GUIDANCE MANUAL

For

Form AWR-033

Application for Operational Authorisation

Unmanned Aircraft Systems (UAS / RPAS) and Advanced Air Mobility (AAM)

Manual No: 1.0.5
Issue Date: 12 Nov 2026
Edition: 01 Revision Number: 00
Associated form: AWR-033 Issue 2

Controlled Copy

Copyright © 2026 by the Civil Aviation Authority (CAA), Oman. All rights reserved. No part of this publication may be stored in a retrieval system, transmitted, or reproduced in any way, including but not limited to photo-copy, magnetic or other record, without the prior agreement and written permission of the President of the CAA, Oman.

Reference No: DGCAR/4/3/3/ 1927 /2026 **Date: 12 Nov 2026**

Classification: General

Subject: **Approval – Guidance Manual for Form AWR-033, Application for Operational Authorisation – UAS and AAM**

Pursuant to the Civil Aviation Law of the Sultanate of Oman, the applicable Civil Aviation Regulations, including CAR 102, CAR 15 and CAR-AAM.SB (AMC1 CAR-AAM.SB.155(a)), and ICAO Critical Element (5) – Technical Guidance, Tools and Provision of Safety Critical Information, the Director General of Civil Aviation Regulation (DGCAR) hereby approves the following document as Guidance Material (GM):

- **Title:** Guidance Manual for Form AWR-033 – Application for Operational Authorisation, UAS and AAM (AWR-033 GM)
- **Edition / Revision:** Edition 01, Revision 00
- **Effective Date:** 12/11/2026

The Manual establishes standardised guidance on the selection of the authorisation route, the completion of Form AWR-033 Issue 2, the content of supporting evidence and the application of the SORA 2.5 methodology for unmanned aircraft and Advanced Air Mobility operations. It shall be used by applicants and operators, by CAA inspectors of the Flight Safety Department authorised as UAS Inspectors under CAA-SOP-AAM 2.3 and, for Route C, by the Sandbox Technical Team, and by other authorised personnel, in support of a consistent, transparent and proportionate authorisation process.

This approval is issued under the authority of the Directorate General of Civil Aviation Regulation and shall take effect on the date indicated above. It shall remain valid unless amended, suspended, or withdrawn by the Authority.

Rawya Nasser Hamed Al-Adawi
Director General of Civil Aviation Regulation

RECORD OF AMENDMENT

Ed. / Rev.	Effective Date	Description
01 / 00	12 November 2026	First issue Guidance Manual for Form AWR-033, Application for Operational Authorisation – UAS and AAM Aligned with CAR-AAM.SB Edition 01 as approved (applicable 10 November 2026).

Intentionally Left Blank

FOREWORD

This document, Guidance Manual for Form AWR-033 (hereinafter referred to as "this Manual"), has been issued by the Civil Aviation Authority of the Sultanate of Oman (hereinafter referred to as "the Authority" or "OMAN CAA") under the provisions of CAR 102 (Unmanned Aircraft) and CAR-AAM.SB (Advanced Air Mobility Sandbox Regulation), as provided for in AMC1 CAR-AAM.SB.155(a).

This Manual sets out the means by which an applicant selects the applicable authorisation route, completes Form AWR-033 Issue 2 and assembles the evidence required for the grant of a Standard Drone Permit, a CAR 102 Operational Authorisation or an AAM Sandbox Approval, and for the associated Sandbox Flight Permit, Sandbox Remote Pilot Authorisation and AAM Landing Site or vertiport authorisation. It also informs applicants of the procedure, target times and criteria the Authority applies when processing an application.

This Manual is Guidance Material. It has no legal effect of its own and does not create obligations beyond those of the Civil Aviation Law and the Civil Aviation Regulations. Where this Manual and a regulation differ, the regulation prevails; in case of discrepancy between language versions, the Arabic text of the regulations prevails.

The following provisions form the regulatory and technical basis of this Manual, as applicable:

a. Oman Civil Aviation Law promulgated by Royal Decree 76/2019, as amended by Royal Decree 62/2023, and its Executive Regulation (Ministerial Decision No. 116/2023); Article 39 of the Executive Regulation allows the Authority to exempt aircraft used in technical experimentation, education or training from one or more regulatory conditions, except the insurance condition;
b. CAA Decision No. 1412/2023 on unmanned aircraft (registration, licensing of activities, exemptions, obligations, restrictions and fines);
c. CAR 102 Rev 02 (Unmanned Aircraft), which names Form AWR-033 in CAR 102.110;
d. CAR 180 Appendix 4 (ICAO RPAS provisions as transposed, from the dates stated therein); CAR 171 and CAR 172 (aeronautical telecommunications and air traffic services), where the operation affects ATS;
e. CAR-AAM.SB Edition 01 (Advanced Air Mobility Sandbox Regulation), applicable from 10 November 2026, and its Acceptable Means of Compliance and Guidance Material;
f. CAA Decision No. 879/2025 (fees);
g. CAR 15 (Appointment of Authorised Persons and Review of Decisions);
h. ICAO Annex 2, Appendix 4 (Remotely Piloted Aircraft Systems), ICAO Doc 10019 (Manual on Remotely Piloted Aircraft Systems) and ICAO Doc 9859 (Safety Management Manual);
i. JARUS Specific Operations Risk Assessment (SORA) Edition 2.5 and the corresponding EASA AMC to Regulation (EU) 2019/947.

The editing practices used in this document are as follows:

a. '**Shall**' is used to describe a condition, evidence item or implementation expectation to be satisfied when demonstrating compliance with the applicable CARs; it does not, by itself, create an independent regulatory obligation.
b. '**Should**' is used to indicate a recommendation.
c. '**May**' is used to indicate discretion by the Authority, the industry or the applicant, as appropriate.
d. '**Will**' is used to advise of an action incumbent on the Authority.

Comments and proposals for amendment of this Manual should be addressed to the Flight Safety Department, Directorate General of Civil Aviation Regulation, at the submission channel published by the Authority on its website (section 4.4).

Intentionally Left Blank

TABLE OF CONTENTS

RECORD OF AMENDMENT 3

FOREWORD 5

TABLE OF CONTENTS 7

GLOSSARY OF TERMS OR ABBREVIATIONS 9

1. GENERAL 11

1.1. INTRODUCTION 11
1.2. DEFINITIONS 11
1.3. SCOPE AND APPLICABILITY 12
1.4. LEGAL AND REGULATORY BASIS 12
1.5. AWR-033 WITHIN THE CAA REGULATORY METHODOLOGY 12
1.6. COMPOSITION OF THE APPLICATION PACKAGE 13
1.7. STATUS AND AMENDMENT OF THIS MANUAL 13

2. SELECTING THE AUTHORISATION ROUTE 14

2.1. THE THREE ROUTES 14
2.2. ROUTE SCREENING (PART 0.6) 14
2.3. ILLUSTRATIVE EXAMPLES 14
2.4. THE BOUNDARY BETWEEN ROUTE B AND ROUTE C 14
2.5. SPECIAL SUBMISSION TYPES (PART 0.1) 14
2.6. INDICATIVE FUTURE CAR-AAM CATEGORY (PART 0.8) 16

3. RESPONSIBILITIES 16

3.1. THE APPLICANT AND OPERATOR 16
3.2. THE ACCOUNTABLE MANAGER 17
3.3. THE SPONSORING ENTITY 18
3.4. THE AUTHORITY 18
3.5. OTHER STATE ENTITIES 19

4. APPLICATION PROCESS 20

4.1. OVERVIEW 20
4.2. PRE-APPLICATION MEETING 20
4.3. PREPARING THE ELECTRONIC APPLICATION 20
4.4. SUBMISSION AND ACKNOWLEDGEMENT 21
4.5. COMPLETENESS CHECK 21
4.6. TECHNICAL ASSESSMENT AND COORDINATION 21
4.7. DECISION AND TARGET TIMES 21
4.8. REFUSAL, RECONSIDERATION AND REVIEW 21
4.9. COMMON DEFICIENCIES 22
4.10. FEES 22

5. COMPLETING THE FORM, PART BY PART 23

5.1. GENERAL RULES 23
5.2. PART 0 – SUBMISSION AND ROUTING 23
5.3. PART A – APPLICANT AND ORGANISATION 24
5.4. PART B – OPERATION AND PERMISSIONS 24
5.5. PART C – AIRCRAFT AND SYSTEM 25
5.6. PART D – LOCATIONS AND GROUND ENVIRONMENT 26
5.7. PART E – AIRSPACE AND UTM 26
5.8. PART F – RISK ASSESSMENT SUMMARY 27

5.9. PART G – OPERATIONS, INSURANCE AND OBLIGATIONS 27
5.10. PART H – ATTACHMENTS AND OPEN ITEMS 27
5.11. PART I – DECLARATIONS AND SIGNATURES 28
5.12. PART J – FOR CAA USE ONLY 28
6. ATTACHMENTS: REQUIRED CONTENT 29
6.1. GENERAL 29
6.2. PROPORTIONALITY 29
6.3. CONTENT OF EACH ATTACHMENT 29
7. SORA 2.5 GUIDANCE 31
7.1. EDITION TO BE USED 31
7.2. STEP 1 – DOCUMENTATION OF THE OPERATION 31
7.3. STEP 2 – INTRINSIC GROUND RISK CLASS 31
7.4. STEP 3 – GROUND RISK MITIGATIONS AND FINAL GRC 31
7.5. STEP 4 – INITIAL AIR RISK CLASS 32
7.6. STEP 5 – STRATEGIC MITIGATIONS AND RESIDUAL ARC 32
7.7. STEP 6 – TACTICAL MITIGATION PERFORMANCE REQUIREMENT 32
7.8. STEP 7 – SAIL 32
7.9. STEPS 8 TO 10 – CONTAINMENT, OSOs AND SAFETY PORTFOLIO 33
7.10. ADDITIONAL HAZARDS AND THE RISK TOLERABILITY MATRIX 34
7.11. OMAN OPERATING ENVIRONMENT 34
8. ROUTE C – THE SANDBOX SUPPLEMENT 36
8.1. COMPOSITION OF A SANDBOX APPLICATION 36
8.2. AFTER APPROVAL 36
8.3. ASSOCIATED INSTRUMENTS
9. AFTER THE DECISION 37
9.1. OBLIGATIONS COMMON TO ALL ROUTES 37
9.2. ROUTE B – CONDITIONS AND DATA 37
9.3. ROUTE C – THE SANDBOX LIFE CYCLE 37
9.4. SURVEILLANCE 37
9.5. TRANSITION TO CAR-AAM 37
ATTACHMENT A: TRACEABILITY OF FORM FIELDS 38
ATTACHMENT B: ROUTE B PERIODIC OPERATIONAL DATA TEMPLATE 39
ATTACHMENT C: PRE-SUBMISSION CHECKLIST 40
ATTACHMENT D: WORKED EXAMPLE – ROUTE B, BVLOS PIPELINE INSPECTION 41
D.1. OPERATION 41
D.2. ROUTING 41
D.3. SORA SUMMARY (PART F2) 41

GLOSSARY OF TERMS OR ABBREVIATIONS

The following abbreviations and acronyms are used in this Manual and in Form AWR-033. They have been harmonised, where applicable, with the terminology of CAR 1, CAR 102, CAR-AAM.SB, ICAO Annex 2 and JARUS SORA 2.5. Defined terms are given in section 1.2.

