

**Operational Risk Analysis Overview for Operations in the Specific Category
PDRA – S01 Version 1.0: AMC 4 to Article 11 IR (EU) 2019/947**

Data of authorised UAS and operation	
1. Manufacturer or Type Certificate holder	
2. Model name	
3. Type of UAS configuration	<input type="checkbox"/> Conventional Airplane <input type="checkbox"/> Helicopter <input type="checkbox"/> Multirotor <input type="checkbox"/> Hybrid/VTOL <input type="checkbox"/> Lighter than air <input type="checkbox"/> Other, please specify:
4. Is the UAS tethered during the operation?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5. Maximum characteristic dimensions (including propellers)	
6. Maximum take-off mass	
7. Maximum speed	
8. Type of propulsion system	<input type="checkbox"/> Electric <input type="checkbox"/> Combustion <input type="checkbox"/> Hybrid, specify type: <input type="checkbox"/> Other, please specify:
9. Number of type certificate or design verification report (if available)	
10. Certificate of airworthiness (if available)	
11. Number of noise certificate (if available)	
12. Manufacturer or Type Certificate holder	
13. Short description of proposed operations including the locations	Please provide the GPS coordinates for the operational volume (flight geography and contingency volume), the ground risk buffer and the air risk buffer (if available) as a separate file using either .txt; .kmz or .kml. Give reference to the file name: _____
Short description of proposed operations	
Place, Date	Name and Signature

Compliance Matrix for PDRA – S01 Version 1.0

Operational characterisation (scope and limitations)		
	PDRA requirements	Reference to documentation
Level of human intervention	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.	Document name: Chapter number: Page number:
	1.2 The remote pilot should operate only one UA at a time.	Document name: Chapter number: Page number:
	1.3 The remote pilot should not operate from a moving vehicle.	Document name: Chapter number: Page number:
	1.4 The remote pilot should not hand over the control of the UA to another command unit.	Document name: Chapter number: Page number:
UA range limit	1.5 VLOS distance from the remote pilot at all times.	Document name: Chapter number: Page number:
Areas overflown	1.6 UAS operations should be conducted over a controlled ground area.	Document name: Chapter number: Page number:
	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 centered on the point of the surface of the Earth where the tether is fixed.	Document name: Chapter number: Page number:
UA limitations	1.8 The UA should have a MTOM of less than 25 kg, including payload.	Document name: Chapter number: Page number:

Operational characterisation (scope and limitations)		
	PDRA requirements	Reference to documentation
	1.9 The UA should have a maximum characteristic dimension (e.g. wingspan, rotor diameter/area or maximum distance between rotors in case of multicopter) of less than 3 m.	Document name: Chapter number: Page number:
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.	Document name: Chapter number: Page number:
	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.	Document name: Chapter number: Page number:
	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.	Document name: Chapter number: Page number:
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 authorization in accordance with the published procedures for the area of operation, to ensure a low probability of encountering manned aircraft.	Document name: Chapter number: Page number:
Visibility	1.14 The flight visibility should allow the remote pilot to conduct the entire flight in VLOS.	Document name: Chapter number: Page number:
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.	Document name: Chapter number: Page number:

Operational mitigations		
	PDRA requirements	Reference to documentation
Operational volume	3.1 The UAS operator should define the operational volume for the intended operation, including: 3.1.1 the flight geography; and 3.1.2 the contingency volume, with its external limit(s) at least 10 m beyond the limit(s) of the flight geography, if the operation is conducted with untethered UA.	Document name: Chapter number: Page number:
	3.2 To determine the operational volume, the UAS operator should consider the position-keeping capabilities of the UAS in 4D space (latitude, longitude, height, and time).	Document name: Chapter number: Page number:
	3.3 In particular, the accuracy of the navigation solution, the flight technical error of the UAS, as well as the flight path definition error (e.g. map error) and latencies should be considered and addressed when determining the operational volume.	Document name: Chapter number: Page number:
	3.4 The remote pilot should apply emergency procedures as soon as there is an indication that the UA may exceed the limits of the operational volume, as per point 5.1.4(d) below.	Document name: Chapter number: Page number:
Ground risk	3.5 The UAS operator should establish a ground risk buffer to protect third parties on the ground outside the operational volume.	Document name: Chapter number: Page number:
	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 in Table PDRA-S01.1 — Main limitations and provisions for PDRA-S01 (AMC 4 to Article 11 of RG (EU) 2019/947).	Document name: Chapter number: Page number:
	3.7 For the operation of tethered UA, the ground risk buffer is considered in point 1.7 above.	Document name: Chapter number: Page number:
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.	Document name: Chapter number: Page number:

Operational mitigations		
	PDRA requirements	Reference to documentation
	3.9 Prior to the flight, the UAS operator should assess the proximity of the planned operation to manned aircraft activity.	Document name: Chapter number: Page number:

UAS operator and UAS operations provisions		
	PDRA requirements	Reference to documentation
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));	Document name: Chapter number: Page number:
	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;	Document name: Chapter number: Page number:
	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;	Document name: Chapter number: Page number:
	4.1.4 develop an effective emergency response plan (ERP) that is suitable for the intended operation (see GM1 UAS.SPEC.030(3)(e));	Document name: Chapter number: Page number:
	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;	Document name: Chapter number: Page number:

UAS operator and UAS operations provisions		
	PDRA requirements	Reference to documentation
	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;	Document name: Chapter number: Page number:
	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	Document name: Chapter number: Page number:
	4.1.8 ensure that the UAS that is used in the intended operation complies with the technical provisions of point 6 below.	Document name: Chapter number: Page number:
	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;	Document name: Chapter number: Page number:
	4.2.2 in accordance with the OM that is referred to in point 4.1.1 above;	Document name: Chapter number: Page number:
	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;	Document name: Chapter number: Page number:
	4.2.4 at a ground speed of less than 5 m/s in case of untethered UA;	Document name: Chapter number: Page number:

UAS operator and UAS operations provisions		
	PDRA requirements	Reference to documentation
	4.2.5 by a remote pilot that complies with point 5.1 below; and	Document name: Chapter number: Page number:
	4.2.6 with a UA that complies with point 6 below.	Document name: Chapter number: Page number:
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.	Document name: Chapter number: Page number:
	4.4 The maintenance staff should follow the UAS maintenance instructions when performing maintenance.	Document name: Chapter number: Page number:
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.	Document name: Chapter number: Page number:
	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.	Document name: Chapter number: Page number:

Provisions for the personnel in charge of duties essential to the UAS operation		
	PDRA requirements	Reference to documentation
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.	Document name: Chapter number: Page number:
	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: (a) an entity that has declared compliance with the requirements of Appendix 3 to the Annex to the UAS Regulation and is recognized 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;	Document name: Chapter number: Page number:
	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.	Document name: Chapter number: Page number:
	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	Document name: Chapter number: Page number:

Provisions for the personnel in charge of duties essential to the UAS operation		
	PDRA requirements	Reference to documentation
	(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		
	PDRA requirements	Reference to documentation
UAS	<p>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) 2019/945¹, except that the UAS does not need to:</p> <p>6.1.1 bear a Class C3 UAS or Class C5 UAS identification on itself;</p> <p>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 minimized;</p> <p>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</p> <p>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.</p> <p><i>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.</i></p> <p><i>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.</i></p> <p><i>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.</i></p>	<p>Document name:</p> <p>Chapter number:</p> <p>Page number:</p>
Date	Signature	