NPA/25/11

Title of Proposal: Regulations for Open category and Specific S1 sub-category Uncrewed Air Systems

RA(s) or Manual Chapter(s): RA 1031, RA 1600, RA 1601, RA 1062, RA 1603, RA 1604, RA 1607.

Organizations and / or business sectors affected: Open category and Specific S1 sub-category Uncrewed Air Systems related organizations

RFC Serial No: MAA/RFC/2022/215, 2023/038, 2023/141, 2023/253, 2024/148, 2024/149, 2024/150, 2024/152, 2024/153, 2024/154, 2024/155, 2024/156, 2024/157, 2024/158, 2024/160, 2024/166, 2024/167, 2024/220, 2024/222, 2024/223, 2024/226, 2024/227, 2024/228, 2024/232, 2024/233, 2024/234, 2024/236, 2024/237, 2024/239, 2024/240, 2024/241, 2024/242, 2024/243, 2024/244, 2024/245, 2024/246, 2024/248, 2024/249, 2024/250, 2024/251, 2024/252, 2024/253, 2024/254, 2024/255, 2024/256, 2024/257, 2024/258, 2024/259, 2024/260, 2024/266, 2024/267, 2024/270, 2024/271, 2024/272, 2024/273, 2024/279, 2024/281, 2024/286, 2024/287, 2024/290, 2024/293, 2024/294, 2024/298, 2024/302, 2024/303, 2024/304, 2024/306, 2024/308, 2024/309, 2024/311, 2024/312, 2024/320, 2024/321, 2024/323, 2024/325, 2024/337, 2024/338, 2024/339, 2024/356, 2024/357, 2024/362, 2024/364, 2024/366, 2024/367, 2024/380, 2025/008

MAA Author

Post	Name	Rank	Signature
DSA-MAA-Reg-Eng-1000	Redacted	Redacted	Redacted - Original Signed

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MAA LegAd (if required)

Post	Name	Rank	Signature
N/A	N/A	N/A	N/A

Cross-references to Other Documents or Relevant Sources

Other MRP Amendments: N/A
Service Inquiry Recommendations: N/A
AAIB Recommendations: N/A
Other Investigation Recommendations: N/A
Any Other Document: N/A

Feedback Notes for the Regulated Community

The Regulated Community are invited to offer feedback about the proposed amendment in the following areas:

- Air or Flight Safety impact
- Operational impact
- Errors or omissions
- Timescale for implementation
- Cost of implementation
- Amendment to internal processes/orders
- Resourcing the outcome of change
- (Contract amendments because of the change)

The format for feedback is available within a single Excel Template file on both internal and external MAA websites; it is important to use this format to ensure that your responses are considered and answered correctly.

Summary of Proposed Amendment

Objective: To ensure the RPAS RAs remain aligned with changes to the Regulated Community, coherent with the rest of the MRP, removed potential confusion, are a step forward, are leaner, and apply learning.

Changes made:
- Allowing for Specific S1 UAS to operate beyond 2km (from the Remote Pilot),
- Updating references to the DE&S RPAS Delivery Team (as it has changed names),
- Amalgamating all categorization requirements into RA 1600,
- Reducing Regulatory restrictions on Swarming, Armed, and dropping of materiel activities,
- Spelling and grammatical corrections,
- Updates to referenced documents,
- Updating terminology,
- Simplifying RA 1600 Annex A,
- Cross-referencing to RA 2335,
- Re-ordering the Open category RAs into roles,
- Removal of the RPAS Suggested Minimum Standards and Possible Mitigations spreadsheet.

Impact Assessment: Medium impact. The regulatory requirements have not fundamentally changed but have been amended to allow greater operational flexibility, to improve coherency and consistency of terminology, and to provide greater clarity.

Consultation Period Ends: 2 May 2025

The consultation period for this proposed amendment ends on the stated date. Please send your feedback, using the Response Form, via email to DSA-MAA-MRPEnquiries@mod.gov.uk

MAA Approval

Post	Name	Rank	Signature
DSA-MAA-Reg-DepHd	Redacted	Redacted	Redacted - Original Signed

►This RA has been substantially re-written; for clarity no change marks are presented – please read RA in its entirety◄

RA 1031 – Contractor Flying Approved Organization Scheme (Basic Uncrewed Air Systems)

Rationale

Civilian organizations are required to operate UK military registered Uncrewed Air Systems (UAS) in the Open Category and Specific S1 UAS sub-category[1]. Without appropriate regulatory oversight of such organizations, persons could be exposed to unnecessary Risk. This Regulatory Article (RA) defines the regulatory framework required for the Contractor Flying Approved Organization Scheme (Basic UAS) (CFAOS (BUAS))[2] which in turn ensures such organizations comply with the MAA Regulatory Publications (MRP) and are subjected to appropriate Regulatory oversight.

It details the requirements for a supporting organization and the appointment of an Accountable individual, the UAS Accountable Manager (UAS AM), to maintain Safety and standards, the method / conditions to gain Approval, and the appointment / duties of an appropriate Sponsor. The regulatory framework is Structured to be proportionate to the Open Category and Specific S1 sub-category and their physical attributes, and to permit appropriate operating freedoms to 'non-traditional' civilian aviation organizations commensurate with the Risks presented.

Contents

Regulation 1031(1)

Organization

1031(1) Civilian organizations operating UK military registered UAS in the Open Category or Specific S1 sub-category **shall** be appropriately regulated, Structured, and controlled.

Acceptable Means of Compliance 1031(1)

Organization

1. Civilian organizations that operate[3] UK military registered UAS in the Open Category or Specific S1 sub-category **should** be an approved organization in accordance with (iaw) the CFAOS (BUAS)[4].

2. CFAOS (BUAS) organizations **should**:

   a. Comply with RA 1600[5] and:

      (1) RA 1601[6] for UAS operated in the Open A1 sub-category.

      (2) RA 1602[7] for UAS operated in the Open A2 sub-category.

      (3) RA 1603[8] for UAS operated in the Open A3 sub-category.

      (4) RA 1604[9] for UAS operated in the Specific S1 sub-category.

   b. Hold an appropriate CFAOS (BUAS) Approval Certificate prior to operation of any UK military registered UAS.

   c. Operate iaw the scope of their CFAOS (BUAS) Approval Certificate.

[1] As defined in RA 1600 – Uncrewed Air Systems Categorization.
[2] Organizations operating under the CFAOS (BUAS) may be referred to as CFAOS (BUAS) organizations.
[3] Civilian Operated (In-Service) and Civilian Operated (Development); refer to RA 1160 – The Defence Air Environment Operating Framework.
[4] Refer to RA 1031(3): Approval.
[5] Refer to RA 1600 – Uncrewed Air Systems Categorization.
[6] Refer to RA 1601 – Uncrewed Air Systems Open A1 sub-category (Fly 'Over' People).
[7] Refer to RA 1602 – Uncrewed Air Systems Open A2 sub-category (Fly 'Close To' People).
[8] Refer to RA 1603 – Uncrewed Air Systems Open A3 sub-category (Fly 'Far From' People).
[9] Refer to RA 1604 – Uncrewed Air Systems Specific S1 sub-category.

Acceptable Means of Compliance 1031(1)

d. Nominate an UAS AM who is suitably experienced and empowered, with the appropriate freedom, authority and resource to undertake the role.

e. Have in place:

(1) An MAA endorsed Contractor Flying Organization Exposition (Basic UAS) (CFOE (BUAS))[4].

(2) An MAA endorsed CFAOS (BUAS) Operations Manual which conveys how the organization meets the requirements of the CFAOS (BUAS)[4].

f. Ensure that all UAS operated under the CFAOS (BUAS) are categorized.

g. Ensure that personnel assigned to, or directly involved in, UAS flight and ground operations, are appropriately qualified and trained for their duties iaw the RAs at paragraph 2.a (as applicable).

h. Ensure that the MAA is:

(1) Granted appropriate access to the organization for the purpose of determining initial and continued regulatory compliance.

(2) Notified of any change affecting or likely to affect the scope of the CFAOS (BUAS) Approval.

(3) Notified of any change regarding the UAS AM.

3. In addition to the requirements above, CFAOS (BUAS) organizations conducting Test and Evaluation (T&E), ie Civilian Operated (Development)[10] activity, **should** comply with the requirements of RA 2370[11].

Guidance Material 1031(1)

Organization

4. The issue and continuation of a CFAOS (BUAS) Approval is subject to compliance with the relevant Regulations and endorsement by an appropriate Sponsor[12].

5. The following RAs are applicable to UAS operating under the CFAOS (BUAS):

a. RA 1031.

b. RA 1161(5).

c. RA 1410[13].

d. RA 1600.

e. RA 1601, RA 1602, RA 1603 and / or RA 1604[14].

f. Any relevant Regulatory Instructions and / or Regulatory Notices.

g. Any other RAs deemed applicable through:

(1) Explicit reference and / or direction to any other RAs within the RAs listed above.

(2) The CFAOS (BUAS) Approval process (such as RA 2370 for CFAOS (BUAS) organizations conducting T&E, ie Civilian Operated (Development) activity); discussion with the MAA Contractor Flying Approved Organization Scheme (CFAOS) Branch will be required in order to determine any such applicable RAs.

6. CFAOS (BUAS) organizations will only be permitted to operate UK military registered UAS in the Open Category and Specific S1 sub-category.

[10] Refer to RA 1160 – The Defence Air Environment Operating Framework.
[11] Refer to RA 2370 – Test and Evaluation.
[12] Refer to RA 1031(4): Sponsor.
[13] Refer to RA 1410 - Occurrence Reporting and Management.
[14] The applicability of RA 1601, RA 1602, RA 1603 and / or RA 1604 is dependent on endorsed sub-category; ie RA 1601 is applicable to an organization endorsed for Open A1 sub-category operations, RA 1602 for those endorsed for Open A2 sub-category operations etc. Any organization endorsed for more than one sub-category will apply the respective RAs for all endorsed sub-categories.

Guidance Material 1031(1)

7. CFAOS (BUAS) organizations will not be permitted to operate UK military registered UAS in the Specific S2 sub-category and Certified Category (these options are restricted to operation under the full CFAOS[15, 16] or to Military Operated UAS).

8. For the avoidance of doubt:

a. All UK military registered UAS that are operated under the CFAOS (BUAS) must be categorized iaw RA 1600[5].

b. However, CFAOS (BUAS) organizations are not required to submit an UAS Categorization submission nor hold an MAA Letter of Endorsed Categorization (LEC))[5]. Categorization will be achieved through the CFAOS (BUAS) application / Approval process and the CFAOS (BUAS) Approval Certificate, which address the requirements of UAS Categorization submission and LEC respectively.

c. The MAA CFAOS Branch will form an internal MAA UAS Categorization Panel which will confirm the valid / applicable UAS Category.

9. The regulatory requirements for an Approval under the CFAOS (BUAS) is discrete and distinct from a full CFAOS Approval under RA 1028[15] (the two schemes are exclusive). However, there may be benefits in facilitating organizations already holding a full CFAOS Approval to address the requirements for CFAOS (BUAS) under their extant CFAOS Approval. Therefore, an entity already approved to operate under the CFAOS that subsequently requires to operate under the privileges of the CFAOS (BUAS) may not be required to possess a separate CFAOS (BUAS) Approval, instead being required to progress an appropriate CFAOS scope uplift iaw RA 1028[15]. However, the regulatory requirement for the operation of UAS in the Open Category and Specific S1 sub-category will always be that described by the CFAOS (BUAS). Discussion with the MAA CFAOS Branch will be required in order to determine the appropriate route to Approval in such cases.

Regulation 1031(2)

Uncrewed Air Systems Accountable Manager

1031(2) UAS operated under the CFAOS (BUAS) **shall** be under the authority of an UAS AM and be supported by appropriate persons.

Acceptable Means of Compliance 1031(2)

Uncrewed Air Systems Accountable Manager

10. UAS AMs **should**:

a. Be responsible and Accountable for the operation of UAS within their Area of Responsibility (AoR).

b. Ensure that:

(1) The MAA has endorsed:

(a) The CFOE (BUAS)[4] and;

(b) The CFAOS (BUAS) Operations Manual[4].

(2) UAS are categorized[5].

c. Establish and maintain a process for the update and maintenance of the documents at paragraph 10.b.

d. Ensure that Risks to Life (RtL) to Remote Pilots (RP), UAS launch crew, personnel working on supporting or supported Systems, and the general public or other organizational / MOD personnel through operation of UAS within their AoR are As Low As Reasonably Practicable (ALARP) and Tolerable and cease operations if RtL are identified that are not demonstrably ALARP and Tolerable.

e. Ensure that UAS are operated iaw:

[15] Refer to RA 1028 – Contractor Flying Approved Organization Scheme.
[16] The CFAOS is the Assurance mechanism underpinning the Competence of Defence Contractor Flying Organizations that operate crewed Aircraft and Specific S2 sub-category and Certified Category UAS on the UK Military Aircraft Register (MAR).

Acceptable Means of Compliance 1031(2)

(1) The CFAOS (BUAS) Approval Certificate.

(2) RA 1600[5] and:

(a) RA 1601[6] for UAS operated in the Open A1 sub-category.

(b) RA 1602[7] for UAS operated in the Open A2 sub-category.

(c) RA 1603[8] for UAS operated in the Open A3 sub-category.

(d) RA 1604[9] for UAS operated in the Specific S1 sub-category.

(3) Any other RAs that have been deemed applicable[17].

(4) The CFOE (BUAS)[4].

(5) The CFAOS (BUAS) Operations Manual[4].

(6) Where applicable, ensure compliance with RA 2370[11] for the conduct of T&E, ie Civilian Operated (Development) activity.

f. Ensure that any significant changes to their operating Responsibilities or to the supporting Systems that may affect the discharge of their RtL Responsibilities are reported immediately to the MAA CFAOS Branch[18].

g. Apply for military registration of all Uncrewed Aircraft (UA) to be operated[19, 20], or confirm that registration is already in place, and ensure that all UAS are registered prior to operation[21].

h. Ensure that the Sponsor has issued a Certificate of Usage (CofU)[12] for all Civilian-Owned UAS.

i. Hold appropriate Terms of Reference (ToR).

j. Act as the organization's senior point of contact with the MAA.

k. Nominate a UAS Flight Operations Post-Holder (FOPH) for UAS operated in the Open A2, Open A3 and Specific S1 sub-categories[22, 23, 24].

11. An UAS AM **should** be:

a. At least a Middle Manager within the organization.

b. Formally responsible for the delivery of safe UAS operations.

c. Directly appointed by an appropriate management board.

12. UAS AM nominees **should** apply to the MAA for endorsement to undertake the role of UAS AM, and expect to attend an MAA endorsement interview at which they will be required to provide evidence of suitability to undertake the role.

13. Attend an MAA UAS AM briefing day prior to submission of the CFOE (BUAS), CFAOS (BUAS) Operations Manual and any other supporting documents, if required to do so by the MAA[25].

Guidance Material 1031(2)

Uncrewed Air Systems Accountable Manager

14. **Middle Manager**. The term Middle Manager will be taken to mean a manager who possesses the authority to make independent decisions on UAS operations without recourse to superiors or executives. If they do not sit at Board level (or equivalent divisional level) they will have appropriately delegated authority, and the organization will be required to demonstrate that the individual holds the authority and

[17] See also paragraph 5g.
[18] Via DSA-MAA-OpAssure-CFAOS-Group@mod.gov.uk.
[19] Refer to RA 1161(5) - Military Open Category / Specific S1 sub-category Remotely Piloted Aircraft Registration.
[20] For Open Category and Specific S1 sub-category UAS operated under the CFAOS (BUAS), application for UK MAR registration is implicit in the CFAOS (BUAS) application (see also RA 1031(3) – Approval).
[21] Via DSA-MAA-OpAssure-MAR@mod.gov.uk.
[22] The UAS AM may, where appropriate, also hold the role of UAS FOPH provided it can be clearly demonstrated that such a dual appointment does not conflict with either their UAS AM or UAS FOPH Responsibilities.
[23] A UAS FOPH is not required for UAS operated in the Open A1 sub-category.
[24] The Responsibilities required of the CFAOS (BUAS) UAS FOPH are covered in detail within RA 1602, RA 1603 and RA 1604.
[25] The requirement will be determined following submission of the MAA CFAOS (BUAS) Form 2 – refer to RA 1031(3).

Guidance Material 1031(2)

freedom to execute decisions with respect to UAS operated under the CFAOS (BUAS).

15. **Suitability**. 'Suitability' for the UAS AM role means being able to demonstrate appropriate knowledge and understanding of the relevant UAS operating principles and of the relevant Regulations and documents that prescribe UAS operating processes and standards. This includes, but is not limited to, the following:

a. RA 1031.

b. RA 1161(5).

c. RA 1600[5].

d. RA 1601[6], RA 1602[7], RA 1603[8], and / or RA 1604[9].

e. RA 1410[13].

f. RA 2370[11] (for UAS AMs responsible for T&E activity).

g. The organization's CFOE (BUAS)[4].

h. The organization's CFAOS (BUAS) Operations Manual[4].

i. Role and Responsibilities of the UAS AM.

j. Operating Risk.

k. Role and Responsibilities of the UAS FOPH[24].

16. **UAS AM Endorsement**

a. **Application**. UAS AM nominees must apply to the MAA for endorsement using an MAA CFAOS(BR) Form 4[26]. Thereafter, and in consultation with the MAA, supporting evidence for endorsement interview will be provided to the MAA CFAOS Branch[18] at least 10 working days prior to interview. The organization's CFOE (BUAS) will provide the foundation of the supporting evidence. Further evidence required will include, but is not limited to:

(1) Organization Structure, to allow understanding of the UAS AM's position within the organization, including appropriate explanation of the powers / authority held and relational links to relevant areas.

(2) Explanation of the UAS AM's independence, including access to adequate resource, to allow enactment of regulatory requirements without hindrance.

(3) For UAS AMs intending to manage or conduct T&E how they intend to comply with RA 2370[11].

(4) A tailored CV detailing the UAS AM's professional background highlighting any involvement with aviation and / or UAS operations.

b. **Interview.** The UAS AM endorsement interview will be led by an MAA CFAOS Branch OF4 representative and will cover 4 broad areas as a minimum: a description of the UAS AM's roles and Responsibilities; their knowledge, skills and experience; how the UAS AM intends to comply with RA 1031, RA 1600 and other applicable Regulations[27]; and any wider points from the supporting evidence submitted.

c. **Endorsement**. UAS AM endorsement will be in writing and at a minimum level of MAA Department Head (OF5).

17. **UAS AM Briefing Day.** The CFAOS (BUAS) and the approach taken by the MAA is significantly different to that of other Regulators. Therefore, the UAS AM briefing day is designed to inform UAS AMs, UAS FOPHs and compliance personnel of the construct, governance Structure and Regulations that underpin the CFAOS (BUAS). UAS AMs, UAS FOPHs and compliance personnel will benefit from early attendance on an UAS AM briefing day, prior to the Development of their CFOE (BUAS), CFAOS (BUAS) Operations Manual and any supporting documents.

[26] The MAA Form 4 can be found on the MAA website https://www.gov.uk/government/collections/miltary-aviation-authority-approvals.
[27] Such as RA 2370 – Test and Evaluation, for those UAS AMs who will manage or conduct T&E activity.

Guidance Material 1031(2)

Suitable briefing day dates will be discussed as part of the initial contact with the MAA CFAOS Branch after submission of the MAA CFAOS (BUAS) Form 2[25].

18. **MAA Engagement**. UAS AMs will allow the MAA to examine and / or Audit the organization with respect to the operation of UAS under the CFAOS (BUAS), and to review the UAS AM endorsement following any significant change to an UAS AM's Responsibilities.

19. **Duty of Care**. UAS AMs have a personal level Duty of Care for personnel under their control (those who, by virtue of their involvement, temporary or otherwise, in UAS activities, come within an UAS AM's AoR) and the wider public who may be affected. They are thus Accountable for the safe operation of UAS in their AoR and for ensuring that RtL is ALARP and Tolerable. However, the UAS AM governance model does not absolve managers at any level of their broader, enduring Duty of Care Responsibilities under Common Law and the Health and Safety at Work Act (1974).

Regulation 1031(3)

Approval

1031(3) CFAOS (BUAS) Organizations **shall** be approved by the MAA.

Acceptable Means of Compliance 1031(3)

Approval

Application

20. To be considered for Approval under the CFAOS (BUAS) an organization[28] **should:**

a. Demonstrate that Approval is in either:

(1) The MOD Interest[10] or;

(2) The wider National interest[29].

b. Have the endorsement of an appropriate Sponsor[12] at:

(1) 1* level or above for Approvals in the MOD Interest.

(2) 2* level or above for Approvals in the wider National interest.

21. Applications for CFAOS (BUAS) Approval **should** be:

a. Made using an MAA CFAOS (BUAS) Form 2[30].

b. Supported by a CFOE (BUAS), a CFAOS (BUAS) Operations Manual and any other applicable documents.

Application

22. A CFAOS (BUAS) Approval **should** remain valid subject to:

a. The organization remaining in compliance with the relevant Regulations.

b. The MAA being granted access to the organization to determine compliance with the relevant Regulations.

c. The Approval Certificate not being surrendered, suspended or revoked.

d. Continued endorsement of MOD Interest and / or National interest.

23. Following award of CFAOS (BUAS) Approval the MAA **should** be notified of any factors likely to affect or influence the extant Approval. Furthermore:

a. Any uplifts or significant changes / variations to the Approval[31] **should**:

[28] See paragraph 9 for organizations already holding a CFAOS Approval iaw RA 1028 – Contractor Flying Approved Organization Scheme.
[29] Operating in the wider National interest is categorized as Special Case Flying (SCF); refer to RA 1160 – The Defence Environment Operating Framework.
[30] The MAA CFAOS (BUAS) Form 2 can be found on the MAA Website https://www.gov.uk/government/collections/miltary-aviation-authority-approvals.
[31] Such as: change of UAS Category, change or addition of an UAS type / mark (see also paragraph 42). The MAA CFAOS Branch may be consulted where doubt exists as to whether a change demands formal application or otherwise.

Acceptable Means of Compliance 1031(3)

(1) Be formally applied[32] for and;

(2) Only be implemented on receipt of an appropriately amended CFAOS (BUAS) Approval Certificate.

b. Any reductions[33] **should** be formally notified at the earliest opportunity.

CFOE (BUAS)

24. The CFOE (BUAS) **should** be:

a. Current and up-to-date.

b. Under the accountability and signature of the UAS AM.

c. Provided to the MAA in electronic copy.

25. The CFOE (BUAS) **should** be iaw the MAA template[34] and as a minimum contain the following[35]:

a. The official name and business name, address and mailing address of the organization.

b. A statement signed by the UAS AM confirming that the CFOE (BUAS) and any referenced documents:

(1) Are accurate and true.

(2) Define the organization's compliance with the relevant Regulations[36] and will be complied with at all times.

c. A statement describing the CFOE (BUAS) amendment process (to include a procedure describing how Minor Changes not requiring prior MAA endorsement will be managed and notified to the MAA[37]).

d. The name of the UAS AM.

e. The name of the UAS FOPH (for UAS operated in the Open A2, Open A3 and Specific S1 sub-categories[23]).

f. The position / role and name of the Sponsor.

g. Detail of how the activity is in the MOD Interest and / or the justification for Special Case Flying (SCF)[29].

h. A description of the CFAOS (BUAS) organization including:

(1) Organizational Structure.

(2) Types / marks of UAS operated.

(3) UAS Categories and Physical Attributes[5].

(4) Numbers of UAS operated.

(5) Operating locations.

(6) Expected flying rate.

(7) Numbers of RPs and other workforce resource associated with the task.

i. A list of which RAs are deemed applicable[36].

j. Details of any experience in flying operations or any wider aspects relevant to the activity such as training and T&E.

[32] For uplift the documentation required will be analogous to that required to support the initial application and will, as a minimum, include both a revised MAA CFAOS (BUAS) Form 2 and CFOE (BUAS).
[33] Such as removal of the requirement to operate under a particular UAS Category, removal of UAS type; the MAA CFAOS Branch may be consulted where doubt exists as to whether a change is a reduction or otherwise.
[34] The CFOE (BUAS) template can be found on the MAA website https://www.gov.uk/government/collections/miltary-aviation-authority-approvals.
[35] This list is not exhaustive; the UAS AM may add to the list as they see fit.
[36] See also paragraph 5.
[37] Such as grammatical and typographical errors where the meaning of the wording remains unchanged (where doubt exists the MAA CFAOS Branch may be consulted as to whether a change requires prior MAA approval or otherwise).

Acceptable Means of Compliance 1031(3)

k. A list of Contracted and Subcontracted organizations if applicable.

CFAOS (BUAS) Operations Manual

26. The CFAOS (BUAS) Operations Manual **should** be:

a. Current and up-to-date.

b. Under the accountability and signature of the UAS AM.

c. Provided to the MAA in electronic copy.

27. The CFAOS (BUAS) Operations Manual **should** be iaw the MAA template[38] and as a minimum contain the following[35]:

a. A series of Orders / Instructions that details how the organization will comply in practice with all relevant RAs[36].

b. A statement confirming that the CFAOS (BUAS) Operations Manual:

(1) Has been approved by the UAS AM.

(2) That the Orders / Instructions will be complied with at all times.

c. A clear and unambiguous directive that all relevant personnel (such as the UAS FOPH and RPs) **should** comply with the Orders / Instructions.

d. A process to record that all relevant personnel have read the CFAOS (BUAS) Operations Manual and that they understand and comprehend the Orders / Instructions contained within.

e. A statement describing the CFAOS (BUAS) Operations Manual amendment process (to include a procedure describing how Minor Changes not requiring prior MAA endorsement will be managed and notified to the MAA[37]).

Registration

28. UA operating under the CFAOS (BUAS) **should** be registered on and, when no longer required, de-registered from the UK MAR.