AAM	Advanced air mobility	**JARUS**	Joint Authorities for Rulemaking on Unmanned Systems
AEC	Airspace encounter category	**LOA**	Letter of agreement
AGL	Above ground level	**LUC**	Light UAS operator certificate
AIP	Aeronautical Information Publication	**ML**	Machine learning
AltMoC	Alternative means of compliance	**MTOM**	Maximum take-off mass
AMC	Acceptable means of compliance	**NOTAM**	Notice to airmen
AMSL	Above mean sea level	**NSA**	National Survey Authority
ANSP	Air navigation service provider	**OCC**	Operations control centre
ARC	Air risk class (iARC: initial ARC)	**ODD**	Operational design domain
ATS	Air traffic services	**OSO**	Operational safety objective
ATZ	Aerodrome traffic zone	**PDPL**	Personal Data Protection Law (Royal Decree 6/2022)
BVLOS	Beyond visual line of sight	**RAFO**	Royal Air Force of Oman
C2	Command and control (link)	**ROP**	Royal Oman Police
CAA	Civil Aviation Authority (Oman)	**RPA / RPAS**	Remotely piloted aircraft / RPA system
CAR	Civil Aviation Regulation (Oman)	**RPS**	Remote pilot station
CDAA	Civil Defence and Ambulance Authority	**RT**	Radiotelephony
CONOPS	Concept of operations	**SAIL**	Specific assurance and integrity level
CTR / CTA / TMA	Control zone / control area / terminal control area	**SMS**	Safety management system
DAA	Detect and avoid	**SORA**	Specific operations risk assessment
DG	Dangerous goods	**TMPR**	Tactical mitigation performance requirement
DGCAR	Directorate General of Civil Aviation Regulation	**TMZ**	Transponder mandatory zone
EASA	European Union Aviation Safety Agency	**TRA**	Telecommunications Regulatory Authority
EVLOS	Extended visual line of sight	**UA / UAS**	Unmanned aircraft / UA system
eVTOL	Electric vertical take-off and landing (aircraft)	**USSP**	U-space / UTM service provider
FIR	Flight information region	**UTM**	UAS traffic management (not the Universal Transverse Mercator grid)
GM	Guidance material	**VLOS**	Visual line of sight
GNSS	Global navigation satellite system	**VMC**	Visual meteorological conditions
GRC	Ground risk class (iGRC: intrinsic GRC)	**VTOL**	Vertical take-off and landing
ICAO	International Civil Aviation Organization	**WGS 84**	World Geodetic System 1984

1. GENERAL

1.1. INTRODUCTION

Form AWR-033 is the single application form for every unmanned aircraft and Advanced Air Mobility (AAM) operation that requires a permission from the Authority, whatever the route. Issue 2 of the form is supported by two complementary documents:

a. **Form AWR-033 Issue 2** – a short electronic form that records facts, choices and references. It is the document the Authority registers, assesses and signs.

b. **This Manual (AWR-033 GM)** – the explanations, the content required in each attachment, the SORA 2.5 tables, the process and the traceability of each field to its legal source. It is not submitted.

Applicants for an AAM Sandbox Approval (Route C) also complete CAR-AAM.SB forms F1-01 (Sandbox Supplement to AWR-033), F1-03 (Complexity Level Self-Assessment) and F1-04 (Applicability and Compliance Matrix). These forms collect only Sandbox-specific information; nothing given in AWR-033 is asked again (Chapter 8).

Two legal regimes, one form. Routes A and B are governed only by CAR 102 and CAA Decision No. 1412/2023; Route C is governed by CAR-AAM.SB (CAR-AAM.SB.010(b)(1)). A Route A or Route B applicant does not need to read Chapter 8 or the Sandbox provisions of this Manual.

1.2. DEFINITIONS

The following terms and meanings are applied in this Manual and in Form AWR-033:

AAM Sandbox Approval (Route C): The approval issued under CAR-AAM.SB.165 and Appendix 11 permitting a Sandbox Project to be conducted, in phases and subject to Stop Conditions, for not more than 24 months, renewable once for up to 12 months and not beyond 9 November 2028 (CAR-AAM.SB.165(e), .665(b)).

Accountable Manager: The person with corporate authority to ensure that all activities can be financed and carried out to the standard required, and who signs the declaration in Part I.

Adjacent area / airspace: The ground area and airspace beyond the ground risk buffer and the operational volume that could be reached after a fly-away; used to determine containment requirements.

Applicant / operator: The natural or legal person seeking the permission and who will hold operational control of the flights. For a consortium, a single Oman-registered operator with contractual control.

CAR 102 Operational Authorisation (Route B): An approval under CAR 102 whose conditions are derived from the SORA (SAIL, OSO robustness, containment and operational limitations).

Certified-category trigger: *Any of the triggers listed in AMC1 CAR-AAM.SB.157 (carriage of persons; dangerous goods with high risk to third parties; aircraft of 3 m or more over assemblies of people) that place an unmanned Sandbox Project in the certified category of CAR-AAM.*

Complete application: An application in which every applicable field is answered, every required attachment is provided and the fee is paid. Target times run from this date.

Complexity Level: The level (L1, L2 or L3) of a Sandbox Project determined under CAR-AAM.SB.157 as the highest level indicated by any criterion.

Contingency volume: The volume around the flight geography in which contingency procedures are applied to return the aircraft to normal flight.

Controlled ground area: An area where the operator can ensure that only involved persons are present. It is an iGRC row, not a mitigation credit.

Electronic form: The Microsoft Word version of Form AWR-033 built with content controls (text, date, drop-down and check-box fields), each identified by a field tag.

Flight geography: The volume in which the aircraft is intended to fly under normal conditions, including margins for flight-technical and navigation errors.

Ground risk buffer: The ground area around the footprint of the operational volume in which the aircraft is expected to come down after loss of control.

Operational volume: The flight geography plus the contingency volume.

Programme Coordination Office: *An entity designated or recognised by the Authority under CAR-AAM.SB.127 to coordinate the scheduling, shared resources, logistics and airspace activation requests of a Sandbox Programme, without regulatory function and without Operational Control.*

Regulatory Learning Plan: The plan of regulatory questions that Sandbox Projects and operational data are to answer for the drafting of CAR-AAM (CAR-AAM.SB.100(b)(11)).

Sandbox Flight Permit: *A permit issued under CAR-AAM.SB.252 for an AAM Aircraft that does not hold a type certificate or a validated type certificate (section 8.3).*

Sandbox Remote Pilot Authorisation: *The authorisation issued under CAR-AAM.SB.310(b) to a remote pilot of a Complexity Level L2 or L3 project where no appropriate licence category yet exists (section 8.3).*

Standard Drone Permit (Route A): A permit issued under CAR 102 and CAA Decision No. 1412/2023 for low-risk operations conducted within standard conditions at stated sites and dates.

Stop Condition: An objective, pre-defined trigger, stated in a Sandbox Approval, upon which the Sandbox Operator immediately restricts or suspends the affected operations and notifies the Authority within 24 hours; suspended operations resume only with the written agreement of the Authority (CAR-AAM.SB.175).

Target CAR-AAM Category: The category and instrument of the future CAR-AAM into which a Sandbox Project is expected to transition (CAR-AAM.SB.157(e)).

USSP designation: *The designation by the Authority of a UTM Service Provider under CAR-AAM.SB.405 or, pending designation, the acceptance of an interim UTM arrangement stated in the Sandbox Approval (CAR-AAM.SB.405(g)).*

Working day: A day other than a Friday, Saturday or official public holiday in the Sultanate of Oman.

1.3. SCOPE AND APPLICABILITY

This Manual applies to any person or organisation applying for permission to operate an unmanned aircraft, an RPAS or an AAM aircraft in the Sultanate of Oman, including operations in the Muscat FIR over the high seas conducted by an Oman operator. For a flight that crosses into another FIR, the applicant lists the FIRs and ATS units affected in E2; coordination is made through the ATS provider, the authorisation of the other State is obtained where required (CAR 180 Appendix 4), and ANSD coordinates with the foreign authority where needed. It does not apply to:

a. indoor operations, and toy drones of 250 g or less flown below 100 m without sensors or cameras (CAA Decision No. 1412/2023, Art. 8);

b. State aircraft operations; and

c. military operations under CAR 102.385.

1.4. LEGAL AND REGULATORY BASIS

Instrument	Relevance to AWR-033
Civil Aviation Law (Royal Decree 76/2019, as amended by Royal Decree 62/2023) and its Executive Regulation (Ministerial Decision No. 116/2023)	Powers of the Authority to licence and supervise aviation activity; Executive Regulation Art. 39: exemption of aircraft used in technical experimentation, education or training, except the insurance condition
CAA Decision No. 1412/2023	Registration, licensing of activities, exemptions, obligations, restrictions and fines (“Dec. 1412/2023” in the form)
CAR 102 Rev 02	Unmanned aircraft rules; CAR 102.110 names Form AWR-033; basis of Routes A and B. Route B is applied as an approval under CAR 102 with conditions, pending confirmation of its legal basis by Legal Affairs and the amendment of CAR 102
CAR 180 Appendix 4	ICAO RPAS provisions as transposed in CAR 180 Appendix 4, from the dates stated therein, including the content of an RPAS authorisation request
CAR 171; CAR 172	Aeronautical telecommunications and air traffic services: obligations of the ATS provider and ATS coordination of operations that affect ATS (sections 3.5, 4.6 and 5.7). References are to CAR 172 as amended (CAR-AAM.SB.675(f))
CAR-AAM.SB Edition 01	Advanced Air Mobility Sandbox Regulation; basis of Route C and of the associated instruments (Sandbox Flight Permit, Sandbox Remote Pilot Authorisation, USSP designation, AAM Landing Site or vertiport authorisation)
CAR 10; CAR 13; CAR 15; CAR 92; CAR 100	Exemptions; occurrence reporting; review of decisions; dangerous goods; safety management
CAA Decision No. 879/2025	Fees for Routes A and B (Decision 879/2025 replaces the fees referred to in CAR 102.080); Route C fees: section 4.10
CAA-SOP-AAM Edition 01	The Authority’s internal procedures for processing AWR-033 applications

Table 1. Legal and regulatory basis of Form AWR-033

1.5. AWR-033 WITHIN THE CAA REGULATORY METHODOLOGY

The Authority is moving from CAR 102 to a permanent, EASA-based regulation, CAR-AAM, in parallel tracks rather than in sequence. AWR-033 is the common entry point to all of them:

Route	Legal instrument today	What it prepares for
A – Standard Drone Permit	CAR 102 and CAA Decision No. 1412/2023	Open category (CAR-AAM.OPEN): registration and remote pilot competence
B – CAR 102 Operational Authorisation	CAR 102 approval with conditions derived from the SORA	Specific category (CAR-AAM.SPEC): operational authorisation, then LUC
C – AAM Sandbox Approval	CAR-AAM.SB.165 and Appendix 11	Target CAR-AAM Category recorded under CAR-AAM.SB.157(e): SPEC, CERT or IAM

Table 2. Routes, instruments and future CAR-AAM categories

Because the same form, the same SORA 2.5 method and the same compliance matrix are used on all routes, an operator's file can later be converted into a CAR-AAM instrument without repeating assessments already accepted (CAR-AAM.SB.657 and the transitional Part CAR-AAM.TRA). The CAR-AAM categories and Parts referred to in this Manual follow the proposed structure of CAR-AAM. They are indicative only and will be confirmed when CAR-AAM is adopted under CAR 11.

