NOTICE OF PROPOSED AMENDMENT FOR DASR CHANGE PROPOSAL 2024-003 Revision 0

DASR UAS

UNCREWED AIRCRAFT SYSTEMS

INTRODUCTION

Applicability

1. This proposal is applicable to all Defence Services and Groups operating Uncrewed Aircraft Systems (UAS).

Purpose

2. The purpose of this Notice of Proposed Amendment (NPA) is to enable community input for the development of DASR UAS, ahead of its formal release in Jul 26. The updated DASR UAS addresses a range issues contributing to insufficient Defence regulation for UAS, as evidenced through benchmarking of CAA and MAA regulation. Benchmarking included a review of Defence UAS OIP, aviation safety reporting, and airworthiness board material.

Background

3. DASA conducted a comprehensive review of UAS regulatory material and OIP. The review concluded that Defence has insufficient regulation for the effective management of UAS Aviation Safety Hazards.

4. This NPA forms part of the stakeholder consultation process.

Scope of proposed changes

5. This NPA proposes the update of *DASR Uncrewed Aircraft Systems* regulation consistent with best practice as applied other CAAs and MAAs, and tailored to the Defence context. The proposed updated DASR UAS incorporates:

a. the re-structure and consolidation of DASR UAS sections to:

   i. UAS.10 *Common requirements for all Defence UAS operations*

   ii. UAS.20 *Certified UAS* (not updated in this amendment)

   iii. UAS.30.a *Specific Type A UAS*

   iv. UAS.30.b *Common requirements for standard scenarios*, including requirements for:

      (a) initial and continuing airworthiness

      (b) Flying Management System

      (c) airspace integration and *due regard*

      (d) ground risk characterisation

(e) organisations, including introduction of an 'Authorised UAS Organisation' (AUO) framework, where organisations operating UAS can seek DASA authorisation as an AUO and use a suite of standard scenarios for organisations with demonstrated competence

v. UAS.35 and UAS.36 standard scenarios, providing:

(a) limited permissions (UAS.36) for use by UAS Organisations without a DASA authorisation

(b) expanded permissions (UAS.35) for use by AUOs.

vi. UAS.40 *Open category*, providing updated requirements and guidance, and re-aligned with CASA.

b. Defence aviation safety community suggestions[1]

c. acronyms, terms and definitions specific to the regulation

d. Part, AMC and GM.

Benefits of proposed changes

6. The benefits of this proposal include:

a. improved clarity for the requirements common to all Defence UAS operations

b. improved UAS Operating Permit (UASOP) application requirements and guidance

c. provision of robust and flexible standard scenario organisation requirements to facilitate growth of UAS Organisation competence across Defence

d. the leveraging of global best practise, while retaining necessary flexibility for the Defence operating context

e. improved clarity and prescription for Open category operations.

Effects of proposed changes

7. The proposed regulation increases compliance requirements for organisations conducting operations under the standard scenarios through UAS.30.b, UAS.35 and UAS.36. However, this will improve the capability of UAS Organisations to operate independently of Military Air Operators (MAOs), and open pathways for expanded permissions through standard scenarios and UASOPs.

8. DASA does not foresee significant Defence aviation safety community impediments to implementing the regulatory Hazard controls.

Proposed regulation

9. The proposed regulation is in Enc 1.

Implementation strategy

10. DASA will release the proposed regulation in Jul 26. DASA proposes a transition[2] timeframe of 12 months from DASR release.

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1 Raised by ENVCOMD representatives, aviation safety community and DASA staff during early consultation of regulation draft.

2 During transition, DASA will not enforce compliance with the new regulation—allowing time for organisations to implement new requirements.

HOW TO SUBMIT COMMENTS ON THIS NPA

Format

11. Record responses to this NPA on the NPA Response Sheet included in Annex A. Submit responses by email to dasa.uas@defence.gov.au. Hardcopies are not required.

Timing

12. Please forward comments on NPA for DASR Change Proposal (DCP) 2024-003 to DASA by close of business **05 Dec 25**.

Additional information

13. Additional information on this NPA is available from LTCOL Charles Phillips, DD-UAS OPS (DAVNOPS-DASA), at charles.phillips@defence.gov.au or (02) 5131 4526.

DISPOSITION OF RESPONSES RECEIVED

14. DASA will prepare and publish a Comment Response Document on the DASA Website. DASA will not individually acknowledge or respond to comments or submissions.

nicholas.pausina Digitally signed by nicholas.pausina
Date: 2025.10.23 12:01:51 +11'00'

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Oct 25

Annex:
A. NPA for DCP 2024-003 Revision 0 – Response Sheet.

Enclosure:
1. NPA for DCP 2024-003 – Proposed DASR *Uncrewed Aircraft Systems*.

NPA FOR DCP 2024-003 Revision 0 Response Sheet

DASR UAS

Please forward this sheet as an email attachment to dasa.uas@defence.gov.au **by 05 Dec 25. Response formats in MS Excel (preferred) and MS Word can be found at Obj No:** BP34901852 **and** BO3960659 respectively, or alternatively contact DASA.

Please indicate your acceptance or otherwise of this proposal by ticking the appropriate box below. Additional comments, suggested amendments or alternative action are welcome and may be provided on this response sheet or by separate correspondence.

[ ] The proposal is **acceptable without change**.

[ ] The proposal is **acceptable but would be improved if the following changes were made**:

[ ] The proposal is **not acceptable but would be acceptable if the following changes were made:**

LSN	NPA Reference: (i.e Regulation number, NPA paragraph etc)	Comment or suggested change	Explanation
1			
2			
3			
4			
5			

RESOURCE IMPLICATIONS

Please provide specific comment on any significant resource implications that this proposal may have for your organisation, for both its implementation and ongoing compliance. Your comments should address both financial and human resource considerations.

Resource implications – Proposal implementation	
Resource implications – Proposal sustainment	

RESPONDENT DETAILS

Your name:	
Submission date:	
Your organisation:	
Email address:	
Postal address:	
Phone:	
Whose views are represented in your response? **i.e. Is your response the authoritative response from your organisation?**	Responding on behalf of : Individual [ ] Regulated Military entity [ ] Regulated Commercial entity [ ] Wing HQ [ ] Group HQ [ ] ADF Regulatory, Technical or Logistics policy agency [ ] Other commercial entity [ ], Other [ ] Please describe:
Do you consent to your name being published as an NPA respondent within the NPA Summary of Responses:	YES [ ] NO [ ]

DRAFT DASR UAS.10 FOR JUL 26 DASR RELEASE

Contents

Section 1 Additions to the DASP Acronyms and Glossary.

Section 2 Amended DASR UAS.10 DASR Part only.

Section 3 Amended DASR UAS.10 DASR Part, Acceptable Means of Compliance (AMC) and Guidance Material (GM).

SECTION 1: ADDITIONS AND AMENDMENTS TO THE DASP ACRONYMS AND GLOSSARY

1. The following **new and revised** definitions and acronyms are proposed for the DASP Manual Acronyms and Glossary:

Glossary

Aircraft Captain* (UAS Context)

A suitably qualified person designated as being in command and charged with the safe and effective conduct of the aircraft during flight. Analogous with the civil term 'pilot–in–command'.

Authorised UAS Organisation (AUO) *

A UAS Organisation, including an FMS and SMS, with a DASA Authorisation to operate Defence UAS.

Beyond Visual Line Of Sight (BVLOS) * (UAS Context)

An operation of a remotely piloted aircraft where the aircraft is not operated in visual line of sight of the remote pilot or competent spotters.

Deconfliction * (UAS context)

The act of reducing the risk of collision between aircraft and other airborne hazards by coordinating their movements in time or space. Source: Australian Defence Glossary.

Defence Controlled Ground or Water * (UAS Context)

Refer to the population density definitions table in GM3 UAS.10.

Extended Visual Line Of Sight (EVLOS) * (UAS Context)

Extended Visual Line Of Sight operations are those where the Remote Pilot hands over responsibility for VLOS to a competent spotter(s). A competent spotter can maintain direct unaided visual contact with the UA, orient the UA, and directly communicate sufficient information to the RP to meet their separation and collision avoidance responsibilities.

General Public (GP) * (UAS Context)

All persons who are not directly involved with, and not reasonably informed of a UAS operation. GP are all other personnel who are not Mission Essential Personnel (MEP) or Informed Personnel.

Informed Personnel* (UAS Context)

Informed Personnel are personnel not directly involved in the operation of the UAS; however, they are reasonably informed of the UAS operation.

NOTE: Depending on the UAS operation, Informed Personnel may include Defence personnel and/or foreign military personnel and/or civilians. Examples include other range users attending daily range conferences/ mass air briefs and/or personnel reasonably informed by sentries or signage of the UAS operation.

Key Staff * (UAS context)

Appointments within a UAS Organisation that contribute to the UAS Organisation's safe operations.

Mission Essential Personnel (MEP) * (UAS Context)

All persons directly involved in, and essential to the operation of the UAS and conduct of its mission or tasking.

Participating Aircraft * (UAS Context)

Any Aircraft:

1. where the crew is informed of the UAS operating profile, and relevant limitations, and contingency or emergency actions that may affect other Aircraft, and complies with an appropriate De-confliction plan to ensure Aviation Safety, and

2. operating as a State Aircraft or an Aircraft Sponsored by Defence under DASR NDR or GR.27.

UAS Organisation *

Any organisation with Operational Control of UAS, or who operates Defence UAS.

Visual Line Of Sight (VLOS) * **(UAS Context)**

A remotely piloted aircraft operation in which the remote pilot operating the aircraft maintains direct unaided visual contact and can orient, and navigate the aircraft to meet their separation and collision avoidance responsibilities.

ACRONYM	EXPANSION
AUO	Authorised UAS Organisation
BVLOS	Beyond Visual Line Of Sight
EVLOS	Extended Visual Line Of Sight
VLOS	Visual Line Of Sight

SECTION 2: AMENDED DASR UAS.10 PART ONLY

The following amends the DASR Part for DASR UAS.10 in toto. There are no other changes to the extant DASR UAS.10

DASR UAS.10 Common requirements for all Defence UAS Operations

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▸ GM

(a) Commands and Defence Groups must authorise Defence UAS operations, and ensure UAS Organisations: ▸ GM

1. eliminate Aviation Safety risks to other Airspace users, and to people and Critical Infrastructure (CI) on the ground or water, or

2. where it is not reasonably practicable to eliminate Aviation Safety risks, minimise those risks So Far As is Reasonably Practicable (SFARP).

(b) UAS Organisations must comply with the DASR requirements of Certified, Specific or Open category and: ▸ GM

1. report: ▸ GM

   i. Aviation Safety Events for:

      a. Certified category UAS IAW the relevant DASRs

      b. Specific Type A UAS IAW the relevant UAS Operating Permit (UASOP)

      c. Specific Type B and Open category where the UAS category requirements and UAS Organisation Risk Management fails to prevent danger to:

         (1) other Airspace users

         (2) people on the ground or water

         (3) CI.

   ii. Aviation Safety Issues for:

      a. Certified category UAS IAW the relevant DASRs

      b. Specific Type A UAS if required in the relevant UASOP

      c. Specific Type B UAS if required in a standard scenario.

2. register Defence UAS on:

   i. the Defence Register when directed by the Authority, or

   ii. a local register. ▸ AMC ▸ GM

3. provide to DASA upon request, all data and access to support initial and ongoing compliance assurance of UAS operations

4. maintain appropriate OIP. ▸ AMC

(c) If a UAS Organisation intends to conduct operations:

1. where other Airspace users, Mission Essential Personnel (MEP), Informed Personnel, General Public (GP) and CI are exposed to elevated Aviation Safety risks introduced by UAS Experimentation, they must operate IAW: ▸ GM

   i. UAS.20, or

   ii. UAS.30.a IAW a DASA authorised UASOP or

   iii. UAS.35(c) standard scenario for Test & Evaluation, or

   iv. UAS.36(b) standard scenario.

2. using weapons integrated with Defence UAS, they must operate IAW: ▸ GM

   i. a DASA authorisation through UAS.30.a, or UAS.20, or ▸ GM

   ii. UAS.35(f).

3. carrying personnel on a Defence UAS, they must operate IAW a DASA authorisation through UAS.30.a or UAS.20. ▸ GM

SECTION 3: AMENDED DASR UAS.10 DASR Part, AMC and GM

The following amends the DASR Part and corresponding AMC and GM in toto. There are no other changes to the extant DASR UAS.10, AMC and GM.

DASR UAS.10

▾ GM

GM UAS.10 – Purpose statement and applicability (AUS)

a. **Purpose: (Context)** Defence UAS operations involve organisations with a range of organisational size and maturity~~,~~ and varied UAS Configurations, Roles, and Environment (CRE). Consequently, Risk Management (RM) must scale according to the Aviation Safety hazards associated with specific organisations and CRE. Defence characterises air and ground Aviation Safety risks as distinct components of the overall risk landscape, which enables improved application of risk controls in the absence of Aircrew on board an Aircraft. **(Hazard)** Poorly scaled and implemented RM for Defence UAS operations could compromise Aviation Safety. **(Defence)** This regulation requires UAS Organisations to implement defined RM requirements, with distinct consideration of air and ground risk, so that Aviation Safety risks are eliminated So Far As is Reasonably Practicable (SFARP), and where not reasonably practicable to eliminate, minimised SFARP.

b. **DASR UAS applicability**

i. DASR UAS only applies to UAS operated by Defence, as State Aircraft~~t~~, below the Kármán line.

ii. If a UAS is used for Defence purposes and regulated by a Civil Aviation Authority (CAA):

(a) the requirements of DASR UAS.10(a) and DASR NDR apply

(b) Commands/Groups may interpret AMC DASR NDR.05(a) references to '...or equivalent document' to include the approval granted by the CAA for the UAS operation

(c) UAS Organisations may not use the flexibility provision presented in GM DASR NDR.10(a) to operate the UAS outside the requirements and limitations (including operating areas) imposed by the CAA—unless the Sponsor:

(i) applies to the relevant CAA for a dispensation to their regulations, or

(ii) temporarily operates the UAS under DASR UAS, (If exercising this option, the CAA regulations, requirements and limitations will cease to apply for that period), or

(iii) approves the use of Defence Airspace where the CAA has imposed a restriction on the use of Defence Airspace in a civil approval instrument (eg Defence controlled Restricted Areas).

(d) DASR UAS.20, DASR UAS.30 and DASR UAS.40 do not apply.

iii. The Explosives Safety Regulatory Framework (ESRF) regulates hazards specific to explosive materials, which do not include the hazards controlled by DASR UAS. DASR UAS provides regulatory controls for the hazards posed by a UAS to other airspace users; and personnel and critical infrastructure on the ground. Hence, for weaponised UAS, the ESRF regulations and DASR UAS both apply.

c. **DASR UAS non-applicability.** DASR UAS regulations do not apply:

i. where a Command/Group sponsors foreign military UAS operations in Australian sovereign airspace—in these circumstances, DASR GR.27 applies

ii. to Defence UAS operating indoors where the Uncrewed Aircraft (UA) is physically contained within the indoor operating area; however the WHS Act still applies.

d. **Applicability of other DASR.** DASR UAS may be interpreted as a self-contained regulation. Therefore, other DASR only apply where prescribed within DASR UAS, or at DASA's direction.

e. **Other applicable authorities, regulations and policies.** Authorities, regulations and policies, external to DASR UAS, may relate to the safety of UAS operations. While these other elements are not Aviation Safety requirements per se, UAS Organisations are responsible for identifying any additional requirements relevant to the acquisition and safe use of UAS. Examples could include:

i. the *Work Health and Safety Act 2011* and Work Health and Safety Regulations 2011

ii. the CASA Office of Airspace Regulation (OAR) operating under the *Airspace Act 2007* and Airspace Regulations 2019

iii. the Defence Test and Evaluation Manual (DTEM)—as the Defence policy for T&E

iv. the Defence Spectrum Office (DSO)—as the Defence authority for radio frequency spectrum allocation

v. the Defence Security Principles Framework (DSPF)—for hazards relating to cyber-security

vi. the Directorate of Defence Radiation Safety and Assurance (DRSA) and the Defence Radiation Safety Manual (DRSM)—as the ADF authority for LASER safety

vii. the Defence Training Area Management Manual (DTAMM)—applies to the management of Defence ranges and associated airspace

viii. Service-specific policy, where applicable.

f. **Definitions.** DASR UAS employs the following definitions in addition to the DASR Glossary and specific to characterisation of ground populations:

Quantitative Population Value (people/km^2)	**Qualitative Descriptors**	**Area Description**
N/A	Defence Controlled Ground or Water	Areas controlled by Defence where unauthorised people are prohibited

		from entering or where the UAS Organisation can reasonably ensure unauthorised people are absent for the duration of UAS operations Critical Infrastructure (CI) is not present within the area, or the UAS does not pose a hazard to the CI (eg due to the low size and speed of the UAS, or established safe margins)
N/A	Isolated environment	Hard to reach areas (mountains, remote deserts, etc), large bodies of water away from expected boat traffic, shipping lanes, and known fisheries where it is reasonably expected that people will rarely be present.
<5	Remote	Areas where people may be present, such as forests, deserts, large farm parcels, etc. Areas where there is approximately 1 small building every km^2
<50	Lightly Populated	Areas of small farms. Residential areas with very large lots (approx. 4 acres or 16000m^2)
<500	Sparsely Populated or Residential Lightly Populated	Areas comprised of homes and small businesses with large lot sizes (approx. 1 acre or 4,000m^2)
<5000	Suburban or Low density metropolitan	Areas of single-family homes on small lots, apartment complexes, commercial buildings, etc. Can contain multi-storey buildings, but generally most should be below 3-4 stories.
<50,000	High Density Metropolitan	Areas of mostly large multi-storey buildings. The downtown area of most cities. Areas of dense skyscrapers.
>50,000	Assemblies (of people)	The highest density areas in large cities. Large gatherings of people such as professional sporting events, large concerts, etc.

g. **ICAO definitions.** DASA uses definitions from ICAO Doc 10019—Manual on RPAS where applicable in order to promote international harmonisation. Consequently, DASA draws the definitions for UAS, UA, UAS Organisation, RP, RPS and segregated airspace from this reference, with minor adaptation to suit the military context where necessary.

(a) Commands and Defence Groups must authorise Defence UAS operations, and ensure UAS Organisations: ▾GM

GM UAS.10(a) – Authorisation (AUS)

a. **Commands and Groups**. Service Chiefs and Defence Group Heads are accountable for authorising all UAS operations within their respective environments (including Risk Management and retention). DASR UAS assumes that Service Chiefs and Group Heads will apply DASR UAS to their own environments through Command and delegation instruments, with accountability ultimately residing with the Service Chief or Group Head. In this context, DASA expects that operating-level personnel will refer to Service or Group policy provided by an informed Commander, Accountable Manager, or delegate with appropriate authorisations, to remain compliant with DASR UAS. Where there is no delegation from the Service Chief or Group Head, the Service Chief or Group Head is accountable for providing approvals to operate UAS.

b. The responsibility for ensuring the safe operation of UAS rests with Service Chiefs or Groups Heads, irrespective of whether DASA issues a discrete authorisation.

c. Where DASA provides operating permissions through DASR UAS without the need for a discrete authorisation, Commands or Groups can use the DASA Approval To Operate UAS (ATOUAS) template to issue authorisations.

1. eliminate Aviation Safety risks to other air users, and to people and critical infrastructure on the ground or water, or

2. where it is not reasonably practicable to eliminate Aviation Safety risks, minimise those risks So Far As is Reasonably Practicable (SFARP).

