AMC2 Article 11 Rules for conducting an operational risk assessment

ED Decision 2023/012/R

PREDEFINED RISK ASSESSMENT PDRA-G01 Version 1.3

EDITION September 2023

(a) Scope

This PDRA is the result of applying the methodology that is described in AMC1 Article 11 of the UAS Regulation to UAS operations that are conducted in the 'specific' category:

(1) with UA with maximum characteristic dimensions (e.g. wingspan, rotor diameter/area or maximum distance between rotors in case of multirotor) of up to 3 m and typical kinetic energy of up to 34 kJ;

(2) BVLOS of the remote pilot with visual air risk mitigation;

(3) over sparsely populated areas;

(4) less than 150 m (500 ft) above the surface overflown (or any other altitude reference defined by the Member State); and

(5) in uncontrolled airspace.

(b) PDRA characterisation and conditions

The characterisation and conditions for this PDRA are summarised in **Table PDRA-G01.1** below:

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
1. Operational characterisation (scope and limitations)				
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 a loss of the command and control (C2) link.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.2 The remote pilot should operate only one UA at a time.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

[1] To be filled in by the UAS operator.

[2] To be filled in by the UAS operator.

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
	Self-declaration	1.3 The remote pilot should not operate the UA from a moving vehicle.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.4 The remote pilot should not hand the control of the UA over to another command unit.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
UA range limit	Self-declaration	1.5 Launch/recovery: at VLOS distance from the remote pilot, if not operating from a safe prepared area. *Note: 'safe prepared area' means a controlled ground area that is suitable for the safe launch/recovery of the UA.*	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.6 In flight: 1.6.1 If no AOs are employed: the UA is not operated further than 1 km (or other distance defined by the competent authority) from the remote pilot. *Note: The remote pilot's workload should allow them to continuously visually scan the airspace.*	*Please include a reference to the relevant chapter of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		1.6.2 If AOs are employed: the range is not limited as long as the UA is not operated further than 1 km (unless a different distance is defined by the competent authority) from the AO who is nearest to the UA.	*Please include a reference to the relevant chapter of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
Overflown areas	Declaration supported by data	1.7 UAS operations should be conducted over sparsely populated areas.	*Please include a reference to the relevant chapter of the OM where the procedures for determining the population density are provided.*	'I declare compliance.' Please describe how population density data is identified.

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
UA limitations	Self-declaration	1.8 Maximum characteristic dimensions (e.g. wingspan, rotor diameter/area or maximum distance between rotors in case of a multirotor): 3 m	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.9 Typical kinetic energy (as defined in paragraph 2.3.1(k) of AMC1 to Article 11 of the UAS Regulation: up to 34 kJ	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Flight height limit	Self-declaration	1.10 The maximum height of the operational volume should not be greater than 150 m (500 ft) above the overflown area (or any other altitude reference defined by the Member State). *Note: In addition to the vertical limit of the operational volume, an air risk buffer is to be considered (see 'Air risk' under point 3 of this table).*	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Airspace	Self-declaration	1.11 The UA should be operated:		
		1.11.1 in uncontrolled airspace (corresponding to an air risk that can be classified as ARC-b); or	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.11.2 in a segregated area (corresponding to an air risk that can be classified as ARC-a); or	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.11.3 as otherwise established by the Member States in accordance with Article 15 (with an associated air risk that can be classified as not higher than ARC-b).	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Visibility	Self-declaration	1.12 The UA should be operated in an area where flight visibility is greater than 5 km. *Note: Please refer to GM1 UAS.STS-02.020(3).*	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions					
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Others	Self-declaration	1.13	The UA should not be used to drop material or to carry dangerous goods, except for dropping items in connection with agricultural, horticultural or forestry activities where the carriage of such items does not contravene any other applicable regulations.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
2. Operational risk classification (according to the classification defined in AMC1 to Article 11 of the UAS Regulation)					
Final GRC	3	**Final ARC**	ARC-b	**SAIL**	II
3. Operational mitigations					
Operational volume (see Figure 2 of AMC1 Article 11)	Self-declaration	3.1	To determine the operational volume, the applicant should consider the position-keeping capabilities of the UAS in 4D space (latitude, longitude, height, and time).	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.2	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.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.3	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.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Ground risk		3.4	The UAS operator should establish a ground risk buffer to protect third parties on the ground outside the operational volume.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.4.1	The minimum criterion should be the use of the '1:1 rule' (e.g. if the UA is planned to operate at a height of 150 m,	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
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		the ground risk buffer should at least be 150 m).		
		3.5 The operational volume and the ground risk buffer should be all contained in a sparsely populated area.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
	Self-declaration	3.6 The applicant should evaluate the area of operations typically by means of an on-site inspection or appraisal, and should be able to justify a lower density of people at risk in the operational area and the ground risk buffer.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Air risk	Self-declaration	3.7 The UAS operator should establish an air risk buffer to protect third parties in the air outside the operational volume.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.8 This air risk buffer should be contained in an 'airspace that meets the conditions defined in 1.11 and over sparsely populated areas. If the operation is limited at a height below 120 m, no additional vertical air risk buffer is required.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.' *If the height of the operation is above 120 m and up to 150 m, please add the following:* 'Supporting evidence is included in the OM.' 'Justification supporting the appropriate air risk buffer is documented in […].'
		3.9 The operational volume should be outside any geographical zone corresponding to a flight restriction zone, as defined by the responsible authority, unless the UAS operator has been granted appropriate permission.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.10 Prior to the flight, the remote pilot should assess the proximity of the planned operation to manned aircraft activity.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
	Declaration supported by data	3.11 If the UAS operation is performed above 120 m and up to 150 m, the UAS operator should develop appropriate procedures to not jeopardise other airspace users.	*Please include a reference to the relevant chapter/section of the OM. Please describe how the remote pilots and, if employed, the AOs are able to assess the height of the UA compared to other airspace users[1]*	'I declare compliance and supporting evidence is included in the OM.'
Observers[2]	Self-declaration	3.12 If the UAS operator decides to employ one or more airspace observers (AOs), the remote pilot may operate the UA up to the distance that is specified in point 1.6.2.	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		3.13 The UAS operator should ensure the correct placement and the appropriate number of AOs along the intended flight path. Prior to each flight, the UAS operator should verify that:	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		3.13.1 the visibility and the planned distance of the AOs are within the acceptable limits that are defined in the operations manual (OM);	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		3.13.2 there are no potential terrain obstructions for each AO;	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		3.13.3 there are no gaps between the zones that are covered by each of the AOs;	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		3.13.4 communication with each AO is established and effective; and	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'

[1] The UAS operator should demonstrate that they have sufficient confidence in the accuracy of the information about the height of the UA and the means to advert and avoid other airspace users and obstacles in the vicinity of the UA.