1.6. COMPOSITION OF THE APPLICATION PACKAGE

Element	Route A	Route B	Route C
Form AWR-033 Issue 2 (electronic, signed)	●	●	●
Attachments AT01–AT17 as marked in Part H (Chapter 6)	Some	●	●
CAR-AAM.SB forms F1-01 and F1-03 (submitted as AT18)	—	—	●
Applicability and Compliance Matrix in F1-04 format (AT17)	—	●	●
Fee payment reference (AT16)	●	●	●
Requests for associated instruments (Sandbox Flight Permit, Sandbox Remote Pilot Authorisation, AAM Landing Site or vertiport) – content of CAR-AAM.SB Appendices 3 to 5 (section 8.3)	—	—	As applicable

Table 3. Composition of the application package (● required)

1.7. STATUS AND AMENDMENT OF THIS MANUAL

This Manual is maintained by the Flight Safety Department. It will be reviewed at least every 12 months, and whenever CAR 102, CAA Decision No. 1412/2023, CAR-AAM.SB or SORA is amended, to keep it consistent with Form AWR-033 and with CAA-SOP-AAM. Amendments are recorded in the Record of Amendment and approved by the DGCAR. A revision of this Manual, of Form AWR-033 or of CAA-SOP-AAM triggers a consistency review of the other two.

Transition from Issue 1. Form AWR-033 Issue 2 supersedes Issue 1 Revision 8 from 10 November 2026. Applications received on Issue 1 before that date are processed on the basis of the

information submitted; the Authority may request any additional information under Issue 2. From 10 November 2026 only Issue 2 is accepted.

2. SELECTING THE AUTHORISATION ROUTE

2.1. THE THREE ROUTES

	Route A	Route B	Route C
Name	Standard Drone Permit	CAR 102 Operational Authorisation	AAM Sandbox Approval
Typical operation	VLOS, day, ≤ 120 m AGL, away from people and aerodromes, ≤ 25 kg	BVLOS, night, near aerodromes or people, heavier aircraft, delivery, multi-UA – conventional UAS	Persons on board, eVTOL / VTOL-capable aircraft, vertiports, UTM-integrated or highly automated concepts, aircraft needing a Sandbox Flight Permit
Risk method	Standard conditions	SORA 2.5	SORA 2.5, or a structured method for persons on board (CAR-AAM.SB.205)
Form content	Part 0; A1–A4; B1–B4; C1, C2.1, C2.3, C2.7, C2.10; D1, D2, D6, D7; E1; G2, G5, G6, G8; H as marked; I1, I2, I4	All Parts	All Parts, plus F1-01, F1-03 and F1-04
The Authority issues	Drone permit for stated sites and dates	Authorisation with conditions derived from the SORA (SAIL, OSOs, containment)	Sandbox Approval with Complexity Level, phases and Stop Conditions; ≤ 24 months, renewable once for up to 12 months; not beyond 9 November 2028
Target decision time	10 working days	SAIL I–II: 30; SAIL III–IV: 45; SAIL V–VI: 60 working days	L1: 30 / L2: 60 / L3: 90 working days (CAR-AAM.SB.135)
Future CAR-AAM category	Open	Specific (operational authorisation, then LUC)	As recorded under CAR-AAM.SB.157(e)

Table 4. Comparison of the three routes

Periods run from the date the application is complete and exclude time spent waiting for the applicant.

2.2. ROUTE SCREENING (PART 0.6)

Each question shall be answered for the whole operation, including contingency situations. A single “Yes” to questions 1–13 means Route B as a minimum. A single “Yes” to questions 14–16 means Route C. The Authority confirms the route and may require a higher one (Part J2.1).

Q	Guidance	Reference
1	Use of observers (EVLOS) counts as beyond the pilot’s own visual line of sight. BVLOS requires monitoring, tracking and collision-avoidance capability.	CAR 102.105(4)(c), 102.125(3)
2	Height is measured above ground level; state AMSL where terrain varies.	Dec. 1412/2023 Art. 15(6); CAR 102.045

Q	Guidance	Reference
3	Night is from sunset to sunrise. Operations outside VMC are not permitted under Route A.	Dec. 1412/2023 Art. 17(2); CAR 102.105(4)(j)–(k)
4	Screen against both the 5 km limit (airports, ports, protected places) and the 5.5 km / 3 NM limit (controlled aerodromes), measured from the edge of the ground risk buffer, covering the whole operational volume including the contingency volume and any contingency route. The more restrictive applies (CAR-AAM.SB.020(b)). Where any part of the operation needs ATS coordination, E2 is completed whatever the route.	Dec. 1412/2023 Art. 17(1); CAR 102.150–.160
5	Answer “Yes” if any uninvolved person may be within 30 m, or persons, vessels, vehicles or structures not under the operator’s control within 150 m, at any time.	CAR 102.035, .040, .075, .105(4)(d)
6	MTOM above 25 kg (medium and large RPA).	CAR 102.010, .050, .070
7	Includes displays and swarms. More than two aircraft per pilot is permitted only for displays.	CAR 102.115(4)–(5)
8	Pre-programmed flight not under continuous manual control, even if the pilot can intervene.	CAR 102.125
9	Any carriage of goods, slung load, or dropping or release of an article.	Dec. 1412/2023 Art. 15(9); CAR 102.105(4)(i)
10	Includes medical specimens, dry ice, lithium batteries carried as cargo and pyrotechnic parachutes.	CAR 92; CAR 102.115(5)(h)
11	Aerobatics, public display, competition or leaflet drop.	Dec. 1412/2023 Art. 17(9)
12	Mobile-network and satellite links require TRA authorisation and, from the applicability date stated in CAR 180 Appendix 4, a C2 Link service provider meeting CAR 102.135(2).	CAR 102.130, .135
13	Foreign aircraft or operator, or flights crossing the FIR boundary or over the high seas. List the affected FIRs and ATS units in E2 (section 1.3).	CAR 102.175; CAR 180 App. 4
14	Any passenger, or crew other than test crew. A type certificate is mandatory for passenger carriage and cannot be exempted (CAR-AAM.SB.250(e), .670(b)); the pilot on board holds a licence with the appropriate category and type rating and a Class 1 medical certificate (CAR-AAM.SB.310(c)).	CAR-AAM.SB.157, .250(e), .670(b)
15	See section 2.4. Novelty is judged on the concept of operations, not on the technology alone.	AMC1 and GM3 CAR-AAM.SB.010
16	An aircraft without a type certificate or a type certificate validated by the Authority and, for an unmanned aircraft, without a design verification or declaration accepted by the Authority for operations at SAIL I to IV. Such an aircraft needs a Sandbox Flight Permit (section 8.3). An unmanned aircraft operated at SAIL V or VI needs a type certificate or a Sandbox Flight Permit.	CAR-AAM.SB.250, .252

Table 5. Guidance on the route screening questions

2.3. ILLUSTRATIVE EXAMPLES

Operation	Decisive factor	Route
Wedding photography, 0.9 kg multirotor, VLOS, day, rural venue	All screening answers “No”	A
BVLOS pipeline inspection, 15 kg multirotor, sparsely populated desert	Q1 BVLOS; SAIL II (Attachment D)	B
Medical delivery between two Muscat hospitals, conventional UAS, ATS coordination	Q1, Q4, Q5, Q9, Q10; SAIL IV	B
Same medical service relying on a USSP for strategic deconfliction with other operators	UTM service relied upon for separation – section 2.4(c)	C
Two-seat eVTOL demonstration flights with persons on board	Q14, Q15; certified trigger	C (L3)

Table 6. Illustrative route determinations

2.4. THE BOUNDARY BETWEEN ROUTE B AND ROUTE C

Route B is the default for operations that are demanding but conventional; Route C is reserved for concepts that CAR 102 cannot accommodate even with SORA-based conditions. An operation goes to Route C if at least one of the following applies:

a. persons are carried on board (question 14);

b. the aircraft needs a Sandbox Flight Permit because it has no accepted design basis (question 16);

c. the concept depends on an element that CAR 102 does not regulate and that cannot be handled as a condition of an approval under CAR 102: a vertiport, a UTM service relied upon for separation or conformance, an AI/ML function performing a safety-critical task, or a new form of airspace use; or

d. the Authority directs the application to Route C because phased, supervised operation with Stop Conditions is needed to manage the risk, or because the operation is identified in the Regulatory Learning Plan (CAR-AAM.SB.100(b)(11)).

Operations that will fall within the open category of CAR-AAM are not Sandbox Projects (AMC1 CAR-AAM.SB.010; AMC1 CAR-AAM.SB.157(b)). In case of doubt, the applicant should request a pre-application meeting (Part 0.3); the Authority will decide in writing (CAR-AAM.SB.010(b)(3); CAA-SOP-AAM SOP-01).

Step	Test	Outcome
1	Any “Yes” to questions 14–16, or any condition (a)–(d) of section 2.4?	Route C
2	Otherwise, any “Yes” to questions 1–13?	Route B
3	Otherwise (all answers “No”)	Route A
4	The Authority confirms or raises the route (Part J2.1); an applicant may also request a higher route voluntarily	Route confirmed

Table 7. Route determination logic

Route classification is not an airspace approval. Route classification and acceptance of the SORA support the operational authorisation only. They do not replace ATC clearance, special airspace use approval, acceptance of an ATS change, ATS provider trial approval or any exemption, which are obtained separately (CAR-AAM.SB.400(f); section 3.5).

Example. A 4 kg multirotor flown VLOS within the standard conditions is Route A and needs no SORA. The same aircraft flown BVLOS along a road is Route B and needs a SORA. Mass alone does not determine the route.

2.5. SPECIAL SUBMISSION TYPES (PART 0.1)

Submission type	When to use it	What to complete
Amendment	Change to an existing permit, authorisation or Sandbox Approval	Part 0 and the changed Parts only; give the existing number in 0.2 and list the amended field references in 0.2b. Route C changes after approval use F1-06 (notifiable) or F1-07 (major)
Extension or renewal	Same operation, new period. Route C: one renewal of up to 12 months on the basis of performance evidence (CAR-AAM.SB.165(e))	Part 0, changed Parts, updated AT02 and AT17
Transition into the AAM Sandbox	Trials authorised before the Sandbox applies that the Authority directs into it (CAR-AAM.SB.650); the Authority identifies such trials by 8 February 2027	Full Route C application
Conversion to CAR-AAM	Once the relevant CAR-AAM Part applies (CAR-AAM.SB.657; CAR-AAM.TRA)	Part 0, Part A, AT17 with the "Target CAR-AAM Part" column and, for Route C, the Sandbox Conversion Annex (CAR-AAM.SB.655)

Table 8. Special submission types

2.6. INDICATIVE FUTURE CAR-AAM CATEGORY (PART 0.8)

Every applicant states the category of the future CAR-AAM into which its operation is expected to fall. The answer has no legal effect today but tells the Authority which Part of CAR-AAM the operation will inform and allows conversion to be planned. The categories follow the proposed structure of CAR-AAM and will be confirmed when CAR-AAM is adopted under CAR 11; CAR 102 does not itself define open or specific categories.

Route	Expected CAR-AAM category	Expected instrument
A	Open (subcategories A1–A3)	Registration and remote pilot competence
B	Specific; SAIL as assessed	Operational authorisation; LUC once mature
C – L1 or L2, or L3 without certified-category trigger	Specific	Operational authorisation or LUC
C – L3 with certified-category trigger (AMC1 CAR-AAM.SB.157(b))	Certified (CAR-AAM.CERT)	Certified-category operator certificate and type certificate

Route	Expected CAR-AAM category	Expected instrument
C – piloted VTOL-capable aircraft	CAR-AAM.IAM	VTOL operator approval, type rating, vertiport certificate

Table 9. Indicative future CAR-AAM category

For Route C the category proposed in Part 0.8 shall match the Complexity Level proposed in F1-03 under AMC1 CAR-AAM.SB.157. The Authority records the Target CAR-AAM Category in the decision (F1-11; Appendix 11 item 17).

