

# Specifika kategorin PDRA S-01 & PDRA-S02

# [www.easa.europa.eu](http://www.easa.europa.eu) – Easy access rules

The screenshot shows a web browser window with the URL <https://www.easa.europa.eu/document-library/easy-access-rules/easy-access-rules-unmanned-aircraft-systems-regulation-eu>. The page title is "Easy Access Rules for Unmanned Aircraft Systems (Regulation (EU) 2019/947 and Regulation (EU) 2019/945)". Below the title, it says "Revision from September 2021 - Available in online format". The page features a navigation menu on the left with categories like "Application Forms", "Regulations", and "Publications". The main content area includes a "Publication Date: 13/01/2021" and a description: "This publication contains the rules and procedures for the operation of unmanned aircraft, displayed in a consolidated, easy-to-read format, with advanced navigation features through links and bookmarks." It also mentions that it covers "Commission Implementing Regulation (EU) 2019/947" and "Commission Delegated Regulation (EU) 2019/945". A "Drones" logo is visible in the bottom right corner of the page content.

# PDRA

## Article 5 - 'Specific' category of UAS operations

*Regulation (EU) 2020/639*

1. Where one of the requirements laid down in [Article 4](#) or in Part A of the Annex is not met, a UAS operator shall be required to obtain an operational authorisation pursuant to [Article 12](#) from the competent authority in the Member State where it is registered.
2. When applying to a competent authority for an operational authorisation pursuant [Article 12](#), the operator shall perform a risk assessment in accordance with [Article 11](#) and submit it together with the application, including adequate mitigating measures.

# GM1 to AMC1 Article 11

- Alternatives to full risk assessment for some operations.
- STS
- PDRA

## GM1 to AMC1 Article 11 Rules for conducting an operational risk assessment

ED Decision 2020/022/R

### GENERAL

The operational risk assessment required by Article 11 of the UAS Regulation may be conducted using the methodology described in AMC1 Article 11. This methodology is basically the specific operations risk assessment (SORA) developed by JARUS. Other methodologies might be used by the UAS operator as alternative means of compliance.

Aspects other than safety, such as security, privacy, environmental protection, the use of the radio frequency (RF) spectrum, etc., should be assessed in accordance with the applicable requirements established by the Member State in which the operation is intended to take place, or by other EU regulations.

For some UAS operations that are classified as being in the 'specific' category, alternatives to carrying out a full risk assessment are offered to UAS operators:

- (a) for UAS operations with lower intrinsic risks, a declaration may be submitted when the operations comply with the standard scenarios (STSs) listed in Appendix 1 to the UAS Regulation. Table 1 provides a summary of the STSs; and
- (b) for other UAS operations, a request for authorisation may be submitted based on the mitigations and provisions described in the predefined risk assessment (PDRA) when the UAS operation meets the operational characterisation described in AMC2 et seq. Article 11 to the UAS Regulation. Table 2 below provides a summary of the PDRA that have been published so far.

# PDRA

~~SORA~~

~~ASSESSMENT~~

Predefined risk  
assessment (PDRA)

Apply for  
authorisation

Operational  
authorisation

Start the  
operation

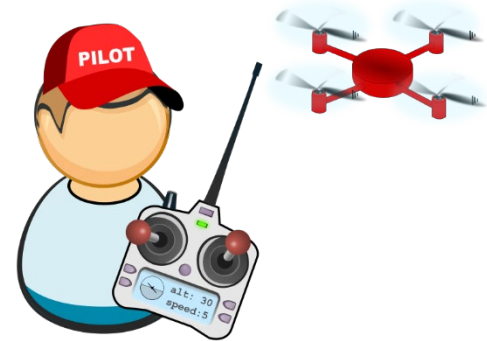


# PDRA S-01 & S-02

PDRA#	Edition/date	UAS characteristics	BVLOS/VLOS	Overflown area	Maximum range from remote pilot	Maximum height	Airspace	AMC# to Article 11	Notes
PDRA-S01	1.0/July 2020	Maximum characteristic dimension of up to 3 m and MTOM of up to 25 kg	VLOS	Controlled ground area that might be located in a populated area	VLOS	120 m	Controlled or uncontrolled, with low risk of encounter with manned aircraft	AMC4	
PDRA-S02	1.0/July 2020	Maximum characteristic dimension of up to 3 m and MTOM of up to 25 kg	BVLOS	Controlled ground area that is entirely located in a sparsely populated area	2 km with an AO 1 km, if no AO	120 m	Controlled or uncontrolled, with low risk of encounter with manned aircraft	AMC5	

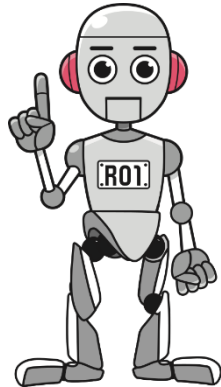
# PDRA S-01 Overview

- Characterisation
- Risk classification
- Mitigations
- Provisions for the personnel in charge of duties essential to the UAS operation
- Technical provisions
- UAS operator and UAS operations provisions