29. Registration markings **should** be appropriately displayed on UA according to UA size and type[19].

Guidance Material 1031(3)

Approval

30. Under the CFAOS (BUAS), for Open Category and Specific S1 sub-category UAS that are not already registered, application for UK military registration is automatic through submission of the CFAOS (BUAS) application, along with the CofU for Civilian-Owned UAS, to the MAR Registrar[21], (there is no requirement to submit a separate application[39]).

31. The Sponsor / MAA may endorse / approve some CFAOS (BUAS) organizations, for T&E / Development, to operate UAS within a more permissive framework that is platform agnostic. Such organizations would be approved to self-categorize / re-categorize UAS and to independently modify and / or add UAS types / marks via the governance and methodology of the organization's T&E processes.

a. In such cases:

(1) RA 2370 will be applicable; ie the organization must comply with RA 2370 and the UAS AM be endorsed to manage / conduct T&E iaw RA 2370.

(2) The CFAOS (BUAS) Approval will be conditions-based, within set pre-defined operating environments and limitations:

(a) For operation of UAS in the Open Category and / or Specific S1 sub-category and;

(b) Aligned to the RA 2370 T&E Categories.

[38] The CFAOS (BUAS) Operations Manual template can be found on the MAA website https://www.gov.uk/government/collections/miltary-aviation-authority-approvals.
[39] See also RA 1031(2): Uncrewed Air Systems Accountable Manager.

Guidance Material 1031(3)

(3) Approval will require the CFAOS (BUAS) organization to consider and define Airworthiness standards, Maintenance and Modification methodology within its operating framework and T&E processes.

(4) Approval will be clearly articulated in the CFOE (BUAS) and the CFAOS (BUAS) Approval Certificate.

(5) Appropriate T&E processes that describe the methodology for self-categorization / re-categorization and Modification / addition of UAS types / marks, will be detailed in the CFAOS (BUAS) Operations Manual.

(6) UAS AMs will be required to:

(a) Ensure the Sponsor has endorsed all UAS categorizations / re-categorizations and / or additions of UAS types / marks via an updated MAA CFAOS (BUAS) Form 2.

(b) Notify the MAA CFAOS Branch of all UAS categorizations / re-categorizations and any Modifications and / or additions of UAS types / marks, and provide detail of the intended activity.

(c) Apply for the registration of additional UA[21, 40]. or confirm that registration is already in place.

(d) Ensure that the Sponsor has issued a CofU[22] for all Civilian-Owned UAS.

b. There may be rationale for a hybrid Approval in that the approved activity is split between non-T&E activity and T&E activities[41]; ie where:

(1) Part of the Approval is stipulated to particular types / marks of UAS in precise MAA endorsed UAS categories (eg for training and currency) as non-T&E activity.

(2) Part of the Approval permits self / re-categorization and Modification / addition of UAS types / marks as T&E activity (as per the framework described at paragraph 31.a).

32. The CFAOS (BUAS) Operations Manual will define Airworthiness standards and Maintenance processes.

33. Organizations seeking new CFAOS (BUAS) Approvals will be aware that the timeline from application to Approval typically takes about 3 to 6 months[42], and could be significantly longer depending on the complexity (eg T&E) or permanence of Approval sought (ie whether the requirement will be enduring). Early dialogue with the MAA CFAOS Branch is encouraged. Organizations may initiate informal engagement with a view to understanding the route to CFAOS (BUAS) Approval, the regulatory requirement, and wider challenges related to both the CFAOS (BUAS) and regulatory compliance. However, organizations will note that informal engagement will be limited and without commitment until formal engagement is authorized via endorsement by an appropriate Sponsor (ie by MAA CFAOS (BUAS) Form 2).

34. When it is considered that there is a case for an organization to be included in the CFAOS (BUAS) a detailed appraisal will be carried out by the MAA. The appraisal will seek to establish confidence in the organization, and the UAS AM, relevant to the operations concerned. The organization will be Audited via documentary and on-site inspections.

35. For the avoidance of doubt, the application for and subsequent issue of CFAOS (BUAS) Approval is accepted as addressing any requirements (perceived or otherwise) for a Military Permit To Fly, an Air System Safety Case, and UK Military Aircraft Registration.

CFAOS (BUAS) Approval Certificate

36. When evidence presented by the organization demonstrates that it satisfies the MAA requirements, a CFAOS (BUAS) Approval Certificate will be issued listing:

[40] For the registration of additional UA, application for MAR registration is automatic via the notification.
[41] ie between Civilian Operated (In-Service) and Civilian Operated (Development) iaw RA 1160.
[42] From receipt of MAA CFAOS (BUAS) Form 2, and also dependent on the quality of the supporting document submission.

Guidance Material 1031(3)

a. A unique identifying reference.

b. The approved organization, including the operating and trading name if different.

c. The organization's principal place-of-business address.

d. Name and details of the UAS AM.

e. UAS types / marks for which operation is approved or whether the organization is endorsed for T&E / Development and the independent Modification / addition of UAS types / marks via self-categorization / re-categorization.

f. UAS Categories and Physical Attributes[5] for which operation is approved or whether the organization is endorsed for self-categorization / re-categorization.

g. Any applicable limitations.

h. Any T&E Endorsement.

i. The issue date (and date of expiry / revision if required).

j. The title, name and signature of the MAA approving officer.

37. A CFAOS (BUAS) Approval Certificate will remain valid subject to:

a. The organization remaining in compliance with the applicable Regulations.

b. The MAA being granted access to the organization to determine continued compliance.

c. The Approval Certificate not being surrendered, suspended or revoked.

d. Continued endorsement by the MOD Sponsor(s).

38. The MAA will withdraw from the CFAOS (BUAS) any organization that no longer meets the requirements.

39. A list of organizations who have been granted Approval under the CFAOS (BUAS) may be published by the MAA. If, eg for specific security reasons, publication would be undesirable for an organization, the MAA CFAOS branch will need to be made aware prior to completion of the Approval process.

Compliance

40. CFAOS (BUAS) organizations will be subject to compliance Assurance activities conducted by or on behalf of the MAA. Access may be required to personnel, facilities, UAS, documents, records, data, procedures and any other materials relevant to compliance.

41. Costs for periodic compliance Assurance activities conducted by or on behalf of MAA will not be recoverable from the MAA.

Approval Changes

42. As a minimum, the MAA must be notified of changes to:

a. The UAS AM.

b. The UAS FOPH[23].

c. The MOD Sponsor(s).

d. Detail regarding how the activity is in the MOD Interest.

e. Types / marks of UAS operated.

f. UAS Categories and / or Physical Attributes[5].

g. Ownership of the organization.

h. The organization's official name, business name, address and / or mailing address.

Guidance Material 1031(3)

43. Application to the MAA for a CFAOS (BUAS) Approval amendment will not constitute Approval to operate to the proposed amendment.

44. Following receipt of an application for uplift or significant change the MAA will determine continuing regulatory compliance and will amend, if necessary, the CFAOS (BUAS) Approval Certificate.

45. The CFOE (BUAS) is the document that details the scope of activity deemed to constitute CFAOS (BUAS) Approval.

46. The CFAOS (BUAS) Operations Manual is the document that details how the organization intends to comply with the applicable Regulations.

Regulation 1031(4)

Sponsor

1031(4) All CFAOS (BUAS) Organizations **shall** have a Sponsor.

Acceptable Means of Compliance 1031(4)

Sponsor

47. The Sponsor **should**:

a. Be a Crown Servant at 1* level or above for Approvals in the MOD Interest.

b. Be a Crown Servant at 2* level or above for Approvals in the wider National interest (ie SCF).

c. Have appropriate Competence and experience that enables them to discharge the requirements of this Regulation[43].

d. Hold ToR that empower them to act as such as a Sponsor, and which detail their Sponsor Responsibilities.

Governance

48. The Sponsor **should**:

a. Endorse the MAA CFAOS (BUAS) Form 2.

b. Confirm that:

(1) The organization has a CFAOS (BUAS) Approval appropriate to the scope of activity.

(2) An UAS AM, endorsed by the MAA, is in place, supported by a UAS FOPH[22, 23].

(3) Appropriate Safety arrangements are in place for UAS operated under the CFAOS (BUAS).

c. Assure themselves that:

(1) The organization is operating within the scope of its CFAOS (BUAS) Approval[44].

(2) The organization is operating in compliance with the Regulations as listed in the CFOE (BUAS)[44].

Registration

49. The Sponsor **should**:

a. Ensure the UAS AM has applied for military registration of the UAS, or confirm registration is already in place[45].

50. Issue a CofU[46] for any Civilian-Owned UAS.

[43] 2* Sponsors for CFAOS (BUAS) Approvals in the wider National interest (ie for SCF) **should** also hold an appropriate Letter of Delegation (detailing the Sponsor activities) from the relevant service Chief of Staff or Defence Equipment and Support Chief Executive Officer.
[44] Note this is an enduring requirement.
[45] Refer to paragraphs 10g, 28 and 29 and to RA 1161(5): Military Open Category / Specific S1 sub-category Remotely Piloted Aircraft Registration.
[46] Refer to RA 1160(3): Certificate of Usage.

Guidance Material 1031(4)

Sponsor

51. Through the MAA CFAOS (BUAS) Form 2, Sponsors are endorsing (thereby supporting in full) the application for an organization to hold a CFAOS (BUAS) Approval to conduct the activities detailed within the Form 2, using UK military registered UA, and that the activities are in either the MOD Interest or wider National interest. This includes the initial Form 2 and any subsequent amendments.

52. The Responsibility for Sponsor will remain with the post / appointment, not the individual. A new MAA CFAOS (BUAS) Form 2 must be submitted following any change or replacement of the individual holding the post / appointment[4].

53. The Sponsor will ensure appropriate indemnity arrangements are in place[47].

[47] Advice may be sought from MOD Central Legal Services.

►This RA has been substantially re-written; for clarity no change marks are presented – please read RA in its entirety◄

RA 1600 – Uncrewed Air Systems Categorization

Rationale

There is a requirement to acquire, categorize, develop, and operate appropriate Uncrewed Air Systems (UAS). Therefore, there needs to be in place a proportionate Regulatory and Certification framework; this is based on the UAS operating intent and the level of Risk their proposed activity poses. Categorization sets a proportionate regulatory framework to ensure that UAS operations are conducted safely, based on the Risk that UAS operations pose to involved and Uninvolved Persons[1] on the ground and to other air users. The process of UAS Categorization considers both the UAS type and method of operation. The Risk is dependent on many factors including, but not limited to Uncrewed Aircraft (UA) physical attributes (eg mass, dimensions, speed, energy, etc), range of operation, duration of exposure[2], robustness of link, the nature of the airspace, and the Quality of training. As the Risk increases, the robustness of the Assurance required to demonstrate that operations are safe will increase. Without agreed regulatory frameworks to assist organizations to acquire, categorize, develop, and operate appropriate UAS, UAS may present uncontrolled and unmitigated Risks to Life (RtL). The categorization of UAS (which considers both UAS type and method of operation) directs which Regulation and Acceptable Means of Compliance (AMC) apply. This Regulatory Article (RA) provides an overview of the Categorization system and directs the regulatory requirements to ensure that organizations acquire appropriate UAS and correctly operate them in the relevant Category[3] to enable suitable regulatory frameworks to be applied to their operation. This will ensure that UAS are safe to operate and are being operated safely throughout their life.

Contents

Definitions

Definitions relevant to the RA 1600 Series

1. Terms, defined in MAA02, that are relevant to the RA 1600 Series (non-exhaustive list):

a. Air System.
b. Aircraft.
c. Aircrew.
d. Areas of high population density.
e. Armed Uncrewed Air System (Armed UAS).
f. Beyond Visual Line Of Sight (BVLOS).
g. Command and Control link.
h. Command Unit.
i. Congested Areas.
j. Controlled Airspace (CAS).
k. Controlled Flight Into Terrain (CFIT).
l. Danger Area.
m. Defence Air Environment (DAE) Operating Categories.
n. Detect and Avoid.

[1] Refer to MAA02 – Military Aviation Authority Master Glossary.
[2] Exposure is a function of the numbers of people at Risk from the operation and the time during which they are at Risk.
[3] Hereafter “Category” refers to Category and / or sub-categories. Hereafter the terms ‘categorize’, ‘categorized’, and ’categorization’ refers to the MAA-endorsed UAS Category and / or sub-category which defines an appropriate Regulatory framework.

Definitions

o. Drone.

p. Dropping of materiel.

q. Ground Control Station (GCS).

r. Loitering Munition.

s. Lost link.

t. Medical Certificate.

u. Payload.

v. Period of Operation.

w. Remote Pilot (RP).

x. Remote Pilot Station (RPS).

y. Remotely Piloted Aircraft (RPA).

z. Remotely Piloted Air System (RPAS).

aa. Remotely Piloted Air System Accountable Manager (RPAS AM).

bb. Remotely Piloted Air System Ground Operator (RGO).

cc. Remotely Piloted Air System Responsible Officer (RPAS RO).

dd. Segregated Airspace.

ee. Sense and Avoid.

ff. Special Purpose Clearance (SPC).

gg. Suitably Qualified and Experienced Person (SQEP).

hh. Swarm.

ii. Uncrewed Aircraft (UA).

jj. Uncrewed Air System (UAS).

kk. Uncrewed Air System Accountable Manager (UAS AM).

ll. Uncrewed Air System Ground Operator (UGO).

mm. Uncrewed Air System Observer (UAS Observer).

nn. Uncrewed Air System Responsible Officer (UAS RO).

oo. Uninvolved Person.

pp. Visual Line Of Sight (VLOS).

2. Terms, not defined in MAA02, that are tangentially relevant to the RA 1600 Series:

a. **Artificial Intelligence.** A family of general-purpose technologies, any of which may enable machines to perform tasks normally requiring human or biological intelligence, especially when the machines learn from data how to do those tasks. (Sourced from: Defence AI Strategy Jun 2022)

b. **Autonomous Operations.** An operation during which an UA operates without the RP being able to intervene. (Source derived from: UK CAA CAP 722D)

c. **First Person View (FPV) UAS Operations.** FPV UAS operations will be endorsed via the Categorization process. FPV UAS are UAS fitted with video cameras downlinking live video to the RP via the Command Unit or through video goggles. This capability provides the RP with a pseudo pilots eye view from the UAS. FPV UAS Operations will have a UAS Observer assisting the RP to keep the UA away from other Aircraft and Obstacles. The UAS Observer will

Definitions

be situated alongside the RP and will not use aided vision (eg binoculars). In all cases, the RP is still responsible for the Safety of the flight[4].

Note:

Images captured by a camera and displayed on a flat screen give the RP little by way of depth perception and no peripheral vision. This can make it difficult for the RP to accurately judge speed and distance, and to maintain sufficient awareness of the area surrounding the UA to effectively Detect and Avoid other Aircraft and Obstacles. As a result, the use of FPV equipment is not an acceptable mitigation for BVLOS flight unless the relevant organization has received a specific Authorization to do so from the MAA.

d. **Machine Learning.** Computer algorithms that can 'learn' by finding patterns in sample data and then apply this to new data to produce useful outputs, often using neural networks. (Sourced from: Defence AI Strategy Jun 2022)

e. **Extended Visual Line Of Sight (EVLOS).** *To be deleted from MAA02 as it's not used in the MAA Regulatory Publications (MRP). If future amendments include reference to EVLOS in the UAS Regulations, then a description can be added to the UAS Regulations.*

f. **Layered Safety Approach (LSA).** *To be deleted from MAA02 as it has been removed from all MRP documents using it (MAA02, RA 1604, RA 2320, and the UAS Manual). The RA 2320 requirements have been subsumed into the Segregated Airspace requirements (noting the LSA could only be applied when operating in SA).*

Applicability

3. RA 1600 applies to UK Military Registered UAS, whether Military-Owned or Civilian-Owned and / or Military Operated or Civilian Operated. This includes Civilian-Owned and Civilian Operated UAS operating extra-territorially under contract to the MOD.

4. RA 1600 does not apply to:

a. Privately-owned UAS (ie non-MOD owned and not on the UK Military Aircraft Register (MAR)) operated by MOD personnel outwith their MOD duties (ie where the use is private or recreational).

b. Civil Registered or Unregistered Civilian-Owned UAS and Civilian Operated UAS operating, in accordance with (iaw) the Air Navigation Order / Overseas National Regulations, under contract to the MOD.

c. Other Nation's military UAS.

d. Military owned and operated FPV UAS not being used for military purposes (eg racing Drones).

5. UAS to be operated in the DAE are required to be categorized in one of three UAS Categories, which are:

a. **Open Category**

(1) Operations within the Open Category are those to be conducted with UAS that:

(a) Are operated within VLOS[5,6], of the RP, maintaining an ability to determine the UA orientation[7],

[4] This is based on the UK CAA's FPV webpage: https://www.caa.co.uk/drones/rules-and-categories-of-drone-flying/first-person-view-flying/.
[5] UAS Categorized as Open A1 may be operated BVLOS when operating within buildings, vessels, and structures.
[6] When there is demand for Open and S1 sub-categorized UAS, supported by an appropriate Risk wrapper for freedom of operation, there **should** be a proportionate route to increased operating range from the RP. To enable this, an additional RA 1600 Annex B Appendix 2 **should** be submitted, for the additional permissions beyond the baseline LEC.
[7] In 'follow-me' mode (the UA will automatically follow the Command Unit), the UA may be flown up to a maximum distance of 50 m from the RP, even if this means that the UA is no longer VLOS.

Applicability

(b) Are not flown at an Altitude greater than 120 m (400 ft) from the closest point of the surface of the earth,

(c) Have a maximum operating speed of 19 m/s,

(d) Are registered on the UK MAR by type[8],

(e) Have a Military Aircraft Registration Number and unit identifier displayed on the main fuselage,

(f) Are capable of Swarming,

(g) Operate under the DAE Operating Framework and be assigned to a DAE Operating Category[9, 10], and

(h) Adhere to noise limits, Altitude limits, and requirements for remote identification and geo-awareness Systems and additional requirements if being used during tethered flight[11].

(2) The Open Category is divided into three operating sub-categories with the following specific requirements:

(a) **Open A1[12]**. Operations within the Open A1 sub-category are those to be conducted with UAS that:

(i) Have a Maximum Take-Off Weight (MTOW), including Stores, of less than 250 g,

(ii) Are capable of being operated safely over Uninvolved Persons but not flight over Areas of high population density, and

(iii) Carry a UK / EU conformity marking of C0[13] or be designed to similar standards.

(b) **Open A2[14]**. Operations within the Open A2 sub-category are those to be conducted with UAS that:

(i) Have a MTOW, including Stores, of less than 4 kg,

(ii) Are capable of being operated safely to a minimum horizontal distance of 30 m from Uninvolved Persons, or down to 5 m horizontally if a 'low speed mode'[15] is equipped and selected, but not flight over Areas of high population Density, and

(iii) Carry a UK / EU conformity marking of C0 – C2 or be designed to similar standards.

(c) **Open A3[16]**. Operations within the Open A3 sub-category are those to be conducted with UAS that:

(i) Have a MTOW, including Stores, of less than 25 kg,

(ii) Are capable of being operated safely to a minimum horizontal distance of 50 m from Uninvolved Persons and not within 50 m of Congested Areas, but not operated over Areas of high population density, and

[8] Refer to RA 1161 – Military Registration of Air Systems Operating within the Defence Air Environment.
[9] Refer to RA 1160 – The Defence Air Environment Operating Framework.
[10] The DAE Operating Category relates to the ownership and Safety governance of the Air System, whereas the UAS Category relates to the regulatory framework which is set by the MAA according to the Risk posed by the UAS and the manner in which it is operated.
[11] A Tethered UA is defined as: "A UA that remains securely attached (tethered) via a physical link to a person, the ground, or an object at all times while it is flying. The tether normally takes the form of a flexible wire or a cable and may also include the power supply to the Aircraft as well." (Source derived from: UK CAA CAP 722).
[12] Refer to RA 1601 – Uncrewed Air Systems Open A1 sub-category (Fly 'Over' People).
[13] Refer to Commission Delegated Regulation (EU) 2020/1058 and UK Regulation (EU) 2019/945.
[14] Refer to RA 1602 – Uncrewed Air Systems Open A2 sub-category (Fly 'Close To' People).
[15] "low-speed mode" limits the maximum speed to 3 m/s when selected by the RP, if the UAS has an UK / EU conformity marking of C2 or is designed to similar standards.
[16] Refer to RA 1603 – Uncrewed Air Systems Open A3 sub-category (Fly 'Far From' People).

Applicability

(iii) Carry a UK / EU conformity marking of C0 – C4 or be designed to similar standards.

b. **Specific Category**

(1) The Specific Category is divided into two operating sub-categories with the following specific requirements:

(a) **Specific S1**[17]. Operations within the Specific S1 sub-category are those to be conducted with UAS that:

(i) Have a MTOW, including Stores, of less than 25 kg,

(ii) Are required to operate BVLOS up to a maximum of 2,000 m from the RP[6],

(iii) Are capable of being operated safely at a horizontal distance from Uninvolved Persons to be determined on an UAS Categorization Submission case-by-case basis, but not operated over Areas of high population density,

(iv) Are capable of being operated safely to an Altitude in line with manufacturers guidelines,

(v) Carry a UK / EU conformity marking of C0 – C4 or be designed to similar standards,

(vi) Are flown inside Segregated Airspace within the UK Flight Information Region,

(vii) Have a maximum operating speed of 19 m/s,

(viii) Are registered on the UK MAR by type,

(ix) Have a Military Aircraft Registration Number and unit identifier, or a local UAS serial number, displayed on the main fuselage,

(x) Operate under the DAE Operating Framework and be assigned to a DAE Operating Category,

(xi) Adhere to noise limits, Altitude limits, and requirements for remote identification and geo-awareness Systems and additional requirements if being used during tethered flight,

(xii) Are capable of being armed (constrained to named Operations and Designated Danger Areas (DDA) only and subject to specific restrictions),

(xiii) Are capable of carrying / transporting dangerous Cargo[18, 19],

(xiv) Are capable of Swarming, and

(xv) Are capable of Dropping of materiel.

(b) **Specific S2**[20]. Operations within the Specific Category are those to be conducted with UAS that:

(i) Have a MTOW, including Stores, of any weight[21],

(ii) Are required to operate BVLOS of any distance from the RP,

(iii) Are capable of being operated safely at a horizontal distance from Uninvolved Persons, and over Areas of high

[17] Refer to RA 1604 – Uncrewed Air Systems Specific S1 sub-category.
[18] Refer to AAP-06 – The North Atlantic Treaty Organization (NATO) Glossary of Terms and Definitions (English and French).
[19] For example (non-exhaustive list): Explosives, radioactive material, flammable liquids, dangerous or volatile chemicals, strong acids, compressed gases, biological agents, poisons.
[20] Refer to RA 1605 – Uncrewed Air Systems Specific S2 sub-category.
[21] Note: UAS operations conducted BVLOS and / or with a MTOW greater than 25 kg pose additional RtL, not only to those directly involved in launch and recovery but also, to Uninvolved Persons and other air users.

Applicability

population density, to be determined on an UAS Categorization Submission case-by-case basis,

(iv) Carry a UK / EU conformity marking of C0 – C6 or be designed to similar standards,

(v) Can be flown at any Altitude,

(vi) Have any maximum operating speed,

(vii) Are registered on the UK MAR by type or tail (as detailed in RA 1161),

(viii) Have a Military Aircraft Registration Number and unit identifier displayed on the main fuselage,

(ix) Operate under the DAE Operating Framework and be assigned to a DAE Operating Category,

(x) Adhere to noise limits, Altitude limits, and requirements for remote identification and geo-awareness Systems and additional requirements if being used during tethered flight,

(xi) Are capable of being armed (constrained to named Operations and DDA only),

(xii) Are capable of carrying / transporting dangerous Cargo,

(xiii) Are capable of Swarming, and

(xiv) Are capable of Dropping of materiel.

c. **Certified Category[22].** Operations within the Certified Category are those to be conducted with UAS that[23]:

(1) Have a MTOW, including Stores, of any weight,

(2) Are required to operate BVLOS of any distance from the RP,

(3) Are capable of being operated safely at a horizontal distance from Uninvolved Persons, and over Areas of high population density, to be determined on an UAS Categorization Submission case-by-case basis,

(4) Can be flown at any Altitude,

(5) Carry a UK / EU conformity marking of C0 – C6 or be designed to similar standards,

(6) Have any maximum operating speed,

(7) Are registered on the UK MAR by tail,

(8) Have a Military Aircraft Registration Number displayed on the main fuselage,

(9) Operate under the DAE Operating Framework and be assigned to a DAE Operating Category,

(10) Adhere to noise limits, Altitude limits, and requirements for remote identification and geo-awareness Systems and additional requirements if being used during tethered flight,

(11) Are capable of being armed,

(12) Are capable of carrying / transporting dangerous Cargo,

(13) Are capable of Swarming,

(14) Are capable of Dropping of materiel,

(15) Can carry people,

[22] Refer to RA 1606 – Uncrewed Air Systems - Certified Category.
[23] These characteristics may be approved in a lower Category where the overall Safety argument supports it.

Applicability

(16) Are capable of autonomous operations, with procedures covering the activities the RP is not directly controlling (including unplanned emergency conditions such as Lost link profiles), and

(17) Are determined by the MAA to have residual RtL that is too great unless the UAS is certified, based on a combination of: MTOW, UA size, VLOS or BVLOS operation, overflight of people, airspace integration and classification, Detect and Avoid, etc.

Regulation 1600(1)

Uncrewed Air System Categorization

1600(1) All UK military registered UAS **shall** be categorized.

Acceptable Means of Compliance 1600(1)

Uncrewed Air System Categorization

6. Prior to operations commencing, UAS **should** be categorized into one or more of the following: Open A1, Open A2, Open A3, Specific S1, Specific S2 sub-categories or Certified Category.

