

SCOPE

This procedure applies to all staff, students, visitors and contractors using drones, also known as Remotely Piloted Aircraft (RPA), for Monash University activities, both on and off Monash University campuses. Depending on the purpose of the drone activity undertaken, at or on behalf of Monash University, different requirements may apply in order to comply with the Civil Aviation Safety Regulations (CASR). The requirements detailed in this procedure must be followed at all times, in addition to any requirements as specified by the Monash University Chief Remote Pilot (CRP) from time to time.

Exclusions:

- This procedure is written to align with the requirements of the Monash University Occupational Health and Safety Management System and is not a comprehensive list of drone compliance requirements. For additional information, please visit the <u>Civil</u> Aviation Safety Authority (CASA) website or contact the Monash University CRP.
- This procedure does not include operations outside of Australia. Where international operations occur, the licensed Remote
 Pilot (RP) must adhere to local Aviation legislation and regulations. If local regulations do not exist, CASR should be followed by
 way of best practice.

NOTE:

- Additional responsibilities related to the use of drones may be stipulated through CASA communications with the CRP and communicated to stakeholders, and as documented in the Monash University Remotely Piloted Aircraft Operator's Certificate (ReOC) documentation and Drone Safety Management System (DSMS).
- All drone activities must be approved by the CRP or Deputy Chief Remote Pilot (DCRP) as their delegate via the DSMS.
 Standing (on-going) approvals may be provided in circumstances where permitted and appropriate.
- 'Recreational' and 'Sport' use of drones (e.g. drone racing, flying for fun) are not permitted unless authorised by the CRP.

PROCEDURE STATEMENT

To detail the responsibilities and actions required to manage all drone operations conducted by or on behalf of Monash University.

1. Abbreviations

ARN	Aviation Reference Number	
AROC	Aeronautical Radio Operator Certificate	
CASA	Civil Aviation Safety Authority	
CASR	Civil Aviation Safety Regulations	
CRP	Chief Remote Pilot	
DCRP	Deputy Chief Remote Pilot	
DSMS	Drone Safety Management System (also referred to as 'AVCRM')	



OH&S	Monash Occupational Health & Safety	
ReOC	Remotely Piloted Aircraft Operator's Certificate	
RePL	Remote Pilot License	
RP	Remote Pilot (also referred to as 'Drone Pilot')	
RPA	Remotely Piloted Aircraft	
RPAS	Remotely Piloted Aircraft System	
SOC	Standard Operating Conditions (also referred to as 'Drone Safety Rules')	

2. Types of Drone Operations

The requirements applicable to any drone activity will depend on the 'Category' of operation, and whether it is considered to be for a commercial, sport and recreation purpose. Due to this complexity and to ensure that all operations comply with the regulations, all drone activities at or on behalf of Monash University require approval from the CRP (or delegate) regardless of the category of operation. In some instances, a 'standing approval' may be provided by the CRP, subject to conditions. This ensures that the necessary requirements are complied with at all times, while providing flexibility to enable the safe and efficient adoption of drone technology across Monash University. The 'Category' of operation will dictate the **minimum** additional requirements as detailed below.

Excluded Category – Basic Operations

The 'Excluded Category' was introduced by CASA to reduce the burden on RPs when operating under the Standard Operating Conditions (SOCs) / Drone Safety Rules, as detailed in this procedure. This permits staff and students to operate drones in limited circumstances without the need to obtain a Remote Pilot Licence (RePL) or to comply with the stricter requirements of the Monash University ReOC. The requirements under the Excluded Category depend on the weight of the drone being operated.

Despite these reduced requirements and unless otherwise approved by the CRP, all RPs must hold an Operator Accreditation (unless they hold an RePL) and comply with the Drone Registration requirements. Additionally, flight approval must be obtained by the CRP prior to proceeding with any flight under the Excluded Category, unless otherwise exempt by the CRP.

• Drones that weigh less than 250 grams (Micro Drone/RPA)

You do not require an RePL to operate a Micro drone under the SOCs. Additionally, you may operate within controlled airspace in some circumstances (with approval from the CRP).

• Drones that weigh more than 250 grams but less than 2 kg (Very Small Drone/RPA)

You do not require an RePL to operate a Very Small drone under the SOCs.

