



CIVIL AVIATION DIRECTIVE – 6011 PART (II)

**UNMANNED
AIRCRAFT SYSTEM
AGRICULTURAL UAS OPERATIONS**

CIVIL AVIATION AUTHORITY OF MALAYSIA

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Introduction

In exercise of the powers conferred by section 24O of the Civil Aviation Act 1969 [Act 3], the Chief Executive Officer makes this Civil Aviation Directive 6011 Part (II) – Unmanned Aircraft System Agricultural UAS Operations – (“CAD 6011 Part (II) – UAS AGR”), pursuant to Regulation 136, 141, 189 and 193 of the Malaysian Civil Aviation Regulations (MCA 2016).

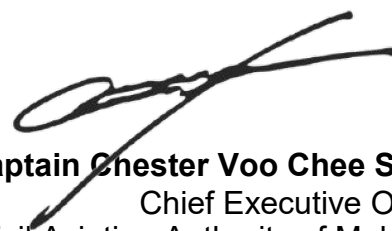
This CAD contains the standards, requirements and procedures to individuals and operators in Malaysia seeking approval for agricultural operations utilising an Unmanned Aircraft System (UAS) under part of Regulation 136 and be read together with Regulation 141, and if the UA is more than 20 kilogrammes, be read together with Regulations 144 of the Malaysian Civil Aviation Regulations.

Furthermore, Civil Aviation Directive 6011 Part (II) – Unmanned Aircraft System Agricultural UAS Operations – (“CAD 6011 Part (II) – UAS AGR”) – UAS highlights the safety requirements that must be met, in terms of airworthiness and/or operational standards, before an agricultural UAS is allowed to be operated in Malaysia.

This Civil Aviation Directive 6011 Part (II) – Unmanned Aircraft System Agricultural UAS Operations – (“CAD 6011 Part (II) – UAS AGR”) is published by the Chief Executive Officer under Section 24O of the Civil Aviation Act 1969 [Act 3] and come into operation on 15 November 2022.

Non-compliance with this CAD

Any person who contravenes any provision in this CAD commits an offence and shall on conviction be liable to the punishments under section 24O of the Civil Aviation Act 1969 [Act 3] and/or under Malaysian Civil Aviation Regulation 2016.



(Datuk Captain Chester Voo Chee Soon)
Chief Executive Officer
Civil Aviation Authority of Malaysia

Civil Aviation Directive components and Editorial practices

This Civil Aviation Directive is made up of the following components and are defined as follows:

Standards: Usually preceded by words such as “*shall*” or “*must*”, are any specification for physical characteristics, configuration, performance, personnel or procedure, where uniform application is necessary for the safety or regularity of air navigation and to which Operators must conform. In the event of impossibility of compliance, notification to the CAAM is compulsory.

Recommended Practices: Usually preceded by the words such as “*should*” or “*may*”, are any specification for physical characteristics, configuration, performance, personnel or procedure, where the uniform application is desirable in the interest of safety, regularity or efficiency of air navigation, and to which Operators will endeavour to conform.

Appendices: Material grouped separately for convenience but forms part of the Standards and Recommended Practices stipulated by the CAAM.

Definitions: Terms used in the Standards and Recommended Practices which are not self-explanatory in that they do not have accepted dictionary meanings. A definition does not have an independent status but is an essential part of each Standard and Recommended Practice in which the term is used, since a change in the meaning of the term would affect the specification.

Tables and Figures: These add to or illustrate a Standard or Recommended Practice and which are referred to therein, form part of the associated Standard or Recommended Practice and have the same status.

Notes: Included in the text, where appropriate, Notes give factual information or references bearing on the Standards or Recommended Practices in question but not constituting part of the Standards or Recommended Practices;

Attachments: Material supplementary to the Standards and Recommended Practices or included as a guide to their application.

It is to be noted that some Standards in this Civil Aviation Directive incorporates, by reference, other specifications having the status of Recommended Practices. In such cases, the text of the Recommended Practice becomes part of the Standard.

The units of measurement used in this document are in accordance with the International System of Units (SI) as specified in CAD 5. Where CAD 5 permits the use of non-SI alternative units, these are shown in parentheses following the basic units. Where two sets of units are quoted it must not be assumed that the pairs of values are equal and interchangeable. It may, however, be inferred that an equivalent level of safety is achieved when either set of units is used exclusively.

A common units of measurements used within this document are expressed in accordance with those used in normal aviation practise within Malaysia:

- a) Vertical distances of aircraft (heights, altitudes) are expressed in **feet (ft)**
- b) Heights of obstructions are expressed in **metres (m)**
- c) Distances for navigation, airspace reservation plotting, and ATC separation are expressed in **nautical miles (nm)**



- d) Shorter distances are expressed in **metres (m)** and **kilometres (km)** when at or over 5000 metres
- e) Mass is expressed in **kilogrammes (kg)** and **grammes (g)** when less than 1 kg
- f) Speed is expressed in **knots (kt)**
Note. - Speeds below 50 kts may also be expressed in **metres per second (m/s)**

Where appropriate, conversions will be provided with the text with the alternative value shown in brackets e.g. 400 feet (120 metres).

Other typical conversions that are used are:

- a) Distance
 - 10 feet = 3 metres
 - 50 feet = 15 metres
 - 500 feet = 150 metres

- b) Mass
 - 250 g = 0.55 lb (pounds)
 - 25 kg = 55 lb

Any reference to a portion of this document, which is identified by a number and/or title, includes all subdivisions of that portion.

Throughout this Civil Aviation Directive, the use of the male gender should be understood to include male and female persons.

CAD 6011 (II) is a subset of the 'CAD 6011 series' of UAS Directives and Guidance documentations, which includes:

- CAD 6011 : Unmanned Aircraft System (General)
- CAGM 6011 : Unmanned Aircraft System (General)
- CAD 6011 (I) : Remote Pilot Training Organisation
- CAD 6011 (II) : Agricultural UAS Operations
- CAD 6011 (III) : UAS Rotary Wing Swarm Operations
- CAD 6011 (IV) : Standard Scenarios (STSs)
- CAD 6011 (V) : Special UAS Project

Note. - Work is currently being done to develop a CAD 6011 (II) in a 'Bahasa Malaysia' Edition. CAD 6011, CAGM 6011, CAD 6011 (III) and CAD 6011 (IV) will be introduced at a later stage.

Enquiries related to CAD 6011 (II) can be made to the UAS Unit via drone@caam.gov.my



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1 General

1.1 Citation

1.1.1 These Directives are the Civil Aviation Directive 6011 (II) - Agricultural UAS Operations (CAD 6011 (II) – AGR), Issue 01/Revision 01, and comes into operation on 15 November 2022.

1.1.2 This CAD 6011 (II) - AGR, Issue 01/Revision 01 will remain current until withdrawn or superseded.

1.2 Applicability

1.2.1 This CAD is not applicable if the operations are conducted in any of the following conditions:

- a) It has a characteristic dimension of 3 m or more, and is designed to be operated over assemblies of people;
- b) It is designed for transporting people;
- c) It is designed for the purpose of transporting dangerous goods and requiring a high level of robustness to mitigate the risks for third parties in case of accident.

1.2.2 An applicant for Research and Development Testing are to adhere to CAD 6011 (V) - SUP requirements. However, if the Research and Development testing satisfies in full the requirements laid out in PDRA 2. ([Refer to Appendix 1](#)) the requirements in CAD 6011 (V) - SUP may be exempted.

1.3 Revocation

- 1.3.1 This CAD revokes Civil Aviation Directive 6011 (II) - Agricultural UAS Operations (CAD 6011 (II) – AGR) Issue 01/Revision 00, dated 01 March 2021.

1.4 Purpose

- 1.4.1 This CAD is applicable to Agricultural operations utilising an Unmanned Aircraft System (UAS).
- 1.4.1.1 An Agricultural UAS operations is the operations of a UAS for the purposes of:
- a) Dispensing any agricultural payload intended for plant nourishment, soil treatment, propagation of plant life, or pest control; or
 - b) Engaging in dispensing ‘agricultural payload’ and surveillance activities directly affecting agriculture, horticulture, or forest preservation, but not including the dispensing of live insects.
- 1.4.2 This CAD prescribes the directives in relations to:
- a) Agricultural UAS operations within Malaysia; and
 - b) The issue of commercial and private agricultural UAS Aerial Work certificate for those operations.
- 1.4.3 For the purposes of the civil UAS Regulation, the term ‘operation of unmanned aircraft systems’ does not include indoor UAS operations. Indoor operations are operations that occur in or into a house or a building (dictionary definition) or, more generally, in or into a closed space such as a fuel tank, a silo, a cave or a mine where the likelihood of a UA escaping into the outside airspace is very low.
- 1.4.4 In a public emergency such as an ‘outbreak’ declared by the Department of Agriculture of Malaysia, a person conducting agricultural UAS operations under this part may, to the extent necessary, deviate from the operating rules of this part for relief and welfare activities approved by the CAAM.
- 1.4.5 Each person who, under the approval of the CAAM, deviates from a rule of this part shall, within 10 days after the deviation send to drone@caam.gov.my a complete report of the UAS operation involved, including a description of the operation and justifications.

1.5 Policy

- 1.5.1 UAS operating in Malaysia must meet at least the same safety and operational standards as manned aircraft when conducting the same type of operation in the same airspace.
- 1.5.2 As a result, when compared to the operations of manned aircraft of an equivalent class or category, UAS operations must not present or create a greater hazard to persons, property vehicles or vessels, either in the air or on the ground.
- 1.5.3 However, with unmanned aviation, the primary consideration is the type of operation being conducted, rather than who or what is conducting it, or why it is being done. Because there is 'no person on board' the aircraft, the consequences of an incident or accident are purely dependent on where that incident/accident takes place. The CAAM's focus therefore on the risk that the UAS operation presents to third parties, which means that more effort or proof is required where the risk is greater.
- 1.5.4 For the purpose of UAS operations, the 'See and Avoid' principle employed in manned aircraft is referred to as 'Detect and Avoid'.

1.6 Unmanned aircraft – clarification of terms

- 1.6.1 The following terms are reproduced here:
- a) 'unmanned aircraft' means an aircraft and its associated elements which are operated with no pilot on board.
 - b) 'aircraft' means a machine that can derive support in the atmosphere from reactions of the air, other than reactions of the air against the surface of the earth.
 - c) For clarification, the CAAM considers the following as flying 'objects' rather than flying 'machines' and so are not considered to be unmanned aircraft:
 - 1) Paper aeroplane
 - 2) Hand launched glider, but only those with no moveable control surfaces or remote control link
 - 3) Frisbees, darts and other thrown toys.
 - d) For the purpose of electrically powered unmanned aircraft, the batteries are considered as part of the aircraft, and the 'charge' is considered as the fuel.

1.7 ICAO Annexes

- 1.7.1 The 19 Annexes to the Chicago convention contain the International Standards and Recommended Practices (SARPS), upon which every ICAO member State then uses to create its own national regulations.
- 1.7.2 ICAO is currently in the process of developing international SARPS covering Remotely Piloted Aircraft Systems which are conducting international Instrument Flight Rules (IFR) operations within controlled airspace and from aerodromes. These SARPS fit into the Certified category of UAS operations and the appropriate regulations will be adapted in accordance with these SARPS when they are completed.
- 1.7.3 ICAO is not currently developing SARPS for any other types of UAS operations.

1.8 Civil and Military regulations

- 1.8.1 Any aircraft which is not 'military aircraft' must, under Civil Aviation Act 1969 [Act 3] comply with civil requirements. 'Military aircraft' means a military aircraft as defined in item 2. (1) of Civil Aviation Act 1969 [Act 3].

1.9 Personal Data Protection Act (PDPA Act 709)

- 1.9.1 UAS Operators and remote pilots should be aware that the collection of images of identifiable individuals, even inadvertently, when using surveillance cameras mounted on an unmanned aircraft, may be subject to the Malaysian Personal Data Protection Act 2010 [Act 709] which regulates the processing of personal data in commercial transaction with the implementation of the 7 Personal Data Protection Principles on the protection of individual with regard to the processing of personal data and on the free movement of such data.
- 1.9.2 UAS operators must be aware of their responsibilities regarding operations from private land and any requirements to obtain the appropriate permission before operating from a particular site. They must ensure that they observe the relevant trespass laws and do not unwittingly commit a trespass whilst conducting a flight.

1.10 Insurance

- 1.10.1 Each holder of an Agricultural UAS AWC shall maintain a valid insurance to cover its liability towards a third party.



1.11 Enforcement

- 1.11.1 The CAAM takes breaches of aviation legislation seriously and will seek to prosecute in cases where dangerous and illegal flying has taken place.
- 1.11.2 Please report any misuse of UAS to CAAM and the Royal Malaysian Police.
- 1.11.3 The CAAM's remit is limited to safety and also to investigate where someone is operating, or has operated, in a manner that is not in accordance with their Aerial Work Certificate. This does not include concerns over privacy or broadcast rights. Breaches of Aviation Regulation legislation pertaining to UAS must be reported directly to: drone.enforcement@caam.gov.my.



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2 Definition and Abbreviation

2.1 Definition

- a) For the purposes of this CAD, the definitions in Malaysia Civil Aviation Regulation 2016 apply.
- b) The following definitions also apply:
 - 1) **‘unmanned aircraft system’ (UAS)** means an aircraft and its associated elements which are operated with no pilot on board;
 - 2) **‘unmanned aircraft system operator’ (‘UAS operator’)** means any legal or natural person operating or intending to operate one or more UAS;
 - 3) **‘assemblies of people’** means gatherings where persons are unable to move away due to the density of the people present;

Note. - Assemblies of people have been defined by an objective criterion related to the possibility for an individual to move around in order to limit the consequences of an out-of-control UA. It was indeed difficult to propose a number of people above which this group of people would turn into an assembly of people: numbers were indeed proposed, but they showed quite a large variation. Qualitative examples of assemblies of people are:

- a) *sport, cultural, religious or political events;*
 - b) *beaches or parks on a sunny day;*
 - c) *commercial streets during the opening hours of the shops; and*
 - d) *ski resorts/tracks/lanes*
- 4) **‘UAS geographical zone’** means a portion of airspace established by the competent authorities that facilitates, restricts or excludes UAS operations in order to address risks pertaining to safety, privacy, protection of personal data, security or the environment, arising from UAS operations;
 - 5) **‘robustness’** means the property of mitigation measures resulting from combining the safety gain provided by the mitigation measures and the level of assurance and integrity that the safety gain has been achieved;
 - 6) **RESERVED**
 - 7) **‘visual line of sight operation’ (‘VLOS’)** means a type of UAS operation in which, the remote pilot is able to maintain continuous unaided visual contact with the unmanned aircraft, allowing the remote pilot to control the flight path of the unmanned aircraft in relation to other aircraft, people and obstacles for the purpose of avoiding collisions;
 - 8) **‘beyond visual line of sight operation’ (‘BVLOS’)** means a type of UAS operation which is not conducted in VLOS;

- 9) **RESERVED**
- 10) **RESERVED**
- 11) **‘dangerous goods’** means articles or substances, which are capable of posing a hazard to health, safety, property or the environment and which are shown in the list of dangerous goods in the Technical Instructions or which are classified to those instructions.

Note.1 - In the case of an incident or accident, that the unmanned aircraft is carrying as its payload, including in particular:

- i) Explosives (mass explosion hazard, blast projection hazard, minor blast hazard, major fire hazard, blasting agents, extremely insensitive explosives);*
- ii) Gases (flammable gas, non-flammable gas, poisonous gas, oxygen, inhalation hazard);*
- iii) Flammable liquids (flammable liquids, combustible, fuel oil, gasoline);*
- iv) Flammable solids (flammable solids, spontaneously combustible solids, dangerous when wet);*
- v) Oxidising agents and organic peroxides;*
- vi) Toxic and infectious substances (poison, biohazard);*
- vii) Radioactive substances;*
- viii) Corrosive substances;*

Note.2 - Under the definition of dangerous goods, blood may be considered to be capable of posing a hazard to health when it is contaminated or unchecked (potentially contaminated). In consideration of Chapter 09 of CAD 6011 (V) -SUP.

- a) medical samples such as uncontaminated blood can be transported in either ‘Special UAS Project’ or it must be ‘certified’ in accordance with CAD 6011 (V) - SUP;*
 - b) unchecked or contaminated blood must be transported in the ‘Special UAS Project’ or the ‘certified’ category. If the transport may result in a high risk for third parties, the UAS operation belongs to the ‘certified’ category. If the blood is enclosed in a container such that in case of an accident, the blood will not be spilled, the UAS operation may belong to the ‘Special UAS Project’ if there are no other causes of high risk for third parties.*
- 12) **‘payload’** means instrument, mechanism, equipment, part, apparatus, appurtenance, or accessory, including communications equipment, that is installed in or attached to the aircraft and is not used or intended to be used in operating or controlling an aircraft in flight, and is not part of an airframe, engine, or propeller;
- 13) **‘direct remote identification’** means a system that ensures the local broadcast of information about an unmanned aircraft in operation, including

the marking of the unmanned aircraft, so that this information can be obtained without physical access to the unmanned aircraft;

- 14) **'follow-me mode'** means a mode of operation of a UAS where the unmanned aircraft constantly follows the remote pilot within a predetermined radius;
- 15) **'geo-awareness'** means a function that, based on the data provided by the competent authorities, detects a potential breach of airspace limitations and alerts the remote pilots so that they can take immediate and effective action to prevent that breach;
- 16) **'privately built UAS'** means a UAS assembled or manufactured for the builder's own use, not including UAS assembled from sets of parts placed on the market as a single ready-to-assemble kit;
- 17) **'autonomous operation'** means an operation during which an unmanned aircraft operates without the remote pilot being able to intervene;

Note. - Flight phases during which the remote pilot has no ability to intervene in the course of the aircraft, either following the implementation of emergency procedures, or due to a loss of the command-and-control connection, are not considered autonomous operations.

An autonomous operation should not be confused with an automatic operation, which refers to an operation following pre-programmed instructions that the UAS executes while the remote pilot is able to intervene at any time.

- 18) **'uninvolved persons'** means persons who are not participating in the UAS operation or who are not aware of the instructions and safety precautions given by the UAS operator;

Note. - Due to the huge variety of possible circumstances, the general guidelines below may be used.

An uninvolved person is a person that does not take part in the UAS operation, either directly or indirectly.

A person may be considered to be 'involved' when they have:

- a) *given explicit consent to the UAS operator or to the remote pilot to be part of the UAS operation (even indirectly as a spectator or just accepting to be overflown by the UAS); and*
- b) *received from the UAS operator or from the remote pilot clear instructions and safety precautions to follow in case the UAS exhibits any unplanned behaviour.*

In principle, in order to be considered a 'person involved', one:

- a) *is able to decide whether or not to participate in the UAS operation;*
- b) *broadly understands the risks involved;*
- c) *has reasonable safeguards during the UAS operations, introduced by the site manager and the aircraft operator; and*

- d) *is not restricted from taking part in the event or activity if they decide not to participate in the UAS operation.*

The person involved is expected to follow the directions and safety precautions provided, and the UAS operator or remote pilot should check by asking simple questions to make sure that the directions and safety precautions have been properly understood.