7. Categorization Submissions **should not** be submitted for UAS intended to be operated by CFAOS (BUAS) Defence Contractor Flying Organizations (under a UAS AM) in the Open Category and Specific S1 sub-category (ie in the Civilian Operated (in-Service), Civilian Operated (Development) and / or Special Case Flying DAE Operating Categories)[24].

8. **Responsibility for UAS Categorization**. Once an organization recognizes the need to categorize an UAS it intends to operate, an appropriate person within the organization **should** accept Responsibility for completing the MAA Categorization Submission as follows:

a. **Open Category and Specific S1 sub-category.** The UAS RO **should** be responsible for submitting a Categorization Submission to the MAA[21, 25].

b. **Specific S2 sub-category.** The Type Airworthiness Authority (TAA)[26] (with Aviation Duty Holder (ADH) / Accountable Manager (Military Flying) (AM(MF)) / Senior Responsible Owner (SRO) endorsement[27]) or the AM(MF) only[28] **should** be responsible for submitting the Categorization Submission to the MAA[21].

c. **Certified Category.** The TAA (with ADH / AM(MF) / SRO endorsement), or the AM(MF) only, **should** be responsible for submitting the Categorization Submission to the MAA[21].

9. **Categorization Submission**. Cases for Categorization **should** be based on the operating Risk (which includes, but is not limited to: MTOW, dimensions, and speed of the remote air vehicle; and the nature of the proposed operations, including the range from the RP and the airspace).

10. Open Category and Specific S1 sub-category Categorization Submissions **should** provide detail to allocate a Category, identifying processes and aggravating factors coupled with mitigations that contribute to both the Safe to Operate and Operate Safely arguments. Open Category and Specific S1 sub-category Categorization Submission information, **should** as a minimum include:

a. A statement detailing why the UAS belong in the proposed UAS Category and sub-category (Open A1, Open A2, Open A3, or Specific S1).

[24] Categorization of UAS operated under the CFAOS (BUAS) will be achieved / accomplished via the CFAOS (BUAS) Approval process.
[25] For organizations operating under a CFAOS (BUAS) Approval submission of a Categorization Safety Checklist is not required; this will be achieved / accomplished via the CFAOS (BUAS) Approval process (refer to paragraph 9c).
[26] Where the Air System is not UK MOD-owned, Type Airworthiness (TAw) management regulatory responsibility by either the TAA or Type Airworthiness Manager (TAM) needs to be agreed within the Sponsor's approved model; refer to RA 1162 – Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems. Dependant on the agreed delegation of TAw responsibilities TAM may be read in place of TAA as appropriate throughout this RA.
[27] For UAS intended for embarked operations the Ship Platform Authority and Ship Duty Holder, where known, **should** be consulted and involved in the categorization process.
[28] For UAS in the Special Case Flying operating category; Refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems.

Acceptable Means of Compliance 1600(1)

b. The applicable information as detailed within the Categorization Safety Checklist at RA 1600 Annex B.

11. Specific S2 sub-category and Certified Category Categorization Submissions **should** provide detail of the proposed regulatory governance construct the UA will follow for MAA agreement, including substantiated arguments for any requested derogations from the MRP. Specific S2 sub-category and Certified Category Categorization Submissions **should** as a minimum include:

a. A statement detailing why the UAS belongs in the proposed UAS Category and sub-category (Specific S2 or Certified).

b. A technical description of the UAS[29].

c. A description of the organization's operating intent and environment.

d. The aggravating and / or mitigating factors affecting or likely to affect the proposed UAS Category and sub-category.

e. Key stakeholders' details (eg ADH / AM(MF), TAA, etc).

f. A proposed Safety Target[30, 31].

g. The Type Airworthiness Strategy[32].

h. A statement detailing which MAA RAs are considered not applicable in the context of the Categorization Submission, or where an Alternative AMC approach is required to meet the intent. Each identified RA **should** be accompanied by a justification for the MAA to review.

i. A statement that all Categorization Submission documentation has been reviewed and accepted by the TAA.

j. A statement that all Categorization Submission documentation has been reviewed and accepted by the ADH / AM(MF).

k. Approach to Release To Service (RTS) Recommendations (RTSR) / Military Permit To Fly (MPTF) Recommendation or MPTF (Development).

l. Detail of any proposed kinetic, directed energy weapons or other effectors intended to alter target properties, to include munition type and deployment method[33].

m. Strategy for Approval of any ordnance and how its interaction / integration with the UAS will be safely managed (refer to the Defence Ordnance, Munitions and Explosives Safety Regulator).

n. Planned operating areas when armed and unarmed (for example, designated aviation Danger Areas and / or Ranges)[1, 34].

o. Any derogations (a list of example derogations is detailed in the UAS Manual) being applied for supported by a Safety claim, argument, and evidence; culminating in a coherent and robust Safety Assessment[35].

12. Organizations **should** submit a Categorization Submission to the MAA[36]. Organizations planning on submitting a Categorization Submission **should** contact the MAA at the earliest opportunity to discuss intent and operation.

13. Following receipt of the completed UAS Categorization Submission; the MAA **should** form a Categorization Panel and either issue a LEC[37] or reject the submission. An LEC is likely to be issued close to the first flight.

[29] To include Make and Model if Commercial Off The Shelf, or a broad description if agreed already within the Concept, Assessment, Development, Manufacturing, In-Service, and Disposal cycle for the development of Air Systems.
[30] Refer to RA 1230 – Design Safety Targets.
[31] Refer to the Uncrewed Air Systems Manual - Regulatory Process, Categorization and Compliance.
[32] Refer to RA 5010 – Type Airworthiness Strategy.
[33] Only required for UAS designed or intended to be armed.
[34] Refer to DSA 03.OME Part 3 (Formerly JSP 403 Volume 2) - Defence Code of Practice (DCOP) for Ranges.
[35] Following Letter of Endorsed Categorization (LEC) issue, requests for Alternative Acceptable Means of Compliances, Waivers or Exemptions to the MRP **should** be formally applied for (iaw MAA03) and authorized by the MAA.
[36] Contact via DSA-MAA-MRPEnquiries@mod.gov.uk.
[37] For UAS operated under the CFAOS (BUAS), the CFAOS (BUAS) Approval Certificate together with the referenced Contractor Flying Organization Exposition (BUAS) will satisfy the requirement of the LEC (ie an LEC will not be issued).

Acceptable Means of Compliance 1600(1)

14. Open Category and Specific S1 sub-category UAS LECs **should** remain valid for a maximum of 24 months, provided the conditions specified in the LEC remain extant. Specific S2 sub-category and Certified Category UAS LECs **should** remain valid for the duration of the organization's UAS operations provided the conditions specified in the LEC remain extant. Where an operating organization wishes to expand beyond those conditions, including changes to the equipment, operating intent, or operating environment:

a. The organization[38] **should** resubmit the Categorization Submission and an associated Safety argument to the MAA[21], noting that the updated Category and / or sub-category may be different to that previously endorsed.

b. A new LEC **should** be in place prior to any operation under the new conditions[38].

c. For new organizations and / or use cases for Specific S2 sub-category UAS, the Air System Safety Case (ASSC) (Live) and RTSR / MPTF (In-Service) Recommendation **should** be re-submitted to the MAA[21] for review.

d. If a requirement is identified for an UAS being operated in the Specific S1 sub-category to be operated outside its extant LEC for a specific operational requirement, the use of a SPC **should** be applied.

15. Organizations[39] wishing to add or remove different UAS models to an extant Open Category or Specific S1 sub-category LEC are only required to submit an Appendix 1 to the Categorization Safety Checklist at RA 1600 Annex B. Appendix 1 submissions **should** only be submitted if no changes have been made to the original endorsed Safety Checklist RA 1600 Annex B.

16. For Certified Category UAS, further LEC applications **should not** be submitted following completion of initial Certification activity iaw RA 5810. The full MRP will apply and further LEC submissions provide no additional benefit.

17. Development activity (including Test and Evaluation (T&E), trials, and experimentation) **should** only be approved and undertaken by T&E endorsed organizations and SQEP[40].

18. If UAS do not hold a UK / EU conformity marking, it **should** be designed to similar standards and, the UAS manufacturer needs to be endorsed by the Defence Equipment & Support (DE&S) UAS Delivery Team (DT).

19. **UK MAR Requirements.** UAS **should** be registered on, and when required de-registered from, the UK MAR. For Open Category and Specific S1 sub-category UAS, application for UK MAR registration is implicit in the Categorization Submission[41] or CFAOS (BUAS) application and there is no requirement to submit a separate application. Specific S2 sub-category and Certified Category UAS **should** comply with the RA 1161 requirements.

Guidance Material 1600(1)

Uncrewed Air System Categorization

20. Civil Registered, Military Operated UAS are regulated by RA 1166[42].

21. Defence personnel involved in the Development and procurement of Uncrewed Air Systems must comply with 2025DIN04-053[43].

22. Defence personnel involved in the Development and procurement of Uncrewed Air Systems must ensure the frequency Allocation process and considerations are complete, via the Defence Electromagnetic Authority annex within JSP 453[44], prior to purchasing and using UAS.

[38] Except for organizations operating under a CFAOS (BUAS) Approval (refer to paragraph 9c).
[39] Except for organizations operating under a CFAOS (BUAS) Approval, who **should** follow the procedures as per RA 1031.
[40] Refer to RA 2370 – Test and Evaluation.
[41] The Categorization Submission is in place of the RTS / MPTF, the ASSC, and the Application for Approval in Principle.
[42] Refer to RA 1166 – UK Civil-Registered Aircraft Utilized by the Ministry of Defence.
[43] Refer to 2025DIN04-053 – Defence Uncrewed Systems Design Authority (DUxDA) Development and Procurement of Uncrewed Systems.
[44] Refer to JSP 453 – Digital Policies and Standards for Defence, Chapter 4 – Operations, Annex – Defence Electromagnetic Authority (DEMA) Standard.

Guidance Material 1600(1)

23. Early engagement with the MAA is encouraged to reduce impact on project timelines. Engagement will ideally be during the equipment assessment phase (or earlier if possible) to enable the Categorization Submission to be submitted no later than Full Business Case to ensure that the correct Certification and regulatory regime can be adopted.

24. It is important that an organization wishing to bring an UAS into Service within the DAE fully understands the extent of its proposed usage in so far as is practicable throughout the life of the Air System, in order that an appropriate UAS can be acquired from the outset (future-proofing). Changes to the requirements once In-Service will require re-assessment of the Categorization which may lead to the categorized UAS not being suitable for the revised operating intent and / or conditions.

25. Selection of the correct UAS is dependent on the intended Concept of Use (CONUSE) and Concept of Employment. Organizations can refer to RA 1600 Annex A, Figure 1 to assist in determining appropriate UAS categories and physical attributes from the outset.

26. The procurement of UAS to be operated in the Open Category or Specific S1 sub-category is likely to be undertaken outside of the DE&S Acquisition process, by organizations with minimal UAS experience. DE&S UAS DT, CATALYST DT or DE&S Airworthiness Team (DAT) are able to provide guidance on the procurement of such UAS. Whilst the Strat Com Integration Design Authority, Defence Uncrewed Systems Design Authority can provide Advice on the Acquisition of such Systems.

27. The Categorization Safety Checklist at RA 1600 Annex B provides a list of topics to be considered in the cases for Open Category and Specific S1 sub-category Categorization[45]. However, it is recognized that minimal detail may be available when a Categorization Submission is made during the UAS Concept phase. Nonetheless, it is in the best interests of the submitting organization to include as much detail as is available. This will, in turn, enable the MAA to make the best-informed UAS Category assessment.

28. The MAA recognizes that the full suite of Artefacts and evidence for Specific S2 sub-category and Certified Category UAS may not be available at LEC submission and that ASSC and RTS / MPTF review will be completed prior to commencement of flight.

29. Where UAS will be operated in the maritime environment (ie embarked aviation), the Ship's Platform Authority and Ship Duty Holder are likely to be essential in the provision of Subject Matter Expertise for the Categorization Submission[46]. The UAS categorization[45] needs to be reviewed to ensure the original UAS categorization remains accurate, or requires a re-categorization, with a change in CONUSE / Concept of Operations if used in maritime environment.

30. The MAA may categorize UAS into a different Category than that submitted if deemed appropriate.

31. The MAA will form a UAS Categorization Panel chaired by an Authorizing Officer to review the Categorization Submission. It is expected that the MAA Categorization process, from receipt of the Categorization Submission to issuance of a LEC or provisional Categorization response, will be no longer than 60 working days. Where the MAA has to request further information from the submitting organization to inform the Categorization decision, the response may be delayed.

32. The Specific S1 sub-category represents the greatest RtL that an UAS RO or UAS AM can manage. The RtL is bounded through the LEC or CFAOS (BUAS) Approval respectively. Elevation of Risk beyond this point requires an ADH chain or AM(MF) and entry into Specific S2 sub-category or Certified Category.

33. Any re-Categorization may require additional MRP compliance including Certification, Continuing Airworthiness management, etc. Therefore, organizations may wish to seek initial Categorization in an appropriate Category if they envisage operating intent and / or conditions being expanded later.

[45] For organizations operating under a CFAOS (BUAS) Approval this will be achieved / accomplished via the CFAOS (BUAS) Approval process (refer to paragraph 9c).
[46] Refer to RA 1395(5): Ship Air-Release Uncrewed Air Systems.

Guidance Material 1600(1)

34. UAS operating in the Open and S1 sub-categories do not require a RTS / MPTF. UAS operating in the S2 sub-category and Certified Category require an RTS / MPTF. There may be a requirement to have an MPTF (Development) for T&E activities.

35. **Flying Displays, Display Flying, Role Demonstrations and Flypasts.** Flying Displays, Display Flying, Role Demonstrations and Flypasts will be planned, managed, organized, and delivered iaw RA 2335[47].

36. **First Person View (FPV) UAS Operations.** The Categorization Submission will note the different operating parameters. The use of FPV seriously limits the operators' wider airspace understanding. The use of a spotter will be included in the submission to maintain situational awareness, or an acceptable alternative will be proposed. FPV UAS has been demonstrated as an effective method in asymmetric warfighting. To support effective training FPV UAS may be permitted to conduct CFIT under an SPC if the criteria governing SPCs is met.

Regulation 1600(2)

Remotely Piloted Air System Regulatory Requirements

1600(2) Withdrawn – Incorporated into RA 1600(1).

Acceptable Means of Compliance 1600(2)

Remotely Piloted Air System Regulatory Requirements

37. Withdrawn – Incorporated into RA 1600(1).

Guidance Material 1600(2)

Remotely Piloted Air System Regulatory Requirements

38. Withdrawn – Incorporated into RA 1600(1).

[47] Refer to RA 2335 – Flying Displays, Display Flying, Role Demonstrations and Flypasts.

ANNEX A

Figure 1 – Categorization Schematic (for illustrative purposes only – see RAs for definitive applicability)

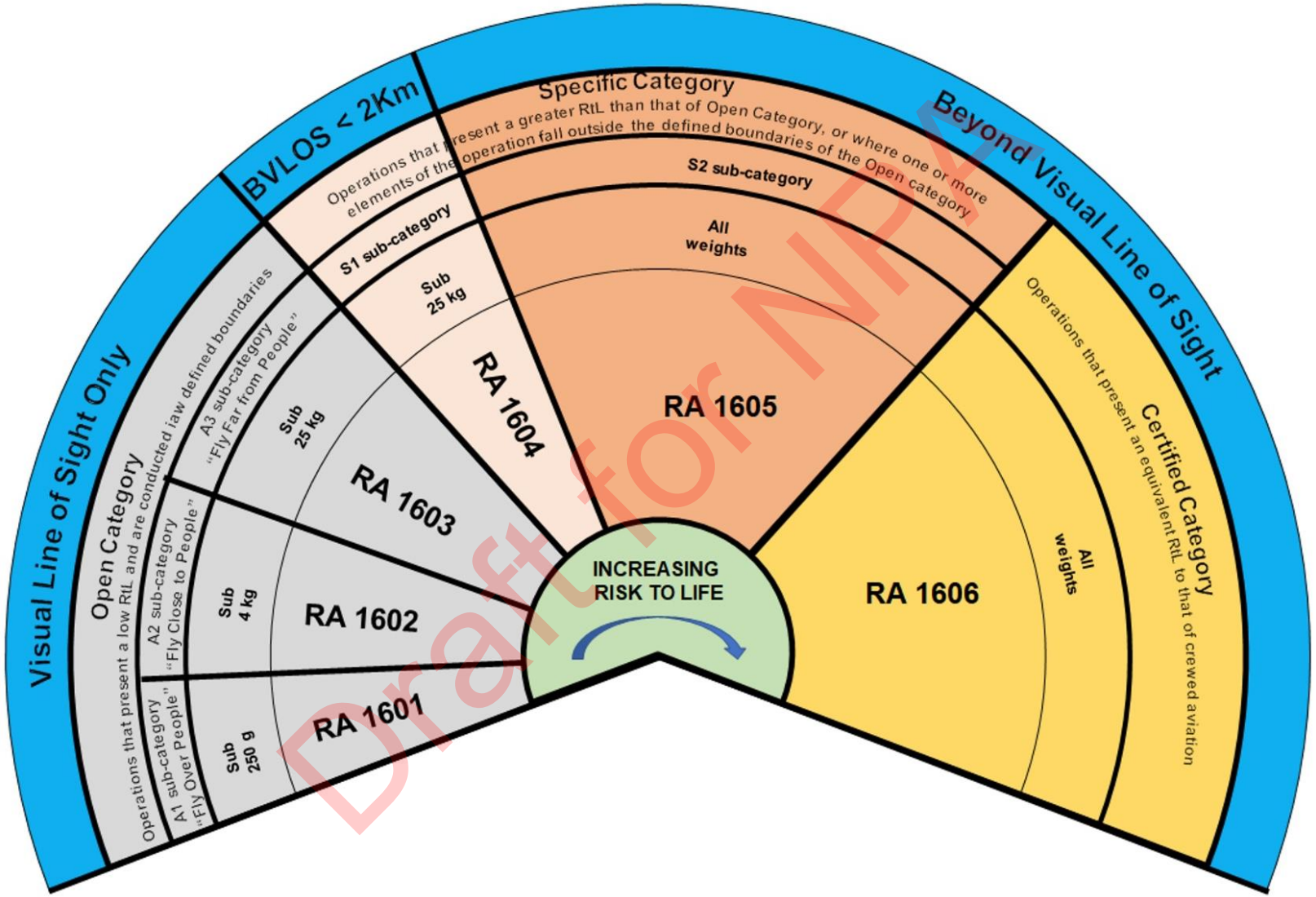

Table 1 – Requirements for operating an Uncrewed Air System

	Open			Specific		Certified[22, 23]
	A1[12]	**A2[14]**	**A3[16]**	**S1[17]**	**S2[20]**	
MTOW (including Stores)	Less than 250 g	Less than 4 kg	Less than 25 kg	Less than 25 kg	Any weight[21]	Any weight[21]
Horizontal distance from RP	VLOS[5, 7]	VLOS	VLOS	BVLOS (under 2,000 m)**Error! Bookmark not defined.**	BVLOS (of any distance)	BVLOS (of any distance)
Horizontal distance from Uninvolved Persons	Any	Minimum 30 m ***OR*** Minimum 5 m if a 'low speed mode'[15] is equipped and selected	Minimum 50 m ***AND*** Not within 50 m of Congested Areas	Any (to be decided (TBD) on a case-by-case basis)	Any (TBD on a case-by-case basis)	Any (TBD on a case-by-case basis)
Operated over Areas of high population density	No	No	No	No	Yes	Yes
Altitude	No greater than 120 m (400 ft)	No greater than 120 m (400 ft)	No greater than 120 m (400 ft)	In line with manufacturers guidelines	Any	Any
UK / EU conformity marking	C0 (or designed to similar standards)	C0 – C2 (or designed to similar standards)	C0 – C4 (or designed to similar standards)	C0 – C4 (or designed to similar standards)	C0 – C6 (or designed to similar standards)	C0 – C6 (or designed to similar standards)
Segregated Airspace only	No	No	No	No	Yes (and within the UK Flight Information Region)	No
Maximum operating speed	19 m/s	19 m/s	19 m/s	19 m/s	Any	Any
UK MAR[8] registration	By type	By type	By type	By type	By type or tail	By tail
Military Aircraft Registration No. (displayed on the main fuselage)	Yes (and unit identifier)	Yes (and unit identifier)	Yes (and unit identifier)	Yes (and unit identifier) or local UAS serial no.	Yes (and unit identifier)	Yes
Operate under DAE Operating Framework	Yes	Yes	Yes	Yes	Yes	Yes

	Open			Specific		Certified[22, 23]
	A1[12]	**A2[14]**	**A3[16]**	**S1[17]**	**S2[20]**	
Assigned a DAE Operating Category[9, 10]	Yes	Yes	Yes	Yes	Yes	Yes
Tethered flight[11]	Yes	Yes	Yes	Yes	Yes	Yes
Armed	No	No	No	Capable of (constrained to named Operations and Designated Danger Areas only and subject to specific restrictions))	Capable of	Capable of
Dangerous Cargo[18, 19] (carry / transport)	No	No	No	Capable of	Capable of	Capable of
Swarming	Capable of	Capable of	Capable of	Capable of	Capable of	Capable of
Dropping of materiel	No	No	No	Capable of	Capable of	Capable of
Carrying people	No	No	No	No	No	Capable of
Autonomous operation	No	No	No	No	No	Capable of
Residual RtL that is too great unless the UAS is certified	No	No	No	No	No	Yes

Table 2 - People / Organizations required for operating an Uncrewed Air System

	Open			Specific		Certified
	A1	**A2**	**A3**	**S1**	**S2**	
Capability Owner	No	Yes (min OF5 or equivalent)	Yes (min OF5 or equivalent)	Yes (min OF5 or equivalent)	No	No
Sponsor	No	No	No	No	Yes	Yes
UAS RO	Yes (min OF2 or equivalent)	Yes (min OF4 or equivalent)	Yes (min OF4 or equivalent)	Yes (min OF4 or equivalent)	No	No
UAS AM	Yes	Yes	Yes	Yes	No	No
SO	No	Yes	Yes	Yes	Yes	Yes
FOPH	No	Yes	Yes	Yes	Yes	Yes
Senior Duty Holder	No	No	No	No	Yes	Yes
Operating Duty Holder	No	No	No	No	Yes	Yes
Delivery Duty Holder	No	No	No	No	Yes	Yes
AM(MF)	No	No	No	No	Yes	Yes
TAA	No	No	No	No	Yes (MTOW < 150 kg = OF5 or equivalent) (MTOW > 150 kg = OF4 or equivalent)	Yes
Continuing Airworthiness Management Organization	No	No	No	No	Yes	Yes
Chief Air Engineer	No	No	No	No	Yes	Yes
SRO	No	No	No	No	Yes	Yes

Table 3 – Paperwork required for operating an Uncrewed Air System

	Open			Specific		Certified
	A1	**A2**	**A3**	**S1**	**S2**	
RA1600 Annex B	Yes	Yes	Yes	Yes	No	No
SPC	Yes	Yes	Yes	Yes	No	No
Manufacturer's User or Op Manual	Yes	Yes	Yes	Yes	No	No
Application for Approval in Principle	No	No	No	No	Yes	Yes
Airworthiness Strategy	No	No	No	No	Yes	Yes
Certificate of Design	No	No	No	No	Yes	Yes
Design Safety Targets	No	No	No	No	Yes	Yes
RTS	No	No	No	No	Yes	Yes
MPTF	No	No	No	No	Yes	Yes
ASSC	No	No	No	No	Yes	Yes
Ageing Air System Audit	No	No	No	No (if Service Life >6 yrs)	No (if Service Life >6 yrs)	Yes
Integrity Mgmt	No	No	No	No	Yes	Yes
Military Airworthiness Review Certificate	No	No	No	No	No	Yes
Design Approved Organization Scheme	No	No	No	No	No	Yes
Maintenance Approved Organization Scheme	No	No	No	No	No	Yes
Software Assurance	No	No	No	No	Yes	Yes
Configuration Management Plan	No	No	No	No	No	Yes

ANNEX B

Categorization Safety Checklist[48]

The Categorization Safety Checklist provides recommended headings and content to be considered for inclusion in the submission for Open Category and Specific S1 sub-category UAS Categorization. It is recognized that some of the content detailed below might not be available at the time the Categorization Submission is prepared. Nonetheless, it is in the best interests of the submitting organization to include as much information as available to inform the MAA Categorization.

1. **Organization**

*{Full details of the organization that is subject to the submission – all areas detailed below ought to be covered as a minimum. **Where examples are given, they are not exhaustive**}*

1.1. Structure of organization and management
{Brief description}

1.2. Key personnel
{As appropriate, eg UAS RO, UAS AM. Aviation qualifications and experience to be included if applicable}

1.3. Responsibility and duties of the RP
{Expected duties of the RP}

1.4. Responsibility and duties of support personnel in the operation of the UAS
{eg RPs might use an assistant to help with the operation of the UA. Give a brief description of this person's responsibilities and duties}

1.5. Flight team composition
{Composition of the flight team according to nature of operation, complexity, type of UA, etc}

1.6. Operation of multiple types of UAS
{Detail any limitations to the numbers and types of UAS that a RP might operate if appropriate}

1.7. Qualification requirements
{Details of the qualifications, experience or training necessary for the RP or support crew according to the types of UAS and roles employed by the RP}

1.8. Crew health
{A statement and any guidance to ensure that the crew are appropriately fit before conducting any operations}

1.9. Logs and records
{Requirements for logs and records of flights for the UAS and by the RP}

1.10. Details of the RP training programme
{Training and checking requirements for RPs and support crew as determined by the UAS RO / UAS AM to cover initial, refresher and conversion syllabi. Include any independent assessment of RP Competency and currency requirements}

1.11. Occurrence prevention, Occurrence reporting, and Flight Safety programme
{Include any reporting requirements and interface with Safety Management System}

1.12. Change Management (Modifications)
{Detail how the organization manages changes to the original design}

1.13. Other documents
{*As considered necessary – copies of any documents ought to be attached}*

2. **Operations**

*{Details of the operating environment and procedures subject to the submission – all areas detailed below ought to be covered as a minimum. **Where examples are given, they are not exhaustive**}*

2.1. Operating Intent / Types of operation
{Detail nature of operation (eg VLOS / BVLOS, flexible / dynamic tasking, day / Night, weather, operating behaviour, etc)}

[48] For organizations operating under a CFAOS (BUAS) Approval submission of a Categorization Safety Checklist is not required; this will be achieved / accomplished via the CFAOS (BUAS) Approval process (refer to paragraph 10a).