• Drones that weigh more than 2 kg but less than 25 kg (Small Drone/RPA)

You do not require an RePL to operate a Small drone under the SOCs. At this weight, operations are limited to Monash University property (land owned or leased by Monash University). Any request to operate a Small drone (between 2 kg and 25 kg) under the Excluded Category will be assessed on a case by case basis, subject to an assessment of the nature of the operation and the RP's experience.

Included Category – Including Complex Operations

Any operation that does not meet the requirements of the Excluded Category is considered an Included Category operation, and additional requirements apply. All Included Category operations operate under Monash University's ReOC, and as a consequence all RPs must hold an RePL and complete a formal induction with the CRP, in addition to the specific flight approval.

Once inducted under Monash University's ReOC, RPs may be requested to undertake complex operations and to operate a wider variety of drones as permitted under their RePL. Complex operations include activities such as flying at night, within controlled airspace, above 120 metres (400 feet), Extended Visual Line of Sight (EVLOS), Beyond Visual Line of Sight (BVLOS) and so on. The RP must seek flight approval using the DSMS and such flights will be approved on a case by case basis. It is recommended that RPs discuss such applications with the CRP well in advance of submitting the request on the DSMS.



Educational Use Only

In some circumstances, drones flown for educational purposes only are exempt from licencing, accreditation or registration requirements. This does not extend to Monash University staff, academic research, or where the operation seeks to promote or advertise the university. Any student seeking to rely on this exemption must obtain approval from the CRP, which may be given in limited circumstances.

3. Drone Safety Rules

The Drone Safety Rules, also known as Standard Operating Conditions (SOCs), apply to all types of drones and drone operations unless otherwise approved by the CRP. Any approvals will be subject to additional requirements or conditions as required under the Monash University ReOC. Unless otherwise approved, you must comply with SOC / Drone Safety Rules at all times.

You must:

- Only fly one drone at a time
- Always fly your drone in visual line of sight this means:
 - Flying only during the day
 - Avoid flying through cloud, fog or smoke
 - You can always see your drone with your own eyes not by using goggles, binoculars or another device
 - Not flying behind obstacles that stop you from always seeing your drone. For example, trees, buildings or other structures.

You must not fly a drone:

- Higher than 120 m (400 ft) above ground level
- Closer than 30 m to people horizontally other than those helping to control or navigate your drone
- Over or above people at any time or height
- In a way that creates a hazard to another person, property or aircraft
- Near emergency operations
- In prohibited or restricted airspace (use a CASA-verified drone safety app to help you identify these)
- Closer than 5.5 km to a controlled airport, which usually has a control tower, if your drone weighs more than 250 g. You can operate indoors provided the drone cannot leave the building.

You may operate your drone within 5.5 km of a non-controlled aerodrome or helicopter landing site provided that:

- There are no manned aircraft flying in the area
- You land as soon as safely possible if you see any manned aircraft flying to or from the airport or helicopter landing site
- You remain outside the airfield boundary

Any deviation from the SOC / Drone Safety Rules will require approval from the CRP and will be considered an operation under the 'Included Category' and Monash University's ReOC. See CASA's <u>Drone Safety Rules website</u> or contact the CRP for additional information and guidance if required.

4. Aviation Reference Number, Operator Accreditation and Remote Pilot Licence

With the exception of flights approved as 'Education Use Only' activities (very limited circumstances), all RPs will be required to obtain an Aviation Reference Number (ARN), and either an Operator Accreditation or RePL depending on the nature of the activity.

Aviation Reference Number and myCASA Account

An ARN is an individual customer number used by CASA to identify you, and is similar to having a staff or student number. You will need to create a myCASA account and apply for an ARN online. Please see the CASA website for instructions:

https://www.casa.gov.au/licences-and-certification/individual-licensing/aviation-reference-numbers



Operator Accreditation

To fly a drone in the Excluded Category you must hold a valid Operator Accreditation. Accreditation is free, can be completed online and is valid for three years. A copy of your Operator Accreditation must be provided to the CRP before any flight requests are submitted as part of the DSMS onboarding process. The Operator Accreditation process is completed via your myCASA account. Please see the CASA
Accreditation website for instructions:

Remote Pilot Licence

To fly a drone in the Included Category you must hold a valid RePL for the <u>type and weight of drone being operated</u>. Additionally, the drone activity must be approved by the CRP and conducted in accordance with the Monash University ReOC. Further information can be found on CASA's Remote Pilot Licence website or by contacting the CRP.

