft, class rating distinguishes single versus multi engine, and land planes versus sea planes, however for unmanned aircraft, class ratings must also address the RPS and its interaction with the RPA. These considerations require a new approach for licensing.

5.3. LICENSING AUTHORITY

- 5.3.1. The licences of remote pilots should be issued or rendered valid by the Licensing Authority of the state in which the RPAS is located, even if the RPAS is only temporarily located in the state. This facilitates oversight of the remote pilot by the Licensing Authority.

6. GUIDANCE TO THE REGULATOR ON RULES FOR THE REMOTE PILOT LICENCE

General rules

- 6.1. A person should not act as a remote pilot-in-command of an RPA unless that person is the holder of a remote pilot licence, containing the rating suitable for the purpose of executing the operation.

7. Human performance

- 7.1. Remote pilot licence requirements and competencies should consider the integration of human performance issues within a competency-based training and assessment approach.
- 7.2. All stakeholders (instructors, assessors, course developers, training providers, inspectors etc.) involved in the training and assessment process should be provided with guidance on how to develop, implement and manage or oversee competency-based training and assessments that integrate human performance elements. Human performance training should not stand out as a separate subject.

8. Obligation for personnel to carry documents

8.1. When operating an RPAS:

- 8.1.1. A remote pilot must hold a current Medical Assessment.
- 8.1.2. A remote pilot must have in his/her possession a valid remote pilot licence.
- 8.1.3. An RPA observer should have proof of RPA observer competency issued by the RPAS operator or an approved training organization in his/her possession.
- 8.1.4. The remote pilot must meet the requirement for recent experience established by the state of the operator.

9. Language proficiency

- 9.1. Remote pilots that are required to communicate with ATS must demonstrate the ability to speak and understand the language used for ATS communications to the level specified in the language proficiency requirements SA-CAR 61.01.7 and as defined in document SA- CATS 61.01.7.
- 9.2. Proof of language proficiency in English, used for communications involved in the remotely piloted flight should be endorsed on the remote pilot licence.
- 9.3. Such proof of language proficiency should indicate the language, the proficiency level and the validity date.
- 9.4. Except for remote pilot who has demonstrated language proficiency at an expert level, the language proficiency endorsement should be re-evaluated periodically, according to the level of language proficiency.

10. Credit for remote pilot licences

- 10.1. The Licensing Authority should establish methods and criteria for crediting prior demonstrated knowledge, experience and skill acquired in manned or unmanned aviation.

11. Rendering remote pilot licences valid

- 11.1. The SACAA will render valid a remote pilot licence issued by another Contracting State, as an alternative of the issuance of its own licence; it should establish validity by suitable authorization to be carried with the remote pilot licence.

12. Credit for remote pilot licences obtained during military service

- 12.1. In order for holders of military pilot licences or military remote pilot licences to obtain civil remote pilot licences, they should apply to the SACAA where they served.
- 12.2. The knowledge, experience and skill obtained in military service should be given credit by the Licensing Authority.
- 12.3. The Licensing Authority should establish methods and criteria for crediting prior demonstrated knowledge, experience and skill obtained during military service.

13. Student remote pilot

- 13.1. A student remote pilot should meet requirements prescribed by SACAA. Additionally, a student remote pilot should not act as solo remote pilot of an RPAS:
- 13.2. Unless under the supervision of, or with the authority of, an authorized RPAS Instructor.
- 13.3. The SACAA will not permit a student remote pilot to fly an RPA unless that student holds a current Medical Assessment.

14. Remote pilot licence-minimum age

- 14.1. An applicant for a remote pilot licence should be no less than 18 years of age.

15. Application and issue of remote pilot licences and associated ratings, limitations and endorsement

- 15.1. Any person satisfying the eligibility requirements should be able to file an application for a remote pilot licence.
- 15.2. While possessing (or having possessed) a valid pilot licence may provide credit toward knowledge, experience and skill related to a remote pilot licence, the possession of a valid pilot licence for manned aviation is not a pre-requisite.
- 15.3. An application should be submitted to the Licensing Authority in a form CA 101.03.2 and manner established by this authority for:
- 15.4. The issuance, revalidation or renewal of the remote pilot licence and associated ratings, limitations and endorsements; or
- 15.5. Additional ratings, removal of limitations or amendments of endorsements.
 - 15.5.1. The application should be accompanied by evidence that the applicant complies with the requirements as mentioned above.

