

## SPECIFIEKE PROCEDURE

**Belgian Military Airworthiness Document - Unmanned Aircraft Systems**

## Synthese

Het doel van deze richtlijn is om een regelgevend kader te bieden voor het gebruik van onbemande luchtvaartsystemen (unmanned aircraft systems - UAS) binnen Defensie.

Enerzijds worden er luchtwaardigheidseisen bepaald waarmee een UAS veilig kan ingezet worden (Initial Commissioning) onder de autoriteit van de Belgische Defensie, ongeacht de omstandigheden, de omgeving (burger of militaire omgeving, in België of in het buitenland) of de operator (burger, militair, Belgisch of buitenlands).

In deze context is het nodig om:

- De UAS categorieën te bepalen;
- Voor elke UAS categorie, de minimale luchtwaardigheidseisen te bepalen in volgende domeinen: certificatie; luchtoperaties, onderhoud, opleiding van operatoren, opleiding van onderhoudspersoneel, ontwerp-, productie- en onderhoudsorganisaties
- Het proces te bepalen voor toelating van ingebruikname van een Belgische militaire UAS onder de verantwoordelijkheid van de BMAA;
- Het proces te bepalen waardoor een Belgische militaire UAS in het buitenland kan ingezet worden na toestemming van de lokale bevoegde luchtwaardigheidsautoriteit;
- Het proces te bepalen waardoor het gebruik van buitenlandse militaire UAS, burger UAS of UAS van andere overheidsdiensten kan worden toegelaten.

Anderzijds behandelt deze richtlijn ook de rol en competenties (niet exhaustief) van andere autoriteiten binnen de Belgische Defensie op het vlak van onbemande luchtvaartsystemen.

In het kader van de wederzijdse erkenning tussen nationale (militaire) luchtwaardigheidsautoriteiten en om de equivalentie van richtlijnen en procedures te kunnen vaststellen, werd deze richtlijn in het Engels opgesteld.

## Autoriteiten

|                       |            |
|-----------------------|------------|
| Redactionele overheid | VALID-BMAA |
|-----------------------|------------|

|                       |       |
|-----------------------|-------|
| Goedkeurend organisme | VCHOD |
|-----------------------|-------|

|                     |     |
|---------------------|-----|
| Uitgevend organisme | BAF |
|---------------------|-----|

## Reden van update/nieuwe versie

N/A

## Toepassingsgebied: Wanneer en waar van toepassing?

|           |          |
|-----------|----------|
| Categorie | Air; UAV |
|-----------|----------|

|            |     |
|------------|-----|
| Toepassing | N/A |
|------------|-----|

|                         |                                                                       |
|-------------------------|-----------------------------------------------------------------------|
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## PREAMBLE

This Belgian Military Airworthiness Document is based upon following European Regulations regarding Unmanned Aircraft Systems and their Acceptable Means of Compliance (AMC) and Guidance Materials (GM):

- ✓ COMMISSION DELEGATED REGULATION (EU) 2019/945 of 12 March 2019 on unmanned aircraft systems and on third-country operators of unmanned aircraft systems.
- ✓ COMMISSION IMPLEMENTING REGULATION (EU) 2019/947 of 24 May 2019 on the rules and procedures for the operation of unmanned aircraft (Text with EEA relevance).

In addition, for the Belgian Defence, the implementation of airworthiness of unmanned military aircraft is regulated by the the law of July 31st, 2020 "Law on the airworthiness of military aircraft" and the CHOD instruction 22-50077884 of April 7th, 2022 "Establishment of the Belgian Military Airworthiness Authority and related implementing directives".

Conform to the CHOD instruction 22-50077884 establishing the Belgian Military Airworthiness Authority and the law of July 31st, 2020 "Law on the airworthiness of military aircraft", this BMAD-UAS is drafted and published under the editorial and approval authority of the BMAA. The objective is to provide a regulatory framework in order to ensure a correct implementation of the Unmanned Aircraft Systems (operated by the Belgian Defence or under its Authority).

Each UAS implemented by Belgian Defence or by other actors within Belgian Defence facilities must adhere to following principles which constitute the regulatory framework:

- ✓ Comply with technical conditions and requirements, including airworthiness specifications (Technical Pillar)
- ✓ Be operated by a trained pilot (Education Pillar)
- ✓ Be operated in an authorized airspace (Airspace Pillar)
- ✓ Comply with additional rules defined in an Exploitation Manual or CONOPS, depending on the UAS-category and have an aviation safety management system in place (Regulation Pillar).

As the scope of the BMAA is limited to airworthiness, it may not act as the single Competent Authority for the UAS implementation. Therefore, additional Competent Authorities have to be identified within the Belgian Defence in order to create and implement the UAS regulatory framework. Some of them have to develop the principles mentioned in §4; while other ones have to control/verify that the BD UAS-operators work pursuant to the aforementioned principles/regulatory framework (role of the Operating Authority which is also considered as a Competent Authority).

As a result; a Competent Authority remains responsible to develop its own set of rules as well as the implementation directives applicable to the Belgian Defence (BD) UAS-operators.

The BMAA acts as a Competent Authority in the airworthiness domain, part of the technical pillar.

Requirements related to other domains under the responsibility of other Competent Authorities, which are part of the regulatory framework, may not be enforced by the BMAA but are only recommended. It remains the responsibility of the concerned Competent Authority to take the necessary actions, as prescribed in the previous paragraph, to impose them.

## KEY TO USE OF DOCUMENT

Requirements – including the Requirement number, are contained within boxes with a dark blue field on the left-hand edge.

### **BMAD-UAS-A.03: Monitoring System¶**

¶

Pursuant to the Royal Decree, dated on 17 Augustus 2017, related to the Internal Control System, which obliges the Belgian Defence to ensure the achievement of its objectives through processes and mechanisms, the correct application of the requirements mentioned at BMAD-UAS A.01 & A.02 is the responsibility of the OA and its Command & Control (C²) chain.¶

Reports shall be recorded by the OA and shall be made available if requested by the Belgian Military Airworthiness Authority.¶

Acceptable Means of Compliance (AMC) – including the AMC number, are contained within grey shaded boxes with a middle-blue field on the left-hand edge. AMC are located directly after the Requirements to which they refer for ease of use. AMC are means that organisations and personnel may use to demonstrate compliance with the provisions of this BMAR.

### **AMC to BMAD-UAS A.03 Monitoring System**

The Command & Control (C²) chain of the OA may refer to the [ICS Handbook's requirements](#) in order to put in a place a control and oversight system.

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Guidance Material (GM) – including the Guidance Material number, are contained within grey shaded boxes with a light-blue field on the left-hand edge. GM are located directly after the Requirements (and if applicable, directly after the AMC) to which they refer for ease of use.

### **GM to BMAD-UAS A.03: Monitoring System**

The purpose of the Monitoring system is, to control and monitor the correct application of the Cat OPEN UAS's requirements in order to cope with the higher requirements coming from the Belgian Defense Policy Handbook (for instance see Part III: Governance, Steering, Policy: Commandment, § Principles: 'Control'. Policy Stakeholders: IG, All ACOS, All DG, All COMOPS), and other documents issued by the CHOD Department.

Therefore, the Command & Control (C²) chain of the OA monitors (not exhaustive):

1. The processes established by the OA and the Operators in order to cope with the requirements mentioned at BMAD-UAS A.01 & A.02.
2. The Technical & Logistical status of each individual UA-asset or UA-system in its inventory.

It might be done through audits and inspections or any other system considered useful by the OA.

## Section A - UAS CATEGORIES AND ASSOCIATED REQUIREMENTS

### Subpart A - UAS to be operated in the 'OPEN' Category

#### BMAD UAS A.01 Requirements for UAS to be operated in the 'OPEN' Category

1. Operational requirements:

- a. UA: MTOM  $\leq$  25 kg.
- b. Operation within the (E)VLOS (may be assisted by an UA Observer).

**Remarks:**

- ✓ If the UAS MTOM is  $<$  900g and the follow-me mode is activated, the UAS operates in a range of 50m and at max 50m AGL.
- ✓ With an UA observer, clear and effective communication shall be established between the remote pilot and the UA observer.
- ✓ **Nighttime** operations are allowed:
  - Pilot & Observers are present and equipped with night vision equipment in order to be able to see the UA;
  - The UA is equipped with lights that avoid any confusion with the navigation lights of a manned aircraft;
  - The UA is equipped with features that enable an easy identification by means of the night vision devices used by the pilot and the observer.

- c. Flight Altitude: max **120m AGL** (except if otherwise decided by COMOPSAIR A3.2 pursuant to§1.f.).

**Remark:** At flight altitudes of less than 30 m AGL (might be higher if operations in a dedicated restricted airspace (see with COMOPSAIR A3.2), an UA observer stays nearby the remote pilot and assists him **for operations by means of a visual output device** (e.g. FPV goggles,) that provides the UA pilot with real-time images of the area in the direction of flight of the UA.

- d. Mode of operation: **No** operation with **passengers, nor cargo (incl. DG & weapons)**.

e. Ground area:

- i. **Controlled ground area** is required (**No** operation **above uninvolved people** (including assembly of people: UAS operations above assembly of people have to be operated in the 'SPECIFIC' or in the 'CERTIFIED' Category).
- ii. Horizontal Safety distance from uninvolved people pursuant to the '1 by 1 rule':

Altitude = Horizontal clearance (e.g. for a flight at 50m Above Ground Level (AGL), the Horizontal Safety Distance will be 50m from uninvolved people).

**Remarks:**

- ✓ For UA with a MTOM up to 4kg, the OA, depending on the remote pilot training, may reduce the safety distance up to min 30m (up to max 5m only when flying in low speed mode (3m/s)).
- ✓ Safety distance applies also for operations above sea (safety distance to maintain with ships).
- ✓ If deemed necessary:
  - The operator has to take necessary actions in order to prevent unauthorized people to enter the zone of operation;

- The operator has to take necessary actions in order to appropriately protect the people involved in the operations and staying within the ground area overflown during the UAS operations;
- The BMAA Certification Branch may require additional safety measures.

f. **Airspace rules:** In accordance with **COMOPSAIR A3.2's regulations** or specific instructions

2. Responsibilities of the OA:

a. Technical requirements

i. Design requirements:

- 1) The UAS shall be marked in a durable manner with a unique identification number and listed in a register (BMAD UAS A.02).
- 2) A statement from the manufacturer indicating that the UAS complies with the legally binding requirements of the European Union (EU) ensuring health, safety and environmental protection (e.g. EU declaration of conformity, CE marking) is available.