5. Drone Registration

With the exception of drones that are operated as approved 'Education Use Only' activities (very limited circumstances), all drones must be registered with CASA before they can be flown. Registration is the requirement of the individual user or areas within Monash University, and evidence of current drone registration is required when requesting flight approval from the CRP or adding a new drone to the DSMS. Further information about drone registration can be found on <u>CASA's Drone Registration website</u> or by contacting the CRP.

6. Drone Safety Management System

The DSMS, also referred to as AVCRM, is used to manage all aspects of drone operations at or on behalf of Monash University, including but not limited to RP inductions, licence management, drones, logs, flight requests, and approvals. Before first use, RPs must request access to the DSMS from the CRP and be guided through the onboarding process depending on the expected operations (Excluded Category, Included Category, or both). Once the account has been enabled RPs will be able to login using their Monash University account by visiting the Monash University DSMS website. RPs will not be able to successfully login until their Monash University account has been linked to the DMSM by the CRP.

Once added to the DSMS, RPs must submit all drone flight requests to the CRP via the DSMS by submitting a new job and completing all the required fields. If this is not possible, or for a contractor activity or an exempt activity, an initial request can be made by email and will be assessed by the CRP on a case by case basis. In limited cases, the CRP may provide approval via email when it is not practical or necessary to use the DSMS.

7. Recording of Flight Details

Flight Logs

RPs are required to keep documented records of all drone operations, except those operating in the Excluded Category using Micro or Very Small drones (less than 2 kg in weight). The DSMS records the operational information required under the Monash University ReOC, however RPs are responsible for maintaining their individual RP flight logs in order to comply with CASA requirements. For a detailed list of all record keeping requirements please visit CASA's Drone Record Keeping website.

8. Education and Training

Education and training flights conducted by aspiring or licensed RPs are subject to the approval of the CRP and the following requirements:

 RPs conducting education and training operations must be directly supervised by an appropriately licensed RP or the CRP for the duration of the activity.

Education and training flights may be approved by the CRP to enable RPs to:

- Obtain a minimum 5 hours supervised practical drone flight experience;
- Conduct operations for skill and competency development using a drone that is not specified in their RePL; and
- Participate in training activities for the granting of a RePL or additional license; competencies by a CASA certified training provider and supervising licensed RP.



9. Flight Restrictions

Operations near Aerodromes and Restricted Areas

It is the responsibility of the RP to determine if operations will be conducted in proximity to any aerodrome (whether uncontrolled or controlled), or whether the operation falls within restricted or prohibited airspace, and plan for any CASA permissions or approvals via the CRP as required. The locations of restricted areas are marked on aeronautical charts, with contact details of the relevant controlling authorities able to be obtained from the <u>Airservices Australia En Route Supplement Australia (ERSA)</u>. Alternatively, RPs are encouraged to use <u>CASA's Drone Safety Apps</u> to investigate and check for any potential issues or restrictions that may apply to their proposed operation.

Flying in certain airspace requires RP to use Aeronautical Radios to monitor air traffic, and to be holders of an Aeronautical Radio Operator Certificate (AROC). For additional information on these requirements, please see CASA's AROC website.

Flying Indoors

Indoor flights require appropriate risk management and a completed risk assessment. Any deviation from the noted conditions should be highlighted, risk managed and approved in consultation with the CRP prior to any proposed flight.

Indoor drone operations are permitted providing the following requirements are met:

- Drone must not be operated in a manner that creates a unreasonable hazard to another aircraft, person or property;
- The drone must not be able to leave the indoor space when within 5.5 km of a controller aerodrome e.g. enclosed or restricted in all directions by closed doors, netting etc;
- 30 meters of separation distance must be maintained between the drone and any people;
- Flights are not conducted over any populous areas.

10. Documentation

Other than drone operations conducted by contractors or otherwise exempt with the written approval of the CRP, all flights must be requested via the DSMS. The process for applying for a flight on the DSMS will be detailed during the onboarding process and additional material will be available on the Monash University DSMS website.

Risk Management Specifications

All drone activities must be appropriately risk managed as per the Monash University OHS Risk Management Procedure. For the purpose of managing risk, the DSMS is used to identify, manage and report risks directly relating to the operation of the drone (e.g. the risks directly related to the operation of the drone in order to comply with CASA requirements). All other risks, for example non-drone ground risks, working in remote locations, travel, confined spaces etc, must be managed using the S.A.R.A.H risk management tool as detailed in the OHS Risk Management Procedure. Non-drone risks and any related risk assessment is the responsibility of the individual RP(s) and or their supervisor, and such risks will not be reviewed or validated by the CRP as part of the drone flight approval process.

