



SUMMARY OF PROPOSED CHANGE



Proposed amendments to Part 101 Manual of Standards - Beyond visual line of sight aeronautical knowledge standards and guide

Part 101 (Unmanned Aircraft and Rockets) Manual of Standards 2023

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Introduction

In 2016, major amendments were made to Part 101 (Unmanned Aircraft and Rockets) of the *Civil Aviation Safety Regulations 1998* (CASR), enabling the associated Part 101 Manual of Standards (MOS) to be published in 2019 in its initial form.

Subsequently, CASA conducted a regulatory post-implementation review (PIR) of Part 101 of CASR and its MOS. The aim of the PIR was to recognise what is working well, what could work better, and what will be needed in the future to support the rapidly evolving operating environment.

Through the PIR process and from formal and informal feedback, CASA identified a need for an examination to facilitate authorisations for Beyond Visual Line of Sight (BVLOS) operations outside of controlled airspace (OCTA). At that time, the only available mechanism to assess candidate knowledge was the Part 61 Instrument Rating Examination (IREX). The IREX was designed to test a crewed (Part 61 of CASR) pilot's knowledge for functioning at a more complex level required to safely operate under the instrument flight rules (IFR).

The current pathway of the IREX introduces unnecessary burden on applicants who want to operate remotely piloted aircraft systems (RPAS) BVLOS in non-controlled airspace (or OCTA). While IREX is at this time still considered appropriate for BVLOS operations inside controlled airspace (CTA), CASA is seeking to introduce a tailored examination focused on BVLOS for RPAS operations in non-controlled airspace which would, in the future, be intended to function as a pathway for a BVLOS rating¹ to the IREX pathway.

To enable industry access to the proposed BVLOS OCTA examination sooner, CASA proposes to finalise the BVLOS OCTA aeronautical knowledge standards and guide and make the documents formally available after review and relevant amendment from public consultation feedback. The standards, guide and the exam would be available under the legislative authority of subparagraph 101.300 (4) (a) (iii) of CASR² before the standards are incorporated into the Part 101 MOS.

A remote pilot who successfully passes the proposed BVLOS OCTA examination would hold a pass³, and subsequently would be permitted to conduct BVLOS OCTA operations subject to operating under a remotely piloted aircraft operator's certificate (ReOC) holder who, under regulation 101.029 of CASR, has an approval to operate BVLOS.

The proposed regulatory fee for the Beyond Visual Line of Sight (BVLOS) OCTA examination is A\$70 inclusive of GST, plus the examination delivery fee set by a third-party supplier⁴. The proposed regulatory fee would see an increase of A\$5 compared to the IREX. This will be published in a Cost Recovery Implementation Statement (CRIS) on the [CASA website](#) that will also be open for public consultation.

¹ For this consultation and associated material, the term *BVLOS rating* should be read as a rating that will be developed by CASA and used at a future date.

² Passing an 'approved examination' to operate other than by visual line of sight.

³ A pass credit.

⁴ The examination provider.

The future remote pilot licencing framework

CASA is developing a future remote pilot licencing framework which will include BVLOS operations inside and outside of controlled airspace. The proposed BVLOS OCTA exam is the first step in the establishment of this framework. While the end state is proposed to establish a BVLOS rating⁵, the proposed exam will only provide a successful candidate with a pass credit in the BVLOS OCTA examination and not a rating. A rating will require a pass in both a theoretical exam and a practical flight test. CASA is focussing first on the theoretical examination, with the flight test competencies still to be developed.

The examination would include elements of aeronautical knowledge that may be advanced for smaller, less complex BVLOS operations. We are carefully considering the structure of the BVLOS framework, and while multiple categories of BVLOS operations may exist in the future, the proposed breadth of BVLOS operations for the BVLOS examination are either inside or outside of controlled airspace. The relevant criteria, standards and aeronautical knowledge required for these two categories of operation were discussed with the BVLOS examination industry working group prior to the release of this consultation. The working group agreed this is an appropriate way forward.

Given the complexity of BVLOS operations, CASA must ensure its assessment and approval of these operations, maintains a focus on the safety of air navigation as our highest priority. These proposed amendments seek to: improve safety; facilitate better efficiency for CASA and industry through improved processes, reduced resource burden, and clarified requirements; and provide a more consistent framework for the regulation and operation of RPA under Part 101 of CASR and its MOS.

We aim to roll out the proposed examination through the Pilot Examination Office (PEXO) system in the first half of 2023. The feedback we receive from this consultation will also assist us in developing implementation and transition timeframes.

⁵ For this consultation and associated material, the term *BVLOS rating* should be read as a rating that will be developed by CASA and used at a future date.

