Draft guidance for RPAS BVLOS operations

**Overview**

CASA is developing guidance to help remotely piloted aircraft operator’s certificate (ReOC) holders wanting to conduct remotely piloted aircraft systems (RPAS) operations beyond visual line of sight (BVLOS).

We have developed several draft standard scenarios to provide clarity about the minimum evidence and information requirements.

We are seeking technical feedback on the first set of scenarios for:

* RPAS operations near a vertical object, such as buildings or powerlines, with a controlled ground environment (AU‑STS 1), or a sparsely populated ground environment (AU-STS 2)
* RPAS operations within 3 NM of a registered or certified non-controlled aerodrome in a remote area (AU‑STS 4)
* RPAS operations in remote Australian airspace, defined by CASA as areas with a very low population density and negligible air activity (AU-STS 6 and AU-STS 7).

These documents are:

* Draft Standard Scenario application and documents – Guidance material
* Draft AU-STS 1: Applicant response - BVLOS operations near a vertical object(s) with a Controlled Ground Environment
* Draft AU-STS 2: Applicant response - BVLOS operations near a vertical object(s) with a Sparsely Populated Ground Environment
* Draft AU-STS 4: Applicant response - BVLOS operations in a remote area within 3 NM of a Registered or Certified Non-controlled Aerodrome
* Draft AU-STS 6: Applicant response - BVLOS operations in remote Australian Airspace (below 400 ft AGL)
* Draft AU-STS 7: Applicant response - BVLOS operations in remote Australian Airspace (400 ft AGL to 5000 ft AMSL)

**How we assess risk**

CASA assesses BVLOS applications using the specific operations risk assessment (SORA) process.

The SORA provides the minimum technical, operational and organisational requirements an operator must provide for an acceptable safety case.

The standard scenarios in the guidance material are intended for use by ReOC holders and cover RPAS operations that meet predefined criteria and comply with the methods and principles of the SORA.

SORA was developed by Joint Authorities for Rulemaking of Unmanned Systems (JARUS).

These guidance documents are applicable to RPAS operations in Australian airspace only.

**Why are we consulting**

CASA recognises the valuable contribution that community and industry consultation makes to the regulatory development process. For this reason, we are seeking feedback on whether the draft documents provide adequate guidance for the preparation of a BVLOS approval application across a variety of operational contexts and work as intended.

A copy of each draft guidance document is provided below and on the survey page alongside the question to which they are related.

It is important that you read the guidance documents before providing your feedback.

Comments should be submitted through the online response form.

**What** **happens** **next**

At the end of the response period for public comment, we will review each comment and submission received. We will make all submissions publicly available on the CASA website, unless you request your submission remain confidential. We will also publish a Summary of Consultation which summarises the feedback received, outlines any intended changes and details our plans for the guidance.

Feedback will be used to inform the final release of each standard scenario, which will be published to the CASA website. If significant feedback about a particular scenario is received, CASA may choose to conduct further consultation about that scenario. This may result in a delayed release for that scenario.

Give Us Your Views

[Online Survey](https://consultation.casa.gov.au/regulatory-program/pp1816us/consultation/)

**Related**

* Standard Scenario application and documents – Guidance material
* AU-STS 1: Applicant response - BVLOS operations near a vertical object(s) with a Controlled Ground Environment
* AU-STS 2: Applicant response - BVLOS operations near a vertical object(s) with a Sparsely Populated Ground Environment
* AU-STS 4: Applicant response - BVLOS operations in a remote area within 3 NM of a Registered or Certified Non-controlled Aerodrome
* AU-STS 6: Applicant response - BVLOS operations in remote Australian Airspace (below 400 ft AGL)
* AU-STS 7: Applicant response - BVLOS operations in remote Australian Airspace (400 ft AGL to 5000 ft AMSL)
* MS Word copy of online consultation

## **Audience & Interest groups**

##  **Audiences**

* CASA Staff

* Drone training organisation

* Holder of RPAS remotely piloted aircraft operator’s certificate (ReOC)

* Holder of RPAS and remote pilot licence (RePL)

## **Interests**

* In-house training

# **Page:** Consultation Contents

This consultation is seeking feedback on draft standard scenarios for RPAS BVLOS operations.

It has been designed to give you the option to provide feedback on the survey in its entirety or to provide feedback on the standard scenario documents of interest to you.