**Remark:** The manufacturer shall prove and maintain a certification in accordance with DIN EN ISO 9001 or a comparable standard if no EU declaration of conformity, nor CE marking is available.

- 3) Verify that the User and/or Maintenance Manuals are available.

ii. Maintenance Requirements

- 1) Maintenance Program management through an aircraft continuing (airworthiness) record system (for instance: ILIAS)
- 2) UAS maintained pursuant to:
  - a) MatMan MRSys-A/O directives
  - b) User and/or Maintenance manuals
  - c) Manufacturer instructions (if any): Service bulletins (changes, repairs, AD, safety instructions,...)
  - d) OA's Exploitation Manual if existent
- 3) Follow-up of the flying hours of the UA, including operating hours of other systems part of the UA system
- 4) Follow-up of the maintenance activities
- 5) Install and use the most recent software version pursuant to the manufacturer instructions.

iii. Occurrence Reporting System

1) Purpose:

The unique objective of occurrence reporting is the prevention of accidents and incidents and NOT to attribute blame or liability

2) Reporting:

Notwithstanding any mandatory reporting of technical discrepancies, an OA shall encourage any person involved in UAS activities to report any (safety) occurrences through a (safety) reporting system as established by its safety management system (VCHOD Note MITS 18-50035270). Reporting should be made as soon as possible and not later than 72 Hrs after the occurrence.

The reporting of accidents is mandatory.

The following technical occurrences which may represent a significant risk to aviation safety, shall be reported to the BMAA Certification Branch ([\\*COMOPSAIR-BMAA-CERTIF](#)) as soon as possible and not later than 72 Hrs after the OA becoming aware of the occurrence:

- a) Structural defects including the loss of any part of the UA structure in flight;
- b) System malfunctions:
  - Loss of a system;
  - Loss of redundancy of a system;
  - Leakage of any fluid which resulted in a fire hazard or possible hazardous contamination of UAS structure, systems or equipment, or which has or could have endangered the UAS, its occupants or any other person;
  - Fuel system (Power system) malfunctions or defects, which had an effect on fuel supply and/or distribution;
  - Malfunction or defect of any indication system when this results in misleading indications to the UAS operator;
  - Abnormal functioning of flight controls such as asymmetric or stuck/jammed flight controls (for example: lift (flaps/slats), drag (spoilers), attitude control (ailerons, elevators, rudder) devices);
- c) Maintenance and repair problems:
  - Serious structural damage (for example: cracks, permanent deformation, delamination, debonding, burning, excessive wear, or corrosion) found during maintenance of the UAS or component;
  - Serious leakage or contamination of fluids (for example: hydraulic, fuel, oil, gas or other fluids);
  - Failure or malfunction of any part of an engine or powerplant and/or transmission resulting in any one or more of the following:
    - non-containment of components/debris;
    - failure of the engine mount structure.
  - Damage, failure or defect of propeller, which could lead to in-flight separation of the propeller or any major portion of the propeller and/or malfunctions of the propeller control;
  - Damage, failure or defect of main rotor gearbox/attachment, which could lead to in-flight separation of the rotor assembly and/or malfunctions of the rotor control;

- Significant malfunction of a safety-critical system or equipment including emergency system or equipment during maintenance testing or failure to activate these systems after maintenance;
  - Incorrect assembly or installation of components of the UAS found during an inspection or test procedure not intended for that specific purpose;
  - Wrong assessment of a serious defect, or serious non-compliance with MEL and Technical logbook procedures;
  - Serious damage to Electrical Wiring Interconnection System (EWIS);
  - Any defect in a life-controlled critical part causing retirement before completion of its full life;
  - The use of products, components or materials, from unknown, suspect origin, or unserviceable critical components;
  - Misleading, incorrect or insufficient applicable maintenance data or procedures that could lead to significant maintenance errors, including language issue;
  - Incorrect control or application of UAS maintenance limitations or scheduled maintenance;
  - Releasing an UAS to service from maintenance in case of any non-compliance which endangers the flight safety;
  - Serious damage caused to an UAS during maintenance activities due to incorrect maintenance or use of inappropriate or unserviceable ground support equipment that requires additional maintenance actions;
  - Identified burning, melting, smoke, arcing, overheating or fire occurrences;
  - Any occurrence where the human performance, including fatigue of personnel, has directly contributed to or could have contributed to an accident or a serious incident;
  - Significant malfunction, reliability issue, or recurrent recording quality issue affecting a flight recorder system (such as a flight data recorder system, a data link recording system or a cockpit voice recorder system) or lack of information needed to ensure the serviceability of a flight recorder system.
- d) Propulsion (including thermal and electric engines, propellers and rotor systems) and APU (auxiliary power unit) problems:
- Failure or significant malfunction of any part or controlling of a propeller, rotor or powerplant;
  - Damage to or failure of main/tail rotor or transmission and/or equivalent systems;
  - Flameout, in-flight shutdown of any engine or APU when required;
  - Engine operating limitation exceedance, including overspeed or inability to control the speed of any high-speed rotating component (for example: APU, air starter, air cycle machine, air turbine motor, propeller or rotor);
  - Failure or malfunction of any part of an engine, powerplant, APU or transmission resulting in any one or more of the following:
    - thrust-reversing system failing to operate as commanded;

- inability to control power, thrust or rpm (revolutions per minute);
- non-containment of components/debris.

e) Emergencies and other critical situations:

- Any event leading to the declaration of an emergency ('Mayday' or 'PAN call');
- Any burning, melting, smoke, fumes, arcing, overheating, fire or explosion;
- Contaminated air in the passenger compartment which has or could have endangered the UAS, its occupants or any other person;
- Failure to apply the correct non-normal or emergency procedure by the UAS operator to deal with an emergency;
- Use of any emergency equipment or non-normal procedure affecting in-flight or landing performance;
- Failure of any emergency or rescue system or equipment which has or could have endangered the UAS, its occupants or any other person.

3) Analysis

An OA shall develop a process to analyse any collected occurrence report in order to identify the safety hazards associated with identified occurrences or group of occurrences.

Based on that analysis, an OA shall determine any appropriate corrective or preventive action, required to improve aviation safety.

When, following an occurrence analysis, an OA identifies any appropriate corrective or preventive action required to address actual or potential aviation safety deficiencies, it shall:

- implement that action in a timely manner; and
- establish a process to monitor the implementation and effectiveness of the action.

An OA should regularly provide, through its safety management system, its personnel with information concerning the analysis of, and follow-up on, occurrences for which preventive or corrective action is taken.

4) Confidentiality

Personal details of any natural person, when available in an occurrence report, shall only be used by one or more persons, as designated by the OA, to handle independently the collection, evaluation, processing, analysis and storage of details of occurrences reported.

The handling of the reports shall be done with a view to preventing the use of information for purposes other than safety, and shall appropriately safeguard the confidentiality of the identity of the reporter and of the persons mentioned in occurrence reports, with a view to promoting a 'Just Culture'.

De-identified information shall be disseminated within the OA organisation as appropriate.

- b. Other requirements recommended by the BMAA which should be encompassed in OA's regulations/rules/directives:

- i. For each initial commissioning of a UAS model in the 'OPEN' Category, the OA shall first contact the Material Manager (MatMan) MRSys-A/O in order to determine whether the UAS can be considered as a new UAS type or can be covered by an already commissioned UAS-type<sup>1</sup>. Secondly, if it's considered as a new one, the OA shall send to the BMAA Certification Branch, a declaration pursuant to BMAD UAS C.01.
- ii. The OA shall ensure the pilot is trained pursuant to her instructions and regulations.
- iii. The OA shall ensure the UAS is operated pursuant to the hereinabove Operational (§1.) and Technical requirements (§2.a.).
- iv. The OA shall ensure that the UAS frequencies are used pursuant to the regulations and instructions from [NARFA](#) (National Radio Frequency Agency).
- v. Ensure that actions for UAS use abroad, pursuant to BMAD UAS B.05 (§1 'OPEN' Category.), are taken.
- vi. Therefore, in order to monitor & control all its responsibilities, the OA puts in place a Monitoring/Oversight System (See BMAD UAS A.03).

#### **BMAD UAS A.02 UAS Registration/Certificate of Registration (CoR)**

1. The OA:
  - a. Shall verify in close coordination with the Material Manager that each UAS is registered in ILIAS.
  - b. Shall keep an updated register of all its UAS in use at its level.
2. MRSys-A shall establish a common Certificate of Registry (CoR), by UAS model and not by type which covers all the assets related to this model.

#### **BMAD UAS A.03 Quality System/Internal Control System**

The Royal Decree, dated August 17<sup>th</sup> 2017, related to the Internal Control System, obliges the Belgian Defence to ensure the achievement of its objectives through processes and mechanisms. The goal is to generalize and standardize the risks management between all units, their Staff, the departments and the CHOD office (Gov Sp Section).

Therefore, the OA is responsible for the correct application and oversight of the requirements mentioned at BMAD UAS A.01 and BMAD UAS A.02.

Reports shall be recorded by the OA and shall be made available if requested by the Belgian Military Airworthiness Authority.

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<sup>1</sup> The MatMan will always keep the BMAA informed of his analysis for verification.

## AMC to BMAD UAS A.03 Monitoring System

The OA may refer to the [ICS Handbook's requirements](#) in order to put in place a monitoring system.

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#### GM to BMAD UAS A.03 Monitoring System

The purpose of the Monitoring System is, to control and oversight the correct application of the 'OPEN' Category UAS's requirements in order to cope with the higher requirements coming from the Belgian Defense Policy Handbook (for instance see Part III: Governance, Steering, Policy: Commandment, § Principles: 'Control'. Policy Stakeholders: IG, All ACOS, All DG, All COMOPS), and other documents issued by the CHOD Department. Therefore, the OA monitors (not exhaustive):

- a. The processes and/or mechanisms established by the OA and its Operators in order to comply with the requirements mentioned at BMAD-UAS A.01 & A.02.