(b) UAS Organisations must comply with the DASR requirements of Certified, Specific or Open category, and: ▾GM

GM UAS.10(b) – Operations compliant with DASR Certified, Specific or Open categories (AUS)

a. The category system provides operating freedoms to suit Command and Group capability requirements and Risk Management (RM) requirements contextualised to those freedoms.

b. Certified category enables Services and Groups to operate a UAS over GP, MEP and Informed Personnel, and in all classes of airspace for which the UAS is equipped.

c. Specific Type A (DASR UAS.30.a) enables Services or Groups to seek a discrete DASA authorisation for operations when the other categories do not provide the capability sought by a Service or Group.

d. Specific Type B (DASR UAS.30.b) category enables Services and Groups to operate within predefined Standard Scenarios:

i. detailed in DASR UAS.35, only as an Authorised UAS Organisation, with notification to DASA Authorised UAS Organisation

ii. detailed in DASR UAS.36, with notification to DASA, without a requirement to gain discrete DASA Approval.

e. Open category enables Services and Groups to operate UAS within predefined limitations detailed in DASR UAS.40, without a notification to DASA, and without a requirement to gain discrete DASA authorisation.

1. report: ▾ GM

GM UAS.10(b)1 – Occurrence Reporting (AUS)

See GR.40 for guidance regarding the objective of Occurrence Reporting, and DASP Volume 3, Chapter 10.2 for expanded guidance.

i. Aviation Safety Events for:

a. Certified category UAS IAW the relevant DASRs

b. Specific Type A UAS IAW the relevant UAS Operating Permit (UASOP)

c. Specific Type B and Open category where the UAS category requirements and UAS Organisation Risk Management fails to prevent danger to:

(1) other Airspace users

(2) people on the ground or water

(3) CI.

ii. Aviation Safety Issues for:

a. Certified category UAS IAW the relevant DASRs

b. Specific Type A UAS if required in the relevant UASOP

c. Specific Type B UAS if required in a standard scenario.

2. register Defence UAS on either:

i. the Defence Register when directed by the Authority

ii. a local register. ▾ AMC ▾ GM

AMC UAS.10(b)2ii – UAS Registration (AUS)

a. Services and Groups should use a centralised local register, including:

i. UAS serial number

ii. manufacturer and model

iii. operating organisation or unit.

GM UAS.10(b)2ii – UAS Registration (AUS)

Registration assures transparency to Airspace management authorities where necessary, and to provide traceability between a UAS and its operating unit. DASA may direct a Service or Group to apply for Defence Registration when DASA identifies a benefit.

3. provide to DASA upon request, all data and access to support initial and ongoing compliance assurance of UAS operations

4. maintain appropriate OIP ▾ AMC

AMC UAS.10(b)4 – Management of OIP (AUS)

a. UAS Organisations should ensure all OIP is:

   i. applicable, accurate and approved

   ii. maintained in good and legible order

   iii. accessible to personnel in a format and medium appropriate to the operational environment

   iv. applicable to the scope and level of the operation being conducted

   v. accurately maintained, controlled and made accessible to applicable personnel and organisations

   vi. supported by a master document or record allowing the amendment status and document completeness to be ascertained.

b. OIP should contain or display:

   i. authority for use

   ii. document name

   iii. document number

   iv. date of issue and currency (amendment status)

   v. sponsor details, including their responsibility and authority.

c. For OIP specific to aircraft type, UAS Organisations should ensure:

   i. updates are approved by an appropriate authority

   ii. OIP from foreign sources is appropriately approved and incorporated (eg from overseas OEM).

d. OIP issued under this regulation should include:

   i. a list of OIP sponsors and approval authorities

   ii. a list of OIP Sponsor approved sources of Flight Information Documents (FID) is maintained

iii. defined periodic review criteria not exceeding 12 months (Defence AIP will follow the 28 day Air Information Regulation and Control (AIRAC) cycle).

iv. OIP distribution requirements, where relevant.

(c) If a UAS Organisation intends to conduct operations:

1. where other Airspace users, Mission Essential Personnel (MEP), Informed Personnel, General Public (GP) and CI are exposed to additional Aviation Safety risks introduced by UAS Experimentation, they must operate IAW: ▾GM

GM UAS.10(c)1 – Determination of Experimentation-related Aviation Safety risks (AUS)

a. **Experimentation**. The Defence Test & Evaluation Manual (DTEM) defines what constitutes Experimentation and applies to Experimentation activities on UAS.

b. **(Context)** UAS Experimentation Flights are an essential input to capability, and in many cases, UAS Organisations can conduct Experimentation without exposing MEP, Informed Personnel or GP to hazards beyond normal operations. However, UAS Organisations may need to conduct Experimentation Flights with additional safety risks to MEP, Informed Personnel and GP. **(Hazard)** UAS Organisations could expose MEP, Informed Personnel or GP to unnecessary Experimentation-related hazards through a lack of appropriate organisation, personnel and processes; and compromise Aviation Safety. **(Defence)** This regulation requires UAS Organisations to seek and implement the appropriate Risk Management to ensure that Aviation Safety risks to GP, Informed Personnel and GP are eliminated So Far As is Reasonably Practicable (SFARP), and where not reasonably practicable to eliminate, minimised SFARP.

c. Where an Experimentation activity does not pose additional risks beyond the UAS Organisation's normal operating risk profiles, they may conduct Experimentation under any of the DASR UAS.36 and UAS.35 standard scenarios.

d. Examples of when Experimentation may introduce additional risks to MEP, Informed Personnel, GP and CI include:

i. dropping logistics items in proximity to personnel for the first time

ii. operating a UAS from a ship's flight deck for the first time, with personnel exposed to hazards (eg personnel on deck, or within launch/recovery hazard areas)

iii. inaugural flights of UAS (eg first ever operation of a developmental UAS)

iv. Flights of existing and proven UAS where modifications are made to Safety Critical systems and UAS Organisations cannot exclude personnel from ground risk areas.

e. Defence policy may apply, including:

i. The Defence Test & Evaluation Manual

ii. Service or Group Experimentation policy.

i. UAS.20, or

ii. UAS.30.a IAW a DASA authorised UASOP, or

iii. UAS.35(c) standard scenario for Test & Evaluation, or

iv. UAS.36(b) standard scenario.

2. using weapons integrated with Defence UAS, they must operate IAW: ▾GM

GM UAS.10(c)2 – Weaponised UAS (AUS)

a. This regulation provides additional safety assurance for a weaponised UAS where the weapon hazards increase the platform's inherent hazard to other Aircraft, persons on the ground and Critical Infrastructure. It provides a Commander two options for weaponised UAS approvals. A Commander may either pursue a DASA authorised UASOP; or operate IAW a weaponised UAS standard scenario. The UASOP provides a greater degree of flexibility with a commensurately more rigorous assurance process. Whereas, the standard scenario provides a streamlined approval process enabled by a more constrained set of standard operating conditions.

b. Under the DASR, any form of Explosive adapted, included, or attached to a Defence UAS for the purposes of applying a destructive effect to personnel and equipment, is 'weaponised'. DASA applies DASR UAS to remotely or autonomously controlled airborne weapons only where it identifies a tangible Aviation Safety benefit. Therefore, DASA will assess each platform on a case-by-case basis and determine DASR UAS applicability for any UAS that adapts, includes, or attaches Explosives on any platform where the ESRF or Land Range Safety applies.

c. The focus of Aviation Safety Risk Management for weaponised UAS is the destructive elements of the UAS that introduce hazards exceeding those of the platform itself. For non-weaponised UAS, DASA only applies regulatory hazard controls that further reduce the overall risk of impact that endangers the aviation safety of other airspace users, persons on the ground or water and Critical Infrastructure due to the kinetic energy imparted. The implementation of hazard controls specific to a weapon may only need consideration where the weapon expands the hazard profile of the UAS (eg the weaponised component of a UAS increases the potential fatalities upon impact beyond the consequence inherent to the platform).

d. Smoke, flares, and methods of illumination (eg used for Search and Rescue purposes) are not weapons. Note, these items are pyrotechnics and hence, are Explosives—the ESRF applies. The Command/Group remains responsible for ensuring that anything dropped or discharged from a UAS is risk managed SFARP. This includes ensuring the adequate safe carriage of stores to prevent unintentional release and/or discharge of those stores and any unintended consequences.

i. a DASA authorisation through UAS.30.a or UAS.20. ▾GM

GM UAS.10(c)2i – Certified or Specific Type A weaponised UAS approvals (AUS)

a. Applications for the weaponisation of a UAS should consider:

i. any undue hazard exposure to MEP, Informed Personnel, or the GP

ii. possible impacts to Airworthiness of the platform as a consequence of integration and subsequent weapon release and separation

iii. hazards identified during launch/recovery and Flight loads of the UAS-Weapon combination

iv. accuracy, integrity, availability and continuity of service of targeting applications where there is an impact on Aviation Safety, including any latency of the command and control link

v. the likely safety risk associated with the application and intended mission of the UAS

vi. safety requirements for the application of laser technology (eg any safety risks associated with laser technology applicable to the UAS requires additional assessment beyond weaponisation and Command or Group authorisation to operate safely—normal Defence procedures for laser safety clearances apply as per the Defence Radiation Safety Manual).

ii. UAS.35(f).

3. carrying personnel on a Defence UAS, they must operate IAW a DASA authorisation through UAS.30.a or UAS.20. ▾GM

GM UAS.10(c)3 – Carriage of persons (AUS)

DASA defines specific assurance requirements for the carriage of people on UAS on a case-by-case basis—albeit using crewed Aircraft DASR as a benchmark for most operations. However, DASA will consult with a Command or Group to refine appropriate requirements where the carriage of personnel on a UAS is critical for mission risk (eg SAR or battlefield medical evacuation).

DRAFT DASR UAS.30.a FOR JUL 26 DASR RELEASE

Contents

Section 1: Amended DASR UAS.30.a DASR Part only.

Section 2: Amended DASR UAS.30.a DASR Part, Acceptable Means of Compliance (AMC) and Guidance Material (GM).

SECTION 1: AMENDED DASR UAS.30.a PART ONLY

The following amends the DASR Part for DASR UAS.30.a in toto.

DASR UAS.30.a Specific Type A UAS

(a) UAS Organisations must operate Specific Type A UAS IAW the: ▸ GM

1. requirements and limitations within a DASA authorised UASOP

2. requirements within a DASA agreed Form 152, or equivalent document, that covers:

   i. documentation of the UAS configuration, role, and environment, as directed by DASA ▸ AMC ▸ GM

   ii. UAS Organisation requirements, as directed by DASA ▸ AMC ▸ GM

   iii. implementation of a Safety Management System (SMS) contextualised for the UAS CRE, as directed by DASA ▸ AMC ▸ GM

   iv. implementation of a tailored initial and continuing airworthiness system contextualised for the UAS CRE, as directed by DASA ▸ AMC ▸ GM

   v. implementation of a Flying Management System (FMS) contextualised for the UAS CRE that: ▸ AMC ▸ GM

      a. employs suitable risk controls to address the risk of Deconfliction breakdown, contextualised for the UAS CRE ▸ AMC ▸ GM

      b. employs suitable risk controls to address the risk of unintended descent, contextualised for the UAS CRE ▸ AMC ▸ GM

      c. ensures the UA is controlled by a qualified RP or a DASA authorised system. ▸ AMC ▸ GM

SECTION 2: AMENDED DASR UAS.30.a DASR Part, AMC and GM

The following amends the DASR UAS.30.a in toto and corresponding AMC and GM in toto.

DASR UAS.30.a Specific Type A UAS

(a) UAS Organisations must operate Specific Type A UAS IAW the: ▼GM

GM UAS.30.a(a) – UASOP application (AUS)

a. This regulation identifies the accountable person for safe UAS operations.

b. This regulation assumes that the UASOP applicant will be the UAS Organisation. DASA acknowledges UAS Organisations may have support in developing UASOP applications from a variety of sources including CASG and other support agencies. There is nothing precluding UAS Organisations from delegating out work that supports the development of a UASOP application. However, the overall accountability for the UASOP application and its submission rests with the UAS Organisation. Once submitted, DASA will assess the application in order to assure the safety of UAS operations before issuing a UASOP and operations can commence.

c. Provided that risk controls proposed as part of the UASOP application minimise risks due to the design deficiencies of the UAS, So Far As is Reasonably Practicable (SFARP), DASA will issue a UASOP for the particular UAS and scope of UAS operations if satisfied that the relevant UAS Organisation:

i. has documented the intended CRE for the UAS and provided it to DASA

ii. if required, is an Authorised UAS Organisation, or has otherwise applied to DASA to be an Authorised UAS Organisation

iii. if required, has submitted evidence to DASA of their Safety Management System

iv. if required, has submitted evidence to DASA of their initial and continuing airworthiness systems

v. has submitted evidence to DASA of their Flying Management System, including:

(a) an assessment of the risk of Deconfliction breakdown IAW the 7-step Risk Management process

(b) an assessment of the risk of unintended descent IAW the 7-step Risk Management process

(c) management of RP qualifications, or other DASA authorised system.

vi. has proposed any other requirements or limitations for inclusion in the UASOP in order to eliminate or otherwise minimise the Aviation Safety risks of their UAS operations SFARP.

d. Risk controls will generally fall into one of three categories, as follows:

i. **Technical risk controls**. Technical risk controls relate to the application of rigour to the design, construction and maintenance processes, such that a system's

likelihood of catastrophic failure is known and controlled. This may include the application of standards, or inclusion of systems designed to support safe operation, such that the likelihood of failure can be reduced.

ii. **Operational risk controls**. Operational risk controls relate to the application of restrictions and limitations to the operation. This may include measures such as limiting operations to segregated airspace, over a safe area of designated ground or water, or restricting flight over the GP, to a limited set of weather conditions, or to specific roles.

iii. **Systemic risk controls**. Systemic risk controls relate to the application of regulatory standards to organisations involved in the design, construction, maintenance and operation of the system. Systemic mitigation is intended to reduce the occurrence of organisational and human errors which can contribute to the failure of a system.

e. A DASA issued UASOP will, as a minimum:

i. identify the UAS

ii. identify the UAS Organisation

iii. identify registration requirements for the UAS

iv. identify compliance with an approved CRE Document/SOIU

v. identify whether the UAS Organisation needs to be an Authorised UAS Organisation

vi. identify the implementation of a SMS contextualised for the UAS CRE, if necessary

vii. identify the implementation of a tailored initial and continuing airworthiness system contextualised for the UAS CRE, if necessary

viii. identify compliance with a FMS

ix. identify key risk controls that must be employed to minimise the risk of Deconfliction breakdown during UAS operations

x. identify key risk controls that must be employed to minimise the risk of unintended descent during UAS operations

xi. identify the RP qualifications, or a DASA authorised system, that can control the UA

xii. identify Aviation Safety Issues that must be reported

xiii. direct any other restrictions and limitations as necessary.

1. requirements and limitations within a DASA authorised UASOP

2. requirements within a DASA agreed Form 152, or equivalent document, that covers:

i. documentation of the UAS configuration, role, and environment, as directed by DASA ▾ AMC ▾ GM

AMC UAS.30.a(a)2.i – UAS CRE (AUS)

a. UAS Organisations should document the UAS CRE for their intended operations using either a:

   i. DASA UAS CRE Document template, approved by the Command or Group (or delegate)

   ii. UAS SOIU template endorsed by DASA and approved IAW DASR ARO.50.A.

b. UAS Organisations should reference the approved UAS CRE Document or SOIU in their DASR Form 152.

c. Non-administrative changes to the SOIU require DASA Endorsement, unless agreed by DASA.

GM UAS.30.a(a)2.i – UAS CRE (AUS)

a. This regulation assures that UAS Organisations define a CRE sufficient to inform decisions about whether a UAS is, and remains, safe for operations authorised under a UASOP. The defined CRE establishes context for risk management, sets a baseline to control UASOP operations, and helps identify changes that require update and reassessment of risk management approaches.

b. DASA recommends the CRE document is best suited for enduring operations under a standard scenario, or for simple UASOP applications. An SOIU is more appropriate for complex UASOP applications or when the relevant stakeholders consider DASA endorsement is necessary.

c. The difference between a DASA CRE Document and a UAS SOIU lies mainly in the number of stakeholders that need to be consulted, and the required approval level for each document:

   i. CRE Documents do not require much stakeholder consultation and can be approved at Commander/Group Head (or delegate) level. DASA endorsement of the CRE document is not required. This aligns with the lower risk nature of the UAS operation.

   ii. SOIUs require a greater amount of stakeholder consultation, including with DASA. While still required to be approved by Commander/Group Head (or delegate) level, the SOIU may warrant a higher-level delegate approval (compare with expectation for crewed aircraft SOIUs in AMC ARO.50.A). This aligns with the higher risk nature of the UAS operation, necessitating a greater number of people to consult with (due potentially to the shared nature of the risk, refer to WHS Act Section 46) to minimise the risk of the UAS operation.

ii. UAS Organisation requirements, as directed by DASA ▾ AMC ▾ GM

AMC UAS.30.a(a)2.ii – UAS Organisation requirements (AUS)

a. UAS Organisations should:

   i. be an Authorised UAS Organisation, if directed by DASA

ii. implement any other UAS Organisation requirements detailed or referenced in the UASOP

GM UAS.30.a(a)2.ii – UAS Organisation requirements (AUS)

a. This regulation assures that UAS Organisations have the necessary maturity, experience, and systems in place to carry out the proposed UAS operations. One mechanism available to DASA to assure this is to reserve higher risk and complex UAS operations only to Authorised UAS Organisations.

b. Some UASOPs may not require operations as an Authorised UAS Organisation. However, given UASOPs address operations outside Specific Type B and Open Category permissions those situations are likely the exception rather than the norm. Note that some of the Specific Type B Category Standard Scenarios are already reserved for Authorised UAS Organisations only (refer to DASR UAS.30.b(a)3).

c. In reality, applying for Authorised UAS Organisation status is not likely to prove burdensome for applicants, given most UAS Organisations will progress through the Specific Type B Standard Scenarios before requesting a UASOP from DASA. Of note, MAOs are Authorised UAS Operators where the OpSpec details permission to operate the relevant category of UAS.

iii. implementation of a Safety Management System (SMS) contextualised for the UAS CRE, as directed by DASA ▾ AMC ▾ GM

AMC UAS.30.a(a)2.iii – SMS (AUS)

a. UAS Organisations should implement Safety Management System requirements detailed or referenced in the UASOP

GM UAS.30.a(a)2.iii – SMS (AUS)

a. DASA may not require implementation of a SMS for all UASOPs. However, in the context that UASOPs address operations beyond Specific Type B and Open Categories, those situations are the exception. Note that even the Specific Type B Category Standard Scenarios require a range of Safety Management System implementation.

b. UASOP applicants should consider the sliding scale of requirements implemented for the following categories:

i. Open Category, as the category with the lowest inherent hazards, does not explicitly require an SMS. However, it does provide some embedded elements of SMS.

ii. The Specific Type B category standard scenarios for all UAS Organisations (DASR UAS.36) require simplified SMS due to increased inherent operating hazards beyond those in Open category.

iii. The Specific Type B category standard scenarios for Authorised UAS Organisations only (DASR UAS.35) and Certified Category, require an SMS compliant with DASR UAS due to further increased inherent operating hazards.

c. The requirement for an SMS is unlikely to be onerous, given most UAS Organisations would have progressed through the Specific Type B Standard Scenarios before requesting a UASOP from DASA.

iv. implementation of a tailored initial and continuing airworthiness system contextualised for the UAS CRE, as directed by DASA ▼AMC▼GM

AMC UAS.30.a(a)2.iv – Initial and continuing airworthiness (AUS)

a. UAS Organisations should implement:

i. initial airworthiness requirements detailed or referenced in the UASOP

ii. continuing airworthiness requirements detailed or referenced in the UASOP.