2.2. Operating Areas
{Full detail of expected areas of geographic operations including operating areas (eg Congested Areas, open countryside, roads, etc). Consideration of overflown population density, suitability of launch and recovery locations and required services}

2.3. Operating limitations, conditions, and related factors
{Minimum and maximum operating conditions and limitations; reference any applicable limitations document if available and / or applicable; maximum kinetic energy; MTOW; maximum speed; population density}

2.4. Aggravating and / or mitigating factors table affecting or likely to affect the UAS Category or Categories.

2.5. Supervision of UAS operations
{A description of any system to supervise the operations of the RP}

2.6. Operating site planning and assessment
{Airspace operating environment considerations and procedures (eg controlled or restricted airspace, local avoids and Hazards, electromagnetic environment, etc)}

2.7. Communications
{Awareness and links with other users and Aircrew / RPs}

2.8. Weather
{Consideration of UAS environmental limitations}

2.9. On site procedures

a. Site Survey *{Methods of surveying operating area, identifying Hazards and any recorded Risk Assessment}*

b. Selection of operating area and alternate *{Methods of identifying and selecting operating area and how the alternate would be kept clear}*

c. Crew briefing *{Procedures to brief crew (eg task, responsibilities, duties, emergencies, etc)}*

d. Cordon Procedure *{Adherence of separation criteria}*

e. Communications *{Procedures to maintain contact with crew and adjacent air operations if appropriate}*

f. Weather Checks *{Met brief provision, limitations and operating considerations}*

g. Refuelling *{To include changing / charging of batteries}*

h. Loading of equipment *{Detail procedures taken to ensure security of loaded equipment}*

2.10. Assembly and functional checks
{Checks conducted on completion of assembly of the system}

2.11. Pre-flight checks
{Checks conducted immediately prior to flight}

2.12. Flight Procedures
{Start, take-off, in-flight, landing, shutdown}

2.13. Post-flight or between flight checks
{Detail the checks or inspections conducted both after flight and between flights, do appropriate Maintenance documents exist to return the Air System to a Serviceable state?}

2.14. Emergency Procedures
{Include Lost link, flyaway, airspace encroachment, fire (UA and Command Unit), etc. Preventive measures ought to also be detailed, along with a list of alarms and associated instructions, etc. Preventive measures ought to also be detailed}

2.15. Surveillance of Operations
{Surveillance methods for Verification of UAS geospatial positioning}

ANNEX B – APPENDIX 1

Categorization Safety Checklist

Technical descriptions and details of the UAS that is subject to the submission – all areas detailed below **should** to be covered as a minimum. **Where examples are given, they are not exhaustive.**

3. **Systems**

3.1. Details of Design Organization and manufacturer / production organization
{The designer and manufacturer might be the same company, include details of any Approvals that such organizations hold}

3.2. Recognized standards, to which the equipment has been designed, built and tested
{Details of any standards that might or might not be aviation related and might add to the Safety argument. Where known this ought to include test and evaluation evidence}

3.3. The designed flight envelope
{Full description of the flight envelope including: MTOW, flight duration, communications range, max Height and speeds to maintain safe flight and glide profile (where appropriate). Include effects on flight envelope of differing Payloads}

3.4. UA dimensions
{Full dimensions to be given including mass with and without fuel; with and without any Payloads, etc}

3.5. UA energy
{maximum speed (m/s), maximum kinetic energy (joules)}

3.6. Design features
{Detail the design features of the system, materials used, type of Structure, etc}

3.7. Software Assurance
{Detail the software version, and the steps taken to assure the software}

3.8. Construction
{Detail the build nature of each Air System and how structural strength is assured}

3.9. Electrical power and distribution
*{Detail the electrical power and distribution, include battery type and number, generator specifications, equipment ratings, load shedding where appropriate, etc. This section **should** also consider any storage considerations related to batteries (eg on board ship)}*

3.10. Propulsion System
{Detail the Propulsion System(s) used, power output, type of propeller / rotor, etc}

3.11. Fuel System
{Detail the fuel system arrangement, type of fuel, fuel delivery, etc}

3.12. Flight Management System and Flight Control System
{Detail of how the UA is controlled, control linkages, control rigging, include any automatic stabilisation, etc}

3.13. Navigation and Guidance
{Detail the system used for navigation and guidance, include any automatic piloting, telemetry, etc}

3.14. Other avionics
{Detail any other avionics fitted to the system}

3.15. Launch and Recovery
{Describe the launch and recovery Systems and detail any landing aids fitted to the system}

3.16. Payloads
{For each UA give a technical description of the Payload expected to be installed or carried}

3.17. Emergency recovery or Safety systems
{Detail any Systems fitted to the UA or Command Unit that contribute to safe flight or handling including their modes of operation (eg ballistic parachutes, propeller guards, independent flight termination, flight recovery system, etc)}

3.18. Modifications to the system
{Detail any Modifications that have been made post initial design}

3.19. Command Unit
{Where a laptop / tablet is utilized give details of the type of operating system and other technical specifications. Give detail of process for firmware and software updates, and what flight parameters, commands, and data are recorded}

3.20. Command and Control Link (C2)
{Describe the C2 infrastructure, how its integrity is monitored and the reaction of the system to degraded signal strengths}

3.21. C2 Loss Prevention
{What design characteristics or procedures are in place to prevent and mitigate loss of data link whether due to Radio Frequency (RF) interference, equipment malfunctions (UA / Command Unit) or atmospheric conditions}

3.22. Lost Link
{Describe the UA lost data link logic, profile and management for all phases of flight}

3.23. Whole system Single Points Of Failure (SPOF)
{For each element of the whole system, identify where SPOF might exist or alternatively where redundancy exists (eg motors, propellers, etc)}

3.24. Lifing, Maintenance schedules and inspections as applicable
{Describe the general Maintenance philosophy for the UA}

3.25. Repair and servicing as applicable
{Where Repairs to the system are necessary, describe the Repair and servicing philosophy}

3.26. Known failure modes
{For the whole system identify known failure modes and detail preventive strategy}

3.27. Failsafe features
{Detail any failsafe features in the design of the system}

3.28. Operating limitations and conditions (for Categorization phase only) as applicable
{List the minimum and maximum operating conditions to highlight any mitigating or aggravating factors}

3.29. Transportation requirements
{Detail how the system is transported between sites. Include all carry cases, transport description, etc}

3.30. UK / EU Conformity Standard / Similar Standards
{Detail the conformity standard of the UAS}

ANNEX B – APPENDIX 2

Specific Purpose Clearance Checklist

Units who currently hold, or are in the process of applying for an Open / Specific S1 LEC, or have an existing SPC may submit this appendix to seek additional operating clearances. All areas below **should** be covered as a minimum. Where examples are given, they are not exhaustive.

4. **Special Purpose Clearance Submission.**

4.1 Details of the Operating Intent / additional clearance(s).
{Please relate the request to the specific area of the Regulation that you require derogations from, including the MOD benefit in doing so (eg Operating Range)}

4.2 Operating Area(s).
{Detail the areas for operation including details of permissions where applicable}

a. Airspace considerations.
*{Detail the airspace to be used, this **should** include details of how you will segregate airspace, provision of suitable surveillance of the operating area, communication methods between the Remote Pilot (RP) and the surveillance provider, a method for location of the Uncrewed Aircraft, methods of providing conspicuity to other air users (eg Automatic Dependent Surveillance Broadcast (ADS-B)), Methods for maintaining safe separation from other Air Systems.*

b. Ground considerations.
*{Details **should** be provided of any populated areas within the operating area(s) as well as suitable mitigation to prevent Risk to both involved and Uninvolved Persons. State any additional considerations towards Risk for involved persons}*

4.3 Operating limitations, conditions, and related factors.
{Minimum and maximum operating conditions and limitations; reference any applicable limitations document if available and / or applicable}

4.4 Systems you require to utilize for the additional permission(s) and their suitability.
*{Any system not on the LEC will also require Appendix 1 to Annex B to be submitted. For UAS already on the LEC their suitability **should** be derived from the Original Equipment Manufacturer}*

4.5 Timeline for the clearance(s) to be applicable[49].
*{For enduring timelines additional justification **should** be provided demonstrating an internal review and assessment process for the enduring validity of the clearance}*

4.6 Independent Assurance Organization – Identify the Competent organization(s) that are responsible for your aviation Assurance.
{This is requested to provide a supporting Assurance Structure for all units wishing to apply for additional permissions.}

4.7 Training.
{Detail additional Senior Operator / Flight Operations Post Holder / Remote Pilot Instructor / RP training considerations detailed by the UAS Responsible Officer / UAS Accountable Manager that have been or will be undertaken to enable the activity covered in 4.1. If the individual is deemed suitably qualified and experienced, please evidence this}

4.8 Additional mitigations.
{Highlight additional aggravating factors and their mitigations in support of the activity highlighted in 4.1. Demonstrate how the residual Risks remain As Low As Reasonably Practicable and Tolerable}

[49] Maximum of 24 months in line with the current validity of the LEC.

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►This RA has been substantially re-written; for clarity no change marks are presented – please read RA in its entirety◄

RA 1601 – Uncrewed Air Systems Open A1 sub-category (Fly 'Over' People)

Rationale

There is a requirement to determine and apply an appropriate regulatory framework to Uncrewed Air Systems (UAS) to ensure they are safe to operate and are being operated safely. Failure to appropriately address UAS specific Hazards could lead to an increased Risk to Life (RtL). This regulatory framework will be proportionate to the UAS Category and its physical attributes[1]. This Regulatory Article (RA) defines the regulatory framework for those UAS operating in the Open A1 sub-category. The regulatory framework is Structured to specifically permit appropriate operating freedom to 'non-traditional' aviation units (who are the prevalent users of UAS in the Open A1 sub-category).

Contents

Applicability

1. Operations within the Open A1 sub-category are those to be conducted with UAS that:

a. Are operated within Visual Line Of Sight (VLOS)[2, 3], of the Remote Pilot (RP), maintaining an ability to determine the Uncrewed Aircraft's (UA) orientation[4].

b. Are not flown at a Height greater than 120 m (400 ft) from the closest point of the surface of the earth,

c. Have a maximum operating speed of 19 m/s,

d. Are registered on the UK Military Aircraft Register by type[5],

e. Have a Military Aircraft Registration Number and unit identifier displayed on the main fuselage,

f. Operate under the Defence Air Environment (DAE) Operating Framework and be assigned to a DAE Operating Category[6, 7],

g. Adhere to noise limits, Height limits, and requirements for remote identification and geo-awareness Systems and additional requirements if being used during tethered flight[8].

h. Have a Maximum Take Off Weight, including Stores, of less than 250 g,

i. Are capable of being operated safely over Uninvolved Persons but not flight over Areas of high population density, and

[1] For definitions of UAS Categories, UAS sub-categories, and UAS physical attributes (eg Sub 250 g, Sub 4 kg, etc), refer to RA 1600 – Uncrewed Air Systems Categorization.
[2] UAS Categorized as Open A1 may be operated Beyond VLOS when operating within buildings, vessels, and Structures.
[3] Refer to MAA02: Military Aviation Authority Master Glossary.
[4] In 'follow-me' mode (the UA will automatically follow the Command Unit), the UA may be flown up to a maximum distance of 50 m from the RP, even if this means that the UA is no longer VLOS.
[5] Refer to RA 1161 – Military Registration of Air Systems Operating within the Defence Air Environment.
[6] Refer to RA 1160 – The Defence Air Environment Operating Framework.
[7] The DAE Operating Category relates to the ownership and Safety governance of the Air System, whereas the UAS Category relates to the regulatory framework which is set by the MAA according to the Risk posed by the UAS and the manner in which it is operated.
[8] A Tethered UA is defined as: "A UA that remains securely attached (tethered) via a physical link to a person, the ground, or an object at all times while it is flying. The tether normally takes the form of a flexible wire or a cable and may also include the power supply to the Aircraft as well." (Source derived from: UK CAA CAP 722).

Applicability

j. Carry a UK / EU conformity marking of C0[9] or be designed to similar standards.

2. Unless detailed further in the Letter of Endorsed Categorization (LEC) or Contractor Flying Approved Organization Scheme (Basic Uncrewed Air System) (CFAOS (BUAS))[10] Approval, only those MAA Regulatory Publication (MRP) documents detailed in this RA, RA 1600, and applicable Regulatory Instructions and Regulatory Notices, are applicable to UAS operating in Open A1 sub-category.

3. CFAOS (BUAS) organizations must also comply with RA 1031[10].

4. UAS publications are likely to include:

a. The RA 1600 Annex B Categorization Safety Checklist for the UAS (MOD organizations).

b. The Contractor Flying Organization Exposition (Basic UAS) (CFOE (BUAS)) (non-MOD organizations).

c. Manufacturer's User or Operating Manual.

d. Specific Orders or Instructions from the UAS Responsible Officers (RO).

e. The CFAOS (BUAS) Operations Manual from the UAS Accountable Manager (AM).

5. Local orders such as those published by a Head of Establishment or Head of Unit.

6. This Regulation does not cover Test and Evaluation (T&E) activity. UAS applicants wishing to operate in a manner or Configuration not supported by RA 1600 and RA 1601 (ie T&E) will be subject to RA 2370[11] and other MRP requirements. Discussion with the MAA[12] will be required in order to confirm the applicable Regulations.

7. The endorsed RA 1600 Annex B Categorization Safety Checklist (MOD organizations) or the CFAOS (BUAS) Approval (non-MOD organizations) will satisfy the requirement for an Air System Safety Case (ASSC) (An ASSC provides an evidenced and coherent argument that a system is safe to operate and is being operated safely).

Regulation 1601(1)

Responsibilities

1601(1) Organizations operating UAS in the Open A1 sub-category **shall** ensure that the requirements of RA 1600 and RA 1601 are complied with.

Acceptable Means of Compliance 1601(1)

Responsibilities

8. MOD organizations responsible for operating UAS in the Open A1 sub-category **should** ensure operations are in the MOD Interest[6].

9. MOD organizations responsible for operating UAS **should** either:

a. Nominate a UAS RO (minimum OF2 or equivalent); or

b. Ensure that operations are carried out by an organization appropriately approved in accordance with (iaw) the Contractor Flying Approved Organization Scheme (Basic Uncrewed Air System) (CFAOS (BUAS)).

10. Non-MOD organizations operating military registered UAS in the Open A1 sub-category **should**:

a. Be appropriately approved iaw the CFAOS (BUAS).

b. Nominate a UAS AM iaw RA 1031.

[9] Refer to Commission Delegated Regulation (EU) 2020/1058 and UK Regulation (EU) 2019/945.
[10] Refer to RA 1031 – Contractor Flying Approved Organization Scheme (Basic Uncrewed Air Systems).
[11] Refer to RA 2370 – Test and Evaluation.
[12] Contact via DSA-MAA-MRPEnquiries@mod.gov.uk.

Acceptable Means of Compliance 1601(1)

11. Where UAS operations are being considered at a location with:

a. No other MOD aviation (ie as the only activity), the UAS organizations **should** consult the MAA to discuss the regulatory requirements with regards to the provision of a Safe Operating Environment.

b. Other MOD aviation, the UAS organizations **should** comply with RA 1010 and RA 1026[13].

Guidance Material 1601(1)

Responsibilities

12. Organizations operating under a CFAOS (BUAS) Approval are not permitted to operate under a UAS Special Purpose Clearance (SPC).

13. Not all potential RPs will have experience flying UAS; to gain sufficient experience, it is expected that organizations will provide appropriate training packages.

Regulation 1601(2)

Uncrewed Air System Responsible Officers and Uncrewed Air System Accountable Managers Responsibilities

1601(2) UAS in the Open A1 sub-category **shall** be operated under the authority of a UAS RO / UAS AM and supported by appropriate persons.

Acceptable Means of Compliance 1601(2)

Uncrewed Air System Responsible Officers and Uncrewed Air System Accountable Managers Responsibilities

14. UAS ROs / UAS AMs **should** ensure prior to operation of UAS in the Open A1 sub-category:

a. MOD organizations hold an appropriate MAA UAS LEC.

b. Non-MOD organizations hold an appropriate CFAOS (BUAS) Approval.

15. UAS ROs and UAS AMs **should**:

a. Ensure UAS Occurrences are reported, investigated, and recorded[14, 15].

Note:

Landings, or terminal phase manoeuvres, consistent with planned operations, incurring damage or destruction, will not normally be considered as Air Safety reportable Occurrences unless the UAS RO / RPAS AM determines that there may be a wider Safety interest. Notwithstanding this derogation, any significant deviation from the intended UAS behaviour, response, or UA flight path **should** be reported.

b. Ensure there are local procedures detailing the process for the transfer of Air Safety arrangements and general conditions of transfer (explicitly handover requirements, and requiring both the dispatching and receiving organizations to be responsible for compliance with the directed conditions of transfer).

c. Detail in Orders the operating limitations and regulatory requirements applicable to operations in their Area of Responsibility (AoR).

d. Ensure UAS operating in the Open A1 sub-category are not:

(1) Operated over open-air assemblies of uninvolved people where in the event of UA failure, collision with uninvolved people is probable.

[13] Refer to RA 1010 - Head of Establishment Aviation Responsibilities and Aviation Duty Holder / Accountable Manager (Military Flying) Establishment Responsibilities and RA 1026 – Aerodrome Operator and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities.
[14] Refer to RA 1410 – Occurrence Reporting and Management.
[15] Refer to the Manual of Aircraft Post Crash and Incident Management, Chapter 1: The Aircraft Post Crash Incident Management (APCIM) Task, paragraph 8: Applicability.

Acceptable Means of Compliance 1601(2)

(2) Operated higher than 120 m (400 ft) above the surface (land or sea).

(3) Operated in a restricted area[16] (eg flight restriction zone of a protected Aerodrome[17]) unless in receipt of appropriate permission from the Airspace Controlling Authority.

e. Ensure suitable Lost link procedures are implemented to maintain safe flight (or safe termination), safe separation from other Aircraft, and to enable Aircraft recovery (if possible). In the event of an emergency in the Command Unit that requires abandonment, or the loss of return feed data link that precludes safe control, Lost link procedures **should** be followed (if applicable).

f. Produce orders or instructions detailing actions in the event that verbal communication becomes impossible (eg intercom failure or suspected incapacitation).

g. Be responsible and accountable for the operation of UAS within their AoR.

h. Ensure that Risks to RPs, operating personnel, other organization / MOD personnel, and the general public through the operation of UAS are acceptable and cease operations if not.

i. Hold appropriate Terms of Reference (ToR).

j. Follow the intent of RA 2335[18], for UAS operators working up for, or conducting, UAS flying at a Flying Display, Display Flying, Display Parachuting, Role Demonstration or Flypast.

k. Ensure that RPs are appropriately trained (iaw JSP 822[19]) and Competent.

l. Ensure that RPs are medically fit to operate the categorized UAS[20].

m. Specify a Suitably Qualified and Experienced Person to award UAS flying privileges.

16. UAS ROs **should**:

a. Ensure that UAS are operated and maintained in line with the RA 1600 Annex B Categorization Safety Checklist, Manufacturer's User or Operating Manual, RA 1601(4), and LEC.

b. Attend an MAA UAS RO briefing day[21] prior to commencement of UAS operations if required to do so by the MAA[22].

c. Ensure the requirement for a UAS SPC **should** be identified when a UAS operating in the Open A1 sub-category requires to be operated outside the bounds of its LEC, for a specific named Operation (and associated training).

d. Ensure UAS SPCs (which are authorized by the MAA and issued to the UAS RO / UAS AM):

(1) Are invoked when the RtL associated with its usage is greater than the Risk identified within the Open A1 LEC[23],

(2) Are for a defined activity and time bounded,

[16] Defined as: "Airspace of defined dimensions over the land areas or territorial waters of a State within which the flight of aircraft is restricted in accordance with certain specified conditions". Sourced from: UK CAA CAP 722D.
[17] Details of UK Aerodromes that fall into the 'protected' category can be found within the NATS eAIS Package. For Government Aerodromes see the UK Mil AIP.
[18] Refer to RA 2335 – Flying Displays, Display Flying, Display Parachuting, Role Demonstrations and Flypasts.
[19] Refer to JSP 822: Defence Direction and Guidance for Training and Education.
[20] The baseline minimum Joint Medical Employment Standard for Military RPs of Open A1 Category UAS is A-4. There is no baseline minimum Medical Employment Standard for Civilian RPs of Open A1 Category UAS. There are no Initial or Periodic Medical Examination requirements (both Military and Civilian) to operate UAS in the Open Category and S1 sub-category. However, these baseline requirements may be further restricted via the LEC and / or the endorsed RA 1600 Annex B Categorization Safety Checklist.
[21] Refer to RA 1440 – Air Safety Training.
[22] This requirement will be reviewed by the MAA during the categorization process; and any requirement / dispensation articulated in the LEC.
[23] Refer to RA 1600 – Uncrewed Air Systems Categorization.

Acceptable Means of Compliance 1601(2)

(3) Have review periodicities not exceeding 12 months (unless specifically detailed within the MAA approved UAS SPC).

e. Supplement the original Categorization Submission, when applying for a UAS SPC, for the UAS with relevant details including a record of their judgement that the benefits of operating the UAS with a UAS SPC outweigh any increased RtL and submit it to the MAA iaw the RA 1600 Categorization submission process[23].

f. Ensure that UAS operations within another sovereign nation's territorial Airspace are conducted either:

(1) For operations conducted with the nation's consent, iaw relevant local, national, and international legal requirements, and satisfy diplomatic clearance requirements[24], or

(2) For operations conducted without the nation's consent (ie conducted lawfully under the Law of Armed Conflict, UN Security Council resolution or other legal mandate), outside Controlled Airspace[3]; unless the Controlled Airspace has been created or assigned for the purposes of the Operation.

17. UAS AMs **should**:

a. Ensure that UAS are operated and maintained in line with the CFAOS (BUAS) Operations Manual, Manufacturer's User or Operating Manual, RA 1601(4) and either the LEC (MOD organizations) or CFAOS (BUAS) Approval (non-MOD organizations).

b. Attend an MAA UAS AM briefing day[25] prior to commencement of UAS operations if required to do so by the MAA[26].

c. Ensure that UAS operations within another sovereign nation's territorial Airspace and with that nation's consent are conducted iaw relevant local, national, and international legal requirements and satisfy diplomatic clearance requirements[27].

Guidance Material 1601(2)

Uncrewed Air System Responsible Officers and Uncrewed Air System Accountable Managers Responsibilities

18. UAS ROs and UAS AMs may waive the requirement for an Occurrence Safety Investigation (OSI) down to a Local Occurrence Investigation (LOI) for an Accident where the loss is consistent with the intended concept of operating use of the UAS. Ultimately it is for the UAS RO / UAS AM to decide that there is nothing to be gained from a formal OSI. As a minimum the subsequent LOI still requires codification by the Incident Manager prior to being closed.

19. UAS ROs / UAS AMs will not conduct UAS training while undertaking formal tasking.

20. When operating with reduced visibility (eg at Night, sandstorm, etc) over or in proximity to uninvolved people, the UAS RO / UAS AM will need to ensure the ability to operate safely (eg Night Vision Devices, etc).

21. The requirement to Authorize operations in the Open A1 sub-category is not mandated; however, UAS ROs / UAS AMs may elect to implement an Authorization process to formalize and account for any tasking conducted[28].

22. Segregated Airspace is used as a mitigation for mid-air collision. UAS ROs / UAS AMs will detail the procedures to be followed to ensure that the UAS remains

[24] Refer to RA 2305 – Supervision of Flying.
[25] Refer to RA 1440 – Air Safety Training.
[26] This requirement will be reviewed by the MAA during the CFAOS (BUAS) Approval process; and any requirement / dispensation articulated in the Approval.
[27] Refer to AP1158 – Approval and Diplomatic Clearance for Flights to Destinations Abroad.
[28] If UAS ROs choose to implement the Authorization process, they are advised to use the principles of RA 2306 – Authorization of Flights.

Guidance Material 1601(2)

within the Segregated Airspace (this might include restrictions on approaching the boundaries of allocated airspace or use of independent flight termination Systems).

23. A UAS RO may be required to employ Open A1 sub-category UAS outside limitations contained within their LEC, when there is an unplanned or unexpected operational imperative to do so[29]. When such situations arise, the UAS RO (or their representative when the UAS RO is not deployed) needs to inform the operational commander[30] of the increased Risk associated with operating outside of the LEC. Although the urgency of a given situation may preclude formal process, a UAS RO needs to demonstrate in retrospect a Risk analysis suitable to the context. There needs to be an assessment of the impact on third-parties (for example crewed aviation or civilian population in the area)[31]. The operational commander needs to agree to accept the Risk and record the decision to do so. Operations outside of the LEC have to cease immediately once the operational requirement has been met.

24. UAS SPCs are situation dependant and bound by time (length of Approval period) and airspace in which the operation will be conducted. They are not an alternative to long-term compliance.

25. A UAS SPC is comparable to a Specific S2 sub-category and Certified Category Operational Emergency Clearance (OEC) and will only be used for flight under the following circumstances:

a. In conditions of actual or potential hostile enemy action, or;

b. In other conditions of operational imperative, to include training for actual or planned operations, when enabled by the UAS RO.