Spectators or any other people gathered for sport activities or other mass public events for which the UAS operation is not the primary focus are generally considered to be ‘uninvolved persons’.

People sitting at a beach or in a park or walking on a street or on a road are also generally considered to be uninvolved persons.

An example: when filming with a UAS at a large music festival or public event, it is not sufficient to inform the audience or anyone present via a public address system, or via a statement on the ticket, or in advance by email or text message. Those types of communication channels do not satisfy the points above. In order to be considered a person involved, each person should be asked for their permission and be made aware of the possible risk(s). This type of operation does not fall into the ‘open’ category and may be classified as ‘specific’ or ‘certified’, according to the risk.

- 19) **‘making available on the market’** means any supply of a product for distribution, consumption or use on the Malaysian market in the course of a commercial activity, whether in exchange of payment or free of charge;
- 20) **‘placing on the market’** means the first making available of a product on the Malaysian market;
- 21) **‘controlled ground area’** means the ground area where the UAS is operated and within which the UAS operator can ensure that only involved persons are present;
- 22) **‘maximum take-off mass’ (‘MTOM’)** means the maximum Unmanned Aircraft mass, including payload and fuel, as defined by the manufacturer or the builder, at which the Unmanned Aircraft can be operated;

Note. - This MTOM is the maximum mass defined by the manufacturer or the builder, in the case of privately built UAS, which ensures the controllability and mechanical resistance of the UA when flying within the operational limits.

The MTOM should include all the elements on board the UA:

- a) *all the structural elements of the UA;*
b) *the motors;*
c) *the propellers, if installed;*
d) *all the electronic equipment and antennas;*
e) *the batteries and the maximum capacity of fuel, oil and all fluids; and*
f) *the heaviest payload allowed by the manufacturer, including sensors and their ancillary equipment.*

- 23) **‘unmanned sailplane’** means an unmanned aircraft that is supported in flight by the dynamic reaction of the air against its fixed lifting surfaces, the free flight of which does not depend on an engine. It may be equipped with an engine to be used in case of emergency.
- 24) **‘unmanned aircraft observer’** means a person, positioned alongside the remote pilot, who, by unaided visual observation of the unmanned aircraft, assists the remote pilot in keeping the unmanned aircraft in VLOS and safely conducting the flight;
- 25) **‘aircraft observer’** means a person who assist the remote pilot by performing unaided visual scanning of the airspace in which the unmanned aircraft is operating for any potential hazard in the air;
- 26) **‘command unit’ (“CU”)** means the equipment to control unmanned aircraft remotely as defined in point 32 of Article 3 of Regulation (EU) 2018/1139 which supports the control or the monitoring of the unmanned aircraft during any phase of flight, with the exception of any infrastructure supporting the command and control (C2) link service;
- 27) **‘C2 link service’** means a communication service supplied by a third party, providing command and control between the unmanned aircraft and the CU;
- 28) **‘flight geography’** means the volume(s) of airspace defined spatially and temporarily in which the UAS operator plans to conduct the operation under normal procedures;
- 29) **‘flight geography area’** means the projection of the flight geography on the surface of the earth;
- 30) **‘contingency volume’** means the volume of airspace outside the flight geography where contingency procedures are applied;
- 31) **‘contingency area’** means the projection of the contingency volume on the surface of the earth;
- 32) **‘operational volume’** is the combination of the flight geography and the contingency volume;
- 33) **‘ground risk buffer’** is an area over the surface of the earth, which surrounds the operational volume and that is specified in order to minimise the risk to third parties on the surface in the event of the unmanned aircraft leaving the operational volume;
- 34) **‘night’** means the time between 20 minutes after sunset and 20 minutes before sunrise, excluding both the times, determined at surface level;

- 36) **‘Agricultural UAS operations’** is the operations of a UAS for the purpose of:
- i) Dispensing any ‘agricultural payload’ intended for plant nourishment, soil treatment, propagation of plant life, or pest control; or
 - ii) Engaging in dispensing ‘agricultural payload’ and surveillance activities directly affecting agriculture, horticulture, or forest preservation, but not including the dispensing of live insects.
- 37) **‘Agricultural Payload’** means any dispensing materials such as pesticides and any other substances as permitted by Department of Agriculture (DOA). (Refer to DOA website for approved Agricultural Payload List)
- 38) **‘Pesticides’** means, subject to subsection (2) of Pesticides Act 1974 means:
- i) Any substance that contains an active ingredient; or
 - ii) Any preparation, mixture or material that contains any one or more of the active ingredients as one of its constituents, but does not include contaminated food or any article listed in the Second Schedule of Pesticides Act 1974.

2.2 Abbreviation

AEC	Airspace Encounter Category
AEH	Airborne Electronic Hardware
ANSP	Air Navigation Service Provider
ARC	Air Risk Class
AGL	Above Ground Level
AM	Accountable Manager
AMC	Acceptable Means of Compliance
AO	Airspace Observer
ATC	Air Traffic Control
ATO	Approved Training Organisation
ATP	Authorised Technical Personnel
AWC	Aerial Work Certificate
BVLOS	Beyond Visual Line Of Sight
CAAM	Civil Aviation Authority of Malaysia
CEO	Chief Executive Officer (CAAM, unless stated otherwise)
CG	Centre of Gravity
CGSO	Chief Government Security Office
COA	Certificate of Approval
CRP	Chief Remote Pilot
C2	Command and Control
C3	Command, Control and Communication
ConOps	Concept of Operations
DAA	Detect And Avoid
DOA	Department Of Agriculture
ERP	Emergency Response Plan
FHSS	Frequency-Hopping Spread Spectrum
FOM	Flight Operations Manager
GRC	Ground Risk Class
GM	Guidance Material

GNSS	Global Navigation Satellite System
HMI	Human Machine Interface
ISM	Industrial, Scientific and Medical
JARUS	Joint Authorities for Rulemaking on Unmanned Systems
JUPEM	Jabatan Ukur dan Pemetaan Malaysia
LRMP	Lembaga Racun MakhluK Perosak
MAFI	Ministry of Agriculture and Food Industries
METAR	Aviation Routine Weather Report (in (aeronautical) meteorological code)
MC	Maintenance Controller
MCC	Multi-Crew Cooperation
MCAR	Civil Aviation Regulation 2016
MCMC	Malaysian Communications and Multimedia Commission
MTOM	Maximum Take-Off Mass
OM	Operations Manual
OSO	Operational Safety Objective
PDRA	Pre-Defined Risk Assessment
PtF	Permit to Fly
RBO	Risk-Based Oversight
RCoC	Remote Pilot Certificate of Competency
RCP	Required Communication Performance
RF	Radio Frequency
RFI	Remote Pilot Flight Instructor
RGI	Remote Pilot Ground Instructor
RLP	Required C2 Link Performance
RP	Remote Pilot
RPS	Remote Pilot Station
RPTO	Remote Pilot Training Organisation
SAIL	Specific Assurance and Integrity Level
SIRIM	Standard and Industrial Research Institute of Malaysia
SM	Safety Manager



SMSM	Safety Management System Manual
SOE	Schedule of Events
SORA	Specific Operations Risk Assessment
SPECI	Aviation Selected Special Weather code (in (aeronautical) meteorological code)
STS	Standard Scenario
SW	Software
TAF	Terminal Area Forecast
TCAS	Traffic Collision Avoidance System
TMPR	Tactical Mitigation Performance Requirement
TPM	Training and Procedure Manual
UA	Unmanned Aircraft
UAS	Unmanned Aircraft System
UAS Regulation	MCAR 2016 Part XVI and its legislations pertaining to UAS, including CAD 6011 and its subseries
VLL	Very Low Level
VLOS	Visual Line of Sight
VO	Visual Observer



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3 Aerial Work Certificate

3.1 Scope of Aerial Work Certificate (AWC)

- 3.1.1 No person shall engage in Agricultural UAS activities unless in possession of valid AWC issued by the CAAM, and in accordance with this CAD.
- 3.1.2 No person shall engage in Agricultural UAS activities unless a notification has been made to the nearest agricultural department or agricultural agency.
- 3.1.3 Each person having operational control for an agricultural UAS operation shall hold, and comply with, an AWC issued under Regulation 136 of the MCAR 2016 and this CAD.
- 3.1.4 For the purpose of paragraph 3.1.2, a person has responsibility for operational control if the person has any of the following functions as the part of his responsibility:
- a) Assigning personnel for the operation and determining whether the operation may be operated safely;
 - b) Employing, contracting or otherwise engaging crew members for the operation;
 - c) Making a decision to vary the operation, other than a decision by the Remote Pilot taken on the grounds regarding safety.
- 3.1.5 If required by the CAAM, the applicant shall, upon an application for the issuance of the AWC, cause the CAAM inspector to be trained and rated on the type of the UA listed in the application form.
- 3.1.6 If required by the CAAM, the operator shall, upon application for the variation of the AWC to include additional type of UA, cause the CAAM inspector to be trained and rated on the type of aircraft listed in the application form.

3.2 Proposed type(s) of operation for AWC

- 3.2.1 The types of operations for AWC are as below:
- a) Private;
 - b) Commercial.
- 3.2.2 For the purpose of issuance or renewal of an AWC under paragraph 3.2.1, the fleet shall consist of minimum one (1) UA for a Private Agricultural UAS Operator and two (2) UA for a Commercial UAS Operator.
- 3.2.2.1 CAAM does not permit 'privately built UAS' for agricultural purposes. [\(Refer to definition item 16\)](#)

3.3 Criteria for the issuance of AWC

- 3.3.1 An applicant is entitled to an Agricultural UAS AWC if it is approved by the CEO and is satisfied that:
- a) Each applicant has demonstrated and meets the applicable requirements of this CAD; and
 - b) The granting of Aerial Work Certificate is not contrary to the interests of aviation safety.

3.4 Privileges of an Agricultural UAS AWC holder

- 3.4.1 An Aerial Work Certificate (AWC) authorises the holder to perform operations and associated training including the following:
- a) Service(s)/ operation(s), utilising the UA(s), and on location(s) as listed in the holder's Aerial Work Certificate (AWC);
 - b) Ground or flight training appropriate to the UA operated or intended to be operated;
 - c) Test or check flights to determine the competence of flight crew; and
 - d) Tests or checks to determine the competence of other persons providing the operations or carrying out the operations listed in the holder's Operations Manual, Maintenance Procedure Manual.

3.5 Limitations and exemptions on Private Agricultural UAS AWC holder

- 3.5.1 The following requirement must be followed to be deemed as private Agricultural UAS Operator:
- a) The RP must hold a valid RCoC issued by the CAAM (Refer to CAD 6011 (I) for guidance);
 - b) The RP is the owner of the UA or is an employee operating the aircraft on the UA owner's behalf;
 - c) The UA is being operated over the owner's property or property leased by the owner;
 - d) The RP or the owner/leaseholder does not receive direct reward or compensation for the operation;
 - e) Applicant must provide the proof of a bona fide property interest.

Note. - This requires the applicant to provide a deed or agricultural use lease for the property where operators will perform agricultural UAS activity(ies).

- 3.5.2 A private Agricultural UAS AWC will only be required to submit a declaration form and its required documents ([Refer to Attachment C-2](#)) to be processed as an AWC holder. The applicant will be exempted from the full phases of certification process.

3.6 Transferability of an AWC

3.6.1 An Aerial Work Certificate is not transferable.

3.7 Validity, suspension and revocation of AWC

3.7.1 Depending on the competence of the AWC Holder and its organisation, an AWC and associated operations specification may be valid up to a maximum of five (5) years. For the initial grant of an AWC, the period of validity shall be one (1) year. The date of issuance and expiry date are to be entered on the AWC.

3.7.2 An AWC will remain in force during the validity period until it is suspended or revoked by the CEO in accordance with the Regulation 193 of the MCAR 2016.

3.7.3 Any Certificate that is suspended or revoked must be surrendered forthwith to the CEO.

3.7.4 The Certificate that expires shall forthwith be deposited by the holder to the CEO.

3.8 Changes to the AWC

3.8.1 No holder of AWC shall make any changes affecting:

- a) The terms and conditions of the AWC or the particulars in the AWC; or operations specifications; or any elements of the AWC's management system as specified in [item 4.2.et seq.](#)

Unless with the approval of the CEO.

Note. - Refer to [variation of AWC](#) for more information

3.9 Variation to Existing AWC

3.9.1 If the holder of an AWC wishes to apply for the variation of its certificate such as:

- a) Changes to the location(s) listed on operation specification;
- b) Changes to the UA(s) listed on the operation specification;
- c) Changes the type of operation activities (dispensing/ other than dispensing/ private/ commercial) as listed on the operation specification;
- d) Name of the organisation specified in the Aerial Work Certificate;
- e) Place of business/Mailing address of the organisation specified in the Aerial Work Certificate;
- f) The applicant's/operator's Operational Point of Contact details; and
- g) Or any other changes to the Aerial Work Certificate or operations specification;

The AWC holder shall submit full details of the requested amendments. The minimum notice required is 60 working days, but the AWC holder is advised to give as much notice as possible. No undertaking can be given that an application will be dealt with within any requested timeline.

- 3.9.2 On receipt of the submission of the requested amendments, special inspections may be conducted which may include a demonstration flight. After all of the documentation is complete and upon satisfactory completion of any special inspection, the relevant amended page of the AWC or the operations specifications will be issued to the operator as approval for the requested variation to the AWC.

3.10 Renewal of AWC and Audit

- 3.10.1 Commercial AWC Holders shall be subjected to an annual desktop review of the operations manuals, remote pilot currency logs and any other relevant information when UAS operators apply to renew their AWC. In addition, some UAS operators will be selected for an 'on-site' audit on a random basis.

- 3.10.2 The application required by paragraph 3.10.1 shall be submitted to the CEO at least four (4) months prior to the expiry date of the Certificate, along with a statement in the application regarding the current capability and competency of the Operator.

- 3.10.3 Depending on the complexity of the organisation or the operations being conducted by the UAS operator, performance-based oversight principles may dictate that the CAAM's level of oversight is increased. This may mean more frequent audits of some UAS operators, or variations in the scope and manpower employed to conduct the audit.

- 3.10.4 On-site audits will be normally be scheduled with the UAS operator, although the CAAM reserves the right to conduct audits at 'no notice' if such an action is considered necessary. Audits will be conducted by the UAS Unit and may be carried out at the UAS operator's 'base' and/or at an operating location while carrying out an operating task.

Note. - For the purpose of demonstrating compliance with the UAS Regulation, a UAS operator (commercial or private Agricultural UAS AWC Holder) shall grant to any person, that is duly authorised by the CAAM, an access to any facility, UAS, document, records, data, procedures or to any other material relevant to its activity.

- 3.10.5 Any findings or observations will be discussed during the audit and a timescale for their rectification will be agreed.

- 3.10.6 Oversight reports will be distributed to UAS operators within 28 working days of completion of an audit. The UAS operator will be expected to respond within the allocated timescale detailing the actions it intends to take to rectify any identified

issues. Further communication will continue as considered necessary by the CAAM until the oversight report and associated findings/observations are closed.

3.10.7 Renewal of AWC will be denied in case the AWC holder fails to come up with adequate corrective actions to a satisfactory level. Lack of timely corrective action or non-conformance with the regulatory requirements may result in enforcement action whenever applicable.

3.10.8 Finding and observations

3.10.8.1 When objective evidence is found by the CAAM during an audit or inspection that shows non-compliance with the applicable requirements, a finding will be notified to the UAS operator. In extreme cases, the UAS operator's operational authorisation or operating certificate may be limited, suspended or even revoked immediately.

3.10.8.2 Findings are classified as follows:

- a) A level-one finding is any non-compliance with these requirements that could lead to uncontrolled non-compliances and which could affect the safety of a UAS operation;
- b) A level-two finding is any non-compliance with these requirements that is not classified as level-one.

An observation may be raised where there is potential for future non-compliance if no action is taken, or where the CAAM wishes to indicate an opportunity for safety improvement or indicate something that is not considered good practice.



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4 Requirements for the Issuance of AWC

Operational Requirements

4.1 Operator's Responsibilities

4.1.1 The operator shall:

- a) Satisfy the CAAM that is able, fit and competent to conduct safe operations;
- b) Operate in accordance with the provisions of the operations specifications;
- c) Comply with directives, notices, circulars and requirements issued by the Chief Executive Officer;
- d) Establish procedures and limitations adapted to the type of the intended operation and the risk involved, including:
 - 1) Operations manual to ensure the safety of the operations;
 - 2) Procedures to ensure that security requirements applicable to the area of operations are complied with the intended operation;
 - 3) Measures to protect against unlawful interference and unauthorised access;
 - 4) Guidelines for its remote pilots to plan UAS operations in a manner that minimises nuisances, including noise and other emissions-related nuisances, to people and animals.

Note. - A private UAS AWC Holder is exempted from requirement 4.1.1(d). A private UAS AWC Holder shall follow strictly the operational procedures based on the manufacturer's recommendations, if available.

- e) Ensure that all operations effectively use and support the efficient use of radio spectrum approved by MCMC in order to avoid harmful interference;
- f) Ensure that before conducting operations, remote pilots comply with all of the following conditions:
 - 1) Have the competency to perform their tasks in line with the applicable training;
 - 2) Have been informed about the UAS operator's operations manual, if required by the risk assessment and procedures in accordance with item 4.1.1 (d);
- g) Ensure that personnel in charge of duties essential to the UAS operation, other than the remote pilot itself, comply with all of the following conditions:
 - 1) Have completed the on-the-job training developed by the operator;
 - 2) Have been informed about the UAS operator's operations manual, and about the procedures established in accordance with point item 4.1.1 (d);

Note. - A private UAS AWC Holder is exempted from requirement 4.1.1(g).

- h) Keep and maintain an up-to-date record of:
- 1) All the relevant qualifications and training courses completed by the remote pilot and the other personnel in charge of duties essential to the UAS operation and by the maintenance staff, for at least 3 years after those persons have ceased employment with the organisation or have changed their position in the organisation;
 - 2) The maintenance activities conducted on the UAs for a minimum of 3 years;
 - 3) The information on UAS operations, including any unusual technical or operational occurrences for a minimum of 3 years;

Note. - A private UAS AWC Holder is only required to store the records for at least 12 months and make them available for inspection upon request from the CAAM.