For additional information, please contact Monash University Occupational Health & Safety.

Flight Plan

A flight plan must be completed as part of pre-flight activities and this will form part of the DSMS job request. The CRP uses flight plans and additional pre-flight information to determine adequacy of flight planning, suitability of safety risk controls and activity compliance with CASA requirements (restricted areas, drone safety rules, conditions, etc.).

Pre-Flight Checklist & Post Flight Summary

A pre-flight checklist and post flight summary must be completed by the RP conducting the drone operation. The checklist is embedded in the DSMS and used by the RP to confirm the airworthiness of the drone immediately prior to flight. The checklist may be modified to list additional technical checks to be conducted on the drone depending on the type, configuration and any specific information related to pre-flight checking and validation.

A post flight summary completed by the RP must detail any issues experienced during flight, including any breach of pedestrian segregation, technical malfunction of drone, flight crew communication issues, potential operational improvements to be considered for future flights or any additional information the RP considers relevant. Any issues identified during post flight activities should be reported to the CRP.

Date of next review: 2024



11. Contractor Engagement

All contracted RPs must conduct their drone operation in accordance with the intent of this procedure as guided by the CRP. Additionally, all contractor flights must be endorsed by the CRP prior to commencement. CRP endorsement of a contractor flight must not be taken to be an 'approval', or endorsement that the flight complies with all relevant regulations and requirements. The contractor will be solely responsible for compliance with the relevant laws and regulations at all times and an endorsement provides no guarantee that the proposed operation as detailed will meet such requirements.

In order to have a contractor flight endorsed, the following items and information must be obtained and verified by the Monash University staff member who is sponsoring the activity. Contractors must provide copies of:

- CASA Operator Accreditation, RePL and ReOC (as applicable);
- Relevant Certificates of Insurance for RP(s) and entity conducting the operation, and must cover drone related risks;
- Flight specific Job Safety Assessment (JSA) and additional information to assists in understanding the nature of the operation being conducted and the proposed risk management strategies;
- Any CASA exemption, permission or approval as relevant.

All contractors are required to complete the Monash University contractor induction through BPD prior to conducting operations, if unaccompanied. All contractors must seek flight endorsement for any proposed drone operation via the Monash University sponsor, who may refer the contractor directly to the CRP to assist in completing this process. Contractor flights are not managed through the DSMS unless otherwise specified.

12. Privacy

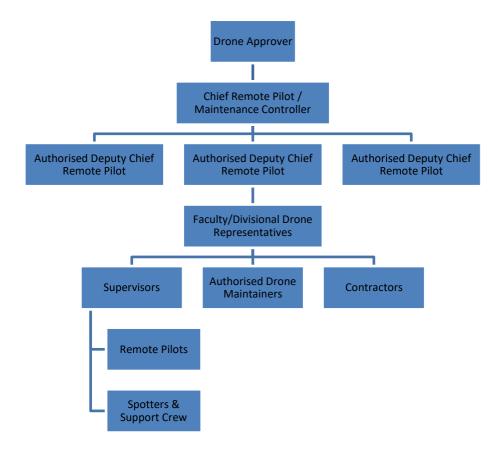
All drone operations must consider privacy concerns as part of pre-flight planning activities. Additional information can be obtained from the Monash University Privacy Office.

13. Responsibility for Implementation

A comprehensive list of OHS responsibilities is provided in the document <u>OHS Roles, Responsibilities and Committees Procedure</u>. The specific responsibilities with respect to Drone Safety Management are provided below:

Organisational Structure: All drone operations must adhere to the organisational structure noted in the below figure, in addition to the roles and responsibilities listed in this procedure.





Monash University Drone Approver

The Monash University Drone Approver is responsible for engaging and consulting with Monash University drone stakeholders during appointment of the following roles:

- Chief Remote Pilot
- Drone Maintenance Controller (typically the same person as the CRP)

The Monash University Drone Approver must notify CASA of any variance to the appointment of the CRP and ensure that mechanisms are available for the transfer of duties to an alternative RP, if the individual in the CRP position becomes unavailable or is unable to fulfil their duties.

In consultation with the CRP, the Monash University Drone Approver ensures the following Monash University Drone Safety Management elements are established and maintained, including the CASA approved Drone Operations Manual and related documentation.