[2] Please refer to point UAS.STS-02.050 for the AO's main responsibilities.

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		3.13.5 if means are used by the AOs to determine the position of the UA, those means are functioning and effective. *Note: Instead of an AO, the remote pilot may perform the visual scan of the airspace, provided that the workload allows them to perform their duties.*	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
4. UAS operator and UAS operations conditions				
UAS operator and UAS operations	Declaration supported by data	4.1 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));	*Please describe how this condition is met.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.2 develop procedures to ensure that the security requirements applicable to the area of operations are complied with during in the intended operation;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.3 develop measures to protect the UAS against unlawful interference and unauthorised access;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.4 develop procedures to ensure that all operations comply with Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data; in particular, the UAS operator should carry out a data protection impact assessment, when this is required by the data protection national authority of the Member State with regard to the	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'

PDRA characterisation and conditions				
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		application of Article 35 of that Regulation;		
		4.1.5 develop guidelines for its remote pilots to plan UAS operations in a manner that minimises nuisance, including noise and other emissionsrelated nuisance, to people and animals;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.6 develop an emergency response plan (ERP) in accordance with the conditions for a 'medium' level of robustness (please refer to AMC3 UAS.SPEC.030(3)(e);	*Please describe how this condition is met.*	'I declare compliance and that the ERP is available to the competent authority for review.'
		4.1.7 validate the operational procedures in accordance with the conditions for a 'medium' level of robustness, which are included in AMC2 UAS.SPEC.030(3)(e);	*Please describe how this condition is met.*	'I declare compliance and that the description for meeting this condition is available to the competent authority for review.'
		4.1.8 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;	*Please describe how this condition is met.*	'I declare compliance and that the description for meeting this condition is available to the competent authority for review.'
		4.1.9 have a policy that defines how the remote pilot and any other personnel in charge of duties essential to the UAS operation can declare themselves fit to operate before conducting any operation;	*Please describe how this condition is met.*	'I declare compliance and that the description for meeting this condition is available to the competent authority for review. '

PDRA characterisation and conditions				
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		4.1.10 designate for each flight a remote pilot with adequate competency and other personnel in charge of duties essential to the UAS operation if needed;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.11 ensure that the UAS operation effectively uses and supports the efficient use of the radio spectrum in order to avoid harmful interference;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.12 keep for a minimum of 3 years and maintain up to date a record of the information on UAS operations, including any unusual technical or operational occurrences and other data as required by the declaration or by the operational authorisation.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that recordkeeping data is available to the competent authority for review.'
UAS maintenance	Self-declaration	4.2 The UAS operator should:		
		4.2.1 ensure that the UAS maintenance instructions that are defined by the UAS operator are included in the OM and cover at least the UAS manufacturer's instructions and requirements, when applicable;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.2.2 ensure that the maintenance staff follow the UAS maintenance instructions when performing maintenance;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.2.3 keep for a minimum of 3 years and maintain up to date a record of the maintenance activities conducted on the UAS;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.2.4 establish and keep up to date a list of the maintenance staff employed by the	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		UAS operator to carry out maintenance activities;		
		4.2.5 comply with point UAS.SPEC.100, if the UAS uses certified equipment;	*Please include a reference to the relevant chapter/section of the OM or n/a.*	'I declare compliance.' or 'n/a'
External services	Self-declaration	4.3 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.	*Please describe how this condition is met.*	'I declare compliance.'
		4.4 The UAS operator should define and allocate the roles and responsibilities between the UAS operator and the external service provider(s), if applicable.	*Please describe how this condition is met.*	'I declare compliance.'
5. Conditions for the personnel in charge of duties essential to the UAS operation				
General	Declaration supported by data	5.1 The UAS operator should ensure that all personnel in charge of duties essential to the UAS operation are provided with competency-based, theoretical and practical training specific to their duties, which consists of the applicable theoretical elements derived from AMC1 UAS.SPEC.050(1)(d), and practical elements from AMC2 UAS.SPEC.050(1)(d) and UAS.SPEC.050(1)(e). In addition, for non-remote pilots, also from AMC3 UAS.SPEC.050(1)(d).	*Please describe how this condition is met.*	'I declare compliance.' Evidence of training is available for inspection at the request of the competent authority or its authorised representative. The training programme is documented in the OM.
		5.2 The UAS operator should keep and maintain up to date a record of all the relevant qualifications and training courses completed by the remote pilot and the	*Please describe how this condition is met.*	'I declare compliance.' Record-keeping data is available for inspection at the request of the competent authority.

PDRA characterisation and conditions				
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		other personnel in charge of duties essential to the UAS operation and by the maintenance staff for at least 3 years after those persons have ceased to be employed by the organisation or have changed position within the organisation.		
Remote pilot	Self-declaration	5.3 The remote pilot should have the authority to cancel or delay any or all flight operations under the following conditions:		
		5.3.1 when the safety of persons is jeopardised; or	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.2 when property on the ground is jeopardised; or	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.3 when other airspace users are jeopardised; or	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.4 when there is a violation of the terms of the operational authorisation.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.4 If AOs are employed, the remote pilot should ensure that the necessary number of AOs is available and correctly placed, and that the communication with them can be adequately established.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.5 The remote pilot should:		
		5.5.1 not perform duties under the influence of psychoactive substances or alcohol, or when they are unfit to perform their tasks due to injury, fatigue, medication, sickness or other causes;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.5.2 be familiar with the manufacturer's instructions provided by the manufacturer of the UAS;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.5.3 ensure that the UA remains clear of clouds;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
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		5.5.4 perform unaided visual scan of the airspace and ensure that the AO(s) can perform the same, if required, to avoid any potential collision hazard;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.5.5 obtain updated information relevant to the intended operation about any geographical zones defined in accordance with Article 15 of the UAS Regulation; and	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.5.6 ensure that the UAS is in a safe condition to complete the intended flight safely, and if applicable, check whether the direct remote identification is active and up to date.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Multi-crew cooperation (MCC)	Self-declaration	5.6 Where multi-crew cooperation (MCC) is required, the UAS operator should:		
		5.6.1 designate the remote pilot-in-command to be responsible for each flight;	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		5.6.2 include procedures to ensure coordination between the remote crew members through robust and effective communication channels; those procedures should cover, as a minimum:	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		5.6.2.1 the assignment of tasks to the remote crew members; and	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		5.6.2.2 the establishment of step-by-step communication; and	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'