Documentation

To facilitate the design and establishment of the proposed BVLOS OCTA examination for the purposes of subparagraph 101.300 (4) (a) (iii) of CASR, CASA has produced two documents:

- BVLOS OCTA aeronautical knowledge standards
- BVLOS OCTA aeronautical knowledge guide

These documents are designed to be read concurrently. Doing so will assist a candidate to self-study for the BVLOS OCTA examination, as well as provide training organisations the necessary standards to create and tailor their courses.

Both documents form part of this public consultation and are open to feedback. Following public consultation, the updated documentation will be made available on our [website](#).

It should be noted that CASA is proposing to establish the BVLOS OCTA exam as soon as possible to provide an alternative pathway from IREX. As such, the BVLOS OCTA aeronautical knowledge standards and guide will be available following review of consultation feedback in conjunction with an instrument made for the purpose of subparagraph 101.300 (4) (a) (iii) of CASR.

The standards and guide will remain available until the standards are incorporated into the Part 101 MOS. Once this has occurred, candidates will need to refer to both the Part 101 MOS and the BVLOS OCTA standards guide document for reference.

It is proposed the BVLOS OCTA exam will be available for candidates to book online in the first half of 2023.

BVLOS OCTA aeronautical knowledge standards

This document contains the topics and knowledge standards required for a candidate to pass the BVLOS OCTA examination. The information is presented in a concise, outcome-based format.

An outcome-based standards document marks a shift from the current more prescriptive RePL standards. The reason for this shift is to guide industry to gain a broader and deeper understanding of a particular subject and to develop a more knowledgeable remote pilot who understands the 'why' and 'how' behind each element.

As this is a change in direction from previous RPAS standards, CASA has created an accompanying guide to assist industry in understanding the knowledge requirements, which is to be read in conjunction with the standards document. A candidate reading these standards will need to study the subject in depth to successfully pass the examination.

For example, a prescriptive standards document will direct the candidate to know the four compass points (North, South, East and West), as well as which charts are available and useful. This is in contrast with an outcome-based standards document which would direct the candidate to learn to effectively navigate using a chart and a compass. The examination will test the candidate's knowledge of how to read both the chart and the compass and apply that knowledge in a real-world scenario-based question.

BVLOS OCTA aeronautical knowledge standards guide

The purpose of this guide is to assist industry participants and approved training organisations to self-study or develop and provide additional training for a RePL holder to obtain a pass in the BVLOS OCTA examination.

The guide expands on the topics and further describes each of the knowledge categories and standards in the BVLOS OCTA aeronautical knowledge standards document.

Reference material

Acronyms

The acronyms and abbreviations used in this SPC are listed in the table below.

Acronym	Description
AAM	advanced air mobility
AC	advisory circular
BVLOS	beyond visual line of sight
CTA	controlled airspace
CASA	Civil Aviation Safety Authority
CASR	<i>Civil Aviation Safety Regulations 1998</i>
IFR	instrument flight rules
IR	instrument rating
IREX	instrument rating exam
MOS	Manual of standards
OCTA	outside controlled airspace
PEXO	Pilot examination office (system)
PIR	post implementation review
ReOC	remotely piloted aircraft operator's certificate
RePL	remote pilot licence
RPAS	remotely piloted aircraft system
SPC	summary of proposed change
TWG	technical working group
VLOS	visual line of sight

Definitions

Terms that have specific meaning within this document are defined in the table below. Where definitions from the civil aviation legislation have been reproduced for ease of reference, these are identified by 'grey shading'. Should there be a discrepancy between a definition given in this SPC and the civil aviation legislation, the definition in the legislation prevails.

Term	Definition
operator	A holder who is authorised by CASA to operate RPAS commercially under a ReOC

References

Legislation

Legislation is available on the Federal Register of Legislation website <https://www.legislation.gov.au/>

Document	Title
Part 101 of CASR	Part 101 of the <i>Civil Aviation Safety Regulations 1998</i> , as published on the Rules page on the CASA website .
Part 101 MOS	Part 101 (Unmanned Aircraft and Rockets) Manual of Standards 2019 (as amended) published on the Rules page on the CASA website .

Purpose and background of the proposed amendments

The three broad categories of remotely piloted aircraft (RPA) operations in Australia are recreational, commercial operations under the excluded category, and commercial operations under a ReOC.

When operating commercially—either under the excluded category or a ReOC—and depending upon the type of operation and weight of the RPAS they are operating, the remote pilot is required to hold either a CASA accreditation or an RePL.

To obtain a RePL, an individual must complete and pass training with a CASA-approved training organisation. This training includes a practical assessment and theory examination.

Theory examinations are delivered by CASA approved training organisations that hold a ReOC under regulation 101.335 of CASR. Theoretical material, as well as the practical competencies and assessment, is developed by the training organisation in accordance with Chapter 2 and Schedule 2 of the Part 101 MOS and approved by CASA. Alternatively, a pilot with a current Part 61 of CASR pilot licence can obtain an RePL through abbreviated training.