The Technical & Logistical status of each individual UA-asset or UA-system in its inventory.

The OA may refer to its LICA (Local Internal Control Assistant) for the setup of a monitoring system (support in the risks management).

Furthermore, to help the OA, trainings are planned by the Belgian Defence through:

- b. The LICA training given by the PMS Department from the RMA campus;

KOO and HOO trainings for the Non-Commissioned Officers;

1<sup>st</sup>, 2<sup>nd</sup> & 3<sup>rd</sup> cycles for the Officers

## Subpart B - UAS to be operated in the 'SPECIFIC' Category

### BMAD UAS A.04 Definition of the 'SPECIFIC' Category and overview of the Subpart B.

1. If one operational requirement from the 'OPEN' Category is not adhered to, the UAS is automatically considered as operated in the 'SPECIFIC' Category.
2. The BMAA Certification Branch defines the generic requirements to apply for the 'SPECIFIC' Category, its standards scenarios and related subcategories (if any).
3. The BMAA Certification Branch has defined 2 Standards Scenarios, pre-defined for the 'SPECIFIC' Category and suggests to the OA to use them:
  - a. One in VLOS conform to BMAD UAS A.06;
  - b. One in BVLOS conform to BMAD UAS A.07.
4. If those 2 standards scenarios cannot be adhered to, the BMAA gives additional information/guidelines in order to keep on operating the concerned UAS in the 'SPECIFIC' Category (BMAD UAS A.08).

### BMAD UAS A.05 Generic Requirements for UAS to be operated in the 'SPECIFIC' Category and its related standards scenarios

1. UA: No specific MTOW (except for both Standards scenarios).
2. Operational Requirements:
  - a. **No flight with passenger, nor with DGs;**
  - b. Operations in **(B)VLOS;**
  - c. Flight Altitude: **No specific Flight Altitude (except if otherwise decided by COMOPSAIR A3.2 as prescribed by § e.).**
  - d. Each operational scenario shall be defined in a CONOPS drafted under the OA's responsibility (see content in the [Annex A to AMC 1 to Art 11 to EU Regulation 2019/947](#) as referred in the [Easy Access Rules for Unmanned Aircraft Systems \(Regulations \(EU\) 2019/947 and \(EU\) 2019/945\)](#). Additional requirements might be requested by the BMAA.
  - e. **Airspace rules:** In accordance with **COMOPSAIR A3.2's regulations** or specific instructions.
  - f. Flight with **Cargo** is allowed provided the MTOW defined by the manufacturer is not exceeded and provided the manufacturer's instructions are implemented accordingly.

**Remark :**

Cargo and armed flights (UAS equipped with weapons) may only occurred within the conditions approved by the airworthiness authority (BMAA). Specific information, conditions, operational envelop,... with cargo or weapons, have to be mentioned in the UAS user and/or maintenance manual(s). If it is not the case, a technical analysis has to be done iccw the Material Manager prior to allow cargo or armed flights by the BMAA. Finally, the CONOPS will be updated accordingly.

3. Responsibilities of the OA
  - a. Technical requirements
    - i. Design requirements:
      - 1) The UAS shall be marked in a durable manner with a unique identification number and listed in a register (See BMAD UAS A.09).
      - 2) The Maintenance & User Manuals shall be available.

- 3) A CONOPS (see aforementioned §2.d) has to be drafted by the OA and has to be submitted to the BMAA (all branches: Certification Branch, Maintenance & Operator Branch, Training Branch) and other involved Competent Authorities for approval.

This CONOPS, even if not explicitly prescribed by [Annex A to AMC 1 to Art 11 to EU Regulation 2019/947](#), shall address the Design, the Maintenance, the Training requirements and the processes to safely operate the UAS (including an occurrence reporting system as described in BMAD UAS A.01).

If Standards Scenarios are applied, they have to be mentioned in the CONOPS too.

**Remark:** The existing Exploitation Manuals for the Micro (ACOT-SPS-MicUAS-LSCQ-001) and Mini UAS (ACOT-SPS-ISTARAV-LICQ-001) written by COMOPSLAND may serve as baseline for the establishment of the CONOPS.

- 4) If the UAS cannot be operated in the scope of the 2 Standards Scenarios, a Specific Operations Risks Assessment (SORA), pursuant to [AMC 1 to Art 11](#) to [Easy Access Rules for Unmanned Aircraft Systems \(Regulations \(EU\) 2019/947 and \(EU\) 2019/945\)](#) shall be established by the requestor (the manufacturer or the OA) (refer to BMAD UAS A.08 for more information).

The SORA has to be performed iccw the Material Manager, the manufacturer and other Competent Authorities, as for instance: the BMAA (all branches), COA A3.2, ...

The BMAA is only responsible for the requirements related to Airworthiness.

Depending on the SAIL (Specific Assurance & Integrity Level) resulting from this SORA, following actions shall be implemented:

- a) If the SAIL is I-II (Low Risks): The Operational Safety Objectives (OSOs) required by the SORA and related to the SAIL I-II, have to be fulfilled and demonstrated before any validation by an Airworthiness Authority and the other stakeholders.

In order to comply with a part of those OSOs (mainly those concerning the 'Design/Conception'), a statement from the manufacturer indicating that the UAS complies with the legally binding requirements of the European Union (EU) ensuring health, safety and environmental protection (Ex: EU declaration of conformity, CE marking,...) can be given to the BMAA.

**Remark:** If no EU declaration of conformity, nor CE marking is available, the manufacturer shall:

- To the max extent possible, apply the technical requirements from the UAS classes defined in the [Annex to Delegated Regulation \(EU\) 2019/945](#);
- Prove and maintain a certification in accordance with DIN EN ISO 9001 or a comparable standard.

- b) If the SAIL is III-IV (Medium Risks):

The BMAA requires that the Operational Safety Objectives (OSOs) related to SAIL III-IV required by the SORA have to be adhered to and demonstrated before validation.

**Remark:** The manufacturer may apply for a (R)TC but in that case, the UAS has to operate in a controlled environment pursuant to BMAD UAS A.13.

To avoid that, the BMAA encourages the manufacturer:

- To design UAS pursuant to the [Special Condition for Light Unmanned Aircraft Systems - Medium Risk](#), issued by EASA
- To present to the BMAA, in order to show compliance with the OSOs related to the Design, required by the SORA, a design verification report, pursuant to the EASA's document :

'Guidelines on Design verification of UAS operated in the 'specific' category and classified in SAIL III and IV'.

- c) If the SAIL is V-VI (High Risks): The UAS shall be certified with a (R)TC delivered by EASA or any other Airworthiness Authority (BMAA included), pursuant to BMAD UAS A.13)
  - ii. Maintenance Requirements (shall be addressed by the CONOPS if not explicitly prescribed by the BMAA nor by the [Annex A to AMC 1 to Art 11 to EU Regulation 2019/947](#)):
    - 1) Maintenance Program management through an aircraft continuing (airworthiness) record system (for instance: ILIAS)
    - 2) UAS to be maintained pursuant to:
      - a) MRSys-A/O directives
      - b) The User and/or Maintenance manuals
      - c) The manufacturer instructions (if any): Service bulletins (changes, repairs, AD, safety instructions,...), the maintenance requirements defined by the BMAA Maintenance & Operator Branch, the training requirements for the technicians defined by the BMAA Training Branch
      - d) The OA's Exploitation Manual(s) which has/have to be aligned with the CONOPS requirements (see aforementioned § 3. a. i. 3)).
    - 3) If deemed necessary, the BMAA shall enforce the following requirements :
      - a) A Release to Service or equivalent, in the UAS Form or LogBook, after the execution of the maintenance tasks related to the concerned UAS.
      - b) The maintenance tasks or the certification of them may only be executed by properly educated and trained technicians, who have attended a specific training or formation to maintain the UAS.
- Important note:**  
Those maintenance requirements shall be proposed by the OA to both Maintenance & Operator and Training & Education Branches of the BMAA. They shall be specifically approved by those branches of the BMAA before being referenced in the CONOPS for proper implementation. If the need arises, those requirements will be proposed by the UAS manufacturer on behalf of the OA.
- iii. Occurrence Reporting System (shall be addressed by the CONOPS if not explicitly prescribed by the [Annex A to AMC 1 to Art 11 to EU Regulation 2019/947](#)): See BMAD UAS A.01)
  - b. Other requirements recommended by the BMAA which should be encompassed in OA's regulations:
    - i. The OA shall first contact the Material Manager MRSys-A/O in order to determine whether the UAS model can be considered as a new type or can be covered by an already commissioned UAS-type in the 'SPECIFIC' Category<sup>2</sup>. Secondly, if it's considered as a new one (Initial Commissioning), the Authority shall send to the BMAA Certification Branch, a request pursuant to BMAD UAS C.02, in order to obtain a 'certificate of technical conformity' (called Non-Technical Objection or NTO).  
  
This NTO is established by the BMAA for each type of UAS of the 'SPECIFIC' Category and covers all assets/models of the same type. It is valid throughout the lifetime of the concerned UAS provided the conditions and the limitations defined in this documents are adhered to (It could be considered as a Certificate of Airworthiness 'CoA/CofA' used in the 'CERTIFIED' Category).
    - ii. The OA shall ensure the pilot is trained pursuant to its instructions and regulations.

<sup>2</sup> The MatMan will always keep the BMAA informed of his analysis in order to control it.

- iii. The OA shall ensure the UAS is operated pursuant to:
  - 1) The User Manual
  - 2) The Maintenance Manual
  - 3) The hereinabove Operational requirements (§2) and technical requirements (§ 3. a.)
- iv. The OA shall ensure that the UAS frequencies are used pursuant to the regulations and instructions from NARFA.
- v. The OA shall ensure that actions for UAS's use abroad, pursuant to BMAD UAS B.05 (See §2 'SPECIFIC' Category), are implemented.
  - 1) In order to monitor and control its responsibilities, the OA shall put in place a Monitoring System (See BMAD UAS A.10).