PDRA characterisation and conditions				
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		5.6.3 ensure that the training of the remote crew covers MCC.	Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.	'I declare compliance.' or 'n/a'
Maintenance staff	Declaration supported by data	5.7 Any maintenance staff member that is authorised by the UAS operator to perform maintenance activities should have been adequately trained in the documented maintenance procedures	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.' Evidence of training is available at the request of the competent authority.
Personnel in charge of duties essential to the UAS operation are fit to operate	Self-declaration	5.8 The personnel in charge of duties essential to the UAS operation should declare that they are fit to operate before conducting any operation, based on the policy that is defined by the UAS operator.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
6. Technical conditions				
		6.1 The UAS should be equipped with means to monitor the critical parameters of a safe flight, in particular the following:		
		6.1.1 the UA position, height or altitude, ground speed or airspeed, attitude and trajectory;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.1.2 the UAS energy status (fuel, battery charge, etc.); and	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.1.3 the status of critical functions and systems; as a minimum, for services based on RF signals (e.g. C2 Link, GNSS, etc.), means should be provided to monitor the adequate performance and trigger an alert when the performance level becomes too low.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.2 The UA should have the performance capability to descend safely from its operating altitude to a 'safe altitude' in less	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
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		than 1 minute, or have a descent rate of at least 2.5 m/s (500 fpm).		
Human–machine interface (HMI)	Self-declaration	6.3 The UAS information and control interfaces should be clearly and succinctly presented and should not confuse, cause unreasonable fatigue, or contribute to causing any disturbance to the personnel in charge of duties essential to the UAS operation in such a way that could adversely affect the safety of the operation.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.4 If an electronic means is used to support AOs in their role of maintaining awareness of the position of the UA, its HMI should:		
		6.4.1 be sufficiently easy to understand to allow AOs to determine the position of the UA during the operation; and	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'*	'I declare compliance.' or 'n/a'
		6.4.2 not degrade the AOs' ability to:		
		6.4.2.1 perform unaided visual scan of the airspace where the UA is operating for any potential collision hazard; and	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'*	'I declare compliance.' or 'n/a'
		6.4.2.2 maintain effective communication with the remote pilot at all times.	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'*	'I declare compliance.' or 'n/a'
		6.5 The UAS operator should conduct a UAS evaluation that considers and addresses human factors to determine whether the HMI is appropriate for the operation.	*Please describe how this condition is met.*	'I declare compliance.'
C2 links and communication		6.6 The UAS should comply with the applicable requirements for radio equipment and the use of the RF spectrum.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

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	Self-declaration	6.7 Protection mechanisms against interference should be used, especially if unlicensed bands (e.g. ISM) are used for the C2 link (mechanisms such as FHSS, DSSS or OFDM technologies, or frequency deconfliction by procedure).	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.8 The UAS should be equipped with a C2 link that is protected against unauthorised access to the command-and-control functions.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.9 In case of a loss of the C2 link, the UAS should have a reliable and predictable method to recover the command-and-control link of the UA or to terminate the flight in a way that reduces any undesirable effect on third parties in the air or on the ground.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.10 Communication between the remote pilot and the AO(s) should allow the remote pilot to manoeuvre the UA with sufficient time to avoid any risk of collision with manned aircraft, in accordance with point UAS.SPEC.060(3)(b) of the UAS Regulation.	*Please describe how this condition is met.*	'I declare compliance.'
Tactical mitigation	Self-declaration	6.11 The UAS design should be adequate to ensure that the time required between a command given by the remote pilot and the UA executing it does not exceed 5 seconds.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.12 Where an electronic means is used to assist the remote pilot and/or AOs in being aware of the UA position in relation to potential 'airspace intruders', the information is provided with a latency and an update rate	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'

PDRA characterisation and conditions				
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		for intruder data (e.g. position, speed, altitude, track) that support the decision criteria.		
Containment	Declaration supported by data	6.13 To ensure a safe recovery from a technical issue that involves the UAS or an external system that supports the operation, the UAS should comply with the following basic containment provisions:		
		6.13.1 no probable failure of the UAS or of any external system that supports the operation would lead to operation outside the operational volume; and	*Please describe how this condition is met*	'n/a since enhanced containment applies.' or 'I declare compliance.' 'A design and installation appraisal is available and it covers at least: — the design and installation features (independence, separation, and redundancy); and — the particular risks (e.g. hail, ice, snow, electromagnetic interference, etc.) relevant to the type of operation.'
		6.13.2 it is reasonably expected that a fatality will not occur due to any probable failure of the UAS or of any external system that supports the operation.	*Please describe how this condition is met*	
		6.14 The vertical extension of the operational volume should be 150 m above the surface (or any other reference altitude defined by the Member State). *Note: The term 'probable' should be understood in its qualitative interpretation, i.e. 'anticipated to occur one or more times during the entire system/operational life of an item'.*	*Please describe how this condition is met*	
		6.15 The following enhanced containment conditions should apply if the adjacent area includes an assembly of people or if the adjacent airspace is classified as ARC-d (in accordance with SORA):		