16. Privileges and conditions

- 16.1. Privileges. The privileges of the holder of a remote pilot licence including any associated ratings, limitations and endorsements are, within the appropriate RPAS category and type, to act as remote pilot of an RPAS for the type of operation being conducted. A remote pilot may also act as an RPA observer, if appropriately trained.
- 16.2. The exercise of the privileges granted by a remote pilot licence is dependent upon the validity of the licence and of the ratings contained therein, if applicable, and the Medical Assessment.
- 16.3. Conditions. Once requirement for the category and type rating of RPA are developed, and the type or class rating for RPS are defined, these should be included in the skill test of an applicant for the issue of a remote pilot licence.

17. Theoretical knowledge examinations

17.1. Applicants for a remote pilot licence should:

- 17.1.1. Take those examinations applicable for the remote pilot licence and associated ratings they seek from the Licencing Authority of SACAA; and
- 17.1.2. Only take the examination when recommended by the authorized instructor or approved training organization responsible for their training and upon completion of the appropriate elements of the training course to a satisfactory standard.
- 17.1.3. The recommendation by an authorized instructor or approved training organization should be valid for a period established by the Licencing Authority. If the applicant has failed to attempt at least one theoretical knowledge examination within this period of validity, the need for further training should be determined by the authorized instructor or approved training organization, based on the needs of the applicant.
Note: See AIC 30.99 in the absence of current exams and technical standards. Pass standards.
- 17.1.4. A pass in the theoretical knowledge examination should be awarded to an applicant achieving the minimum percentage established by the Licencing Authority for that examination.
- 17.1.5. The theoretical knowledge examinations, comprised of more than one test, should be complete by the applicant within a time period established by the Licencing Authority.

18. Validity period

- 18.1. The successful completion of the theoretical knowledge examination should be valid for a period established by the Licencing Authority.

19. Subjects of knowledge

- 19.1. The applicant for a remote pilot licence should have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a remote pilot licence and appropriate to the category of RPA intended to be included in the remote pilot licence, in at least the following subjects:
 - 19.1.1. Air law.
 - 19.1.2. RPAS general knowledge.
 - 19.1.3. Flight performance, planning and loading.
 - 19.1.4. Human performance.
 - 19.1.5. Meteorology.
 - 19.1.6. Navigation.
 - 19.1.7. Operational procedures.
 - 19.1.8. Principles of flight; and
 - 19.1.9. Radiotelephony Practical skill test.
- 19.2. Before a skill test for the issue of a remote pilot licence is taken; the applicant should have passed the required theoretical knowledge examination(s). The theoretical knowledge instruction should always have been completed before skill tests are taken.
- 19.3. The applicant for a skill test should be recommended for the test by the authorized instructor or approved training organization responsible for the training, once the required training has been completed. The training records should be made available to the RPA examiner.

- 19.4. An applicant for a remote pilot licence should pass a skill test to demonstrate the ability to perform, as remote PIC of the appropriate RPA category and associated RPS, the relevant procedures and manoeuvres with the competency appropriate to the privileges granted.
- 19.5. An applicant for a skill test for the remote pilot licence should have received instruction for operations on the same RPA category and associated RPS to be used in the test.
- 19.6. The applicant for the issue of a remote pilot licence should demonstrate the ability to:
- 19.6.1. Recognize and manage threats and errors.
 - 19.6.2. Operate the RPA within its limitations or those limitations imposed by regulations.
 - 19.6.3. Complete all manoeuvres with smoothness and accuracy.
 - 19.6.4. Exercise good judgements and airmanship.
 - 19.6.5. Apply aeronautical knowledge; and
 - 19.6.6. Maintain control of the RPA at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.
 - 19.6.7. Progress in acquiring the required skills should be continually assessed.
 - 19.6.8. An applicant for a remote pilot licence should have appropriate experience flying an RPA in actual or simulated flight.
 - 19.6.9. An applicant for a remote pilot licence should have completed the experience in an approved training course.
 - 19.6.10. The training should be competency-based and conducted in an appropriate RPAS environment.