3. RESPONSIBILITIES

3.1. THE APPLICANT AND OPERATOR

The applicant shall:

a. provide information that is true, complete and consistent across the form and its attachments, and identify every attachment by number, revision and date;

b. retain operational control of every flight conducted under the permission, including flights performed by contractors;

c. operate only within the permit, authorisation or Sandbox Approval and its conditions;

d. notify the Authority before implementing any change to the information in the application; and

e. give the Authority access to facilities, aircraft, records and personnel for assessment and surveillance.

3.2. THE ACCOUNTABLE MANAGER

The Accountable Manager signs the operator declaration (Part I1) and, for Routes B and C, accepts in writing the residual risks recorded in Part F and AT08 within the tolerability bands delegated to the operator (section 7.10). Signature of the internal review (Part I3) does not constitute approval by the Authority.

3.3. THE SPONSORING ENTITY

Where the operation is conducted for an investor, a government entity or under a contract, the sponsoring entity confirms in Part I2 that the work is carried out under its supervision. Sponsorship is not required for recreational activity.

3.4. THE AUTHORITY

The Authority, through the Flight Safety Department and, for Route C, the Sandbox Technical Team under the DGCAR, will:

a. acknowledge receipt of an application within 10 working days and confirm whether it is complete;

b. confirm the route and, for Routes B and C, verify the SAIL and every mitigation credit against AT07 and AT08;

c. coordinate with the ATS provider and other State entities where required (section 3.5);

d. decide within the target times in section 4.7 and state the conditions, limitations and validity of any permission; and

e. give written reasons for any refusal, with the applicable review route.

Information supplied in an application is used only for the purposes of the authorisation, surveillance and, in aggregated form, rule-making. Commercially sensitive information identified as such by the applicant is protected in accordance with the applicable law.

3.5. OTHER STATE ENTITIES

Entity	Typical involvement	Evidence in the application
ANSP / ATS units	Operations in controlled airspace or near controlled aerodromes; NOTAM; call signs	E2; AT09 (LOA or coordination record)
Royal Air Force of Oman (RAFO)	Military airspace and installations; civil-military coordination	E2.3; D6
National Survey Authority (NSA)	Aerial imaging and survey; review of recorded data	B4; G6; AT13
Telecommunications Regulatory Authority (TRA)	Radio frequency licensing of C2 links	C2.3; AT09
Royal Oman Police (ROP); CDAA	Security, emergency response, public safety	AT10; AT13
Municipality / local authority; landowners	Use of land and public spaces	D7; AT15

Table 10. Coordination with other State entities

Division of responsibilities for ATS and airspace. The Flight Safety Department is the single entry point and issues the operational authorisation (CAR 102 or CAR-AAM.SB); it does not approve airspace. The Air Navigation Services Department (ANSD) assesses the ATS and airspace impact of the operation and accepts ATS changes. The ATS provider carries out operational coordination and records its agreement (AT09). Any proposal with a credible ATS impact, including low-level or BVLOS flights outside controlled airspace, is referred to ANSD early, and the ANSD outcome is recorded in Part J3 before the decision.

4. APPLICATION PROCESS

4.1. OVERVIEW

Stage	Applicant	Authority	Output / time
1. Pre-application (recommended for B and C)	Requests meeting; presents CONOPS and route analysis	Confirms route, expectations and evidence	Minutes with CAA reference
2. Submission	Submits signed electronic form, attachments and fee	Registers the file	File number
3. Acknowledgement and completeness	Remedies deficiencies within 30 calendar days	Acknowledges; completeness check (CAA-SOP-AAM SOP-01)	≤ 10 working days
4. Technical assessment	Answers requests for information	Verifies route, SAIL, OSOs, evidence (SOP-02, SOP-03 or SOP-04)	Assessment record
5. Coordination	Provides agreements and consents	Coordinates with ATS, RAFO, NSA, TRA and others	Coordination record
6. Decision	—	Approves, approves with conditions, or refuses (SOP-02 to SOP-04; Route C: decision of the Director General of Civil Aviation Regulation)	Within target time (section 4.7)

Table 11. Stages of the AWR-033 process

4.2. PRE-APPLICATION MEETING

A pre-application meeting is recommended for Routes B and C and for any borderline routing. The applicant should submit, at least 5 working days before the meeting, a short CONOPS, the draft Part 0 screening answers and the intended SORA assumptions. The Authority will record the conclusions in minutes, whose reference is entered in Part 0.3. Minutes do not prejudge the decision.

4.3. PREPARING THE ELECTRONIC APPLICATION

Form AWR-033 Issue 2 is issued as an electronic Word form. The form is protected so that only the response fields can be edited:

a. **Text fields** (grey placeholder text) – click and type; the placeholder disappears. Multi-line fields accept line breaks.

b. **Drop-down fields** – select a single value (for example the route, the SAIL or “Yes / No” in the screening questions).

c. **Date fields** – use the calendar picker; dates are recorded as dd/mm/yyyy.

d. **Check boxes** – click to tick; more than one may be ticked unless the field states otherwise.

e. Every field carries a **tag** equal to its field reference (for example P0_6_Q01 or F2_SAIL), which allows the Authority to extract the data automatically. Fields shall not be deleted, renamed or converted to images.

f. Where a table has insufficient rows (fleet list, locations, crew), the applicant uses the corresponding continuation sheet in AT04, AT03 or AT11 and states “continued in ATxx” in the last row.

The completed form shall be saved in .docx format and, once signed, also as a searchable PDF. Attachments should follow the conventions below:

Item	Convention
Application file name	AWR033_<OperatorShortName>_<Route A|B|C>_<yyyymmdd>_v<nn>.docx
Attachment file name	AT<nn>_<ShortTitle>_Rev<nn>.<ext> (for example AT07_SORA_Rev02.pdf)
Formats	Searchable PDF for documents; .kml / .kmz for geospatial data; .xlsx for the compliance matrix (AT17) and fleet or crew lists
Signature	Qualified electronic signature, or scanned wet signature with stamp
Package	One compressed folder or portal upload per application; total size within the limit published by the Authority

Table 12. Electronic submission conventions

4.4. SUBMISSION AND ACKNOWLEDGEMENT

The application shall be submitted to the Flight Safety Department through the submission channel (e-mail address or portal) published by the Authority on its website and shown on the Form. The Authority will acknowledge receipt and allocate a file number within 10 working days (Part J1.1).

4.5. COMPLETENESS CHECK

An application is complete when every applicable field is answered (or marked “N/A” with a reason), every required attachment is provided and the fee is paid. Where it is incomplete, the Authority will request the missing information; under CAA Decision No. 1412/2023 Art. 11 the applicant has 30 calendar days from the date of notification to remedy the deficiencies, failing which a Route A or B application may be closed. A Route C application that remains incomplete 90 days after a request for information may be closed without a decision (CAR-AAM.SB.135(d)).

4.6. TECHNICAL ASSESSMENT AND COORDINATION

The Authority will verify every result recorded in Part F against AT07 and AT08 (CAA-SOP-AAM SOP-03; SOP-04 for Route C), may request additional evidence, and may conduct an inspection or witness a demonstration flight. Mitigation credits are accepted only where the evidence required by the SORA annexes is provided. Coordination with other entities (section 3.5) runs in parallel where possible. Where the operation requires a new ATS procedure, an ATS system interface or a trial by the ATS provider, the ATS provider assesses the change and obtains the acceptance or prior written approval of the Authority under CAR 172 (CAR 172.165 and .305); this runs in parallel with, and is not replaced by, the assessment of the application.

4.7. DECISION AND TARGET TIMES

Route / level	Target decision time (working days, from completeness)	Typical validity
Route A	10	Stated sites and dates
Route B – SAIL I–II	30	Up to 12 months, renewable
Route B – SAIL III–IV	45	Up to 12 months, renewable
Route B – SAIL V–VI	60	Up to 12 months, renewable
Route C – L1 / L2 / L3	30 / 60 / 90 (CAR-AAM.SB.135)	Up to 24 months, renewable once for up to 12 months; not beyond 9 November 2028 (CAR-AAM.SB.165(e))
Route C – Phase Gate or Major Change	L1 15 / L2 30 / L3 45 (CAR-AAM.SB.135(b))	—
Route C – EIS Readiness Review	L1 30 / L2 45 / L3 60 (CAR-AAM.SB.135(b))	Initial EIS period of not less than 6 months (CAR-AAM.SB.170(f))

Table 13. Target decision times and validity

The decision will be one of: approved; approved with conditions; further information requested; or not approved (Part J4.1). Time spent awaiting the applicant's response is excluded.

Route C decisions, and the associated instruments of section 8.3, are taken by the Director General of Civil Aviation Regulation as Sandbox Decision-Maker (CAR-AAM.SB.100(b)(2)).

4.8. REFUSAL, RECONSIDERATION AND REVIEW

A refusal will state the reasons and the review route. For all routes, a decision may be reviewed in accordance with the Civil Aviation Law and CAR 15, through the review body stated in the decision letter. For a decision to refuse, limit, suspend or revoke a Sandbox Approval, a Sandbox Flight Permit or an exemption, the applicant may also request reconsideration in writing within 30 days of notification (F1-12); the Authority decides within 30 working days through an official not involved in the original decision, and a decision taken for immediate safety or security reasons is not suspended (CAR-AAM.SB.145).

4.9. COMMON DEFICIENCIES

Experience shows that the following deficiencies cause most requests for information. Applicants should check them before submission (see also Attachment C):

Deficiency	How to avoid it
Screening answers inconsistent with the operation described (for example "No" to Q4 with a site inside a CTR)	Screen against the geospatial file (AT03) including the ground risk buffer
Mitigation credits claimed without evidence (M1, M2, strategic ARC reduction)	Reference the AT07 section and the evidence meeting the SORA annex criteria

Deficiency	How to avoid it
Mixed SORA editions or consultation drafts used	Use one released edition; state Main Body and annex editions in AT07
Lost-link settings quoted as manufacturer defaults	State the configured logic and timeouts for this operation (C2.5)
Population density based on a single daytime snapshot	Consider time of day, weekends, holidays and seasons (D5)
Insurance certificate not covering the aircraft, area or operation	Check scope and validity of AT02 against Parts B–D
Emergency contacts not verified	Verify contacts and record the date in G4
Attachments without revision or date	Apply the naming convention in section 4.3

Table 14. Common deficiencies and how to avoid them

4.10. FEES

For Routes A and B, fees are payable in accordance with CAA Decision No. 879/2025. For Route C, fees are payable in accordance with the schedule published by the Authority under CAR-AAM.SB.140(a) or, where the Authority has published a reduced or nil fee for an initial cohort (AMC2 CAR-AAM.SB.100(c)), in accordance with that publication. The payment reference is provided as AT16 and verified by the Authority in Part J1.3.

5. COMPLETING THE FORM, PART BY PART

5.1. GENERAL RULES

a. Complete every field applicable to the route (see the “Complete for” line at the head of each Part). Answer “N/A” with a short reason rather than leaving a field blank.

b. Keep the form short. Narrative belongs in the attachments listed in Part H, with the section reference given in the form.

c. Distinguish proposed controls (P), implemented controls (I) and verified controls (V). Do not claim a SORA mitigation credit without the evidence required by the SORA annexes.

d. One application describes one coherent operation. Use the fleet list (C1) and location table (D2) for several aircraft or sites; use separate applications where the risks or methods differ materially.

e. Use SI units with feet where aviation practice requires; coordinates in WGS 84; dates as dd/mm/yyyy; times in local time (UTC+4) unless stated; airspace activation times in E1 and E2 in UTC.

f. The form is completed in English. In case of discrepancy, the Arabic text of the regulations prevails.