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
	Declaration supported by data	6.15.1 The UAS should be designed to standards that are considered adequate by the competent authority and/or in accordance with a means of compliance that is acceptable to that competent authority such that:	*Please include a reference to the relevant chapter/section of the OM or indicate 'n/a'.*	'N/A since the basic containment applies' or 'I declare compliance with MoC Light-UAS.2511. Analysis and/or test data with supporting evidence is available.' or 'The UAS has a DVR demonstrating compliance with the enhanced containment requirements.'
		6.15.1.1. the probability of the UA leaving the operational volume should be less than 10^{-4}/FH; and	*Please include a reference to the relevant chapter/section of the OM or indicate 'n/a'.*	
		6.15.1.2 no single failure of the UAS or of any external system that supports the operation should lead to operation outside the ground risk buffer. *Note: The term 'failure' should be understood as an occurrence that affects the operation of a component, part, or element in such a way that it can no longer function as intended. Errors may cause failures but are not considered to be failures. Some structural or mechanical failures may be excluded from this criterion if it can be shown that these mechanical parts were designed according to aviation industry best practices.*	*Please include a reference to the relevant chapter/section of the OM or indicate 'n/a'.*	

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		6.15.2 SW and AEH whose development error(s) could directly lead to operations outside the ground risk buffer should be developed according to an industry standard or methodology that is recognised as adequate by EASA. *Note 1: The proposed additional safety conditions cover both the integrity and the assurance levels.* *Note 2: The proposed additional safety conditions do not imply a systematic need to develop the SW and AEH according to an industry standard or methodology that is recognised as adequate by the competent authority. For instance, if the UA design includes an independent engine shutdown function that systematically prevents the UA from exiting the ground risk buffer due to single failures or an SW/AEH error of the flight controls from occurring, the intent of the conditions of point 6.15.1 above could be considered met.*	*Please include a reference to the relevant chapter/section of the OM or indicate 'n/a'.*	
Remote identification[1]	Self-declaration	6.16 The UAS has a unique serial number compliant with standard ANSI/CTA2063-A-2019, Small Unmanned Aerial Systems Serial Numbers, 2019, according to Article 40(4) of Regulation (EU) 2019/945.	*Please describe how this condition is met.*	'I declare compliance.'

[1] Applicable from 1 July 2022.

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		6.17 the UAS is equipped with a remote identification system according to Article 40(5) of Regulation (EU) 2019/945.	*Please describe how this condition is met.*	'I declare compliance.'
Lights[1]	Self-declaration	6.18 If the UAS is operated at night, it is equipped with at least one green flashing light according to point UAS.SPEC.050(1)(l)(i) of the UAS Regulation.	*Please describe how this condition is met.*	'I declare compliance.' or 'n/a'

Table PDRA-G01.1 — Main limitations and conditions for PDRA-G01

[1] Applicable from 1 July 2022.

AMC3 Article 11 Rules for conducting an operational risk assessment

ED Decision 2023/012/R

PREDEFINED RISK ASSESSMENT PDRA-G02 Version 1.2

EDITION September 2023

(a) Scope

This PDRA is the result of applying the methodology that is described in AMC1 to Article 11 of the UAS Regulation to UAS operations conducted in the 'specific' category with the following main attributes:

(1) UA with maximum characteristic dimensions (e.g. wingspan, rotor diameter/area or maximum distance between rotors in case of a multirotor) of up to 3 m and typical kinetic energies of up to 34 kJ;

(2) BVLOS of the remote pilot;

(3) over sparsely populated areas;

(4) in airspace that is reserved or segregated for the UAS operation, corresponding to an air risk that can be classified as ARC-a.

(5) within the range of the direct C2 link[1] (radio line of sight) up to the height of the upper boundary of the reserved airspace.

(b) PDRA characterisation and conditions

The characterisation and conditions for this PDRA are summarised in Table PDRA-G02.1 below.

[1] Due to the lack of experience in the use of communication services for extending the C2 link coverage through communication networks (e.g. mobile networks) in the type of UAS operations that are addressed by this PDRA, the scope of the PDRA is initially limited to the coverage of a direct C2 Link (direct link between the control station and the UA). As more experience in the use of those communication services is gained, the conditions of this PDRA may be revised to encompass their uses.

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
1. Operational characterisation (scope and limitations)				
Level of human intervention	Self-declaration	1.1 No autonomous operations: the remote pilot should have the ability to maintain control of the UA, except in case of a loss of the command-and-control (C2) link.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.2 The remote pilot should operate only one UA at a time.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.3 The remote pilot should not operate the UA from a moving vehicle.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.4 The remote pilot should not hand the control of the UA over to another command unit.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
UA range limit	Self-declaration	1.5 Launch/recovery: At VLOS distance from the remote pilot, if not operating from a safe prepared area. *Note: 'safe prepared area' means a controlled ground area that is suitable for the safe launch/recovery of the UA.*	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.6 In flight: The range limit should be within the coverage of the direct C2 link coverage (radio line of sight), which ensures the safe conduct of the flight.	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
Overflown areas	Declaration supported by data	1.7 UAS operations should be conducted over sparsely populated areas.	*Please include a reference to the relevant chapter/section of the OM where the procedures for determining the population density are provided.*	'I declare compliance.' *Please describe how the population density data is identified.*
UA limitations		1.8 Maximum characteristic dimension (e.g. wingspan, rotor diameter/area or	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

[1] To be filled in by the UAS operator.

[2] To be filled in by the UAS operator.