26. The UAS RO will ensure that a clear explanation of the Risks involved, and related operating instructions to support a UAS SPC are incorporated into the Categorization Submission.

27. The UAS RO will ensure that the authority required for a UAS SPC to be enabled, guidance on the Risk involved, and related operating instructions are specified in appropriate orders.

28. UAS ROs and UAS AMs must ensure compliance with UK Civil Aviation Authority Safety Notice Number: SN-2025/004[32].

Regulation 1601(3)

Remote Pilots Responsibilities

1601(3) RPs operating UAS in the Open A1 sub-category **shall** be qualified and Competent.

Acceptable Means of Compliance 1601(3)

Remote Pilots Responsibilities

29. RPs **should**:

a. Maintain a level of Competence appropriate to the tasks being conducted.

b. Be familiar with all publications, processes and orders required to safely operate the UAS.

c. Be fully conversant with either the RA 1600 Annex B Categorization Safety Checklist (MOD organizations) or CFAOS (BUAS) Operations Manual (non-MOD organizations), and local Orders.

d. Be responsible for the safe operation of the UAS and not present undue Risk or Hazard to other airspace users or any person, vessel, vehicle or Structure.

[29] Where Safety, Environmental Protection or operational imperatives demand, the Regulations may be deviated from provided that a convincing case can be offered in retrospect.
[30] The empowered individual at the time with tactical awareness of the current operation or task.
[31] Bounded by the Laws of Armed Conflict, superior command direction, Rules of Engagement and RtL to own forces.
[32] Refer to SN-2025/004 – UAS Software and Firmware Updates.

Acceptable Means of Compliance 1601(3)

e. Notify the Low Flying Booking Cell (LFBC)[33, 34], when flying in the UK below 2,000 ft Above Ground Level[35, 36].

f. Adhere to:

(1) Orders promulgated by the UAS RO or UAS AM.

(2) The UAS Manufacturer's User or Operating Manual.

(3) The operating parameters and procedures detailed in:

(a) The RA 1600 Annex B Categorization Safety Checklist and LEC (MOD organizations) or;

(b) The CFAOS (BUAS) Operations Manual and CFOE (BUAS) (non-MOD organizations).

g. Conduct Flight Planning and Risk Assessments iaw the most restrictive of Orders and adhere to the following operating limitations:

(1) Operated within VLOS of the RP

(2) Operated whilst maintaining an ability to determine the UA's orientation[37].

(3) Any conditions stipulated in the LEC (MOD organizations) or CFAOS (BUAS) Approval (non-MOD organizations).

h. Ensure that when it is necessary to hand over control of a UAS, a formal instruction to take control and to accept control is made. In some cases (eg during instruction) it is necessary to take control in the first instance - this **should** also be formally declared and accepted. Formal statements of 'I have control' and 'You have control' **should** be made and acknowledged as appropriate.

30. When a planned UA sortie necessitates the handing over of control of the UA, the associated RPs **should** plan the timings and other requirements in advance of the sortie.

Guidance Material 1601(3)

Remote Pilots Responsibilities

31. RPs will be appropriately trained and Competent. RPs are required to understand and be fully conversant with all appropriate publications and RA 1601(3), to ensure that their UAS are safe to operate and are being operated safely.

Regulation 1601(4)

Safe Operation and Limitations

1601(4) Withdrawn – Incorporated into RA 1601(1, 2 and 3).

Acceptable Means of Compliance 1601(4)

Safe Operation and Limitations

32. Withdrawn – Incorporated into RA 1601(1, 2 and 3).

[33] Contacted via email to SWK-MAMCLFCOORD@mod.gov.uk or by telephone 01489 887 000 or 0800 515 544. The LFBC will be able to offer information on potential pre-planned conflicting activity in the area.
[34] Refer to RA 2330 – Low Flying; and UK Military Low Flying Handbook (available via the milFLIP website (https://www.aidu.mod.uk/Milflip/)).
[35] Be aware that Rotary Wing Aircraft may operate below 100 ft; and military Fixed Wing Aircraft may operate between 100 ft and 250 ft.
[36] Whilst not legally mandated, it is highly recommended as best practice, to record UAS operations via: the Centralised Aviation Data Service flight planning service (provided by BAE Systems Information) to help reduce the Risk of collision with other Aircraft and physical Hazards (eg overhead wires), Notice to Aviation (NOTAMs), Notices to Mariners (NOTMARs), Drone Assist, etc.
[37] In 'follow-me' mode (the UA will automatically follow the Command Unit), the UA may be flown up to a maximum distance of 50 m from the RP, even if this means that the UA is no longer VLOS.

Guidance Material 1601(4)

Safe Operation and Limitations

33. Withdrawn – Incorporated into RA 1601(1, 2 and 3).

►This RA has been substantially re-written; for clarity no change marks are presented – please read RA in its entirety◄

RA 1602 – Uncrewed Air Systems Open A2 sub-category (Fly 'Close To' People)

Rationale

There is a requirement to determine and apply an appropriate regulatory framework to Uncrewed Air Systems (UAS) to ensure they are safe to operate and are being operated safely. Failure to appropriately address UAS specific Hazards could lead to an increased Risk to Life (RtL). This regulatory framework will be proportionate to the UAS Category and its physical attributes[1]. This Regulatory Article (RA) defines the regulatory framework for those UAS operating in the Open A2 sub-category. The regulatory framework is structured to specifically permit appropriate operating freedom to 'non-traditional' aviation units (who are the prevalent users of UAS in the Open A2 sub-category).

Contents

Applicability

1. Operations within the Open A2 sub-category are those to be conducted with UAS that:

   a. Are operated within Visual Line Of Sight (VLOS)[2, 3], of the Remote Pilot (RP), maintaining an ability to determine the Uncrewed Aircraft's (UA) orientation[4],

   b. Are not flown at a Height greater than 120 m (400 ft) from the closest point of the surface of the earth,

   c. Have a maximum operating speed of 19 m/s,

   d. Are registered on the UK Military Aircraft Register by type[5],

   e. Have a Military Aircraft Registration Number and unit identifier displayed on the main fuselage,

   f. Operate under the Defence Air Environment (DAE) Operating Framework and be assigned to a DAE Operating Category[6, 7],

   g. Adhere to noise limits, Height limits, and requirements for remote identification and geo-awareness Systems and additional requirements if being used during tethered flight[8],

   h. Have a Maximum Take Off Weight, including Stores, of less than 4 kg,

[1] For definitions of UAS Categories, UAS sub-categories, and UAS physical attributes (eg Sub 250 g, Sub 4 kg, etc), refer to RA 1600 – Uncrewed Air Systems Categorization.
[2] UAS Categorized as Open A1 may be operated Beyond VLOS when operating within buildings, vessels, and Structures.
[3] Refer to MAA02: Military Aviation Authority Master Glossary.
[4] In 'follow-me' mode (the UA will automatically follow the Command Unit), the UA may be flown up to a maximum distance of 50 m from the RP, even if this means that the UA is no longer VLOS.
[5] Refer to RA 1161 – Military Registration of Air Systems Operating within the Defence Air Environment.
[6] Refer to RA 1160 – The Defence Air Environment Operating Framework.
[7] The DAE Operating Category relates to the ownership and Safety governance of the Air System, whereas the UAS Category relates to the regulatory framework which is set by the MAA according to the Risk posed by the UAS and the manner in which it is operated.
[8] A tethered UA is defined as: "A UA that remains securely attached (tethered) via a physical link to a person, the ground or an object at all times while it is flying. The tether normally takes the form of a flexible wire or a cable and may also include the power supply to the Aircraft as well." (Source derived from: UK CAA Civil Air Publication (CAP) 722).

Applicability

i. Are equipped with a low-speed mode which limits the maximum speed to 3 m/s when selected by the RP if the UAS has an UK / EU conformity marking of C2, or is designed to similar standards,

j. Are capable of being operated safely to a minimum horizontal distance of 30 m from Uninvolved Persons, or down to 5 m horizontally if a 'low speed mode'[9] is fitted and selected, but not flight over Areas of high population density, and

k. Carry a UK / EU conformity marking of C0 – C2[10] or be designed to similar standards.

2. Unless detailed further in the Letter of Endorsed Categorization (LEC) or Contractor Flying Approved Organization Scheme (Basic Uncrewed Air System) (CFAOS (BUAS))[11] Approval, only those MAA Regulatory Publication (MRP) documents detailed in this RA, including relevant Regulatory Instructions and Regulatory Notices, are applicable to UAS operating in Open A2 sub-category.

3. CFAOS (BUAS) organizations must also comply with RA 1031[11].

4. Where the requirement for a UAS to be operated from one of His Majesty's / MOD Ship exists, the combination must be Authorized through an appropriate Ship Air-Release process[12].

5. UAS publications are likely to include:

a. The RA 1600 Annex B Categorization Safety Checklist for the UAS (MOD organizations).

b. The Contractor Flying Organization Exposition (Basic UAS) (CFOE (BUAS)) (non-MOD organizations).

c. Manufacturer's User or Operating Manual.

d. Specific Orders or Instructions from the UAS Responsible Officer (RO).

e. The CFAOS (BUAS) Operations Manual from the UAS Accountable Manager (AM).

f. Local orders such as those published by a Head of Establishment or Head of Unit.

6. This Regulation does not cover Test and Evaluation (T&E) activity. UAS applicants wishing to operate in a manner or Configuration not supported by RA 1600 and RA 1602 (ie T&E) will be subject to RA 2370[13] and other MRP requirements. Discussion with the MAA[14] will be required in order to confirm the applicable Regulations.

7. The endorsed RA 1600 Annex B Categorization Safety Checklist (MOD organizations) or the CFAOS (BUAS) Approval (non-MOD organizations) will satisfy the requirement for an Air System Safety Case (ASSC) (An ASSC provides an evidenced and coherent argument that a system is safe to operate and is being operated safely).

Regulation 1602(1)

Responsibilities

1602(1) Organizations operating UAS in the Open A2 sub-category **shall** ensure that the requirements of RA 1600 and RA 1602 are complied with.

[9] "low-speed mode" limits the maximum speed to 3 m/s when selected by the RP.
[10] Refer to Commission Delegated Regulation (EU) 2020/1058 and UK Regulation (EU) 2019/945.
[11] Refer to RA 1031 – Contractor Flying Approved Organization Scheme (Basic Uncrewed Air Systems).
[12] Refer to RA 1395 – Authorization to Permit Embarked Aviation in His Majesty's / MOD Ships.
[13] Refer to RA 2370 – Test and Evaluation.
[14] Contact via DSA-MAA-MRPEnquiries@mod.gov.uk.

Acceptable Means of Compliance 1602(1)

Responsibilities

8. MOD organizations responsible for operating UAS **should** either:

   a. Nominate:

      (1) A Capability Owner (minimum OF5 or equivalent), and

      (2) A UAS RO (minimum OF4 or equivalent).

   b. Or ensure that operations are carried out by an organization appropriately approved in accordance with (iaw) the CFAOS (BUAS).

9. Non-MOD organizations operating military registered UAS in the Open A2 sub-category **should**:

   a. Be appropriately approved iaw the CFAOS (BUAS).

   b. Nominate a UAS AM iaw RA 1031.

10. Where UAS operations are being considered at a location with:

   a. No other MOD aviation (ie as the only activity), the UAS organizations **should** consult the MAA to discuss the regulatory requirements with regards to the provision of a Safe Operating Environment.

   b. Other MOD aviation, the UAS organizations **should** comply with RA 1010 and RA 1026[15].

Guidance Material 1602(1)

Responsibilities

11. Organizations operating under a CFAOS (BUAS) Approval are not permitted to operate under a UAS Special Purpose Clearance (SPC).

Regulation 1602(2)

Uncrewed Air System Responsible Officers and Uncrewed Air System Accountable Managers Responsibilities

1602(2) UAS in the Open A2 sub-category **shall** be operated under the authority of a UAS RO / UAS AM and supported by appropriate persons.

Acceptable Means of Compliance 1602(2)

Uncrewed Air System Responsible Officers and Uncrewed Air System Accountable Managers Responsibilities

12. Prior to operation of UAS in the Open A2 sub-category:

   a. MOD organizations **should** hold an appropriate MAA UAS LEC.

   b. Non-MOD organizations **should** hold an appropriate CFAOS (BUAS) Approval.

13. UAS ROs and UAS AMs **should**:

   a. Ensure UAS Occurrences are reported, investigated, and recorded[16, 17].

      Note:

      Landings, or terminal phase manoeuvres, consistent with planned operations incurring damage or destruction, will not normally be considered as Air Safety reportable Occurrences unless the UAS RO / UAS AM determine that there may be a wider Safety interest. Notwithstanding this derogation, any significant deviation from the intended UAS behaviour, response, or UA flight path **should** be reported.

[15] Refer to RA 1010 - Head of Establishment Aviation Responsibilities and Aviation Duty Holder / Accountable Manager (Military Flying) Establishment Responsibilities and RA 1026 – Aerodrome Operator and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities.
[16] Refer to RA 1410 – Occurrence Reporting and Management.
[17] Refer to the Manual of Aircraft Post Crash and Incident Management, Chapter 1: The Aircraft Post Crash and Incident Management (APCIM) Task, paragraph 8; Applicability.

Acceptable Means of Compliance 1602(2)

b. Ensure there are local procedures detailing the process for the transfer of Air Safety arrangements and general conditions of transfer (explicitly handover requirements, and requiring both the dispatching and receiving organizations to be responsible for compliance with the directed conditions of transfer).

c. Detail in Orders:

(1) The operating limitations and regulatory requirements applicable to operations in their Area of Responsibility (AoR).

(2) The types of RP Instructor (RPI) within their AoR.

(3) The experience level and course(s) required by personnel in their AoR to become an RPI.

(4) The required currencies and competencies required for an RPI qualification to remain valid.

d. Ensure UAS operating in the Open A2 sub-category are not:

(1) Intentionally operated over Uninvolved Persons[3].

(2) Operated higher than 120 m (400 ft) above the surface (land or sea).

(3) Operated over or within a horizontal distance of 50 m of any Congested Area[40].

(4) Operated in a restricted area[18] (eg flight restriction zone of a protected Aerodrome[19]) unless in receipt of appropriate permission from the Airspace Controlling Authority.

e. Ensure suitable Lost link procedures are implemented to maintain safe flight (or safe termination), safe separation from other Aircraft, and to enable Aircraft recovery (if possible). In the event of an emergency in the Command Unit that requires abandonment, or the loss of Return feed data link that precludes safe control, Lost link procedures **should** be followed (if applicable).

f. Produce orders or instructions detailing actions in the event that verbal communication becomes impossible (eg intercom failure or suspected incapacitation).

g. Ensure that Risks to RPs, operating personnel, other organization / MOD personnel, and the general public through the operation of UAS are As Low As Reasonably Practicable and Tolerable, and cease operations if not.

h. Hold appropriate Terms of Reference (ToR).

i. Follow the intent of RA 2335[20], for UAS operators working up for, or conducting, UAS flying at a Flying Display, Display Flying, Display Parachuting, Role Demonstration, or Flypast.

j. Ensure that, where training provided does not include flying under MRP rules, the UAS SO / UAS Flight Operations Post Holder (FOPH) receives additional local training on MRP UAS flying either by an RPI or an appropriately Suitably Qualified and Experienced Person (SQEP) individual[21] as approved by the UAS RO / UAS AM.

14. UAS ROs **should**:

a. Be responsible and Accountable for the operation of UAS within their AoR and answerable to a designated Capability Owner within the chain of command.

[18] Defined as: “Airspace of defined dimensions over the land areas or territorial waters of a State within which the flight of aircraft is restricted in accordance with certain specified conditions”. Sourced from: UK CAA CAP 722D.
[19] Details of UK Aerodromes that fall into the ‘protected’ category can be found within the NATS eAIS Package. For Government Aerodromes see the UK Mil AIP.
[20] Refer to RA 2335 – Flying Displays, Display Flying, Display Parachuting, Role Demonstrations and Flypasts.
[21] Attendance at either the UAS RO Briefing Day or UAS AM Briefing day will satisfy this requirement.

Acceptable Means of Compliance 1602(2)

b. Ensure that the UAS is operated and maintained in line with the RA 1600 Annex B Categorization Safety Checklist, Manufacturer's User or Operating Manual, RA 1602(4), and LEC.

c. Attend an MAA UAS RO briefing day[22] prior to commencement of UAS operations if required to do so by the MAA[23].

d. Nominate a Senior Operator (SO).

e. Issue a Letter of Delegation when delegating supervisory day-to-day operating responsibilities to a SQEP (minimum OF3) within their AoR. The delegated individual **should** attend the MAA UAS RO briefing day prior to commencement of RPAS operations if required to do so by the MAA. Whilst day to day supervisory Responsibility may be delegated by the UAS RO, accountability will remain with the UAS RO.

f. Ensure the requirement for a UAS SPC **should** be identified when a UAS operating in the Open A2 sub-category requires to be operated outside the bounds of its LEC, for a specific named Operation (and associated training).

g. Ensure UAS SPCs (which are authorized by the MAA and issued to the UAS RO / UAS AM):

(1) Are invoked when the RtL associated with its usage is greater than the Risk identified within the Open A2 LEC[24],

(2) Are for a defined activity and time bounded,

(3) Have review periodicities not exceeding 12 months (unless specifically detailed within the MAA approved UAS SPC).

h. Supplement the original Categorization Submission, when applying for a UAS SPC, for the UAS with relevant details including a record of their judgement that the benefits of operating the UAS with a UAS SPC outweigh any increased RtL and submit it to the MAA iaw the RA 1600 Categorization submission process[24].

i. Ensure that UAS operations within another sovereign nation's territorial Airspace are conducted either:

(1) For operations conducted with the nation's consent, iaw relevant local, national, and international legal requirements, and satisfy diplomatic clearance requirements[25], or

(2) For operations conducted without the nation's consent (ie conducted lawfully under the Law of Armed Conflict, UN Security Council resolution or other legal mandate), outside Controlled Airspace[40]; unless the Controlled Airspace has been created or assigned for the purposes of the Operation.

15. UAS AMs **should**:

a. Be responsible and Accountable for the operation of UAS within their AoR.

b. Ensure that UAS are operated and maintained in line with the CFAOS (BUAS) Operations Manual, Manufacturer's User or Operating Manual, RA 1602(4), and either the LEC (MOD organizations) or CFAOS (BUAS) Approval (non-MOD organizations).

c. Attend an MAA UAS AM briefing day[23] prior to commencement of UAS operations if required to do so by the MAA[26].

[22] Refer to RA 1440 – Air Safety Training.
[23] This requirement will be reviewed by the MAA during the Categorization process; and any requirement / dispensation articulated in the LEC.
[24] Refer to RA 1600 – Uncrewed Air Systems Categorization.
[25] Refer to RA 2305 – Supervision of Flying.
[26] This requirement will be reviewed by the MAA during the CFAOS (BUAS) Approval process; and any requirement / dispensation articulated via the Approval.

Acceptable Means of Compliance 1602(2)

d. Nominate a FOPH in order to provide the UAS AM with appropriate specialist support[27].

e. Ensure that UAS operations within another sovereign nation's territorial Airspace and with that nation's consent are conducted iaw relevant local, national, and international legal requirements and satisfy diplomatic clearance requirements[28].

Guidance Material 1602(2)

Uncrewed Air System Responsible Officers and Uncrewed Air System Accountable Managers Responsibilities

16. UAS ROs / UAS AMs may waive the requirement for an Occurrence Safety Investigation (OSI) down to a Local Occurrence Investigation (LOI) for an Accident where the loss is consistent with the intended concept of operating use of the UAS. Ultimately it is for the UAS RO / UAS AM to decide that there is nothing to be gained from a formal OSI. As a minimum the subsequent LOI still requires codification by the Incident Manager prior to being closed.

17. It is anticipated that, in many instances, UAS will be operated by organizations with either limited or no prior aviation experience. In such cases, the Unit Commander or civilian middle manager (who may have limited or no previous aviation experience) may be appointed as the UAS RO / UAS AM. Therefore, the MAA will provide appropriate UAS RO / UAS AMs briefings[22] to those assessed as requiring further training in order that they may be considered Competent to manage the RtL associated with operation of the UAS.

18. UAS ROs / UAS AMs will not conduct UAS training while undertaking formal tasking.

19. When operating with reduced visibility (eg at Night, sandstorm, etc) over or in proximity to uninvolved people, the UAS RO / UAS AM will need to ensure the ability to operate safely (eg Night Vision Devices, etc).

20. The requirement to Authorize operations in the Open A2 sub-category is not mandated; however, UAS ROs / UAS AMs may elect to implement an Authorization process to formalize and account for any tasking conducted[29].

21. Segregated Airspace is used as a mitigation for mid-air collision. UAS ROs / UAS AMs will detail the procedures to be followed to ensure that the UAS remains within the Segregated Airspace (this might include restrictions on approaching the boundaries of allocated airspace or use of independent flight termination Systems).

22. A UAS RO may be required to employ Open A2 sub-category UAS outside limitations contained within their LEC, when there is an unplanned or unexpected operational imperative to do so[30]. When such situations arise, the UAS RO (or their representative when the UAS RO is not deployed) needs to inform the operational commander[31] of the increased Risk associated with operating outside of the LEC. Although the urgency of a given situation may preclude formal process, a UAS RO needs to demonstrate in retrospect a Risk analysis suitable to the context. There needs to be an assessment of the impact on third-parties (for example crewed aviation or civilian population in the area)[32]. The operational commander needs to agree to accept the Risk and record the decision to do so. Operations outside of the LEC have to cease immediately once the operational requirement has been met.

23. UAS SPCs are situation dependant and bound by time (length of Approval period) and airspace in which the operation will be conducted. They are not an alternative to long-term compliance.

[27] To include Test and Evaluation (T&E) when in the organization's CFAOS (BUAS) Approval and the UAS AM is not appropriately T&E qualified.
[28] Refer to AP1158 – Approval and Diplomatic Clearance for Flights to Destinations Abroad.
[29] If UAS ROs choose to implement the Authorization process, they are advised to use the principles of RA 2306 – Authorization of Flights.
[30] Where Safety, Environmental Protection or operational imperatives demand, the Regulations may be deviated from provided that a convincing case can be offered in retrospect.
[31] The empowered individual at the time with tactical awareness of the current operation or task.
[32] Bounded by the Laws of Armed Conflict, superior command direction, Rules of Engagement and RtL to own forces.

Guidance Material 1602(2)

24. A UAS SPC is comparable to a Specific S2 sub-category and Certified Category Operational Emergency Clearance (OEC) and will only be used for flight under the following circumstances:

a. In conditions of actual or potential hostile enemy action, or;

b. In other conditions of operational imperative, to include training for actual or planned operations, when enabled by the UAS RO.

25. The UAS RO will ensure that a clear explanation of the Risks involved, and related operating instructions to support a UAS SPC are incorporated into the Categorization Submission.

26. The UAS RO will ensure that the authority required for a UAS SPC to be enabled, guidance on the Risk involved, and related operating instructions are specified in appropriate orders.

27. UAS ROs and UAS AMs must ensure compliance with UK Civil Aviation Authority Safety Notice Number: SN-2025/004[33].

Regulation 1602(3)

Uncrewed Air System Senior Operators and Uncrewed Air System Flight Operations Post Holders Responsibilities

1602(3) Operations of UAS in the Open A2 sub-category **shall** be supported by UAS SOs / UAS FOPHs.

Acceptable Means of Compliance 1602(3)

Uncrewed Air System Senior Operators and Uncrewed Air System Flight Operations Post Holders Responsibilities

28. UAS SOs and UAS FOPHs **should**:

a. Support and be answerable to the respective UAS RO / UAS AM.

b. Have completed an approved UAS training package provided by a Defence Systems Approach to Training (DSAT) compliant UAS course, or an equivalent UK Civil Aviation Authority (CAA) approved Recognized Assessment Entity (RAE)[34] that includes a flying assessment.

c. Ensure that all RPs within their AoR have successfully completed a flying assessment under the supervision of the UAS SO / UAS FOPH, and document accordingly.

d. Ensure that RPs are medically fit to operate the categorized UAS[35].

e. Ensure any RPI complies with RA 1602(6).

f. Assure themselves that a UAS operating training package and flying assessment of the RPs is conducted.

g. Specify SQEP individuals (eg RPIs) to award UAS flying privileges.

Guidance Material 1602(3)

Uncrewed Air System Senior Operators and Uncrewed Air System Flight Operations Post Holders Responsibilities

29. Training provided by a CAA approved RAE that includes a flying assessment or an equivalent DSAT compliant UAS course has been assessed as appropriate by the MAA to provide suitable training and assessment for UAS SOs and UAS FOPHs.

30. The UAS SO / UAS FOPH may also hold a dual role as an RPI.

31. UAS SOs / UAS FOPHs will ensure that all RPs receive Conversion To Type (CTT) training from an RPI.

[33] Refer to SN-2025/004 – UAS Software and Firmware Updates.
[34] The list of CAA approved RAEs is found in the Unmanned Aircraft section of the CAA website.
[35] The baseline minimum Joint Medical Employment Standard for Military RPs of Open A2 Category UAS is A-4. There is no baseline minimum Medical Employment Standard for Civilian RPs of Open A2 Category UAS. There are no Initial or Periodic Medical Examination requirements (both Military and Civilian) to operate UAS in the Open Category and S1 sub-category. However, these baseline requirements may be further restricted via the LEC and / or the endorsed RA 1600 Annex B Categorization Safety Checklist.

Regulation 1602(4)

Remote Pilots Responsibilities

1602(4) RPs operating UAS in the Open A2 sub-category **shall** be qualified and Competent.