5.2. PART 0 – SUBMISSION AND ROUTING

Field	Guidance	Reference
0.1	Select one submission type. “New” applies to a first application or to an operation materially different from one already approved. Other types: section 2.5.	Dec. 1412/2023 Art. 10; CAR-AAM.SB.650, .657
0.2	Mandatory unless “New”. Give the existing permit, authorisation or Sandbox Approval number. In 0.2b list the field references amended (the protected electronic form replaces the former “mark in red” practice).	—
0.3	Date and CAA reference of the pre-application minutes, or “None”.	CAA-SOP-AAM SOP-01
0.4	Activity category under Dec. 1412/2023 Art. 1. “For hire or reward” determines whether an RPA Operator Certificate or notification is needed (A4).	Dec. 1412/2023 Art. 1; CAR 102.065, .340
0.5	Start and end dates. Allow at least the target decision time (section 4.7) before the start date. Route C: not more than 24 months.	CAR-AAM.SB.165(e)
0.6	Answer every question “Yes” or “No” using section 2.2.	Section 2.2
0.7	Route consistent with 0.6. A higher route may be requested voluntarily; explain in 0.9.	Section 2.4
0.8	Indicative future CAR-AAM category; for Route C consistent with F1-03.	Section 2.6; AMC1 CAR-AAM.SB.157
0.9	Explain any borderline answer or voluntary choice of a higher route.	—

Table 15. Guidance on Part 0

5.3. PART A – APPLICANT AND ORGANISATION

Field	Guidance	Reference
A1	A legal person shall be registered in Oman. A foreign organisation applies through an Oman-registered entity, which is the operator. Individuals give civil ID or passport number and shall be at least 18. Foreign-owned aircraft used commercially need an RPA Operator Permit (A1.6).	Dec. 1412/2023 Art. 9(1); CAR 102.175; CAR-AAM.SB.150(a)
A2	The sponsoring entity confirms that the work is under its supervision and signs I2. Not required for recreational activity.	AWR-033 Issue 1 Part III
A3	Complete where the operator does not own the aircraft. The lease or use agreement is provided in AT01; it shall leave operational control and maintenance responsibility with the operator or state how they are allocated.	CAR 102.025
A4	Non-excluded RPA need an RPA Operator Certificate. Very small RPA operated for hire need notification 5 business days before first operation. List previous AWR-033 permissions for the same activity.	CAR 102.065, .305, .340, .345
A5	The Chief Remote Pilot shall hold a remote pilot licence; the Maintenance Controller function may be contracted. Route B: Accountable Manager, Chief Remote Pilot and Maintenance Controller as a minimum. Route C: all six roles, verified by the Authority on F1-02; one person may hold more than one function with the agreement of the Authority, provided that the compliance monitoring function remains independent of the functions it monitors (CAR-AAM.SB.150(b)(1)); ownership and control (shareholders above 10 %) are declared in F1-01 Section 1.	CAR 102.315, .320; CAR-AAM.SB.150(b)(1)
A6	List every organisation whose failure could affect safety, security or compliance (consortium members, USSP, C2 Link service provider, OCC, maintenance), and attach the agreements (AT09). For a consortium, the applicant shall be the single operator with contractual control.	CAR-AAM.SB.150(c), .455; SORA OSO 13

Table 16. Guidance on Part A

Operational control arrangements (who may release, continue, divert and terminate a flight; minimum crew; maximum aircraft per pilot) and safety management arrangements are described in the operations manual (AT06) and the safety management description (AT12), not in the form.

5.4. PART B – OPERATION AND PERMISSIONS

Field	Guidance	Reference
B1	Tick every applicable use case; the primary use case is the one described in B2.	Dec. 1412/2023 Art. 10
B2	Write for a reviewer who has not seen the attachments: purpose, who needs the service, a typical mission from planning to recovery, the measurable outcome and what is excluded. Maximum 150 words; the full CONOPS is AT06.	Dec. 1412/2023 Art. 10; SORA Step 1
B3.1–B3.2	Visual conditions and control method shall be consistent with screening questions 1 and 8.	CAR 102.105, .125

Field	Guidance	Reference
B3.3	Ratio of remote pilots to aircraft and maximum aircraft airborne at once. More than two aircraft per pilot only for displays.	CAR 102.115(4)–(5)
B3.4	Height in metres and feet AGL, and AMSL where terrain varies. Above 120 m / 400 ft requires approval.	Dec. 1412/2023 Arts 4, 15(6); CAR 102.045
B3.5	Maximum range from the remote pilot station; shall be supported by C2 link coverage evidence (AT04).	CAR 102.130; OSO 06
B3.6	Day only or day and night; operating hours, days of the week and expected flights per day.	Dec. 1412/2023 Art. 17(2)
B4	Tick only what is sought. Aerial imaging needs National Survey Authority authorisation; the NSA may review and copy recorded data. Delivery needs prior licence from the Authority and the relevant entities. Exemptions under CAR 10 and AltMoC requests shall be justified in AT17.	Dec. 1412/2023 Arts 15(8)–(9); CAR 102.230(5); CAR 10
B5	Regulatory learning – see section 5.4.1.	AMC3 CAR-AAM.SB.100

Table 17. Guidance on Part B

5.4.1. B5 – Regulatory learning

The Authority keeps a Regulatory Learning Plan listing the questions it must answer to draft CAR-AAM, for example final reserve energy in high temperatures, OCC staffing per aircraft, GNSS interference mitigation, noise acceptance near housing and UTM performance (AMC3 CAR-AAM.SB.100). Route B applicants are invited, and Route C applicants required, to state which questions their operation can inform and to provide periodic operational data (G9). Route B data are used only in aggregated form for rule-making.

5.5. PART C – AIRCRAFT AND SYSTEM

Field	Guidance	Reference
C1	Every aircraft except micro (< 250 g) shall be registered before use; large RPA under CAR 47. The characteristic dimension is the wingspan, main rotor diameter or maximum blade-tip distance; with the maximum speed it selects the iGRC column. Design basis codes: MD, DV, CA, TC, SFP (as defined in the form).	Dec. 1412/2023 Art. 2; CAR 102.170; SORA Step 2
C2.1	Aircraft type of the most demanding aircraft; complete one C2 sheet per additional type (AT04).	CAR 180 App. 4
C2.2	Propulsion and energy source; usable energy and number of batteries per aircraft.	OSO 05, 23
C2.3–C2.5	C2 link technology, bands and TRA status; C2 Link service provider from the applicability date stated in CAR 180 Appendix 4; lost-link logic and timeouts configured for this operation, not the manufacturer default unless unchanged.	CAR 102.130, .135; OSO 06
C2.6	Navigation source (GNSS, RTK, inertial) and the detection of and response to GNSS interference.	Section 7.11
C2.7	Identification and conspicuity equipment. Aircraft above 150 kg shall carry approved radio, GNSS navigation and a Mode S transponder.	CAR 102.235(8)

Field	Guidance	Reference
C2.8	Detect-and-avoid means and performance, or “None”. Any system shall not introduce a greater hazard.	CAR 102.240
C2.9	Containment functions fitted. Pyrotechnic parachutes are dangerous goods and shall be marked on the aircraft.	CAR 102.415 GM; CAR 92
C2.10	Payload type; cargo, winch or sprayer installations also require G7 and B4.	CAR 102.105(4)(i)
C2.11	Large RPA need a CAR 21 special (restricted) or experimental certificate. Route C: the airworthiness basis is a type certificate, a validated type certificate, a Sandbox Flight Permit or, for unmanned aircraft at SAIL I to IV only, a design verification or declaration accepted by the Authority (CAR-AAM.SB.250(c)). Certificate, design verification or declaration references are expected for SAIL IV and above. Modifications need approval.	CAR 102.015(2), .050; CAR-AAM.SB.250
C2.12	EASA automation levels: 1 assistance; 2 human-AI teaming; 3 advanced automation. Machine-learning models shall not change in service without approval as a Major Change. Safety-critical functions without real-time human intervention are approved only for Complexity Level L3 projects after an accepted demonstration programme (CAR-AAM.SB.280(c)–(d)).	CAR-AAM.SB.280; AMC1 SB.280

Table 18. Guidance on Part C

5.6. PART D – LOCATIONS AND GROUND ENVIRONMENT

Field	Guidance	Reference
D1	Precise locations are listed in D2. Generic (location-independent) applications shall describe in AT06 the procedure used to size volumes, assess each new site and notify the Authority before flight.	SORA Step 1
D2	WGS 84 latitude and longitude in decimal degrees (six decimals) or DMS; governorate and wilayat; elevation AMSL; function code.	—
D3	Name and revision of the .kml / .kmz file (AT03) and the height reference used in it. Coordinates in D2 shall match the file.	SORA Step 1
D4	Dimensions of the flight geography, contingency volume, ground risk buffer and adjacent area. Adjacent area: distance flown in 3 minutes at maximum speed, not less than 5 km and not more than 35 km.	SORA Steps 2, 8
D5	Use the maximum density anywhere in the operational volume and ground risk buffer for the iGRC, and the average density in the adjacent area for containment. Consider time of day, weekends, holidays and seasons. A water route does not by itself mean no exposed people.	SORA Steps 2, 8; CAR 102.075
D6	Distance from the nearest edge of the ground risk buffer to each sensitive site within 10 km; write “None within 10 km” where applicable.	Dec. 1412/2023 Art. 17(1); RD 118/2011
D7	Owner consent for property overflown or flown near; local authority approval for public or residential areas (AT15).	CAR 102.025(4)

Table 19. Guidance on Part D

5.7. PART E – AIRSPACE AND UTM

Field	Guidance	Reference
E1	Airspace class and structures from the current Oman AIP and NOTAM; state the AIRAC date checked. Controlled or segregated airspace follows two distinct steps: operation in controlled airspace needs ATC approval or clearance (CAR 102.150; CAR 180.125); a segregated area needs a special airspace use approval through ANSD and the airspace process (AD 994/2025), with its activation arrangements. Give the lateral and vertical limits with datum (AGL/AMSL), the UTC activation window, buffers and the AIP/AIRAC reference in AT03 or AT09. A NOTAM is published for approved operations in the vicinity of controlled aerodromes where required by the ATS provider or the approval conditions.	CAR 102.150, .230(3)
E2	On first contact ATS shall know the flight is a drone. ATS may allocate a call sign or code. After authorisation and before each flight, as applicable: ATS notification (operator); NOTAM request through the ATS provider to AIS; flight plan where required; ATC clearance on the day. For each affected unit, give the agreement status, conditions and open actions in AT09 and list any pending item in H2. Coordinate with RAFO where military airspace is affected (E2.3).	CAR 102.160(2), .235(4)
E3	UTM services shall come from a USSP designated by the Authority or an interim arrangement stated in the Sandbox Approval. A traffic display is not separation provision; ATS instructions prevail. State in E3 the arrangement used (designated USSP, interim arrangement accepted by the Authority, or no UTM service) and give in AT09 the data shared, who monitors conformance and the action agreed with ATS if the service fails, including pause and resumption criteria.	CAR-AAM.SB.405
E4	Expected manned traffic, means of detection and avoidance action. VLOS: give way and land when another aircraft is seen or heard. BVLOS: describe the detection means and their limits, who decides on avoidance and the time available to act, consistent with the SORA TMPR (section 7.7) and the right-of-way rules of CAR 180.	CAR 102.025(3)(d), .240

Table 20. Guidance on Part E

5.8. PART F – RISK ASSESSMENT SUMMARY

Part F records the results of the SORA and of the additional hazard assessment; it does not replace AT07 and AT08. Chapter 7 explains each step and reproduces the SORA 2.5 tables. F1.2 shall name a person who has independently checked the assessment and who was not involved in preparing it. In F2 each result shall reference the AT07 section containing its justification. The Authority will verify every result against AT07 and AT08 (CAA-SOP-AAM SOP-03). Each air-risk control relied on shows its owner and its status (P, I or V, section 5.1(c)); where segregation is claimed, show how activation and access are controlled.