- i) Use UAS which, as a minimum, are designed in such a manner that a possible failure will not lead the UAS to fly outside the operation volume or to cause a fatality. In addition, Man-Machine interfaces shall be such to minimise the risk of pilot error and shall not cause reasonable fatigue;
- j) Maintain the UAS in a suitable condition for safe operation by:
- 1) As a minimum, defining maintenance instructions and employing an adequately trained and qualified maintenance staff ([Refer to item 4.8 et. seq.](#)); and
 - 2) Using an unmanned aircraft which is designed to minimise noise and other emissions, taking into account the type of the intended operations and geographical areas where the aircraft noise and other emissions are of concern.

Note. - A private UAS AWC Holder may be exempted from employing a trained and qualified maintenance staff but must strictly follow manufacturers limitations and recommendations.

- k) Will not carry narcotic drugs, marijuana, and depressant or stimulant drugs or substances.
- l) No person shall dispense, or cause to be dispensed, from the UA, any material or substance in a manner that creates a hazard to persons, or property on the surface.
- m) No person shall dispense or cause to be dispensed from a UA, any agricultural payload (unless as listed by DOA), or pesticides unless it is registered under Pesticides Act 1974:
- 1) For a use other than for which it is registered;
 - 2) Contrary to any safety instructions or use limitations on its label; or
 - 3) In violation of any law or regulation of Malaysia.

- n) All operations must be conducted below 400 feet above ground level (AGL) and at a distance of not closer than 50 meters to persons, vessels, vehicles and structures uninvolved to the operations.
- o) All operations must be conducted beyond 9.26km from an aerodrome and only in Class G airspace.
- p) All operations shall be conducted in Visual Line of Sight (VLOS) or Extended Visual Line of Sight (EVLOS), if Agricultural UAS Operator intends to seek for BVLOS operations, refer to CAD 6011 (V) -SUP.
- q) The RP must have a minimum age of at least 18 years of age and holds the appropriate RCoC for the operations. (Refer to CAD 6011 (I) for guidance)
- r) The RP shall have completed during the preceding 90 days on the type relevant type of UAS:
 - 1) At least 3 Agricultural UAS flights of at least 10 minutes of flight time each; and
 - 2) If required, at least 1 dispensation operation.
- s) To have an adequate and sound financial practice to ensure operational and maintenance cost and expenditure are covered.

4.2 Management System

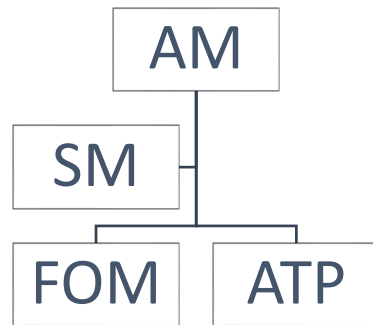
4.2.1 The operator shall establish, implement and maintain a management system that includes:

- a) Organisation structure acceptable to the CAAM with define lines of responsibility and accountability throughout the operator, including a direct safety accountability of the Accountable Manager (AM);
- b) a description of the overall philosophies and principles of the operator with regard to safety, referred to as the safety policy;

Note. - Guidance on SMS can be found in [Appendix 3](#) of this CAD.

- c) the identification of aviation safety hazards entailed by the activities of the operator, their evaluation and the management of associated risks, including taking actions to mitigate the risk and verify their effectiveness;
- d) maintaining trained and competent personnel to perform their tasks;
- e) a function to monitor compliance of the operator with the relevant requirements. Compliance monitoring shall include a feedback system of findings to the AM to ensure effective implementation of corrective actions as necessary;
- f) any additional requirements as directed by the Chief Executive Officer.

4.2.1.1 Organisation structure of an AWC Holder should be as outlined below:



4.2.2 The management system shall correspond to the size of the operator and the nature and complexity of its activities, taking into account the hazards and associated risks inherent in these activities.

- a) The minimum Nominated Post Holder that must be accepted for the certification of an AWC by the CAAM are:
- 1) Accountable Manager (AM);
 - 2) Safety Manager (SM);
 - 3) Flight Operations Manager (FOM); and
 - 4) Authorised Technical Personnel (ATP).

Note.1 - A private Agricultural UAS AWC Holder is exempted from the requirement of Nominated Post Holder. It is understandable that the owner of the UA will be the Accountable Manager for the operation. He is however required to ensure that all its operations are to remain in compliance of the MCAR 2016, this CAD 6011 (II) and the AWC, its terms and conditions, its operating specifications and its limitations and conditions defined.

Note.2 - The application form for nomination of An Accountable Manager or Nominated Post Holder(s) can be found on the CAAM website, under UAS Section.

4.2.2.1 The acceptability of a single person holding several posts, possibly in combination with being the AM as well, will depend upon the nature and scale of the operation. The two main areas of concern are competency and an individual's capacity to meet his responsibilities.

4.2.2.2 The Nominated Post Holder(s) shall be Malaysian citizens unless local expertise is not available for the safety of its operation. In cases where foreign expertise is required, approval shall be granted in accordance with the local employment terms and conditions and approved by CAAM.

4.2.3 Accountable Manager (AM)

- a) The operator shall appoint AM as approved by the CAAM who has the corporate authority for ensuring that all operations and maintenance activities can be financed and carried out to the standard required by the CAAM and any additional requirements defined by the UAS operator.
- b) The AM is an essential part of the AWC holder's management organisation. The term 'AM' is intended to mean the Chief Executive/Executive Chairman/Managing Director/CEO/General Manager, etc. of the operator's organisation, who by virtue of his position has overall responsibility (including finance) for managing the organisation.

4.2.4 Safety Manager (SM)

- a) The operator shall appoint a SM approved by the CAAM to ensure that the implementation and maintenance of an effective SMS. (Refer to [Appendix 3](#) for further guidance). The SM shall:
 - 1) Have extensive applicable and adequate knowledge and experience commensurate with the Operator's planned operations, MCAR 2016, UAS Regulations and SMS.

Note. - Depending on the size and complexity of the organisation, the SM may require to have undergone SMS Implementation Course.

4.2.5 Flight Operations Manager (FOM)

- a) The operator shall appoint FOM as approved by the CAAM to ensure that the operations are in compliance with the standards required by the CAAM, and any additional requirements defined by the UAS operator.
- b) The qualifications of the FOM are:
 - 1) Has extensive applicable and acceptable experience to the type of operation conducted in the Agricultural UAS AWC;
 - 2) Possess sound managerial capability.

4.2.6 Authorised Technical Personnel (ATP)

- a) The operator shall nominate and authorise ATP and accepted by the CAAM. To ensure that the technical requirements are in compliance with the standards required by the CAAM, and any additional technical requirements defined by the UAS operator.
- b) [Refer to Chapter 4.8](#) for more information on ATP.

4.3 Level of Autonomy and Guidelines for Human-autonomy Interaction

4.3.1 The concept of autonomy, its levels and human-autonomous system interactions are currently being discussed in various domains (not only in aviation), and no common understanding has yet been reached. Guidance will therefore be provided once this concept is mature and globally accepted.

4.3.2 Autonomous operations are not allowed by CAAM at this moment.

Note.1 - 'autonomous operation' means an operation during which an unmanned aircraft operates without the remote pilot being able to intervene.

Note.2 - Flight phases during which the remote pilot has no ability to intervene in the course of the aircraft, either following the implementation of emergency procedures, or due to a loss of the command-and-control connection, are not considered autonomous operations.

An autonomous operation should not be confused with an automatic operation, which refers to an operation following pre-programmed instructions that the UAS executes while the remote pilot is able to intervene at any time.

[Refer to definition item 17.](#)

4.4 Night operations

4.4.1 The operator should establish flight experience qualifications for RP conducting night operations. For example, an operator may require RP(s) to acquire 15-25 hours in operations in proximity to the area of proposed night operations. To enhance safety, operators should require RP to work an area during daylight before working the same area at night.

4.5 Logging of flight activities and record keeping

4.5.1 An acceptable means to log and record the flight activities is to use a logbook, which may be electronic.

4.5.2 The information to be recorded should include the following:

a) the identification of the UAS (manufacturer, model/variant (e.g., serial number);

Note. - if the UA(s) is not subject to registration, the identification of the UA(s) may be done using the serial number of the UAS.(for e.g.; UA(s) less than 20 kilogrammes)

b) the date, time, and location of the take-off and landing;

c) the duration of each flight;

d) the total number of flight hours/cycles;

e) in the case of a remotely piloted operation, the name of the remote pilot responsible for the flight;

- f) the activity performed;
- g) any significant incident or accident that occurred during the operation;
- h) a completed pre-flight inspection;
- i) any defects and rectifications;
- j) any repairs and changes to the UAS configuration; and

4.5.3 Records should be stored for 3 years in a manner that ensures their protection from unauthorised access, damage, alteration, and theft.

4.5.4 The logbook can be generated in one of the following formats: electronic or paper. If the paper format is used, it should contain, in a single volume, all the pages needed to log the holder's flight time. When one volume is completed, a new one will be started based on the cumulative data from the previous one.

4.7 Operations Manual (OM)

4.7.1 As required in accordance with [4.1.1 \(d\)](#), the OM should contain at least the information as listed below, if applicable, customized for the area and type of operation.

0	Cover and contact	
	0.1	Cover identifying the UAS operator with the title 'Operations Manual', contact information and OM revision number
	0.2	Table of contents.
1	Introduction	
	1.1	Definitions, acronyms and abbreviations.
	1.2	System for amendment and revision of the OM (list the changes that require prior approval and the changes to be notified to the CAAM).
	1.3	Record of revisions with effectivity dates.
	1.4	List of effective pages (list of effective pages unless the entire manual is re-issued, and the manual has an effective date on it).
	1.5	Purpose and scope of the OM with a brief description of the different parts of the documents.
	1.6	Safety statement (include a statement that the OM complies with the relevant requirements of this CAD and contains instructions that are to be complied with by the personnel involved in flight operations).
	1.7	Approval signature (the accountable manager must sign this statement).
2	Description of the UAS operator's organisation (include the organigram and a brief description thereof).	
3	Concept of operations (ConOps)	
	For each operation, please describe the following:	
	3.1	Nature of the operation and associated risks (describe the nature of the activities performed and the associated risks).
	3.2	Operational environment and geographical area for the intended operations (in general terms, describe the characteristics of the area to be overflown, its topography, obstacles etc., and the characteristics of the airspace to be used, and the environmental conditions (i.e., the weather and electromagnetic environment); the definition of the required operation volume and risk buffers to address the ground and air risks).

	3.3	Technical means used (in general terms, describe their main characteristics, performance and limitations, including UAS, external systems supporting the UAS operation, facilities, etc.)
	3.4	Competency, duties and responsibilities of personnel involved in the operations such as the remote pilot, UA observer, visual observer (VO), supervisor, controller, operations manager, etc. (initial qualifications; experience in operating UAS; experience in the particular operation; training and checking; compliance with the applicable regulations and guidance to crew members concerning health, fitness for duty and fatigue; guidance to staff on how to facilitate inspections by CAAM personnel).
	3.5	Risk analysis and methods for reduction of identified risks (description of methodology used; bow-tie presentation or other).
	3.6	Maintenance (provide maintenance instructions required to keep the UAS in a safe condition, covering the UAS manufacturer’s maintenance instructions and requirements when applicable).
4	Normal Procedures (The UAS operator should complete the following paragraphs considering the elements listed below. The procedures applicable to all UAS operations may be listed in paragraph 4.1.)	
	4.1	General procedures valid for all operations
	4.2	Procedures peculiar to a single operation
5	Contingency procedures (The UAS operator should complete the following paragraphs considering the elements listed below. The procedures applicable to all UAS operations are listed in paragraph 5.1).	
	5.1	General procedures valid for all operations
	5.2	Procedures peculiar to a single operation
6	Emergency procedures (The UAS operator should define procedures to cope with emergency situations.)	
7	Emergency response plan (ERP)	
8	Security (security procedures referred to in paragraph 4.1.1 (d) (ii) and (iii) ; instructions, guidance, procedures, and responsibilities on how to implement security requirements and protect the UAS from unauthorised modification, interference, etc.)	
9	Guidelines to minimise nuisance and environmental impact (referred to in paragraph 4.1.1 (d) (iv) ;	
10	Occurrence reporting procedures according to MCAR Regulation 165 (Guidance may be found in Appendix 2 for Occurrence Reporting)	
11	Record-keeping procedures (instructions on logs and records of pilots and other data considered useful for the tracking and monitoring of the activity).	



12	Additional Operating Procedures	
	12.1	Dispensing any agricultural payload in a manner that will not create a hazard to person or property on the surface
	12.2	Ensuring that each person used in the agricultural operation is informed of their duties and responsibilities
	12.3	Ground crew coordination and loading procedures
	12.4	Limitations on Weight and Balance
	12.5	Procedures for ATC coordination (if required)
	12.6	Night operation procedures
	12.7	Limitations and operating restrictions for dispensing Agricultural Payload
	12.8	If the UA has an approved minimum equipment list (MEL), procedures for deferring and returning items to service
	12.9	Pre-flight procedures
	12.10	Procedures for when it is necessary to fly under wires
	12.11	Knowledge of UA operating limitations
	12.12	Risk mitigation strategies
	12.13	Fatigue awareness and fatigue management strategies

4.7.2 Changes to Manuals

4.7.2.1 A commercial agricultural AWC Holder shall:

- a) Ensure that the operations manual are amended so as to remain a current description of its organisation;
- b) Ensure that any amendment made to the CAAM meet the applicable requirements of this CAD and the MCAR or any other directives, notices, circulars and requirements issued by the CEO;
- c) Forward to the CAAM for retention a copy of amendment manual as soon as practicable after the amendment is incorporated into the respective manual; and
- d) Make such amendments and revisions required to the manual as CAAM considers necessary in the interest of aviation safety.

4.7.3 Emergency Response Plan

4.7.3.1 An Emergency Response is an action taken in response to an unexpected and dangerous event in an attempt to mitigate its impact on people, property or the environment. The Emergency Response Plan should reflect the size, nature and complexity of activities performed by the organisation. The ERP should:

- a) Contain the action to be taken by the operator or specified individuals in an emergency
- b) Provide for a safe transition from normal to emergency operations and vice versa
- c) Ensure coordination with the ERPs of other organisations, where appropriate
- d) Clearly delineates the responsibilities of the personnel in charge of duties essential to the UAS operations
- e) Describe emergency training/drills as appropriate

Note.1 - When considered appropriate by the CAAM, to be validated through a representative tabletop exercise consistent with the ERP training syllabus.

Note.2 - The table-top exercise may or may not involve all third parties identified in the ERP.

Technical Requirements

4.8 Airworthiness Requirement for Agricultural UAS

- 4.8.1 In accordance with MCAR 2016, a UA having a mass of more than 20 kilogrammes without its fuel is required to have an authorisation from CAAM CEO.
- 4.8.2 In pursuant to 4.4.1, all multi-rotor UAS that has been designed for the purpose of agricultural UAS activities shall be authorised by satisfying in full, the following requirements:
- a) The UAS shall be designed as its intended operation set by the manufacturer and has been evaluated and acceptable by the CAAM;
 - b) The UAS shall have Technical Data Specification or equivalent set by the manufacturer and any other supporting documents shall be submitted to the CAAM as required;
 - c) The UAS shall have a proper Flight Manual, Maintenance Manual and Operating Manual from the UAS Manufacturer;
 - d) The UAS shall be maintained in accordance with the UAS maintenance manual provided by the UAS manufacturer;
 - e) The UAS Maintenance and inspections programme shall be developed by the UAS operator in accordance with the UAS manufacturer instructions and recommendations and shall be approved by the CAAM;
 - f) The UAS shall be maintained by authorised technical personnel (ATP) nominated by the organisation and shall be accepted by the CAAM;
 - g) The ATP shall carry out maintenance in accordance with the approved maintenance and inspections programme;
 - h) Pre-flight inspections shall be performed by the ATP prior any flight;
 - i) The ATP shall have relevant qualification, competent and must be trained by the UAS manufacturer;
 - j) Any modifications, repairs and replacement of parts and components on the UAS shall be as per manufacturer instructions and recommendations;
 - k) The modifications, repairs and replacement of parts and components shall only be performed by the ATP;
 - l) All the maintenance, modifications, repairs and replacement of UAS parts and components shall be recorded;
 - m) All the records shall be kept in a secure manner;
 - n) The records shall be retained for a minimum of 3 years;
 - o) Any other requirements prescribed by the CAAM if necessary; and

- p) The UAS and all the relevant documentation shall be inspected and verified by the CAAM prior the authorisation to be granted.

4.8.3 The airworthiness requirements for other than the Multi-rotor UAS that has been designed for agricultural activities might be different from the above requirements depending on the level of performances, limitations and specifications. Therefore, the requirements will be determined by the CAAM as case to case basis.

4.9 Registration and marking of the Agricultural UAS

4.9.1 The agricultural UAS shall be registered as per following:

- a) The UAS operator must display on the UAS marks consisting of Roman capital letters “CAAM-UAS-XXXX” followed by the four (4) digits registration number of the aircraft assigned by the CAAM. For example, CAAM-UAS-1234.
- b) The registration markings must be readable and weatherproof;
- c) The size of the marking may be determined by the operator and acceptable by the CAAM.

Personnel Requirements

4.10 Responsibilities of the Remote Pilot

4.10.1 General

4.10.1.1 The remote pilot shall:

- a) Not perform duties under the influence of psychoactive substance or alcohol or when it is unfit to perform its task due to injury, fatigue, medication, sickness or other causes;
- b) Have the appropriate remote pilot competency (RCoC) and carry a proof of competency while operating the UAS.

Note. - Refer to item [4.11.5](#) for guidance. More detailed guidance can be found in CAD 6011 (I).

- c) Before starting an UAS operation, the remote pilot shall comply with all of the following:
 - 1) Obtain updated NOTAM in regards to the area of operations;
 - 2) ensure that the operating environment is compatible with the authorised or declared limitations and conditions;
 - 3) ensure that the UAS is in a safe condition to complete the intended flight safely, and if applicable, check if the direct remote identification works properly;
 - 4) ensure that the information about the operation has been made available to the relevant air traffic service (ATS) unit, other airspace users and relevant stakeholders, as required by the operational authorisation or by the conditions published by the CAAM.
- d) During the flight, the remote pilot shall:
 - 1) Comply with the authorised declared limitations and conditions;
 - 2) avoid any risk of collision with any manned aircraft and discontinue a flight when continuing it may pose a risk to other aircraft, people, animals, environment or property;
 - 3) comply with the operational limitations in geographical zones/locations stated in the Agricultural UAS Aerial Work Certificate or operations specifications;
 - 4) comply with the operator's procedures and/or operations manual;
 - 5) not fly close to or inside areas where an emergency response effort is ongoing unless they have permission to do so from the responsible emergency response services;
 - 6) ensure that the operations does not pose risk to environment.