GM UAS.30.a(a)2.iv – Initial and continuing airworthiness (AUS)

a. This regulation assures that UAS Organisations apply a suitable initial and continuing airworthiness system to support any systemic and technical risk controls proposed as part of an operation, to ensure the integrity of the risk controls through the operational life of the UAS.

b. Initial and continuing airworthiness requirements are not necessarily relevant to all UASOPs. Examples where DASA may not impose initial and continuing airworthiness requirements could include operations that only involve a limited number of flights, operations with only a fleeting exposure to people/Critical Infrastructure, and low weight and speed UA that are unlikely to cause injury upon impact.

c. DASA will only impose initial and continuing airworthiness requirements on UAS where they make a tangible contribution to the safety of other airspace users, or people/critical infrastructure on the ground/water. This is generally the case where a larger UAS, typically one that exceeds the weight limitations of Open Category, is expected to operate in close proximity to/over people and Critical Infrastructure on the ground, and other airspace users. In these challenging operating environments, measures to reduce the frequency of UAS crashes and the malfunction of critical equipment (eg positioning equipment when relied upon for separation from crewed aircraft, ADS-B Out, independent Flight Termination Systems, etc.) should be pursued where reasonably practicable, including through increased rigour in engineering and maintenance support, and reporting of issues encountered.

d. Ultimately, DASA's decision on initial and continuing airworthiness requirements within a UASOP will be based on whether the UAS operation is relying on any key systemic or technical risk controls, and whether those risk controls require a suitable initial and continuing airworthiness system to ensure their proper function.

e. The direct application of Airworthiness DASRs (i.e. DASR 21, M, 145, 66, and 147) to UAS outside of the Certified Category is usually not practicable. Each of these regulations inherently assume the UAS will have a standards-based design, a Military Type Certificate, and subsequent Certificates of Airworthiness for each UA, which is generally not the case with UAS outside of the Certified Category. Instead, where necessary, DASA will generally pursue an alternative approach by identifying the underlying 'safety intent'

that the Airworthiness DASRs aim to achieve, and prescribing these principles as broad outcome-based requirements to be achieved. The UAS Organisation may therefore have latitude in how to meet these requirements.

f. A UAS Organisation is likely to have the most comprehensive understanding of their proposed CRE and available risk controls. Therefore, the onus is on the UAS Organisation to propose, if necessary, initial and continuing airworthiness requirements to DASA for agreement and inclusion in the authorised UASOP.

v. implementation of a Flying Management System (FMS) contextualised for the UAS CRE that: ▾ AMC ▾ GM

AMC UAS.30.a(a)2.v – FMS (AUS)

UAS Organisations should implement Flying Management System requirements detailed or referenced in the UASOP.

GM UAS.30.a(a)2.v – FMS (AUS)

a. This regulation assures that UAS Organisations implement a suitable Flying Management System (FMS) for their proposed UAS operations.

b. Applicants should consider the following range of FMS within DASR UAS, and the possible application to their own Configuration Role and Environment, when determining UASOP application proposals:

i. Open category does not require a formal FMS to manage the limited inherent operating hazards in this category. However, note that DASR UAS.10(a) and DASR UAS.10(b) do mandate basic management requirements.

ii. Specific Type B category provides permissions for increasing inherent operating hazards. Therefore, UAS Organisations operating Specific Type B UAS must implement a basic Flying Management System IAW DASR UAS.30.B(a)3.

iii. Certified Category, as the category that most closely resembles the hazards inherent with crewed Aircraft operations, requires full compliance with DASR ORO.10.

c. In reality, the requirement for an FMS will not prove burdensome to applicants, as most UAS Organisations would have already progressed through the Specific Type B Standard Scenarios before requesting a UASOP from DASA.

a. employs suitable risk controls to address the risk of Deconfliction breakdown, contextualised for the UAS CRE ▾ AMC ▾ GM

AMC UAS.30.a(a)2.v.a – Risk controls for Deconfliction breakdown (AUS)

a. UAS Organisations should implement:

i. risk controls detailed or referenced in the UASOP that address Deconfliction breakdown

ii. additional risk controls, beyond those identified in the UASOP, if needed to eliminate or otherwise minimise risk so far as is reasonably practicable of Deconfliction breakdown for a particular UAS Operation.

GM UAS.30.a(a)2.v.a – Risk controls for Deconfliction breakdown (AUS)

a. Deconfliction breakdown refers to the point where the safety margins between the UA and other Airspace users begin to reduce and compromise Aviation Safety.

b. DASR UAS addresses the risks associated with integrating Specific and Open Categories into existing airspace (both controlled and uncontrolled) primarily due to:

i. equipage shortfalls,

ii. inability to comply with the Air Traffic Control instructions (eg meet standard rates of climb),

iii. the inability to comply with rules of the air (eg the absence of capability to 'see and avoid' other aircraft).

c. Where UAS segregation from other Aircraft is not a practicable option for UAS Organisations, operations in a variety of Airspace may be conducted under a UASOP if the UAS Organisation demonstrates to DASA that Aviation Safety risks to other airspace users:

i. cannot be eliminated, and

ii. are minimised SFARP.

d. A UAS Organisation minimises Aviation Safety risks for Airspace through risk controls specifically targeted to the risk of Deconfliction breakdown. Note that risk controls proposed may result in secondary considerations, for example initial and continuing airworthiness requirements for technical risk controls such as ADS-B Out.

e. The airspace integration management prescription in DASR UAS.30.b may provide UAS Organisations with a useful basis for applications under Specific Type A category.

b. employs suitable risk controls to address the risk of unintended descent, contextualised for the UAS CRE ▾ AMC ▾ GM

AMC UAS.30.a(a)2.v.b – Risk controls for unintended descent (AUS)

a. UAS Organisations should implement:

i. risk controls detailed or referenced in the UASOP that address unintended descent

ii. additional risk controls, beyond those identified in the UASOP, if needed to eliminate or otherwise minimise risk so far as is reasonably practicable the risk of unintended descent for a particular UAS Operation.

GM UAS.30.a(a)2.v.b – Risk controls for unintended descent (AUS)

a. This regulation assures that UAS Organisations implement suitable risk controls to eliminate or otherwise minimise SFARP the risk of an unintended departure from a Flight path leading to compromised safety of people and Critical Infrastructure on the ground. DASA refers to this as 'unintended descent', and is the point where control of the UA is lost and safety margins for people on the ground and Critical Infrastructure begin to diminish. An unintended descent scenario also includes controlled flight into terrain.

b. Operations near or over people and Critical Infrastructure can be conducted under a UASOP if a UAS Organisation demonstrates to DASA that the Aviation Safety risks to people and Critical Infrastructure:

   i. cannot be eliminated, and

   ii. are minimised SFARP.

c. UAS Organisations achieve risk minimisation through implementation of risk controls specifically aimed at addressing the risk of unintended descent. Note that proposed risk controls may result in secondary considerations, for example initial and continuing airworthiness requirements for technical risk controls such as independent flight termination systems.

c. ensures the UA is controlled by a qualified RP or a DASA authorised system ▾AMC ▾GM

AMC UAS.30.a(a)2.v.c – RP qualification and DASA authorised systems (AUS)

a. UAS Organisations should ensure UAs are controlled by:

   i. RPs that meet qualification requirements detailed or referenced in the UASOP, or

   ii. a DASA authorised system detailed or referenced in the UASOP.

GM UAS.30.a(a)2.v.c. – RP qualification and DASA authorised systems (AUS)

a. This regulation assures that UAS Organisations define suitable qualification requirements for their RPs and implement systems to ensure only qualified RPs control UA. This regulation also assures that only DASA authorised systems are able to control UA where no RP ability to intervene is proposed.

b. When proposing a new or updated UASOP to DASA, the UAS Organisation should define:

   i. the required RP qualification and training requirements, given the expected UAS CRE

ii. any requirement for the RP to maintain a specified medical standard in accordance with DASR.MED.10

iii. any requirement for the RP to maintain currency and recency.

c. Applicants should consider the range of requirements for the following categories when determining a UASOP proposal:

i. Open category provides RP qualifications contextualised for the most limited UAS operations hazard profile in DASR UAS.

ii. Specific Type B category provides more prescriptive RP qualification requirements contextualised to increased inherent operating hazards.

iii. Certified category provides the most stringent RP qualification requirements due to operating permissions equivalent to crewed Aircraft.

d. **DASA authorised system**. The provision for a DASA authorised system is to account for the spectrum of possibilities presented by Autonomous Aircraft, increasing levels of autonomous functionality in UAS, and associated with Artificial Intelligence technologies.

e. When proposing to DASA a system to control a UA, the UAS Organisation should:

i. define the level of control the system will have over the UA

ii. identify the functions, failure conditions, and failure modes that are impacted by the removal (partial or complete) of the RP

iii. analyses the relevant functions, failure conditions, and failure modes that are impacted by the removal (partial or complete) of the RP

iv. justify to DASA why the proposed system is sufficiently safe.

DRAFT DASR UAS.30.b FOR JUL 26 DASR RELEASE

Contents

Section 1: New DASR UAS.30.b DASR Part only.

Section 2: New DASR UAS.30.b DASR Part, Acceptable Means of Compliance (AMC) and Guidance Material (GM).

SECTION 1: AMENDED DASR UAS.30.b PART ONLY

The following is new DASR Part for DASR UAS.30.b

DASR UAS.30.b Common requirements for standard scenarios

(a) UAS Organisations must operate Specific Type B UAS IAW: ▸ GM

1. the requirements of either:

   i. UAS.35 standard scenarios as an Authorised UAS Organisation ▸ GM

   ii. UAS.36 standard scenarios. ▸ GM

2. Initial Airworthiness and Continuing Airworthiness management contextualised for the UAS Configuration Role and Environment (CRE), for: ▸ GM

   i. UAS safety and reliability ▸ AMC ▸ GM

   ii. UAS configuration management ▸ AMC ▸ GM

   iii. maintenance requirements and instructions ▸ AMC

3. a Flying Management System (FMS), including: ▸ GM

   i. approved UAS Configuration, Role and Environment (CRE) documents of the UAS operated within each standard scenario ▸ AMC ▸ GM

   ii. a Safety Management System (SMS) for:

      a. Authorised UAS Organisations IAW DASR SMS ▸ AMC

      b. UAS Organisations using UAS.36 ▸ AMC ▸ GM

   iii. appointment of Key Staff to manage the FMS ▸ AMC ▸ GM

   iv. Flying Supervision ▸ AMC ▸ GM

   v. UAS Crew training, experience, currency, competency and medical requirements ▸ AMC ▸ GM

   vi. operating standards and limitations, including management of: ▸ AMC ▸ GM

      a. UAS operations integration into the relevant Airspace and with *due regard* for the safety of civil air navigation ▸ AMC1 ▸ AMC1 ▸ GM

      b. establishing and operating to minimum safe distances from people on the ground and water, and CI in the relevant areas. ▸ AMC ▸ GM

(b) UAS Organisations must notify DASA via submission of DASR Form 150 prior to commencement of UAS operation.

SECTION 2: AMENDED DASR UAS.30.b DASR Part, AMC and GM

The following is new DASR Part and corresponding AMC and GM.

DASR UAS.30.b Common requirements for the standard scenarios

(a) UAS Organisations must operate Specific Type B UAS IAW: ▾GM

GM UAS.30.b(a) – Purpose statement (AUS)

Purpose. (Context) Standard scenarios facilitate a range of Defence UAS operations without the need for a bespoke DASA authorisation for every usage, by providing focused hazard controls. **(Hazard)** Inadequate assurance of UAS organisations may compromise Aviation Safety and lead to a breach of Defence's WHS obligations. **(Defence)** This regulation requires a UAS Organisation to implement organisation risk controls to eliminate Aviation Safety risks SFARP, or where it is not reasonably practicable to eliminate those risks, to otherwise minimise safety risks SFARP.

1. the requirements of either:

   i. UAS.35 standard scenarios as an Authorised UAS Organisation ▾GM

   GM UAS.30.b(a)1i – UAS.35 standard scenario applicability (AUS)

   a. DASA provides the DASR UAS.35 standard scenarios exclusively to DASA Authorised UAS Organisations, to assure hazard controls associated with increased permissions in these standard scenarios. A DASA Authorisation assures that Authorised UAS Organisations implement appropriate Initial Airworthiness (IA) and Continuing Airworthiness (CA), Flying Management Systems (FMS), and Safety Management Systems (SMS) to ensure Aviation Safety.

   b. MAOs are Authorised UAS Organisations where the OpSpec details permission to operate Certified, Specific Type A, and Specific Type B UAS.

   c. Other Command or Group Heads can apply to DASA for organisational authorisation provided they can demonstrate that they have implemented effective IA and CA, FMS, and SMS.

   ii. UAS.36 standard scenarios. ▾GM

   GM1 UAS.30.b(a)1ii – UAS.36 standard scenarios (AUS)

   The UAS.36 standard scenarios provide all UAS Organisations with predefined permissions and limitations without a requirement for a DASA authorisation.

2. Initial Airworthiness and Continuing Airworthiness management contextualised for the UAS Configuration Role and Environment (CRE), for: ▾GM

   GM UAS.30.b(a)2 – Initial and Continuing Airworthiness (AUS)

   a. Initial Airworthiness, in the context of standard scenarios, is to assure that UAS Organisations implement suitable arrangements to identify and remedy

deficiencies in the UAS design, where reasonably practicable. The design system safety and reliability requirements drawn from initial and continuing airworthiness principles, can then be applied where they make a tangible contribution to safety in the context of operations under the standard scenarios.

b. Continuing Airworthiness, in the context of standard scenarios, is to assure that UAS Organisations implement suitable and ongoing arrangements to maintain the UAS in a condition for safe operation IAW the intended CRE.

i. UAS safety and reliability ▾ AMC ▾ GM

AMC UAS.30.b(a)2i – Safety and reliability (AUS)

a. **Safety and reliability.** Where reasonably practicable, the UAS Organisation should establish agreements with the OEM and other relevant design service providers to provide design solutions to correct unsafe design conditions identified in the extant UAS design.

b. The UAS Organisation should implement technical risk controls to ensure compliance with the requirements in each standard scenario.

GM UAS.30.b(a)2i – Technical risk controls (AUS)

a. UAS Organisations should consider implementing all reasonably practicable technical risk controls, including:

i. automatic Flight actions upon Command and Control Lost Link (eg autonomous recovery system, or independent Flight termination (when it is safe to terminate independently))

ii. limiting the UA over the operational area and the Airspace designated for the activity (eg geo-fencing, programmable maximum and minimum altitude)

iii. the ability for the RP to monitor:

(a) Command and Control link performance through the control interface

(b) externally provided services that affect flight critical systems and voice communication systems (eg mobile or satellite networks)

iv. prior testing of functionality to enable manual termination of Flight by the RP

v. considerations for the safe recovery from Human Error (eg, functional tests, mechanical interlocks/safety pins, use of acknowledgment features, fuel or energy consumption monitoring functions).

ii. UAS configuration management ▾ AMC ▾ GM

AMC UAS.30.b(a)2ii – UAS configuration management (AUS)

The UAS Organisation should establish a system to collect, investigate and analyse information on in-service failures, malfunctions and defects to detect and have rectified unsafe conditions and to inform safety risk management review.

GM UAS.30.b(a)2ii – UAS configuration management (AUS)

The UAS Organisation should consider establishing a system to manage the configuration of the UAS design, including authorised design changes and repairs cognisant of the UAS CRE, including through a technical log.

iii. maintenance requirements and instructions ▾ AMC

AMC UAS.30.b(a)2iii – Maintenance requirements and instructions (AUS)

a. The UAS Organisation should ensure maintenance:

i. requirements and instructions are defined (within OEM issued documentation or within unit level OIP), authorised, and available to relevant personnel

ii. is carried out IAW approved maintenance requirements and instructions.

3. a Flying Management System (FMS), including: ▾ GM

GM UAS.30.b(a)3 – FMS (AUS)

This requirement assures that UAS Organisations implement an adequate Flight operations framework of authority and requirements, appropriately contextualised to the UAS CRE.

i. approved UAS Configuration, Role and Environment (CRE) documents for UAS operated within each standard scenario ▾ AMC ▾ GM

AMC UAS.30.b(a)3i – CRE (AUS)

a. The UAS Organisation should use the DASA UAS CRE document template or equivalent document for defining the UAS CRE, or an SOIU IAW DASR ARO.50.A where relevant. A Commander (or delegate) may approve a UAS CRE document.

b. The UAS Organisation should reference the approved UAS CRE document or SOIU in the relevant DASR Form 150.

GM UAS.30.b(a)3i – CRE (AUS)

a. A CRE informs decisions about whether an Aircraft design remains safe for operations in the defined roles and environments. It establishes the context for Risk Management, and sets a baseline to control activities and assist Services and Groups in identifying changes that require update and reassessment of Risk Management.

b. Significant changes to the CRE should result in an update to the UAS CRE document or SOIU and re-submission of an updated DASR Form 150 referencing the updated document.

c. A CRE document should include the extent to which the UA is required to operate near or over people and Critical Infrastructure including the duration of exposure and expected population density, amplifying:

i. population distributions of MEP, Informed Personnel and GP exposed to UA hazards

ii. Airspace environments in which the UA may operate, including the extent shared Airspace usage

iii. the extent to which the UA is required to operate in the proximity of Aerodromes and vessels

iv. the extent to which the UA is required to operate near Critical Infrastructure.

ii. a Safety Management System (SMS) for:

a. Authorised UAS Organisations IAW DASR SMS ▾ AMC

AMC UAS.30.b(a)3ii.a – Occurrence reporting (AUS)

a. UAS Organisations should consider incorporating the reporting of UAS Aviation Safety Issues as an element of the SMS.

b. The UAS Organisation should define in OIP at a minimum:

i. reporting parameters for UAS Aviation Safety Events and Aviation Safety Issues where reporting is required in a standard scenario

ii. personnel responsible for entering Aviation Safety Events and Issues into the relevant reporting system.

b. UAS Organisations using UAS.36 ▾ AMC ▾ GM

AMC UAS.30.b(a)3ii.b – SMS implementation (AUS)

A UAS Organisation should implement an SMS commensurate with the organisation and its operations.

GM UAS.30.b(a)3ii.b – SMS implementation (AUS)

a. UAS Organisations conducting operations IAW UAS.36 should implement an SMS with:

i. defined policy and objectives, including:

(a) a statement of management commitment to safety

(b) safety accountabilities and responsibilities

(c) coordination of emergency response planning

(d) SMS documentation.

ii. Aviation Safety Risk Management artefacts documenting:

(a) hazard identification processes

(b) safety risk assessment and mitigation.

iii. safety assurance using artefacts to document:

(a) safety performance monitoring and measurement, including investigation of UAS Aviation Safety Issues (where required in standard scenarios) and Events using UAS flight data and monitoring of ASRs, and implement changes to OIP where necessary

(b) the management of change

(c) continuous improvement of the SMS, including routine auditing to confirm compliance with DASR UAS.

iv. safety promotion using artefacts to document:

(a) training and education

(b) safety communication (eg notices, bulletins, briefings, posters).

iii. appointment of Key Staff to manage the FMS ▾ AMC ▾ GM

AMC UAS.30.b(a)3iii – Key Staff (AUS)

UAS Organisations should formally appoint Key Staff who are competent, qualified and appropriately trained, and with responsibilities commensurate to the scope and complexity of the relevant UAS operations.