Note: See AIC 30.99 in the absence of skills test. In the interim, each applicant will be dealt with on a case- by- case scenario and privileges could extend up to 24 months.

20. Advisory: At the end of, or during the 24-month period, the rating may be withdrawn depending on the regulation. RPAS instruction.
- 20.1. The applicant for a remote pilot licence should have received dual RPAS instruction from an authorized RPAS instructor in the appropriated RPA category and associated RPS for the category, type and class rating(s) sought.
- 20.2. The RPAS instructor should ensure that the applicant for a remote pilot Licence has operational experience in the following areas to the level of performance required for the remote pilot, if applicable:
- 20.2.1. Recognize and manage threats and errors.
 - 20.2.2. Pre-flight operations, including RPAS inspection and servicing, communications checks and control function verification, setup of RPS, loading and validation of flight planning information, and obtaining ATC clearances where appropriate.
 - 20.2.3. Aerodrome ground operations and traffic pattern operations where applicable, ground and airborne collision avoidance precautions and procedures including use of RPA · observers and communications services if required.
 - 20.2.4. Control of the RPA by visual reference unless the RPAS does not provide for manoeuvres by visual reference.
 - 20.2.5. Recovery from flight at critically slow airspeeds, high sink rates and, in the case of RPA aeroplanes, spin avoidance.
 - 20.2.6. Recovery from unusual attitudes using flight instrumentation or by use of camera systems.

- 20.2.7. Normal and crosswind take-offs and landings.
- 20.2.8. Navigation procedures using all available means including change of destination or in flight change of lost C2 link flight plan programming.
- 20.2.9. Identification of hazardous meteorological conditions and avoidance procedures thereof.
- 20.2.10. abnormal and emergency procedures and manoeuvres including simulated aircraft engine and electrical failures, software failures, loss of C2 link, failures and malfunctions limited to the RPS, communications failure.
 - a) in the case of RPA helicopters: abnormal and emergency procedures; autorotation, retreating blade stall, lower rotor rpm settling with power, forced landings, sloped ground operations, max performance take-off, steep approach, run on landing and take-off.
 - b) Compliance with airspace restrictions, lateral and vertical, compliance with ATC services instructions and procedures; and
 - c) In the case of RPA helicopters: hovering - taxi and turns; transition from hovering to flight and from flight to hovering.
 - d) Crediting of flight time
- 20.2.11. Crediting of flight time:
- 20.2.12. Unless otherwise specified in by the Licensing Authority, time to be credited for a remote pilot licence should have been acquired in operating of RPA.
- 20.2.13. an applicant for a remote pilot licence and associated rating should be credited in full with all flight time in the appropriate RPA category and associated RPS, for which the remote pilot licence and associated rating are sought;
- 20.2.14. the Licensing Authority should determine whether experience as a remote pilot under instruction in RPA flight simulation training device is acceptable as part of the total RPA flight time required and to what extent such credit for experience will be granted; and
- 20.2.15. when the applicant for a remote pilot licence has flight time as a pilot of manned aircraft or as a remote pilot of RPA in other categories, the Licensing Authority should determine whether such experience is acceptable and, if so, the extent to which the flight time requirements may be reduced.

21. Crediting of theoretical knowledge

- 21.1. The applicant for a remote pilot licence should be credited towards the requirements for theoretical knowledge instruction and examination for a remote pilot licence in another category of RPA or type of RPS. This credit also applies to applicants for a remote pilot licence who have already successfully completed the theoretical knowledge examinations for the issuance of a remote pilot licence in another category of RPA or type of RPS.

22. Recording of RPA flight time

- 22.1. The remote pilot should keep a reliable record of the details of all RPA flights exercised in a logbook and manner established by the Licensing Authority.