- e) Before starting dispensation operations:
 - 1) if the RP dispenses Agricultural Payload, it shall only substances listed by the Department of Agriculture (DOA):
 - 2) if the RP uses Pesticides, it shall be a LRMP approved Pesticides. The RP shall read the label prior operation and utilise the pesticides as described on the label;
 - 3) Applicants must have satisfactory knowledge of the general effects and precautions described on the label of the pesticides that they normally use in the area of operation;
 - 4) Operator shall be knowledgeable about recommended methods for disposing of used pesticides containers. Malaysian Goods Agricultural Practices (MYGAP), DOA approved methods for disposal are contained on the pesticide label. Applicants should be aware of the LRMP regulations that may require additional precautions.

4.10.2 Operating Environment

- 4.10.2.1 The remote pilot, or the UAS operator, should check any conditions that might affect the UAS operation, such as the locations of people, property, vehicles, public roads, obstacles, aerodromes, critical infrastructure, and any other elements that may pose a risk to the safety of the UAS operation.
- 4.10.2.2 Familiarisation with the environment and obstacles should be conducted through a survey of the area where the operation is intended to be performed.
- 4.10.2.3 If obstruction to flight include structures, trees, unfavourable terrain, housing areas, towers, etc., and the RP has not previously worked the particular area, it may be useful to obtain a description of the work area from a person familiar with that area and/or conduct a ground survey. A ground survey may be crucial when a RP finds it necessary to fly under wire.
- 4.10.2.4 It should be verified that the weather conditions at the time when the operation starts and those that are expected for the entire period of the operation are compatible with those defined in the manufacturer's manual, as well as with the operational authorisation or declaration, as applicable.
- 4.10.2.5 The remote pilot should be familiar with the light conditions and make a reasonable effort to identify potential sources of electromagnetic energy, which may cause undesirable effects, such as EMI or physical damage to the operational equipment of the UAS.

- 4.10.2.6 When using two or more UA to apply chemicals to a field, the RP conducting the operation should be encouraged to arrange between themselves who performs the clean-up swaths or trim passes, when applicable. Mid-air collisions have occurred between UA conducting team operations when no coordination is accomplished.
- 4.10.3 Ensure that UAS is in a safe condition to complete the intended flight
- a) The RP should:
- 1) update the UAS with data for the geo-awareness function if one is available on the UA;
 - 2) ensure that the UAS is fit to fly and complies with the instructions and limitations provided by the manufacturer;
 - 3) ensure that any payload carried is properly secured and installed, respecting the limits for the mass and CG of the UA;
 - 4) ensure that the UA has enough propulsion energy for the intended operation based on:
 - 5) the planned operation; and
 - 6) the need for extra energy in case of unpredictable events; and
 - 7) for a UAS equipped with a loss-of-data-link recovery function, ensure that the recovery function allows a safe recovery of the UAS for the envisaged operation; for programmable loss-of-data-link recovery functions, the remote pilot may have to set up the parameters of this function to adapt it to the envisaged operation.
- 4.10.4 Dispensing Operations
- a) RP should consider the following during dispensing operations:
- 1) The resulting cloud from dispensed chemical dust could spread in such a way that it obscures the horizon, flaggers and other ground reference. If this condition occurs, the RP must halt dispensing until ground references are once again visible.
 - 2) The RP should brief the ground crew concerning the chemical being used and the necessary protective clothing. The personal protective equipment (PPE) (rubber gloves, apron, boots, respirators, etc,) should be tailored to the environment and particular chemical in use. When using flaggers, RP should be able to brief them concerning the potential hazard of the pesticide being dispensed; and should indicate that they equip themselves with the appropriate PPE.
 - 3) RP should also be aware that persons working closely with or handling pesticides should change clothes and bathe at the end of the operation, or immediately if the pesticide(s) contacts their skin. Persons handling pesticides should wear clean work clothes daily.
 - 4) The RP must be knowledgeable about procedures to prevent contamination of the water sources if water is obtained from streams or ponds for mixing purposes. The RP must know state and local laws

concerning spillage. They should be knowledgeable about how often to clean UA and spray equipment (e.g., daily or as often as required) to remove accumulation of pesticides residue. When cleaning aircraft, the RP should be aware of state and local laws concerning drainage into a sewer, ditch, pond, stream, or other body of water, and the location of approved disposal sites.

- 5) The RP must possess sufficient knowledge of the primary symptoms of poisoning to promptly seek immediate professional medical attention when concern exists regarding contamination. If required, perform decontamination in accordance with the manufacturer's labelling and instructions.

4.10.5 Competency Requirement for Remote Pilot

- a) The RP shall hold a valid RCoC issued by the CAAM as below:

	Operations	RCoC
1.	Other than dispensation activities in VLOS	RCoC-B
2.	Dispensation operations	RCoC-B + Module 2
3.	EVLOS operations	RCoC-B + Module 1

Note. - Refer to CAD 6011 (I) for further detail.



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5 Certification Process

5.1 Applying to conduct Agricultural UAS Aerial Work Certificate

- a) This Chapter describes the process for applying an Aerial Work Certificate in order to conduct an Agricultural UAS Operations. The CAAM has established a methodological approach for evaluating and determining an applicant's ability to comply with the Regulations. The evaluation items focus on three categories:
 - 1) Airmen;
 - 2) Aircraft; and
 - 3) Operations.
- b) Applicants must successfully satisfy each of the phases in the evaluation process to receive the Aerial Work Certificate. The phases are:
 - 1) Pre-application Phase;
 - 2) Formal application Phase;
 - 3) Documents Evaluation Phase;
 - 4) *Demonstration and Inspection Phase*; and
 - 5) Certification Phase.

Note.1 - A private Agricultural UAS AWC will only be required to submit a declaration form and its required documentations to be processed as an AWC holder. The applicant will be exempted from the full phases of certification process. Refer to [Attachment C\(2\) for private Agricultural UAS AWC Declaration form](#).

Note.2 - Depending on the size and complexity of the operation, the Demonstration and Inspection phase will either be conducted together with the Document evaluation phase, exempted or conducted specifically on its own phase on case by case basis by the CAAM.

5.2 Pre-application Phase

- 5.2.1 The pre-application meeting is an informal meeting to provide applicants with an overview of the certification process and identify the necessary resources to assist them in becoming certificated.
- 5.2.2 In addition to understanding the MCAR 2016, this CAD and its related documents, the CAAM strongly advises initial new applicants to book a pre-application meeting before preparing an application. To book a meeting, send an email to **drone.atf@caam.gov.my** in the subject field, put a **“request for Agricultural UAS Aerial Work Certificate operations pre-application meeting”**. Within the body of the e-mail, indicate your preference for face-to-face or teleconference, and include your contact details. A completed prospective operator’s pre-assessment statement (POPS) form and supporting documents is to be included in the attachment of the email submitted. However, a hard copy of the POPS shall be sent by hand or by mail to the Flight Operations Division as stated in the POPS form.
- 5.2.3 A prospective operator’s pre-assessment statement (POPS) form is to be completed by the applicant for the purpose of establishing the intent on the applicant to continue with the process for certification and thus enable the CAAM to commit resources and plan the certification process. The POPS can be found in [Attachment A](#) of this document.
- 5.2.3.1 The CAAM will advise the prospective applicant on the approximate period of time that will be required to conduct the certification process, subsequent to the receipt of a complete and properly executed application. This advice is particularly important in the case of new operators so that such applicants may avoid undue financial outlays during the certification period.
- 5.2.3.2 In those cases, where an applicant's organisation is in the formative stage, and the applicant has little or no operating experience, the applicant shall be advised that it may not be possible to judge the AWC’s operating competency until a sufficient period of operational proving, including observation training flights, have been carried out and that the overall period required to reach a final decision on the application may be protracted and considerable financial outlays unavoidable.
- 5.2.3.3 The importance of a thorough and careful preliminary assessment of the application cannot be overemphasised. The more thoroughly the applicant’s competence is established at this stage, the less likelihood there will be of having serious problems in the document evaluation and the demonstration and inspection phases preceding certification or during the course of subsequent operations. Analysis of the application will indicate either that it is acceptable on a preliminary basis or that it is unacceptable.

- 5.2.3.4 The pre-application phase will also include a parallel assessment of the financial, and economic status of the applicant and the proposed operation. The financial viability of the operation may be the most critical factor in reaching a decision on whether or not an AWC should be awarded.
- 5.2.3.5 The financial and economic assessment of the applicant will be carried out by the CAAM or an appropriate organisation accepted by the CAAM and be assigned responsibility to provide an assessment related to economic aspects of the proposed operation.
- 5.2.4 If an applicant is familiar with all the requirements of the certification process and the required documentation, they may not need a pre-application meeting (e.g., if they have previous experience as an Agricultural UAS Operator holding an Aerial Work Certificate by CAAM). In such cases, the CAAM eliminates the pre-application phase and the applicant proceeds to the formal application phase.
- 5.2.5 Depending on applicability, 'The Committee' may be called to join during the pre-application phase. 'The Committee' may comprise of:
- a) CAAM UAS Unit;
 - b) SIRIM;
 - c) MCMC;
 - d) JUPEM; and
 - e) CGSO.
- Note. - A representative of CAAM UAS Unit will act as chairman of 'The Committee'.*
- 5.2.5.1 The establishment of The Committee is required for the applicant to determine the applicability and compliance with all other UAS regulations set by other agencies; and if required, for the certification/approval process to work parallel.



5.2.6 Sequence of Events for Pre-application Phase

5.2.6.1 The sequence of events from the submission of application for issue of Aerial Work Certificate shall be as follows:

- a) Applicant will be required to establish contact with CAAM to understand procedures and gather information relevant to AWC;
- b) The name and Place of business of the applicant;
- c) A description of the applicant's business organisation, corporate structure, and names and addresses of those entities and individuals having a major financial interest;
- d) The nature or the proposed operations or activities;
- e) Prepare financial data/evidence indicating financial solvency as per government policy.

5.2.6.2 During the meeting, the CAAM will ensure that applicants meet the eligibility requirements for obtaining an Aerial Work Certificate by conducting a general inquiry. Be prepared to provide the CAAM with the following information:

- a) Location of home base of operations;
- b) Location of probable satellite sites;
- c) Location(s) of the proposed operation(s) in .kmz/.kml file.
- d) List of items intended to be dispensed (Please refer to DOA's approved list of Agricultural Payload (if applicable));
- e) Operating as individual, corporation, or partnership;
- f) Previous experience with Agricultural UAS Operations;
- g) Category and class of UAS;
- h) Qualifications and experience of Flight Operations Manager (FOM).



5.3 Formal application Phase

5.3.1 During this phase, the applicant is expected to submit the complete application to CAAM together, with the proposed Schedule of Event, and the cost of certification established during the previous phase and relevant documents to support the intended operation.

Note. - The application will not be processed in the event the applicant fails to make payment within 14 working days. Where application contains significant deficiencies, the CAAM will advise the applicant of this and provide an opportunity for the applicant to withdraw and amend their application. Note that this will suspend the application process to a maximum of 30 calendar days after which, if revised information has not been received, the application will be cancelled, and all the monies will not be refunded to the applicant.

5.3.2 The CAAM will review the application within 21 working days of receiving the items required as listed in 5.3.1.

5.3.3 Applicants are notified, **in writing**, whether the formal application is accepted or rejected. If the application is inaccurate or not completed properly, the CAAM returns the application to the applicant outlining the items that are unsatisfactory. Applicants must take the appropriate action to correct the items before the certification process can continue. The CAAM may determine that a formal application meeting is necessary to resolve the issues with the application. Typically, the pre-application phase covers these items or specific discrepancies found with the application.

5.3.4 The CAAM's acceptance of a formal application phase does not constitute approval or acceptance of individual attached documents. The documents are thoroughly evaluated during subsequent phases of the certification process. This phase ends upon the CAAM's acceptance of the application, and the Document Evaluation Phase begins.

5.3.5 At this stage, the applicant and the UAS Unit certification team will likely know of the requirement if the requirement of 'The Committee' is still required. The applicant is required to follow through with the approval process with the other relevant agencies if required. The approvals of other agencies are pertinent to be completed prior to the demonstration and inspection phase.

5.3.6 Sequence of Events for Formal Application Phase

5.3.6.1 On receipt of acceptance of a Formal application, an applicant must fulfil the following requirements towards achieving a sound status as assessed by CAAM for issuance of AWC:

- a) Set up main base and operations base as applicable with a principal place of business, the registered office located in Malaysia. Such bases may be subjected to inspection by Inspectors of CAAM consistent with the type of operations sought;
- b) Recruit adequately Key Management Officials commensurate with the type of operations (administrative, operational, maintenance, financial, etc.). Only the competence of the Flight Operations Manager and the Accountable Manager shall be subjected to verification of the CAAM;
- c) Prepare required manual(s) for the CAAM's review followed by acceptance/approval. The review of the documents is likely to be repeated for several times;
- d) Obtain information on the UA(s) as well as the UA(s) purchase/lease documents for onward submission to the CAAM. The purchase/lease documents at this stage could be provisional one;
- e) Initiate training of Remote Pilot and other personnel as applicable;
- f) Prepare the company for inspection/evaluation by the CAAM;
- g) Arrange for inspection of UA by the CAAM UAS Unit (either brought in to CAAM or at UA location);
- h) Prepare for UA inspection, emergency response plan procedure and demonstration;
- i) Prepare for demonstration flights as applicable;
- j) Complies with MCAR 2016 and all the applicability of this CAD and CAD 6011 (when it becomes effective), as applicable;
- k) Any other additional requirements that are deemed necessary by CAAM;
- l) Any other additional requirements that are deemed necessary by The Committee;
- m) Submit application with relevant documents for issuance of AWC.

Note. - The applicant must submit schedule of events ([refer Attachment B](#)) to the CAAM which are agreeable to both parties to demonstrate that the applicant has the capability and competency to comply with all requirements for the issuance of the AWC. The dates shall be logical in sequence and provide time for review, inspection and approval of each item.



Note. - CAAM will determine if the inspection will be carried out for item (f), (g), (h) and (i) of this paragraph. Nonetheless, the applicant must be ready if an inspection by the CAAM takes place.

- 5.3.6.2 The criteria for a formal application for issue of an AWC shall depend upon the applicant having been assessed by the CAAM to have attained satisfactory standard as regards to the sequence of events observed and the requirements mentioned in Paragraph 5.3.6.1 duly complied with. At this stage, applicant shall submit application along with the required fees to the CEO in a prescribed form for issuance of AWC.
- 5.3.6.3 For a renewal of the AWC, the process will start from the Formal Application Phase as mentioned in 5.3.6.1. For all other applicants, the process will start from Pre-application Phase.



5.4 Documents Evaluation Phase

5.4.1 During this phase, CAAM will undertake a detailed study of the applicant's operations manual and other documents, which accompanied the formal application. The documentation must be complete, accurate and current to satisfy the CAAM's requirements before the inspection phase (if required) commence. There will be series of discussions between the CAAM and the applicant at this stage with regards to establishing the validity/acceptability of the applicant's proposals. It must be understood that the documents shall precisely reflect the mode and manner which the applicant intends to conduct the proposed operations and once approved, they shall form a part of understand between the CAAM and the operator with regards to future functions of the operator.

5.4.2 Sequence of Events for Submission of Documents

5.4.2.1 The applicant shall submit to the Project Manager one set of following manuals/documents for review and corrections as applicable. After reviewing/correcting, applicant will submit two final copies of the manuals for CAAM approval.

5.4.2.2 The compliance checklist ([Refer to Attachment D-1](#)) may be used to ensure that all information(s) are inserted in Manuals or present during the certification phase. These information provided to the CAAM will also assist the CAAM in processing the Aerial Work Certificate in a more expedient manner. Operator should submit as early as possible, a point-by point reply to the applicable requirement. Additional requirement may be specified by the CAAM when deemed necessary.

5.5 Demonstration and Inspection phase

- 5.5.1 During this phase, the applicant needs to demonstrate to CAAM that the applicant' is in a position to conduct the proposed operations in accordance with the procedures detailed in the documents/manuals reviewed during the previous phase utilising the personnel/facilities/equipment identified in the formal application. Qualifications and experience of the nominees for Nominated Post Holders will be evaluated and interviewed. Aircraft, maintenance facilities and arrangements will be inspected. Training facilities (on job training programme), and training personnel will be evaluated.
- 5.5.2 Company's organisational structure, channels of communication, delegation of powers, financial strength and sources of funding will be subjected to detailed scrutiny to ensure that the company has sufficient resources, effective arrangement and control to satisfy its obligations.
- 5.5.3 Nominated Post Holder(s), Flight Operations, Remote Pilot(s) and as required by the CAAM will also be assessed according to the operations during this phase.
- 5.5.4 If CAAM is satisfied with the above arrangements, demonstration flight(s) as applicable will be conducted, as determined by the CAAM. This phase may reveal the need for some operational changes, which in turn may require the applicant to make amendments to the documents originally submitted. All elements must be satisfactorily completed before proceeding to the certification phase.

5.6 Certification phase

- 5.6.1 When all the previous phases have been satisfactorily completed, CAAM will take the necessary administrative action to approve formally the nominees for Nominated Post Holders (if not already), the UA, facilities and procedures specified in the Operations Manual, applicable documents and formally issue the Aerial Work Certificate and the associated Operations Specifications. It must be noted that although the CAAM inspectors may indicate to the applicant regarding acceptability of the applicant's arrangements in respect of personnel, equipment, facilities, services, procedures or process in relation to the proposed operations as and when evaluations on such matters are completed, the final decision of CAAM in regard to each such arrangement would be conveyed to the operator formally during the certification process only.
- 5.6.2 The culmination of this phase is the issuance of the AWC to the applicant.
- 5.6.3 Subsequent to the issuance of a AWC, the CAAM inspector will be responsible for conducting periodic inspections, to ensure the AWC Holder's continued compliance with the CAAM regulations, authorisations, limitations and provisions of its AWC and operations specification.
- 5.6.4 The entire [Certification for Aerial Work Certificate](#) process flow chart can be found in Attachment E.



6 Appendices

Item	Subject	Additional References
Appendix 1 :	Pre-defined Risk Assessment 2 – PDRA 2	Item 1.2.3 of CAD 6011 (II) - AGR
Appendix 2	Occurrence Reporting	Item 4.7 of CAD 6011 (II) - AGR
Appendix 3	Safety Management System	Item 4.2.1 of CAD 6011 (II) - AGR



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Pre-Defined Risk Assessment – PDRA 02

CAAM/BOP/UAS/SUP/PDRA02-01

**PRE-DEFINED RISK ASSESSMENT - PDRA02**

Flights for Research and Development Testing of UAS with a Maximum Take-Off Mass (MTOM) up to 150kg

WHAT?

- This PDRA is designed to enable short term initial research and development flights to be conducted, within a sterile area away from people and property. It allows a UAS manufacturer/developer to conduct initial 'proof of concept' flight tests without the need to produce a full risk assessment for a product that may not prove to be feasible for further development.
- It allows a UAS manufacturer/developer to conduct initial 'proof of concept' flight tests without the need to produce a full risk assessment for a product that may not prove to be feasible for further development.