GM UAS.30.b(a)3iii – Key Staff (AUS)

a. Key Staff are personnel appointed by a UAS Organisation to ensure the appropriate assignment of accountabilities for Aviation Safety. UAS Organisations should appoint Key Staff:

i. with defined initial and continuing position eligibility requirements

ii. with defined authority delegations and limitations

iii. for managing, as a minimum:

(a) the Safety Management System

(b) IA and CA, where relevant

(c) Flying operations standardisation

(d) Flying Supervision

(e) Flying instruction, when the organisation conducts training.

b. Some low-complexity operations may not justify assigning individual personnel against all positions; in these cases the UAS Organisation may combine accountabilities into one or more personnel:

i. **Aviation Safety Officer.** An Aviation Safety Officer is responsible for the management and maintenance of UAS Aviation Safety within the operating organisation. Such duties might include:

(a) identifying, reporting and tracking of hazards; and implementation of hazards controls

(b) the conduct of Aviation Safety training for members of the UAS Organisation

(c) ensuring crew duty limits are enforced

(d) incident investigation

(e) correction of identified deficiencies.

ii. **IA and CA management**. Personnel managing IA and CA are responsible for implementing and monitoring appropriate IA and CA risk controls commensurate to the inherent technical hazards of a given UAS. The extent of technical risk controls will vary significantly depending on the operational context. Therefore, the level of qualifications, training and experience required for managing IA and CA is set accordingly.

iii. **Standardisation Officers (STANDO).** A STANDO is responsible to the Accountable Manager (eg operating unit CO) for monitoring and reporting on operational staff compliance with OIP, and providing guidance for standardisation of unit UAS operations.

iv. **Flight Authorisation Officers (FLTAUTHO).** FLTAUTHOs are personnel of any appropriate rank or position appointed to provide Flight Authorisation of all UAS operations conducted by the unit.

v. **UAS instructors.** A UAS instructor is an RP authorised by the UAS Organisation as competent to provide UAS flying instruction. The UAS instructor is responsible for providing instruction and assessment to unit personnel IAW the relevant LMP and OIP. UAS Instructors may also be OEM authorised personnel responsible for initial training on the relevant UAS.

iv. Flying Supervision ▾ AMC ▾ GM

AMC UAS.30.b(a)3iv – Flying Supervision and Flight Authorisation (AUS)

a. A UAS Organisation Flying Supervision System should:

i. define Flight Authorisation (FLTAUTH) requirements, including:

(a) a requirement for the Aircraft Captain to brief the Flight Authorisation Officer (FLTAUTHO) prior to Flights

(b) requirement for the FLTAUTHO to approve Flights.

ii. define FLTAUTHO requirements, including:

(a) qualifications, training, experience and rank commensurate to the risk context

(b) UAS Flight approval authority and limitations, commensurate to the risk context

(c) responsibilities

(d) self-authorisation limitations when the FLTAUTHO is the Aircraft Captain

(e) a requirement for the FLTAUTHO to hold either:

(i) a qualification on the UAS types for which they will provide FLTAUTH

(ii) relevant aviation experience, endorsed by the UAS Organisation, where the FLTAUTHO does not hold the relevant UAS qualification.

(f) additional supervision requirements for Flights of a more hazardous nature, where relevant

(g) review periods for qualifications and personnel.

iii. not use personnel from outside the UAS Organisation as FLTAUTHOs, unless appropriately FLTAUTHO qualified, and either:

(a) operationally essential

(b) solely for T&E.

iv. ensure FLTAUTH is conducted for all UAS Flights.

GM UAS.30.b(a)3iv – Flying Supervision and Flight Authorisation (AUS)

a. For UAS operations with increased complexity, UAS Organisations should determine, based on the UAS CRE, whether to qualify FLTAUTHOs through either a Service-endorsed Flying Supervisors course, or as a minimum a unit-level training that covers:

i. Non-Technical Skills and fatigue management

ii. the Defence Aviation Safety Program and Regulations

iii. Aviation Safety Hazards

iv. contemporary risk management

v. study of Occurrence Reporting, as well accident and incident reports from other global operators, of related UAS types

vi. FLTAUTHO roles and responsibilities

vii. supervision of Crew.

b. Flight Authorisation:

i. should provide unambiguous instructions and guidance to allow the Aircraft Captain to make well-balanced decisions, while avoiding unnecessary interference with the Aircraft Captain's legitimate decision-making responsibilities

ii. should ensure operations occur IAW:

(a) the standard scenario requirements

(b) the organisation's approved OIP for:

(i) CRE or SOIU

(ii) Airspace management and De-confliction

(iii) planning requirements for safe distances from people on the ground and CI

(iv) CA requirements and limitations when relevant

(v) operation of the UAS

(vi) mission planning

(vii) crewing requirements (eg qualifications, experience, medical fitness)

(viii) risk management.

iii. should ensure FLTAUTH records:

(a) include:

(i) date, time and expected duration

(ii) UAS type and serial number

(iii) callsign (if used)

(iv) crew composition (eg Aircraft Captain, Remote Crew, Mission Crew)

(v) planned mission details

(vi) any specific limitations that apply to Flights

(vii) identifiable acknowledgements by the FLTAUTHO and the Aircraft Captain

iv. are retained as a permanent record and archived when the UAS Organisation no longer requires those records (eg IAW Commonwealth records management policy issued under the Archives Act 1983).

v. UAS Crew training, experience, currency, competency and medical requirements ▾AMC ▾GM

AMC UAS.30.b(a)3v – UAS Crew Qualification, Training, Experience and medical standards (AUS)

a. UAS Organisations should implement UAS Crew training and management risk controls, including:

i. training that prepares the Remote Crew (and Mission Crew where relevant) to:

(a) perform flight planning

(b) perform the required action/tasks for employing/programming risk controls

(c) perform the required pre-flight, in-flight and post flight checks

(d) perform the required actions to load/unload payloads/stores, where relevant

(e) identify and perform emergency procedures

(f) perform emergency response actions (eg unit emergency response plan)

(g) operate IAW approved OIP

(h) operate in the full range of approved environmental conditions

(i) operate in multi-crewed environments, where relevant

(j) operate the UA in a way that minimises risk to GP, MEP, critical infrastructure, and other airspace users

(k) identify and manage risks unique to the UA role and operating environment.

ii. a UAS Crew qualification system that defines the requirements for training, experience and Recency

iii. UAS Crew Currency and Recency requirements (eg Category system)

iv. Aircraft Captaincy requirements to ensure:

(a) operations minimise risk to GP, MEP, Critical Infrastructure, and other airspace users

(b) adequate mission planning, including collection of sufficient pre-Flight information and conduct of Flight Planning to ensure safe execution of the Flight (eg UAS configuration, crew suitability, mission details, weather and operating environment)

(c) the conduct of an adequate pre-Flight briefing

(d) the UAS and any ancillary equipment is serviceable, maintenance released (where relevant) and accepted for the Flight

(e) effective management of multi-crew operations, where these are conducted

(f) effective management of the Remote Pilot Station environment (eg sterile cockpit)

(g) compliance with all OIP relevant to Flight

(h) occurrences outside the scope of the Flight authorisation are recorded and managed in accordance with the OIP

(i) in-Flight Aircraft Captain handover procedures, where relevant

(j) Aircraft Captains use all the resources at their disposal to ensure the safe execution of Flights, including credible emergency scenarios

(k) Aircraft Captains contact the FLTAUTHO for advice and guidance when it is necessary to deviate from the briefed Flight authorisation, as soon as circumstances allow

(l) conduct a post-Flight UAS crew debrief

(m) the authorising officer is notified of any unusual occurrences or deviations from the briefed Flight authorisation, and these are recorded

(n) comply with post-Flight documentation requirements.

v. requirements for Synthetic Training Devices (where these are used as a component of UAS Crew qualifications, training and management) covering:

(a) approval for use by the UAS Organisation

(b) identification and risk management of any negative training, and the defined the scope of training permitted using the STD (eg procedural only, or full Flight modelling)

(c) restrictions on the mix of STD and live Flight experience to maintain UAS Crew qualifications, training and experience, including RP logbook recording requirements

(d) how the organisation will maintain the ongoing STD fidelity for the scope of required training benefit.

b. Remote Crew (and Mission Crew where relevant) medical fitness requirements.

GM UAS.30.b(a)3v – UAS Crew Qualification, Training, Experience and medical standards (AUS)

a. UAS Organisations should implement UAS Crew qualification systems

i. commensurate to:

(a) the UAS operated by the UAS Organisation

(b) the role and operating environment (eg VLOS vs BVLOS operations, Visual Meteorological Conditions vs reduced visibility, day vs night operations, operations with participating aircraft).

ii. including additional qualifications for UAS Crews where relevant to a standard scenario (eg for Test & Evaluation, BVLOS, night operations, competent spotters)

iii. for instructor qualifications where relevant (including STD management), and requirements for routine competency assessments

b. UAS Crew Currency and Recency requirements (eg Category system) should include:

(a) a method of recording UAS Crew competency, experience and recency (eg logbooks and electronic Currency/Recency tracking)

(b) methods to regain Currency and Recency

(c) circumstances for appropriate extensions or waivers to Currency and Recency.

c. Remote Crew (and Mission Crew where relevant) medical fitness requirements should include:

i. a medical fitness system that defines:

(a) minimum medical standards required to operate the UAS (eg aligned to Service requirements)

(b) drug (including prescription and non-prescription medication) and alcohol use (eg limitations, notification requirements, mandatory no-fly requirements)

(c) fatigue management (eg duty day, continuous rest between duty days, maximum accumulative flight times per day)

(d) self-assessment of medical fitness prior to, and during flight operations

(e) return to flying following TMUFF, where relevant.

ii. training that enables the UAS Crew to understand the Aviation Safety risks associated with medical fitness in order to conduct an appropriate self-assessment.

vi. operating standards and limitations, including management of: ▾AMC ▾GM

AMC UAS.30.b(a)3vi – Operating standards and limitations (AUS)

a. A UAS Organisation should document and maintain operating standards and limitations appropriate to the risk context, through OEM or Service OIP (eg an operations manual) that includes:

i. approved UA limitations

ii. pre-Flight checks (including independent verification of Safety Critical data) that confirm the configuration and serviceability of the UAS

iii. requirements to maintain and operate UAS IAW approved OEM and Service OIP

iv. the responsibilities of:

(a) Aircraft Captains

(b) Remote Crews

(c) FLTAUTHOs

(d) instructors, where relevant

(e) maintenance personnel (if necessary to ensure Aviation Safety).

v. risk management procedures

vi. Aircraft Captaincy requirements

vii. Flight planning requirements

viii. contingency and inflight emergency requirements, where relevant

ix. fatigue management requirements (eg Flight time and duty period limitations, Risk Management and waivers)

x. medical standards

xi. Non-Technical Skills requirements, where relevant

xii. version management of all Aeronautical Data used

xiii. Remote Crew logbook requirements.

GM UAS.30.b(a)3vi – Operating standards and limitations (AUS)

a. DASA provides an operations manual template to capture operating standards and limitations for UAS Organisations. UAS Organisations using the template should retain the structure as far as practicable for the Aviation Safety benefit to standardisation across Defence UAS operations. However,

UAS Organisations need only provide detail to the extent that it supports Aviation Safety.

b. Approved UA limitations should include:

   i. performance limitations (eg operations ceiling, maximum commanded airspeed)

   ii. datalink limitations (eg range, antennae elevation limitations)

   iii. environmental limitations of the UA (eg RF conditions, weather/dust limits, rain and wind gust limits)

   iv. technical risk controls limitations (eg autonomous recovery system, geo-fencing, altitude and range limiter and on-board cameras)

   v. any other design feature that may contribute to Aviation Safety.

c. Pre-Flight checks (including independent verification of Safety Critical data) should confirm the configuration and serviceability of:

   i. the UA airframe, control surfaces and propellers/rotor blades

   ii. the UA navigation system

   iii. technical risk controls (eg autonomous recovery systems, geo-fencing, altitude and range limiter and on-board camera)

   iv. payloads, including payload mounting and release mechanisms

   v. other systems that contribute to Aviation Safety.

d. Flight planning procedures should include:

   i. minimum safe lateral and vertical distances from GP, Informed Personnel, MEP and Critical Infrastructure (where potential exposure exists)

   ii. launch and recovery, and route/area planning to ensure avoidance of obstacles, people and CI (e.g. required performance and minimum altitudes for launch, recovery and in-Flight)

   iii. minimum fuel or battery states for planned routes, and reserves

   iv. UAS hardware and software configuration and minimum performance (eg standard configurations, weight and balance requirements, allowable module or payload combinations, minimum engine performance and power margins)

   v. Lost Link procedures that ensure safe routing and altitudes, compliant with specific standard scenario requirements

   vi. Role Equipment, dropping of items, use of lasers and any other hazard-sources that may project hazards beyond the UAS, where relevant

vii. minimum UAS Crewing (eg minimum qualifications for specific missions, Mission Crew)

viii. minimum quick reference documentation for the RPS

ix. Radio Frequency (RF) spectrum approvals and ongoing usage, including any environmental limitations, where relevant

x. requirements for the use of externally provided services, where relevant (eg mobile or satellite networks).

e. Contingency and in-Flight emergency procedures should be implemented and tested, including:

i. Flight termination (including criteria and Flight termination sites)

ii. management of Airspace or ground incursions (eg non-compliant air users, or GP)

iii. UA escape from the operational area/assigned airspace (eg alerting GP, MEP, other airspace users and ATC)

iv. malfunction of technical risk controls

v. loss of positive control

vi. unintended UA ground impact

vii. hung or inadvertently released stores

viii. management of battery or fuel hazards

ix. management of DG cargo.

f. UAS Organisations should implement procedures, limitations and requirements:

i. for EVLOS, BVLOS, reduced visibility, night and Instrument Meteorological Conditions (IMC) operations, where conducted

ii. that enable the RP to operate the UAS within its weather limitations (eg obtaining weather forecasts and monitoring weather radars)

iii. for managing the RPS environment, where relevant (eg sterile cockpit)

iv. for handover procedures that enable the RP and/or crew to perform a handover to another RP and/or crew, where relevant (eg checklists, crew coordination and monitoring during handover)

v. for avoidance of spectrum conflict and electromagnetic interference (eg coordinating with the Defence Spectrum Office and conducting a Radio Frequency survey for high intensity emitters)

vi. where relevant, multi-crew operations, including:

(a) standard RPS duty allocations

(b) standardised phraseology for critical phases of flight.

vii. to manage Human Machine Interface (HMI) deficiencies, where relevant

g. UAS Organisations should implement in-Flight monitoring of:

i. command, control and communication data-links performance to ensure safe conduct of Flight

ii. cyber risks that may affect Aviation Safety

iii. RF spectrum that eliminates, or minimises SFARP, interference to a UAS.

h. UAS Organisations should define requirements for Flight recording and locating equipment (where practicable) to ensure retention of altitude, speed and track data until the UA is recovered without incident.

a. UAS operations integration into the relevant Airspace and with *due regard* for the safety of civil air navigation ▾ AMC1 ▾ AMC2 ▾ GM

AMC1 UAS.30.b(a)3vi.a Airspace integration (AUS)

a. **Airspace management**. UAS Organisations should document and implement Airspace De-confliction methods:

i. compliant with the Airspace requirements of the standard scenarios in use by the UAS Organisation

ii. detailing the type of coordination and De-confliction in use to ensure the UA does not pose a hazard to other Aircraft (eg segregation, a Manual of Air Traffic Standards (MATS) Separation standard for application by Air Traffic Control if applicable, and any local De-confliction with Participating Aircraft)

iii. that incorporate safe margins from Airspace boundaries and De-confliction with Participating Aircraft.

b. **Consultation.** For all operations, UAS Organisations should:

i. consult with the relevant Airspace users for operations within:

(a) 3nm a non-controlled Aerodrome

(b) 3nm of a certified or registered HLS

(c) Aerodrome approach and departure paths (see GM UAS.30.b(a)3vi.a for the definition of approach and departure paths)

(d) Instrument Approach Procedures (IAP), including above Lowest Safe Altitudes and Minimum Safe Altitudes, and IFR and VFR routes in non-controlled Airspace

(e) Airspace over water in use as an aerodrome (eg for seaplanes)

(f) coastal regions above 100ft AGL out to 2nm from the coastline

(g) Approach and departure paths for aviation capable ships

(h) 3nm of a certified or registered Helicopter Landing site or helipad (eg oil rigs)areas used for gliding, balloon operations etc. (including competitions usually notified by NOTAM)

(i) areas of regular aerial work activity (eg agricultural spraying, mustering, low-level survey and inspection)

(j) areas regularly involving scenic flying.

ii. consider:

(a) promulgating a NOTAM and use of air band radios to provide other airspace users with awareness of the operation

(b) use of lighting, paint schemes and electronic means to improve detection of the UAS to other air users

(c) air band communication monitoring or broadcasts on the relevant frequency.

AMC2 UAS.30.b(a)3vi.a *Due Regard* (AUS)

a. UAS Organisations must comply with one of the following options to satisfy *due regard* obligations for the safety of civil air navigation, conducting operations:

i. in Visual Meteorological Conditions (VMC) and within VLOS, where the RP can visually detect Aircraft entering the UAS operating airspace and land immediately or take safe actions to avoid a breakdown in segregation or Separation

ii. in VMC and within EVLOS where the RP, with the assistance of competent spotters, can visually detect Aircraft entering the UAS operating airspace and land immediately or take safe actions to avoid a breakdown in segregation or Separation, and:

(a) competent spotters:

(i) receive a handover of VLOS responsibility and can maintain VLOS until further handover

(ii) maintain direct verbal communications with the RP.

iii. in a Restricted Area (RA), Military Operating Area (MOA), or restricted operating zone with Participating Aircraft only

iv. under continual surveillance, where the facility providing surveillance can ascertain the position of UAS and has the capability to maintain continuous surveillance of the surrounding relevant airspace while in communication with the RP

v. where the UAS:

(a) provides position, altitude, heading, track, airspeed, groundspeed and rate of climb or descent

(b) meets the integrity, accuracy, availability and continuity of service requirements of a DASA-authorised standard

(c) receives surveillance system data to provide situational awareness of the surrounding airspace to the RP, which enables de-confliction with other Aircraft.

vi. with a Detect and Avoid (DAA) system authorised by DASA sufficient to avoid other Aircraft

vii. only if unable to comply with AMC UAS.30.b(a)3vi.a paragraphs i-vi, over Australian territorial land or water, and:

(a) in non-controlled Airspace

(b) either:

(i) below 400ft AGL, or Lowest Safe Altitude (LSALT) by night, or

(ii) for UAS operations conducted by a MAO, above 400ft AGL or LSALT following consultation with an appropriate Airspace SME.

(c) Deconflicted with Defence and civilian Aircraft conducting Low Flying (eg through Airspace Control Plan, promulgated NOTAMs for other Aircraft operations)

(d) IAW a Notice To Airmen (NOTAM) that provides all relevant Flight operating details and contact information for the RP or controlling unit

(e) making broadcasts compliant with General Planning Australia (GPA) on the relevant air band frequency with a transceiver range that exceeds the relevant UA operating area by an appropriate safety margin

(f) using any other reasonably practicable risk controls.

viii. only if unable to comply with AMC UAS.30.b(a)3via paragraphs i-vii, over non-territorial waters, and:

(a) in non-controlled Airspace

(b) unless there is a compelling operational imperative, IAW a NOTAM (eg for the Flight Information Region or other relevant area) and Notice to Mariners (NOTMAR) that provides all relevant Flight operating details and contact information for the RP or controlling unit

(c) unless there is a compelling operational imperative , making broadcasts compliant with General Planning Australia (GPA) on the relevant air band frequency with a transceiver range that exceeds the relevant UA operating area by an appropriate safety margin

(d) where relevant, making appropriate broadcasts on a marine radio when vessels in proximity may have embarked aviation

(e) only following any relevant stakeholder consultation where possible (eg oil rig aviation operations, border patrol operations)

(f) using any other reasonably practicable risk controls.

b. **Due regard Flexibility Provision** – *in extremis circumstances*. Commanders faced with compelling operational imperatives to conduct *due regard* operations, which do not meet the requirements of this regulation, must seek approval in accordance with either (as appropriate):

i. single service risk retention instructions

ii. Joint planning indicative risk tolerance descriptions and endorsing authorities doctrine.

c. **Ongoing *due regard* deviations**. For ongoing deviations from UAS.30.b(a)3vi.a, UAS Organisations should seek a UASOP under UAS.30.a based on:

i. DASR compliant risk management

ii. demonstration of operational necessity.