23. Class and type ratings

- 23.1. Holders of a remote pilot licence should not act in any capacity as remote pilots unless they have a valid and appropriate class or type rating, except when undergoing skill tests, or proficiency checks for issue or renewal of class or type ratings or receiving RPAS instruction.

- 23.2. If a modification is made to the RPA or RPS type(s) for which the remote pilot is rated and that does not require the establishment of a different type, the remote pilot should be trained by the RPAS operator to perform the remotely piloted flights using the modified RPA/RPS types.
- 23.3. A class rating should be established for RPA and RPS certificated for single-remote pilot operations, which have comparable handling, performance and characteristics, unless a type rating is considered necessary by the Licencing Authority.
- 23.4. A type rating should be established for RPA and RPS certificated for operation with a minimum crew of at least two remote pilots or when considered necessary by the Licencing Authority.
- 23.5. When a class rating is issued limiting the privileges to act as remote pilot only during the cruise phase of the flight, such limitation should be endorsed on the rating.
- 23.6. When a type rating is issued limiting the privileges to act as remote co-pilot, or limiting the privileges to act as remote pilot only during the cruise phase of the flight, such limitation should be endorsed on the rating.

24. Night operations

- 24.1. Night operations involve distinct skills and areas of knowledge, and it is expected that training programmes will incorporate those aspects into the training and testing of the remote pilot when practical.
- 24.2. The Licensing Authority should require remote pilots to receive dual instruction in RPA night operations including take-off, landing and navigation before exercising the privilege of the remote pilot licence at night.

25. Medical fitness

- 25.1. The remote pilot should hold a current Medical Assessment.

Note: Guidance on the Medical Assessment for remote pilots contained in section 3.6 of this TGM.

26. RPAS INSTRUCTOR

General prerequisites and requirements

- 26.1. Prior to the issuance of an RPAS instructor authorization by the Licencing Authority, an RPAS instructor applicant should:
 - 26.1.1. Hold a remote pilot licence with appropriate category, class, and type rating(s) for which the privilege to instruct is being sought.
 - 26.1.2. Have sufficient training and experience to attain the required level of proficiency in all of the required tasks, manoeuvres, operations and principles and methods of instruction; and
 - 26.1.3. Be entitled to act as remote PIC of the RPAS during such RPAS instruction.
- 26.2. Qualified and authorized RPAS instructions may be assigned to carry out specific assessment, checking or testing duties in instruction techniques for the relevant category or type of RPA and type of RPS to determine that all required performance standards have been satisfactorily achieved. These performance standards may

be required as an end- state objective or on a continuous basis in competency- based training. In either case, the RPAS instructor is responsible for making a determination of the actual standards attained and any recommendation for immediate remediation, if necessary.

- 26.3. Prior to training, RPAS instructors should be selected as being suitable for the RPAS instructor role, based upon appropriate motivation for the training role.
- 26.4. In addition, selection of an RPAS instructor should be based on criteria intended to define proven capabilities for which he/she intends to instruct.
- 26.5. Training programmes for the RPAS instructor role should focus development of the competencies in the following areas:
 - 26.5.1. Manage safety.
 - 26.5.2. Prepare the training environment.
 - 26.5.3. Manage the trainee.
 - 26.5.4. Conduct training.
 - 26.5.5. Perform trainee assessment.
 - 26.5.6. Perform course evaluation; and
 - 26.5.7. Continuously improve performance.

Note: Guidance on instructor competencies is contained in PANS-TRG (Doc 9868) Competencies.