WHEN?

PDRA02 enables the following operations:

- UA Operations for the purpose of research and development
- Flights must be conducted within a sterile area free of any uninvolved persons
- No flight within 50 metres horizontally from any uninvolved persons
- Maximum height not to exceed 400 feet above the surface of the earth
- Flights must be conducted at least 150 metres horizontally from a Designated Area i.e., Residential, Commercial, Industrial or Recreational Area
- Daytime operations ONLY and within VLOS
- Maximum horizontal distance from the remote pilot must not exceed 250 metres, unless a lesser control link radio range has been specified by the manufacturer. Direct unaided visual contact with the said UA must be maintained, sufficient to monitor its flight path for the purposes of avoiding collisions
- Maximum speed:
 - a) 35 knots in any direction where MTOM is less than 75kg
 - b) 25 knots in any direction where MTOM is between 75kg and 150kg
 - c) Where the speed cannot be measured, the Unmanned Aircraft is not to be operated at a speed that is greater than a fast walking pace
- Articles may be picked up by, raised to, and dropped or lowered from the UA provided that the activity is confined to a sterile area defined for this purpose, and is conducted in a way that will not endanger persons or property
- Operations must not be conducted in controlled airspace, except with the permission of the appropriate Air Traffic Control Unit

- Operations must not be conducted within Aerodrome Traffic Zones (ATZ), Restricted Areas or Danger Areas unless the requirements for access to such airspace has been complied with
- Carriage of persons is not permitted
- Dangerous Goods permitted are only agricultural payload as listed by DOA or Pesticides registered under Pesticides Act 1974

WITH?

- UAS maximum take-off mass (MTOM) up to 150kg
- UAS equipped with a mechanism that makes it land in the event of loss of disruption of C2 Link
- Insurance cover to meet insurance requirements
- Either a contracted or own UTM system will be used

HOW?

- UAS Operators must produce an Operations Manual which details how the flight will be conducted. (only the ConOps element of the operations manual is required for this PDRA)
For Agricultural PDRA, [Refer to CAD 6011 \(II\) item 4.7](#) ; For all other PDRA, [Refer to Appendix 2 of CAD 6011 \(V\)](#).
- SMS and ERP Manual
- All Remote Pilot involved in the Operation must be in possession of a valid applicable RCoC.

RCoC-B may be sufficient for VLOS operations

RCoC-B + Module 2 is required if dispensation of Agricultural Payload is involved.

DOCUMENTS TO BE INCLUDED IN THE APPLICATION

- Operations Manual
- SMS and ERP Manual
- Copy of Certification of SMS Manager having attended SMS implementation course
- Copy of RCoC for all Remote Pilots intending to fly under the authorisation

Occurrence Reporting

1.1 UAS Occurrence reporting

1.1.1 UAS occurrences- what you need to do

- a) This section will walk you through the actions you need to take if there has been an occurrence involving an unmanned aircraft and you are wondering if you need to report it, who you need to report to and how you report it.

1.1.2 Have you got the most up-to-date information?

- a) UAS occurrence reporting is evolving and the CAAM may need to make changes to occurrence reporting policy and guidance. To ensure you have the most up-to-date information, you must also check on the [CAAM website](#) in addition to the information in this document.

1.1.3 The purpose of occurrence reporting

- a) Occurrence reporting systems are not established to attribute blame or liability.
- b) Occurrence reporting systems are established to learn from occurrences, improve aviation safety and prevent recurrence.
- c) The purpose of occurrence reporting is to improve aviation safety by ensuring that relevant safety information is reported, collected, stored, protected, exchanged, disseminated and analysed. Organisations and individuals with a good air safety culture will report effectively and consistently. Every occurrence report is an opportunity to identify root causes and prevent them from contributing to accidents where people are harmed.
- d) The safe operation of UAS is as important as that of manned aircraft. Injuries to third parties, or damage to property, can be just as severe. Proper investigation of each accident, serious incident or other occurrence is necessary to identify causal factors and to prevent repetition. Similarly, the sharing of safety-related information via good reporting is critical in reducing the number of future occurrences.

1.1.4 What organisations in Malaysia have a reporting requirement?

- a) The Air Accidents Investigation Branch (AAIB) and the Civil Aviation Authority of Malaysia (CAAM) have separate reporting requirements. It may be necessary to report to one or both. The regulations that describe these requirements are explained, below.

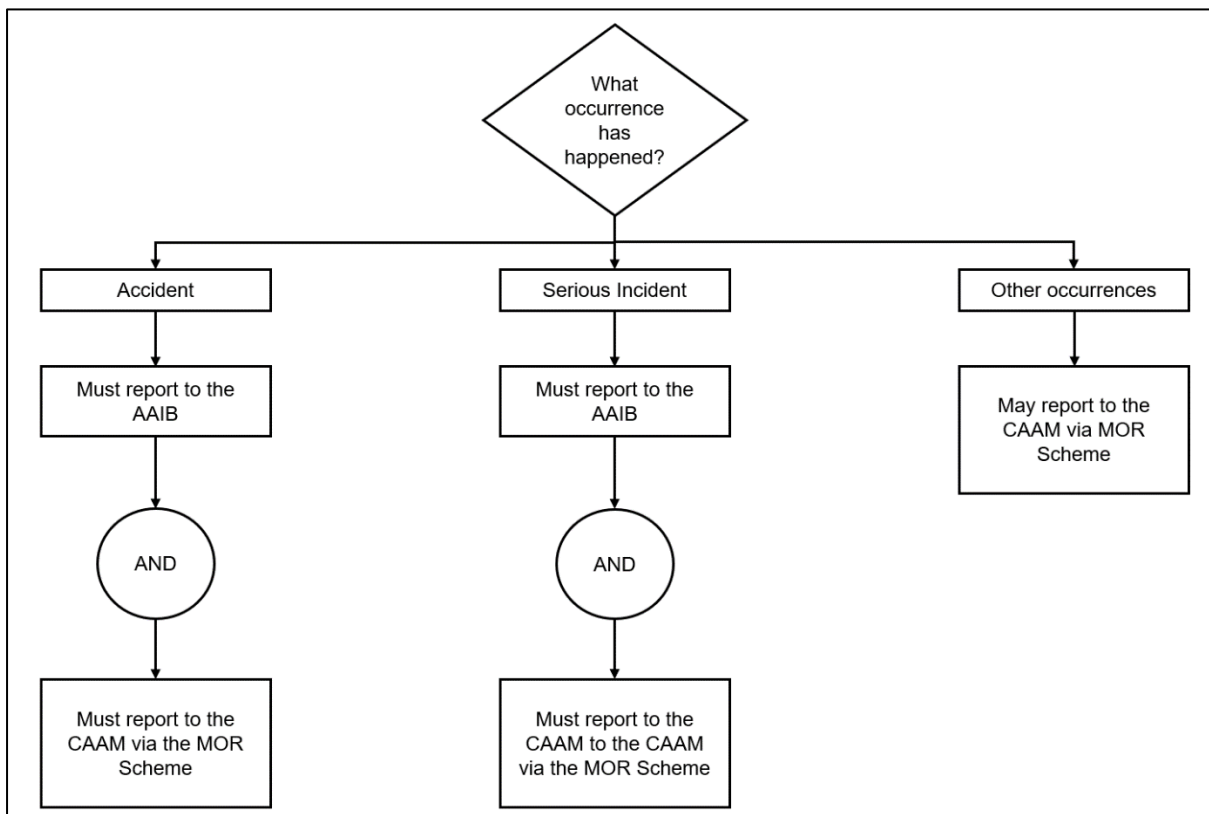
1.1.5 Occurrence reporting regulations

- a) MCAR 2016 Regulation 165 on Mandatory Occurrence Reporting.

1.1.6 Occurrence reporting flowchart

- a) The flowcharts below will help you find out three things:
 - 1) What occurrences you need to report
 - 2) Who you need to report to
 - 3) Mandatory and voluntary reporting

Note. - Voluntary reporting is useful to provide opportunity for safety lessons to be learned more widely from an occurrence. More engaged air safety cultures tend to do more voluntary reporting.



Occurrence Reporting Flowchart

1.2 Definitions

1.2.1 A **reportable occurrence** in relation as defined in MCAR Regulation 165 (1) means:

- a) Any incident relating to such an aircraft or any defect in or malfunctioning of such an aircraft or any part of equipment or such an aircraft, being an incident, malfunctioning or defect endangering, or which if not corrected would endanger the aircraft, its occupants or any other person.
- b) Any defect in or malfunctioning of any facility, on the ground used or intended to be used for purposes of or in connection with the operation of such an aircraft, being a defect or malfunctioning endangering, or which if not corrected would endanger such an aircraft or its occupants.

Note. - Accidents and serious incidents are classifications of reportable occurrence which needs to be reported to CAAM under the Occurrence Reporting Scheme.

1.2.2 An **accident** as defined in ICAO Annex 13 means:

- a) An occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:

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

- i) Being in the aircraft; or
- ii) Direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
- iii) Direct exposure to jet blast,

except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

- 2) The aircraft sustains damage or structural failure which:

- i) adversely affects the structural strength, performance or flight characteristics of the aircraft, and
- ii) would normally require major repair or replacement of the affected component,

except for engine failure or damage, when the damage is limited to a single engine, (including its cowlings or accessories), to propellers,

wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes) or minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike, (including holes in the radome); or

- 3) The aircraft is missing or is completely inaccessible.

1.2.3 A **serious incident** as defined in ICAO Annex 13 means:

- a) An accident involving circumstances indicating that there was a high probability of an accident and is associated with the operation of an aircraft, which in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time it comes to rest at the end of the flight and the primary propulsion system is shut down.

1.2.4 A **fatal injury** as defined in ICAO Annex 13 means:

- a) An injury which is sustained by a person in an accident and which results in his or her death within 30 days of the date of the accident.

Note.1 - Serious injury or death to flight crew or passenger which directly results from the operation of the aircraft or its equipment (e.g., abrupt manoeuvres, turbulence, propeller or jet blast) is required to be reported as Reportable Accident.

Note.2 - Any significant injury to any person, which directly results from the operation of the aircraft or its equipment, but which is not considered to constitute a Reportable Accident.

1.3 Occurrence

1.3.1 The regulations:

- a) Occurrences must be reported in accordance with the requirements of MCAR Regulation 165.
- b) The means of reporting is via the Mandatory Occurrence Reporting (MOR) Scheme. Which can be found on the CAAM website [here](#).
- c) Some of the occurrences MOR Scheme clearly on applies to manned aircraft, however, many equally apply to unmanned aircraft.

1.3.2 Additional UAS Occurrences that must be reported:

- a) In addition to those listed in the regulations above, other, more UAS specific occurrences must also be reported should they or a similar occurrence be experienced or observed by you. These occurrences are listed below but the list is not exhaustive.
- b) When you are considering whether an occurrence is reportable, you should also take into account other situations where the same thing could have happened. For example, the actual occurrence may have been ‘benign’ as it happened in a remote area. However, if the full scope of how the aircraft could be operated is taken into account, for example over people, could the same occurrence in a different situation result in a more serious outcome?
 - 1) Operation of the aircraft
 - i) Unintentional loss of control
 - ii) Loss of control authority over the aircraft
 - iii) Aircraft landed outside the designated area
 - iv) Aircraft operated beyond the limitations established in the relevant operating category or operational authorisation
 - v) Aircraft operated without required licencing, registration or operational authorisation
 - vi) Aircraft operated in an unairworthy or unflightworthy condition
 - 2) Technical malfunction/failure of the aircraft or command unit
 - i) Loss of command and control link (C2 link)
 - ii) Battery failure/malfunction
 - iii) Powerplant failure
 - iv) Aircraft structural failure (for example, part of the aircraft detaches during operation)
 - v) Errors in the configuration of the command unit
 - vi) Display failures
 - vii) Flight programming errors
 - viii) Navigation failures
 - 3) Confusion/liaison errors between flight crew members (human factors)
 - i) Inter crew communication
 - ii) Briefing
 - iii) Competency oversights
 - 4) Interaction with other airspace users and the public
 - i) Conflict with another aircraft, such that a risk of collision may have existed
 - ii) Infringement of restricted/reserved airspace (Inc. Flight restriction zones [FRZ] around aerodromes)
 - iii) Inadvertent flight within close proximity of uninvolved persons (i.e., within the prescribed separation distances)

5) Other emergencies

- i) Any occurrence where the safety of the aircraft, operator, other airspace users or members of the public is compromised or reduced to a level whereby potential for harm or damage is likely to occur (or only prevented through luck)

1.3.3 Reporting an UAS occurrence to the AAIB

a) The AAIB

- 1) The purpose of the AAIB is to improve aviation safety by determining the circumstances and causes of air accidents and serious incidents and promoting action to prevent recurrence.

b) What UAS occurrences must be reported to the AAIB?

- 1) All UAS **accident and serious incidents** are required to be reported to the AAIB, regardless of weight or whether they are being used for commercial purposes.

c) Who must report UAS occurrences to the AAIB?

- 1) 'Any person involved' who has knowledge of an aircraft accident or serious incident in the Malaysia must report it to the AAIB. 'Any person' includes (but it is not limited to) the owner, operator, and remote pilot of a UAS.

d) A more detailed list can be found on the AAIB website.

e) Regulations

- 1) The applicable regulations for investigation of aircraft accident and incident are stated in the MCAR 2016 Part XXVI
 - i) Regulation 185 on notification of accident and incident.
 - ii) Regulation 187 on conduct of investigation.
 - iii) Regulation 187 on notice, circular, direction and information.

Note. - The regulations stated above apply at publication date of this CAD and you should refer to the AAIB website for up-to-date information.

1.3.3.1 How to report a UAS accident or serious incident to the AAIB?

- a) Aircraft accidents or serious incidents should be reported by using the ['AAIB \(Malaysia\) Accident/Incident Notification Form'](#) to the AAIB via email to yahaya@mot.gov.my or fax to 03-888 0163.

1.3.3.2 Any questions?

- a) Contact the [AAIB](#) if you have any questions about reporting occurrences to the AAIB.



- 1.3.4 Reporting a UAS occurrence to the CAAM
- a) What UAS occurrences must be reported to the CAAM?
 - 1) UAS occurrences must be reported to the CAAM in accordance with the [occurrence reporting flowcharts](#) in this document.
 - 2) Using the flowcharts will help you find out whether the occurrence need to be reported to the CAAM.
 - b) Who must report UAS occurrences to the CAAM?
 - 1) A UAS operator, remote pilot or member of a UAS support crew that experiences or observes an occurrence.
 - c) How to report a UAS occurrence to the CAAM?
 - 1) Reports are submitted using the Mandatory Occurrence Reporting (MOR) Scheme.
 - d) The MOR Scheme can be found [here](#).
 - e) Guidance on how to use the MOR Scheme can be found within the Scheme itself.



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Safety Management System

This section addresses general principles of an effective Safety Management System as described in ICAO Annex 19 – Safety Management System.

A safety management system (SMS) is a systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures. (ICAO)

Even though the generic principles were initially focussed on manned aviation, it has been recognised that this system applies to many other industries and organisations for which their primary concern is the conservation of human life and property, reducing risks to a minimum tolerable level and as a result contributing to a safe, reliable and long-term operation.

1.1 The Four Pillars of an SMS

a) ICAO Annex 19 establishes Four basic pillars that form a complete Safety Management System. These are:

- 1) Policy
- 2) Risk management
- 3) Assurance
- 4) Promotion

1.2 The basic pillars are outlined below:

1.2.1 Policy

- Is the safety policy widely available and is the workforce fully engaged and supportive?
- Does the workforce appreciate the importance of hazard identification and safety reporting?
- Is adequate and timely feedback provided to the reporters?

These three questions apply across the entire organisation and are not confined to Flight Operations. This can only be achieved if management are likewise engaged and empowered to deliver the safety policy. What evidence is available to demonstrate your enterprise approach to safety management? Items such as an increase in voluntary reporting rates for all departments can be used. Furthermore, the establishment of a Just Culture must be evidenced and must be used by management at all levels.

1.2.2 Risk Management

- Does the safety reporting system allow employees to submit hazard reports easily? If the system is complex or not easily accessible, the workforce will be reluctant to submit reports.
- Are the reports acted upon and is feedback provided to the reporters?
- Are risk registers up to date and accessible to management?
- How is the efficacy of risk controls/mitigations monitored?
- Is there adequate resource in place to meet the requirements of implemented risk controls?
- Are there processes in place to address both safety issue risk assessments and management of change?
- Does the risk process recognise that safety is only one part of the risk picture? Are risks assessed in terms of their impact on financial, reputation and environmental factors?
- Finally, how are risks communicated to the general workforce? Are diagrammatic representations such as Bow Tie visualisations used, that can be easily understood?

A primary objective of the risk control process should be to ensure that the appropriate resource is allocated to mitigate identified risks. Ideally, a register of all controls should be maintained alongside the risk register. All identified risks must be accepted by a responsible manager and high-level decisions should be made using risk-based analysis. Finally, there must be suitable processes in place to review and monitor all risks listed in the register as part of the assurance processes.

1.2.3 Assurance

- Are risk controls implemented and effective?
- Are controls reviewed regularly?
- Is the SMS improving continuously?
- Is the SMS delivering stated safety objectives?
- Has an Acceptable Level of Safety Performance (ALoSP) been agreed with the Regulator and can achievement of this be demonstrated?

Assurance is a key part of the SMS. Usually, the above requirements are met by the establishment of Safety Performance Indicators (SPIs) and Safety Performance Targets (SPTs). These items are discussed fully in Document 9859 (issue 4) and without these in place any organisation will find it difficult to demonstrate an ALoSP and continuous improvement of the SMS.