We will ask you for:

* **personal information**, such as your name, any organisation you represent, and your email address
* **your consent** to publish your submission
* **your response** to the proposed guidance documents
* **any comments** you may want to provide
* **demographic information** to help us understand your interest in the guidance

In this survey there are two pages requesting feedback on the proposed BVLOS application guidance. These are:

Page 3 - Feedback on draft BVLOS guidance document and standard scenarios. This page requests your views on all proposed documents

Page 4 - Standard Scenarios - structure, priorities and future planning. This page requests your views and information for the purposes of future planning and documents.

When you have completed the sections on which you wish to provide feedback, select the **‘Finish’** button at the bottom right of this page.

**Fact bank:** Topics covered in each standard scenario.

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| **Fact Bank content**Scope Standard Scenario Characterisation and ProvisionsImagesImages providing a visual overview of the ground and airspace attributes for RPAS operations in each scenario.ApplicationThe following sections provide applicants with guidance about the minimum information and evidence required to support an application for BVLOS operations according to the standard scenario. Concept of Operations (CONOPs) Ground Risk Considerations Air Risk Considerations Confirmation Additional supporting materialsOperational Procedures Additional Mitigations RPA Containment Submitting your applicationThis section details what documents must be included in a completed BVLOS application package, where it must be sent and what will happen when it gets to CASA.  |

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| Page | Table of content |
| 1 | Personal information (required) |
| 2 | Consent to publish submission (required) |
| 3 | Feedback on draft BVLOS guidance document and standard scenarios |
| 4 | Standard Scenarios - structure, priorities and future planning |

Page 1: Personal information

First name

(Required)

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Last name

(Required)

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Email

If you enter your email address you will automatically receive an acknowledgement email when you submit your response.

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## Do your views officially represent those of an organisation?

(Required)

*Please select only one item*

[ ]  Yes, I am authorised to submit feedback on behalf of an organisation

[ ]  No, these are my personal views

## If yes, please specify the name of your organisation.

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Which of the following best describes the group you represent?

*Please select one of the options below*

[ ]  ReOC holder

[ ]  RPAS training organisation

[ ]  RPAS pilot (commercial or professional)

[ ]  Drone pilot (sport or recreation)

[ ]  Government organisation

[ ]  Other aviation

[ ]  Other

Please specify “Other” if selected.

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**Page 2:** Consent to publish submission

In order to provide transparency and promote debate, we intend to publish all responses to this consultation. This may include both detailed responses/submissions in full and

aggregated data drawn from the responses received.

Where you consent to publication, we will include:

* **your last name**, if the submission is made by you as an individual or
* **the name of the organisation** on whose behalf the submission has been made
* **your responses** and comments.

We **will not** include any other personal or demographic information in a published

response.

Information about how we consult and how to make a confidential submission is

available on the [CASA website](https://www.casa.gov.au/rules-and-regulations/landingpage/consultation-process)**.**

## Do you give permission for your response to be published?

*(Required)*

*Please select only one item*

[ ]  Yes - I give permission for my response/submission to be published.

[ ]  No - I would like my response/submission to remain confidential but understand that de-identified aggregate data may be published.

[ ]  I am a CASA officer.

**PAGE 3: Feedback on draft BVLOS guidance document and standard scenarios**

**Question 1: Draft Standard Scenario application and documents – Guidance Material. Would this guidance document be useful and work in the way intended?**

**Purpose**

The purpose of this guidance document is to provide industry with:

* guidance of a general nature about some of the supporting documentation required
* information on how to prepare specific documents
* information on how to assess an area
* information on the mitigations and procedures required to support the application.

**Fact Bank –** Draft Standard Scenario Application and Documents – Guidance Material

*Please select one of the options below* - include any comments you may have on any technical errors in the guidance or factors we may have overlooked.

[ ]  yes

[ ]  some change/s required (please specify below)

[ ]  no (please specify below)

[ ]  not applicable

Comments on draft guidance on standard scenarios

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**Question 2: Draft AU-STS 1: Would this guidance document be useful and work in the way intended?**

**Purpose**

This document is intended to be used as part of the safety case application for a BVLOS approval to conduct BVLOS operations near vertical objects with a **controlled ground environment standard scenario**. The use-cases that might fall within this scenario include inspections or surveillance of infrastructure, such as powerlines, communications towers, wind turbines and/or bridges, in an operational area that only involves active participants.

**Fact Bank –** Draft AU-STS 1: Applicant response - BVLOS operations near a vertical object(s) with a Controlled Ground Environment

*Please select one of the options below* - include any comments you may have on any technical errors in the guidance or factors we may have overlooked.