**BMAD UAS A.06 Standard Scenario n°01 VLOS over a controlled ground area in a populated environment**

1. This chapter describes the additional requirements applicable to the 'SPECIFIC' Category in the scope of operations **with UAS over a controlled ground area in a populated environment**.
2. Operational Requirements:
  - a. UA: **MTOM ≤ 25 kg**.
  - b. Max Altitude: **120m AGL (except if otherwise decided by COMOPSAIR A3.2 pursuant to §2.d.iii.)**
  - c. **(E)VLOS** Conditions (may be assisted by an **UA Observer**).
 

**Remark:** With an UA observer, clear and effective communication shall be established between the remote pilot and the UA observer.
  - d. Ground area & Airspace Rules:
    - i. A **controlled ground area** is required (cfr Figure 1 below)
    - ii. The contingency area, with its external boundaries positioned at least 10 m beyond the limit(s) of the flight geography area;
    - iii. The ground risk buffer, which shall cover a distance beyond the external limit(s) of the contingency area that meets at least the following parameters:

| Max Height above ground (m) | Minimum distance to be covered by the ground risk buffer for UA (m) |                     |
|-----------------------------|---------------------------------------------------------------------|---------------------|
|                             | With a MTOW up to 10 kg                                             | With a MTOW > 10 kg |
| 30                          | 10                                                                  | 20                  |
| 60                          | 15                                                                  | 30                  |
| 90                          | 20                                                                  | 45                  |
| 120                         | 25                                                                  | 60                  |

- iv. The UA is not operated from a moving platform (vehicle).
- v. Airspace rules: In accordance with COMOPSAIR A3.2's regulations.

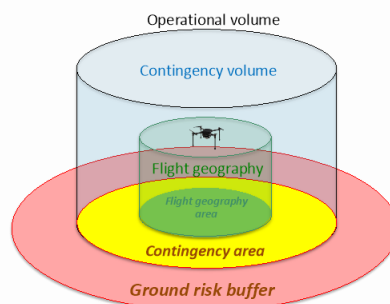


Figure 1 – Controlled Ground Area

### 3. Responsibility of the OA:

- a. Technical requirements for UAS: [Refer to Part 16 of the Annex to Delegated Regulation \(EU\) 2019/945 of the Easy Access Rules for Unmanned Aircraft Systems \(Regulations \(EU\) 2019/947 and \(EU\) 2019/945\)](#); UAS marked as class C5 or complies with the requirements of that class if the CE Marking is not yet applicable.
- b. Maintenance and Training requirements for technicians: See BMAD UAS A.05.

### BMAD UAS A.07 Standard Scenario n°02 BVLOS with UA Observers over a controlled ground area in a sparsely populated environment

1. This chapter describes the additional requirements applicable to the 'SPECIFIC' Category, in the scope of Operations **with UAS over a controlled ground area in a sparsely populated environment**.
  2. Operational Requirements:
    - a. UA: **MTOM ≤ 25 kg.**
    - b. Max Altitude: **120m AGL (except if otherwise decided by COMOPSAIR A3.2 pursuant to §2.d.vii.)**
    - c. **BVLOS Conditions**
    - d. Ground area & Airspace Limitations per design:
      - i. **Above sparsely populated environment only.**
      - ii. **A controlled ground area** is required.
      - iii. The contingency area, with its external limit(s) at least 10 m beyond the limit(s) of the flight geography area;
      - iv. Ground Risk Buffer distance equal to the most likely distance travelled by the UA when the termination procedure is activated. The UAS manufacturer should provide such distance or parameters to estimate it taking into account the operational conditions and limitations;
      - v. Robust means of communication between observer and remote pilot.
      - vi. The UA is not operated from a moving platform (vehicle).
      - vii. Airspace rules: In accordance with **COMOPSAIR A3.2's regulations**.
- Remark:** without UA/RPA observer if the activities occur in a dedicated restricted airspace

### 3. Responsibility of the OA:

- a. Technical requirements for UAS: [Refer to Part 17 of the Annex to Delegated Regulation \(EU\) 2019/945 of Easy Access Rules for Unmanned Aircraft Systems \(Regulations \(EU\) 2019/947 and \(EU\) 2019/945\)](#): marked as class C6 or complies with the requirements of that class if the CE Marking is not yet applicable.
- b. Maintenance and Training requirements for technicians: See BMAD UAS A.05.

#### BMAD UAS A.08 UAS possible use out of standards scenarios

1. If the UAS is not operated in one of both aforementioned standard scenarios (BMAD UAS A.06 & BMAD UAS A.08), as previously mentioned in the generic requirements of the 'SPECIFIC' Category (BMAD UAS A.05), **a risks analysis based on SORA** ([see AMC 1 to Art 11 to the Reg UE 2019/947](#) as referred in the [Easy Access Rules for Unmanned Aircraft Systems \(Regulations \(EU\) 2019/947 and \(EU\) 2019/945\)](#) has to be done.

| Intrinsic UAS Ground Risk Class (GRC)     |                               |                                  |                                     |                                   |
|-------------------------------------------|-------------------------------|----------------------------------|-------------------------------------|-----------------------------------|
| Max UAS Characteristics Dimension         | 1m/approx 3ft                 | 3m/approx 10ft                   | 8m/approx 25ft                      | >8m/approx 25ft                   |
| Typical Kinetic Energy Expected           | < 700 J<br>(approx 529 ft lb) | < 34 kJ<br>(approx 25 000 ft lb) | < 1084 kJ<br>(approx 800 000 ft lb) | 1084 kJ<br>(approx 800 000 ft lb) |
| Operational Scenarios                     |                               |                                  |                                     |                                   |
| (B)VLOS over a controlled ground area*    | 1                             | 2                                | 3                                   | 4                                 |
| VLOS in a Sparsely Populated Environment  | 2                             | 3                                | 4                                   | 5                                 |
| BVLOS in a Sparsely Populated Environment | 3                             | 4                                | 5                                   | 6                                 |
| VLOS in a Populated Environment           | 4                             | 5                                | 6                                   | 8                                 |
| BVLOS in a Populated Environment          | 5                             | 6                                | 8                                   | 10                                |
| VLOS over an Assembly of People           | 7                             |                                  |                                     |                                   |
| BVLOS over an Assembly of People          | 8                             |                                  |                                     |                                   |

\*The controlled ground area in the 'SPECIFIC' Category encompasses the Operational Volume (Flight Geography + Contingency volume) and the Ground Risk buffer, which is not the case for the 'OPEN' Category. As a result, the controlled ground area for the 'SPECIFIC' Category is larger than for the 'OPEN' Category. Only involved people, equipment and infrastructure are allowed in the controlled ground area.

**Remarks:**

- The operations at sea, for military purposes, are covered by the Operational Scenarios: VLOS or BVLOS in sparsely populated environment. Whenever the people present on the ground/sea area of operation are participating to the manoeuvres, the applicable scenario can be considered as VLOS/BVLOS over a controlled ground area.
- The operations shaded in black in the table above shall be addressed by the 'CERTIFIED' Category (cfr Subpart C - )

2. In order to facilitate the 'certification' of a UAS in the 'SPECIFIC' Category, the BMAA Certification Branch recommends:

- a. To limit the applicable GRC to max 3 in the table above, without mitigation measures\*.

(\*) Mitigation Measures to decrease the GRC and to achieve a residual GRC of 3, may be applied if the need arises (See [Annex B to AMC 1 to Art 11 to the Reg UE 2019/947](#) as referred in the [Easy Access Rules for Unmanned Aircraft Systems \(Regulations \(EU\) 2019/947 and \(EU\) 2019/945\)](#)).

- b. Regarding the Air Risk Class (ARC) as stated in [Annex C and Annex D to AMC 1 Art 11 to Reg UE 2019/947](#) ([Easy Access Rules for Unmanned Aircraft Systems \(Regulations \(EU\) 2019/947 and \(EU\) 2019/945\)](#)), to limit the operational scenarios as follows:

- i. ARC-a (atypical airspace -> for example a Segregated Airspace wherein only the UAS is operated) or
- ii. ARC-b (FL > 600 or Ops < 400 ft Above Ground Level or AGL in an uncontrolled airspace over a rural/sparsely populated environment)

- c. If §2.a & 2.b are properly implemented, the Specific Assurance and Integrity Level (SAIL) will be I or II which implies to fulfil the requirements of BMAD UAS A.05).

3. If the SAIL is > SAIL I-II, the BMAA refers to the requirements of BMAD UAS A.05 § 3.a.i.4)b). & § 3.a.i.4)c).

4. The operational scenarios and drone characteristics are defined and included in the OA's CONOPS.

5. Reminder: In order to receive the technical GO (NTO) to operate the UAS in the 'SPECIFIC' Category, the OA shall provide the BMAA with :

- a. A formal request (application file) pursuant to BMAD UAS C.02
- b. The concerned CONOPS will be annexed to the application file
- c. In addition, when the envisioned scenario is out of the Standard Scenarios, a SORA has to be annexed to the application file too.

**BMAD UAS A.09 UAS Registration/Certificate of Registration (CoR)**

1. The OA:
  - a. Shall verify in close coordination with the Material Manager that each UAS is registered in ILIAS.
  - b. Shall keep an updated register of all its UAS in use at its level.
2. MRSys-A shall establish a common Certificate of Registry (CoR), by UAS model, which covers all the assets related to this model.

**Remark: Depending on the UAS model, an individual CoR may be imposed by the BMAA.**

**BMAD UAS A.10 Quality System/Internal Control System**

The Royal Decree, dated on August 17<sup>th</sup> 2017, related to the Internal Control System, obliges the Belgian Defence to ensure the achievement of its objectives through processes and mechanisms. The goal is to generalize and standardize the risks management between all units, their Staff, the departments and the CHOD office (Gov Sp Section).

Therefore, the OA is responsible for the correct application and oversight of the requirements mentioned at BMAD UAS A.05 & BMAD UAS A.10.

Reports shall be recorded by the OA and shall be made available if requested by the Belgian Military Airworthiness Authority.