1.2.4 Promotion

Unless the safety policy and its objectives are communicated widely and in a format that is designed to engage all employees, it is unlikely to be effective. Poster campaigns can be useful, but short-lived. Management must promote the safety policy continuously. This could be in the form of monthly safety newsletters by fleet managers (which could be a leading SPI if used). Again, this process should be adopted across all departments and whilst safety promotion is often positive in operational areas, the following questions should still be asked:

- Is it applied in all areas?
- How engaged are the other, non-operational, areas- for example, when did the commercial department last attend a risk assessment or a monthly safety meeting?
-

“Safety is no Accident. It Must be Planned”

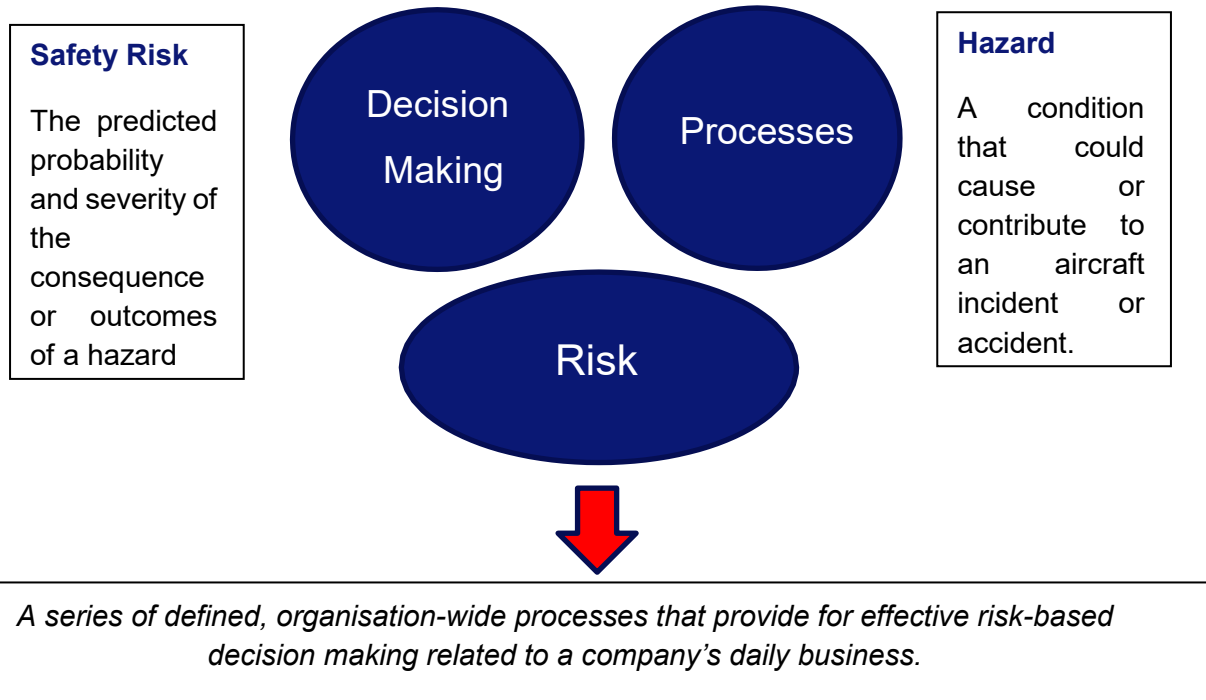
1.3 SMS Regulatory Framework

- a) The ICAO Standards and Recommended Practices (SARPS) promulgated in several Annexes to the Chicago Convention require the implementation of a safety management system by the following aviation service provider organisations:
 - 1) Aircraft operators;
 - 2) Aircraft maintenance organisations;
 - 3) Air navigation services providers;
 - 4) Airport operators;
 - 5) training organisations;
 - 6) aircraft manufacturers.
- b) UAS operators are currently not included in the above list of service providers. However, the 3rd edition (Amendment 2) of Annex 19 is likely to introduce new SARPs requiring UAS operators to have an effective SMS. This amendment is still being drafted, with an applicability date around 2026.
- c) Because of the diverse relationships between the rulemaking bodies and the variety of aviation service provider organisations, it is of critical importance to standardise the SMS functions to the point that there is a common understanding of the meaning of SMS among all concerned organisations and authorities. In this regard with Certified Category the same basic principles as Manned Aviation, for which a proper and effective Safety Management System should be implemented by the organisation conducting the operation. For the upper level in the Specific Category, following a Safety Management System could be considered voluntarily with the intention of improving internal processes,

accountabilities and in general enhancing the overall safety of the proposed operation.

Note. - Depending on the size and complexity of the operation, UAS operator in shall develop SMS Manual which must be acceptable to the CAAM.

1.4 General Safety Management System



1.5 Key Processes of an SMS

- a) Hazard Identification
 - 1) A method for identifying hazards related to the whole organisation (operational + systemic hazards)
- b) Safety Reporting
 - 1) A process for the acquisition of safety data not only related to product safety
- c) Risk Management
 - 1) A standard approach for assessing risks and for applying risk controls
- d) Performance Measurement
 - 1) Management tools for analysing how effectively the organisation's safety goals are being achieved
- e) Safety Assurance
 - 1) Processes based on quality management principles that support continual improvement of the organisation's safety performance.

1.6 Implementation and Assessment

1.6.1 Many aspects of safety management may already exist within an organisation. In order to introduce an SMS a gap analysis is the suggested first step to establish what components already exist, (E.g. for writing a safety case or risk assessment). It is important that the SMS corresponds to the size and complexity of the organisation and takes into consideration the nature of its operations.

- a) Implementation steps could include:
- b) Obtain Senior Management buy-in;
- c) Appointing a Safety Manager / Team / Board;
- d) Undertake a gap analysis;
- e) Develop an implementation plan;
- f) Establish a risk assessment and control system;
- g) Use for internal occurrence reports, audit findings, organisational changes;
- h) Validate the matrix;
- i) Establish and encourage a reporting system and a hazard log;
- j) Produce a SMSM or incorporate it into existing Manuals;
- k) Training of staff;
- l) Ensure that all the SMS building blocks are in place;
- m) Consider contracted and subcontracted services;



- n) Proactively look for hazards;
- o) Establish the most significant safety issues and start to measure and manage them;
- p) Establish performance measures.

1.7 Applying an SMS for the UAS industry

- 1.7.1 The sensible and effective application of a Safety Management System to the different types of operations and categories is essential. These principles will help to contribute to the overall safety of the proposed operation and thus reduce the risk of it causing harm to persons or property. SMS principles can be applied from the basic Open Category all the way up to the Certified Category. A good understanding of these principles, and the employment of a risk-oriented approach, will help to ensure a safe and reliable UAS operation.



7 Attachments

Attachment A	:	<u>Prospective Operator's Pre-Assessment Statement Form (POPS)</u>
Attachment B	:	<u>Schedule of Events (SOE)</u>
Attachment C (1)	:	<u>Commercial AWC Application Form</u>
Attachment C (2)	:	<u>Private AWC Declaration Form</u>
Attachment D (1)	:	<u>Compliance Checklist (Commercial AWC Holder)</u>
Attachment D (2)	:	<u>Compliance Declaration (Private AWC Holder)</u>
Attachment E	:	<u>AWC Process Flow Chart</u>
Attachment F	:	<u>Layout of Commercial/Private UAS AWC</u>
Attachment G	:	<u>Layout of Operations Specifications for AWC Holder</u>



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Prospective Operator’s Pre-Assessment Statement Form (POPS)

Notes to Applicant

General

1. Please ensure form is correctly filled; the applicable fee is fully paid, and that all required supporting documentation is provided. Incomplete/incorrect form or/and inadequate payment will lead to delays in processing your application.
2. Applications shall be submitted as early as possible before the planned commencement date of operation. The entire certification process usually takes 3 months, subject to compliance by the applicant and taking into consideration the time required for the entire certification process and its complexity. Where space is sufficient for the information required, the words “See Attachment 1,2,3’ etc. should be written and the necessary attachments supplied with the application form.
3. Completed POPS form (hard copy and soft copy) and supporting documents (soft copy) are to be submitted to one following of the following address:

Mailing address	Office address (for hand delivery)	Email Address
Director, Flight Operations Division Civil Aviation Authority of Malaysia 27 Persiaran Perdana Level 2 Podium Block, Precinct 4 62618 Putrajaya, Malaysia.	Civil Aviation Authority of Malaysia Pihak Berkuasa Penerbangan Awam Malaysia No. 27 Persiaran Perdana Aras 1-4 Blok Podium 62618 Putrajaya Malaysia	drone.atf@caam.gov.my

Collection

4. You will be notified when the certificate is ready for collection at the Flight Operations Division office.

NOTE 1

Operator principal place of business telephone and fax details, including country code. Email to be provided.

NOTE 2

Contact details, at which operational management can be contacted without undue delay.

NOTE 3

The particulars given should be those of the person who will be the operator of the aircraft, in the case of an incorporated body, the body, the names, addresses and nationality of the Directors, and the Chief Executive Officer (or Managing Director of General Manager), and in the case of an unincorporated



corporation, the names, addresses and nationality of all partners. This list should reflect the organisational structure of the company applying for the AWC and the financial data and business plan.

NOTE 4

A list of UA manufacturer, model and either for dispensing or other than dispensing operation(s).

NOTE 5

Give the proposed date for the commencement of operations.

NOTE 6

List of **all** location(s) of the proposed operations in a .kmz/.kml file.

NOTE 7

List of all items intended to be dispensed. Cross-reference must be made to Department of Agriculture’s approved list of Agricultural Payload.

NOTE 8

The minimum time between receipt of completed manuals and the proposed date for the commencement of operations is three months. If manuals are not submitted with the application, please give date(s) when they will be presented for inspection. Applicants shall ensure that the validity of the manuals submitted to CAAM is maintained at all times.

NOTE 9

If the Unmanned Aircraft are not owned by the Company, details of leasing contracts should be attached.

NOTE 10

Please list the names, qualifications and experience of the persons (e.g., Flight Operations Manager, Authorised Technical Personnel, etc)



CIVIL AVIATION AUTHORITY OF MALAYSIA
PROSPECTIVE OPERATOR’S PRE-ASSESSMENT STATEMENT FORM (POPS)

Part I – Particulars of Applicant *(This person will be the main point of contact for CAAM)*

Title:	Name of Applicant:	Tel:
--------	--------------------	------

Designation:	Email:
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Part II – Particulars of Organisation

Name of Organisation:

Address of Place of Business:

Name(s) if different from above in which operations will be conducted:

Tel (See Note 1):	Fax (See Note 1):
----------------------------	----------------------------

E-mail (**See Note 1**):

Operational Point of Contact (**See Note 2**):

Tel: (60)

Fax: (60)

Email:



Part III – Particulars of Directors/Share Holders (See Note 3)				
Designation	Name	Address	Telephone	Nationality
Part IV – Particulars of AWC Post Holders				
Personnel	Name & Designation		Contact Number & Email Address	
Accountable Manager:				
Safety Manager				
Flight Operations Manager:				
Authorised Technical Personnel				
Others:				



Part V – Particulars of Unmanned Aircraft for Operations (See Note 4)							
DISPENSING OPERATIONS							
Manufacturer	Model	Equipped for		Total Number Each UA Operated	Registration mark	MTOM	Serial Number
		LIQUID	SOLID				
		<input type="checkbox"/>	<input type="checkbox"/>				
		<input type="checkbox"/>	<input type="checkbox"/>				
		<input type="checkbox"/>	<input type="checkbox"/>				
		<input type="checkbox"/>	<input type="checkbox"/>				
		<input type="checkbox"/>	<input type="checkbox"/>				
OTHER THAN DISPENSING OPERATIONS							
Manufacturer	Model	Type of activity	Total Number of UA operated	MTOM	Serial Number		

Proposed date for the commencement of operations (See Note 5):



Part VI – Applicant Checklist (Please check the applicable boxes)		
Supporting documents to be submitted	Yes	No
Organisation Chart, financial data, and Business plan (see Note 3)	<input type="checkbox"/>	<input type="checkbox"/>
Location (s) of the proposed operation(s) in .kmz/.kml file (see Note 6)	<input type="checkbox"/>	<input type="checkbox"/>
List of items intended to be dispensed (see Note 7)	<input type="checkbox"/>	<input type="checkbox"/>
Complete POPS Forms (see Note 8)	<input type="checkbox"/>	<input type="checkbox"/>
Leasing contracts of the Unmanned Aircraft (see Note 9)	<input type="checkbox"/>	<input type="checkbox"/>
Qualifications of the Nominated Post Holder(s) (see Note 10)	<input type="checkbox"/>	<input type="checkbox"/>



Part VII – Applicant Declaration

I hereby declare that the information given in this form is true in every respect and that I will comply with all the necessary requirements for the grant of an Aerial Work Certificate. I further declare that all documents submitted in support of this application are true in every respect. I hereby apply for the grant of an Aerial Work Certificate.

Name, Signature of Accountable Manager & Company Stamp

Date (Day / Month / Year)

For Official Use

Received by:

Authorised Collection
Officer (Name Stamp &
Signature)

Date
(Day / Month / Year)

AWC No.:

Period of validity:



Schedule of Events

CAAM/BOP/UAS/AWC/05-01

ORGANISATION DETAILS			
Name of Operator:		Place of Business:	
Accountable Manager:		Mailing Address (if different from Place of Business)	
AM email address		Pre-Certification Number: (CAAM UAS Unit to insert)	
AM contact number			
Desired Date for the operations to commence			

Necessary document, action or event	Proposed Date	Date received/ Accomplished	Date returned for changes	Reference
Note. - Items in yellow will be completed by the CAAM				
1.0	PRE-APPLICATION PHASE			
	Submission of POPS			
	Assignment of Certification Team by CAAM			
				Project Manager
				BOP
				BAW
				ATC
				Other
				Other
	Establishment of The Committee			
				SIRIM
				MCMC
				JUPEM
				CGSO
	Pre-application meeting			



Necessary document, action or event	Proposed Date	Date received/ Accomplished	Date returned for changes	Reference
Note. - Items in yellow will be completed by the CAAM				
2.0 FORMAL APPLICATION PHASE				
Application Form				
Schedule of Events				
Payment of cost of certification				
Submission of financial viability				
Review of Application				
Review of submission financial viability				
Formal Application meeting				
3.0 DOCUMENTS EVALUATION PHASE				
Compliance checklist Submission				
Review of Compliance checklist				
Operations Manual Submission				
Review of OM				
Leasing/owned documents of UA(s) submission				
Review of leasing/owned documents of UA(s)				
Maintenance Manual (or equivalent) submission				
Review of Maintenance Manual (or equivalent)				
Nominated Post Holder/Key Personnel				
Application for interview of AM				
Application for interview of SM				
Application for interview of FOM				
Application for interview of ATP				



Necessary document, action or event	Proposed Date	Date received/ Accomplished	Date returned for changes	Reference
Note. - Items in yellow will be completed by the CAAM				
Interview of AM				
Interview of SM				
Interview of FOM				
Interview of ATP				
3.0 DOCUMENTS EVALUATION PHASE				
Insurance				
Submission Insurance				
Acceptance of Insurance				
Description of applicant's business organisation, corporate structure, and names and addresses of those entities and individuals having a major financial interest.				
OTHER				
Approval from other agencies (if applicable)				
4.0 DEMONSTRATION AND INSPECTION PHASE (may be exempted, combined with Document evaluation phase, or on its own)				
On site assessment				
Evaluation of on-site assessment				
Inspection of UA				
Acceptance of UA				
Demonstration Flight				
Acceptance of Demonstration Flight				
ERP Simulation				
Acceptance of ERP				




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Commercial AWC Application Form

CAAM/BOP/UAS/AWC/01-01

		CIVIL AVIATION AUTHORITY OF MALAYSIA Application for <u>Commercial</u> Agricultural UAS Aerial Work Certificate		
		OPERATIONS		<input type="checkbox"/>
APPLICATION FOR	<input type="checkbox"/>	Dispensing Agricultural Payloads	<input type="checkbox"/>	Variation
	<input type="checkbox"/>	Other than Dispensing Activities	<input type="checkbox"/>	Renewal
	UAS operator data			
1.1	UAS Operator registration number			
1.2	UAS Operator Name			
1.3	Place of Business			
1.4	Name of Accountable Manager			
1.5	Accountable Manager contact detail (phone and email address)			
1.6	Name of Flight Operations Manager (if not same as AM)			
1.7	Name of the Authorised Technical Personnel (if not same as AM/FOM)			
UAS DATA				



DISPENSING OPERATIONS													
2.1	Manufacturer	2.2	Model	2.3 Equipped for		2.4	Total Number Each UA Operated	2.5	Registration mark	2.6	MTOM	2.7	Serial Number
				LIQUID	SOLID								
				<input type="checkbox"/>	<input type="checkbox"/>								
				<input type="checkbox"/>	<input type="checkbox"/>								
				<input type="checkbox"/>	<input type="checkbox"/>								
				<input type="checkbox"/>	<input type="checkbox"/>								
OTHER THAN DISPENSING OPERATIONS													
2.1 Manufacturer		2.2 Model		2.8 Type of activity		2.4 Total Number of UA operated		2.6 MTOM		2.7 Serial Number		2.9 JUPEM Approval	
												<input type="checkbox"/>	
												<input type="checkbox"/>	
												<input type="checkbox"/>	



List the Name(s) and the RCoC number of Agricultural Remote Pilot(s) working for you at the present time (Use separate sheet and attach if additional space is needed)			
Name		3.0	RCoC number
3.1	Unmanned Traffic Management	Own <input type="checkbox"/>	Contracted <input type="checkbox"/>
3.2	Description on UTM Capabilities (if used)		
CHECKLIST			
No	Items	Tick (X) as applicable	Remarks
4.1	Application Form	<input type="checkbox"/>	
4.2	Schedule of Events (initial)	<input type="checkbox"/>	
4.3	Compliance Checklist (renewal)	<input type="checkbox"/>	



4.4	Cheque attached for AWC application fee	<input type="checkbox"/>	
4.5	Location(s) of proposed operations	<input type="checkbox"/>	

5.0 – I, the undersigned, hereby declare that:

- ✓ **The information provided in this application form is true and correct.**
- ✓ **That the information provided in this application will allow CAAM to calculate an estimate for service for processing this application.**
- ✓ **That the cost estimate may change, and processing the application may be delayed, if:**
 - **The application does not accurately and completely identify my requirements; or**
 - **The details in this application are subsequently changed; or**
 - **Adequate supporting documentation has not been provided.**
- ✓ **For the CAAM to proceed with this application, I must:**
 - **Accept the cost estimate; and**
 - **Forward the prescribed payment; and**
 - **Forward all supporting documentations to the CAAM.**

I, the undersigned, hereby declared that the UAS operation will comply with:

- ✓ **Any applicable UAS Regulations related to privacy, data protection, liability, insurance, security and environmental protection; and**
- ✓ **The applicable requirements of MCAR and its legislation pertaining UAS; and**



✓ **The limitations and conditions defined in the Agricultural UAS Aerial Work Certificate, its terms and conditions and operations specification provided by the CAAM.**

Note. - I am aware of, and accept, the risk that information sent via email may be intercepted and read during transmission, not delivered or modified. (If you do not accept, material will be sent by post).