5.9. PART G – OPERATIONS, INSURANCE AND OBLIGATIONS

Field	Guidance	Reference
G1	Reference, revision and structure of the operations manual (AT06).	AMC1 CAR-AAM.SB.300

Field	Guidance	Reference
G2	Commercial remote pilots need a remote pilot licence. BVLOS needs the IR theory examination or an ROC with BVLOS approval. RT certificate in controlled airspace and within 3 NM of a controlled aerodrome. Route C: remote pilot licence or certificate issued by the Authority or, for Complexity Level L2 and L3 projects where no appropriate licence category exists, a Sandbox Remote Pilot Authorisation (section 8.3); medical certificate of at least Class 3; ICAO language proficiency Level 4 or higher where communicating with ATS; a pilot on board with passengers holds a licence with the appropriate category and type rating and a Class 1 medical certificate. Where ATS communication is required, cross-reference the primary and backup communication means, the call sign and any transponder or ADS-B equipment (C2.7).	CAR 102.120, .255, .260; CAR-AAM.SB.310
G3	Most restrictive of manufacturer, regulatory and operator limits. Maximum wind 20 kt unless the manufacturer limit is lower; day VMC (visibility ≥ 5 km, ceiling ≥ 1 500 ft) unless night is approved.	CAR 102.105(4)(j)–(l)
G4	AT10 reference, date the emergency contacts were last verified and date of the last exercise.	OSO 08
G5	Accidents and serious incidents immediately to the Authority and the accident investigation authority; other occurrences within 72 hours; security or cyber incidents within 24 hours to the CAA and to the competent security or cybersecurity authority (CAR-AAM.SB.460(c); Appendix 2 Part B item 10). For Route C, CAR-AAM.SB.215 applies directly. For Routes A and B, CAR 102 Subpart G allows 3 days for written reports; the 72-hour period declared in G5 is applied as a condition of the permit or authorisation (CAA-SOP-AAM SOP-02 and SOP-03). Use the reporting channel and 24/7 contact published by the Authority.	CAR 13; CAD 01-02; CAR-AAM.SB.215
G6	NSA imaging approval reference, secure storage of aircraft and the cybersecurity summary (AT13).	Dec. 1412/2023 Art. 17(6)–(7)
G7	Cargo and dangerous goods status; CAR 92 approval reference where DG are carried (AT14).	CAR 92
G8	Third-party liability insurance for the whole licence period (Dec. 1412/2023 Art. 9(2)); for RPA above 5 kg also CAR 102.025(3)(a). Route C minimum amounts are set by the Authority for the Complexity Level and aircraft mass; the Authority is notified at least 30 days before any cancellation or reduction of cover (CAR-AAM.SB.555(b)–(c)).	Dec. 1412/2023 Art. 9(2); CAR 102.025(3)(a); CAR-AAM.SB.555
G9	Route B: quarterly summary using Attachment B. Route C: the Performance Monitoring Plan (CAR-AAM.SB.600) replaces the summary.	CAR 102.025(12); CAR-AAM.SB.600

Table 21. Guidance on Part G

5.10. PART H – ATTACHMENTS AND OPEN ITEMS

H1 lists the attachments required by route (● required; ○ if applicable). For each attachment give number, revision and date, and the status P (proposed), I (implemented) or V (verified). H2 lists every open item (unverified claim, pending agreement, failed test or missing evidence) with its owner, due date and effect on flight release – for example “no flight until closed” or “no BVLOS

segment until closed". In H3 the applicant confirms that the pre-submission checklist (Attachment C) has been applied.

5.11. PART I – DECLARATIONS AND SIGNATURES

The Accountable Manager signs for organisations; individual Route A applicants sign as remote pilot in command (Dec. 1412/2023 Arts 10 and 15(4)). For Routes B and C the declaration includes acceptance of the residual risks stated in Part F. The internal review signatures (I3) are not CAA approval. The media statement (I4) applies to Route C under CAR-AAM.SB.560(d) and to Routes A and B as a condition of the permit or authorisation. Signatures follow section 4.3.

5.12. PART J – FOR CAA USE ONLY

Part J is completed by the Authority in accordance with CAA-SOP-AAM SOP-01 to SOP-04. It records registration, completeness, fee, route confirmation, verified SAIL, Complexity Level and Target CAR-AAM Category (Route C), coordination, decision, permission number, conditions and the reasons and review rights for any refusal. Where ATS is affected, the position of the ATS provider and the regulatory assessment of ANSD are recorded separately in the file and referenced in J3. J4.3 lists any condition to be closed before the first flight or the next phase, and who verifies its closure.

6. ATTACHMENTS: REQUIRED CONTENT

6.1. GENERAL

Part H of the form lists the attachments by route. This chapter states what each shall contain. Content may be combined in fewer documents provided the section references are given in the form. Each attachment shall carry a document number, revision and date, and follow the naming convention in section 4.3.

6.2. PROPORTIONALITY

The level of detail shall be proportionate to the risk. For Route B it follows the SAIL and the OSO robustness required; for Route C, AMC2 CAR-AAM.SB.155 sets the level by Complexity Level. Low-robustness requirements may be met by declaration, but the Authority may request evidence.

6.3. CONTENT OF EACH ATTACHMENT

ID	Attachment	Required content
AT01	Identity and approvals	Commercial registration; civil ID for individuals; approvals listed in A4; aircraft registration certificates; lease or use agreement (A3).
AT02	Insurance	Certificate naming the operator, aircraft, area, type of operation, limits and validity.
AT03	Maps and geospatial files	.kml / .kmz files containing the flight geography, contingency volume, ground risk buffer, adjacent area and, where available, the air risk buffer; chart or imagery source, effective and survey dates, prepared and checked by; continuation of D2.
AT04	Aircraft and system	Manufacturer, model, configuration; dimensions, masses, speeds, climb, descent and turn rates (CAR 180 App. 4 para 3.2(k)); endurance; propulsion and energy (battery chemistry, usable energy); environmental limits (wind, temperature, ingress protection); C2 link (bands, power, TRA status, coverage evidence, number of remote pilot stations and handover); navigation and GNSS fallback; identification, lights, DAA; geo-fence, return-to-home, flight termination, recovery device, redundancy; payload; software and firmware baseline; automated functions with level, ODD, exit detection, pilot role and fallback; architecture diagram with common power, network and positioning dependencies; maintenance programme, release to service, battery management, inspections after heat, dust or sand, and software configuration control.
AT05	Design basis evidence	Manufacturer declaration and means of compliance (CAR 102.400–.405); design verification report proportionate to SAIL; CAR 21 certificate or type certificate; noise data (CAR-AAM.SB.505); qualification evidence for Oman conditions.

ID	Attachment	Required content
AT06	CONOPS and operations manual	Mission narrative; organisation chart, operational control and staffing (CAR 102.025(6)); site assessment procedure for generic locations; controlled ground area procedure; terrain, obstacles and local effects; manned traffic and conflict management; normal operating sequence (planning, site preparation, release, take-off, en route, recovery, post-flight); contingency procedures for C2 loss, GNSS loss, traffic, fly-away, propulsion failure, battery fire, people entering the area, weather or dust, loss of UTM or OCC, crash and security incidents; for each failure affecting ATS (lost C2 link, lost ATS communication, navigation loss, fly-away, breach of the operational volume): who alerts ATS, the backup channel, the expected route and altitude of the aircraft and the termination or recovery action, with the immediate alert distinguished from formal occurrence reporting (CAR 180 Appendix 4; CAR-AAM.SB.400(c)(6) for Route C); operating envelope with dispatch checks; checklists (CAR 102.415 GM); records and retention (36 months, CAR 102.025(12)); training, checking, fitness and fatigue; psychoactive substances policy. Structure: EASA specific-category template or AMC1 CAR-AAM.SB.300.
AT07	SORA assessment	All ten steps with the evidence for each claim (Chapter 7); volume and buffer calculation basis (navigation and flight-technical error, reaction times, wind, 1:1 rule or ballistic model); population data; Oman environment assessment (section 7.11); tools used and their versions; comprehensive safety portfolio listing the evidence for every requirement.
AT08	Hazard and threat register	Hazards and threats outside the SORA steps (cargo release, battery fire on the ground, unlawful interference, cyber attack), assessed with the matrix in section 7.10: ID, phase, consequence, initial risk, controls and owner, verification, residual risk, accepted by. Route C: integrated register under CAR-AAM.SB.200(d).
AT09	Agreements	ATS letters of agreement or coordination records, NOTAM arrangements, USSP and C2 Link service agreements with performance and incident notification terms, TRA licence, other service agreements listed in A6. Where ATS is affected, the agreement or coordination record shows its effective dates and covers, in proportion to the operation: affected units and duty contacts; call signs, communications and readback; airspace structure and its activation, release and cancellation; separation or segregation concept and who may stop the flight; flight intent and conformance monitoring; who requests and checks any NOTAM; contingency procedures; and occurrence coordination (mirroring CAR-AAM.SB.400(c)).
AT10	Emergency response plan	Emergency command; verified contacts (ROP, CDAA, nearest hospital, CAA, ATS unit); location reporting; responder access; battery-fire response; recovery from water; preservation of evidence; exercise record.
AT11	Personnel	Licences and ratings, RT certificates, medical or fitness evidence, type training and recency for the crew in G2; CVs of nominated persons in A5; continuation of G2.
AT12	Safety management	Route B: hazard reporting, risk review, just culture and internal audit, proportionate to the operation. Route C: SMS manual under CAR 100 and CAR-AAM.SB.210, and the security programme under CAR-AAM.SB.225. Basis of the SMS: Route C, CAR-AAM.SB.210; Route B, a condition of the authorisation proportionate to the SAIL. Where risks are shared with ATS or a USSP, state who owns each control; residual risk is accepted under CAR-AAM.SB Appendix 2 (section 7.10).

ID	Attachment	Required content
AT13	Security, privacy and data	Secure storage and controlled release of aircraft; protection against unlawful interference; NSA imaging approval and data handling; privacy (Dec. 1412/2023 Art. 17(6)–(7); PDPL, RD 6/2022); cybersecurity of aircraft, ground station and C2 (Route C: evidence pack under CAR-AAM.SB.460, summarised in F1-01).
AT14	Dangerous goods	Classification (ICAO Doc 9284), packaging, loading, release method, CAR 92 approval and training, or procedures preventing inadvertent carriage.
AT15	Consents	Landowner and local authority consents, with validity.
AT16	Fee	Payment reference under CAA Decision No. 879/2025 (Routes A and B) or the Sandbox fee publication (Route C, section 4.10).
AT17	Applicability and Compliance Matrix	Every applicable requirement (this form, CAR 102, Dec. 1412/2023, other CARs, SORA OSOs and, for Route C, CAR-AAM.SB) with means of compliance, evidence, monitoring and frequency, and the corresponding CAR-AAM Part, in CAR-AAM.SB form F1-04 format for both Routes B and C. Means of compliance: full compliance; AMC; AltMoC with approval reference; exemption under CAR 10 with reference; or not applicable with justification.
AT18	Sandbox forms	CAR-AAM.SB forms F1-01 (Sandbox Supplement) and F1-03 (Complexity Level Self-Assessment) and the documents they reference (Chapter 8).