# PDRA S-01

- No autonomous operation.
- Autonomous vs automatic



PDRA characterisation and provisions	
<b>1. Operational characterisation (scope and limitations)</b>	
<b>Level of human intervention</b>	<p>1.1 No autonomous operations: the remote pilot should have the ability to maintain control of the UA, except in case of loss of the command and control (C2) link.</p> <p>1.2 The remote pilot should operate only one UA at a time.</p> <p>1.3 The remote pilot should not operate from a moving vehicle.</p> <p>1.4 The remote pilot should not hand over the control of the UA to another command unit.</p>
<b>UA range limit</b>	1.5 VLOS distance from the remote pilot at all times.
<b>Areas overflown</b>	<p>1.6 UAS operations should be conducted over a controlled ground area.</p> <p>1.7 For the operation of a tethered UA, the area should have a radius equal to the tether length plus 5 m and should be centred on the point of the surface of the Earth where the tether is fixed.</p>
<b>UA limitations</b>	<p>1.8 The UA should have an MTOM of less than 25 kg, including payload.</p> <p>1.9 The UA should have a maximum characteristic dimension (e.g. wingspan, rotor diameter/area or maximum distance between rotors in case of multirotor) of less than 3 m.</p>
<b>Flight height limit</b>	<p>1.10 The remote pilot should maintain the UA within 120 m from the closest point of the surface of the Earth. The measurement of the distances should be adapted according to the geographical characteristics of the terrain, such as plains, hills, and mountains.</p> <p>1.11 When flying a UA within a horizontal distance of 50 m from an artificial obstacle that is taller than 105 m, the maximum height of the UAS operation may be increased up to 15 m above the height of the obstacle, at the request of the entity responsible for the obstacle.</p> <p>1.12 The maximum height of the operational volume should not exceed by 30 m the maximum height that is allowed by points 1.10 and 1.11 above.</p>
<b>Airspace</b>	<p>1.13 The UA should be operated:</p> <p>1.13.1 in uncontrolled airspace (Class F or G), unless different limitations are provided for by the Member States for their UAS geographical zones in areas where the</p>

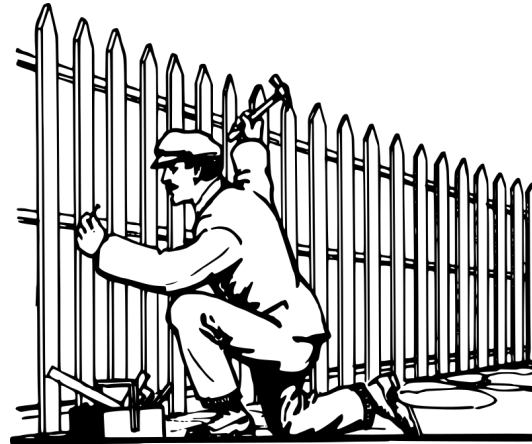


# PDRA S-01 Scope and limitations

UA range limit	1.5 VLOS distance from the remote pilot at all times.
Areas overflown	1.6 UAS operations should be conducted over a <u>controlled ground area</u> . 1.7 For the operation of a tethered UA, the area should have a radius equal to the tether length plus 5 m and should be centred on the point of the surface of the Earth where the tether is fixed.
UA limitations	1.8 The UA should have an <u>MTOM of less than 25 kg, including payload</u> . 1.9 The UA should have a maximum characteristic dimension (e.g. wingspan, rotor diameter/area or maximum distance between rotors in case of multirotor) of less than 3 m.

# Controlled ground area

“means the ground area where the UAS is operated and within which the UAS operator can ensure that only involved persons are present”



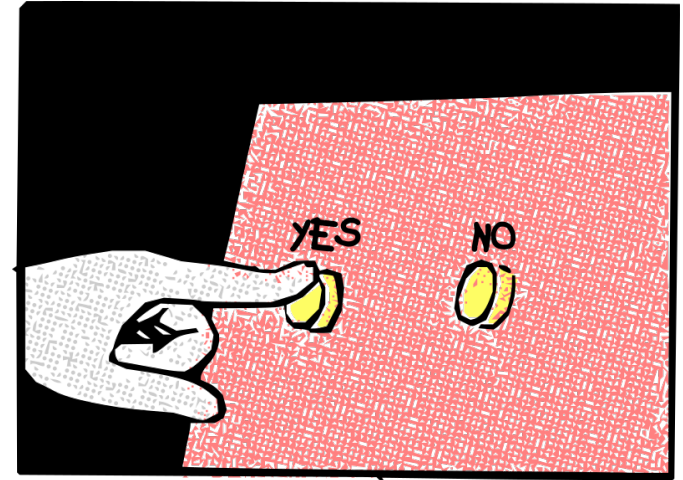
# Uninvolved persons

”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”



# GM1 Article 2(18)

- Explicit consent
- Safety precautions.
- Can decide if to participate
- Understands the risks
- Has reasonable safeguards
- Is not restricted if not participating



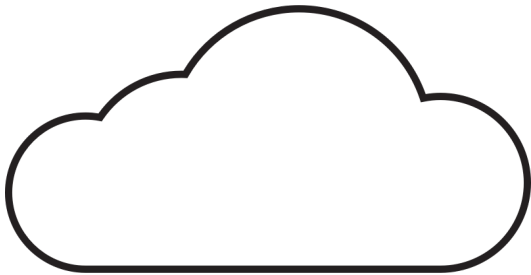
# GM1 Article 2(18)

When filming with a UAS at a large music festival or public event, it is not sufficient to inform the audience or anyone present via a public address system, or via a statement on the ticket, or in advance by email or text message.