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
	Self-declaration	maximum distance between rotors in case of a multirotor): 3 m		
		1.9 Typical kinetic energy (as defined in paragraph 2.3.1(k) of AMC1 to Article 11 of the UAS Regulation: up to 34 kJ	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Flight height limit	Self-declaration	1.10 The maximum height of the operation volume is limited by the size of the reserved or segregated airspace. *Note: In addition to the vertical limit of the operational volume, an air risk buffer is to be considered (see 'Air risk' under point 3 of this table).*	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Airspace	Self-declaration	1.11 Operations should only be conducted in airspace that is reserved or segregated for the purpose of conducting UAS operations (corresponding to an air risk that can be classified as ARC-a).	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Visibility	Self-declaration	1.12 If take-off and landing are conducted in VLOS of the remote pilot, the visibility should be sufficient to ensure that no people are in danger during the take-off/landing phase. The remote pilot should abort the take-off or landing in case people on the ground are in danger.	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
Others	Self-declaration	1.13 The UA should not be used to drop material or to carry dangerous goods, except for dropping items in connection with agricultural, horticultural or forestry activities where the carriage of such items does not contravene any other applicable regulations.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions					
Topic	**Method of proof**	**Condition**		**Integrity[1]**	**Proof[2]**
2. Operational risk classification (according to the classification defined in AMC1 to Article 11 of the UAS Regulation)					
Final GRC	**3**	**Final ARC**	**ARC-a**	**SAIL**	**II**
3. Operational mitigations					
Operational volume (see Figure 2 of AMC1 Article 11)	Self-declaration	3.1 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).		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.2 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.		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.3 The remote pilot should apply the emergency procedures as soon as there is an indication that the UA may exceed the limits of the operational volume.		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Ground risk	Self-declaration	3.4 The UAS operator should establish a ground risk buffer to protect third parties on the ground outside the operational volume.		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.4.1 The minimum criterion should be the use of the '1:1 rule' (e.g. if the UA is planned to operate at a height of 150 m, the ground risk buffer should at least be 150 m).		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.5 The operational volume and the ground risk buffer should be all contained in a sparsely populated area.		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		3.6 The applicant should evaluate the area of operations typically by means of an on-site inspection or appraisal, and should be able to justify a reduced density of people at risk in the operational area and the ground risk buffer.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Air risk	Self-declaration	3.7 The operational volume, including the air risk buffer, if applicable, should be entirely contained in the reserved or segregated airspace.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Observers		n/a		
4. UAS operator and UAS operations conditions				
UAS operator and UAS operations	Declaration supported by data	4.1 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));	*Please describe how this condition is met.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.2 develop procedures to ensure that the security requirements applicable to the area of operations are complied during the intended operation;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.3 develop measures to protect the UAS against unlawful interference and unauthorised access;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.4 develop procedures to ensure that all operations comply with Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data; in particular, the UAS operator should	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		carry out a data protection impact assessment, when this is required by the data protection national authority of the Member State with regard to the application of Article 35 of that Regulation;		
		4.1.5 develop guidelines for its remote pilots to plan UAS operations in a manner that minimises nuisance, including noise and other emissions-related nuisance, to people and animals;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.6 develop an emergency response plan (ERP) in accordance with the conditions for a 'medium' level of robustness (please refer to AMC3 UAS.SPEC.030(3)(e);	*Please describe how this condition is met.*	'I declare compliance and that the ERP is available to the competent authority for review.'
		4.1.7 validate the operational procedures in accordance with the conditions for a 'medium' level of robustness, which are included in AMC2 UAS.SPEC.030(3)(e);	*Please describe how this condition is met.*	'I declare compliance and that the ERP is available to the competent authority for review.'
		4.1.8 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	*Please describe how this condition is met.*	'I declare compliance and that the description for meeting this condition is available to the competent authority for review.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		(c) any other means acceptable to the competent authority; and		
		4.1.9 have a policy that defines how the remote pilot and any other personnel in charge of duties essential to the UAS operation can declare themselves fit to operate before conducting any operation.	*Please describe how this condition is met.*	'I declare compliance and that the description for meeting this condition is available to the competent authority for review.'
		4.1.10 designate for each flight a remote pilot with adequate competency and other personnel in charge of duties essential to the UAS operation if needed;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.11 ensure that the UAS operation effectively uses and supports the efficient use of the radio spectrum in order to avoid harmful interference;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.12 keep for a minimum of 3 years and maintain up to date a record of the information on UAS operations, including any unusual technical or operational occurrences and other data as required by the declaration or by the operational authorisation;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that recordkeeping data is available to the competent authority.'
		4.1.13 As part of the procedures contained in the OM (point 4.1.1 above), include the description of the following:		
		(a) The method and means of communication with the authority or entity responsible for the management of the airspace during the entire period of the reserved or segregated airspace	*Please describe how this condition is met*	'I declare compliance and that evidence is available to the competent authority for review.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		being active, as mandated by the authorisation. *Note: The communication method should be published in the NOTAM activating the reserved airspace to also allow coordination with manned aircraft.*		
		(b) The member(s) of personnel in charge of duties essential to the UAS operation, who are responsible for establishing that communication.	*Please describe how this condition is met*	'I declare compliance and that evidence is available to the competent authority for review.'
UAS maintenance	Self-declaration	4.2 The UAS operator should:		
		4.2.1 ensure that the UAS maintenance instructions that are defined by the UAS operator are included in the OM and cover at least the UAS manufacturer's instructions and requirements when applicable; and	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.2.2 ensure that the maintenance staff follow the UAS maintenance instructions when performing maintenance.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.2.3 keep for a minimum of 3 years and maintain up to date a record of the maintenance activities conducted on the UAS;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.2.4 establish and keep up to date a list of the maintenance staff employed by the operator to carry out maintenance activities;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		4.2.5 comply with point UAS.SPEC.100, if the UAS uses certified equipment.	*Please include a reference to the relevant chapter/section of the OM or indicate 'n/a'.*	I declare compliance.' or 'n/a'
External services	Self-declaration	4.3 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.	*Please describe how this condition is met.*	'I declare compliance.'
		4.4 The UAS operator should define and allocate the roles and responsibilities between the UAS operator and the external service provider(s), if applicable.	*Please describe how this condition is met.*	'I declare compliance.'
5. Conditions for the personnel in charge of duties essential to the UAS operation				
General	Self-declaration	5.1 The UAS operator should ensure that all personnel in charge of duties essential to the UAS operation are provided with competency-based theoretical and practical training specific to their duties, which consists of the applicable theoretical elements derived from AMC1 UAS.SPEC.050(1)(d) and practical elements from AMC2 UAS.SPEC.050(1)(d) and UAS.SPEC.050(1)(e).	*Please describe this condition is met.*	'I declare compliance. ' Evidence of training are available for inspection at the request of the competent authority or its authorised representative. The training programme is documented in xxx'.
		5.2 The UAS operator should keep and maintain up to date a record of all the relevant qualifications and training courses completed by the remote pilot and the other personnel in charge of duties essential to the UAS operation and by the maintenance staff for at least 3 years after those persons have ceased	*Please describe how this condition is met.*	'I declare compliance.' Record-keeping data is available for inspection at the request of the competent authority.