GM UAS.30.b(a)3vi.a – *Due regard* and Airspace integration (AUS)

a. Flying with *'due regard'* to other airspace users is a term Defence uses to describe operations which are neither IFR, nor VFR and in which the Aircraft Captain assumes responsibility for De-conflicting with civilian air traffic.

b. *Due regard* operations for UAS involve implementing all measures necessary to ensure the safety of civilian Aircraft, people, vehicles, vessels, and infrastructure. UAS Organisations must not conduct *due regard* operations such that the primary control against the hazard of a collision is the 'see and avoid' capability of a third party. Similarly, reliance on operating in historically low density airspace, either on its own or in conjunction with relying on the see and avoid capability of a third party, does not satisfy the requirements for *due regard* operations.

c. The options provided in AMC UAS.30.b(a)3v.i.a for territorial and non-territorial areas refer to the United Nations Convention on the Law of the Sea (UNCLOS), which provides international law for the use of non-territorial waters and where those areas are established.

d. ANP 3300 defines RAN policy for Defence UAS operations in vicinity of Australian and foreign warships, including definition of approach and departure paths for air-capable ships.

e. Figure 1 defines the straight-in approach and departure paths at non-controlled Aerodromes.

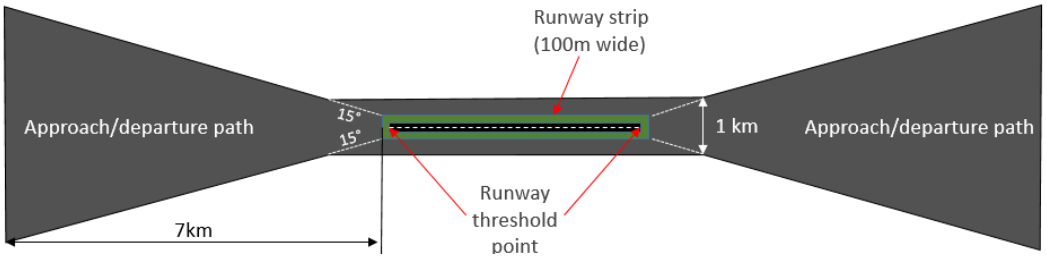

Figure 1 Approach and departure paths at a non-controlled Aerodrome.

f. Where a UAS Organisation is using Lowest Safe Altitude (LSALT) by night as the ceiling for an operation, those operations are subject to the requirements of the RAAF AIS General Planning Australia for calculation of the appropriate LSALT.

g. **Approval authorities for specific Airspace**. A range of authorities controls the various types of Airspace volumes, listed in ERSA or as listed below. UAS operations may only occur within the following Airspace where the relevant authority first provides permission for:

i. Flights within the no-fly zone of a controlled Aerodrome (no-fly zones are cumulative for Aerodromes with multiple runways), which is:

(a) within 3 NM, in any direction, from the runway threshold of any runway of a non-controlled aerodrome

(b) within the areas shaded dark grey less than 7km from the runway threshold, and above 300ft AGL beyond 7km from the runway threshold

(c) for UAS <250g Take-Off-Weight only, above 150ft AGL within the light grey shaded area.

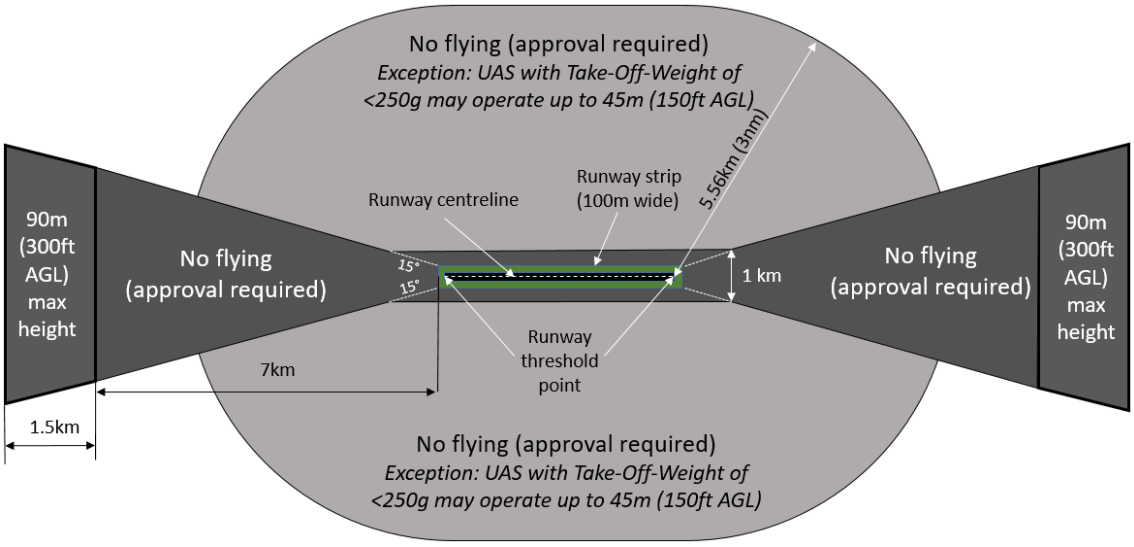

Figure 2 No-fly zones of controlled Aerodromes.

i. controlled Airspace above 400ft AGL when operating outside a controlled Aerodrome no-fly zone

ii. the Airspace surrounding vessels capable of launching and recovering Aircraft—contact Royal Australian Navy Headquarters Fleet Air Arm for advice regarding approvals for RAN and foreign warships

iii. areas where a fire, police or other public safety or emergency operation is being conducted—refer to local authorities.

h. **Airspace management OIP.** UAS Organisations should:

i. define requirements:

(a) to seek approval from Airspace controlling authorities or Airspace control agencies to enter Airspace as detailed in En Route Supplement Australia (ERSA) (eg Airservices Australia or Airspace controlling authorities)

(b) for communications with Participating Aircraft

(c) to notify other Airspace users of the intended UA activity

(d) for safe margins from Airspace boundaries and Participating Aircraft based on:

(i) credible failure modes of the UAS

(ii) maximum airspeed

(iii) turn radius at maximum airspeed

(iv) command and control latency

(v) navigation system redundancy and accuracy (GNSS, altimeters)

(vi) technical risk controls (eg geo-fencing)

(vii) risk recovery controls (eg parachutes, air brakes, autonomous recovery system, etc)

(viii) Lost Link and emergency routing

(ix) Flight termination systems and designated Flight termination sites

(x) adjacent area activity that may affect UAS behaviour, such as RF emitters

(xi) adjacent area activity such as high-density Airspace.

ii. provide documentation to inform (eg via the DASA ATMP template) relevant external stakeholders of the Aviation Safety hazards, relevant limitations and Risk Management associated with planned UAS operations, including:

(a) UAS description, including equipage and navigational capabilities (eg GPS and altimeter accuracy, size of UA, operating ceiling, relevant launch/recover and manoeuvring capabilities)

(b) type or volume of Airspace for intended operations

(c) segregation or separation methods (eg RA, MOAs, MATS-compliant methods)

(d) limitations (eg RP operating limits, lack of see and avoid capability, non-certified equipage, communications transceiver range limits, any prohibition of Flight above other Aircraft)

(e) a formal operations liaison POC (eg Operations Officer).

i. **Documentation consultation and endorsement.** UAS Organisations may seek advice through DASA (DD UAS OPS) for implementation of Airspace Risk Management where they identify that they lack the necessary expertise or assess that further oversight will benefit Aviation Safety (eg DASA endorsement of an ATMP).

b. establishing and operating to safe distances from people on the ground and water, and CI in the relevant areas. ▾ AMC ▾ GM

AMC UAS.30.b(a)3vi.b – Planning requirements (AUS)

a. **Process**. UAS Organisations must determination population at risk compliant with the limits and definitions in each standard scenario for normal and emergency UAS conditions. This process includes:

i. determining the area at risk for the operation

ii. evaluating population density, GP and CI locations within the area at risk and ensuring compliance with standard scenario limitations

iii. determining the adjacent area and ensuring compliance with standard scenario limitations

iv. implementing both technical and operational risk controls to eliminate risks to people, or where it is not reasonably practicable to eliminate those risks, to otherwise minimise the people at risk through:

(a) airspace or time-based restrictions (eg operate only by night, avoid loitering in vicinity of identified GP)

(b) avoiding areas of elevated risk (eg no operation within predetermined safe distances from known GP or CI locations)

(c) ground or air observation through visual or electronic means

(d) proactive technical limitations (eg geo-fencing, flight termination buffers, reduced fuel/energy states)

(e) recovery systems to reduce impact energy (eg parachute recovery systems).

b. **Area at risk.** Areas at risk should include (see figures 1 to 4 for examples):

i. ‘Green areas’—for normal operations.

ii. ‘Orange areas’—where the UA may operate for short periods of time under emergency conditions (eg to conduct corrective manoeuvres to re-establish in the green area)

iii. ‘Red areas’—where, after a loss of control event, a flight termination or an immediate landing is typically required to prevent the UA from operating over / becoming a hazard to non-permitted or higher risk locations (eg. populous area).

c. **Adjacent area.** UAS Organisations should determine the lateral size of the adjacent area, measured from the outside edge of the orange area and calculated using the distance flown in 3 minutes at the maximum operational airspeed of the UA, and (see figures 1 to 4 for examples):

i. if the distance is less than 5 km, the minimum dimension is 5 km

ii. if the distance is between 5 and 35 km, use the calculated dimension

iii. if the distance is more than 35 km, the maximum dimension is 35 km.

Figure 1: Generic example only, do not use for planning - area at risk with no internal population.

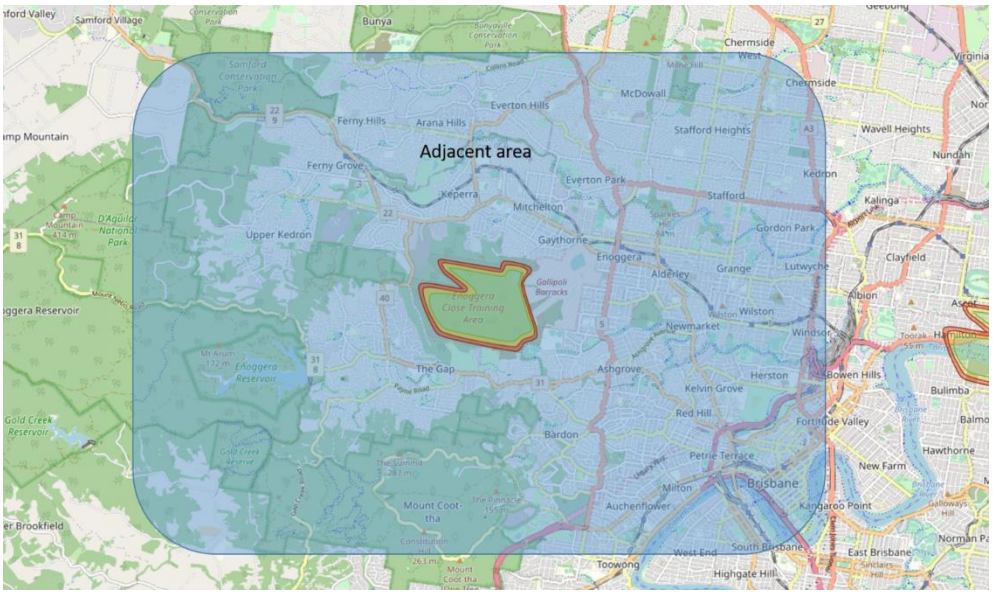

Figure 2 Generic example only, do not use for planning – adjacent area for an area at risk with no internal population.

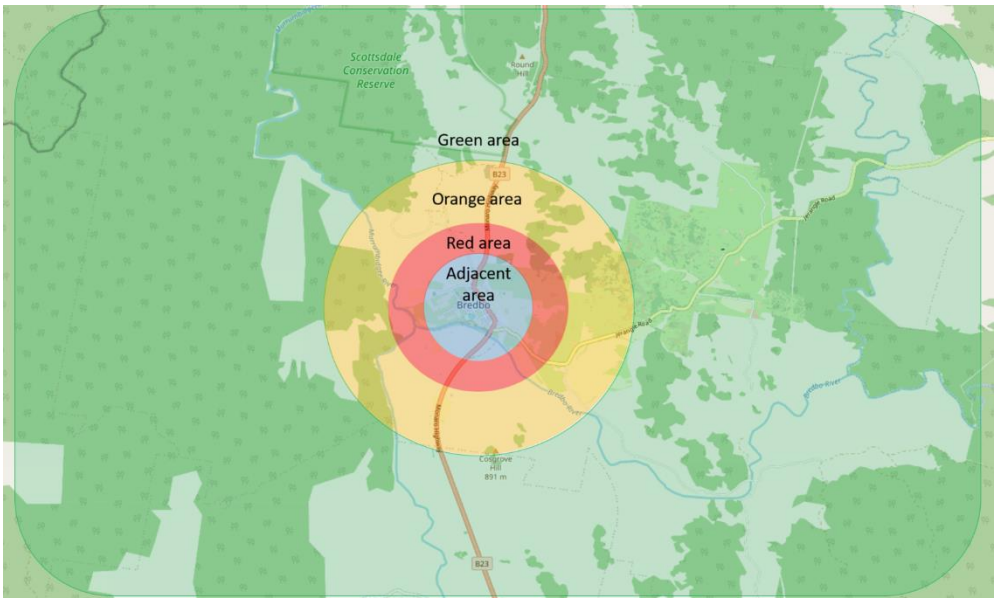

Figure 3 Generic example only, do not use for planning – area at risk with an internal population.

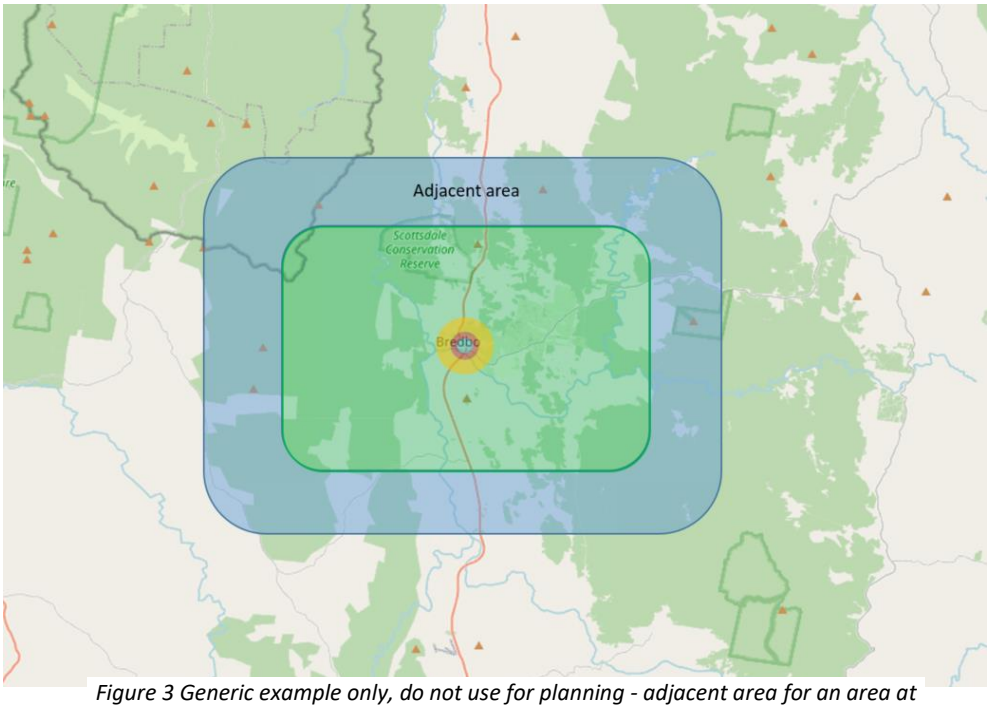

Figure 3 Generic example only, do not use for planning - adjacent area for an area at risk with an internal population.

d. **People at risk.** A UAS Organisation must evaluate population density within the area at risk and adjacent areas using quantitative means where practicable, or qualitative means if unable to use a quantitative method.

e. **Identification of GP and Critical Infrastructure locations (CI).** Locations of GP and CI should be identified prior to operations and during Flight (where practicable), and where necessary, implement appropriate risk controls to eliminate or minimise risk SFARP. Identified locations should be made available to the RP on the UA control software or on an equivalent mapping display.

f. **GP and CI Avoidance criteria.** The UAS Organisation should determine and establish safe margins between the UAS and identified GP and CI locations, where practicable.

g. **Defining planning criteria.** The UAS Organisation must define mission planning criteria for:

i. ensuring areas do not exceed the max permissible people at risk densities within the standard scenario(s) in use

ii. identifying GP and CI locations

iii. determining avoidance criteria.

h. **Constraining operating area.** The UAS Organisation should implement appropriate technical or operational risk controls to ensure no probable single failure of the UAS or any external system supporting the operation leads to an operation beyond the intended area of operations (ie escape into the adjacent area), including:

i. the use of geo-fencing (if available) to contain the UA within the lateral limits of the operating area

ii. the establishment of appropriate safe margins between the operating area and adjacent area

iii. the immediate end of Flight (eg flight termination) through a combination of procedures/processes and/or available technical means if the UA leaves the area of operations.

GM UAS.30.b(a)3vi.b – Planning requirements (AUS)

a. **Areas at risk**. UAS Organisations should determine the area at risk for a UA system based on:

i. 'Green area' dimensions, including:

(a) task profile to be flown (eg point to point, wide area surveillance)

(b) navigation accuracy (eg GNSS accuracy, position holding error, map error)

(c) UA flight logics.

ii. 'Orange area' dimensions, including:

(a) max operational speed of the UA

(b) turning radius (fixed wing) or stopping distance (multirotor)

(c) command and control latency

(d) RP reaction time

(e) loss-of-link logic (eg pre-programmed path or direct return)

(f) geo-fence logic (if active) upon breach of the geo-fence. (180 degree turn or stopping).

iii. 'Red area', including:

(a) max operational speed of the UA

(b) max operational height above ground level

(c) UA descent profile under controlled descent or flight termination (eg ballistic descent, glide ratio, drift under parachute recovery systems, debris field)

(d) command and control latency

(e) RP reaction time.

b. **People at risk**. UAS Organisations should consider the following guidance when determining population densities.

i. **Quantitative values.** UAS Organisations should use quantitative values provided by authoritative statistical data sources (eg the Australian Bureau of Statistics) to determine the expected population density within an operational area. However, the UAS Organisation should also consider that this data may not reflect the actual population density at risk during an operation due to:

(a) time-stale data (date of last census)

(b) time of day and day of week variations

(c) seasonal variations (eg. camping areas or holiday destinations that could be expected to have a greater population density during holiday periods)

(d) major weather events / area evacuations

(e) sheltering—in general, UA weighing less than 25 kg (limited to the speeds in the standard scenarios) cannot penetrate buildings except in cases where the UAS speed or building materials are unusual (eg ballistic terminal speed descent, or tents, glass roofs).

ii. When using quantitative values to determine the people at risk, UAS Organisations should:

(a) for the area at risk, apply the highest population density (ppl/km^2) of any segment (1km x 1km grid square) in the operating area

(b) for the adjacent area, use population density (people/km^2), averaged over the whole adjacent area, based on:

(i) available population data

(ii) the adjacent area only beyond the red area.

iii. **Qualitative descriptors.** Where a UAS Organisation cannot characterise population density through quantitative means, UAS Organisations may use the qualitative descriptors defined in GM UAS.10 to determine the likely population density in an area, where relevant—prior to the implementation of risk controls to reduce the 'at risk' population.

c. **GP and CI avoidance criteria**. Determinations of safe margins should include consideration of:

i. max airspeed of the UA

ii. max operational altitude above ground level

iii. UA descent profile under controlled descent or flight termination (eg ballistic descent, glide ratio, drift under parachute recovery systems, debris field)

iv. command and control latency

v. RP reaction time

vi. UA positional accuracy

vii. use of geo-fencing (if available)

viii. Loss of Link routing.