Date		Accountable Manager Signature	
-------------	--	--	--

CAAM USE	
REMARKS:	
Signature:	Date:
Accepted by UASI:	
Signature:	Date:
Director of Flight Operations:	

FOR CAAM USE ONLY

UASI Name _____

ACCEPT REJECT

Remarks _____

UASI Signature _____

Date _____

Application Fee:	
Receipt No:	
Cheque / P.O.:	
Initial:	
Date:	




Instructions for filling in the form

- 1.1 UAS Operator Registration number issued by CAAM, (not applicable for first time applicant).
- 1.2 UAS Operator Name.
- 1.3 Place of business of operations, if an agricultural UAS operator changes the address of their operations, they must notify in writing to the CAAM before the change becomes effective.
- 1.4 The name of the Accountable Manager.
- 1.5 Contact detail of Accountable Manager.
- 1.6 Name of Flight Operations Manager if not same as Accountable Manager.
- 1.7 Name of the Authorised Technical Personnel if not same as Accountable Manager or Flight Operations Manager.
- 2.1 The name of the manufacturer of the UAS.
- 2.2 The model of the UAS as defined by the manufacturer.
- 2.3 The UA is designed and equipped for Solid and/or Liquid payload dispensation.
- 2.4 The total number of the same model of UA in the inventory of the UAS operator.
- 2.5 Registration and Airworthiness Approval (not applicable for initial applicant) – [Refer item 4.8 of CAD 6011 \(II\) - AGR.](#)
- 2.6 UA MTOM in kilogrammes. [Refer to definition 22 for guidance.](#)
- 2.7 The serial number of the UA defined by the manufacturer (if any) and the approved MCMC label serial number, SIRIM Type Approval / Certificate of Conformity (serial number) or SIRIM Special Approval Certificate (serial number). The serial numbers shall be separated by a (/) in between.
- 2.8 Type of activity (surveillance, mapping, etc.)
- 2.9 If the UA is capable of surveillance activity (camera and equivalent), JUPEM approval is required. The applicant for private Agricultural UAS AWC is required to submit a proof of JUPEM approval or JUPEM exemption.
- 3.0 The RCoC number issued by CAAM. Each Remote Pilot intending to operate agricultural UAS operations require to have a valid RCoC as applicable as stated in [4.11.5 of this CAD.](#) (Refer to CAD 6011 (I) for guidance)
- 3.1 UTM system is not mandatory for an Agricultural UAS Operations. However, if a UTM system is in place, specify if the system is contracted or own UTM system will be used.
- 3.2 Description of the UTM system.
- 4.1 This application form is complete, accurate and signed by the AM.
- 4.2 [Schedule of Events as per CAD 6011 \(II\) Attachment B.](#) Only applicable for initial applicant.
- 4.3 Compliance checklist only applicable for renewal applicant as the initial applicants are required to submit during Document Evaluation Phase.
- 4.4 The fee payable for this purpose is described in Civil Aviation (Fees and Charges) Regulation 2016. Crossed cheque payment must be payable to “Civil Aviation Authority of Malaysia”.
- 4.5 Submitted to drone.atf@caam.gov.my in .kmz/.kml file. If no changes to the one given in POPS, include statement in the remarks column, “NO CHANGES TO POPS”.
- 5.0 Declaration by AM.



Private AWC Declaration Form

CAAM/BOP/UAS/AWC/02-01

		CIVIL AVIATION AUTHORITY OF MALAYSIA Declaration for <u>Private</u> Agricultural UAS Aerial Work Certificate					
		OPERATIONS			<input type="checkbox"/>	Initial	
APPLICATION FOR	<input type="checkbox"/>		Dispensing Agricultural Payloads		<input type="checkbox"/>	Variation	
	<input type="checkbox"/>		Other than Dispensing Activities		<input type="checkbox"/>	Renewal	
UAS operator data							
1.1	UAS Operator registration number						
1.2	UAS Operator Name						
1.3	Mailing Address						
1.4	Name of Accountable Manager						
1.5	Accountable Manager contact detail (phone and email address)						
UAS DATA							
DISPENSING OPERATIONS							
2.1 Manufacturer	2.2 Model	2.3 Equipped for		2.4 Total Number UA Operated	2.5 Registration mark	2.6 MTOM	2.7 Serial Number
		LIQUID	SOLID				
		<input type="checkbox"/>	<input type="checkbox"/>				
		<input type="checkbox"/>	<input type="checkbox"/>				
		<input type="checkbox"/>	<input type="checkbox"/>				
		<input type="checkbox"/>	<input type="checkbox"/>				
OTHER THAN DISPENSING OPERATIONS							
2.1 Manufacturer	2.2 Model	2.8 Type of activity	2.4 Total Number of UA operated	2.6 MTOM	2.7 Serial Number	2.9 JUPEM Approval	
						<input type="checkbox"/>	
						<input type="checkbox"/>	
						<input type="checkbox"/>	
List the Name(s) and the RCoC number of Agricultural Remote Pilot(s) working for/with you at the present time							



Attachment D – Private AWC Declaration Form

(Use separate sheet and attach if additional space is needed)

Name		3.0	RCoC number
3.1	Unmanned Traffic Management	Own <input type="checkbox"/>	Contracted <input type="checkbox"/>
3.2	Description on UTM Capabilities (if used)		

CHECKLIST

No	Items	Tick (X) as applicable	Remarks
4.1	This Declaration Form	<input type="checkbox"/>	
4.2	Proof of RP(s) RCoC issued by the CAAM	<input type="checkbox"/>	
4.2	Proof of bona fide property interest	<input type="checkbox"/>	
4.3	Location(s) of the proposed operation(s) in .kmz/.kml file.	<input type="checkbox"/>	
4.4	Operational Procedures	<input type="checkbox"/>	
4.5	Copy of Identification Card	<input type="checkbox"/>	
4.6	Compliance Declaration	<input type="checkbox"/>	
4.7	Insurance Cover	<input type="checkbox"/>	
4.8	Cheque attached for AWC application fee	<input type="checkbox"/>	



5.0 – I, the undersigned, hereby declare that:

- ✓ The information provided in this application form is true and correct.
- ✓ That the information provided in this application will allow CAAM to calculate an estimate for service for processing this application.
- ✓ That the cost estimate may change, and processing the application may be delayed, if:
 - The application does not accurately and completely identify my requirements; or
 - The details in this application are subsequently changed; or
 - Adequate supporting documentation has not been provided.
- ✓ For the CAAM to proceed with this application, I must:
 - Accept the cost estimate; and
 - Forward the prescribed payment; and
 - Forward all supporting documentations to the CAAM.

I, the undersigned, hereby declared that the UAS operation will comply with:

- ✓ Any applicable UAS Regulations related to privacy, data protection, liability, insurance, security and environmental protection; and
- ✓ The applicable requirements of MCAR and its legislation pertaining UAS; and
- ✓ The limitations and conditions defined in the Agricultural UAS Aerial Work Certificate, its terms and conditions and operations specification provided by the CAAM.
- ✓ Ensures that this operations meets the approval of other agencies and is in compliance with other UAS regulations set by other agencies.

Note. - I am aware of, and accept, the risk that information sent via email may be intercepted and read during transmission, not delivered or modified. (If you do not accept, material will be sent by post).

Date		Accountable Manager Signature	
-------------	--	--------------------------------------	--

CAAM USE	
REMARKS:	
Signature:	Date:
Accepted by UASI:	
Signature:	Date:
Director of Flight Operations:	

FOR CAAM USE ONLY

UASI Name _____

ACCEPT REJECT

Remarks _____

UASI Signature _____

Date _____

Application Fee:	
Receipt No:	
Cheque / P.O.:	
Initial:	
Date:	



Instructions for filling in the form

- 1.1 UAS Operator Registration number issued by CAAM, (not applicable for first time applicant).
- 1.2 UAS Operator Name.
- 1.3 Place of business of operations or mailing address of Accountable Manager, if an agricultural UAS operator changes the address, they must notify in writing to the CAAM before the change becomes effective. May also be a home address for private Agricultural UAS Operator.
- 1.4 The name of the Accountable Manager.
- 1.5 Contact detail of Accountable Manager.
- 2.1 The name of the manufacturer of the UAS.
- 2.2 The model of the UAS as defined by the manufacturer.
- 2.3 The UA is designed and equipped for Solid and/or Liquid payload dispensation.
- 2.4 The total number of the same model of UA in the inventory of the UAS operator.
- 2.5 Registration and Airworthiness Approval (not applicable for initial applicant) – [Refer item 3.8.](#)
- 2.6 UA MTOM in kilogrammes. [Refer to definition 22 for guidance.](#)
- 2.7 The serial number of the UA defined by the manufacturer (if any) and the approved MCMC label serial number, SIRIM Type Approval / Certificate of Conformity (serial number) or SIRIM Special Approval Certificate (serial number). The serial numbers shall be separated by a (/) in between.
- 2.8 Type of activity (surveillance, mapping, etc.)
- 2.9 If the UA is capable of surveillance activity (camera and equivalent), JUPEM approval is required. The applicant for private Agricultural UAS AWC is required to submit a proof of JUPEM approval or JUPEM exemption.
- 3.0 The RCoC number issued by CAAM. Each Remote Pilot intending to operate agricultural UAS operations require to have a valid RCoC as applicable as stated in [4.11.5 of this CAD.](#) (Refer to CAD 6011 (I) for guidance)
- 3.1 UTM system is not mandatory for an Agricultural UAS Operations. However, if a UTM system is in place, specify if the system is contracted or own UTM system will be used.
- 3.2 Description of the UTM system.
- 4.1 This application form is complete, accurate and signed by the AM.
- 4.2 Proof of RP(s) has valid RCoC issued by the CAAM.
- 4.2 Provide a deed or agricultural use lease for the property where applicant will perform agricultural UAS activity(ies).
- 4.3 Location of the proposed operation(s) in kmz/kml file (must be same as 4.2)
- 4.4 Operational Procedures set by manufacturer, the Private Agricultural UAS Operator may create his own Operations Manual based on the CAD 6011 (II) – AGR guidance.
- 4.5 Copy of latest Identification Card.
- 4.6 Compliance Declaration for Private Agricultural AWC Holder (Refer Attachment D2).
- 4.7 Insurance cover that will cover third party liability.
- 4.8 The fee payable for this purpose is prescribed in Civil Aviation (Fees and Charges) Regulation 2016. Crossed cheque payment must be payable to “Civil Aviation Authority of Malaysia”.
- 5.0 Declaration by AM.



Compliance Checklist (Commercial Operator)

CAAM/BOP/UAS/AWC/03-01

Note to Operator:

This document should be completed with reference to CAD 6011 (II) – Agricultural UAS Operation.

The compliance checklist shall be used to ensure that all information is inserted in Manuals or present during the certification phase. These information provided to the CAAM will also assist the CAAM in processing the Aerial Work Certificate in a more expedient manner. Operator should submit as early as possible, a point-by point reply to the applicable requirement. Additional requirement may be specified by the CAAM when deemed necessary.

Applicants are expected to complete the checklist in a clear manner by crossing the appropriate checkbox on the compliance status and indicate the location of the relevant supporting document. An example is as shown below:

Criteria Code	Criteria Compliance status			Remarks (Include reference to documentation or reason for non compliance/ non-applicability)
	Yes	No	N/A	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Document XX – Chapter X, item X.X; Document YY, - Chapter Y, item Y.Y

ORGANISATION DETAILS

Name of Operator:

Organisation:

OPERATION DETAILS

Requirement Code	Requirement compliance status			Remarks
	Yes	No	N/A	

GENERAL

4.2.3	Accountable Manager (AM)				
	<ul style="list-style-type: none"> • Has been approved by the CAAM 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> • Has corporate authority for ensuring that all remain compliant as stated in 4.2.3 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



OPERATION DETAILS					
Requirement Code		Requirement compliance status			Remarks
		Yes	No	N/A	
GENERAL (CONTINUATION)					
4.2.4	Safety Manager (SM) <ul style="list-style-type: none"> Has been approved by the CAAM 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Job description entails requirement as stated in 4.2.4 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Meets the requirement as listed in 4.2.4 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.2.5	Flight Operations Manager (FOM) <ul style="list-style-type: none"> Has been approved by the CAAM 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Job description entails requirement as stated in 4.2.5 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Meets the requirement as listed in 4.2.5 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.10	Insurance Insurance that will cover a third party liability <ul style="list-style-type: none"> For initial AWC: insurance documents may be provisional one. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> For renewal/ inspection: insurance documents shall be valid. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.10.4	Permitting Access to CAAM There is a provision in the Operations Manual indicating that the AWC Holder and its personnel shall grant to any person, that is duly authorised by the CAAM, an access to any facility, UAS documents, records, data, procedures or to any other material relevant to its activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



OPERATION DETAILS					
Requirement Code		Requirement compliance status			Remarks
		Yes	No	N/A	
GENERAL (CONTINUATION)					
3.12	Nearest Agricultural Dept./Agency There is a procedure in the Operations Manual indicating compliance of requirement of 3.12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.1.1 (d) (4)	Radio Spectrum Operations use and support efficient and allowed radio spectrum approved by MCMC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.1.1 (f)	Personnel in charge • Have completed the on-the-job training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	• There is an on-the-job training provision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	• Provision to ensure that all personnel are aware of the Operator's operations manual and its procedures established	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.1.1 (h)	Records Personnel Storage of relevant qualifications, training completed by the RP and the other personnel in charge of duties (3 years)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	• Remote Pilot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	• Maintenance staff (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	• Other personnel (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



Requirement Code		Requirement compliance status			Remarks
		Yes	No	N/A	
GENERAL (CONTINUATION)					
4.1.1 (h)	FINANCIAL Adequate and sound financial practice				
	<ul style="list-style-type: none"> A description of the applicant's business organisation, corporate structure, and names and addresses of those entities and individuals having a major financial interest. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.5	Records Flight Activities and Record keeping As listed in item 4.5.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> the identification of the UAS (manufacturer, model/variant (e.g., serial number) 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> the date, time, and location of the take-off and landing 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> the duration of each flight 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> the total number of flight hours/cycles 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> in the case of a remotely piloted operation, the name of the remote pilot responsible for the flight 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> the activity performed 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> any significant incident or accident that occurred during the operation 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> a completed pre-flight inspection 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> any defects and rectifications 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> any repairs and changes to the UAS configuration 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



Requirement Code		Requirement compliance status			Remarks
		Yes	No	N/A	
GENERAL (CONTINUATION)					
4.1.1 (m)	AGRICULTURAL PAYLOAD & PESTICIDES				
	<ul style="list-style-type: none"> Only approved agricultural payload as listed by the DOA 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Pesticides used are registered under Pesticides Act 1974 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.1.1 (n)	Limitations on Operations				
	<ul style="list-style-type: none"> Operations conducted are as referenced to its AWC and operations specifications 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Operations conducted below 400 ft (AGL) and a distance not closer than 50 meters to persons, vessels, vehicles and structures uninvolved to the operations 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.1.1 (o)	<ul style="list-style-type: none"> Operations conducted beyond 9.26 km from an aerodrome and only in class G airspace 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.1.1 (p)	<ul style="list-style-type: none"> Operations either in VLOS or EVLOS 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



Requirement Code		Requirement compliance status			Remarks
		Yes	No	N/A	
GENERAL (CONTINUATION)					
4.1.1 (q)	Remote Pilot				
	<ul style="list-style-type: none"> RP holds valid RCoC issued by the CAAM 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> RP employed is at least 18 years of age 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> There is a provision to ensure recency of RP and all pilots operating shall have completed during the preceding 90 days on type relevant type of the UAS: <ul style="list-style-type: none"> At least 3 Agricultural UAS flights of at least 10 minutes of each flight time; and If applicable, 1 dispensation operation. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.4.1	Night Operations				
	<ul style="list-style-type: none"> Qualification of RP (15-25 hours) 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Provision on training of RP for Night operations 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.7	Operations Manual				
	<ul style="list-style-type: none"> Complete, accurate and current to satisfy the CAAM's requirements 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Adequately comprising of elements stated in 4.7 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



Requirement Code		Requirement compliance status			Remarks
		Yes	No	N/A	
GENERAL (CONTINUATION)					
4.7.3	Emergency Response Plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	• ERP is suitable, clear and adequate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	• Clearly delineates the responsibilities of the personnel in charge of duties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	• Coordination with other organisation, as appropriate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	• Training/drills are developed for ERP by organisation to maintain awareness of all personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



Requirement Code		Requirement compliance status			Remarks
		Yes	No	N/A	
Airworthiness					
3.2.2	UA Fleet Has a minimum of two (2) UA for AWC certification and operations a) For initial AWC: purchase/lease documents may be provisional one. b) For renewal/ inspection: purchase/ lease documents shall be valid.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.1.1 (h)	Records • Maintenance activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	• Unusual technical or operational occurrences for a minimum of 3 years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.8.2	Design • UA used are designed as its intended operation set by manufacturer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	• Accepted by the CAAM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Technical Data Specification • The UAS has Technical Data Specification or equivalent set by the manufacturer and any other supporting documents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Manual(s) The UAS shall has a proper Flight Manual, Maintenance Manual and Operating Manual from the UAS Manufacturer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	The UAS shall be maintained in accordance with the UAS maintenance manual provided by the UAS manufacturer;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



Requirement Code		Requirement compliance status			Remarks
		Yes	No	N/A	
Airworthiness					
4.8.2	Maintenance and Inspection Programme The UAS Maintenance and inspections programme shall be developed by the UAS operator in accordance with the UAS manufacturer instructions and recommendations and shall be approved by the CAAM.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Authorised Technical Personnel <ul style="list-style-type: none"> The UAS shall be maintained by authorised technical personnel (ATP) nominated by the organisation 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> The ATP shall have relevant qualification, competent and must be trained by the UAS manufacturer 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> ATP is accepted by the CAAM 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Clear job description of the ATP and in compliant with the requirements listed in the Chapter 4. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	MODIFICATIONS <ul style="list-style-type: none"> Done by the ATP 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Maintenance, modifications, repairs and replacement of UAS parts and components are recorded 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



Requirement Code	Requirement compliance status	Requirement compliance status			Remarks
		Yes	No	N/A	
Airworthiness					
4.9	Registration and Marking Follows the requirements in 4.9.1: <ul style="list-style-type: none">UAS marks consisting of Roman capital letters “CAAM-UAS-XXXX” followed by the four (4) digits registration number of the aircraft assigned by the CAAM.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none">The registration markings must be readable and weather proof.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



DECLARATION STATEMENT BY APPLICANT			
I declare that the information provided in this form meets the requirements as stated in CAD 6011 (II) – AGR			
Name of Accountable Manager:		Signature:	
		Date:	

FOR CAAM OFFICIAL USE ONLY			
<input type="checkbox"/> SATISFACTORY <input type="checkbox"/> UNSATISFACTORY			
Comments:			
Name of Inspector		Signature:	
		Date:	



INTENTIONALLY LEFT BLANK



Compliance Declaration (Private AWC Holder)

CAAM/BOP/UAS/AWC/04-01

Note to Operator:

This document should be completed with reference to CAD 6011 (II) – Agricultural UAS Operation.

The compliance declaration shall be used to ensure that the private Agricultural AWC applicant/holder is in compliance with the MCAR and its legislations. These information provided to the CAAM will also assist the CAAM in processing the Aerial Work Certificate in a more expedient manner. Operator should submit as early as possible, a point-by point reply to the applicable requirement. Additional requirement may be specified by the CAAM when deemed necessary.