Acceptable Means of Compliance 1602(4)

Remote Pilots Responsibilities

32. RPs **should**:

a. Conduct a UAS operating training package and flying assessment under the supervision of the UAS SO / UAS FOPH.

b. Maintain a level of Competence appropriate to the tasks being conducted.

c. Maintain an Auditable record of UAS training and flying activity.

d. Be familiar with all publications and processes required to safely operate the UAS.

e. Be fully conversant with either the RA 1600 Annex B Categorization Safety Checklist (MOD organizations) or CFAOS (BUAS) Operations Manual (non-MOD organizations), and local orders.

f. Maintain a log of the inspections and Maintenance carried out on their UAS.

g. Be responsible for the safe operation of the UAS and not present undue Risk or Hazard to other airspace users or any person, vessel, vehicle or Structure.

h. Notify the Low Flying Booking Cell (LFBC)[36, 37], when flying in the UK below 2,000 ft Above Ground Level[38, 39].

i. Adhere to:

(1) Orders promulgated by the UAS RO / UAS AM.

(2) The UAS Manufacturer's User or Operating Manual.

(3) The operating parameters and procedures detailed in:

(a) The RA 1600 Annex B Categorization Safety Checklist and LEC (MOD organizations) or;

(b) The CFAOS (BUAS) Operations Manual and CFOE (BUAS) (non-MOD organizations).

j. Conduct Flight Planning and Risk Assessments iaw the most restrictive of Orders and adhere to the following operating limitations:

(1) Operated within VLOS[40] of the RP[41].

(2) Operated with a minimum safe horizontal distance of 30 m from any person, vessel, vehicle or Structure not under the control of the RP[42].

(3) Any conditions stipulated in the LEC (MOD organizations) or CFAOS (BUAS) Approval (non-MOD organizations).

k. Ensure that when it is necessary to hand over control of a UAS, a formal instruction to take control and to accept control **should** be made. In some cases

[36] Contacted via email to SWK-MAMCLFCOORD@mod.gov.uk or by telephone 01489 887 000 or 0800 515 544. The LFBC will be able to offer information on potential pre-planned conflicting activity in the area.
[37] Refer to RA 2330 – Low Flying; and UK Military Low Flying Handbook (available via the milFLIP website (https://www.aidu.mod.uk/Milflip/)).
[38] Be aware that Rotary Wing Aircraft may operate below 100 ft; and military Fixed Wing Aircraft may operate between 100 ft and 250 ft.
[39] Whilst not legally mandated, it is highly recommended as best practice, to record UAS operations via: the Centralised Aviation Data Service flight planning service (provided by BAE Systems Information) to help reduce the Risk of collision with other Aircraft and physical Hazards (eg overhead wires), Notice to Aviation (NOTAMs), Notices to Mariners (NOTMARs), Drone Assist, etc.
[40] Refer to MAA02: Military Aviation Authority Master Glossary.
[41] In 'follow-me' mode (the UA will automatically follow the Command Unit), the UA may be flown up to a maximum distance of 50 m from the RP, even if this means that the UA is no longer VLOS.
[42] Or down to 5 m horizontally if its 'low speed mode' is fitted and selected by the RP.

Acceptable Means of Compliance 1602(4)

(eg during instruction) it is necessary to take control in the first instance - this **should** also be formally declared and accepted. Formal statements of 'I have control' and 'You have control' **should** be made and acknowledged as appropriate.

33. When a planned UA sortie necessitates the handing over of control of the UA, the associated RPs **should** plan the timings and other requirements in advance of the sortie.

Guidance Material 1602(4)

Remote Pilots Responsibilities

34. RPs will be appropriately trained and Competent. RPs are required to understand and be fully conversant with all appropriate publications and RA 1602(4), to ensure that their UAS are safe to operate and are being operated safely.

Regulation 1602(5)

Remote Pilot Instructors Responsibilities

1602(5) RPIs **shall** be trained and Competent.

Acceptable Means of Compliance 1602(5)

Remote Pilot Instructors Responsibilities

35. RPIs are required to possess skills that enable the effective transfer of knowledge to their students, and **should** be trained to achieve the following baseline Competences:

a. Plan, prepare and deliver appropriately Structured theoretical and practical teaching events.

b. Manage trainees, students and instructional resources.

c. Deliver specialist instruction to incorporate a range of differing learning styles.

d. Integrate Human Factors training[22] into all serials.

e. Confirm / check learning has taken place, using appropriate practical techniques on the ground and in the air.

f. Monitor and review trainee or student progress across the full range of RP training events.

g. Produce comprehensive written reports on individual training outcomes.

36. RPIs **should**:

a. Have qualified as a UAS operator following successful completion of a DSAT compliant course or a National Qualified Entity / RAE civilian course that includes a flying assessment.

b. If operating under a UAS RO:

(1) Be qualified as a Defence Trainer[43].

(2) Achieve Practitioner Level prior to awarding qualification / Competency for a RP to fly UAS in this sub-category.

c. If operating under a UAS AM:

(1) Hold an appropriate trainer qualification, approved as an equivalent to a Defence Trainer by the UAS AM responsible for the UAS they will operate.

(2) Achieve suitable level of training Competence, approved as an equivalent to Practitioner level of the Defence Trainer, by the UAS AM prior to awarding qualification / Competency for a RP to fly UAS in this sub-category.

d. Undertake an instructional Competence check on an annual basis. This check **should** be conducted by a Defence Training Supervisor[43] who meets the

[43] Refer to JSP 822 – Defence Direction and Guidance for Training and Education.

Acceptable Means of Compliance 1602(5)

criteria to be an Independent Assessor[40] and who is qualified on the same or a similar RPAS type. It **should** include the following baseline Competencies:

(1) Ability to impart skill and knowledge, utilizing effective analysis and debriefing.

(2) Proficiency in flying or airborne operating skills, and knowledge of the Air System on which tested.

(3) Standardization of current training practice.

(4) Knowledge of subjects allied to flying / Air System operation.

(5) Review a sample of comprehensive written reports on individual training outcomes.

Guidance Material 1602(5)

Remote Pilot Instructors Responsibilities

37. Nil.

Regulation 1602(6)

Remote Pilot Instructors

1602(6) Withdrawn – Incorporated into RA 1602(1, 2, 3, 4 and 5).

Acceptable Means of Compliance 1602(6)

Remote Pilot Instructors

38. Withdrawn – Incorporated into RA 1602(1, 2, 3, 4 and 5).

Guidance Material 1602(6)

Remote Pilot Instructors

39. Withdrawn – Incorporated into RA 1602(1, 2, 3, 4 and 5).

►This RA has been substantially re-written; for clarity no change marks are presented – please read RA in its entirety◄

RA 1603 – Uncrewed Air Systems Open A3 sub-category (Fly 'Far From' People)

Rationale

There is a requirement to determine and apply an appropriate regulatory framework to Uncrewed Air Systems (UAS) to ensure they are safe to operate and are being operated safely. Failure to appropriately address UAS specific Hazards could lead to an increased Risk to Life (RtL). This regulatory framework will be proportionate to the UAS Category and its physical attributes[1]. This Regulatory Article (RA) defines the regulatory framework for those UAS operating in the Open A3 sub-category. The regulatory framework is Structured to specifically permit appropriate operating freedom to 'non-traditional' aviation units (who are the prevalent users of UAS in the Open A3 sub-category).

Contents

Applicability

1. Operations within the Open A3 sub-category are those to be conducted with UAS that:

   a. Are operated within Visual Line Of Sight (VLOS)[2, 3], of the Remote Pilot (RP), maintaining an ability to determine the Uncrewed Aircraft's (UA) orientation[4],

   b. Are not flown at a Height greater than 120 m (400 ft) from the closest point of the surface of the earth,

   c. Have a maximum operating speed of 19 m/s,

   d. Are registered on the UK Military Aircraft Register by type[5],

   e. Have a Military Aircraft Registration Number and unit identifier displayed on the main fuselage,

   f. Operate under the Defence Air Environment (DAE) Operating Framework and be assigned to a DAE Operating Category[6, 7],

   g. Adhere to noise limits, Height limits, and requirements for remote identification and geo-awareness Systems and additional requirements if being used during tethered flight[8],

[1] For definitions of UAS categories, UAS sub-categories, and UAS physical attributes (eg Sub 250 g, Sub 4 kg, etc), refer to RA 1600 – Uncrewed Air Systems Categorization.
[2] UAS Categorized as Open A1 may be operated Beyond VLOS when operating within buildings, vessels, and Structures.
[3] Refer to MAA02: Military Aviation Authority Master Glossary.
[4] In 'follow-me' mode (the UA will automatically follow the Command Unit), the UA may be flown up to a maximum distance of 50 m from the RP, even if this means that the UA is no longer VLOS.
[5] Refer to RA 1161 – Military Registration of Air Systems Operating within the Defence Air Environment.
[6] Refer to RA 1160 – The Defence Air Environment Operating Framework.
[7] The DAE Operating Category relates to the ownership and Safety governance of the Air System, whereas the UAS Category relates to the regulatory framework which is set by the MAA according to the Risk posed by the UAS and the manner in which it is operated.
[8] A Tethered UA is defined as: "A UA that remains securely attached (tethered) via a physical link to a person, the ground, or an object at all times while it is flying. The tether normally takes the form of a flexible wire or a cable and may also include the power supply to the Aircraft as well." (Source derived from: UK CAA Civil Air Publication (CAP) 722).

Applicability

h. Have a Maximum Take Off Weight, including Stores, of less than 25 kg,

i. Are capable of being operated safely to a minimum horizontal distance of 50 m from Uninvolved Persons and not within 50 m of Congested Areas, but not flight over Areas of high population density, and

j. Carry a UK / EU conformity marking of C0 – C4[9] or be designed to similar standards.

2. Unless detailed further in the Letter of Endorsed Categorization (LEC) or Contractor Flying Approved Organization Scheme (Basic Uncrewed Air System) (CFAOS (BUAS))[10] Approval, only those MAA Regulatory Publication (MRP) documents detailed in this RA, including relevant Regulatory Instructions and Regulatory Notices, are applicable to UAS operating in Open A3 sub-category.

3. CFAOS (BUAS) organizations must also comply with RA 1031[10].

4. Where the requirement for a UAS to be operated from one of His Majesty's / MOD Ship exists, the combination must be Authorized through an appropriate Ship Air-Release process[11].

5. UAS publications are likely to include:

a. The RA 1600 Annex B Categorization Safety Checklist for the UAS (MOD organizations).

b. The Contractor Flying Organization Exposition (Basic UAS) (CFOE (BUAS)) (non-MOD organizations).

c. Manufacturer's User or Operating Manual.

d. Specific Orders or Instructions from the UAS Responsible Officer (RO).

e. The CFAOS (BUAS) Operations Manual from the UAS Accountable Manager (AM).

f. Local orders such as those published by a Head of Establishment or Head of Unit.

6. This Regulation does not cover Test and Evaluation (T&E) activity. UAS applicants wishing to operate in a manner or Configuration not supported by RA 1600 and RA 1603 (ie T&E) will be subject to RA 2370[12] and other MRP requirements. Discussion with the MAA[13] will be required in order to confirm the applicable Regulations.

7. The endorsed RA 1600 Annex B Categorization Safety Checklist (MOD organizations) or the CFAOS (BUAS) Approval (non-MOD organizations) will satisfy the requirement for an Air System Safety Case (ASSC) (An ASSC provides an evidenced and coherent argument that a system is safe to operate and is being operated safely).

Regulation 1603(1)

Responsibilities

1603(1) Organizations operating UAS in the Open A3 sub-category **shall** ensure that the requirements of RA 1600 and RA 1603 are complied with.

Acceptable Means of Compliance 1603(1)

Responsibilities

8. MOD organizations responsible for operating UAS **should** either:

a. Nominate:

(1) A Capability Owner (minimum OF5 or equivalent), and

(2) A UAS RO (minimum OF4 or equivalent).

[9] Refer to Commission Delegated Regulation (EU) 2020/1058 and UK Regulation (EU) 2019/945.
[10] Refer to RA 1031 – Contractor Flying Approved Organization Scheme (Basic Uncrewed Air Systems).
[11] Refer to RA 1395 – Authorization to Permit Embarked Aviation in His Majesty's / MOD Ships.
[12] Refer to RA 2370 – Test and Evaluation.
[13] Contact via DSA-MAA-MRPEnquiries@mod.gov.uk.

Acceptable Means of Compliance 1603(1)

b. Or ensure that operations are carried out by an organization appropriately approved in accordance with (iaw) the CFAOS (BUAS).

9. Non-MOD organizations operating military registered UAS in the Open A3 sub-category **should**:

a. Be appropriately approved iaw the CFAOS (BUAS).

b. Nominate a UAS AM iaw RA 1031.

10. Where UAS operations are being considered at a location with:

a. No other MOD aviation (ie as the only activity), the UAS organizations **should** consult the MAA to discuss the regulatory requirements with regards to the provision of a Safe Operating Environment.

b. Other MOD aviation, the UAS organizations **should** comply with RA 1010 and RA 1026[14].

Guidance Material 1603(1)

Responsibilities

11. Organizations operating under a CFAOS (BUAS) Approval are not permitted to operate under a UAS Special Purpose Clearance (SPC).

Regulation 1603(2)

Uncrewed Air System Responsible Officers and Uncrewed Air System Accountable Managers Responsibilities

1603(2) UAS in the Open A3 sub-category **shall** be operated under the authority of a UAS RO / UAS AM and supported by appropriate persons.

Acceptable Means of Compliance 1603(2)

Uncrewed Air System Responsible Officers and Uncrewed Air System Accountable Managers Responsibilities

12. UAS ROs / UAS AMs **should** ensure prior to operation of UAS in the Open A3 sub-category:

a. MOD organizations hold an appropriate MAA UAS LEC.

b. Non-MOD organizations hold an appropriate CFAOS (BUAS) Approval.

13. UAS ROs and UAS AMs **should**:

a. Ensure UAS Occurrences are reported, investigated, and recorded[15, 16].

Note:

Landings, or terminal phase manoeuvres, consistent with planned operations incurring damage or destruction, will not normally be considered as Air Safety reportable Occurrences unless the UAS RO / UAS AM determine that there may be a wider Safety interest. Notwithstanding this derogation, any significant deviation from the intended UAS behaviour, response, or UA flight path **should** be reported.

b. Ensure there are local procedures detailing the process for the transfer of Air Safety arrangements and general conditions of transfer (explicitly handover requirements, and requiring both the dispatching and receiving organizations to be responsible for compliance with the directed conditions of transfer).

c. Detail in Orders:

[14] Refer to RA 1010 - Head of Establishment Aviation Responsibilities and Aviation Duty Holder / Accountable Manager (Military Flying) Establishment Responsibilities and RA 1026 – Aerodrome Operator and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities.
[15] Refer to RA 1410 – Occurrence Reporting and Management.
[16] Refer to the Manual of Aircraft Post Crash and Incident Management, Chapter 1: The Aircraft Post Crash and Incident Management (APCIM) Task, paragraph 8: Applicability.

Acceptable Means of Compliance 1603(2)

(1) The operating limitations and regulatory requirements applicable to operations in their Area of Responsibility (AoR).

(2) The types of RP Instructor (RPI) within their AoR.

(3) The experience level and course(s) required by personnel in their AoR to become an RPI.

(4) The required currencies and competencies required for an RPI qualification to remain valid.

d. Ensure UAS operating in the Open A3 sub-category are not:

(1) Intentionally operated over Uninvolved Persons[3].

(2) Operated higher than 120 m (400 ft) above the surface (land or sea).

(3) Operated over or within a horizontal distance of 50 m of any Congested Area[3].

(4) Operated in a restricted area[17] (eg flight restriction zone of a protected Aerodrome[18]) unless in receipt of appropriate permission from the Airspace Controlling Authority.

e. Ensure suitable lost link procedures are implemented to maintain safe flight (or safe termination), safe separation from other Aircraft, and to enable Aircraft recovery. In the event of an emergency in the Command Unit that requires abandonment, or the loss of return feed data link that precludes safe control, lost link procedures **should** be followed.

f. Produce orders or instructions detailing actions in the event that verbal communication becomes impossible (eg intercom failure or suspected incapacitation).

g. Ensure that Risks to RPs, operating personnel, other organization / MOD personnel, and the general public through the operation of UAS are As Low As Reasonably Practicable and Tolerable, and cease operations if not.

h. Hold appropriate Terms of Reference (ToR).

i. Follow the intent of RA 2335[19], for UAS operators working up for, or conducting, UAS flying at a Flying Display, Display Flying, Display Parachuting, Role Demonstration or Flypast.

j. Ensure that, where training provided does not include flying under MRP rules, the UAS Senior Operator (SO) / UAS Flight Operations Post Holder (FOPH) receives additional local training on MRP UAS flying either by an RPI or an appropriately Suitably Qualified and Experienced Person (SQEP) individual[20] as approved by the UAS RO / UAS AM.

14. UAS ROs **should**:

a. Be responsible and Accountable for the operation of UAS within their AoR and answerable to a designated Capability Owner within the chain of command.

b. Ensure that UAS are operated and maintained in line with the RA 1600 Annex B Categorization Safety Checklist, Manufacturer's User or Operating Manual, RA 1603(4), and LEC.

c. Attend an MAA UAS RO briefing day[21] prior to commencement of UAS operations if required to do so by the MAA[22].

[17] Defined as: "Airspace of defined dimensions over the land areas or territorial waters of a State within which the flight of aircraft is restricted in accordance with certain specified conditions". Sourced from: UK CAA CAP 722D.
[18] Details of UK Aerodromes that fall into the 'protected' category can be found within the NATS eAIS Package. For Government Aerodromes see the UK Mil AIP.
[19] Refer to RA 2335 – Flying Displays, Display Flying, Display Parachuting, Role Demonstrations and Flypasts.
[20] Attendance at either the UAS RO Briefing Day or UAS AM Briefing day will satisfy this requirement.
[21] Refer to RA 1440 – Air Safety Training.
[22] This requirement will be reviewed by the MAA during the categorization process; and any requirement / dispensation articulated in the LEC.

Acceptable Means of Compliance 1603(2)

d. Nominate a SO.

e. Issue a Letter of Delegation when delegating supervisory day-to-day operating Responsibilities to a SQEP (minimum OF3) within their AoR. The appointed UAS RO and delegated individual **should** attend the MAA UAS RO briefing day. Whilst day to day supervisory responsibility may be delegated by the UAS RO, accountability will remain with the UAS RO.

f. Ensure the requirement for an UAS SPC is identified when an UAS operating in the Open A3 sub-category requires to be operated outside the bounds of its LEC, for a specific named Operation (and associated training).

g. Ensure UAS SPCs (which are authorized by the MAA and issued to the UAS RO / UAS AM):

(1) Are invoked when the RtL associated with its usage is greater than the Risk identified within the Open A3 LEC[23],

(2) Are for a defined activity and time bounded,

(3) Have review periodicities not exceeding 6 months (unless specifically detailed within the MAA approved UAS SPC).

h. Supplement the original Categorization Submission, when applying for a UAS SPC, for the UAS with relevant details including a record of their judgement that the benefits of operating the UAS with a UAS SPC outweigh any increased RtL and submit it to the MAA iaw the RA 1600 Categorization submission process[23].

i. Ensure that UAS operations within another sovereign nation's territorial Airspace are conducted either:

(1) For operations conducted with the nation's consent, iaw relevant local, national, and international legal requirements, and satisfy diplomatic clearance requirements[24], or

(2) For operations conducted without the nation's consent (ie conducted lawfully under the Law of Armed Conflict, UN Security Council resolution or other legal mandate), outside Controlled Airspace[3]; unless the Controlled Airspace has been created or assigned for the purposes of the Operation.

15. UAS AMs **should**:

a. Be responsible and accountable for the operation of UAS within their AoR.

b. Ensure that UAS are operated and maintained in line with the CFAOS (BUAS) Operations Manual, Manufacturer's User or Operating Manual, RA 1603(4), and either the LEC (MOD organizations) or CFAOS (BUAS) Approval (non-MOD organizations).

c. Attend an MAA UAS AM briefing day[21] prior to commencement of UAS operations if required to do so by the MAA[25].

d. Nominate[10] a FOPH in order to provide the UAS AM with appropriate specialist support[26].

e. Ensure that UAS operations within another sovereign nation's territorial Airspace and with that nation's consent are conducted iaw relevant local, national, and international legal requirements and satisfy diplomatic clearance requirements[27].

[23] Refer to RA 1600 – Uncrewed Air Systems Categorization.
[24] Refer to RA 2305 – Supervision of Flying.
[25] This requirement will be reviewed by the MAA during the CFAOS (BUAS) Approval process; and any requirement / dispensation articulated via the Approval.
[26] To include Test and Evaluation (T&E) when in the organization's CFAOS (BUAS) Approval and the UAS AM is not appropriately T&E qualified.
[27] Refer to AP1158 – Approval and Diplomatic Clearance for Flights to Destinations Abroad.

Guidance Material 1603(2)

Uncrewed Air System Responsible Officers and Uncrewed Air System Accountable Managers Responsibilities

16. UAS ROs / UAS AMs may waive the requirement for an Occurrence Safety Investigation (OSI) down to a Local Occurrence Investigation (LOI) for an Accident where the loss is consistent with the intended concept of operating use of the UAS. Ultimately it is for the UAS RO / UAS AM to decide that there is nothing to be gained from a formal OSI. As a minimum the subsequent LOI still requires codification by the Incident Manager prior to being closed.

17. It is anticipated that, in many instances, UAS will be operated by organizations with either limited or no prior aviation experience. In such cases, the Unit Commander or civilian middle manager (who may have limited or no previous aviation experience) may be appointed as the UAS RO / UAS AM. Therefore, the MAA will provide appropriate UAS RO / UAS AM briefings[21] to those assessed as requiring further training in order that they may be considered Competent to manage the RtL associated with the operation of the UAS.

18. UAS ROs / UAS AMs will not conduct UAS training while undertaking formal tasking.

19. When operating with reduced visibility (eg at Night, sandstorm, etc) over or in proximity to uninvolved people the UAS RO / UAS AM will need to ensure the ability to operate safely (eg Night Vision Devices, etc).

20. The requirement to Authorize operations in the Open A3 sub-category is not mandated; however, UAS ROs / UAS AMs may elect to implement an Authorization process to formalize and account for any tasking conducted[28].

21. Segregated Airspace is used as a mitigation for mid-air collision. UAS ROs / UAS AMs will detail the procedures to be followed to ensure that the UAS remains within the Segregated Airspace (this might include restrictions on approaching the boundaries of allocated airspace or use of independent flight termination Systems).

22. A UAS RO may be required to employ Open A3 sub-category UAS outside limitations contained within their LEC, when there is an unplanned or unexpected operational imperative to do so[29]. When such situations arise, the UAS RO (or their representative when the UAS RO is not deployed) needs to inform the operational commander[30] of the increased Risk associated with operating outside of the LEC. Although the urgency of a given situation may preclude formal process, a UAS RO needs to demonstrate in retrospect a Risk analysis suitable to the context. There needs to be an assessment of the impact on third-parties (for example crewed aviation or civilian population in the area)[31]. The operational commander needs to agree to accept the Risk and record the decision to do so. Operations outside of the LEC have to cease immediately once the operational requirement has been met.

23. UAS SPCs are situation dependant and bound by time (length of Approval period) and airspace in which the operation will be conducted. They are not an alternative to long-term compliance.

24. A UAS SPC is comparable to a Specific S2 sub-category and Certified Category Operational Emergency Clearance (OEC) and will only be used for flight under the following circumstances:

a. In conditions of actual or potential hostile enemy action, or;

b. In other conditions of operational imperative, to include training for actual or planned operations, when enabled by the UAS RO.

25. The UAS RO will ensure that a clear explanation of the Risks involved, and related operating instructions to support a UAS SPC are incorporated into the Categorization Submission.

[28] If UAS ROs choose to implement the Authorization process, they are advised to use the principles of RA 2306 – Authorization of Flights.
[29] Where Safety, Environmental Protection or operational imperatives demand, the Regulations may be deviated from provided that a convincing case can be offered in retrospect.
[30] The empowered individual at the time with tactical awareness of the current operation or task.
[31] Bounded by the Laws of Armed Conflict, superior command direction, Rules of Engagement and RtL to own forces.

Guidance Material 1603(2)

26. The UAS RO will ensure that the authority required for a UAS SPC to be enabled, guidance on the Risk involved, and related operating instructions are specified in appropriate orders.

27. UAS ROs and UAS AMs must ensure compliance with UK Civil Aviation Authority Safety Notice Number: SN-2025/004[32].

Regulation 1603(3)

Uncrewed Air System Senior Operators and Uncrewed Air System Flight Operations Post Holders Responsibilities

1603(3) Operations of UAS in the Open A3 sub-category **shall** be supported by UAS SOs / UAS FOPHs.

Acceptable Means of Compliance 1603(3)

Uncrewed Air System Senior Operators and Uncrewed Air System Flight Operations Post Holders Responsibilities

28. UAS SOs and UAS FOPHs **should**:

a. Support and be answerable to the respective UAS RO / UAS AM.

b. Have completed an approved UAS training package provided by a Defence Systems Approach to Training (DSAT) compliant UAS course, or an equivalent UK Civil Aviation Authority (CAA) approved Recognized Assessment Entity (RAE)[33] that includes a flying assessment.

c. Ensure that all RPs within their AoR have successfully completed a flying assessment under the supervision of the UAS SO / UAS FOPH, and document accordingly.

d. Ensure that RPs are medically fit to operate the Categorized UAS[34].

e. Ensure any RPI complies with RA 1603(7).

f. Assure themselves that a UAS operating training package and flying assessment of the RPs is conducted.

g. Specify SQEP individuals (eg RPIs) to award UAS flying privileges.

Guidance Material 1603(3)

Uncrewed Air System Senior Operators and Uncrewed Air System Flight Operations Post Holders Responsibilities

29. Training provided by a CAA approved RAE that includes a flying assessment or an equivalent DSAT compliant UAS course has been assessed as appropriate by the MAA to provide suitable training and assessment for UAS SOs and UAS FOPHs.