4. UAS Organisations must notify DASA via submission of DASR Form 150 prior to commencement of UAS operations.

DRAFT DASR UAS.35 FOR JUL 26 DASR RELEASE

Contents

Section 1: Amended DASR UAS.35 DASR Part only.

Section 2: Amended DASR UAS.35 DASR Part, Acceptable Means of Compliance (AMC) and Guidance Material (GM).

SECTION 1: NEW DASR UAS.35 PART ONLY

The following amends the DASR Part for DASR UAS.35 in toto. There are no other changes to the extant DASR UAS.35

DASR UAS.35 Standard scenarios for Authorised UAS Organisations

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▸ GM

(a) **Standard Scenario for operations over non-Defence Controlled Ground or Water.** For operations under this standard scenario, Authorised UAS Organisations must:

1. not conduct Test & Evaluation of UAS Safety Critical systems

2. in addition to the requirements of UAS.30.b, establish and maintain a tailored Initial Airworthiness and Continuing Airworthiness system contextualised for CRE, including:

   i. UAS safety and reliability ▸ AMC

   ii. UAS configuration management ▸ AMC

   iii. maintenance requirements and instructions ▸ AMC

3. conduct operations:

   i. with an Uncrewed Aircraft (UA) that does not exceed: ▸ GM

      a. a dimension of 8 metres ▸ AMC

      b. 145 knots (75m/s) maximum possible commanded airspeed.

   ii. that minimises Flight in vicinity of identified GP and CI locations, so far as is reasonably practicable ▸ AMC

   iii. in either:

      a. Restricted Areas (RA), Military Operating Areas (MOA) or control zones (CTR) that exclude non-Participating Aircraft, or ▸ AMC ▸ GM

      b. Airspace over non-territorial seas with *due regard* for the safety of civil air navigation. ▸ GM

   iv. crewed by a dedicated RP for each UA, where the RP can intervene during all stages of Flight except Lost Link. ▸ AMC

(b) **Standard scenario for one RP to many UAs.** Authorised UAS Organisations must ensure operations under this standard scenario occur:

1. using a UA that does not exceed a dimension of 1 metre and maximum possible commanded airspeed of 50 knots (25m/s) ▸ AMC ▸ GM

2. using IA and CA risk controls contextualised to the Configuration Role and Environment (CRE)

3. in either:

i. Restricted Areas (RA) or Military Operating Areas (MOA) that exclude non-Participating Aircraft, or ▸ GM

ii. Airspace over non-territorial seas with *due regard* for the safety of civil air navigation. ▸ GM

4. over Defence Controlled Ground or Water ▸ AMC ▸ GM

5. crewed by an RP who can intervene during all stages of Flight except Lost Link. ▸ AMC

(c) **Standard scenario for Test & Evaluation (T&E).** Authorised UAS Organisations must ensure operations under this standard scenario occur: ▸ GM

1. with endorsement from an appropriate Test & Evaluation Accountable Unit ▸ AMC ▸ GM

2. using IA and CA risk controls contextualised to the Configuration Role and Environment (CRE) ▸ GM

3. in either:

i. Restricted Areas (RA) or Military Operating Areas (MOA) that exclude non-Participating Aircraft, or ▸ GM

ii. Airspace over non-territorial seas with *due regard* for the safety of civil air navigation. ▸ GM

4. over Defence Controlled Ground or Water, and where GP and CI are absent unless approved by a Delegate of the Safety Authority for Flight Test (DoSA FT). ▸ GM

(d) **Standard Scenario for Weaponised UAS.** Authorised UAS Organisations must ensure weaponised UAS operations under this standard scenario occur: ▸ AMC ▸ GM

1. in an approved Range Danger Area (RDA) ▸ GM

2. in either:

i. Restricted Areas (RA) or Military Operating Areas (MOA) that exclude all Aircraft except participating UAS, or ▸ GM

ii. Airspace over non-territorial seas with *due regard* for the safety of civil air navigation. ▸ GM

3. that contain the RDA in the Airspace designated for the activity ▸ AMC

4. over Defence Controlled Ground or Water ▸ GM

5. with risk controls implemented for MEP ▸ AMC ▸ GM

6. crewed by a dedicated RP for each UA, where the RP can intervene during all stages of Flight except Lost Link and Terminal Guidance. ▸ AMC

SECTION 2: AMENDED DASR UAS.35 DASR Part, AMC and GM

The following amends the DASR Part and corresponding AMC and GM in toto. There are no other changes to the extant DASR UAS.35, AMC and GM.

DASR UAS.35

▾GM

GM UAS.35 – Standard scenario Privilege (AUS)

The DASR UAS.35 standard scenarios provide Authorised UAS Organisations with a Privilege to operate UAS with residual risk to third parties (primarily civilians) through the Risk Management controls detailed in each standard scenario. This Privilege invokes specific requirements to execute Defence responsibilities to third parties in addition to those detailed in the broader Defence Aviation Safety Program. DASA will review and monitor this Privilege and will revoke the Privilege where it identifies non-compliances.

(a) **Standard Scenario for operations over non-Defence controlled land or water.** For operations under this standard scenario, Authorised UAS Organisations must:

1. not conduct Test and Evaluation of UAS Safety Critical Systems.

2. in addition to the requirements of UAS.30.b, establish and maintain a tailored initial and continuing airworthiness system contextualised for CRE, including:

   i. UAS safety and reliability ▾AMC

   AMC UAS.35(a)2i – Safety and reliability (AUS)

   a. The UAS Organisation should:

      i. conduct a hazard assessment that ensures the equipment, systems, and installations are designed to minimise hazards in the event of a probable failure of the UAS and any external system supporting the operation

      ii. ensure the UAS is manufactured by a competent and/or proven entity. This may be achieved through an assessment of quality certifications (eg relevant ISO standards), OEM manufacturing procedures, the specification of materials, suitability and durability of materials used, processes necessary to allow for repeatability in manufacturing and conformity within acceptable tolerances and configuration control.

   b. **Technical risk controls.** Technical risk controls should include automatic protection of the Flight envelope to prevent the RP from making any single input under normal operating conditions that would cause the UA to exceed its Flight envelope or prevent it from recovering in a timely fashion.

   ii. UAS configuration management ▾AMC

   AMC UAS.35(a)2ii – UAS configuration management (AUS)

   a. The UAS Organisation should establish a system:

i. to collect, investigate and analyse information on in-service failures, malfunctions and defects from:

(a) ADF occurrence reports

(b) the OEM if practicable

(c) occurrences reported from foreign operators where practicable.

ii. to assess proposed CRE changes

iii. to assess changes to the design risk.

iii. maintenance requirements and instructions ▾ AMC

AMC UAS.35(a)2iii – Maintenance requirements and instructions (AUS)

a. Maintenance requirements should define:

i. personnel authorised to conduct maintenance (eg operations or maintenance personnel)

ii. qualification, training and experience requirements to conduct maintenance

iii. maintenance schedules (eg 'on condition' monitoring through pre and post flight inspection, specific timeframes) that consider:

(a) the mechanical, avionic, and computer-based systems (including software and firmware) associated with the:

(i) UA and their power sources, such as battery cycles, fuel cells, etc

(ii) UAS support equipment, including transmitter/receiver equipment, radio devices, and any other item of plant or equipment associated with the operations or use of the UAS

(iii) UAS role equipment and their fittings, such as cameras, electronic sensing devices, etc

(b) OEM defined / recommended servicing schedules

(c) defect reporting and mean time between failures.

iv. a system, where relevant, for:

(a) the controlled deferment of defects for non-Safety Critical systems

(b) post maintenance test Flights

(c) release to service

(d) weight and balance management

(e) the management of Airworthiness Directives.

v. the requirement to maintain technical logs for:

(a) type, model, and unique identification of the RPA

(b) max gross weights

(c) total Flight time

(d) in-service time for engines, motors, rotors, propellers, external loads and safety equipment, where relevant

(e) maintenance schedules, maintenance carried out and next maintenance action

(f) rectification of defective safety equipment

(g) unserviceable failsafe equipment

(h) maintenance certification.

b. Maintenance instructions should define:

i. how maintenance is to be carried out

ii. personnel authorised to conduct the maintenance activity.

3. The UAS Organisation must conduct UAS operations:

i. with an Uncrewed Aircraft (UA) that does not exceed: ▾GM

GM UAS.35(a)3.i – UA size and speed limitations (AUS)

The UA dimension and airspeed constraints limit the theoretical size of the area on the ground (critical area) where a UA could impact a standing person and result in a fatality. This is achieved through maximum UA dimension and speed limitations, and assumes no additional risk controls to protect people or reduce the consequence of an impact.

a. a dimension of 8 metres ▾AMC

AMC UAS.35(a)3i.a Maximum UA Dimension (AUS)

a. UAS Organisations should calculate maximum UA dimension using:

i. wingspan for fixed wing

ii. main rotor diameter for rotorcraft

iii. maximum distance between rotor tips for multirotors.

b. Where UAS size alters during Flight (eg VTOL system with foldable wings), the largest UA dimension is used for the calculation.

b. 145 knots maximum possible commanded airspeed.

ii. that minimises Flight in vicinity of identified GP and CI locations, so far as is reasonably practicable ▾ AMC

AMC UAS.35(a)3ii – Population density limitations (AUS)

a. DASR UAS.30.b(a)3vi.b provides the planning procedures for ground risk areas.

b. The following tables provide the maximum 'at risk' residual quantitative population densities based on UA size and speed (critical area size) for operations under this standard scenario. UAS Organisations should only use these tables following implementation of all other risk controls (eg avoidance criteria, time of day restrictions).

i. Area at risk:

Residual 'at risk' population densities			
Maximum UA dimension	1 m	3 m	8 m
Maximum airspeed	25 m/s	35 m/s	75 m/s
Max critical area size (for info only)	6.5 m	65 m	650 m
Maximum population density	500 ppl/km^2	50 ppl/km^2	5 ppl/km^2
Equates to (for info only – assumes an even distribution of population in a 1km x 1km grid square)	1 person every 2000 m^2	1 person every 20,000 m^2	1 person every 200,000 m^2

ii. Adjacent area:

Adjacent Area Quantitative Values				
Maximum UA dimension		1 m	3 m	8 m
Maximum airspeed		25 m/s	35 m/s	75 m/s
Maximum Average population density (ppl/km^2)	Sheltering applicable[1]	No limit	<50,000	<5,000
	Sheltering not applicable	N/A	<5,000	<500

Note:

1. Sheltering can only be applied to adjacent areas if the UA weight is not more than 25 kg.
2. The adjacent area quantitative values apply only for the portion of the adjacent area that lies outside the 'Red area'.

d. **Trade-off tables.** Where relevant, the UAS Organisation may use the following tables which provide an increase to the allowable residual 'at risk' population densities when UA size or speed is less than the standard UA size and speed values:

Max UA dimension trade-off table – Residual 'at risk' population densities due to reduction in max UA dimension (NB: green columns indicate standard values)									
Max UA dimension	1 m	1.5 m	2 m	3 m	4 m	5 m	6 m	7 m	8 m
Max airspeed (m/s)	25	35	35	35	75	75	75	75	75
Max residual population at risk (ppl/km^2)	500	100	75	50	10	8	6.5	5.7	5

Max UA airspeed trade-off table – Residual 'at risk' population densities due to reduction in max UA speed (NB: green columns indicate standard values)								
Max UA dimension	1 m	3 m	3 m	3 m	8 m	8 m	8 m	8 m
Max airspeed (m/s)	25	17.5	26	35	37.5	56	65.6	75
Max residual population at risk (ppl/km^2)	500	179	86	50	18	8.5	7.1	5

iii. in either:

a. Restricted Areas (RA), Military Operating Areas (MOA) or control zones (CTR) that exclude non-Participating Aircraft, or ▾AMC ▾GM

AMC UAS.35(a)3iii.a – Airspace management (AUS)

UAS Organisations should only operate UAS Restricted Areas, Military Operating Areas or control zones (CTR) primarily used for military Aircraft where civilian Aircraft do not routinely operate. The airspace is to be for exclusive use by the UA, or the UA is to be segregated/separated from other Participating Aircraft.

GM UAS.35(a)3iii.a – Restricted Areas, Military Operating Areas and CTR (AUS)

a. En Route Supplement Australia (ERSA) and Designated Airspace Handbook (DAH) provide the approval authorities for operations in CTR, Restricted Areas (RA) or Military Operating Areas (MOA).

b. A CTR may enable the exclusion of non-Participating Aircraft where there is an active ATC service provided that ATC apply appropriate separation standards to Participating Aircraft.

c. MOAs that extend into international airspace are not enforceable under international law. Therefore, Defence cannot prevent foreign airspace users from entering such MOA. However, through the *Airspace Regulations 2007*, CASA can impose conditions of entry into MOAs for Australian registered aircraft and publish any conditions in the Designated Airspace Handbook (DAH). Therefore:

i. MOAs and a RAs place equivalent entry restrictions on Australian registered Aircraft

ii. foreign registered Aircraft:

(a) under international law, are not restricted from entering MOA

(b) although not legally restricted from entering a MOA, should not enter Australian MOA without contacting the relevant administering authority.

d. Defence is obliged under international law to operate UAS with *due regard* to other airspace users (Chicago Convention Article 3d refers). While Defence partially meets its *due regard* obligations, by constraining any Defence UAS operation (outside Australian territory) to within a MOA, it will still need to be cognisant of foreign aircraft entering the MOA and implement appropriate procedures to respond to these situations. UAS.30.b provides the applicable core requirements for managing Airspace.

e. **Temporary RA and MOA requests**. Requests for temporary RA/MOA are staffed to CASA – Office of Airspace Regulation through either the National Airspace Management Organisation (eg for routine requests) or the Joint Airspace Control Cell (JACC) (eg for large exercises).

CASA, IAW the *Airspace Act 2007*, may establish temporary RA/MOA for purposes including:

i. public safety, including the safety of Aircraft in Flight

ii. national security.

f. **Foreign areas equivalent to CTRs, RAs and MOAs**. UAS Organisations may use foreign airspace where that airspace provides equivalency to CTR, RAs and MOAs, if approved by the applicable Airspace controlling authority. In such situations, UAS Organisations will still be required to comply with DASR UAS and any due regard obligations.

g. **Non-Participating Aircraft.** Note, if the UAS is contained inside a Restricted Operating Zone (ROZ)—even if that ROZ is within a CTR/RA that permits non-Participating Aircraft; but the ROZ excludes non-Participating Aircraft—then the UAS Organisation has met the intent of DASR UAS.35(a)3.iii.a.

b. non-territorial seas with *due regard* for the safety of civil air navigation. ▾GM

GM UAS.35(a)3iii.b – *Due regard* (AUS)

See DASR UAS.30.b(a)3vi.a including AMC and GM for *due regard* requirements.

iv. crewed by a dedicated RP for each UA, where the RP can intervene during all stages of Flight except Lost Link ▾AMC

AMC UAS.35(a)3.iv – Intervention by the RP (AUS)

Intervention refers to an action, command or input by the RP to dictate the UA's flight actions. In all situations (except Lost Link), the UAS should enable the RP to alter the Flight path of the UA and perform any other suitable actions to ensure safe Flight.

(b) **Standard scenario for one RP to many UAs.** Authorised UAS Organisations must ensure operations under this standard scenario occur:

1. using a UA that does not exceed a dimension of 1 metre and maximum possible commanded airspeed of 50 knots (25m/s) ▾AMC ▾GM

AMC UAS.35(b)1 Maximum UA dimension and airspeed (AUS)

a. UAS Organisations should calculate maximum UA dimension using:

i. wingspan for a fixed wing UA

ii. main rotor diameter for a rotorcraft UA

iii. maximum distance between rotor tips for a multirotor UA.

b. Where UAS size alters during Flight (eg VTOL system with foldable wings), the largest UA dimension is used for the calculation.

GM UAS.35(b)1 – UA size and speed limitations (AUS)

The UA dimension and airspeed constraints limit the theoretical size of the area on the ground (critical area) where a UA could impact a standing person and result in a fatality. This is achieved through UA dimension and speed limitations, and assumes no additional risk controls to protect people or reduce the consequence of an impact.

2. using IA and CA risk controls contextualised to the Configuration Role and Environment (CRE)

3. in either:

   i. Restricted Areas (RA) or Military Operating Areas (MOA) that exclude non-Participating Aircraft, or ▾GM

   GM UAS.35(b)3i – RA and MOA (AUS)

   a. En Route Supplement Australia (ERSA) and Designated Airspace Handbook (DAH) provide the approval authorities for operations in Restricted Areas (RA) or Military Operating Areas (MOA).

   b. MOAs that extend into international airspace are not enforceable under international law. Therefore, Defence cannot prevent foreign airspace users from entering such MOA. However, through the *Airspace Regulations 2007*, CASA can impose conditions of entry into MOAs for Australian registered aircraft and publish any conditions in the Designated Airspace Handbook (DAH). Therefore:

      i. MOAs and a RAs place equivalent entry restrictions on Australian registered Aircraft

      ii. foreign registered Aircraft:

         (a) under international law, are not restricted from entering MOA

         (b) although not legally restricted from entering a MOA, should not enter Australian MOA without contacting the relevant administering authority.

   c. Defence is obliged under international law to operate UAS with *due regard* to other airspace users (Chicago Convention Article 3d refers). While Defence partially meets its *due regard* obligations, by constraining Defence UAS operations (outside Australian territory) to within a MOA, it will still need to be cognisant of foreign aircraft entering the MOA and implement appropriate procedures to respond to these situations. UAS.30.b provides the applicable core requirements for managing Airspace.

   d. Requests for temporary RA/MOA are staffed through the Joint Airspace Control Cell (JACC) to CASA – Office of Airspace Regulation. CASA may establish temporary RA/MOA where:

      i. published RA/MOA do not cover the intended area of operation

ii. Defence is able to demonstrate a genuine need for the RA/MOA cognisant of the need for equitable use of Airspace.

e. **Non-Participating Aircraft**. Note, if the UAS is contained inside a Restricted Operating Zone (ROZ)—even if that ROZ is within an RA that permits non-Participating Aircraft; but the ROZ excludes non-Participating Aircraft—then the UAS Organisation has met the intent of DASR UAS.35(b)2.i.

f. **Foreign areas equivalent to RAs and MOAs**. UAS Organisations may use foreign Airspace where that airspace provides equivalency to RAs and MOAs, if approved by the applicable Airspace controlling authority. In such situations, UAS Organisations will still be required to comply with DASR UAS and any *due regard* obligations.

ii. Airspace over non-territorial seas with *due regard* for the safety of civil air navigation. ▾GM

GM UAS.35(b)3.ii – *Due regard* (AUS)

See DASR UAS.30.b(a)3vi.a including AMC and GM for *due regard* requirements.

4. over Defence Controlled Ground or Water ▾AMC ▾GM

AMC UAS.35(b)4 – Adjacent area limitations (AUS)

a. DASR UAS.30.b(a)3vi.b provides the planning procedures for characterising ground risk areas for the General Public.

b. The maximum population density within the adjacent area for this standard scenario is 40,000 persons per square kilometre, averaged over the entire adjacent area. UAS Organisations should only apply this value following implementation of all other risk controls (eg avoidance criteria, time of day restrictions).