Those types of communication channels do not satisfy the points above. In order to be considered a person involved, each person should be asked for their permission and be made aware of the possible risk(s). This type of operation does not fall into the 'open' category and may be classified as 'specific' or 'certified', according to the risk.

# PDRA S-01 Scope and limitations

- Max 120m
  - Okontrollerat luftrum
- eller
- Kontrollerat luftrum med tillstånd



## Flight height limit

1.10 The remote pilot should maintain the UA within 120 m from the closest point of the surface of the Earth. The measurement of the distances should be adapted according to the geographical characteristics of the terrain, such as plains, hills, and mountains.

1.11 When flying a UA within a horizontal distance of 50 m from an artificial obstacle that is taller than 105 m, the maximum height of the UAS operation may be increased up to 15 m above the height of the obstacle, at the request of the entity responsible for the obstacle.

1.12 The maximum height of the operational volume should not exceed by 30 m the maximum height that is allowed by points 1.10 and 1.11 above.

## Airspace

1.13 The UA should be operated:

1.13.1 in uncontrolled airspace (Class F or G), unless different limitations are provided for by the Member States for their UAS geographical zones in areas where the probability of encountering manned aircraft is not low; or

1.13.2 in controlled airspace after coordination and flight authorisation in accordance with the published procedures for the area of operation, to ensure a low probability of encountering manned aircraft.

*Note: An airspace with an air risk that is classified as not higher than ARC-b can be considered having a low probability of encountering manned aircraft.*

# PDRA S-01 Scope and limitations

## Visibility

1.14 The flight visibility should allow the remote pilot to conduct the entire flight in VLOS.

## Others

1.15 The UA should not be used to carry dangerous goods, except for dropping items in connection with agricultural, horticultural or forestry activities in which the carriage of the items does not contravene any other applicable regulations.



# PDRA S-01 Final GRC, Final ARC & SAIL

2. Operational risk classification (according to the classification defined in [AMC1 Article 11](#) of the UAS Regulation)

Final GRC

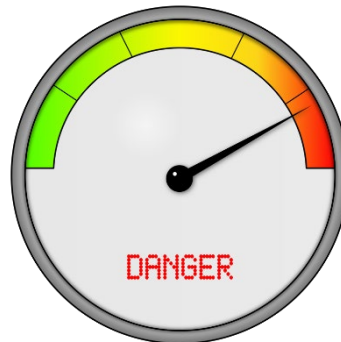
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Final ARC