[ ]  yes

[ ]  some change/s required (please specify below)

[ ]  no (please specify below)

[ ]  not applicable

Comments on Draft AU-STS 1

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**Question 3: Draft AU-STS 2: Would this guidance document be useful and work in the way intended?**

**Purpose**

This document is intended to be used as part of the safety case application for a BVLOS approval to conduct BVLOS operations near vertical objects with a **sparsely populated ground environment** standard scenario. The use-cases that might fall within this scenario include inspections or surveillance of infrastructure, such as powerlines, communications towers, wind turbines and/or bridges, in an operational area with a very low population density.

**Fact Bank:** Draft AU-STS 2: Applicant response - BVLOS operations near a vertical object(s) with a Sparsely Populated Ground Environment

*Please select one of the options below* - include any comments you may have on any technical errors in the guidance or factors we may have overlooked.

[ ]  yes

[ ]  some change/s required (please specify below)

[ ]  no (please specify below)

[ ]  not applicable

Comments on Draft AU-STS 2

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**Question 4: Draft AU-STS 4: Would this guidance document be useful and work in the way intended?**

**Purpose**

This document is intended to be used as part of the safety case application to conduct BVLOS operations in a remote area within 3 NM of a registered or certified non-controlled aerodrome including a helicopter landing site. This standard scenario does not consider RPA operations from or to the aerodrome or RPA operations over the movement area of an aerodrome. It is intended that this standard scenario can also be used for applications as part of a Remote Australian Airspace BVLOS application (AU-STS 6 and AU-STS 7).

**Fact Bank:** AU-STS 4: Applicants response - BVLOS operations in a remote area within 3 NM of a Registered or Certified Non-controlled Aerodrome

*Please select one of the options below* - include any comments you may have on any technical errors in the guidance or factors we may have overlooked.

[ ]  yes

[ ]  some change/s required (please specify below)

[ ]  no (please specify below)

[ ]  not applicable

Comments on Draft AU-STS 4

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**Question 5: Draft AU-STS 6: Would this guidance document be useful and work in the way intended?**

**Purpose**

This document is intended to be used as part of the safety case application for a BVLOS approval to conduct BVLOS operations <400 ft AGL in remote Australian airspace with a sparsely populated ground environment standard scenario.

**Fact Bank:** Draft AU-STS 6: Applicants response - BVLOS operations in remote Australian Airspace (below 400 ft AGL)

*Please select one of the options below* - include any comments you may have on any technical errors in the guidance or factors we may have overlooked.

[ ]  yes

[ ]  some change/s required (please specify below)

[ ]  no (please specify below)

[ ]  not applicable

Comments on Draft AU-STS 6

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**Question 6: Draft AU-STS 7: Would this guidance document be useful and work in the way intended?**

**Purpose**

This document is intended to be used as part of the safety case application for a BVLOS approval to conduct BVLOS operations > 400 ft AGL and < 5000 ft AMSL in remote Australian airspace with a sparsely populated ground environment standard scenario.

**Fact Bank:** Draft AU-STS 7: Applicants response - BVLOS operations in remote Australian Airspace (400 ft AGL to 5000 ft AMSL)

*Please select one of the options below* - include any comments you may have on any technical errors in the guidance or factors we may have overlooked.

[ ]  yes

[ ]  some change/s required (please specify below)

[ ]  no (please specify below)

[ ]  not applicable

Comments on Draft AU-STS 7

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**PAGE 4:** Standard Scenarios - structure, priorities, and future planning

**Question 1:** Do you have any additional comments regarding the overall structure of these documents and are they clear in communicating what CASA requires as part of a BVLOS standard scenario application?

*(Please note, this should not include points you have already raised)*

Comments

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**Question 2:** If CASA were to prioritise release of these standard scenarios, which would provide the greatest benefit?

Please rank in order of 1-5

1 (one) being the highest priority and benefit

5 (five) being the lowest priority and benefit

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| Ranking | Standard scenario |
|  | Draft AU-STS 1: Applicant response - BVLOS operations near a vertical object(s) with a controlled ground environment |
|  | Draft AU-STS 2: Applicant response - BVLOS operations near a vertical object(s) with a sparsely populated ground environment |
|  | Draft AU-STS 4: Applicant response - BVLOS operations in a remote area within 3 NM of a registered or certified non-controlled aerodrome |
|  | Draft AU-STS 6: Applicant response - BVLOS operations in remote Australian airspace (below 400 ft AGL) |
|  | Draft AU-STS 7: Applicant response - BVLOS operations in remote Australian airspace (400 ft AGL to 5000 ft AMSL) |

Comments

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**Question 3:** If CASA were to develop further standard scenarios, which BVLOS application criteria would provide the greatest benefit?

Comments

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