**AMC & GM to BMAD UAS A.10 Monitoring System**

See AMC & GM BMAD UAS A.03.

**Remark:** Where applicable, for application of the Monitoring System for UAS to be operated in the 'SPECIFIC' Category, in the GM BMAD UAS A.03, replace the requirements BMAD UAS A.01 & BMAD UAS A.02 by the requirements BMAD UAS A.05 to BMAD UAS A.10.

## Subpart C - UAS to be operated in the 'CERTIFIED' Category

### BMAD UAS A.11 Definition and generic conditions

1. The UAS operating in this category are those flying :
  - a. With **Passenger(s)** or;
  - b. With **Dangerous Goods** or;
  - c. With **Deliverables** or;
  - d. **(B)VLOS** over **assemblies of people** IF UA dimension is  $>$  or  $=$  to 3m (see table in BMAD UAS A.08)

### GM to BMAD UAS A.11 Definition and generic conditions

The UAS operating in this category are those flying :

- a. With **Passenger(s)**: Military application for instance: injured people
- b. With **Dangerous Goods**: Military application = Logistical Transport
- c. With deliverables: Military application = **weapons** for instance.
- d. **(B)VLOS** over **assemblies of people** (military application = demonstration, crowds) IF UA dimension is  $>$  or  $=$  to 3m (see table in BMAD UAS A.08)

### BMAD UAS A.12 Generic technical & remote pilot requirements

1. The requirements defined in BMAR-21, -M, -145, -66 and -147 apply. They are summarized in the BMAD UAS A.13.
2. The airworthiness requirements for certified aircraft require that technicians maintaining UAS operating in the 'CERTIFIED' Category need to be certified according to BMAR-66.
3. The UAS operating in the 'CERTIFIED' Category require a specific remote pilot training, limited to operators belonging, up to now, to the "BHK/Filière de metier: AS".

**Remark:** The BMAA may adapt the principles above and allow alternative means of compliance provided the type of UAS permits it.

### BMAD UAS A.13 Technical requirements

1. Initial Commissioning in a **Controlled Environment**:
  - a. Design

The Design process (UAS Design/Development) shall meet the requirements of BMAR-21 Subpart B and shall be carried out by a Design Organization (D.O) pursuant to the BMAR-21 Subpart J.

b. Type Certificate (TC)

As soon as the Design process complies with the BMAR-21 requirements, a Type Certificate shall be issued in order to be able to launch the Production (cfr BMAR-21 SubPart B). The details of the TC are depicted in the Type Certificate Data Sheet (TCDS) which refers to (not exhaustive):

- i. The Type Certification Basis (TCB) applied by the Design Organization to certify the design of the concerned UAS Model. It corresponds to the technical requirements necessary to develop an UAS.
- ii. The Maintenance Planning Data (MPD) = Maintenance Manual
- iii. The Aircraft Flight Manual (AFM).

**Remark:** The TC is issued by the State of Design (SoD) Airworthiness Authority (State / Country where the UAS has been designed). This TC might be recognized by the BMAA Certification Branch which is the Airworthiness Authority of the State of Registry (State / Country where the UAS is registered) provided some conditions are met (eg: Mutual Recognition).

c. Type Certificate Holder (TCH)

A TCH, shall be identified and shall be an Approved Design Organization (see §1.a.)) and meet the requirements defined in BMAR-21 21.A.44 here after summarized:

- i. Report and investigate any technical problem.
- ii. Cooperate with the Airworthiness Authority (BMAA Certification Branch) for the drafting of Airworthiness Directives (AD).
- iii. Record any technical problem and take action as appropriate.
- iv. Produce and keep up to date the various technical manuals related to the UAS (Maintenance Planning Data for example).
- v. Within the scope of its privileges (if any) granted by the Airworthiness Authority, the DO carries out the modifications (Change & Repairs) necessary to ensure the integrity of its UAS and the flight safety.

d. Production

The UAS and their related parts and appliances shall be manufactured by an Approved Production Organization pursuant to the BMAR-21 SubPart F or Subpart G.

e. Certificate of Airworthiness (CofA or CoA)

Once the production is completed, each UAS is checked to verify its conformity to the Type Certificate. Afterwards, provided the check is satisfactory, a Certificate of Airworthiness is issued pursuant to the BMAR-21 Subpart H and BMAR-M requirements.

2. UAS Use in a Controlled Environment

a. Airworthiness Review Certificate (ARC)

When using an UAS, the operator is responsible to comply with the limitations related to the both the TC and the CofA. The Airworthiness Authority (BMAA Operator & Maintenance Branch) ensures, through ARC, based on the requirements issued in the BMAR-M, that the CofA stays valid.

b. The Continuing Airworthiness Management Organisation (CAMO)

The CAMO is the organization managing the UAS-fleet. The CAMO shall comply with BMAR-M.

The CAMO shall be approved by the BMAA Maintenance & Operators Branch.

c. Maintenance Organisation (MO)

The purpose of an MO is to properly carry out and to certify the maintenance activities ordered/tasked by the CAMO.

All maintenance tasks prescribed by the TCH (SB for 'change' (modifications) & 'repairs', maintenance pursuant to the maintenance plan, etc.) are carried out in a MO pursuant to the requirements of BMAR-145. This MO will ensure its technicians are qualified conform or recognized equivalent to BMAR-66, and trained in a Maintenance Training Organisation (MTO) pursuant to BMAR-147.

#### **BMAD UAS A.14 Operational requirements**

The UAS is operated conform to TC conditions/limitations.

#### **BMAD UAS A.15 Responsibilities of the OA**

1. The OA shall establish a Controlled Environment as described in BMAD UAS A.13BMAD UAS A.13 under the oversight of the respective branches of the BMAA:
  - a. The Maintenance & Operator Branch;
  - b. The Certification Branch certification;
  - c. The Training Branch.
2. In addition, the OA is recommended to:
  - a. Ensure that the pilots are trained pursuant to specific regulations for remote pilots,
  - b. Ensure that the airspace is used pursuant to the regulations issued by COMOPSAIR A3.2
  - c. Ensure that the UAS is operated within the limitations of the TC.
  - d. Ensure that the UAS is properly registered (see BMAD UAS A.16)
  - e. Ensure that the actions listed in BMAD UAS B.06, for operations abroad are adhered to.

#### **BMAD UAS A.16 UAS Registration/Certificate of Registration (CoR)**

1. The OA:
  - a. Shall verify in close coordination with the Material Manager that each UAS is registered in ILIAS.
  - b. Shall keep an updated register of all its UAS in use at its level.
2. MRSys-A shall establish an individual Certificate of Registry (CoR) for each UAS of the 'CERTIFIED' Category

#### **BMAD UAS A.17 Responsibilities of the BMAA Certification Branch in the 'CERTIFIED' Category**

1. To guide the OA in setting up the Controlled Environment;
2. To approve the concerned organizations (organization approval) en to audit them regularly;
3. To monitor the technical reporting and to draft the ADs as applicable;
4. To certify the UAS and their related parts and appliances as requested by the TCH as well as the necessary modifications and repairs;
5. To guide the OA in the registration process.

## Subpart D - UAS not eligible for operations in the previous Categories

### BMAD UAS A.18 UAS to be operated in the 'TARGET' Category

This chapter only covers the use of UA as air target for training purposes.

1. Operational Requirements: Same as for 'OPEN' Category, BUT:
  - a. ONLY above military ranges and,
  - b. ONLY in a dedicated and restricted airspace iccw COMOPSAIR A3.2 as CA for Airspace rules and,
  - c. BVLOS conditions are allowed and,
  - d. Cargo is allowed.

**Remark:** Any Initial Commissioning of a UAS type of the 'TARGET' Category shall be carried out by the OA, to the BMAA Certification Branch, pursuant to the BMAD UAS C.04 in order to certify the UAS and any other UAS models belonging to the same type, in the 'TARGET' Category

2. Responsibilities of the OA:
  - a. Technical requirements:
    - i. Design requirements
      - 1) Homemade UAS used as targets:
        - a) No Certificate of Conformity (EU declaration of conformity), nor CE Marking, is required
        - b) Refer to specific BMAD UAS A.01 requirements in case of night operations
      - 2) COTS UAS
        - a) UAS purchased through a specific contract managed by MRSys-A/O.
        - b) A statement from the manufacturer indicating that the UAS complies with the legally binding requirements of the European Union (EU) ensuring health, safety and environmental protection (e.g. EU declaration of conformity, CE marking) can be issued upon request of the BMAA.  
  
Remark: The manufacturer shall prove and maintain a certification in accordance with DIN EN ISO 9001 or a comparable standard if no EU declaration of conformity, nor CE marking is available
    - ii. Maintenance Requirements:
      - 1) No ILIAS follow-up is required but a listing of the 'TARGET' Category UAS shall be established and kept up to date at all time by the OA iccw the UAS Material Manager
      - 2) Use & Maintain the UAS pursuant to the applicable User & Maintenance Manuals (If any).
  - b. Other requirements recommended by the BMAA which might be encompassed in OA's regulations/rules/directives:
    - i. Ensure the remote pilot is trained pursuant to the OA requirements.
    - ii. Ensure that the Operational & Technical Requirements for this UAS category are adhered to.
    - iii. Coordinate the flying activities with other concerned CAs (non-exhaustive list):
      - 1) COMOPSAIR A3.2 for the airspace use request;
      - 2) NARFA (+MRCI-NARFA, MRCI-NARFA@mil.be) for the use of the frequencies.

Based on the compliance with the abovementioned operational, technical and other requirements, the OA shall

authorize (or not) the operations with the relevant UAS.\*

\*Any use of a UAS model belonging to this type is authorized provided that the concerned type has been previously commissioned and that the OA coordinates, as mentioned here above, the activities with other CAs.

### BMAD UAS A.19 UAS to be operated in the 'PROTOTYPE' Category

This chapter covers the use of **homemade UAS** used as prototypes **for research & development purposes**.