30. The UAS SO / UAS FOPH may also hold a dual role as an RPI.

31. UAS SOs / UAS FOPHs will ensure that all RPs receive Conversion To Type (CTT) training from an RPI.

Regulation 1603(4)

Remote Pilots Responsibilities

1603(4) RPs operating UAS in the Open A3 sub-category **shall** be qualified and competent.

Acceptable Means of Compliance 1603(4)

Remote Pilots Responsibilities

32. RPs **should**:

[32] Refer to SN-2025/004 – UAS Software and Firmware Updates.
[33] The list of CAA approved RAEs is found in the Unmanned Aircraft section of the CAA website.
[34] The baseline minimum Joint Medical Employment Standard for Military RPs of Open A3 Category UAS is A-4. There is no baseline minimum Medical Employment Standard for Civilian RPs of Open A3 Category UAS. There are no Initial or Periodic Medical Examination requirements (both Military and Civilian) to operate UAS in the Open Category and S1 sub-category. However, these baseline requirements may be further restricted via the LEC and / or the endorsed RA 1600 – Uncrewed Air Systems, Annex B: Categorization Safety Checklist.

Acceptable Means of Compliance 1603(4)

a. Conduct a UAS operating training package and flying assessment under the supervision of the UAS SO / UAS FOPH.

b. Maintain a level of Competence appropriate to the tasks being conducted.

c. Maintain an Auditable record of UAS training and flying activity.

d. Be familiar with all publications and processes required to safely operate the UAS.

e. Be fully conversant with either the RA 1600 Annex B Categorization Safety Checklist (MOD organizations) or CFAOS (BUAS) Operations Manual (non-MOD organizations), and local Orders.

f. Maintain a log of the inspections and Maintenance carried out on their UAS.

g. Be responsible for the safe operation of the UAS and not present undue Risk or Hazard to other airspace users or any person, vessel, vehicle or Structure.

h. Notify the Low Flying Booking Cell (LFBC)[35, 36], when flying in the UK below 2,000 ft Above Ground Level[37, 38].

i. Adhere to:

(1) Orders promulgated by UAS RO / UAS AM.

(2) The UAS Manufacturer's User or Operating Manual.

(3) The operating parameters and procedures detailed in:

(a) The RA 1600 Annex B Categorization Safety Checklist and LEC (MOD organizations) or:

(b) The CFAOS (BUAS) Operations Manual and CFOE (BUAS) (non-MOD organizations).

j. Conduct Flight Planning and Risk Assessments iaw the most restrictive of Orders and adhere to the following operating limitations:

(1) Operated within VLOS of the RP.

(2) Operated with a minimum safe horizontal distance of 50 m from any person, vessel, vehicle or Structure not under the control of the RP.

(3) Any conditions stipulated in the LEC (MOD organizations) or CFAOS (BUAS) Approval (non-MOD organizations).

k. Ensure that when it is necessary to hand over control of a UAS, a formal instruction to take control and to accept control is made. In some cases (eg during instruction) it is necessary to take control in the first instance - this **should** also be formally declared and accepted. Formal statements of 'I have control' and 'You have control' **should** be made and acknowledged as appropriate.

33. When a planned UA sortie necessitates the handing over of control of the UA, the associated RPs **should** plan the timings and other requirements in advance of the sortie.

[35] Contacted via email to SWK-MAMCLFCOORD@mod.gov.uk or by telephone 01489 887 000 or 0800 515 544. The LFBC will be able to offer information on potential pre-planned conflicting activity in the area.
[36] Refer to RA 2330 – Low Flying; and UK Military Low Flying Handbook (available via the milFLIP website (https://www.aidu.mod.uk/Milflip/)).
[37] Be aware that Rotary Wing Aircraft may operate below 100 ft; and military Fixed Wing Aircraft may operate between 100 ft and 250 ft.
[38] Whilst not legally mandated, it is highly recommended as best practice, to record UAS operations via: the Centralised Aviation Data Service flight planning service (provided by BAE Systems Information) to help reduce the Risk of collision with other Aircraft and physical Hazards (eg overhead wires), Notice to Aviation (NOTAMs), Notices to Mariners (NOTMARs), Drone Assist, etc.

Guidance Material 1603(4)

Remote Pilots Responsibilities

34. RPs will be appropriately trained and Competent. RPs are required to understand and be fully conversant with all appropriate publications and RA 1603(4), to ensure that their UAS are safe to operate and are being operated safely.

Regulation 1603(5)

Remote Pilot Instructors Responsibilities

1603(5) RPIs **shall** be trained and Competent.

Acceptable Means of Compliance 1603(5)

Remote Pilot Instructors Responsibilities

35. RPIs are required to possess skills that enable the effective transfer of knowledge to their students, and **should** be trained to achieve the following baseline Competences:

a. Plan, prepare and deliver appropriately Structured theoretical and practical teaching events.

b. Manage trainees, students and instructional resources.

c. Deliver specialist instruction to incorporate a range of differing learning styles.

d. Integrate Human Factors training[21] into all serials.

e. Confirm / check learning has taken place, using appropriate practical techniques on the ground and in the air.

f. Monitor and review trainee or student progress across the full range of RP training events.

g. Produce comprehensive written reports on individual training outcomes.

36. RPIs **should**:

a. Have qualified as a UAS operator following successful completion of a DSAT compliant course or a National Qualified Entity / RAE civilian course that includes a flying assessment.

b. If operating under a UAS RO:

(1) Be qualified as a Defence Trainer[39].

(2) Achieve Practitioner Level prior to awarding qualification / Competency for a RP to fly UAS in this sub-category.

c. If operating under a UAS AM:

(1) Hold an appropriate trainer qualification, approved as an equivalent to a Defence Trainer by the UAS AM responsible for the UAS they will operate.

(2) Achieve suitable level of training Competence, approved as an equivalent to Practitioner level of the Defence Trainer, by the UAS AM prior to awarding qualification / Competency for a RP to fly UAS in this sub-category.

d. Undertake an instructional Competence check on an annual basis. This check **should** be conducted by a Defence Training Supervisor[39] who meets the criteria to be an Independent Assessor[3] and who is qualified on the same or a similar UAS type. It **should** include the following baseline Competencies:

(1) Impart skill and knowledge, utilizing effective analysis and debriefing.

(2) Have proficiency in flying or airborne operating skills, and knowledge of the Air System on which tested.

(3) Standardize current training practice.

[39] Refer to JSP 822 – Defence Direction and Guidance for Training and Education.

Acceptable Means of Compliance 1603(5)

(4) Have knowledge of subjects allied to flying / Air System operation.

(5) Review a sample of comprehensive written reports on individual training outcomes.

Guidance Material 1603(5)

Remote Pilot Instructors Responsibilities

37. Nil.

Regulation 1603(6)

Remote Pilot Instructors

1603(6) Withdrawn – Incorporated into RA 1603(1, 2, 3, 4 and 5).

Acceptable Means of Compliance 1603(6)

Remote Pilot Instructors

38. Withdrawn – Incorporated into RA 1603(1, 2, 3, 4 and 5).

Guidance Material 1603(6)

Remote Pilot Instructors

39. Withdrawn – Incorporated into RA 1603(1, 2, 3, 4 and 5).

►This RA has been substantially re-written; for clarity no change marks are presented – please read RA in its entirety◄

RA 1604 – Uncrewed Air Systems Specific S1 sub-category

Rationale

There is a requirement to determine and apply an appropriate regulatory framework to Uncrewed Air Systems (UAS) to ensure they are safe to operate and are being operated safely. Failure to appropriately address UAS specific Hazards could lead to an increased Risk to Life (RtL). This regulatory framework will be proportionate to the UAS Category and its physical attributes[1]. This Regulatory Article (RA) defines the regulatory framework for those UAS operating in the Specific S1 sub-category. The regulatory framework is Structured to specifically permit appropriate operating freedom to 'non-traditional' aviation units (who are the prevalent users of UAS in the Specific S1 sub-category).

Contents

Applicability

1. Operations within the Specific S1 sub-category are those to be conducted with UAS that:

   a. Have a Maximum Take Off Weight, including Stores, of less than 25 kg,

   b. Are required to operate Beyond Visual Line Of Sight (BVLOS)[2] up to a maximum of 2,000 m from the Remote Pilot (RP),

   c. Are capable of being operated safely at a distance from Uninvolved Persons to be determined on a UAS Categorization Submission case-by-case basis, but not flight over Areas of high population density,

   d. Are capable of being operated to a Height in line with manufacturers guidelines,

   e. Carry a UK / EU conformity marking of C0 – C4[3] or be designed to similar standards,

   f. Are flown inside Segregated Airspace within the UK Flight Information Region,

   g. Have a maximum operating speed of 19 m/s,

   h. Are registered on the UK Military Aircraft Register (MAR) by type[4],

   i. Have a Military Aircraft Registration Number and unit identifier, or a local UAS serial number, displayed on the main fuselage,

   j. Operate under the Defence Air Environment (DAE) Operating Framework and be assigned to a DAE Operating Category[4, 5],

[1] For definitions of UAS Categories, UAS sub-categories, and UAS physical attributes (eg Sub 250 g, Sub 4 kg, etc), refer to RA 1600 – Uncrewed Air Systems Categorization.
[2] Refer to MAA02: Military Aviation Authority Master Glossary.
[3] Refer to Commission Delegated Regulation (EU) 2020/1058 and UK Regulation (EU) 2019/945.
[4] Refer to RA 1161 – Military Registration of Air Systems Operating within the Defence Air Environment.
[5] The DAE Operating Category relates to the ownership and Safety governance of the Air System, whereas the UAS Category relates to the regulatory framework which is set by the MAA according to the Risk posed by the UAS and the manner in which it is operated.

Applicability

k. Adhere to noise limits, Height limits and requirements for remote identification and geo-awareness Systems and additional requirements if being used during tethered flight[6],

l. Are capable of being armed (constrained to named Operations and Designated Danger Areas (DDA) only and subject to specific restrictions),

Note:

Operation within a DDA[7], authorized for BVLOS UAS operations, is subject to the Approval of the Danger Area command authority, and will be in accordance with (iaw) the specific Danger Area, range, or operating area instructions.

m. Are capable of carrying / transporting dangerous Cargo[8, 9],

n. Are capable of Swarming, and

o. Are capable of dropping of materiel.

2. Unless detailed further in the Letter of Endorsed Categorization (LEC) or Contractor Flying Approved Organization Scheme (Basic UAS) (CFAOS (BUAS))[10] Approval, only those MAA Regulatory Publication (MRP) documents detailed in this RA, including relevant Regulatory Instructions and Regulatory Notices, are applicable to UAS operating in Specific S1 sub-category.

3. CFAOS (BUAS) organizations must also comply with RA 1031[10].

4. Where the requirement for a UAS to be operated from one of His Majesty's / MOD Ship exists, the combination must be Authorized through an appropriate Ship Air-Release process[11].

5. UAS publications are likely to include:

a. The RA 1600 Annex B Categorization Safety Checklist for the UAS (MOD organizations).

b. Manufacturer's User or Operating Manual.

c. Specific orders or Instructions from the UAS Responsible Officer (RO).

d. The CFAOS (BUAS) Operations Manual from the UAS Accountable Manager (AM).

e. Local orders such as those published by a Head of Establishment or Head of Unit.

6. Specific S1 sub-category UAS operations are not required to be supported by a:

a. Senior Duty Holder;

b. Operating Duty Holder;

c. Delivery Duty Holder;

d. Accountable Manager (Military Flying);

e. Type Airworthiness Authority[12];

f. Continuing Airworthiness Management Organization;

[6] A Tethered Uncrewed Aircraft (UA) is defined as: "A UA that remains securely attached (tethered) via a physical link to a person, the ground or an object at all times while it is flying. The tether normally takes the form of a flexible wire or a cable and may also include the power supply to the Aircraft as well." (Source derived from: UK CAA Civil Air Publication (CAP) 722).
[7] Refer to MAA02 – MAA Master Glossary; and DSA 03.OME Part 3 (Formerly JSP 403 Volume 2) - Defence Code of Practice (DCOP) for Ranges.
[8] Refer to AAP-06 – The North Atlantic Treaty Organization (NATO) Glossary of Terms and Definitions (English and French).
[9] For example (non-exhaustive list): Explosives, radioactive material, flammable liquids, dangerous or volatile chemicals, strong acids, compressed gases, biological agents, poisons.
[10] Refer to RA 1031 – Contractor Flying Approved Organization Scheme (Basic Uncrewed Air Systems).
[11] Refer to RA 1395 – Authorization to Permit Embarked Aviation in His Majesty's / MOD Ships.
[12] The organization submitting a categorization submission for UAS to be operate in the Open A2 sub-category, Open A3 sub-category and Specific S1 sub-category will ensure, and make clear within the Categorization submission, that either: the manufacturer is listed in the UAS Endorsed Manufacturers List; or the UAS being acquired has a EU / UK conformity marking, or be designed to similar standards.

Applicability

g. Chief Air Engineer.

7. There is no requirement to have a Certificate of Design or meet Design Safety Targets.

8. There is no requirement to demonstrate and sustain Airworthiness via an Airworthiness / Air Safety Strategy.

9. There is no requirement to hold an Ageing Air System Audit.

10. This Regulation does not cover Test and Evaluation (T&E) activity. UAS applicants wishing to operate in a manner or Configuration not supported by RA 1600 and RA 1604 (ie T&E) will be subject to RA 1607[13] and other MRP requirements. Discussion with the MAA[14] will be required in order to confirm the applicable Regulations.

a. The endorsed RA 1600 Annex B Categorization Safety Checklist (MOD organizations) or the CFAOS (BUAS) Approval (non-MOD organizations) will satisfy the requirement for an Air System Safety Case (ASSC) (An ASSC provides an evidenced and coherent argument that a system is safe to operate and is being operated safely).

Regulation 1604(1)

Responsibilities

1604(1) Organizations operating UAS in the Specific S1 sub-category **shall** ensure that the requirements of RA 1600 and RA 1604 are complied with.

Acceptable Means of Compliance 1604(1)

Responsibilities

11. MOD organizations responsible for operating UAS **should** either:

a. Nominate:

(1) A Capability Owner (minimum OF5 or equivalent), and

(2) A UAS RO (minimum OF4 or equivalent).

b. Or ensure that operations are carried out by an organization appropriately approved iaw the CFAOS (BUAS).

12. Non-MOD organizations operating military registered UAS in the Specific S1 sub-category **should**:

a. Be appropriately approved iaw the CFAOS (BUAS).

b. Nominate a UAS AM iaw RA 1031.

13. Where UAS operations are being considered at a location with:

a. No other MOD aviation (ie as the only activity), the UAS organizations **should** consult the MAA to discuss the regulatory requirements with regards to the provision of a Safe Operating Environment.

b. Other MOD aviation, the UAS organizations **should** comply with RA 1010 and RA 1026[15].

Guidance Material 1604(1)

Responsibilities

14. Organizations operating under a CFAOS (BUAS) Approval are not permitted to operate under a UAS Special Purpose Clearance (SPC).

[13] Refer to RA 1607 – Open Category and Specific S1 sub-category Uncrewed Air System Test and Evaluation.
[14] Contact via DSA-MAA-MRPEnquiries@mod.gov.uk.
[15] Refer to RA 1010 - Head of Establishment Aviation Responsibilities and Aviation Duty Holder / Accountable Manager (Military Flying) Establishment Responsibilities and RA 1026 – Aerodrome Operator and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities.

Regulation 1604(2)

Uncrewed Air System Responsible Officers and Uncrewed Air System Accountable Managers Responsibilities

1604(2) UAS in the Specific S1 sub-category **shall** be operated under the authority of a UAS RO / UAS AM and supported by appropriate persons.

Acceptable Means of Compliance 1604(2)

Uncrewed Air System Responsible Officers and Uncrewed Air System Accountable Managers Responsibilities

15. UAS ROs / UAS AMs **should** ensure prior to operation of UAS in the Specific S1 sub-category:

a. MOD organizations **should** hold an appropriate MAA UAS LEC[16].

b. Non-MOD organizations **should** hold an appropriate CFAOS (BUAS) Approval.

16. UAS ROs / UAS AMs **should**:

a. Ensure UAS Occurrences are reported, investigated, and recorded[17, 18].

Note:

Landings, or terminal phase manoeuvres, consistent with planned operations incurring damage or destruction, will not normally be considered as Air Safety reportable Occurrences unless the UAS RO / UAS AM determine that there may be a wider Safety interest. Notwithstanding this derogation, any significant deviation from the intended UAS behaviour, response, or UA flight path **should** be reported.

b. Ensure there are local procedures detailing the process for the transfer of Air Safety arrangements and general conditions of transfer (explicitly handover requirements, and requiring both the dispatching and receiving organizations to be responsible for compliance with the directed conditions of transfer).

c. Detail in Orders:

(1) The operating limitations and regulatory requirements applicable to operations in their Area of Responsibility (AoR).

(2) The types of RP Instructor (RPI) within their AoR;

(3) The experience level and course(s) required by personnel in their AoR to become an RPI.

(4) The required currencies and competencies required for an RPI qualification to remain valid.

(5) The procedures to be followed for piloted control.

(6) The applicable emergency procedures, including any requirements for pre-planned emergency recovery sites.

(7) The protocols required to manage control data-links.

d. Ensure UAS operating in the Specific S1 sub-category are not:

(1) Operated within 50 m of any person, vessel, vehicle or Structure not under the control of the RP except during take-off or landing.

[16] Military Organizations (ie Military Operated) that have previously operated under an Open Category Sub 250 g UAS LEC will require to establish an appropriate UAS RO construct and undertake additional RP training beyond that required for Open Category operations, as defined within this RA. Civilian Organizations (ie Civilian Operated) that have previously operated under an Open Category UAS LEC will require to undertake additional RP training beyond that required for Open Category operations, as defined within this RA.

[17] Refer to RA 1410 – Occurrence Reporting and Management.

[18] Refer to the Manual of Aircraft Post Crash and Incident Management Chapter 1: The Aircraft Post Crash and Incident Management (APCOM) Task, paragraph 8: Applicability.

Acceptable Means of Compliance 1604(2)

(2) Operated over or within a horizontal distance of 50 m of any Congested Area[2].

(3) Operated in a restricted area[19] (eg: flight restriction zone of a protected Aerodrome[20]) unless in receipt of appropriate permission from the Airspace Controlling Authority.

e. Ensure suitable Lost link procedures are implemented to maintain safe flight (or safe termination), safe separation from other Aircraft, and to enable Aircraft recovery. In the event of an emergency in the Command Unit that requires abandonment, or the loss of Return feed data link that precludes safe control, Lost link procedures **should** be followed.

f. Produce orders or instructions detailing actions in the event that verbal communication becomes impossible (eg intercom failure or suspected incapacitation).

g. Ensure that Risks to RPs, operating personnel, other organization / MOD personnel, and the general public through the operation of UAS are As Low As Reasonably Practicable and Tolerable, and cease operations if not.

h. Hold appropriate Terms of Reference (ToR).

i. Follow the intent of RA 2335[21], for UAS operators working up for, or conducting, UAS flying at a Flying Display, Display Flying, Display Parachuting, Role Demonstration or Flypast.

j. Ensure that, where training provided does not include flying under MRP rules, the UAS SO / UAS Flight Operations Post Holder (FOPH) / RP receives additional local training on MRP UAS flying either by an RPI or an appropriately Suitably Qualified and Experienced Person (SQEP) individual[22] as approved by the UAS RO / UAS AM.

k. Ensure that RP training is provided by a Defence Systems Approach to Training (DSAT) compliant organization providing an MAA approved UAS course, or an equivalent UK Civil Aviation Authority (CAA) approved Recognized Assessment Entity (RAE).

l. Ensure that if RP training does not include a period of BVLOS flight, the RP completes BVLOS practical flying training either under the supervision of an RPI / UAS SO / UAS FOPH until deemed qualified as Competent to operate BVLOS, or iaw their CFAOS (BUAS) Approval (for CFAOS (BUAS) organizations).

m. Ensure a level of Safety is provided in respect of collision avoidance, equivalent to that provided by the pilot of a crewed Aircraft[23, 24] (for operations either inside or outside UK airspace).

n. Ensure operations inside the UK Flight Information Region are flown in Segregated Airspace[2].

17. UAS ROs **should**:

a. Be responsible and Accountable for the operation of UAS within their AoR and answerable to a designated Capability Owner within the chain of command.

b. Ensure that the UAS is operated and maintained in line with the RA 1600 Annex B Categorization Safety Checklist, Manufacturer's User or Operating Manual, RA 1604(4), and LEC.

[19] Defined as: "Airspace of defined dimensions over the land areas or territorial waters of a State within which the flight of Aircraft is restricted in accordance with certain specified conditions". Sourced from: UK CAA CAP 722D.
[20] Details of UK Aerodromes that fall into the 'protected' Category can be found within the NATS eAIS Package. For Government Aerodromes see the UK Mil AIP.
[21] Refer to RA 2335 – Flying Displays, Display Flying, Display Parachuting, Role Demonstrations and Flypasts.
[22] Attendance at either the UAS RO Briefing Day or UAS AM Briefing day will satisfy this requirement.
[23] Refer to RA 2320 – Flight Procedures: Role Specific S2 and Certified Uncrewed Air Systems.
[24] For definition refer to MAA02: Military Aviation Authority Master Glossary.

Acceptable Means of Compliance 1604(2)

c. Attend an MAA UAS RO briefing day[25] prior to commencement of UAS operations if required to do so by the MAA[26].

d. Nominate a Senior Operator (SO).

e. Issue a Letter of Delegation when delegating supervisory day-to-day operating responsibilities to a SQEP (minimum OF3) within their AoR. The appointed UAS RO and delegated individual **should** attend the MAA UAS RO briefing day. Whilst day to day supervisory Responsibility may be delegated by the UAS RO, accountability will remain with the UAS RO.

f. Ensure the requirement for a UAS SPC **should** be identified when a UAS operating in the Specific S1 sub-category requires to be operated outside the bounds of its LEC, for a specific named Operation (and associated training).

g. Ensure UAS SPCs (which are authorized by the MAA and issued to the UAS RO / UAS AM):

(1) Are invoked when the RtL associated with its usage is greater than the Risk identified within the Specific S1 LEC[27],

(2) Are for a defined activity and time bounded,

(3) Have review periodicities not exceeding 12 months (unless specifically detailed within the MAA approved UAS SPC).

h. Supplement the original Categorization Submission, when applying for a UAS SPC, for the UAS with relevant details including a record of their judgement that the benefits of operating the UAS with a UAS SPC outweigh any increased RtL and submit it to the MAA iaw the RA 1600 Categorization submission process[27].

i. Ensure that UAS operations within another sovereign nation's territorial Airspace are conducted either:

(1) For operations conducted with the nation's consent, iaw the relevant local, national, and international legal requirements, and satisfy diplomatic clearance requirements[28], or

(2) For operations conducted without the nation's consent (ie conducted lawfully under the Law of Armed Conflict, UN Security Council resolution or other legal mandate), under 'Due Regard'[29] and outside Controlled Airspace; unless the Controlled Airspace[2] has been created or assigned for the purposes of the Operation.

18. UAS AMs **should**:

a. Be responsible and Accountable for the operation of UAS within their AoR.

b. Ensure that UAS are operated and maintained in line with the CFAOS (BUAS) Operations Manual, Manufacturer's User or Operating Manual, RA 1604(4), and either the LEC (MOD organizations) or CFAOS (BUAS) Approval (non-MOD organizations).

c. Attend an MAA UAS AM briefing day prior to commencement of UAS operations if required to do so by the MAA[30].

d. Nominate a FOPH in order to provide the UAS AM with appropriate specialist support[31].

e. Ensure that UAS operations within another sovereign nation's territorial Airspace and with that nation's consent are conducted iaw the relevant local,

[25] Refer to RA 1440 – Air Safety Training.
[26] This requirement will be reviewed by the MAA during the categorization process; and any requirement / dispensation articulated in the LEC.
[27] Refer to RA 1600 – Uncrewed Air Systems Categorization.
[28] Refer to RA 2305 – Supervision of Flying.
[29] Refer to RA 2307 – Rules of the Air.
[30] This requirement will be reviewed by the MAA during the CFAOS (BUAS) Approval process; and any requirement / dispensation articulated via the Approval.
[31] To include T&E when in the organization's CFAOS (BUAS) Approval and the UAS AM is not appropriately T&E qualified.

Acceptable Means of Compliance 1604(2)

national, and international legal requirements and satisfy diplomatic clearance requirements[32].

Guidance Material 1604(2)

Uncrewed Air System Responsible Officers and Uncrewed Air System Accountable Managers Responsibilities

19. UAS ROs / UAS AMs may waive the requirement for an Occurrence Safety Investigation (OSI) down to a Local Occurrence Investigation (LOI) for an Accident where the loss is consistent with the intended concept of operating use of the UAS. Ultimately it is for the UAS RO / UAS AM to decide that there is nothing to be gained from a formal OSI. As a minimum the subsequent LOI still requires codification by the Incident Manager prior to being closed.

20. It is anticipated that, in many instances, UAS will be operated by organizations with either limited or no prior aviation experience. In such cases, the Unit Commander or civilian middle manager (who may have limited or no previous aviation experience) may be appointed as the UAS RO / UAS AM. Therefore, the MAA will provide appropriate UAS RO / UAS AM briefings to those assessed as requiring further training in order that they may be considered Competent to manage the RtL associated with operation of the UAS.

21. UAS ROs / UAS AMs will not conduct UAS training while undertaking formal tasking.

22. When operating with reduced visibility (eg at Night, sandstorm, etc) over or in proximity to uninvolved people, the UAS RO / UAS AM will need to ensure the ability to operate safely (eg Night Vision Devices, etc).