ARC-b

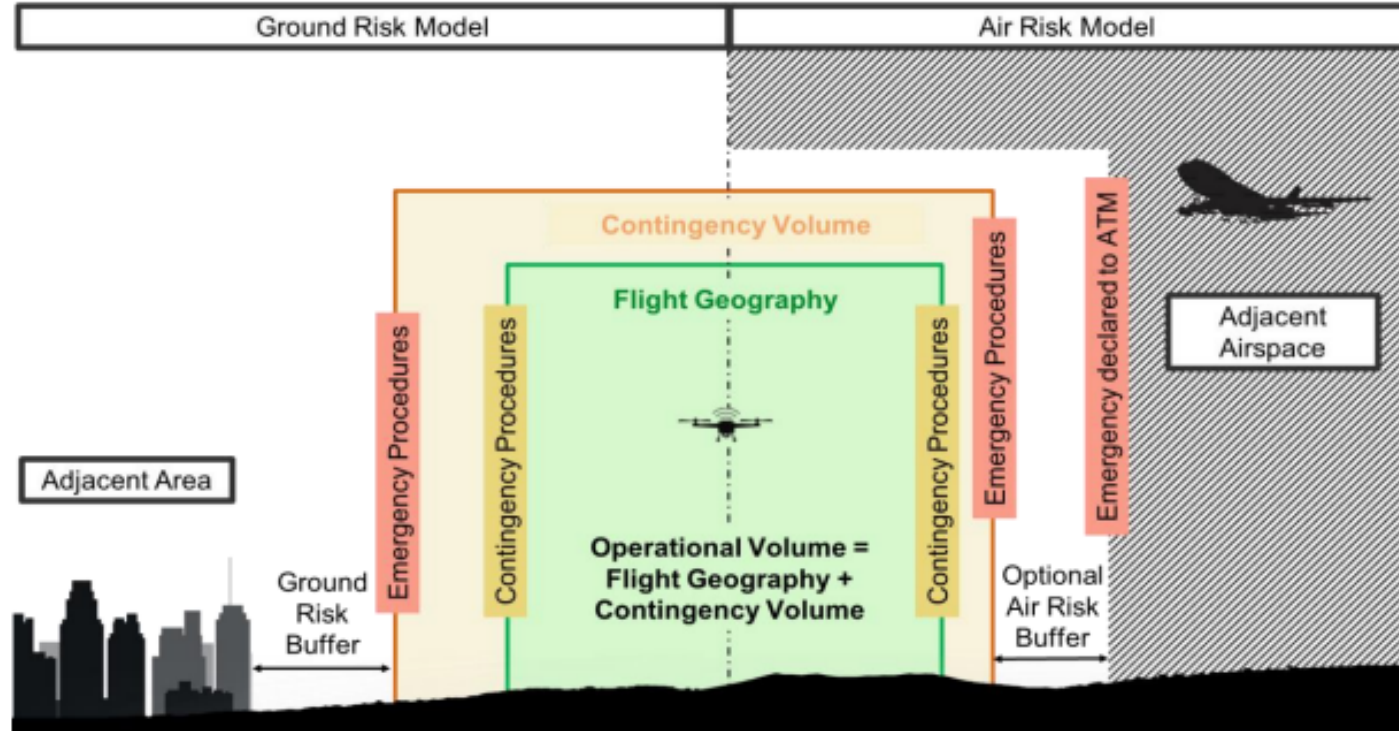
SAIL

II

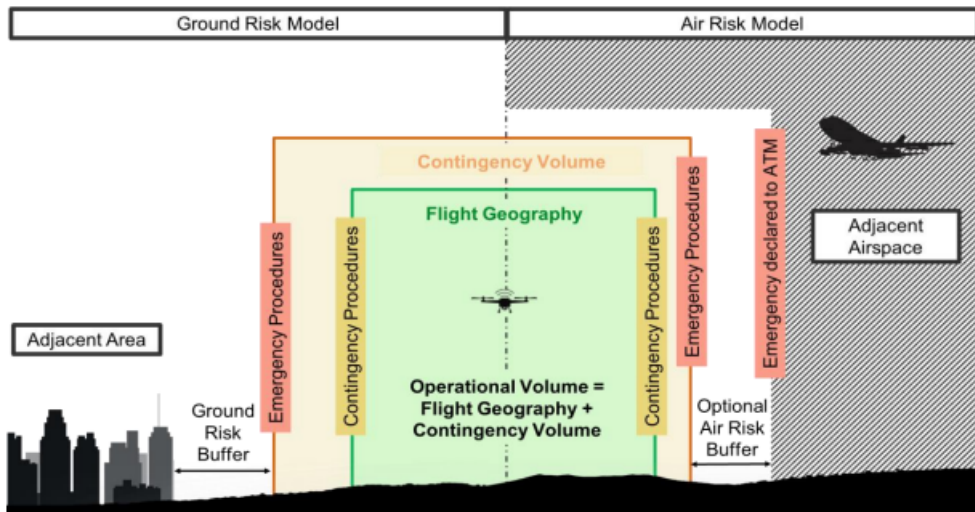




# PDRA S-01 Operational mitigations



# PDRA S-01 Operational mitigations



## Ground risk

3.5 The UAS operator should establish a ground risk buffer to protect third parties on the ground outside the operational volume.

3.6 For the operation of untethered UA, the ground risk buffer should cover a distance beyond the external limit(s) of the contingency area. That distance should be at least as defined below:

Maximum height above ground	Minimum distance to be covered by the ground risk buffer for untethered UA	
	with an MTOM of up to 10 kg	with an MTOM of more than 10 kg
30 m	10 m	20 m
60 m	15 m	30 m
90 m	20 m	45 m
120 m	25 m	60 m

3.7 For the operation of tethered UA, the ground risk buffer is considered in point 1.7 above.

# PDRA S-01 Operational mitigations

## Air risk

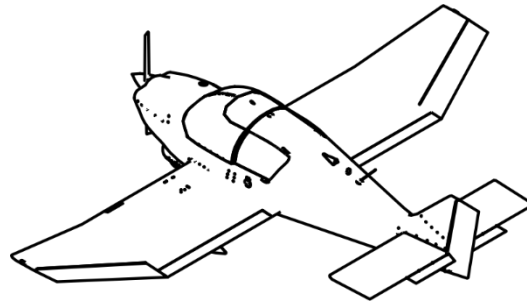
3.8 The operational volume should be outside any geographical zone corresponding to a flight restriction zone of a protected aerodrome or of any other type, as defined by the responsible authority, unless the UAS operator has been granted an appropriate permission.

3.9 Prior to the flight, the UAS operator should assess the proximity of the planned operation to manned aircraft activity.

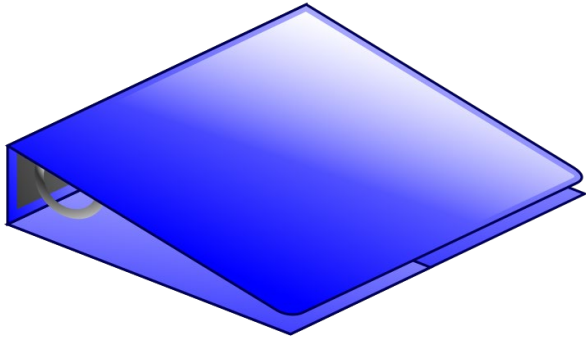
## Observers

Airspace observers (AOs): N/A.

UA observers: refer to point 5.1.4(b) below.