Currently, ReOC holders who conduct BVLOS operations must employ a RePL holder who has passed an aeronautical knowledge examination⁶ for the grant of an instrument rating under Part 61 of CASR⁷.

IREX aeronautical knowledge examination

The IREX aeronautical knowledge examination is CASA-developed and is delivered through the Pilot Examination Office (PEXO) system. It tests a candidate's level of knowledge of Instrument Flight Rules (IFR) procedures and techniques. The IREX was developed for conventional aircraft pilots to progress to a Part 61 of CASR Instrument Rating (IR) through a process of theoretical learning and assessment followed by practical training, culminating in a flight test with a flight examiner. While the IREX covers some areas that are relevant for planning RPAS operations, the examination was not specifically designed for RPAS operations. Further, it places an undue burden on the remote pilot to become familiar with knowledge items that do not apply to some RPAS operations.

Proposed RPAS BVLOS examination

CASA is proposing to design and establish a tailored RPAS BVLOS OCTA examination. This examination would act as an alternative pathway from the IREX, and the basis for a future BVLOS rating⁸ (OCTA) for a remote pilot in Class G non-controlled airspace only. The IREX will remain a valid examination for RPAS operations proposed to be conducted BVLOS within controlled airspace (CTA).

A pass in the proposed theoretical exam would provide a person with a BVLOS OCTA pass⁹ which would be provided to an approved ReOC holder, for further training and compliance with

⁶ Within the meaning of Part 61 of CASR.

⁷ IREX.

⁸ For this consultation and associated material, the term BVLOS rating should be read as a rating that will be developed by CASA and use at a future date.

⁹ A pass credit.

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the ReOC holders' BVLOS standards and procedures, before conducting BVLOS operations outside of controlled airspace. The ReOC holder must hold an approval to operate BVLOS under regulation 101.029 of CASR.

The proposed regulatory fee for the Beyond Visual Line of Sight (BVLOS) OCTA examination is A\$70 inclusive of GST, plus the additional examination delivery fee set by the third-party supplier¹⁰. The proposed regulatory fee would see an increase of A\$5 compared to the IREX. This will be published in a Cost Recovery Implementation Statement (CRIS) on the [CASA website](#) that will also be open for public consultation.

¹⁰ The examination provider.

Previous consultations

The [PIR of Part 101 of CASR and its MOS](#) was publicly consulted between December 2021 and February 2022. Feedback from the consultation identified that the IREX as a pathway to BVLOS operations was overly burdensome and a more appropriate alternative was sought by industry. The [summary of the consultation](#) is available from the [CASA website](#).

Further to the Part 101 PIR consultation and resulting from the Department of Infrastructure, Transport, Regional Development, Communications' [National Emerging Aviation Technologies Policy Statement](#), CASA, in conjunction with industry leaders, developed the [Remotely Piloted Aircraft Systems \(RPAS\) and Advanced Air Mobility \(AAM\) Strategic Regulatory Roadmap \(the Roadmap\)](#). The [Roadmap Consultation](#) was closed in April 2022 and the outcomes published on 2 June 2022.

The published [Roadmap](#) outlines a number of activities including to

"Review and implement an alternative training and examination pathway for remote pilots conducting BVLOS operations."

The Beyond Visual Line of Sight Working Group, comprising industry and CASA delegates, met at the end of October 2022 to discuss the proposed knowledge requirements for the proposed BVLOS exam. The working group supported CASA's proposal for BVLOS licensing operations in Australia and agreed that the proposed standards, as an alternative pathway to the IREX, were appropriate.

Impact on industry

The proposed BVLOS OCTA examination is, through the introduction of the BVLOS aeronautical knowledge standards and the BVLOS aeronautical knowledge guide for operations outside of controlled airspace, designed to facilitate better efficiency for CASA and industry. This is achieved through improved processes and clarified requirements. Overall, this examination is designed to provide a more consistent framework for the regulation and operation of RPA BVLOS.

By creating a new RPAS-focused BVLOS OCTA examination, CASA is seeking to reduce the burden on remote pilots intending to fly BVLOS in non-controlled airspace, as opposed to the IREX, which places considerable commitment of time and resources on candidates.

Although the proposed BVLOS OCTA examination will require study and examination time, this burden may be reduced for operators who may require existing staff to take time to study and pass IREX or recruit remote pilots who already hold a pass in the IREX. This may also reduce the financial cost to industry in both time spent achieving the IREX and time spent recruiting new remote pilots.

This examination reflects CASA's intent to continue to streamline processes and to create a set of regulations and standards with improved flexibility and provide clarity and consistency for industry.

Closing date for comment

CASA will consider all feedback as part of the public consultation process and will where appropriate, incorporate changes.

Comments on the draft proposed amendments to Part 101 Manual of Standards BVLOS OCTA aeronautical knowledge standards and guide should be submitted through the consultation hub by close of business 17 January 2023.