1. Operational Requirements: Same as for 'TARGET' Category.

**Remarks:**

- ✓ Depending on the information provided by the OA that requests to perform 'armed flights' or to fly with DG under this category, the BMAA Certification Branch might authorize or refuse those operations.
- ✓ **For each activity** (or session of tests), the Initial Commissioning of a UAS of the 'PROTOTYPE' Category shall be carried out by the OA, and requested to the BMAA Certification Branch, pursuant to the request in BMAD UAS C.04.

2. Responsibilities of the OA:

a. Technical requirements:

- i. Design requirements: No Certificate of Conformity, Nor CE Marking, is required
- ii. Maintenance Requirements:
  - 1) No ILIAS follow-up is required but a listing of the 'PROTOTYPE' Category UAS shall be established and kept up to date at all time by the OA
  - 2) Use & Maintain the UAS pursuant to the applicable User & Maintenance Manuals (If any).
- iii. The OA shall introduce a declaration to the BMAA when an operator is designated as a Research & Development (R&D) Center in UAS technologies, with appointed competent personnel.

b. Other requirements recommended by the BMAA which might be encompassed in OA's regulations/rules/directives:

- i. Ensure the remote pilot is trained pursuant to the OA requirements.
- ii. Ensure that the Operational & Technical Requirements for this UAS category are adhered to.
- iii. Coordinate the flying activities with other concerned CAs (non-exhaustive list):
  - 1) COMOPSAIR A3.2 for the airspace use request;
  - 2) NARFA ([+MRCI-NARFA](#), [MRCI-NARFA@mil.be](mailto:MRCI-NARFA@mil.be)) for the use of the frequencies.

Based on the compliance with the abovementioned operational, technical and other requirements, the OA shall authorize (or not) the operations with the relevant UAS.

### AMC to BMAD UAS A.19 R&D Center

As mentioned in the BMAD UAS A.03 & BMAD UAS A.10 related to the monitoring system, the Belgian Defence has to ensure the achievement of its objectives through processes and mechanisms.

Therefore, if a OA has objectives in the research and development of UAS technologies, it has to be translated in processes and mechanisms under, for instance, the responsibility of one or more specific services within a CA. Those processes and mechanisms may be shown to the BMAA as Acceptable Means of Compliance.

## Section B - INITIAL COMMISSIONING AND USE OF UAS

### Subpart A - BEL military UAS on the national territory

#### BMAD UAS B.01 UAS of the 'OPEN' Category

1. Any Initial Commissioning of a UAS of the 'OPEN' Category shall be carried out by the OA pursuant to the BMAD UAS C.01 (Declaration for initial commissioning of a 'OPEN' Category UAS).
2. This Form has to be sent before the entry into service of the concerned UAS to the BMAA Certification Branch ([\\*COMOPSAIR-BMAA-CERTIF](#)).
3. The BMAA Certification Branch, after analyzing the request in coordination with MRSys-A/O, will issue an ACK to the OA.
4. Upon receipt of the ACK, the OA shall coordinate the flying activities with other concerned Authorities (non-exhaustive list):
  - a. COMOPSAIR A3.2 for the airspace use request;
  - b. NARFA ([+MRCI-NARFA](#), [MRCI-NARFA@mil.be](mailto:MRCI-NARFA@mil.be)) for the use of the frequencies.
5. Upon completion of Step 1 to 4, the OA shall authorize (or not) the operations with the relevant type of UAS\*.  
  
**\*Any use of UAS assets belonging to the concerned type is authorized provided that this UAS-type has been previously commissioned in the 'OPEN' Category and that the OA coordinates, as mentioned here above, the activities with other Authorities.**

#### BMAD UAS B.02 UAS of the 'SPECIFIC' Category

1. Any Initial Commissioning of a UAS of the 'SPECIFIC' Category shall be carried out by the Operating Authority (OA) pursuant to the BMAD UAS C.02 (Request for the initial commissioning of a 'SPECIFIC' Category UAS).
2. The BMAA Certification Branch, after analyzing the technical & airworthiness requirements mentioned in the CONOPS & OSOs annexed to the request, shall issue or not a NTO (Non-Technical Objection).  
  
This NTO is established for each UAS type of the Specific Category, it covers all models and assets corresponding to the concerned type and is valid throughout the entire lifetime of the UAS, provided the conditions and NTO's limitations are continuously adhered to by the OA.
3. Upon reception of this NTO, the BMAA recommends to the OA to contact the other CAs in order to control the non-airworthiness requirements of the request and receive the necessary approvals consequently.
4. Upon completion of Step 1 to 3, the OA shall authorize (or not) the operations with the relevant UAS.

#### BMAD UAS B.03 UAS of the 'CERTIFIED' Category

1. When the operator operates in an Airworthiness Environment as described in BMAD UAS A.13, no specific flight request has to be sent to the BMAA Certification Branch.
2. The operations are authorized within the limits of the TC and the CoA/CofA. However, it is up to the OA to coordinate activities with other defense services / departments or even civilian authorities if necessary.

## Subpart B - Use of BEL military UAS abroad

### BMAD UAS B.04 Generic Requirements

1. Prior any deployment abroad, the OA is responsible to contact the Host Nation Military Airworthiness Authority (HN MAA) in order to determine what conditions are applicable for the use of foreign UAS and what documents need to be issued.
2. The OA is responsible to give all information requested by the HN MAA\*.
 

\*The information that might be requested by the HN MAA, depending on the UAS Category, is identified in the requirements of this Subpart.

If necessary, the BMAA Certification Branch can support the concerned OA for the coordination with the HN MAA or the issuance of airworthiness related documents that might be requested by the HN MAA.
3. Approval of operations abroad is under the sole responsibility of HN MAA based on its own regulations.

**Remark:** A UAS model which is not commissioned in Belgium conform to this BMAD UAS will never be deployed abroad, even if the HN MAA authorizes it.

### BMAD UAS B.05 UAS operated in the 'OPEN' or 'SPECIFIC' Category potential requirements

1. For UAS operated in the 'OPEN' Category:
  - a. Operator information
    - i. User/Operator description (Service).
    - ii. Country.
    - iii. Confirmation that the system is operated, or supervised in case of crew training, by competent crew/instructors.
  - b. Operational scenario
    - i. Why:
      - 1) Reason to ask for a permission of an operation above a foreign territory (like recording, take pictures).
      - 2) Details of the operations
    - ii. When: Dates and time of the operation.
    - iii. Where: Country / location (including domain civ/mil).
    - iv. How:

| Conditions for 'OPEN' Category category of operations                 | YES | NO |
|-----------------------------------------------------------------------|-----|----|
| The maximum take-off mass (MTOM) of the UA is less or equal to 25 kg. |     |    |
| No Dangerous Goods/cargo, no person transported.                      |     |    |

|                                                                                                                                                                                                                                                                                                                                                            |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| The UA maintains the safe distance from uninvolved people <sup>3</sup> and assemblies of people mandated by the HN MAA                                                                                                                                                                                                                                     |  |  |
| The UA is operated in the VLOS of the remote pilot (decision of the HN MAA regarding possible night operations) or of an observer assisting the remote pilot in safely conducting the flight                                                                                                                                                               |  |  |
| In case of First Person View (FPV), if not agreed differently with the HN MAA, the UA stays in the VLOS of a UA observer directly assisting the remote pilot in order to conduct the flight safely                                                                                                                                                         |  |  |
| In case of automatic mode operation (except for follow-me mode), the UA stays in the VLOS of the remote pilot or a UA observer with the possibility for the remote pilot to intervene in the flight at any time                                                                                                                                            |  |  |
| The UA is operated at an altitude of less than 120 m above the ground. When flying a UA within a horizontal distance of 50 meters from an artificial obstacle taller than 105 meters, the maximum height of the UAS operation may be increased up to 15 meters above the height of the obstacle at the request of the entity responsible for the obstacle. |  |  |
| For UA up to 900 grs, equipped with a follow-me mode and when this function is on, be in a range not exceeding 50 m from the remote pilot, and make it possible for the remote pilot to regain control of the UA                                                                                                                                           |  |  |

If one or more 'No' are selected, UAS operations are considered in the 'SPECIFIC' Category (See §2.), unless it conducts to be considered in the 'CERTIFIED' Category (See BMAD UAS B.06 about the potential requirements for the 'CERTIFIED' Category).

c. Airworthiness related information

i. UAS documentation:

- 1) Description of the UAS: model, type, manufacturer, design configuration (including SW configuration, payloads and external loads, if any), safety functions (e.g. geo-fencing, return-home...)
- 2) User & Maintenance Manual.
- 3) Individual UAS identification (serial numbers, "tail" numbers, ...)

- ii. Declaration that the maintenance is accomplished, in accordance with the Users & Maintenance Manual, including ADs.
- iii. Maintenance status (Technical log, including technical follow-up)
- iv. Declaration that the RN operator will report to HN MAA any occurrence or condition of the UAS which could endanger safety.
- v. Additional information may be required by the HN MAA.

<sup>3</sup> 'uninvolved persons' means persons who are not participating in the UAS operation or who are not aware of the instructions and safety precautions given by the UAS operator

2. For UAS operated in the **'SPECIFIC' Category**:

Same info as for 'OPEN' Category UAS **and in addition**, the identification of risk mitigation measures through an **Operational risk assessment**, using the process and methodology mandated by the HN MAA, must be supplied to the HN MAA.

**BMAD UAS B.06 UAS operated in the 'CERTIFIED' Category**

For the 'CERTIFIED' Category: even if a Mutual Recognition is not in place between the BMAA and the HN NMAA, a copy of the TC or the CofA (incl last MARC), shall be sent to the HN MAA by the OA.

**Subpart C - UAS not belonging to the BEL Defence**

**BMAD UAS B.07 Authorizations from other BEL Defence Departments than the BMAA Certification Branch**

**Any request** from a civilian (Belgian or foreigner) or state operator (Belgian Civil Protection, Belgian Police, Belgian Customs, foreign military UAS-OAs or from other foreign state bodies), that are intending to operate their UAS **in the perimeter of the BEL Defense facilities**, shall first be **authorized by the CHOD** via [chod-prestaties-voor-derden@mil.be](mailto:chod-prestaties-voor-derden@mil.be) or via the concerned BD OA which shall liaise with CHOD-PPT as required.