Table 22. Required content of attachments AT01–AT18

7. SORA 2.5 GUIDANCE

7.1. EDITION TO BE USED

Routes B and C use JARUS SORA 2.5 (Main Body JAR-DEL-SRM-SORA-MB-2.5 of 13 May 2024 and its annexes) or the corresponding EASA AMC edition (ED Decision 2025/018/R), or a later edition accepted by the Authority. The edition of the Main Body and of each annex shall be stated in AT07. Editions shall not be mixed and consultation drafts shall not be used: their mitigation tables and OSO numbering differ from the released text. The tables below follow the JARUS SORA 2.5 Main Body.

For operations with persons on board, and other operations SORA does not cover adequately, a structured methodology acceptable to the Authority is used instead (functional hazard assessment, bow-tie analysis, quantitative safety objectives) (CAR-AAM.SB.205(b)).

7.2. STEP 1 – DOCUMENTATION OF THE OPERATION

The concept of operations is the form (Parts B to E and G) together with AT06. AT07 references the operations manual, the geospatial file and the flight profiles for normal, contingency and emergency phases.

7.3. STEP 2 – INTRINSIC GROUND RISK CLASS

Select the column whose dimension and speed both cover the aircraft (if either is exceeded, use the next column) and the row for the maximum population density in the operational volume and ground risk buffer (D5.1). An aircraft of 250 g or less with a maximum speed of 25 m/s or less has iGRC 1 unless flown over assemblies of people. The Annex F model may be used instead.

Maximum population density	1 m / 25 m/s	3 m / 35 m/s	8 m / 75 m/s	20 m / 120 m/s	40 m / 200 m/s
Controlled ground area	1	1	2	3	3
< 5 people/km²	2	3	4	5	6
< 50 people/km²	3	4	5	6	7
< 500 people/km²	4	5	6	7	8
< 5 000 people/km²	5	6	7	8	9
< 50 000 people/km²	6	7	8	9	10
> 50 000 people/km²	7	8	Not part of SORA	Not part of SORA	Not part of SORA

Table 23. Intrinsic ground risk class (SORA 2.5 Main Body)

7.4. STEP 3 – GROUND RISK MITIGATIONS AND FINAL GRC

Mitigations apply in sequence. When the M1 mitigations are applied, the GRC cannot be reduced below the lowest value (controlled ground area) in the column used in Step 2. This limit does not apply to M2. Each claimed level shall meet the integrity and assurance criteria of Annex B. A controlled ground area is an iGRC row, not an M1 credit. If M2 changes descent behaviour, check that the ground risk buffer is still valid. A final GRC above 7 is outside SORA (certified category).

Mitigation	Levels available
M1(A) Strategic – sheltering	Low −1 / Medium −2
M1(B) Strategic – operational restrictions (time and place)	Medium −1 / High −2
M1(C) Tactical – ground observation	Low −1
M2 Effects of ground impact reduced	Medium −1 / High −2

Table 24. Ground risk mitigations

7.5. STEP 4 – INITIAL AIR RISK CLASS

An airport or heliport environment cannot be ARC-a; ARC-a applies only to atypical or segregated airspace. NOTAM and time-of-day restrictions are Step 5 strategic mitigations, not Step 4 inputs.

AEC	Operational environment	iARC
1	Airport / heliport environment in Class B, C or D airspace	ARC-d
2	Above 150 m (500 ft) AGL, below FL 600, in a Mode S veil or TMZ	ARC-d
3	Above 150 m AGL, below FL 600, in controlled airspace	ARC-d
4	Above 150 m AGL, below FL 600, uncontrolled airspace over an urban area	ARC-c
5	Above 150 m AGL, below FL 600, uncontrolled airspace over a rural area	ARC-c
6	Airport / heliport environment in Class E, F or G airspace	ARC-c
7	Below 150 m AGL in a Mode S veil or TMZ	ARC-c
8	Below 150 m AGL in controlled airspace	ARC-c
9	Below 150 m AGL in uncontrolled airspace over an urban area	ARC-c
10	Below 150 m AGL in uncontrolled airspace over a rural area	ARC-b
11	Above FL 600	ARC-b
12	Atypical or segregated airspace	ARC-a

Table 25. Airspace encounter categories and initial ARC

7.6. STEP 5 – STRATEGIC MITIGATIONS AND RESIDUAL ARC

Reductions are claimed by operational restriction (boundary, time, exposure) or by common structures and rules, each with evidence (Annex C). Possible reductions: iARC-d (AEC 1, 2, 3) to ARC-c or ARC-b; iARC-c (AEC 4 to 9) to ARC-b. ARC-a may be claimed only for a restricted, prohibited or danger area reserved for the operation, airspace where manned aircraft cannot operate, or other atypical airspace where the risk of collision between a UAS and manned aircraft is acceptably low (SORA 2.5 Main Body Step 4; Annex C). Mitigations used in Step 3 or Step 6 shall not be counted again. A NOTAM or a segregated area earns strategic-mitigation credit only with evidence of the published limits, actual activation, access control and the action taken if another aircraft enters (Annex C).

7.7. STEP 6 – TACTICAL MITIGATION PERFORMANCE REQUIREMENT

VLOS is an acceptable tactical mitigation for all ARC levels. For BVLOS: ARC-a no requirement; ARC-b Low; ARC-c Medium; ARC-d High. AT07 shall describe how each function (detect, decide, command, execute, feedback loop) is achieved and its robustness (Annex D).

7.8. STEP 7 – SAIL

Final GRC \ residual ARC	ARC-a	ARC-b	ARC-c	ARC-d
≤ 2	I	II	IV	VI
3	II	II	IV	VI
4	III	III	IV	VI
5	IV	IV	IV	VI
6	V	V	V	VI
7	VI	VI	VI	VI
> 7	Certified category – outside SORA			

Table 26. SAIL determination

For Route C the SAIL is one of the Complexity Level criteria: SAIL I–II indicates L1, III–IV L2 and V–VI L3; the overall level is the highest of all criteria in F1-03 (CAR-AAM.SB.157).

7.9. STEPS 8 TO 10 – CONTAINMENT, OSOs AND SAFETY PORTFOLIO

Containment robustness follows the Step 8 tables using the aircraft size, the SAIL, the adjacent-area population and assemblies within 1 km. Aircraft below 250 g have low containment. The OSO robustness required by SAIL is (NR not required, L low, M medium, H high):

OSO	Objective	I	II	III	IV	V	VI
01	Operator is competent and/or proven	NR	L	M	H	H	H
02	UAS manufactured by competent and/or proven entity	NR	NR	L	M	H	H
03	UAS maintained by competent and/or proven entity	L	L	M	M	H	H
04	Components designed to an airworthiness design standard	NR	NR	NR	L	M	H
05	UAS designed considering system safety and reliability	NR	NR	L	M	H	H
06	C3 link characteristics appropriate	NR	L	L	M	H	H
07	Conformity check of the UAS configuration	L	L	M	M	H	H
08	Operational procedures defined, validated and adhered to	L	M	H	H	H	H
09	Remote crew trained and current	L	L	M	M	H	H
13	External services adequate	L	L	M	H	H	H
16	Multi-crew coordination	L	L	M	M	H	H
17	Remote crew fit to operate	L	L	M	M	H	H

OSO	Objective	I	II	III	IV	V	VI
18	Automatic protection of the flight envelope from human error	NR	NR	L	M	H	H
19	Safe recovery from human error	NR	NR	L	M	M	H
20	Human factors evaluation; HMI appropriate	NR	L	L	M	M	H
23	Environmental conditions defined, measurable, adhered to	L	L	M	M	H	H
24	UAS designed and qualified for adverse environmental conditions	NR	NR	M	H	H	H

Table 27. OSO robustness by SAIL (SORA 2.5)

Note: OSO 05 at SAIL II is NR; see SORA 2.5 Table 14 note (c) and Annex E for UAS designs with novel or complex features and very limited operational experience.

Each OSO claim shall show both integrity and assurance at the claimed level (Annex E) and appear in AT17. The comprehensive safety portfolio (Step 10) lists the documents that show compliance with every requirement from Steps 2 to 9.

7.10. ADDITIONAL HAZARDS AND THE RISK TOLERABILITY MATRIX

Hazards and threats not fully addressed by SORA are assessed with the matrix of CAR-AAM.SB Appendix 2, Part A, which applies to all routes. Security threats use the same matrix with likelihood in place of probability.

Probability \ Severity	A Catastrophic	B Hazardous	C Major	D Minor	E Negligible
5 Frequent	INT	INT	INT	T3	T2
4 Occasional	INT	INT	T3	T2	T1
3 Remote	INT	T3	T2	T1	ACC
2 Improbable	T3	T2	T1	ACC	ACC
1 Extremely improbable	T2	ACC	ACC	ACC	ACC

Table 28. Risk tolerability matrix (CAR-AAM.SB Appendix 2, Part A)

Band	Acceptance	Required action
INT	Not acceptable	The operation does not proceed until the risk is reduced to at least T3.
T3	Authority decision	Submitted to the Authority with the proposed controls; operation only if the Authority accepts the risk in the authorisation.
T2	Accountable Manager	Accepted in writing by the Accountable Manager; reviewed at least annually and after any related occurrence.
T1	Safety manager	Accepted by the safety manager; monitored through the SMS.
ACC	Acceptable	No further action beyond normal monitoring.

Table 29. Risk acceptance by band

7.11. OMAN OPERATING ENVIRONMENT

The risk assessment shall address the conditions below (CAR-AAM.SB.205(d); OSO 23 and 24) with limits, mitigations and evidence.

Hazard	What to address
High ambient and surface temperature; heat-soak	Battery and avionics derating, density altitude, ground handling of batteries
Dust, sand and reduced visibility (shamal)	Ingress protection, sensor degradation, dispatch visibility limits
Coastal humidity, salt and corrosion	Inspection intervals, connector protection
Mountainous terrain, wadis, turbulence and rotor	C2 line of sight, terrain clearance, wind limits
GNSS jamming or spoofing	Detection, alerting, alternative navigation or safe fallback
Seasonal weather (Khareef fog and drizzle, convective storms)	Seasonal limits and monitoring sources
Wildlife and birds	Protected species, nesting seasons, bird-strike risk

Table 30. Oman operating environment hazards

8. ROUTE C – THE SANDBOX SUPPLEMENT

8.1. COMPOSITION OF A SANDBOX APPLICATION

A Sandbox application consists of Form AWR-033 (all Parts) and three CAR-AAM.SB forms. The CAR-AAM.SB forms do not repeat AWR-033: they contain only what is specific to the Sandbox.

Document	Content	Rule
AWR-033	Applicant, operation, aircraft, locations, airspace, SORA results, operations, insurance, attachments, declarations	CAR-AAM.SB.155(a)
F1-01 Sandbox Supplement	Ownership and Sandbox Programme; learning objectives; duration and phasing; Stop Conditions; ODD; airworthiness basis and Sandbox Flight Permit; OCC; vertiports; persons on board and entry into service; cybersecurity, environment, community, business model, monitoring and wind-down; map of SB.155(b) items; confidentiality; Sandbox declaration	CAR-AAM.SB.150, .155, .157
F1-03 Complexity Level	Self-assessment against each criterion, using data already given in AWR-033	CAR-AAM.SB.157
F1-04 Compliance Matrix	Submitted as AT17; the same format is used for Route B	CAR-AAM.SB.020(d)
F1-02 Eligibility Verification	Completed by the Authority from AWR-033 Part A and AT11	CAR-AAM.SB.150

Table 31. Documents of a Route C application

8.2. AFTER APPROVAL

GM2 CAR-AAM.SB.155 shows where each item required by CAR-AAM.SB.155(b) is found. After approval, Sandbox changes use F1-06 and F1-07, Phase Gates F1-05, and AltMoC requests F1-08; AWR-033 is not used again until conversion to CAR-AAM (section 2.5).