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		to be employed by the organisation or have changed position within the organisation.		
Remote pilot	Self-declaration	5.3 The remote pilot should have the authority to cancel or delay any or all flight operations under the following conditions:	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.1 when the safety of persons is jeopardised; or	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.2 when property on the ground is jeopardised; or	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.3 when other airspace users are jeopardised; or	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.4 when there is a violation of the terms of the operational authorisation.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.4 The remote pilot should:		
		5.4.1 not perform duties under the influence of psychoactive substances or alcohol, or when they are unfit to perform their tasks due to injury, fatigue, medication, sickness or other causes;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.4.2 be familiar with the manufacturer's instructions provided by the manufacturer of the UAS;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.4.3 obtain updated information relevant to the intended operation about any geographical zones defined in accordance with Article 15; and	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		5.4.4 ensure that the UAS is in a safe condition to complete the intended flight safely and, if applicable, check whether the direct remote identification is active and up to date.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Multi-crew cooperation (MCC)	Self-declaration	5.5 Where multi-crew cooperation (MCC) may be required, the UAS operator should:		
		5.5.1 designate a remote pilot-in-command to be responsible for each flight;	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		5.5.2 include procedures to ensure coordination between the remote crew members through robust and effective communication channels; those procedures should cover, as a minimum:	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		5.5.2.1 the assignment of tasks to the remote crew members; and	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		5.5.2.2 the establishment of step-by-step communication; and	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		5.6 ensure that the training of the remote crew covers MCC.	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
Maintenance staff	Declaration supported by data	5.7 Any staff member that is authorised by the UAS operator to perform maintenance activities should have been adequately trained in the documented maintenance procedures.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.' Evidence of training is available at the request of the competent authority.
Personnel in charge of duties		5.8 The personnel in charge of duties essential to the UAS operation should	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
essential to the UAS operation are fit to operate		declare that they are fit to operate before conducting any operation, based on the policy that is defined by the UAS operator.		
6. Technical conditions				
General	Self-declaration	6.1 The UAS should be equipped with means to monitor the critical parameters of a safe flight, in particular the following:		
		6.1.1 the UA position, height or altitude, ground speed or airspeed, attitude, and trajectory;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.1.2 the UAS energy status (fuel, battery charge, etc.); and	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.1.3 the status of critical functions and systems; as a minimum, for services based on RF signals (e.g. C2 link, GNSS, etc.), means should be provided to monitor the adequate performance and trigger an alert when the performance level becomes too low.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Human–machine interface (HMI)	Self-declaration	6.2 The UAS information and control interfaces should be clearly and succinctly presented and should not confuse, cause unreasonable fatigue, or contribute to causing any disturbance to the personnel in charge of duties essential to the UAS operation in such a way that could adversely affect the safety of the operation.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.3 The UAS operator should conduct a UAS evaluation that considers and addresses human factors to determine whether the HMI is appropriate for the operation.	*Please describe how this condition is met.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
C2 links and communication	Self-declaration	6.4 The UAS should comply with the applicable requirements for radio equipment and the use of the RF spectrum.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.5 Protection mechanisms against interference should be used, especially if unlicensed bands (e.g. ISM) are used for the C2 link (mechanisms such as FHSS, DSSS or OFDM technologies, or frequency deconfliction by procedure).	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.6 The UAS should be equipped with a C2 link that is protected against unauthorised access to the command-and-control functions.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.7 In case of loss of the C2 link, the UAS should have a reliable and predictable method to recover the command-and-control link of the UA or to terminate the flight in a way that reduces any undesirable effect on third parties in the air or on the ground.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.8 The UAS operator should ensure that reliable and continuous means of two-way communication for the purpose that is indicated in point 4.1.13(a) above are available.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Tactical mitigation		n/a		
Containment		6.9 To ensure a safe recovery from a technical issue that involves the UAS or an external system that supports the operation, the UAS should comply with		

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
	Declaration supported by data	the following basic containment provisions:		
		6.9.1 no probable failure of the UAS or of any external system that supports the operation would lead to operation outside the operational volume; and	*Please describe how this condition is met*	'n/a since enhanced containment applies.' or 'I declare compliance.' 'A design and installation appraisal is available and it covers at least: — the design and installation features (independence, separation, and redundancy); and — the particular risks (e.g. hail, ice, snow, electromagnetic interference, etc.) relevant to the type of operation. '
		6.9.2 it is reasonably expected that a fatality will not occur due to any probable failure of the UAS or of any external system that supports the operation. *Note: The term 'probable' should be understood in its qualitative interpretation, i.e. 'anticipated to occur one or more times during the entire system/operational life of an item'.*	*Please describe how this condition is met*	
	Declaration supported by data	6.10 The following enhanced containment conditions should apply if the adjacent area includes an assembly of people or if the adjacent airspace is classified as ARC-d (in accordance with SORA):		
		6.10.1 The UAS should be designed to standards that are considered adequate by the competent authority and/or in accordance with a means of compliance that is acceptable to that competent authority such that:	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'n/a since basic containment applies.' or 'I declare compliance with MoC Light-UAS.2511. Analysis and/or test data with supporting evidence is available.' or 'The UAS has a DVR demonstrating compliance with the enhanced containment requirements.'
		6.10.1.1. the probability of the UA leaving the operational volume should be less than 10^{-4}/FH; and	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	
		6.10.1.2 no single failure of the UAS or of any external system that supports the operation should	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		lead to operation outside the ground risk buffer. *Note: The term 'failure' should be understood as an occurrence that affects the operation of a component, part, or element in such a way that it can no longer function as intended. Errors may cause failures but are not considered to be failures. Some structural or mechanical failures may be excluded from the criterion if it can be shown that these mechanical parts were designed according to aviation industry best practices.*		
		6.10.2 SW and AEH whose development error(s) could directly lead to operations outside the ground risk buffer should be developed according to an industry standard or methodology that is recognised as adequate by EASA. *Note 1: The proposed additional safety conditions cover both the integrity and the assurance levels.* *Note 2: The proposed additional safety conditions do not imply a systematic need to develop the SW and AEH according to an industry standard or methodology that is recognised as adequate by the competent authority. For instance, if the UA design includes an <u>independent</u> engine shutdown function that systematically prevents the UA from exiting the ground risk buffer due to single failures or an SW/AEH error of the flight controls from*	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		occurring, the intent of the conditions of point 6.10.1 above could be considered met		
Remote identification[1]	Self-declaration	6.11 The UAS has a unique serial number compliant with standard ANSI/CTA2063-A-2019, Small Unmanned Aerial Systems Serial Numbers, 2019, according to Article 40(4) of Regulation (EU) 2019/945	*Please describe how this condition is met.*	'I declare compliance.'
		6.12 The UAS is equipped with a remote identification system according to Article 40(5) of Regulation (EU) 2019/945.	*Please describe how this condition is met.*	'I declare compliance.'
Lights[2]	Self-declaration	6.13 If the UAS is operated at night, it is equipped with at least one green flashing light according to point UAS.SPEC.050(1)(l)(i) of the UAS Regulation.	*Please describe how this condition is met or indicate 'n/a'.*	'I declare compliance.' or 'n/a'