GM UAS.35(b)4 – Risks to GP (AUS)

a. See GM UAS.10 for the definition of Defence Controlled Ground or Water.

b. When operating UAS in an area where GP are not prohibited from entry (eg over water and in a MOA), UAS Organisations should document procedures for, and ensure:

i. surveillance to detect GP entering the area of operations (eg vessels)

ii. safe termination of operations if GP enter the area of operations.

5. crewed by an RP who can intervene during all stages of Flight. ▾AMC

AMC UAS.35(b)5 – Intervention by the RP (AUS)

a. Intervention refers to an action, command or input by the RP to dictate the UA's flight actions. In all situations (except Lost Link), the UAS should enable the RP to

alter the Flight path of the UA and perform any other suitable actions to ensure safe Flight.

b. UAS Organisations should ensure all UAs are operated:

i. as a single Flight (eg single pre-flight brief, single FLTAUTH)

ii. IAW a single ATC clearance where clearances are required

c. UAS Organisations should ensure that the cognitive load on the RP does not exceed the capacity of RPs, through:

i. an assessment and Risk Management of the UAS HMI with consideration to the qualifications, training, experience of RPs qualified IAW the UAS Organisations training

ii. RPS 'sterile cockpit' procedures for critical phases of Flight (eg launch, recovery and high-workload mission phases)

iii. the use of competent spotters, where relevant.

(c) **Standard scenario for Test & Evaluation (T&E).** Authorised UAS Organisations must ensure operations under this standard scenario occur : ▾GM

GM UAS.35(c) – Standard scenario for Test & Evaluation (AUS)

a. This standard scenario enables Authorised UAS Organisations to conduct UAS T&E within the requirements of the standard scenario, with:

i. elevated Aviation Safety risks to persons and CI

ii. one RP for multiple UA's

iii. UAS of any size and speed.

1. with endorsement from an appropriate Test & Evaluation Accountable Unit ▾AMC ▾GM

AMC UAS.35(c)1 – Determination of Experimentation-related Aviation Safety risks (AUS)

a. An appropriate Test & Evaluation Accountable Unit (TEAU), or Command or Group assessed equivalent, with an appropriate FMS.

b. The TEAU should determine whether the Authorised UAS Organisation is capable of safely conducting an Experimentation activity through assessing the UAS Organisation's:

i. organisation

ii. personnel

iii. processes.

GM UAS.35(c)1 – Test & Evaluation Accountable Units (AUS)

The DTEM defines the requirements and competencies of Test & Evaluation Accountable Units.

2. using IA and CA risk controls contextualised to the Configuration Role and Environment (CRE) ▾GM

GM UAS.35(c)2 – IA and CA risk controls (AUS)

A TEAU should assess the appropriateness of the IA and CA risk controls in consultation with the Authorised UAS Organisation.

3. in either:

i. Restricted Areas (RA) or Military Operating Areas (MOA) that exclude non-Participating Aircraft, or ▾GM

GM UAS.35(c)3i – RA and MOA (AUS)

a. En Route Supplement Australia (ERSA) and Designated Airspace Handbook (DAH) provide the approval authorities for operations in Restricted Areas (RA) or Military Operating Areas (MOA).

b. MOAs that extend into international airspace are not enforceable under international law. Therefore, Defence cannot prevent foreign airspace users from entering such MOA. However, through the *Airspace Regulations 2007*, CASA can impose conditions of entry into MOAs for Australian registered aircraft and publish any conditions in the Designated Airspace Handbook (DAH). Therefore:

i. MOAs and a RAs place equivalent entry restrictions on Australian registered Aircraft

ii. foreign registered Aircraft:

(a) under international law, are not restricted from entering MOA

(b) although not legally restricted from entering a MOA, should not enter Australian MOA without contacting the relevant administering authority.

c. Defence is obliged under international law to operate UAS with *due regard* to other airspace users (Chicago Convention Article 3d refers). While Defence partially meets its *due regard* obligations, by constraining Defence UAS operations (outside Australian territory) to within a MOA, it will still need to be cognisant of foreign aircraft entering the MOA and implement appropriate procedures to respond to these situations. UAS.30.b provides the applicable core requirements for managing Airspace.

d. Requests for temporary RA/MOA are staffed through the Joint Airspace Control Cell (JACC) to CASA – Office of Airspace Regulation. CASA may establish temporary RA/MOA where:

i. published RA/MOA do not cover the intended area of operation

ii. Defence is able to demonstrate a genuine need for the RA/MOA cognisant of the need for equitable use of Airspace.

e. **Non-Participating Aircraft**. Note, if the UAS is contained inside a Restricted Operating Zone (ROZ)—even if that ROZ is within an RA that permits non-Participating Aircraft; but the ROZ excludes non-Participating Aircraft—then the UAS Organisation has met the intent of DASR UAS.35(c)3.i.

f. **Foreign areas equivalent to RAs and MOAs**. UAS Organisations may use foreign Airspace where that airspace provides equivalency to RAs and MOAs, if approved by the applicable Airspace controlling authority. In such situations, UAS Organisations will still be required to comply with DASR UAS and any *due regard* obligations.

ii. Airspace over non-territorial seas with *due regard* for the safety of civil air navigation. ▾GM

GM UAS.35(c)3ii – *Due regard* (AUS)

See DASR UAS.30.b(a)3vi.a including the associated AMC and GM for *due regard* requirements.

4. over Defence Controlled Ground or Water, and where GP and CI are absent unless approved by a Delegate of the Safety Authority for Flight Test (DoSA FT). ▾GM

GM UAS.35(c)4 – Risks to GP (AUS)

a. See GM UAS.10 for the definition of Defence Controlled Ground or Water.

b. **General Public.** When operating UAS in an area where GP are not prohibited from entry (eg over water and in a MOA), UAS Organisations should document procedures for, and ensure:

i. surveillance to detect GP entering the area of operations (eg vessels)

ii. safe termination of operations if GP enter the area of operations.

c. **Adjacent area**. DASR UAS.30.b(a)3vi.b provides the planning procedures for characterising ground risk areas for the General Public. The relevant test plan or equivalent document should detail formal Risk Management (RM) procedures commensurate to the UAS CRE and population densities within the relevant area at risk and adjacent area. For adjacent areas encompassing increased population densities (eg towns), RM should include consideration of systems such as fully independent flight termination systems to ensure flight termination should the UAS escape the planned operating area.

(d) **Standard Scenario for Weaponised UAS Evaluation.** Authorised UAS Organisations must ensure weaponised UAS operations under this standard scenario occur: ▾AMC ▾GM

AMC UAS.35(d) – Risk controls for weaponised UAS operations (AUS)

a. Authorised UAS Organisations should implement a combination of technical and operational risk controls in order to eliminate or otherwise minimise risk SFARP when conducting weaponised UAS operations.

b. **Technical risk controls.** Technical risk controls should include:

i. containment of the UA in the deterministic Range Danger Area (RDA) and the Airspace designated for the activity (eg geo-fencing, tether, minimising battery charge/fuel, programmable maximum and minimum altitude)

ii. the functionality to enable manual termination of Flight by the RP.

c. **Operational risk controls.** Operational risk controls should include:

i. pre-flight checks (including independent verification of Safety Critical data), carried out IAW approved OEM or equivalent procedures, that confirm the configuration and serviceability of the Explosive (including the UA arming and firing systems)

ii. emergency procedures for:

(1) GP intrusion into the operational area

(2) intrusion by another airspace user into the assigned airspace

(3) Explosive payload malfunction.

GM UAS.35(d) – Risk Controls for weaponised UAS operations (AUS)

The ESRF details additional risk controls applicable to Explosives (eg fuzing systems).

1. in an approved Range Danger Area (RDA) ▾GM

GM UAS.35(d)1– Range Danger Area (AUS)

The Defence Training Area Management Manual (DTAMM) details Defence Range Danger Area policy.

2. in either:

i. Restricted Areas (RA) or Military Operating Areas (MOA) that exclude all Aircraft except participating UAS, or ▾GM

GM UAS.35(d)2i – RA and MOA (AUS)

a. En Route Supplement Australia (ERSA) and Designated Airspace Handbook (DAH) provide the approval authorities for operations in Restricted Areas (RA) or Military Operating Areas (MOA).

b. MOAs that extend into international airspace are not enforceable under international law. Therefore, Defence cannot prevent foreign airspace users from entering such MOA. However, through the *Airspace Regulations 2007*, CASA can impose conditions of entry into MOAs for Australian registered

aircraft and publish any conditions in the Designated Airspace Handbook (DAH). Therefore:

i. MOAs and a RAs place equivalent entry restrictions on Australian registered Aircraft

ii. foreign registered Aircraft:

(a) under international law, are not restricted from entering MOA

(b) although not legally restricted from entering a MOA, should not enter Australian MOA without contacting the relevant administering authority.

c. Defence is obliged under international law to operate UAS with *due regard* to other airspace users (Chicago Convention Article 3d refers). While Defence partially meets its *due regard* obligations, by constraining Defence UAS operations (outside Australian territory) to within a MOA, it will still need to be cognisant of foreign aircraft entering the MOA and implement appropriate procedures to respond to these situations. UAS.30.b provides the applicable core requirements for managing Airspace.

d. Requests for temporary RA/MOA are staffed through the Joint Airspace Control Cell (JACC) to CASA – Office of Airspace Regulation. CASA may establish temporary RA/MOA where:

i. published RA/MOA do not cover the intended area of operation

ii. Defence is able to demonstrate a genuine need for the RA/MOA cognisant of the need for equitable use of Airspace.

e. **Non-Participating Aircraft**. Note, if the UAS is contained inside a Restricted Operating Zone (ROZ)—even if that ROZ is within an RA that permits non-Participating Aircraft; but the ROZ excludes non-Participating Aircraft—then the UAS Organisation has met the intent of DASR UAS.35(d)2.i.

f. **Foreign areas equivalent to RAs and MOAs**. Authorised UAS Organisations may use foreign Airspace where that airspace provides equivalency to RAs and MOAs, if approved by the applicable Airspace controlling authority. In such situations, UAS Organisations will still be required to comply with DASR UAS and any *due regard* obligations.

ii. Airspace over non-territorial seas with *due regard* for the safety of civil air navigation. ▾GM

GM UAS.35(d)2ii – *Due regard* (AUS)

See DASR UAS.30.b(a)3vi.a including the associated AMC and GM for *due regard* requirements.

3. that contain the RDA in the Airspace designated for the activity ▾AMC

AMC UAS.35(d)3 – Safe margins between RDA and designated airspace (AUS)

a. Authorised UAS Organisations should establish safe margins between an RDA and the boundary of the Airspace designated for the activity, including consideration of adjacent area activity such as high-density Airspace.

b. Authorised UAS Organisations should implement measures to detect and manage inadvertent airspace intrusions. An Authorised UAS Organisation's risk management should consider:

i. warning and response times

ii. potential closure speeds

iii. their capability to terminate the weaponised UAS activity.

4. over Defence Controlled Ground or water ▾ GM

GM UAS.35(c)4 – Defence Controlled Ground or Water areas (AUS)

a. See GM UAS.10 for the definition of Defence Controlled Ground or Water.

b. The Defence Training Area Management Manual (DTAMM) details the approval processes and requirements for management of activities involving explosives. Service-specific policy may apply to the determination of appropriate areas.

c. **General Public.** When operating UAS in an area where GP are not prohibited from entry (eg over water and in a MOA), UAS Organisations should document procedures for, and ensure:

i. surveillance to detect GP entering the area of operations (eg vessels)

ii. safe termination of operations if GP enter the area of operations.

d. **Informed Personnel.** Authorised UAS Organisations should only permit Informed Personnel within the relevant ground area in addition to MEP when their respective Commands are reasonably informed and retain risks at the appropriate Service or Group prescribed level.

5. with risk controls implemented for MEP ▾ AMC ▾ GM

AMC UAS.35(d)5 – Safety risks to MEP (AUS)

a. Authorised UAS Organisations should incorporate technical risk controls including:

i. highly reliable, fail-safe, mechanical solutions that prevent initiation, launch, activation or arming of the weaponised UA until MEP are outside the RDA or within a protected location (eg for arming, a physical connection that removes a pin during UA launch)

ii. an unambiguous indication of the arming status.

b. Authorised UAS Organisations should incorporate operational risk controls that consider the following:

i. location(s) of MEP

ii. normal Flight paths, Lost Link and flight termination trajectories

iii. navigation system accuracy

iv. likely failure modes of the weaponised UAS

v. potential Radio Frequency interference

vi. battery and fuel hazards

vii. geo-fencing

viii. risk recovery controls (eg parachutes and air brakes).

GM UAS.35(d)5 – Safety risks to MEP (AUS)

a. The Defence Aviation Safety Program Manual (DASPMAN) Volume 3, Chapter 14 *Safety Management Systems*, provides guidance regarding 'grossly disproportionate' assessments relevant to MAO decisions regarding MEP risk exposure.

b. 'Protected location' in AMC UAS.35(d)5 refers to any location that prevents harm to personnel from the weaponised UA. Note, 'harm to personnel from the weaponised UA' can include harm through blast, fragmentation, heat or ballistic effects.

6. crewed by a dedicated RP for each UA, where the RP can intervene during all stages of Flight except for Lost Link and during Terminal Guidance. ▾ AMC

AMC UAS.35(d)6 – Intervention by the RP (AUS)

Intervention refers to an action, command or input by the RP to dictate the UA's flight actions. In all situations (except Lost Link and Terminal Guidance), the UAS should enable the RP to alter the Flight path of the UA and perform any other suitable actions to ensure safe Flight.

DRAFT DASR UAS.36 FOR JUL 26 DASR RELEASE

Contents

Section 1: New DASR UAS.36 DASR Part only.

Section 2: New DASR UAS.36 DASR Part, Acceptable Means of Compliance (AMC) and Guidance Material (GM).

SECTION 1: NEW DASR UAS.36 DASR Part

The following is new DASR Part in toto.

DASR UAS.36

▸ GM

(a) **Standard scenario for limited operations over non-Defence Controlled Ground or Water.** UAS Organisations must ensure operations under this standard scenario occur: ▸ GM

1. using a UA that does not exceed a dimension of 1 metre and maximum possible commanded airspeed of 50 knots (25m/s) ▸ AMC ▸ GM

2. with *due regard* to the safety of civil air navigation ▸ GM

3. over: ▸ AMC ▸ GM

   i. population density less than 50 people/km^2, or

   ii. Lightly Populated Environments, or

   iii. any area if the UAS Take-Off-Weight is ≤250g. ▸ GM

4. crewed by a dedicated RP for each UA, where the RP can intervene during all stages of Flight except Lost Link. ▸ AMC

(b) **Standard scenario for operations over Defence Controlled Ground or Water.** UAS Organisations must ensure operations under this standard scenario occur: ▸ GM

1. using a UA that does not exceed a dimension of 8 metres and maximum possible commanded airspeed of 145 knots (75m/s) ▸ AMC ▸ GM

2. in either:

   i. Restricted Areas (RA) or Military Operating Areas (MOA) that exclude non-Participating Aircraft, or ▸ GM

   ii. Airspace over non-territorial seas with *due regard* for the safety of civil air navigation. ▸ GM

3. over Defence Controlled Ground or Water ▸ AMC ▸ GM

4. crewed by a dedicated RP for each UA, where the RP can intervene during all stages of Flight except Lost Link. ▸ AMC

5. with endorsement from an appropriate T&E practitioner when conducting operations identified through compliance with DASR UAS.10(c)1 ▸ AMC ▸ GM

SECTION 2: NEW DASR UAS.36 DASR Part, AMC and GM

The following is new DASR Part and corresponding AMC and GM in toto. There are no other changes to the extant DASR UAS.30.b, AMC and GM.

DASR UAS.36

▾GM

GM UAS.36 – Standard scenario Privilege (AUS)

The DASR UAS.36 standard scenarios provide UAS Organisations with a Privilege to operate UAS with residual risk to third parties through the Risk Management procedures detailed in the standard scenario. This Privilege invokes specific requirements to execute Defence responsibilities to third parties in addition to those detailed in the broader Defence Aviation Safety Program. DASA will review and monitor this Privilege and will revoke the Privilege where it identifies non-compliances.

(a) **Standard scenario for limited operations over non-Defence Controlled Ground or Water.** UAS Organisations must ensure operations under this standard scenario occur: ▾GM

GM UAS.36(a) – Standard scenario for limited operations over non-Defence Controlled Ground or Water (AUS)

This standard scenario enables limited UAS operations over non-defence controlled ground or water, with *due regard* for the Aviation Safety of other Aircraft and consideration of the risk to people on the ground, without the need for a discrete DASA authorisation.

1. using a UA that does not exceed a dimension of 1 metre and maximum possible commanded airspeed of 50 knots (25m/s) ▾AMC ▾GM

AMC UAS.36(a)1 – Maximum UA dimension (AUS)

a. UAS Organisations should calculate maximum UA dimension using:

i. wingspan for a fixed wing UA

ii. main rotor diameter for a rotorcraft UA

iii. maximum distance between rotor tips for a multirotor UA.

b. Where UAS size alters during Flight (eg VTOL system with foldable wings), the largest UA dimension is used for the calculation.

GM UAS.36(a)1 – UA size and speed limitations (AUS)

The UA dimension and airspeed constraints limit the theoretical size of the area on the ground (critical area) where a UA could impact a standing person and result in a fatality. This is achieved through maximum UA dimension and speed limitations, and assumes no additional risk controls to protect people or reduce the consequence of an impact.

2. with *due regard* for the safety of civil air navigation ▾GM

GM UAS.36(a)2 – *Due regard* (AUS)

See DASR UAS.30.b(a)3vi.a including AMC and GM for *due regard* requirements.

3. over: ▾ AMC ▾ GM

AMC UAS.36(a)3 – Adjacent area limitations (AUS)

a. DASR UAS.30.b(a)3vi.b provides the planning procedures for characterising ground risk areas for the General Public.

b. The maximum population density within the adjacent area for this standard scenario is 40,000 persons per square kilometre, averaged over the entire adjacent area. UAS Organisations should only apply this value following implementation of all other risk controls (eg avoidance criteria, time of day restrictions).

GM UAS.36(a)3 – Ground area definitions (AUS)

See GM UAS.10 for the definition of Lightly Populated Environment.

i. population density less than 50 people/km^2, or

ii. Lightly Populated Environments, or

iii. any area if the UAS MTOW is ≤250g. ▾ GM

GM UAS.36(a)3iii – UAS MTOW ≤250g (AUS)

The permission for UAS with an MTOW ≤250g recognises that the hazards to people on the ground are inherently minimised for a UAS with this MTOW and airspeed limit. This does not negate the obligation on the UAS Organisation to further eliminate Aviation Safety risks SFARP, or where not practicable, to minimise those risks SFARP.

4. crewed by a dedicated RP for each UA, where the RP can intervene during all stages of Flight except Lost Link. ▾ AMC

AMC UAS.36(a)4 – Intervention by the RP (AUS)

Intervention refers to an action, command or input by the RP to dictate the UA's flight actions. In all situations (except Lost Link), the UAS should enable the RP to alter the Flight path of the UA and perform any other suitable actions to ensure safe Flight.

(b) **Standard scenario for operations over Defence Controlled Ground or Water.** UAS Organisations must ensure operations under this standard scenario occur: ▾ GM

GM UAS.36(b) – Standard scenario for operations over Defence Controlled Ground or Water (AUS)

This standard scenario enables operations with larger UAS through limiting operations to Controlled Ground Areas and exclusive use Airspace, without the need for a discrete DASA authorisation.

1. using a UA that does not exceed a dimension of 8 metres and maximum possible commanded airspeed of 145 knots (75m/s) ▾ AMC ▾ GM

AMC UAS.36(b)1 Maximum UA dimension (AUS)

a. UAS Organisations should calculate maximum UA dimension using:

i. wingspan for a fixed wing UA

ii. main rotor diameter for a rotorcraft UA

iii. maximum distance between rotor tips for a multirotor UA.

b. Where UAS size alters during Flight (eg VTOL system with foldable wings), the largest UA dimension is used for the calculation.