# UAS operator and operator provisions



## 4. UAS operator and UAS operations provisions

### UAS operator and UAS operations

4.1 In addition to the responsibilities that are defined in point [UAS.SPEC.050](#) of the Annex to the UAS Regulation, and the provisions for UAS operators in previous points of this AMC, the UAS operator should:

4.1.1 develop an operations manual (OM) (for the template, refer to [AMC1 UAS.SPEC.030\(3\)\(e\)](#) and to the complementary information in [GM1 UAS.SPEC.030\(3\)\(e\)](#));

4.1.2 define the operational volume and ground risk buffer for the intended operation, as per points 3.1 to 3.6 above, and include them in the OM;

4.1.3 ensure the adequacy of the contingency and emergency procedures and prove it through any of the following:

- (a) dedicated flight tests; or
- (b) simulations, provided that the representativeness of the simulation means is proven for the intended purpose with positive results; or
- (c) any other means acceptable to the competent authority;

# UAS operator and operator provisions



(b) simulations, provided that the representativeness of the simulation means is proven for the intended purpose with positive results; or

(c) any other means acceptable to the competent authority;

4.1.4 develop an effective emergency response plan (ERP) that is suitable for the intended operation (see [GM1 UAS.SPEC.030\(3\)\(e\)](#));

4.1.5 upload updated information into the geo-awareness function, if such system is installed on the UAS, when required by the UAS geographical zone for the intended location of the operation;

4.1.6 ensure that before starting the operation, the controlled ground area is in place, effective, and compliant with the minimum distance that is defined in points 3.1 and 3.5 above and, when required, coordination with the appropriate authorities has been established;

4.1.7 ensure that before starting the operation, all persons that are present in the controlled ground area:

(a) have been informed of the risks of the operation;

(b) have been briefed on or trained in, as appropriate, the safety precautions and measures that the UAS operator has established for their protection; and

(c) have explicitly agreed to participate in the operation; and

4.1.8 ensure that the UAS that is used in the intended operation complies with the technical provisions of point 6 below.

4.2 A UAS operation under this PDRA should be conducted:

4.2.1 keeping the UA in VLOS of the remote pilot at all times;

4.2.2 in accordance with the OM that is referred to in point 4.1.1 above;

4.2.3 over a controlled ground area that comprises the area of the operational volume that is indicated in point 3.1 above and the ground risk buffer that is indicated in point 3.5 above, both projected on the surface of the Earth;

4.2.4 at a ground speed of less than 5 m/s in case of untethered UA;

4.2.5 by a remote pilot that complies with point 5.1 below; and

4.2.6 with a UA that complies with point 6 below.

# UAS Maintenance & External services

## UAS maintenance

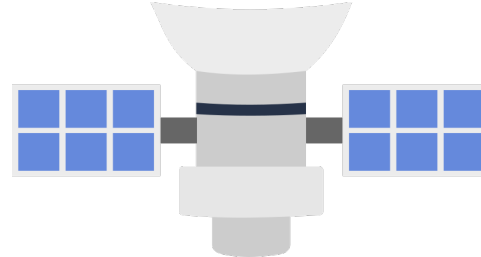
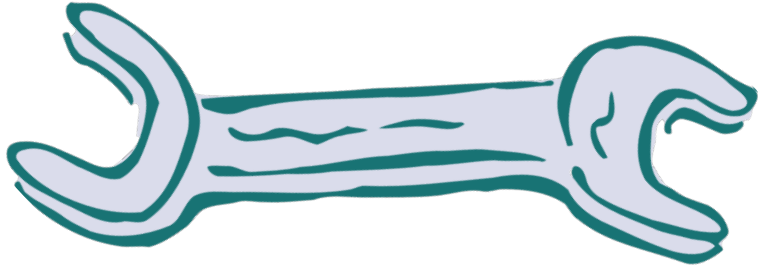
4.3 The UAS maintenance instructions that are defined by the UAS operator should be included in the OM and should cover at least the UAS manufacturer's instructions and requirements, when applicable.

4.4 The maintenance staff should follow the UAS maintenance instructions when performing maintenance.

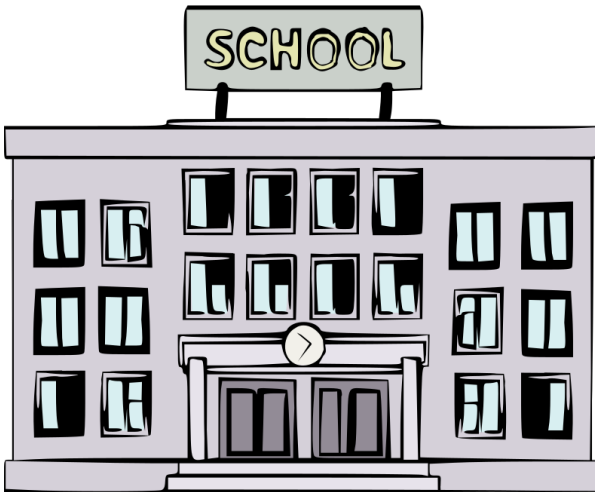
## External services

4.5 The UAS operator should ensure that the level of performance for any externally provided service that is necessary for the safety of the flight is adequate for the intended operation. The UAS operator should declare that this level of performance is adequately achieved.