Table PDRA-G02.1 — Main limitations and conditions for PDRA-G02

[1] Applicable from 1 July 2022.

[2] Applicable from 1 July 2022.

AMC4 Article 11 Rules for conducting an operational risk assessment

ED Decision 2023/012/R

PREDEFINED RISK ASSESSMENT PDRA-S01 Version 1.2

EDITION September 2023

(a) Scope

This PDRA addresses the same type of operations that are covered by the standard scenario STS-01 (Appendix 1 to the Annex to the UAS Regulation); however, it provides the UAS operator with the flexibility to use UASs that do not need to be marked as class C5.

This PDRA addresses UAS operations that are conducted:

(1) with UA with maximum characteristic dimensions (e.g. wingspan, rotor diameter/area or maximum distance between the rotors tips in the case of a multirotor) of up to 3 m;

(2) in VLOS of the remote pilot;

(3) over a controlled ground area that might be located in a populated area;

(4) below 150 m above ground level (AGL) (except when close to obstacles); and

(5) in controlled or uncontrolled airspace, provided that there is a low probability of encountering manned aircraft[1].

(b) PDRA characterisation and conditions

The characterisation and conditions for this PDRA are summarised in **Table PDRA-S01.1** below:

[1] Member States are required to establish the appropriate measures (e.g. UAS geographical zones) to ensure this low probability of encounter. Such a low probability of encounter is equivalent to an ARC that is no higher than ARC-b. Thus, ARC-b is to be considered here as the highest residual (final) ARC.

PDRA characterisation and conditions				
Topic	**Assurance level**	**Condition**	**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
1. Operational characterisation (scope and limitations)				
Level of human intervention	Self-declaration	1.1 No autonomous operations: the remote pilot should have the ability to maintain control of the UA, except in case of a loss of the command-and control (C2) link.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.2 The remote pilot should operate only one UA at a time.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.3 The remote pilot should not operate the UA from a moving vehicle.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.4 The remote pilot should not hand the control of the UA over to another command unit.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
UA range limit	Self-declaration	1.5 VLOS distance from the remote pilot at all times.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Overflown areas	Self-declaration	1.6 UAS operations should be conducted over a controlled ground area.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		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.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.8 The UA should have a maximum characteristic dimension (e.g. wingspan, rotor diameter/area or maximum distance between rotors' tips in the case of a multirotor) of less than 3 m.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Flight height limit		1.9 The remote pilot should maintain the UA within 120 m (unless making use of the option defined in point 1.12) from the closest point of the surface of the Earth. The	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

[1] To be filled in by the UAS operator.

[2] To be filled in by the UAS operator.

PDRA characterisation and conditions				
Topic	**Assurance level**	**Condition**	**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
	Self-declaration	measurement of the distances should be adapted according to the geographical characteristics of the terrain, such as plains, hills, and mountains.		
		1.10 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.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.11 When UAS operators intend to operate at a height above 120 m, up to 150 m, they should define a risk buffer according to point 3.8 below.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Airspace	Self-declaration	1.12 The UA should be operated:		
		1.12.1 in uncontrolled airspace, 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	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.12.2 in controlled airspace after coordination and flight authorisation in accordance with the published procedures for the area of operation, to ensure that the probability of encountering manned aircraft is low. *Note: 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.*	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Visibility	Self-declaration	1.13 The flight visibility should allow the remote pilot to conduct the entire flight in VLOS.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions					
Topic	**Assurance level**	**Condition**		**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
Others	Self-declaration	1.14 The UA should not be used to carry dangerous goods, except for dropping items in connection with agricultural, horticultural or forestry activities where the carriage of such items does not contravene any other applicable regulations. Note: The operator shall comply with applicable national or international regulations on the use of plant protection products, chemicals, dangerous substances, and preparations as appropriate. This includes Directive 2009/128/EC establishing a framework for Community action to achieve the sustainable use of pesticides, if applicable.		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
2. Operational risk classification (according to the classification defined in AMC1 to Article 11 of the UAS Regulation)					
Final GRC	**3**	**Final ARC**	**ARC-b**	**SAIL**	**II**
3. Operational mitigations					
Operational and adjacent volume (see Figure 2 of AMC1 Article 11)	Self-declaration	3.1 The UAS operator should define the operational volume, ground risk buffer and adjacent volume for the intended operation, including:		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.1.1 the flight geography; and		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		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.		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		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).		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Assurance level**	**Condition**	**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
		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.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.4 The size of adjacent volume should be defined.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.5 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 5.3.9(d) below.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.6 No persons should be overflown when spraying liquids or dropping substances. Infrastructure or facilities can be overflown on request of the entity responsible for the infrastructure or facility.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Ground risk	Self-declaration	3.7 The UAS operator should establish a ground risk buffer to protect third parties on the ground outside the operational volume.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.8 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:	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