23. The requirement to Authorize operations in the Specific S1 sub-category is not mandated; however, UAS ROs / UAS AMs may elect to implement an Authorization process to formalize and account for any tasking conducted[33].

24. Segregated Airspace is used as a mitigation for mid-air collision. UAS ROs / UAS AMs will detail the procedures to be followed to ensure that the UAS remains within the Segregated Airspace (this might include restrictions on approaching the boundaries of allocated airspace or use of independent flight termination Systems).

25. A UAS RO may be required to employ Specific S1 sub-category UAS outside limitations contained within their LEC, when there is an unplanned or unexpected operational imperative to do so[34]. When such situations arise, the UAS RO (or their representative when the UAS RO is not deployed) needs to inform the operational commander[35] of the increased Risk associated with operating outside of the LEC. Although the urgency of a given situation may preclude formal process, a UAS RO needs to demonstrate in retrospect a Risk analysis suitable to the context. There needs to be an assessment of the impact on third-parties (for example crewed aviation or civilian population in the area)[36]. The operational commander needs to agree to accept the Risk and record the decision to do so. Operations outside of the LEC have to cease immediately once the operational requirement has been met.

26. UAS SPCs are situation dependant and bound by time (length of Approval period) and airspace in which the operation will be conducted. They are not an alternative to long-term compliance.

27. A UAS SPC is comparable to a Specific S2 sub-category and Certified Category Operational Emergency Clearance (OEC) and will only be used for flight under the following circumstances:

[32] Refer to AP1158 – Approval and Diplomatic Clearance for Flights to Destinations Abroad.
[33] If UAS ROs choose to implement the Authorization process, they are advised to use the principles of RA 2306 – Authorization of Flights.
[34] Where Safety, Environmental Protection or operational imperatives demand, the Regulations may be deviated from provided that a convincing case can be offered in retrospect.
[35] The empowered individual at the time with tactical awareness of the current operation or task.
[36] Bounded by the Laws of Armed Conflict, superior command direction, Rules of Engagement and RtL to own forces.

Guidance Material 1604(2)

a. In conditions of actual or potential hostile enemy action, or;

b. In other conditions of operational imperative, to include training for actual or planned operations, when enabled by the UAS RO.

28. The UAS RO will ensure that a clear explanation of the Risks involved, and related operating instructions to support a UAS SPC are incorporated into the Categorization Submission.

29. The UAS RO will ensure that the authority required for a UAS SPC to be enabled, guidance on the Risk involved, and related operating instructions are specified in appropriate orders.

30. UAS ROs and UAS AMs must ensure compliance with UK Civil Aviation Authority Safety Notice Number: SN-2025/004[37].

Regulation 1604(3)

Uncrewed Air System Senior Operators and Uncrewed Air System Flight Operations Post Holders Responsibilities

1604(3) Operations of UAS in the Specific S1 sub-category **shall** be supported by UAS SOs / UAS FOPHs.

Acceptable Means of Compliance 1604(3)

Uncrewed Air System Senior Operators and Uncrewed Air System Flight Operations Post Holders Responsibilities

31. UAS SOs and UAS FOPHs **should**:

a. Support and be answerable to the respective UAS RO / UAS AM.

b. Have completed an approved UAS training package provided by a DSAT compliant UAS course, or an equivalent UK CAA approved RAE[38] that includes a flying assessment. If the training does not include a period of Beyond Visual Line of Sight (BVLOS) flight, the UAS SO and UAS FOPH **should** complete BVLOS practical flying training either under the supervision of an RPI until deemed qualified as Competent to operate BVLOS, or iaw their CFAOS (BUAS) Approval (for non-MOD organizations).

c. Ensure that all RPs within their AoR have successfully completed a DSAT compliant UAS course, or an equivalent approved UAS training package provided by a RAE that includes a flying assessment.

d. Be qualified on similar type UAS to be operated.

e. Ensure that RPs are medically fit to operate the Categorized UAS[39].

f. Ensure any RPI complies with RA 1604(7).

g. Specify SQEP individuals (eg RPIs) to award UAS flying privileges.

Guidance Material 1604(3)

Uncrewed Air System Senior Operators and Uncrewed Air System Flight Operations Post Holders Responsibilities

32. Training provided by a CAA approved RAE that includes a flying assessment or an equivalent DSAT compliant UAS course has been assessed as appropriate by the MAA to provide suitable training and assessment for UAS SOs and UAS FOPHs.

33. The UAS SO / UAS FOPH may also hold a dual role as an RPI.

34. UAS SOs / UAS FOPHs will ensure that all RPs receive Conversion To Type (CTT) training from an RPI.

[37] Refer to SN-2025/004 – UAS Software and Firmware Updates.
[38] The list of CAA approved RAEs is found in the Unmanned Aircraft section of the CAA website.
[39] The baseline minimum Joint Medical Employment Standard for Military RPs of Specific S1 Category UAS is A-4. There is no baseline minimum Medical Employment Standard for Civilian RPs of Specific S1 Category UAS. There are no Initial or Periodic Medical Examination requirements (both Military and Civilian) to operate UAS in the Open Category and S1 sub-category. However, these baseline requirements may be further restricted via the LEC and / or the endorsed RA 1600 Annex B Categorization Safety Checklist.

Regulation 1604(4)

Remote Pilots Responsibilities

1604(4) RPs operating UAS in the Specific S1 sub-category **shall** be qualified and Competent.

Acceptable Means of Compliance 1604(4)

Remote Pilots Responsibilities

35. RPs **should**:

a. Complete a UAS training package, designed for RPs flying UAS under MRP rules, that includes a flying assessment.

b. Maintain a level of Competence appropriate to the tasks being conducted.

c. Maintain an Auditable record of UAS training and flying activity.

d. Be familiar with all publications and processes required to safely operate the UAS.

e. Be fully conversant with either the RA 1600 Annex B Categorization Safety Checklist (MOD organizations) or CFAOS (BUAS) Operations Manual (non-MOD organizations), and local Orders.

f. Maintain a log of the inspections and Maintenance carried out on their UAS.

g. Be responsible for the safe operation of the UAS and not present undue Risk or Hazard to other airspace users or any person, vessel, vehicle or Structure.

h. Notify the Low Flying Booking Cell (LFBC)[40, 41], when flying in the UK below 2,000 ft Above Ground Level[42, 43].

i. Adhere to:

(1) Orders promulgated by the UAS RO / UAS AM.

(2) The UAS Manufacturer's User or Operating Manual.

(3) The operating parameters and procedures detailed in

(a) The RA 1600 Annex B Categorization Safety Checklist and LEC (MOD organizations) or;

(b) The CFAOS (BUAS) Operations Manual and Contractor Flying Organization Exposition (Basic UAS) (non-MOD organizations).

j. Conduct flight planning and Risk Assessments iaw the most restrictive of Orders and adhere to the following operating limitations:

(1) Operations are conducted in Segregated Airspace[2].

(2) Operated, BVLOS[2], up to a maximum range of 2,000 m[44] from the RP.

(3) Any conditions stipulated in the LEC (MOD organizations) or CFAOS (BUAS) Approval (non-MOD organizations).

k. Ensure that when it is necessary to hand over control of a UAS, a formal instruction to take control and to accept control **should** be made. In some cases

[40] Contacted via email to SWK-MAMCLFCOORD@mod.gov.uk or by telephone 01489 887 000 or 0800 515 544. The LFBC will be able to offer information on potential pre-planned conflicting activity in the area.
[41] Refer to RA 2330 – Low Flying; and the UK Military Low Flying Handbook (available via the milFLIP website (https://www.aidu.mod.uk/Milflip/)).
[42] Be aware that Rotary Wing Aircraft may operate below 100 ft; and military Fixed Wing Aircraft may operate between 100 ft and 250 ft.
[43] Whilst not legally mandated, it is highly recommended as best practice, to record UAS operations via: the Centralised Aviation Data Service flight planning service (provided by BAE Systems Information) to help reduce the Risk of collision with other Aircraft and physical Hazards (eg overhead wires), Notice to Aviation (NOTAMs), Notices to Mariners (NOTMARs), Drone Assist, etc.
[44] Operations beyond 2,000 m may be approved but the range, justification, and ability to support this range needs to be covered and approved in either the Categorization Submission or CFAOS (BUAS) application.

Acceptable Means of Compliance 1604(4)

(eg during instruction) it is necessary to take control in the first instance - this **should** also be formally declared and accepted. Formal statements of 'I have control' and 'You have control' **should** be made and acknowledged as appropriate.

36. When a planned UA sortie necessitates the handing over of control of the UA, the associated RPs **should** plan the timings and other requirements in advance of the sortie.

Guidance Material 1604(4)

Remote Pilots Responsibilities

37. RPs will be appropriately trained and Competent. RPs are required to understand and be fully conversant with all appropriate publications and RA 1604(4), to ensure that their UAS are safe to operate and are being operated safely.

Regulation 1604(5)

Remote Pilot Instructors Responsibilities

1604(5) RPIs **shall** be trained and Competent.

Acceptable Means of Compliance 1604(5)

Remote Pilot Instructors Responsibilities

38. RPIs are required to possess skills that enable the effective transfer of knowledge to their students, and **should** be trained to achieve the following baseline Competences:

a. Plan, prepare and deliver appropriately Structured theoretical and practical teaching events.

b. Manage trainees, students and instructional resources.

c. Deliver specialist instruction to incorporate a range of differing learning styles.

d. Integrate Human Factors training[25] into all serials.

e. Confirm / check learning has taken place, using appropriate practical techniques on the ground and in the air.

f. Monitor and review trainee or student progress across the full range of RP training events.

g. Produce comprehensive written reports on individual training outcomes.

39. RPIs **should**:

a. Have qualified as a UAS operator following successful completion of a DSAT compliant course or a National Qualified Entity / RAE civilian course that includes a flying assessment.

b. If operating under a UAS RO:

(1) Be qualified as a Defence Trainer[45].

(2) Achieve Practitioner Level prior to awarding qualification / Competency for a RP to fly UAS in this sub-category.

c. If operating under a UAS AM:

(1) Hold an appropriate trainer qualification, approved as an equivalent to a Defence Trainer by the UAS AM responsible for the UAS they will operate.

(2) Achieve suitable level of training Competence, approved as an equivalent to Practitioner level of the Defence Trainer, by the UAS AM prior to awarding qualification / Competency for a RP to fly UAS in this sub-category.

d. Undertake an instructional Competence check on an annual basis. This check **should** be conducted by a Defence Training Supervisor[45] who meets the

[45] Refer to JSP 822 – Defence Direction and Guidance for Training and Education.

Acceptable Means of Compliance 1604(5)

criteria to be an Independent Assessor[2] and who is qualified on the same or a similar UAS type. It **should** include the following baseline Competencies:

(1) Ability to impart skill and knowledge, utilizing effective analysis and debriefing.

(2) Proficiency in flying or airborne operating skills, and knowledge of the Air System on which tested.

(3) Standardization of current training practice.

(4) Knowledge of subjects allied to flying / Air System operation.

(5) Review a sample of comprehensive written reports on individual training outcomes.

Guidance Material 1604(5)

Remote Pilot Instructors Responsibilities

40. Nil.

Regulation 1604(6)

Handing over Control of Remotely Piloted Aircraft

1604(6) Withdrawn – Incorporated into RA 1604(1, 2, 3, 4 and 5).

Acceptable Means of Compliance 1604(6)

Handing over Control of Remotely Piloted Aircraft

41. Withdrawn – Incorporated into RA 1604(1, 2, 3, 4 and 5).

Guidance Material 1604(6)

Handing over Control of Remotely Piloted Aircraft

42. Withdrawn – Incorporated into RA 1604(1, 2, 3, 4 and 5).

Regulation 1604(7)

Remote Pilot Instructors

1604(7) Withdrawn – Incorporated into RA 1604(1, 2, 3, 4 and 5).

Acceptable Means of Compliance 1604(7)

Remote Pilot Instructors

43. Withdrawn – Incorporated into RA 1604(1, 2, 3, 4 and 5).

Guidance Material 1604(7)

Remote Pilot Instructors

44. Withdrawn – Incorporated into RA 1604(1, 2, 3, 4 and 5).

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RA 1607 – Open Category and Specific S1 sub-category Uncrewed Air System Test and Evaluation

Rationale

Test and Evaluation (T&E) activity provides evidence that is used to support a Categorization Submission[1], validates fitness-for-purpose, or verifies compliance. The Risks to Life (RtL) associated with this activity are two-fold: firstly the process of evidence gathering has the potential to present a greater RtL than that associated with the routine operating environment, and secondly the generation of flawed evidence may negatively impact the subsequent Categorization Submission, Validation, or Verification. Therefore T&E activity, the associated evidence-generation and data interpretation, needs to be conducted and supervised by approved organizations and Suitably Qualified and Experienced Persons (SQEP).

Contents

Applicability

1. The T&E activities covered by this Regulatory Article (RA) are defined as flights, ground taxi, ground runs, and / or other on-Air System assessments that meet one or more of the following:

   a. Generates evidence in support of a Categorization Submission[1, 2], or an equivalent As Low As Reasonably Practicable and Tolerable Safety argument, including where that evidence may reasonably be expected to be used to do so in the future.

   b. Validates whether a system is fit-for-purpose in its intended environment and / or is able to fulfil its intended role against stakeholder requirements. For example, to assure the Acquisition or capability Development process based on the User Requirement Document. *'Has the right system been built'?*

   c. Verifies compliance with system requirements, Regulations, or specifications. For example, to assure that a system will operate as designed / intended based on the Systems Requirement Document. *'Has the system been built right'?*

   d. Presents a greater RtL than that associated with the routine operating environment due to the nature of the test activity, technical Assurance level of equipment under test, or flight manoeuvres / profiles.

2. Although this RA does not cover experimentation or similar activity (see UK Civil Aviation Authority Air Publication 1220), to support the generation of reliable conclusions units conducting this type of activity may wish to consider adopting similar processes.

Regulation 1607(1)

Test and Evaluation Governance

1607(1) T&E activity **shall** be subject to governance by SQEP.

Acceptable Means of Compliance 1607(1)

Test and Evaluation Governance

3. Uncrewed Air Systems (UAS) Responsible Officers (RO) and UAS Accountable Managers (AM) who manage or conduct T&E activity **should** be endorsed by the Military Aviation Authority (MAA)[3].

4. When not themselves T&E SQEP; UAS ROs and UAS AMs **should** appoint SQEP to oversee T&E activity. In these cases UAS ROs and UAS AMs **should** provide evidence of said individual's SQEP when submitting their application for

[1] Refer to RA 1600 – Uncrewed Air Systems Categorization.
[2] The Categorization Submission utilizing evidence gathered by T&E may not necessarily be that of the article under test.
[3] The T&E Endorsement application form is available on the MAA's websites.

Acceptable Means of Compliance 1607(1)

endorsement by the MAA[3] and note that accountability remains with the endorsed UAS RO or UAS AM.

5. UAS ROs and UAS AMs **should** nominate:

a. Units and organizations for T&E activity and its associated T&E category in accordance with (iaw) the endorsement issued by the MAA.

b. SQEP[4] for T&E activity.

6. UAS ROs and UAS AMs **should** detail in orders:

a. The manner in which T&E activity will be approved as follows:

(1) The scope of involvement of the UAS RO or UAS AM in the Approval process.

(2) The composition and Competency of the Approval Board, which will be SQEP for the activity being conducted, include minimum T&E qualifications iaw Annex A and include representatives from the following areas as appropriate: Design Organization, T&E, Continuing Airworthiness, Type Airworthiness and flight operations.

(3) The categorization of T&E activity.

b. The process for allocating T&E activity to specific Units or organizations.

7. The Approval Board **should**:

a. Approve or reject T&E activity on behalf of the UAS RO or UAS AM.

b. Examine each trial before planning commences and endorse or reject the proposed T&E categorization.

c. Ensure that those designing, planning, supervising and conducting T&E activity are SQEP.

d. Ensure that the trial design is capable of generating the appropriate level and fidelity of evidence.

e. Ensure that, for UAS T&E, the trial design remains within the scope of the MAA UAS Letter of Endorsed Categorization (LEC).

8. Combined Test Teams **should** operate under the governance of a single clearly identifiable UAS RO or UAS AM and within the boundaries of a governance arrangement agreed by all relevant participants / stakeholders (eg T&E Organizations, Design Organization, Delivery Team, etc).

9. The UAS RO / UAS AM **should** ensure that the UAS has been appropriately evaluated by SQEP for basic Airworthiness requirements[5], that it is “Safe to Operate” in the Defence Air Environment (DAE) and can be registered iaw RA 1161[6].

Guidance Material 1607(1)

Test and Evaluation Governance

10. UAS T&E activity may warrant a different UAS categorization to the eventual, envisaged or in-use UAS categorization. The scope of any T&E activity will be considered during the UAS categorization process. Where the proposed T&E activity is outside the scope of an extant MAA UAS LEC, a new UAS Categorization Submission and corresponding LEC will be required, or an alternative arrangement agreed with the MAA.

Regulation 1607(2)

Test and Evaluation Personnel

1607(2) T&E activity **shall** only be designed, planned, supervised, and conducted by SQEP.

[4] iaw Annex A.
[5] This would normally be achieved through endorsement of the manufacturer by the Defence Equipment and Support (DE&S) UAS Delivery Team Type Airworthiness Authority (TAA); refer to RA 1601, RA 1602, RA 1603 and RA 1604. This allows the UAS RO / UAS AM to ensure the basic Airworthiness of an UAS in the early stages of experimentation and development via another route, appropriate to the context of the UAS and T&E activity to be undertaken.
[6] Refer to RA 1161 – Military Registration of Air Systems Operating within the Defence Air Environment.

Acceptable Means of Compliance 1607(2)

Test and Evaluation Personnel

11. UAS ROs and UAS AMs **should** detail in orders the T&E Competencies required of those designing, supervising, and conducting T&E across the T&E categories. These T&E Competencies **should** meet or exceed the minimum qualification requirements[4] and include appropriate experience in the following:

a. Test programme management, Risk Management and T&E governance.

b. The planning, conduct and reporting of T&E activity, including data analysis and interpretation.

c. The intended functionality of the UAS and / or the system under test.

d. The application of relevant test techniques.

12. UAS ROs and UAS AMs **should** record evidence of T&E Competencies (including training, qualifications, and experience) and T&E currency.

Guidance Material 1607(2)

Test and Evaluation Personnel

13. Nil.

Regulation 1607(3)

Test and Evaluation Activity

1607(3) UAS ROs and UAS AMs **shall** issue orders detailing the governance, categorization, planning, conduct, and reporting of T&E activity.

Acceptable Means of Compliance 1607(3)

Test and Evaluation Activity

14. UAS ROs and UAS AMs **should** categorize T&E activity as follows:

a. **Cat 1.** Experimental / Developmental T&E.

b. **Cat 2.** Flight Safety-critical T&E.

c. **Cat 3.** Production T&E.

d. **Cat 4.** Non-Flight Safety-critical T&E.

e. **Cat 5.** Operational T&E.

15. UAS ROs and UAS AMs **should** detail in orders the processes for determining:

a. T&E objectives.

b. Hazard identification and Risk Management processes specific to T&E.

c. Test plans, flight test cards, post-flight reports and trial reports.

d. Ground, Flight Simulator Training Devices and air trials specific training.

e. Specific currency requirements for the T&E activity.

f. Additional / specific Safety and survival training requirements.

g. Any T&E specific procedures for engineering and flight line personnel.

h. SQEP to approve, supervise, plan and conduct T&E activity.

i. SQEP to author and release trials reports.

Guidance Material 1607(3)

Test and Evaluation Activity

16. When formulating test plans containing the T&E objectives, UAS ROs and UAS AMs may refer to the Integrated Test and Evaluation Acceptance Plan.

17. T&E categorization advice is available from the Air and Space Warfare Centre (ASWC) or the Maritime Warfare Centre. When categorizing T&E activity, UAS ROs and UAS AMs will consider that the highest potential for RtL may result from the

Guidance Material 1607(3)

subsequent use of evidence generated by data gathering, analysis, reporting and conclusions rather than from the trials activity itself.

18. The following provides guidance for determining the category of T&E Activity:

a. **Cat 1. Experimental / Developmental T&E.** T&E that expands the flight envelope, extends the flight limitations or develops the handling techniques of an UAS. This entails operations outside, or to the limits of, existing temporary or proposed Airworthiness and flight limitations of the UAS. It may include, but is not exclusive to, assessment of:

(1) Initial flight or significantly modified UAS.

(2) Changes in flight characteristics or flight envelope definition or expansion.

(3) Novel or unusual design, features or techniques.

(4) Changes to handling qualities of an UAS that might include changes to visual references, flight instruments and symbology, flying controls, flying control Systems, Uncrewed Aircraft (UA) performance, external stores and weapons carriage / release / jettison and underslung loads.

b. **Cat 2**. **Flight Safety-critical T&E.** T&E that is conducted on a production standard UAS that provides evidence for an Airworthiness clearance of Flight Safety-critical Systems. This will entail operating to the limits of existing, temporary or proposed Airworthiness and flight limitations of the UAS. It may include, but is not exclusive to, assessment of:

(1) Communications Systems.

(2) Navigation Systems.

(3) Sensors that affect Flight Safety.

(4) Weapon integration.

(5) Collision avoidance Systems.

(6) Secondary role Systems.

c. **Cat 3. Production T&E.** This may be referred to as post-manufacture test flying or post-factory flight test. This activity assures the production standard of a newly built UAS and / or associated Systems that have been newly installed; this activity is not Maintenance test flying. Production T&E may not be required for all UAS, particularly those of smaller physical attributes and / or complexity.

d. **Cat 4. Non-Flight Safety-critical T&E.** Assessment of new Systems or software whose operation is not considered Flight Safety-critical, but which requires T&E activity for clearance. Flying conducted by an UAS to facilitate the testing of a system with which it would not normally be fitted in order to assess that system in the airborne environment. It may include, but is not exclusive to, assessment of:

(1) New cabin installations.

(2) Passenger radio Systems.

(3) Mission system software.

(4) Integration of Aircrew Equipment Assemblies to an Air System.

e. **Cat 5. Operational T&E.** T&E aimed at determining the performance or effectiveness of an UAS's non-Flight Safety-critical Systems / software and developing or ensuring the validity of tactics, techniques and procedures of the UAS and associated doctrine, where they affect the Air System Safety Case . It is normally carried out within the limits of existing or temporary Airworthiness limitations of the UAS. It may include, but is not exclusive to, assessment or Development of the following:

(1) Tactics, Techniques and Procedures.

Guidance Material 1607(3)

(2) Weapon effectiveness.

(3) The operational employment of mission Systems.

19. Trial supervisors are responsible to the endorsed UAS RO or UAS AM for ensuring that T&E Activity is carried out safely iaw the direction of the T&E Approvals Board. They are not required to be flying supervisors or authorisers.

Annex A

Table 1: T&E Categories and Minimum Qualification Requirements for Open Category and Specific S1 Sub-Category UAS

T&E Category	**T&E Activity Description**	**Minimum UAS RO / UAS AM or Contractor Flying Approved Organization Scheme (Basic UAS) Post Holder Qualification**	**T&E Approval Board Qualification** (Minimum one per Approval Board)	**Trial Supervisor Qualification**	**Remote Pilot Qualification** (Minimum one per Air System Crew)
CAT 1	Experimental / Developmental T&E	Nil	Qualified AeroSystems (QAS)	Open Category: Evaluator Aircrew (EA) Specific S1 sub-category: QAS	EA
CAT 2	Flight Safety-critical T&E	Nil	QAS	Open Category: EA Specific S1 sub-category: QAS	EA
CAT 3	Production T&E	N/A	N/A	N/A	Production Pilot
CAT 4	Non-Flight Safety-critical T&E	Nil	QAS	EA	EA[7]
CAT 5	Operational T&E	Nil	QAS	EA	EA[7]

Table 2: T&E Qualifications Hierarchy and Definitions

1. For the purposes of this Annex, when determining SQEP minima, the qualification hierarchy is (in descending order): Class A Test Pilot (TP) / Flight Test Engineer (FTE), Class B TP / FTE, QAS, EA and Production Pilot.

Qualification	**Description**
Class A TP	Long Course TP graduate of Empire Test Pilot School (ETPS), United States Navy TP School (USNTPS), United States Air Force TP School (USAF TPS), L'Ecole du Personnel Navigant d'Essais et de Reception (EPNER) or an equivalent course that is approved and assured by ASWC on behalf of the Air T&E UAS RO / UAS AM.
Class A FTE	Long Course FTE graduate of ETPS, USNTPS, USAF TPS, EPNER or an equivalent course that is approved and assured by ASWC on behalf of the Air T&E UAS RO / UAS AM.
Class B TP	Short Course TP graduate of ETPS or EPNER or an equivalent course that is approved and assured by ASWC on behalf of the Air T&E UAS RO / UAS AM.
Class B FTE	Short Course FTE graduate of ETPS or EPNER or an equivalent course that is approved and assured by ASWC on behalf of the Air T&E UAS RO / UAS AM.
QAS	Graduate of the ASWC AeroSystems Course or an equivalent course that is approved and assured by ASWC on behalf of the Air T&E UAS RO or UAS AM.
EA	Aircrew who have successfully completed a dedicated training course, including but not limited to the ETPS EA Course, that includes the Competencies listed at paragraph 10 and who are deemed SQEP and are authorised to participate in T&E by the UAS RO or UAS AM.
Production Pilot	Aircrew approved as SQEP, Competent and endorsed by the UAS RO or UAS AM to conduct Production T&E.

[7] For Cat 4 and Cat 5 T&E, the minimum T&E qualification may be held by another individual, other than the RP, who is directly supporting the RP in the operation of the UAS. The T&E qualified individual **should** be empowered to influence the conduct of the T&E activity, whilst recognising the authority of the RP, akin to a crew member on a crewed Air System or a multi-crew UAS.