4.6 The UAS operator should define and allocate the roles and responsibilities between the UAS operator and the external service provider(s), if applicable.



# Provisions for the personnel in charge of duties essential to the UAS operation



## 5. Provisions for the personnel in charge of duties essential to the UAS operation

### Remote pilot

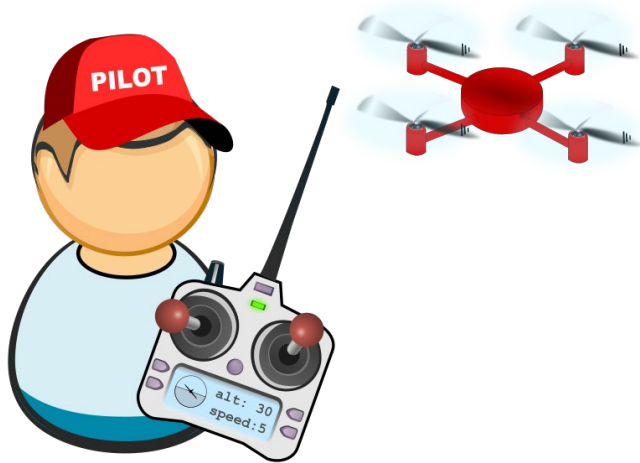
5.1 In addition to complying with the requirements of point [UAS.SPEC.060](#) of the Annex to the UAS Regulation and with the provisions for remote pilots in previous points of this AMC, a remote pilot who is engaged in operations under this PDRA should:

5.1.1 hold a certificate of remote-pilot theoretical knowledge, in accordance with [Attachment A to Chapter I of Appendix 1](#) to the Annex to the UAS Regulation, which is issued by the competent authority or by an entity that is designated by the competent authority of a Member State;

5.1.2 hold an accreditation of completion of a practical-skill training course for this PDRA, in accordance with [Attachment A to Chapter I of Appendix 1](#) to the Annex to the UAS Regulation, which is issued by:



# Provisions for the personnel in charge of duties essential to the UAS operation



(a) an entity that has declared compliance with the requirements of [Appendix 3](#) to the Annex to the UAS Regulation and is recognised by the competent authority of a Member State; or

(b) a UAS operator that has declared to the competent authority of the Member State of registration compliance with this PDRA and with the requirements of [Appendix 3](#) to the Annex to the UAS Regulation;

5.1.3 before starting the UAS operation, verify that the means to terminate the flight of the UA as well as the remote identification system are operational; and

5.1.4 during the flight:

(a) keep the UA in VLOS and maintain a thorough visual scan of the airspace that is surrounding the UA to avoid any risk of collision with manned aircraft; the remote pilot should discontinue the flight if the operation poses a risk to other aircraft, people, animals, environment or property;

(b) for the purpose of point (a) above, be possibly assisted by a UA observer; clear and effective communication should be established between the remote pilot and the UA observer;

(c) use the contingency procedures that are defined by the UAS operator for abnormal situations, including situations where the remote pilot has an indication that the UA may exceed the limits of the flight geography; and

(d) use the emergency procedures that are defined by the UAS operator for emergencies, including triggering the means to terminate the flight when the remote pilot has an indication that the UA may exceed the limits of the operational volume; the means to terminate the flight should be triggered at least 10 m before the UA reaches the limits of the operational volume.



# Technical provisions



## 6. Technical provisions

### UAS

6.1 A UAS that is to be used in operations under this PDRA should comply with the requirements of [Part 16](#) of the Annex to Regulation (EU) 2019/945<sup>1</sup>, except that the UAS does not need to:

- 6.1.1 bear a Class C3 UAS or Class C5 UAS identification on itself;
- 6.1.2 be exclusively powered by electricity, if the UAS operator ensures that the environmental impact that is caused by the use of non-electric UAS is minimised;
- 6.1.3 include a notice that is published by EASA and provides the applicable limitations and obligations, as required by the UAS Regulation; and
- 6.1.4 include the manufacturer's instructions for the UAS if it is privately built; however, information on its operation and maintenance, as well as on the training of the remote pilot, should be included in the OM.

*Note 1: The UAS can comply with point (9) of [Part 4](#) of the Annex to Regulation (EU) 2019/945 by using an add-on that complies with [Part 6](#) of the Annex to said Regulation.*

*Note 2: If the UA does not have a physical serial number that is compliant with standard ANSI/CTA-2063-A 'Small Unmanned Aerial Systems Serial Numbers' and/or does not have an integrated system of direct remote identification, it can comply with point (9) of [Part 4](#) of the Annex to Regulation (EU) 2019/945 by using an add-on that complies with [Part 6](#) of the Annex to said Regulation.*