Applicants are expected to complete the declaration in a clear manner by crossing the appropriate checkbox on the compliance status and indicate the location of the relevant supporting document. An example is as shown below:

I, the undersigned ..(continuation)...	Criteria Compliance status			Remarks (only applicable if the compliance is unable to be met)
	Yes	Unable to accept	N/A	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



ORGANISATION DETAILS					
Name of Accountable Manager:					
Contact Details:					
I, the undersigned, hereby declare that the UAS operation will be in compliance with the items below:		Requirement compliance status			Remarks
		I accept	Unable to accept	N/A	
GENERAL					
GEN	Accountable Manager (AM) <ul style="list-style-type: none"> I am the AM and have the corporate authority for ensuring all remain compliant pertaining to private UAS agricultural operations as stated in CAD 6011 (II) 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> My operations will comply with any applicable UAS regulations related to privacy, data protection, liability, insurance, security and environmental protection 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Applicable requirements of MCAR and its legislation pertaining UAS 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> The limitations and conditions defined in the Agricultural UAS Aerial Work Certificate, its terms and conditions and operations specifications provided by the CAAM 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



OPERATION DETAILS					
I, the undersigned, hereby declare that the UAS operation will be in compliance with the items below:		Requirement compliance status			Remarks
		I accept	Unable to accept	N/A	
GENERAL					
GEN	<ul style="list-style-type: none"> Ensures that this operations meets the approval of other agencies and is in compliance with other UAS regulations set by other agencies 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LIMITATIONS AND EXEMPTION ON PRIVATE AGRICULTURAL UAS AWC HOLDER					
3.5	<ul style="list-style-type: none"> RP(s) involved in my operations holds a valid RCoC issued by the CAAM 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> I have proof of bona fide property interest on the location of operation 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> There is no direct reward or compensation for the operation 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VARIATION TO EXISTING AWC					
3.9	I will inform CAAM if there are changes to the AWC, operations specifications or terms and conditions issued by the CAAM, such as:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Changes to the location(s) on operations specification 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Changes to the UA(s) listed on the operations specification 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Changes to the type of operation activities (dispensing/ other than dispensing) as listed on the operations specifications 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> If my mailing address has been changed 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



OPERATION DETAILS					
I, the undersigned, hereby declare that the UAS operation will be in compliance with the items below:		Requirement compliance status			Remarks
		I accept	Unable to accept	N/A	
AUDIT OR ON-SITE INSPECTION					
3.10.4	<ul style="list-style-type: none"> For the purpose of demonstrating compliance with the UAS Regulation, I shall grant to any person, that is duly authorised by the CAAM, an access to any facility, UAS, document, records, data, procedures or to any other material relevant to its activity. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> I understand that CAAM may conduct audit as outlined in CAD 6011 (II) at 'no notice', and if it found that the operation shows non-compliance with the applicable requirements, the operation may be limited, suspended or even revoked immediately. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RESPONSIBILITY					
4.1	<ul style="list-style-type: none"> The operator is able, fit and competent to conduct safe operations. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> The operation will be operated in accordance with the provisions of the operations specifications 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Comply with directives, notices, circular and requirements issued by the Chief Executive Officer of CAAM 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Ensure that all operations effectively use and support the efficient use of radio spectrum approved by MCMC in order to avoid harmful interference 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



OPERATION DETAILS					
I, the undersigned, hereby declare that the UAS operation will be in compliance with the items below:		Requirement compliance status			Remarks
		I accept	Unable to accept	N/A	
REMOTE PILOT					
4.1	<ul style="list-style-type: none"> The Remote Pilots (RP) are informed, aware and will adhere to the Manufacturer's instructions. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> The Remote Pilot (RP) are above 18 years of age 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> The Remote Pilot (RP) have completed during the preceding 90 days on the type relevant type of UAS: <ul style="list-style-type: none"> At least 3 Agricultural UAS flights of at least 10 minutes of flight time each; and If required, at least 1 dispensation operations. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	<ul style="list-style-type: none"> Have read, understand fully and will ensure compliance of CAD 6011 (II) item 4.11 et. seq. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OPERATIONS					
4.1	<ul style="list-style-type: none"> Operations will be conducted below 400 feet above ground level (AGL) and at a distance of not closer than 50 meters to persons, vessels, vehicles and structures uninvolved to the operations. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> I understand the definition of 'uninvolved person' as explained in CAD 6011 (II). 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



OPERATION DETAILS					
I, the undersigned, hereby declare that the UAS operation will be in compliance with the items below:		Requirement compliance status			Remarks
		I accept	Unable to accept	N/A	
OPERATIONS					
4.1	<ul style="list-style-type: none"> Operation shall be conducted beyond 9.26 km from an aerodrome and only in Class G airspace 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Operation will only be conducted as per listed in the operations specification 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> Operations will be conducted in Visual Line of Sight (VLOS) or Extended Visual Line of Sight (EVLOS) only. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
AGRICULTURAL PAYLOAD AND PESTICIDES					
4.1	<ul style="list-style-type: none"> Will not carry narcotic drugs, marijuana, and depressant or stimulant drugs or substances 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> No person shall dispense, or cause to be dispense from the Unmanned Aircraft (UA), any material or substance in a manner that creates a hazard to persons, or property on the surface 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



OPERATION DETAILS					
I, the undersigned, hereby declare that the UAS operation will be in compliance with the items below:		Requirement compliance status			Remarks
		I accept	Unable to accept	N/A	
OPERATIONS					
4.1	<ul style="list-style-type: none"> • All items dispensed or caused to be dispensed from the Unmanned Aircraft (UA), any agricultural payload (unless as listed by DOA), or pesticides unless it is registered under Pesticides Act 1974. <ul style="list-style-type: none"> ○ For a use other than for which it is registered; ○ Contrary to any safety instructions or use limitations on its label; or ○ In violation of any law or regulation of Malaysia. ○ 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> • I understand and will adhere to night operations requirement as stated in 4.4 of CAD 6011 (II). 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RECORD KEEPING					
4.1 4.5	<ul style="list-style-type: none"> • Records will be kept for at least 12 months and will be made available for inspection upon request from the CAAM as stated in 4.1.1 (h) and 4.5 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
EMERGENCY RESPONSE PLAN					
4.7.3	<ul style="list-style-type: none"> • I understand the requirement and importance of 4.7.3 of CAD 6011 (II) and have developed an appropriate level and current ERP if required. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



OPERATION DETAILS					
I, the undersigned, hereby declare that the UAS operation will be in compliance with the items below:		Requirement compliance status			Remarks
		I accept	Unable to accept	N/A	
CONTACTING NEAREST AGRICULTURAL DEPT OR AGRICULTURAL AGENCY					
4.11	<ul style="list-style-type: none"> Shall notify either the nearest agricultural dept/agency before starting dispensation operations. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
AIRWORTHINESS					
4.8	<ul style="list-style-type: none"> The UAS is designed as its intended operation set by the manufacturer and has been evaluated and acceptable to the CAAM 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> The UAS shall be maintained in accordance with the UAS maintenance manual provided by the UAS manufacturer 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<ul style="list-style-type: none"> The UA (if required by the CAAM) shall bear valid registration and marking as determined by the CAAM. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OCCURRENCE REPORTING					
GEN	<ul style="list-style-type: none"> Aware of my responsibilities to report under Occurrence Reporting as stated in Appendix 2 of CAD 6011 (II). 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



DECLARATION STATEMENT BY APPLICANT			
I declare that the information provided in this form meets the requirements as stated in CAD 6011 (II) – AGR			
Name of Accountable Manager:		Signature:	
		Date:	

FOR CAAM OFFICIAL USE ONLY			
<input type="checkbox"/> SATISFACTORY <input type="checkbox"/> UNSATISFACTORY			
Comments:			
Name of Inspector		Signature:	
		Date:	

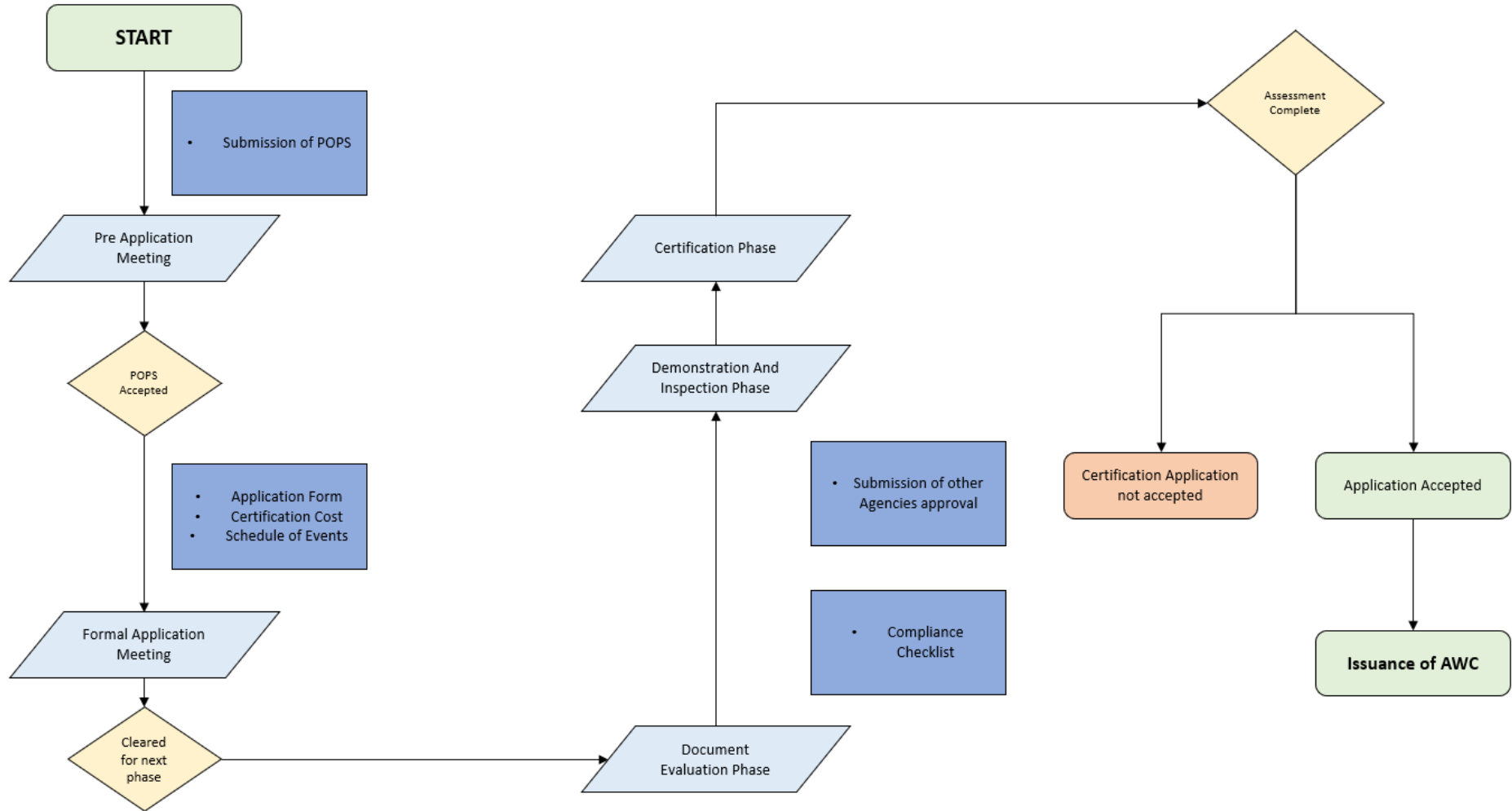


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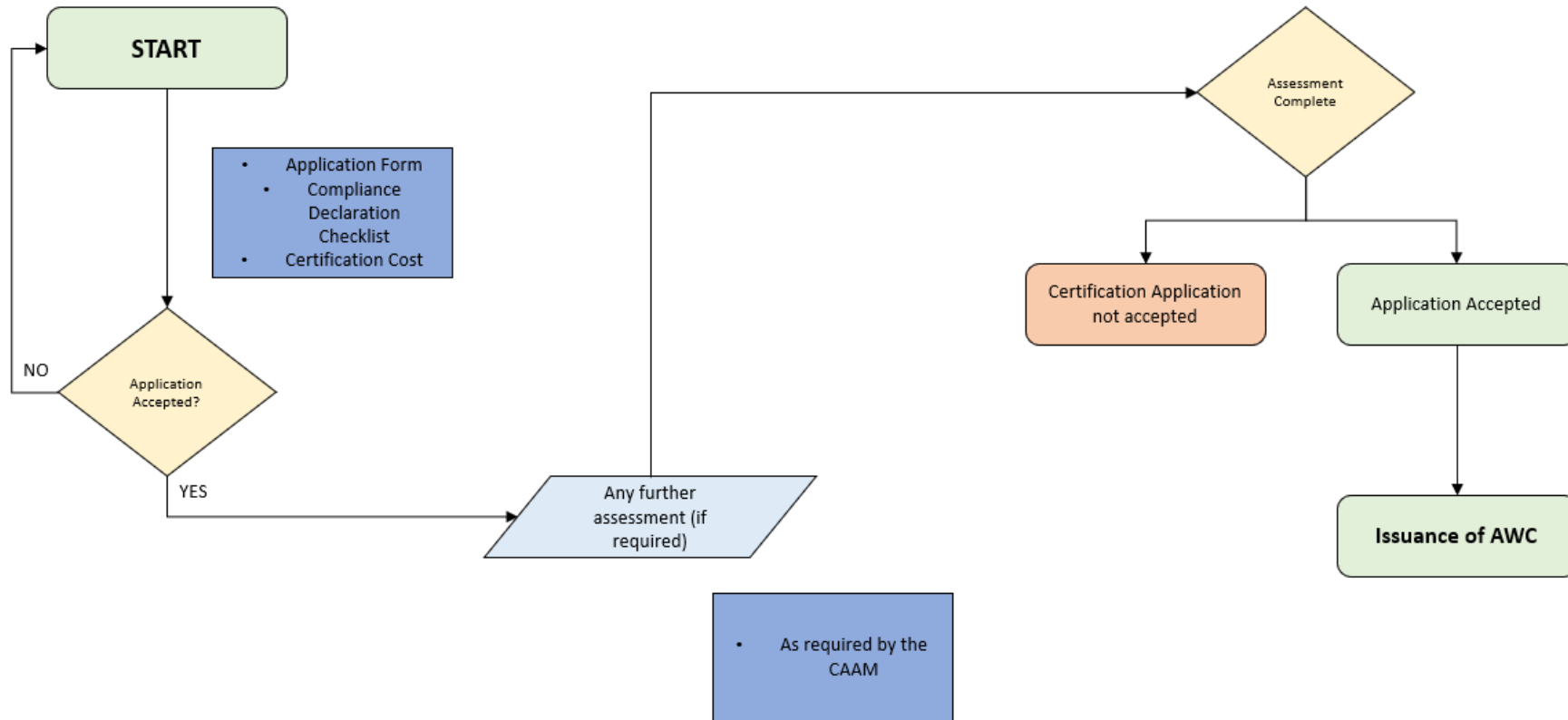
AWC Process Flow Chart

Commercial Agricultural AWC Process Flow Chart





Private Agricultural AWC Process Flow Chart





Layout of Commercial/Private UAS Aerial Work Certificate

CAAM/BOP/UAS/AWC/06-01

CIVIL AVIATION AUTHORITY OF MALAYSIA

(1)



**COMMERCIAL UNMANNED AIRCRAFT SYSTEM
AERIAL WORK CERTIFICATE**

AWC NO. (2)	Operator Name: (4)	OPERATIONAL POINTS OF CONTACT: Contact details at which operational management can be contacted without undue delay are listed in: (7)
Expiry Date: (3)	Operator Address: (5)	POINT OF CONTACT: (8) Telephone:
	Telephone: (6) Fax: Email:	
This certificate certifies that (9) Is authorised to perform Agricultural operations utilising an Unmanned Aircraft System under regulation 136 of the Civil Aviation Regulations 2016 as defined in the attached operations specifications, in accordance with the operations manual and subject to the terms and conditions attached hereto.		
Date of Issue: (10)	Signature: (11) Name: Title:	



Notes:

- (1) To change Private/Commercial as required
- (2) Unique AWC number, issued by the State of Operator.
AWC number starting with P indicates Private;
AWC number starting with C indicates Commercial.
- (3) Date after which the AWC ceases to be valid (DD-MM-YYYY).
- (4) Operator's registered name.
- (5) Operator's principal place of business address for Commercial Agricultural UAS AWC Holder or Mailing address for Private Agricultural UAS AWC Holder.
- (6) The contact details include the telephone and fax numbers, including the country code, and the email address (if available) at which operational management can be contacted without undue delay for issues related.
- (7) The contact details include the telephone and fax numbers, including the country code, and the email address (if available) at which operational management can be contacted without undue delay for issues related.
- (8) Insert the controlled document, carried on board, in which the contact details are listed, with the appropriate paragraph or page reference.
- (9) Operator's registered name.
- (10) Issuance date of the AOC (DD-MM-YYYY)..
- (11) Title, name and signature of the authority representative.



Layout of Operations Specifications for AWC Holder

CAAM/BOP/UAS/AWC/07-01

CIVIL AVIATION AUTHORITY OF MALAYSIA



OPERATIONS SPECIFICATIONS

AWC Number : (1) Operator Name : (2)		Signature: (3) <i>Chief Executive Officer Civil Aviation Authority of Malaysia</i> Date:			
Operations Permitted: (4)		Dispensing Operations <input type="checkbox"/>	Other than Dispensing Operations <input type="checkbox"/>		
LOCATIONS PERMITTED (5)					
Number	Name	Coordinates			Additional Limitations
1.					
2.					
3.					
4.					
5.					
LIST OF UA(s) PERMITTED (6)					
Number	Manufacturer	Model	Amount/Unit	Registration Marking (if applicable)	
1.					
2.					
3.					
4.					
5.					
SPECIAL APPROVALS/ LIMITATIONS (7)					
Number	Description				
1.	Night Operations Allowed		<input type="checkbox"/>		
2.	(Others as applicable)				



Notes:

- (1) Insert the associated AWC number.
- (2) Insert the operator's registered name.
- (3) Issuance date of operations specifications (DD-MM-YYYY) and signature of the authority representative.
- (4) Operations permitted. Either Dispensation, other than dispensation, or both dispensation and other than dispensation operations.
- (5) List of geographical area(s) of authorised operation (by coordinates). Name can be Location known to public (e.g., Felda Aring, Pedas, etc.).
- (6) List of UA permitted/accepted by Airworthiness. Include Registration marking if applicable.
- (7) Special Approvals or Limitation as required by the CAAM.



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