**BMAD UAS B.08 BMAA Certification Branch's contribution**

1. When the request is registered, the BMAA Certification Branch shall be contacted in order to coordinate the issuance of a certificate of technical compliance (NTO), which is based on the certification procedures established by the Airworthiness Authority regardless the UAS category.
2. In that case:
  - a. Pursuant to BMAD UAS C.03, **the civilian applicant** shall provide to the BMAA Certification Branch ([COMOPSAIR-BMAA-CERTIF-DL@mil.be](mailto:COMOPSAIR-BMAA-CERTIF-DL@mil.be)), the proof of the national certification of the concerned UAS.
  - b. Pursuant to BMAD UAS B.05 ('OPEN' Category and 'SPECIFIC' Category) or BMAD UAS B.06 ('CERTIFIED' Category), **the foreign military applicant** shall provide to the BMAA Certification Branch ([\\*COMOPSAIR-BMAA-CERTIF](mailto:COMOPSAIR-BMAA-CERTIF)), the proof of the national certification of the concerned UAS.

**BMAD UAS B.09 Applicant's contribution**

As soon as the NTO is granted by the BMAA, the requestor shall contact the departments mentioned below (if the need arises, with the help of the CHOD-PPT or the liaison of the concerned BD OA) (non-exhaustive list):

1. ACOS IS ([adiv@mil.be](mailto:adiv@mil.be), [sgrs@mil.be](mailto:sgrs@mil.be)) for the authorization of operations above Belgian military domains;
2. COMOPSAIR A3.2 for use of the airspace;
3. NARFA ([MRCI-NARFA@mil.be](mailto:MRCI-NARFA@mil.be)) for the use of frequencies if deemed necessary.
4. Base commander for the authorization of access to the military domain from where the UAS operations will take place

**Remarks:**

- ✓ If the concerned UAS is not certified by its Airworthiness Authority, a BMAA clearance will never be granted.
- ✓ For civilian UAS, the BIPT – Licenses Department ([licencesradio@bipt.be](mailto:licencesradio@bipt.be)) has to be contacted for the use of frequencies.

## Section C - UAS FORMS

### Subpart A - UAS on the national territory

#### **BMAD UAS C.01 Declaration for the initial commissioning of a UAS operated in the 'OPEN' Category (Form for UAS operated in the 'OPEN' Category) in BEL**

The following information of the declaration in subject have to be sent to the BMAA ([\\*COMOPSAIR-BMAA](#)) by means of standard military note addressing exhaustively the fields mentioned on the concerned paragraph.

1. RPAS INFO
  - a. Type :
  - b. Manufacturer :
2. OA'S DECLARATION

Free text proposed by the OA for the initial commissioning of an 'OPEN' Category UAS, attesting that the OA is compliant with the requirements of the BMAD-UAS Section A SubPart A

3. OA'S SIGNATURE:

#### **BMAD UAS C.02 Declaration for the initial commissioning of a UAS operated in the 'SPECIFIC' Category (Form for UAS operated in the 'SPECIFIC' Category) in BEL**

The following information of the declaration in subject have to be sent to the BMAA ([\\*COMOPSAIR-BMAA](#)) by means of standard military note addressing exhaustively the fields mentioned on the concerned paragraph.

**Remark:** The BMAA shall only verify the technical & airworthiness requirements in order to deliver a NTO. Non-airworthiness & non-technical requirements shall not be verified/controlled by the BMAA.

1. RPAS Info
  - a. Type :
  - b. Manufacturer :
2. OA'S DECLARATION

Free text proposed by the OA for the initial commissioning of a 'SPECIFIC' Category UAS, attesting that the OA is compliant with the requirements of the BMAD-UAS Section A SubPart B CONOPS

The CONOPS (first edition and updated versions): see content in the [Annex A to AMC 1 to Art 11 to EU Regulation 2019/947](#) as referred in the [Easy Access Rules for Unmanned Aircraft Systems \(Regulations \(EU\) 2019/947 and \(EU\) 2019/945](#), shall be submitted to the BMAA Certification Branch and the other CA's for approval prior any initial commissioning of a UAS type in the 'SPECIFIC' Category.

Therefore, CONOPS approved by the BMAA and other CA's with the UAS type duly referenced is annexed to the present document.

3. SORA<sup>4</sup>

The SORA shall be submitted to the BMAA Certification Branch and other CA's for approval prior any initial commissioning of a UAS type in the 'SPECIFIC' Category.

Therefore, the SORA approved by the BMAA and other CA's, including the UAS type, is annexed to the present document.

4. OA'S SIGNATURE:

**Subpart B - UAS not belonging to the Belgian Defence operated in Belgium under the BD's responsibility**

**BMAD UAS C.03 Form Non –BD UAS in Belgium: requirements to fulfill by the civilian operator for the use of its UAS in Belgium**

1. OPERATOR INFO

- a. Who :
- b. Registry document delivered by the National Airworthiness Authority (if applicable):

2. RPAS INFO

- a. Type:
- b. Manufacturer:
- c. Evidence that the UAS is authorized to operate:
- d. Evidence that the UAS is authorized to operate based on requirements/directives approved by the National Civilian Airworthiness Authority (NCAA) for operations in one or more categories: UAS registration document, Operator's registration document (see § 1.b), Operations Manual or CONOPS, Pilot License (see §4),..., .

3. SCENARIO

- a. Who: User/Operator description (Service) + country
- b. What : Refer to model & type RPAS (§ 2.a)
- c. When: timeframe for the exercise
- d. Where: places of operations/flights.
- e. How: detailed description of the activities -> Recording, take pictures, flight conditions...

4. COPY OF THE REMOTE PILOT LICENSE TRAINING OF THE PILOT BASED ON NATIONAL REGULATIONS OR DIRECTIVES

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<sup>4</sup> **A Specific Operations Risks Assessment (SORA)** (first edition and updated versions), pursuant to [AMC 1 to Art 11](#) to [Easy Access Rules for Unmanned Aircraft Systems \(Regulations \(EU\) 2019/947 and \(EU\) 2019/945\)](#), is required when the scenarios or operations don't respond to the operational and/or technical requirements of the standards scenarios.

## Subpart C - Form(s) for 'TARGET' and 'PROTOTYPE' Category UAS

### BMAD UAS C.04 Form for a 'TARGET' or 'PROTOTYPE' Category UAS : Declaration for operation

The following information of the declaration in subject have to be sent to the BMAA ([\\*COMOPSAIR-BMAA](#)) Certification Branch by means of standard military note addressing exhaustively the fields mentioned on the concerned paragraph.

1. RPAS Info

- a. Type :
- b. Manufacturer :
- c. Target or Prototype UAS :

2. DATES OF OPERATION (ONLY IF PROTOTYPE UAS):

From... to...

3. OA'S DECLARATION

Free text proposed by the OA attesting, depending on the initial commissioning of a Target or Prototype UAS type, that the OA is coping with the requirements of the BMAD UAS A.18 for 'TARGET' Category UAS & BMAD UAS A.19 for 'PROTOTYPE' Category UAS. Annexes to argument the declaration are requested for the UAS operating in the 'PROTOTYPE' Category.

4. OA'S SIGNATURE:

## Bijlage A: List of Definitions

### 1. **Airworthiness Directive (AD)**

Document issued by the Airworthiness Authority (BMAA Certification Branch) which, after the discovery of a technical problem affecting the aviation safety, imposes corrective actions that must be implemented on the concerned aircraft, in order to restore the level of safety.

### 2. **Airworthiness Environment**

Environment meeting the criteria of the Belgian military regulations (BMARs) in terms of airworthiness. Those regulations cover the technical aspects related to the initial certification and the upkeep of this certification throughout the aircraft life cycle (BMAR 21), the management of an aircraft fleet by a specific approved organization (BMAR M), the maintenance of this fleet by approved organizations (BMAR 145) wherein the technicians are trained in approved training organizations pursuant to the BMAR 147 in order to develop skills pursuant to the BMAR 66.

### 3. **Cargo**

Article or substance or product, carried by the UA using its payload.

Cargo flights may only occurred within the conditions approved by the airworthiness authority. Specific information, conditions, operational envelop,... with cargo, have to be mentioned in the UAS user and/or maintenance manual(s). If it is not the case, a technical analysis has to be done iccw the Material Manager prior to allow cargo flights by the airworthiness authority.

### 4. **CE Marking**

Marking placarded by the manufacturer on a product to indicate that this product (aircraft), at the end of the conformity assessment procedure<sup>5</sup>, complies with the requirements set out in parts 1 to 6 and 16 to 17 of the COMMISSION DELEGATED REGULATION (EU) 2019/945 of 12 March 2019 on unmanned aircraft systems and on third-country operators of unmanned aircraft systems.

### 5. **Contingency Area (See Figure 2)**

The volume of airspace outside the flight geography area where contingency procedures are applied and which is projected on the surface of the earth.

### 6. **Controlled Environment**

An aircraft operating in a controlled environment from an airworthiness point of view is an aircraft that is certified pursuant to BMAR 21 (or an equivalent regulation), operated by a fleet management organization (Continuing Airworthiness Management Organization (CAMO)) approved pursuant to the BMAR M (or an equivalent regulation) and that is maintained by one or more approved maintenance organizations pursuant to BMAR 145 (or an equivalent regulation). Within those maintenance organizations, technicians are trained by approved maintenance training organizations pursuant to the BMAR 147 (or an equivalent regulation) in order to develop skills and be licensed pursuant to BMAR 66 (or an equivalent regulation).

### 7. **Controlled ground Area**

The ground area where the UAS is operated and within which the UAS operator can ensure that only involved persons are present. It may include (depending on the UAS Category), on the ground, the representation of the Operational Volume and the Ground Risk Buffer.

### 8. **Competent Authority (CA)**

The Head of a Belgian Defence Department (or any service identified within its structure), defined pursuant to the Royal Decree (RD) dated on 02 Dec 2018 pertaining the Belgian Defence organisation, responsible for:

- The development of the principles mentioned in preamble of this document, including directives and rules related to those principles, to the attention of the BD UAS operators;
- The control that the BD UAS operators work pursuant to those principles, directives & rules.