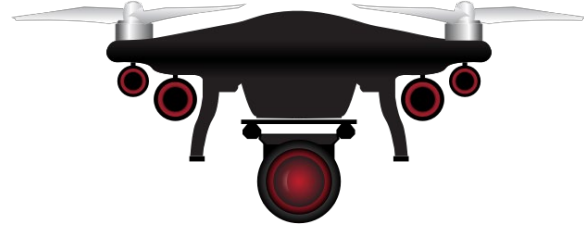
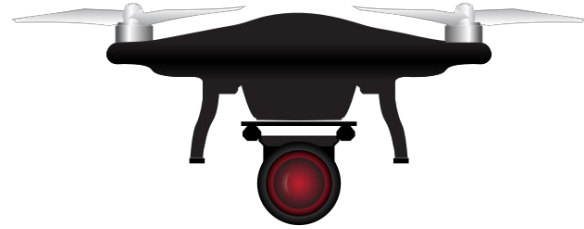
*Note 3: If the UAS is privately built, there may be no identification on the UA of its MTOM. In that case, the operator should ensure that the MTOM of the UA, in the configuration of the UA before take-off, does not exceed 25 kg.*

# PDRA S-02

PDRA#	Edition/date	UAS characteristics	BVLOS/VLOS	Overflown area	Maximum range from remote pilot	Maximum height	Airspace	AMC# to Article 11	Notes
PDRA-S01	1.0/July 2020	Maximum characteristic dimension of up to 3 m and MTOM of up to 25 kg	VLOS	Controlled ground area that might be located in a populated area	VLOS	120 m	Controlled or uncontrolled, with low risk of encounter with manned aircraft	AMC4	
PDRA-S02	1.0/July 2020	Maximum characteristic dimension of up to 3 m and MTOM of up to 25 kg	BVLOS	Controlled ground area that is entirely located in a sparsely populated area	2 km with an AO 1 km, if no AO	120 m	Controlled or uncontrolled, with low risk of encounter with manned aircraft	AMC5	