8.3. ASSOCIATED INSTRUMENTS

The following instruments are requested with the Route C application, with a Phase Gate package or as a Major Change, and are issued by the Director General of Civil Aviation Regulation as Sandbox Decision-Maker (CAA-SOP-AAM SOP-11). Until the Authority publishes the recommended templates (CAR-AAM.SB.675(d)), the content listed in Appendices 3 to 6 is provided in a form acceptable to the Authority.

Sandbox Flight Permit (CAR-AAM.SB.252; Appendix 3). For an AAM Aircraft without a type certificate or a validated type certificate. Provide the proposed flight conditions, the declaration of the design organisation with substantiation, the flight test programme with the qualifications of the test pilots and flight test engineers, and the assessment of risk to third parties (F1-01 Section 5; AT05). Only flight crew and essential test personnel may be carried; no flight over congested areas unless specifically approved; validity of not more than 12 months.

Sandbox Remote Pilot Authorisation (CAR-AAM.SB.310(b); Appendix 4). For remote pilots of Complexity Level L2 and L3 projects where no appropriate licence category exists. Provide evidence of completion of a competency-based training and assessment programme approved

by the Authority, the medical certificate (at least Class 3) and, where communicating with ATS, ICAO language proficiency Level 4 or higher (AT11).

AAM Landing Site or vertiport authorisation (CAR-AAM.SB.350 to .365; Appendix 5). For each site used in Sandbox operations. Provide the site assessment, the identity of the site operator and the vertiport operations manual (F1-01 Section 7). A site open to public passengers or located at a certified aerodrome is certified under CAR 139. The first use of a new site is a Major Change (CAR-AAM.SB.180(d)(7)).

UTM services (CAR-AAM.SB.405; Appendix 6). UTM services are provided only by a USSP designated by the Authority or under an interim UTM arrangement stated in the Sandbox Approval. A USSP applies for designation separately; the Sandbox Operator identifies the USSP and the interface control document in E3 and AT09.

Security programme (CAR-AAM.SB.225). Approved by the Authority before the first flight phase (AT12, AT13).

9. AFTER THE DECISION

9.1. OBLIGATIONS COMMON TO ALL ROUTES

a. Operate only within the permit, authorisation or Sandbox Approval and carry it, or an electronic copy, during operations.

b. Report occurrences as stated in G5.

c. Notify the Authority before implementing any change to the information in the application (amendment on AWR-033, or F1-06 / F1-07 for Route C).

d. Keep records for at least 36 months and make them available to the Authority.

e. Keep insurance in force for the whole period.

9.2. ROUTE B – CONDITIONS AND DATA

The CAR 102 Operational Authorisation states the SAIL, the OSO robustness levels accepted, the containment requirements, the operational limitations and the reporting conditions. The operator sends the periodic operational data under G9 using Attachment B. An authorisation is normally valid for up to 12 months and renewable. Route B is applied as an approval under CAR 102 with conditions, pending confirmation of its legal basis and the amendment of CAR 102 (section 1.4).

9.3. ROUTE C – THE SANDBOX LIFE CYCLE

Phases, Phase Gates, Stop Conditions, the Entry into Service Readiness Review, surveillance, close-out and the Sandbox Conversion Annex follow CAR-AAM.SB Subparts C, L and M and are processed by the Authority under CAA-SOP-AAM SOP-04 to SOP-11. Where ATS is affected, ATS readiness is part of each Phase Gate; suspension and resumption follow the Stop Conditions of the approval, and the ATS unit is informed when a planned flight is cancelled (CAR 180 Appendix 4).

9.4. SURVEILLANCE

The Authority may inspect the operator, its facilities, aircraft, records and personnel, and may witness operations, at any time during the validity of the permission. Findings are notified in writing with a corrective action period proportionate to their safety significance.

9.5. TRANSITION TO CAR-AAM

When the relevant CAR-AAM Part applies, Route A permits give way to open-category registration and competence, Route B authorisations convert to specific-category operational authorisations, and Sandbox instruments convert under CAR-AAM.SB.657. Assessments already accepted, where the SORA edition and the requirement are unchanged, are not repeated.

ATTACHMENT A: TRACEABILITY OF FORM FIELDS

Each field of Form AWR-033 Issue 2 is traced to the requirement it implements and to its location in the draft single form it replaces.

Form field	Oman law and CARs	CAR-AAM.SB	SORA 2.5	Draft single form
0.1–0.5	Dec. 1412/2023 Arts 1, 8, 14; CAR 102.110	SB.155, .165(e), .650, .657	—	0.1–0.3
0.6–0.9	CAR 102 (various); Dec. 1412/2023 Arts 15, 17; CAR 92; CAR 180 App. 4	SB.010, .157, .250, .252; AMC1 SB.157	Applicability	0.4
A1–A4	Dec. 1412/2023 Arts 2, 9(1); CAR 102.065, .175, .300–.340	SB.010(d), .150	OSO 01	A1–A4
A5–A6	CAR 102.315, .320	SB.150(b)(1), (c), .455; F1-02	OSO 01, 13	A5–A7
B1–B4	Dec. 1412/2023 Arts 3, 10, 14, 15, 17; CAR 102 (various); CAR 10; CAR 92	SB.155(b)(2), .252, .670	Step 1	B1–B5
B5	—	SB.100(b)(11); AMC3 SB.100; SB.600	—	new
C1–C2	Dec. 1412/2023 Art. 2; CAR 102.010, .015, .050, .125–.135, .170, .235, .240, .400–.420; CAR 180 App. 4	SB.245, .250, .252, .260, .280, .410	Steps 2, 6, 8; OSO 02–07, 18–20, 24	C1–C10
D1–D7	Dec. 1412/2023 Arts 15(1), 17(1); CAR 102.020, .025(4), .075, .155; RD 118/2011	SB.155(b)(2), .360	Steps 1, 2, 4, 8	D1–D9
E1–E4	Dec. 1412/2023 Art. 4; CAR 102.150, .160, .235, .240; CAR 172, 175, 180	SB.400, .405, .410, .415	Steps 4–6; OSO 13	E1–E5
F1–F3	CAR 102.025	SB.200, .205; App. 2 Part A	Steps 1–10	F0–F13
G1–G9	Dec. 1412/2023 Arts 9, 15, 17; CAR 102.025, .105, .120, .185–.260, Subpart G; CAR 13; CAR 92	SB.215, .225, .300–.330, .450–.465, .555, .600	OSO 08, 09, 16, 17, 23	G1–G13
H	—	SB.020(d); F1-01, F1-03, F1-04	Step 10	I1–I3
I	Dec. 1412/2023 Arts 10, 15–16	SB.155(d), .560(d)	—	J1–J4, F13
J	Dec. 1412/2023 Arts 11–12; CAA Decision No. 879/2025; CAR 15	SB.135, .145, .157, .160; F1-11	—	K1–K5
Moved to F1-01	—	SB.155–.180, .250–.252, .305, .350–.365, .405–.460, .500–.615	Steps 7–9	H0–H13

Table 32. Traceability of form fields

ATTACHMENT B: ROUTE B PERIODIC OPERATIONAL DATA TEMPLATE

Submitted every three months by Route B operators that agreed under B5.2, and by any Route B operator where the authorisation requires it.

Item	Value
Authorisation number and period covered	
Flights and flight hours (by aircraft type)	
Occurrences reported (number and references)	
C2 link loss events	
GNSS interference events	
Operational volume or airspace infringements	
Stop or abort decisions and reasons	
Environmental limits reached (heat, dust, wind)	
Observations relevant to the Regulatory Learning Plan	
Prepared by (name, role, date)	

Table 33. Route B periodic operational data

ATTACHMENT C: PRE-SUBMISSION CHECKLIST

This checklist is a self-assessment aid for applicants. It is not submitted, but the Authority will apply equivalent checks during the completeness review (section 4.5).

#	Check	Route	Done
1	Part 0 screening answered for the whole operation, including contingencies and the ground risk buffer	All	☐
2	Route in 0.7 consistent with 0.6; borderline answers explained in 0.9	All	☐
3	Every applicable field answered or marked “N/A” with a reason	All	☐
4	Coordinates in D2 match the geospatial file (AT03); height reference stated	All	☐
5	Insurance (AT02) covers the aircraft, area, operation and whole period	All	☐
6	Remote pilot licences and RT certificates valid for the whole period (AT11)	All	☐
7	Fee paid and reference provided (AT16)	All	☐
8	SORA edition stated; no mixing of editions; every credit referenced to AT07 evidence	B, C	☐
9	Final GRC, residual ARC, TMPR and SAIL consistent with the tables in Chapter 7	B, C	☐
10	Oman environment hazards addressed (section 7.11)	B, C	☐
11	No INT risk remains; T3 risks listed for the Authority’s decision (AT08)	B, C	☐
12	Compliance matrix (AT17) in F1-04 format covers all applicable requirements and OSOs	B, C	☐
13	ATS, USSP and C2 Link agreements in place or listed as open items (H2)	B, C	☐
14	Independent check of the risk assessment recorded in F1.2	B, C	☐
15	Internal review (I3) completed and signed	B, C	☐
16	F1-01 and F1-03 completed; Complexity Level consistent with 0.8	C	☐
17	Declarations signed (I1; I2 where applicable)	All	☐
18	File names and revisions follow section 4.3	All	☐

Table 34. Pre-submission checklist

ATTACHMENT D: WORKED EXAMPLE – ROUTE B, BVLOS PIPELINE INSPECTION

This simplified example illustrates how Part 0 and Part F are completed. It is illustrative only; real applications require the evidence described in Chapters 6 and 7.

D.1. OPERATION

BVLOS inspection of a desert oil pipeline in a sparsely populated area of Al Wusta, using a 15 kg multirotor (characteristic dimension 1.6 m, maximum speed 20 m/s) at 90 m AGL, in uncontrolled Class G airspace more than 20 km from any aerodrome, by day.

D.2. ROUTING

Screening question 1 (BVLOS) and question 8 (automated flight) are “Yes”; questions 14–16 are “No”. The route is therefore B; the indicative future category is Specific.

D.3. SORA SUMMARY (PART F2)

Step	Item	Result	Basis
2	Intrinsic GRC	3	Column 3 m / 35 m/s (dimension 1.6 m, speed 20 m/s); row < 5 people/km² (population grid, AT07 §3)
3	Mitigations; final GRC	M2 Medium −1 → 2	Parachute system with Annex B evidence (AT05); column minimum respected
4	AEC; initial ARC	AEC 10; ARC-b	Below 150 m AGL, uncontrolled airspace, rural
5	Residual ARC	ARC-b	No strategic mitigation claimed
6	TMPR	Low	BVLOS in ARC-b
7	SAIL	II	Final GRC 2 × ARC-b
8	Containment	Low	Step 8 tables; sparsely populated adjacent area, no assemblies within 1 km
9	OSOs	Met at SAIL II	AT17, e.g. OSO 08 Medium, OSO 06 Low

Table 35. Worked example – SORA results

The Authority would expect a decision within the SAIL I–II target time (section 4.7) from completeness, with conditions stating SAIL II, the accepted OSO robustness, the containment requirement and the operational limitations.