Monash University Chief Remote Pilot

The CRP is the representative and central point of contact for all drone inquiries, information and communication with CASA. The CRP must:

- Have an overview of all drone activities within Monash University and ensure they are conducted in accordance with CASA regulations;
- Develop and maintain the Monash University ReOC and related documentation;
- Provide supervision, assistance and support to the Drone Maintenance Controller (if not the CRP);
- Appoint and review any delegations to Deputy Chief Remote Pilots as appropriate, on an annual basis as a minimum;
- Ensure the Monash University ReOC is maintained through the provision of safe systems of work, CASA documentation and any legislation compliance requirements;
- Ensure all licensed RP conducting drone operations follow the requirements in accordance with this procedure;
- Investigate all drone incidents and instances of drone non-compliance, utilising the Monash University Safety And Risk Analysis Hub (S.A.R.A.H.) for incident and hazard reporting as appropriate;
- Ensure all drone operations are risk managed and provide advice and support to RP conducting drone activities.



Deputy Chief Remote Pilots

Deputy Chief Remote Pilots (DCRP) act as delegates of the CRP. The DCRPs must:

Act in the capacity of the CRP in their respective area and in accordance with the privileges and limitations of such delegation.

Faculty/Divisional Drone Representative

- Have oversight over their specific area's drone operations and conduct activities in accordance with this procedure;
- Ensure all area RPs follow the requirements outlined in this Procedure;
- Ensure all area flights incorporate OHS risk management to ensure safe drone operations;
- Report all non-compliance and incidents relating to drone operations to the CRP;
- Participate in investigations related to drone non-compliance and incidents at the request of the CRP.

Drone Maintenance Controller

- Devise, implement and record maintenance plans and schedules for drones (including peripherals and batteries) that adhere to the requirements noted in the Monash University ReOC and related documentation;
- Provide advice and support to RPs and Faculty/Divisional Drone Representatives to ensure drones are maintained and fit for purpose;
- Appoint and review any delegations to Drone Maintainers as appropriate, on an annual basis as a minimum;
- Adhere to any additional position requirements stipulated by CASA and/or the Monash University ReOC.

Drone Maintainers

Drone Maintainers (DMs) act as delegates of the Drone Maintenance Controller (MC). DMs must:

Act in the capacity of the MC in their respective area and in accordance with the privileges and limitations of such delegation.

Remote Pilot

All Remote Pilots conducting drone operations must:

- Hold and maintain Operator Accreditation or RePL as appropriate:
- Conduct all drone operations in accordance with CASA and any license conditions;
- Adhere to any advice, information or instruction given by the CRP;
- Submit all required flight requests and documentation to the CRP and obtain approval before commencing any flight(s);
- Report all drone incidents to the CRP and (if applicable) the Faculty/Division Drone Representative.
- Document flight incident reports via S.A.R.A.H.;
- At the request of the CRP, participate in drone incident investigations.

Supervisors

All Supervisors coordinating drone activities must:

- Ensure pre-flight planning and risk management of drone operations is consistent with the level of risk associated with the
 activity;
- Ensure the completion and approval of a flight specific risk assessment on the DSMS and any residual (non-drone) risk using the Monash University S.A.R.A.H. and standardised templates.

Support Crew and Spotters

Support Crew and Spotters associated with drone operations must:

- Adhere to the instructions of the licensed RP conducting flights;
- Assist the RP to ensure drone operations do not impact on people near or within the flight area;
- Not operate a drone.

OH&S

Monash OH&S must:

- Ensure the Drone Safety Management Procedure and associated tools and guidance is maintained and available via the OH&S intranet site;
- Provide advice and guidance on OH&S associated issues related to drone operations;
- Audit selected drone operations in accordance with Monash University OHS procedures.



14. Tools

All tools are available on the Monash University Drone Website or within the Drone Safety Management System.

15. Records

Records of drone operations must be retained for the specified timeframe noted below. Additional items may be required to be documented at the request of the CRP or as detailed in the Monash University Drone Operations Manual (Included Operations).