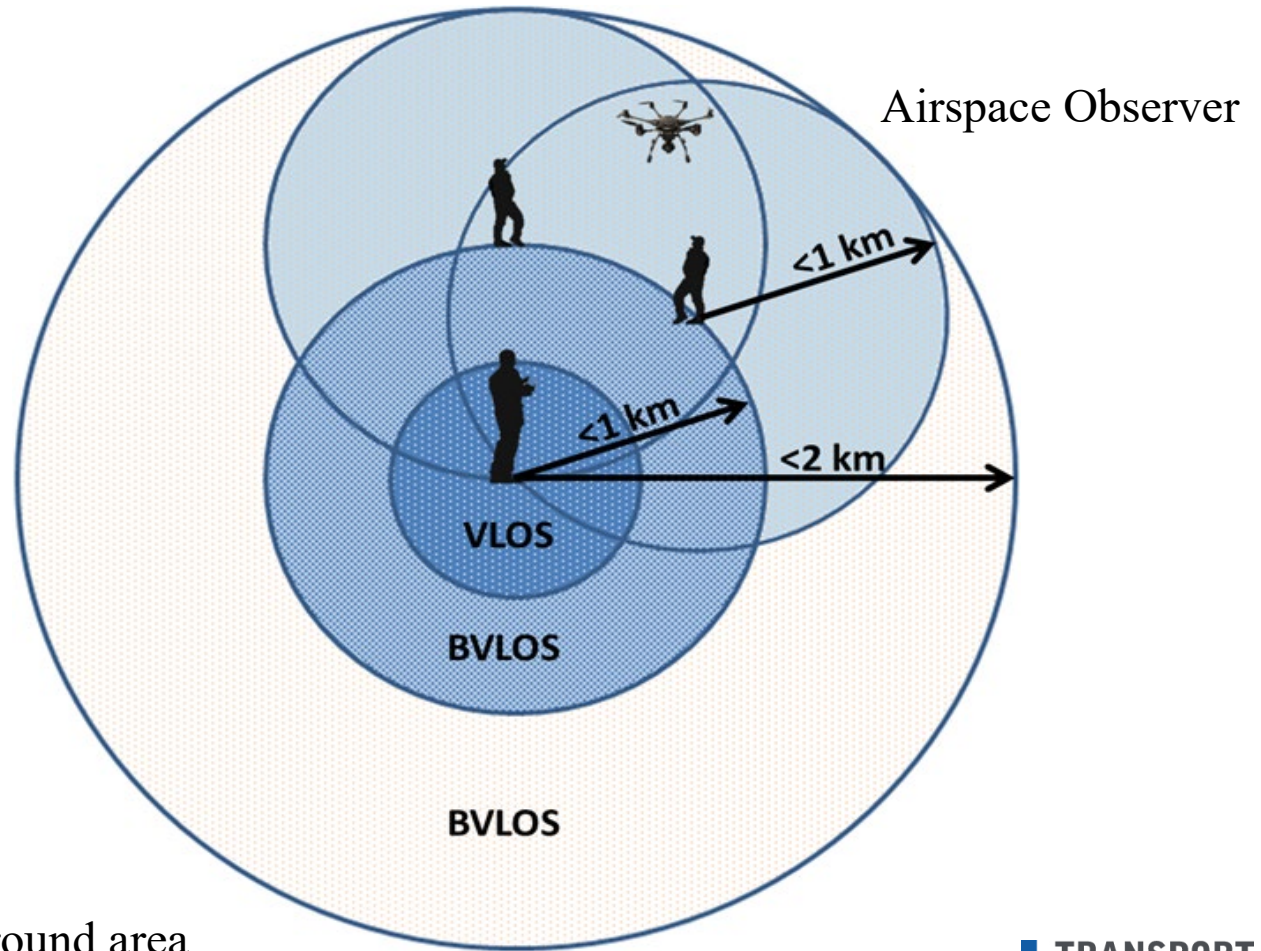
# PDRA S-02

- BVLOS
- 1km, 2km
- Airspace Observer

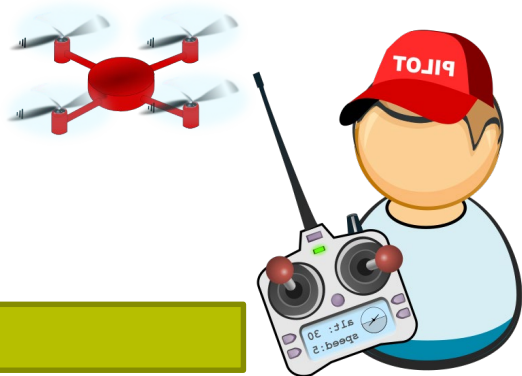


# PDRA S-02

Controlled ground area

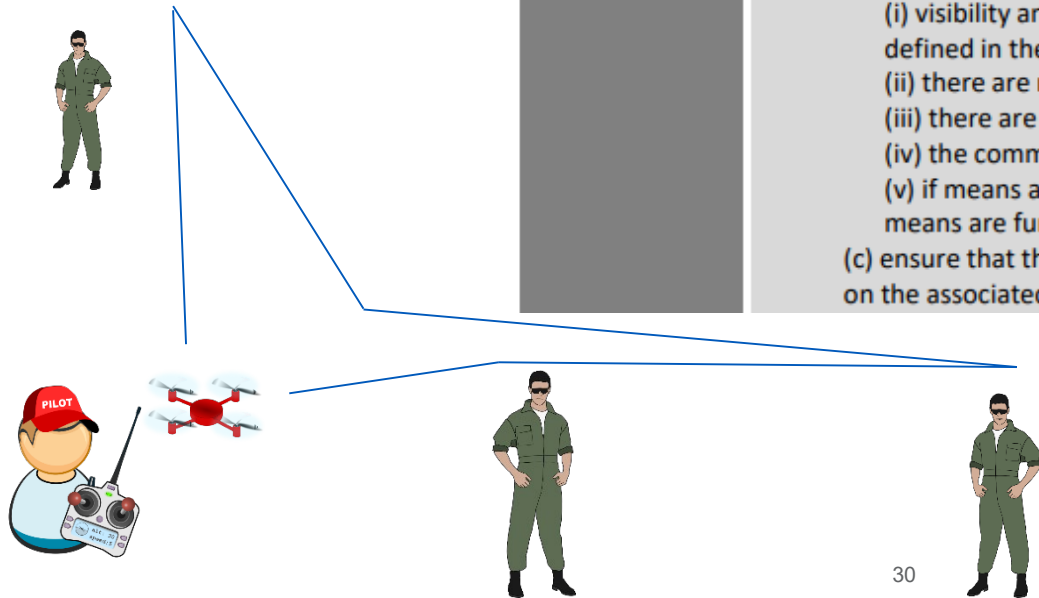


# PDRA S-02



UA range limit	1.5 UAS operations should be conducted: 1.5.1 keeping the UA in sight of the remote pilot during the launch and recovery of the UA, unless the recovery of the UA is the result of an emergency flight termination; 1.5.2 if no airspace observer (AO) is employed in the operation, with the UA no further than 1 km from the remote pilot; and 1.5.3 if one or more AOs are employed in the operation, with the UA no further than 2 km from the remote pilot.
Areas overflow	1.6 UAS operations should be conducted over a controlled ground area.
UA limitations	1.7 The UA should have an MTOM of less than 25 kg, including payload. 1.8 The UA should have maximum characteristic dimensions (e.g. wingspan, rotor diameter/area or maximum distance between rotors in case of multirotor) of less than 3 m. 1.9 The UA should have a maximum ground speed in level flight of not more than 50 m/s.

# PDRA S-02 - UAS operator



4.1.8 before starting the operation, and if airspace observers (AOs) are employed:

(a) ensure the correct placement and number of AOs along the intended flight path;

(b) verify that:

(i) visibility and the planned distance of the AO are within acceptable limits as defined in the OM;

(ii) there are no potential terrain obstructions for each AO;

(iii) there are no gaps between the zones that are covered by each of the AOs;

(iv) the communication with each AO is established and effective; and

(v) if means are used by the AOs to determine the position of the UA, those means are functioning and effective; and

(c) ensure that the AOs have been briefed on the planned flight path of the UA and on the associated timing; and

# PDRA S-02 - UAS operator

4.3 If no AO is employed in the operation, the operation should be conducted with the UA flying no further from the remote pilot than the distance that is indicated in point 1.2.2 above and following a preprogrammed trajectory when the UA is not in VLOS of the remote pilot.



# PDRA S-02 - Remote pilot

## 5.1.4 during the flight:

(a) unless supported by visual observers (VOs), maintain a thorough visual scan of the airspace that is surrounding the UA to avoid any risk of collision with manned aircraft; the remote pilot should discontinue the flight if the operation poses a risk to other aircraft, people, animals, environment or property;