- 26.6. All RPAS instructors should be trained to:
 - 26.6.1. Prepare resources.
 - 26.6.2. Create a climate conducive to learning.
 - 26.6.3. Present knowledge.
 - 26.6.4. Integrate threat and error management (TEM) and crew resource management.
 - 26.6.5. Manage time to achieve training objectives.
 - 26.6.6. Facilitate learning.
 - 26.6.7. Assess trainee performance.
 - 26.6.8. Monitor and review progress.
 - 26.6.9. Evaluate training sessions; and
 - 26.6.10. Report outcomes Assessment of competence.
 - 26.6.11. An applicant for an RPAS instructor authorisation should pass an assessment of competence in the relevant.
 - 26.6.12. type or class of RPA and type of RPS to demonstrate the ability to instruct a student remote pilot to the level required for the issue of the remote pilot licence.
- 26.7. The assessment should be performed on the same type or class of RPA or type of RPS, or flight simulation training device (FSTD) used for the RPAS instruction.
- 26.8. All RPAS instructors should receive refresher training and be re-assessed using a documented training and assessment process acceptable to the Licencing Authority, implemented by a certificated or approved organization, at intervals established by the Licencing Authority but not greater than 3 years.

27. Special conditions

27.1. In the case of introduction of new RPA or RPS in an operator's fleet when compliance with the requirements established by the Licencing Authority is not possible, the Licencing Authority may consider issuing a specific authorisation giving privileges for RPAS instruction. Such an authorization should be limited to the instruction flights necessary for the introduction for the new type of RPA or RPS. The Licencing Authority should determine the validity period of this authorization.

28. Revalidation and renewal RPAS instructor rating

28.1. When issuing further RPAS instructor authorizations, and for the purpose of revalidation, the Licencing Authority should credit:

- a) Applicants with the teaching and learning skills already demonstrated for the RPAS instructor authorization held; and
- b) Hours in the role of an RPAS examiner during skill test or proficiency checks in full towards revalidation requirements for all RPAS instructor authorizations held.

28.2. The Licencing Authority should:

28.2.1. Determine validity period of the RPAS instructor authorization; and

28.2.2. Establish methods for the revalidation and renewal of the RPAS instructor authorization.

Note: See AIC 30.99 in the absence of instructors. In the interim, each applicant will be dealt with on a case-by-case scenario and privileges could extend up to 24 months.

28.3. Advisory: At the end of, or during the 24-month period, the rating may be withdrawn depending on the regulation.

29. MEDICAL ASSESSMENT

29.1. The Class 4 Medical Assessment, applicable to air traffic controllers, is considered to be appropriate for remote pilots.

29.2. If the medical standard prescribed in Annex 1, Chapter 6 is not met, the flexibility provided by ANNEX 1 paragraph 1.2.4.9 may be considered given the particular environment of the RPS and the conduct of the RPAS operations.

Note: Guidance material to apply ANNEX 1 paragraph 1.2.4.9 is contained in the Manual of Procedures for Establishment and Management of State's Personnel Licencing System (Doc 9379).

29.3. The period of validity of Class 4 Medical Assessment is from the date of medical examination for the period not greater than 48 months, reduced to 24 months when the licenced holder has passed their 40th birthday.

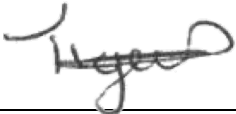


Note: Guidance material to assist licencing authorities and medical examiners published separately in the current addition of the Manual of Civil Aviation Medicine (Doc 8984).

29.4. The Class 4 Medical Assessment issued to an air traffic controller should not automatically be considered valid

for remote pilot and vice versa. The medical examiner has the flexibility to consider the work environment of the applicant when assessing medical fitness and may determine that what is acceptable or unacceptable for the other. For this reason, the Class 4 Medical Assessment should reflect that it has been issued for a remote pilot.

Note: For all other classes or types of operation submit a self-declared medical assessment report for operations involving RPAS classified as class 2 or lower.

30. AUTHORISATION

RESPONSIBLE PERSON:		
	NEO GOUWE	11/03/2024
SIGNATURE OF M: L	NAME IN BLOCK LETTERS	DATE
REVIEWED & VALIDATED BY:		
	JOHAN NIEMAND	17.04.2024
SIGNATURE OF SM: PEL	NAME IN BLOCK LETTERS	DATE
APPROVED BY:		
PP 	ERIC MATABA	07 -May-2024
SIGNATURE OF E: SSA	NAME IN BLOCK LETTERS	DATE

END