GM UAS.36(b)1 – UA size and speed limitations (AUS)

The UA dimension and airspeed constraints limit the theoretical size of the area on the ground (critical area) where a UA could impact a standing person and result in a fatality. This is achieved through UA dimension and speed limitations, and assumes no additional risk controls to protect people or reduce the consequence of an impact.

2. in either:

i. Restricted Areas (RA) or Military Operating Areas (MOA) that exclude non-Participating Aircraft, or ▾GM

GM UAS.36(b)2i – RA and MOA (AUS)

a. En Route Supplement Australia (ERSA) and Designated Airspace Handbook (DAH) provide the approval authorities for operations in Restricted Areas (RA) or Military Operating Areas (MOA).

b. MOAs that extend into international airspace are not enforceable under international law. Therefore, Defence cannot prevent foreign airspace users from entering such MOA. However, through the *Airspace Regulations 2007*, CASA can impose conditions of entry into MOAs for Australian registered aircraft and publish any conditions in the Designated Airspace Handbook (DAH). Therefore:

i. MOAs and a RAs place equivalent entry restrictions on Australian registered Aircraft

ii. foreign registered Aircraft:

(a) under international law, are not restricted from entering MOA

(b) although not legally restricted from entering a MOA, should not enter Australian MOA without contacting the relevant administering authority.

c. Defence is obliged under international law to operate UAS with due regard to other airspace users (Chicago Convention Article 3d refers). While Defence partially meets its due regard obligations, by constraining Defence UAS operations (outside Australian territory) to within a MOA, it will still need to be cognisant of foreign aircraft entering the MOA and implement appropriate

procedures to respond to these situations. UAS.30.b provides the applicable core requirements for managing Airspace.

d. Requests for temporary RA/MOA are staffed through the Joint Airspace Control Cell (JACC) to CASA – Office of Airspace Regulation. CASA may establish temporary RA/MOA where:

i. published RA/MOA do not cover the intended area of operation

ii. Defence is able to demonstrate a genuine need for the RA/MOA cognisant of the need for equitable use of Airspace.

e. **Non-Participating Aircraft**. Note, if the UAS is contained inside a Restricted Operating Zone (ROZ)—even if that ROZ is within an RA that permits non-Participating Aircraft; but the ROZ excludes non-Participating Aircraft—then the UAS Organisation has met the intent of DASR UAS.36(b)2.i.

f. **Foreign areas equivalent to RAs and MOAs**. UAS Organisations may use foreign Airspace where that airspace provides equivalency to RAs and MOAs, if approved by the applicable Airspace controlling authority. In such situations, UAS Organisations will still be required to comply with DASR UAS and any due regard obligations.

ii. Airspace over non-territorial seas with *due regard* for the safety of civil air navigation. ▾GM

GM UAS.36(b)2ii – *Due regard* (AUS)

See DASR UAS.30.b(a)3vi.a including AMC and GM for *due regard* requirements.

3. over Defence Controlled Ground or Water : ▾AMC ▾GM

AMC UAS.36(b)3 – Population density limitations (AUS)

a. DASR UAS UAS.30.b(a)3vi.a provides the planning procedures for characterising ground risk areas for the General Public.

b. The following table provides the maximum population densities within the adjacent area averaged over the entire adjacent area for this standard scenario. UAS Organisations should only use these values following implementation of all other risk controls (eg avoidance criteria, time of day restrictions).

Adjacent Area Quantitative Values				
Maximum UA dimension		1 m	3 m	8 m
Maximum airspeed		25 m/s	35 m/s	75 m/s
Maximum Average population density (ppl/km^2)	Sheltering applicable[1]	<40,000	<5000	N/A
	Sheltering not applicable	N/A	<500	<50

Note:

1. Sheltering can only be applied to adjacent areas if the UA weight is not more than 25 kg.
2. The adjacent area quantitative values apply only for the portion of the adjacent area that lies outside the 'Red area'.

GM UAS.36(b)3 – Risks to GP (AUS)

1. See GM UAS.10 for the definition of Defence Controlled Ground or Water.

2. When operating UAS in an area where GP are not prohibited from entry (eg over water and in a MOA), UAS Organisations should document procedures for, and ensure:

   i. surveillance to detect GP entering the area of operations (eg vessels)

   ii. safe termination of operations if GP enter the area of operations.

4. crewed by a dedicated RP for each UA, where the RP can intervene during all stages of Flight except Lost Link. ▾ AMC

AMC UAS.36(b)4 – Intervention by the RP (AUS)

Intervention refers to an action, command or input by the RP to dictate the UA's flight actions. In all situations (except Lost Link), the UAS should enable the RP to alter the Flight path of the UA and perform any other suitable actions to ensure safe Flight.

5. with endorsement from an appropriate T&E practitioner when conducting operations identified through compliance with DASR UAS.10(c)1 ▾ AMC ▾ GM

AMC UAS.36(b)5 – T&E practitioners (AUS)

a. An appropriate T&E practitioner should hold a Defence T&E practitioner course qualification and experience with UAS T&E, or Command or Group assessed equivalent.

b. The UAS T&E practitioner should determine whether the UAS Organisation is capable of safely conducting an Experimentation activity through assessing the UAS Organisation's:

   i. organisation

   ii. personnel

   iii. processes.

GM UAS.36(b)5 – T&E practitioners (AUS)

The DTEM defines the requirements and competencies of T&E practitioners.

DRAFT DASR UAS.40 FOR JUL 26 DASR RELEASE

Contents

Section 1: Amended DASR UAS.40 DASR Part only.

Section 2: Amended DASR UAS.40 DASR Part, Acceptable Means of Compliance (AMC) and Guidance Material (GM).

SECTION 1: AMENDED DASR UAS.40 PART ONLY

The following amends the DASR Part for DASR UAS.40 in toto. There are no other changes to the extant DASR UAS.40

DASR UAS.40 Open Category

(a) UAS Organisations approving operations in the Open category must: ▸ AMC ▸ GM

1. assign accountability and responsibilities for:

   i. all UAS operations ▸ GM

   ii. Aviation Safety Risk Management ▸ GM

   iii. Occurrence Reporting. ▸ AMC

2. ensure UAS operations and maintenance occurs IAW all relevant OIP, including OEM, Service or Group manuals appropriate for the UAS type

3. use the Radio Frequency (RF) spectrum only IAW:

   i. an approved commercial frequency band, or

   ii. a Defence Spectrum Office approval.

4. with one UA per RP, where the RP can intervene during all stages of Flight except during Lost Link ▸ GM

5. operate Micro UAS (< 250g):

   i. without creating a hazard to another Aircraft, person or Critical Infrastructure (CI)

   ii. below 400ft AGL ▸ GM

   iii. within Visual Line Of Sight (VLOS) by day, or at night where the visual conditions are equivalent to daytime for the Flight area ▸ GM

   iv. at less than 25m/s (50 knots) airspeed

   v. using pre-programmed emergency or flight termination system procedures that ensure compliance with all DASR UAS.40 operating requirements and limitations

   vi. in Restricted Areas and Military Operating Areas only when:

   a. approved by the authority controlling the area

   b. using appropriate safety margins from the Airspace boundary. ▸ AMC

   vii. in the no-fly zone of a controlled Aerodrome, only with approval from a relevant authority ▸ GM

   viii. in proximity to a ship or other vessel, only with approval from a relevant authority ▸ GM

ix. in the no-fly zone of a non-controlled Aerodrome or Helicopter Landing Site only where no concurrent relevant events occur within the associated Airspace ▸ GM

x. using a controlling RP who meets training, qualification and experience requirements defined by the relevant Command or Group ▸ AMC

xi. not over an area where a fire, police or other public safety or emergency operation is being conducted without approval of the person in charge of the operation.

6. operate Very Small UAS (250g to <2 kg) IAW the requirements for Micro UAS, and no closer than:

i. 30m from GP not sheltered from UA hazards ▸ GM

ii. 30m from CI

iii. 15m from MEP and Informed Personnel except:

a. where required to facilitate launch and recovery

b. for MEP essential to mission outcomes, and exposed MEP are appropriately sheltered from the UAS in the event of a malfunction.

7. operate Small UAS (2 to <25 kg), IAW the above requirements and limitations for Very Small UAS, only over Defence Controlled Ground or Water.

SECTION 2: AMENDED DASR UAS.40 DASR Part, AMC and GM

The following amends the DASR Part and corresponding AMC and GM in toto. There are no other changes to the extant DASR UAS.40, AMC and GM.

DASR UAS.40

(a) UAS Organisations approving operations in the Open category must: ▾AMC ▾GM

GM UAS.40(a) – Purpose statement (AUS)

(Context) Open Category facilitates a range of constrained Defence UAS operations where the UAS Organisation may have no previous aviation experience, without the need for a discrete DASA authorisation. **(Hazard)** Inadequately constrained regulatory risk controls for Open category UAS operations may compromise Aviation Safety. **(Defence)** This regulation requires a UAS Organisation to implement simple and robust risk controls to eliminate Aviation Safety risks SFARP, or where it is not reasonably practicable to eliminate those risks, to otherwise minimise safety risks SFARP.

1. assign accountability and responsibilities for:

   i. all UAS operations ▾GM

   GM UAS.40.(a)1i – Accountability for all UAS operations (AUS)

   A unit Commander or Group equivalent (with an appropriate delegation) is usually the accountable person for Open category UAS operations.

   ii. Aviation Safety Risk Management ▾GM

   GM UAS.40.(a)1ii – Aviation Safety Risk Management (AUS)

   The Defence Aviation Safety Program Manual, Volume 3, Chapter 14 provides guidance for development and usage of Aviation Safety Risk Management.

   iii. occurrence reporting. ▾AMC

   AMC UAS.40.(a)1iii – Occurrence Reporting (AUS)

   UAS Organisations should report UAS Aviation Safety Events in accordance with the Defence Aviation Safety Manual (DASM) and the guidance in the DASP Volume 3, Chapter 10.2.

2. ensure UAS operations and maintenance occurs IAW all relevant OIP, including OEM, Service or Group manuals appropriate for the UAS type

3. use the Radio Frequency (RF) spectrum only IAW:

   i. approved commercial frequency band, or

   ii. a Defence Spectrum Office approval.

4. with one UA per RP, where the RP can intervene during all stages of Flight except during Lost Link ▼ GM

GM UAS.40(a)4 – Intervention by the RP (AUS)

Intervention refers to an action, command or input by the RP to direct the UA's Flight actions.

5. operate Micro UAS (< 250g):

i. without creating a hazard to another Aircraft, person or Critical Infrastructure (CI)

ii. below 400ft AGL ▼ GM

GM UAS.40(a)5ii – Operating below 400ft AGL (AUS)

The imposition of a 400ft AGL operating ceiling constrains Open category UAS to Airspace where fewer Aircraft routinely operate. This limitation assists to define operating context for the purpose of Risk Management.

iii. within Visual Line Of Sight (VLOS) by day, or at night where the visual conditions are equivalent to daytime for the Flight area ▼ GM

GM UAS.40(a)5iii – Night visual conditions (AUS)

Night visual conditions equivalent to daytime are usually limited to areas such as under lighting at sports fields, Aerodromes and other high illumination areas.

iv. at less than 25m/s (50 knots) airspeed

v. using pre-programmed emergency or flight termination system procedures that ensure compliance with all DASR UAS.40 operating requirements and limitations

vi. in Restricted Areas and Military Operating Areas only when:

a. approved by the authority controlling the area

b. using appropriate safety margins from the Airspace boundary. ▼ AMC

AMC UAS.40(a)5vi.b – Safe margins from Airspace boundaries (AUS)

a. UAS Organisations should establish safe margins from Airspace boundaries, including consideration for:

i. credible failures of the UAS

ii. stopping distance from maximum airspeed

iii. any command and control latency

iv. technical risk controls (eg geo-fencing)

v. risk recovery controls (eg parachutes, air brakes, autonomous recovery system, etc)

vi. Lost Link and emergency routing

vii. Flight termination systems and designated Flight termination sites

viii. adjacent area activity that may affect UAS behaviour, such as RF emitters

ix. adjacent area activity such as high-density Airspace.

vii. in the no-fly zone of a controlled Aerodrome, only with approval from the relevant authority ▾GM

GM UAS.40(a)5vii – Relevant approval (AUS)

a. Figure 1 defines the no-fly zones of Defence and civilian controlled Aerodromes. For Aerodromes with multiple runways, the no-fly dimensions apply cumulatively, measured from each runway.

b. Figure 1 shows the no-fly zone of a controlled Aerodrome, which are areas below 400ft AGL:

i. within 3 NM in any direction from the runway threshold of any runway of a non-controlled aerodrome

ii. within the areas shaded dark grey less than 7km from the runway threshold, and above 300ft AGL beyond 7km from the runway threshold

iii. for UAS <250g Take-Off-Weight only, above 150ft AGL within the light grey shaded area.

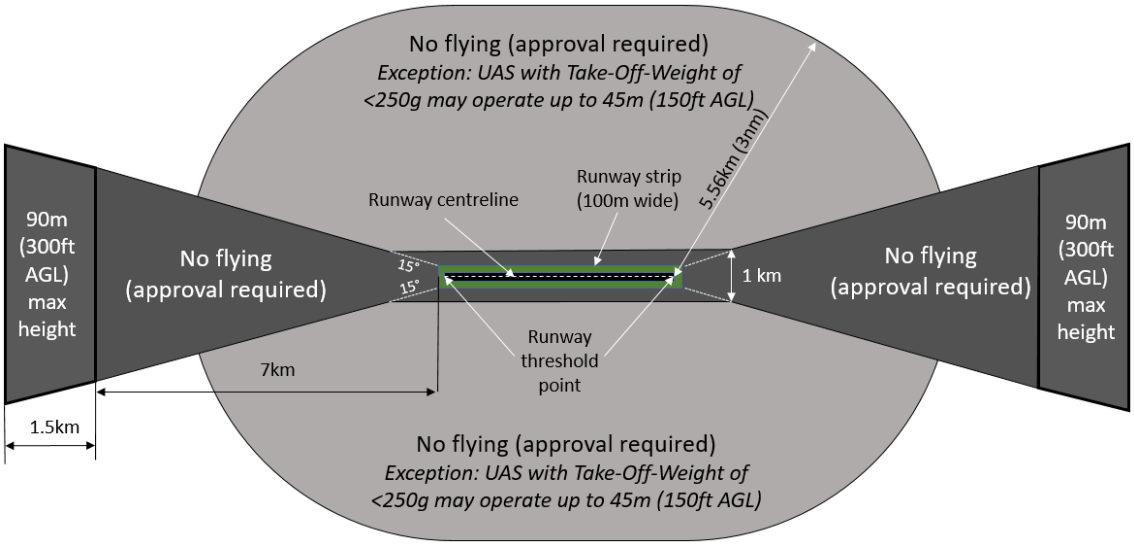

Figure 1: No-fly zones of controlled Aerodromes.

c. For approval to operate in the no-fly zone of Defence and civilian controlled Aerodromes, the Air Traffic Control agency listed in En-Route Supplement Australia are the approvers.

viii. in proximity to a ship or other vessel, only with approval from a relevant authority ▾ GM

GM UAS.40(a)5viii – Relevant approval (AUS)

a. For operations in proximity to a civilian vessel, the captain, vessel master or delegate provides approval.

b. For UAS operations in proximity to Royal Australian Navy or foreign warships, restrictions may apply. UAS Organisations may contact the Royal Australian Navy Headquarters Fleet Air Arm for advice.

ix. in the no-fly zone an non-controlled Aerodrome or Helicopter Landing Site only when no concurrent relevant events occur within the associated Airspace ▾ GM

GM UAS.40(a)5ix – Relevant events (AUS)

a. A relevant event refers to any time a crewed Aircraft is within the relevant Airspace of an Aerodrome or HLS, including when an Aircraft is in the course of approaching, landing at, taking off from, or manoeuvring on the movement area of the Aerodrome.

b. If the UA is already airborne when a relevant event occurs, the RP is required to manoeuvre the UA away from the path of the crewed Aircraft and land the UA as soon as safely possible.

c. The no-fly area for a Helicopter Landing Site is a circle of 0.75nm (1.4km) radius centred on the helipad, surface to 400ft AGL.

d. Figure 2 shows the no-fly zone of a non-controlled Aerodrome, which are areas below 400ft AGL:

i. within 3 NM, in any direction, from the runway threshold of any runway of a non-controlled aerodrome

ii. for UAS <250g Take-Off-Weight only, from 150 to 400ft AGL within the light grey shaded area

iii. from the surface to 400 ft AGL within the areas shaded dark grey

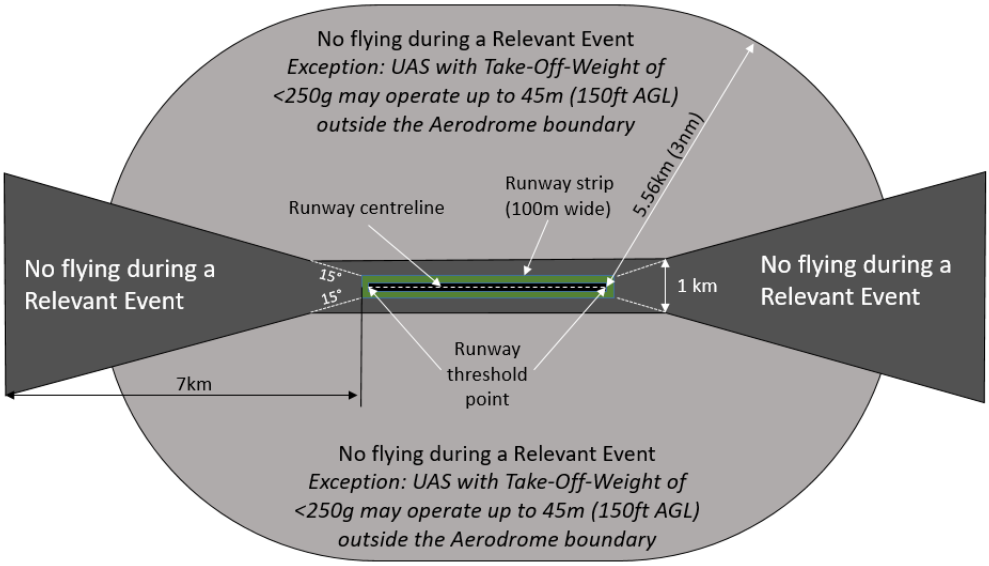

Figure 2: No-fly zone of a non-controlled Aerodrome

x. using a controlling RP who meets training, qualification and experience requirements defined by the relevant Command or Group ▾ AMC

AMC UAS.40(a)5x – RP Qualifications (AUS)

Commands and Groups should ensure Open category RPs are trained to a standard that ensures Aviation Safety risks are eliminated or otherwise minimised as far as is reasonably practicable.

xi. not over an area where a fire, police or other public safety or emergency operation is being conducted without approval of the person in charge of the operation.

6. operate Very Small UAS (250g to <2 kg) IAW the requirements for Micro UAS, and no closer than:

i. 30m from GP not sheltered from UA hazards ▾ GM

GM UAS.40.6i – GP sheltering (AUS)

This requirement assures the protection of GP from hazards related to the UA Flight. Where structures or natural features physically protect GP, the RP may operate the UA closer than 30m.

ii. 30m from CI

iii. 15m from MEP and Informed Personnel except:

a. where required to facilitate launch and recovery

b. for MEP where essential to mission outcomes, and exposed MEP are appropriately sheltered from the UAS in the event of a malfunction.

7. operate Small UAS (2 to <25 kg), IAW the requirements and limitations for Very Small UAS, and only over Defence Controlled Ground or Water.