Record Holder	Records	To be kept for
Faculties/Divisions	Information related to drone operations, including: Flight risk assessments; Approved flight requests; Flight logs;	7 years
	 Copies of Faculty/Division Remote Pilot RePLs; Remote Pilot training records; Copies of CASA exemptions, permissions and approvals; Drone maintenance records. 	Indefinite
Chief Remote Pilot	Chief Remote Pilot The CRP must collect and maintain the following records: Approved Remote Pilot details and copies of RePLs; Copies of contractor ReOCs and insurance details; Flight approvals and information related to Monash University drone operations when communicating with CASA, including operational exemptions, permissions and approvals.	
Remote Pilots Remote Pilots must maintain: • Accurate and updated individual flight logs.		7 years

DEFINITIONS

Key word	Definition
Drone Safety Management System	The Drone Safety Management System (DSMS) is an online cloud-based application used to manage drone operations and compliance in accordance with the requirements of the Civil Aviation Safety Authority (CASA). The current product used for this purpose is AVCRM.
Education and Training	Flight operations that are specifically for aspiring RPs or existing RePL holders to obtain practical experience using drones and related hardware.
Remotely Piloted Aircraft	Remotely Piloted Aircraft (RPA) includes Drones, Unmanned Aerial Vehicles (UAV), Unmanned Aerial System (UAS), Remotely Piloted Aircraft Systems (RPAS) or First Person View (FPV) aircraft, regardless of size, ability to carry a payload or type of powertrain. It includes any contrivance invented, used or designed to navigate or fly in the air that is operated without the possibility of direct human intervention from within or on the aircraft.
Remotely Piloted Aircraft System	The Remotely Piloted Aircraft System (RPAS) encompasses the RPA and any related documentation, ground control station and associated hardware.
Restricted Area	These are temporary or permanent areas of airspace where drone flights may be permitted with the approval of the controlling authority or CASA. This may include, but is not limited to: Aerodromes; Non-instrument helicopter landing sites; Instrument helicopter landing sites; Military areas.

Standard Operating Conditions

Standard Operating Conditions (SOC) are a list of flight requirements applicable to most drone operations as defined by CASA. These are also referred so as the Drone Safety Rules.

GOVERNANCE

Parent policy	OHS&W Policy
Supporting schedules	N/A
Associated procedures	Monash OHS documents Monash University Drone Operations Manual OHS Risk Management Procedure OHS Roles, Responsibilities and Committees Procedure
	Further Information from CASA Website Drone Operator Accreditation Drone Registration Drone Record Keeping Drone Safety Apps Drone Safety Rules Drone Types Flying Near People (30 Metre Rule) Know Your Drone Quiz List of Current ReOC Holders Remotely Piloted Aircraft Operator's Certificate (ReOC) Remote Pilot Licence
Legislation mandating compliance	Civil Aviation Act (1988); Civil Aviation Safety Regulations (1998); Occupational Health and Safety Act (2004); Occupational Health and Safety Regulations (2017); Privacy and Data Protection Act (2014); Surveillance Devices (Workplace Privacy) Act (2006).
Category	Operational
Endorsement	Monash University OHS Committee 23 September 2021
Approval	Office of the Chief Operating Officer & Senior Vice-President (a delegate of the President & Vice-Chancellor) 11 October 2021
Procedure owner	Manager, OH&S
Date effective	October 2021
Review date	2024
Version	4
Content enquiries	ohshelpline@monash.edu

Date of next review: 2024

DOCUMENT HISTORY

Version	Date Approved	Changes made to document
1	September 2017	RPA/Drone Safety Management Procedure, v1
2	November 2017	 Added the following procedure elements: 'Education and Training' details in 'Section 2 – Definitions'; 'Section 3 – Licensing' requirements related to Flight Logs, Education and Training and Research Flights. Updated 'Section 10 – Records' to include Pilot logs.
3	March 2018	 Added exemption for individuals using RPA/Drones for Monash University authorised sporting activities to section 3 – Licensing. Separated 'Recording of Flight Details' and 'Education & Training' from 'Licensing' section. Moved 'Off Campus Research Flights' from 'Education and Training' to Section 3 – Licensing. RPA related terminology modified throughout the document. Controlled and Non-controlled Aerodromes separated.
3.1	July 2021	Updated certification logo in footer to ISO 45001 Updated OHS Policy under 'Parent Policy' to OHS&W Policy
4	October 2021	 Changed title of procedure to 'Drone Safety Management Procedure'. Major content update to incorporate new provisions resulting from the issue of a CASA Remotely Piloted Aircraft Operator's Certificate (ReOC). These updates provide additional flexibility to enable the broad, safe and efficient adoption of drone technology across the University. Updates to roles and responsibilities (including delegated roles).

Date of next review: 2024