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<sup>5</sup> Art 13 REGULATION (EU) 2019/947 COMMISSION IMPLEMENTING REGULATION (EU) 2019/947 of 24 May 2019 on the rules and procedures for the operation of unmanned aircraft.

There will be multiple CA's within the Belgian Defence. For instance:

- The BMAA is the Competent Authority responsible for the development of airworthiness and related requirements (BMAD-UAS) in support of the technical pillar;
- MRSys-A is the Competent Authority responsible for the acquisition and maintenance policy of all UAS, in support of the technical pillar;
- COMOPSAIR A3.2 is the Competent Authority responsible for the development of rules and regulations related to the airspace pillar);
- The ASD is the Competent Authority responsible for the development of overarching aviation safety requirements;
- DGHR is the Competent Authority responsible for the legislation concerning the training/formation of people. DGHR shall be capable of tasking the main operator of a UAS fleet to draft a training concept, which can then be validated by DGHR.

## 9. Dangerous Goods (DG)

Articles or substances, which are capable of posing a hazard to health, safety, property or the environment in the case of an incident or accident, including in particular:

- explosives (mass explosion hazard, blast projection hazard, minor blast hazard, major fire hazard, blasting agents, extremely insensitive explosives);
- gases (flammable gas, non-flammable gas, poisonous gas, oxygen, inhalation hazard);
- flammable liquids (flammable liquids; combustible, fuel oil, gasoline);
- flammable solids (flammable solids, spontaneously combustible solids, dangerous when wet);
- oxidising agents and organic peroxides;
- toxic and infectious substances (poison, biohazard);
- radioactive substances;
- corrosive substances;

Each hazardous product has a United Nations (UN) code.

The exhaustive list of dangerous goods is given in Section 4 of the "IATA Dangerous Goods Regulations".

This BMAD-UAS will address situations where DG's are transported by means of a UAS.

## 10. Data Link

A wireless communication channel between one (or more) GCS / CU and one (or more) RPA / UA, or between several RPA / UA. Its utility may include, but is not limited to, "Command and Control" or "Payload" data exchange. A "Data Link" can consist of:

- An "Uplink" - Transmission of commands from the CU to the RPA;
- A "Downlink" - Data transmission from the RPA to the CU.

## 11. Drone

A drone is an unmanned aircraft (without a crew on board) which is controlled/remotely piloted from a remote pilot station. Also called UA (Unmanned Aircraft) or RPA (Remotely Piloted Aircraft), these drones can be of a size and a complexity comparable to "Manned Aircraft" but they can also be very simple and very small flying platforms.

## 12. First Person View (FPV)

This is a method used to control the UA by means of a visual system, connected to the camera of the UA. This requires the use of equipment (goggles, display, etc.) while operating the UA where the remote pilot manoeuvres the UA through a forward-looking camera installed on the aircraft.

**13. Flight Geography Area (See Figure 2)**

The volume(s) of airspace defined spatially and temporally in which the UAS operator plans to conduct the operation which is projected on the surface of the earth.

**14. Follow-Me Mode**

A mode of operation of a UAS where the unmanned aircraft constantly follows the remote pilot within a predetermined radius.

**15. Ground Control Station (GCS) or Command Unit (CU):**

A facility or device from which the RPA is controlled and / or monitored during all phases of its flight.

**16. Ground Data Terminal (GDT) or C2 Link**

The GDT or C2 Link is a facility including the Data Link.

**17. Ground Risk Buffer (See Figure 2)**

An area, which surrounds the operational volume and that is established in order to minimize the risk to third parties if the unmanned aircraft inadvertently leaves the operational volume.

**18. Kinetic Energy**

Energy in KJ, released at the time of impact and calculated as follows:

$$E = MTOW \times (9.81 \times \text{altitude (in m)} + 0.5 \times \text{ground speed (in m/s)}^2).$$

**19. Micro UAS**

NATO Definition: UAS that have a maximum energy state less than 66J which don't cause significant damage to life or property, can fly up to 200 ft Above Ground Level (AGL) and in a range up to 5km.

**20. Mini UAS**

NATO Definition: UAS with a maximum Take-Off weight up to 15 Kg, which can fly up to 3,000 ft AGL and in a range up to 25km.

**21. MTOW (Maximum Take Off Weight) or MTOM (Maximum Take Off Mass)**

The MTOW or MTOM corresponds to the maximum unmanned aircraft weight, as defined by the manufacturer or constructor for UA operations, including its payload, if any, its cargo as well and the fuel.

**22. Mutual Recognition (MR)**

Process by which 2 Military Airworthiness Authority (MAA) recognize each other on the basis of the procedures they have established for the certification of products, the approval of organizations and their regulatory framework in matters of airworthiness. These authorities must rely on similar or converging regulatory frameworks and on organizations capable of fulfilling, qualitatively and quantitatively, all the tasks generally devolved to an airworthiness authority.

**23. Operating Authority (OA)**

Department of the Belgian Defense responsible for operations with defined UAS- types. The OA is therefore formally the Head of the concerned department (e.g. the Air Component Commander for the Belgian Air Component or DGMR for the Directorate General Material Resources).

Operating authorities will have one or multiple operators under their command.

**24. Operational Volume (See Figure 2)**

It is the combination of the flight geography area and the contingency area which is projected on the surface of the earth.

**25. Operator UAS**

A person who performs essential tasks for the operation of a UAS and who, if applicable, operates the flight controls of the UA during the flight.

Any natural or legal person who operates or intends to operate a UA.

**26. Payload**

Instruments, mechanisms, equipment, parts, ancillary devices or accessories, including communication equipment, which are installed or attached to the UA, are not used or intended to be used for the operation or control of the UA in flight, and are not part of an airframe, engine or propeller, whose aim is to provide additional operational capabilities (surveillance, sensing, cargo lifting, ...).

**27. People/person, infrastructure, involved in the Operation/Exploitation**

Person who is informed of the instructions and security measures given by the operator during operations / flights with a UAS, and if applicable, has to be protected.

See also Uninvolved Person.

**28. Remote Pilot**

See Operator UAS

**29. RPA**

See Drone.

**30. RPA/UA Observer:**

A trained and competent person, designated by the authority, who doesn't use any additional means (eg: binoculars, goggles,...); in order to assist the remote pilot in safely conducting the flight.

**31. UA**

See Drone.

**32. UA's dimension**

For the airplanes: it corresponds to the wingspan.

For the helicopters/rotorcrafts: it corresponds to the diameter of the propeller.

For multirotor: it corresponds to the maximum distance between 2 opposite propellers tips.

**33. UAS model**

A UAS model is the name of the UAS, for instance: DJI Mavic 2, DJI Mavic 2 Zoom. Those, are different models.

**Remark:** Even if the models are different, their designs (conceptions) might be similar and considered as one UAS type. Therefore, previous each initial commissioning of a UAS, the OA contacts firstly the Material Manager (MatMan) in order to know whether or not this is necessary to send a new declaration or a new request to the BMAA Certification Branch.

**34. UAS type**

The UAS type covers all UAS of the same model or a certain number of UAS-models. This type is subject to a technical certification whose requirements vary according to the category of UAS ('OPEN', 'SPECIFIC', 'CERTIFIED').

**35. Uninvolved person**

Person who is not participating in the UAS operation or who is not aware of the instructions and safety precautions given by the UAS operator.

**36. Unmanned Aircraft System (UAS) or RPAS (Remotely Piloted Aircraft System)**

A UAS is the RPA and all its equipment, devices, software and accessories that are necessary to operate the RPA in a SAFE way.

A payload has to be certified for the use in one of the UAS categories. The manufacturer has to declare, in its UAS user and/or maintenance manual(s), the different payloads allowed on the UAS. If it is not the case, a technical analysis has to be done iccw the Material Manager prior to certify the payload by the airworthiness authority.

No flight is allowed if the payload is not certified.

### 37. VLOS (Visual Line Of Sight)/ BVLOS / EVLOS

A type of UAS operation in which, the remote pilot is able to maintain continuous unaided visual contact with the unmanned aircraft, allowing the remote pilot to control the flight path of the unmanned aircraft in relation to other aircraft, people and obstacles for the purpose of avoiding collisions.

**BVLOS** (Beyond Visual Line Of Sight) is a type of UAS operation which is not conducted in VLOS.

**EVLOS** (Extended Visual Line Of Sight) is a type of UAS operation whereby the remote pilot maintains uninterrupted situational awareness of the airspace in which the UAS operation is being conducted via visual airspace surveillance through one or more trained observers, possibly aided by technological means. The remote pilot has direct control of the UAS at all times.

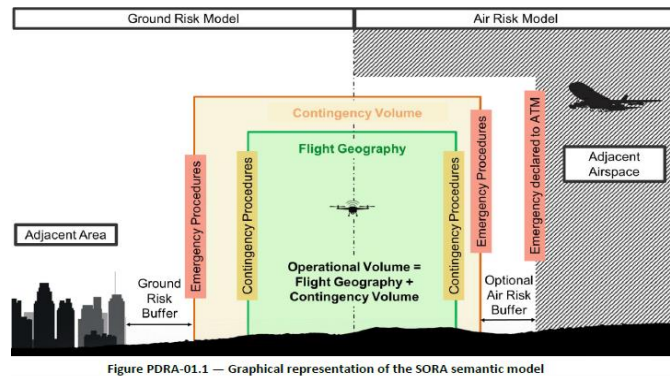


Figure 2

### Refertes

- (1) COMMISSION DELEGATED REGULATION (EU) 2019/945 of 12 March 2019 on unmanned aircraft systems and on third-country operators of unmanned aircraft systems
- (2) COMMISSION IMPLEMENTING REGULATION (EU) 2019/947 of 24 May 2019 on the rules and procedures for the operation of unmanned aircraft (Text with EEA relevance)
- (3) Law of July 31st, 2020 "Law on the airworthiness of military aircraft"
- (4) CHOD instruction 22-50077884 of April 7<sup>th</sup>, 2022 "Establishment of the Belgian Military Airworthiness Authority and related implementing directives".