<table>
<tr><th colspan="5">PDRA characterisation and conditions</th></tr>
<tr><th>Topic</th><th>Assurance level</th><th>Condition</th><th>Demonstration of integrity[1]</th><th>Demonstration of assurance[2]</th></tr>
<tr><td rowspan="2"></td><td rowspan="2"></td><td>
<table>
<tr><th rowspan="2">Max height AGL[1]</th><th colspan="2">Minimum distance for ground risk buffer</th></tr>
<tr><th>with MTOM of up to 10 kg</th><th>with MTOM greater than 10 kg</th></tr>
<tr><td>10 m</td><td>5 m</td><td>10 m</td></tr>
<tr><td>30 m</td><td>10 m</td><td>20 m</td></tr>
<tr><td>60 m</td><td>15 m</td><td>30 m</td></tr>
<tr><td>90 m</td><td>20 m</td><td>45 m</td></tr>
<tr><td>120 m</td><td>25 m</td><td>60 m</td></tr>
<tr><td>150 m</td><td>30 m</td><td>75 m</td></tr>
</table>
</td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td>3.9 For the operation of tethered UA, the ground risk buffer is considered in point 1.7 above.</td><td>Please include a reference to the relevant chapter/section of the OM.</td><td>‘I declare compliance.’</td></tr>
<tr><td rowspan="2">Air risk</td><td rowspan="2">Declaration supported by data</td><td>3.10 If the UAS operation is performed above 120 m and up to 150 m, the UAS operator should:</td><td></td><td></td></tr>
<tr><td>3.10.1 establish an air risk buffer to protect third parties in the air outside the operational volume; and</td><td>Please include a reference to the relevant chapter/section of the OM, otherwise indicate ‘n/a’.</td><td>‘I declare compliance and that supporting evidence is included in the OM.’
Justification supporting the reduction of the air risk buffer is documented in […] or ‘n/a’.</td></tr>
</table>

[1] The closest point from the Earth should be considered.

PDRA characterisation and conditions				
Topic	**Assurance level**	**Condition**	**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
		3.10.2 if the air risk buffer is part of controlled airspace, coordinate the operation with the respective ANSP;	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance and that supporting evidence is included in the OM.' 'or n/a'
		3.10.3 develop appropriate procedures to not jeopardise other airspace users.	*Please include a reference to the relevant chapter/section of the OM. Please describe how the remote pilots and, if employed, the AOs are able to assess the height of the UA compared to other airspace users[1], otherwise indicate 'n/a'.*	'I declare compliance and that supporting evidence is included in the OM.' 'or n/a'
	Self-declaration	3.11 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 appropriate permission.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.12 Prior to the flight, the UAS operator should assess the proximity of the planned operation to manned aircraft activity.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.13 The UAS operator should establish a de-confliction scheme that allows the remote pilot to take efficient decisions in case of incoming traffic.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Observers		3.14 Airspace observers (AOs): n/a UA observers: refer to point 5.3.9(b) below.		
4. UAS operator and UAS operations conditions				
		4.1 The UAS operator should:		

[1] The UAS operator should demonstrate that they have sufficient confidence in the accuracy of the information about the height of the UA and the means to advert and avoid other airspace users and obstacles in the vicinity of the UA.

PDRA characterisation and conditions				
Topic	**Assurance level**	**Condition**	**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
UAS operator and UAS operations	Declaration supported by data	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));	*Please describe how this condition is met.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.2 define, and include in the OM, the procedure to determine the operational volume and ground risk buffer for the intended operation, as per points 3.1 to 3.6 above, and the adjacent volume;	*Please describe how this condition is met.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.3 develop procedures to ensure that that the operation is conducted safely and the security requirements applicable to the area of operations are complied with during the intended operation;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.4 develop measures to protect the UAS against unlawful interference and unauthorised access;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.5 develop procedures to ensure that all operations comply with Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data. In particular, the UAS operator should carry out a data protection impact assessment, when this is required by the data protection national authority of the Member State with regard to the application of Article 35 of that Regulation;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'

PDRA characterisation and conditions				
Topic	**Assurance level**	**Condition**	**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
		4.1.6 develop guidelines for its remote pilots to plan UAS operations in a manner that minimises nuisance, including noise and other emissions-related nuisance, to people and animals;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.7 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 valid for the intended purpose with positive results; or (c) any other means acceptable to the competent authority;	*Please describe how this condition is met*	'I declare compliance and that evidence is available to the competent authority for review.'
		4.1.8 develop an effective emergency response plan (ERP) that is suitable for the intended operation (see GM1 UAS.SPEC.030(3)(e));	*Please describe how this condition is met*	'I declare compliance and that evidence is available to the competent authority for review.'
		4.1.9 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;	*Please describe how this condition is met*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.10 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;	*Please describe how this condition is met*	'I declare compliance and that supporting evidence is included in the OM.'

PDRA characterisation and conditions				
Topic	**Assurance level**	**Condition**	**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
		4.1.11 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;	*Please describe how this condition is met*	'I declare compliance and that supporting evidence is included in the OM.'
		(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	*Please describe how this condition is met*	'I declare compliance and that supporting evidence is included in the OM.'
		(c) have explicitly agreed to participate in the operation; and	*Please describe how this condition is met*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.12 designate for each flight a remote pilot with adequate competency and other personnel in charge of duties essential to the UAS operation if needed;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.13 in case the operation takes place in a controlled airspace, as part of the procedures that are contained in the OM (point 4.1.1 above), include the description of the following: (a) the method and means of communication with the authority or entity responsible for the management of the airspace during the entire period of operation; (b) the member(s) of personnel in charge of duties essential to the UA operation, who are responsible for establishing that communication;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'

PDRA characterisation and conditions				
Topic	**Assurance level**	**Condition**	**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
		4.1.14 ensure that the UAS operation effectively uses and supports the efficient use of the radio spectrum in order to avoid harmful interference;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.15 keep for a minimum of 3 years and maintain up to date a record of the information on UAS operations, including any unusual technical or operational occurrences and other data as required by the declaration or by the operational authorisation.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that recordkeeping data is available to the competent authority.'
UAS maintenance	Self-declaration	4.2 The UAS operator should:		
		4.2.1 ensure that the UAS maintenance instructions that are defined by the UAS operator are included in the OM and cover at least the UAS manufacturer's instructions and requirements when applicable; and	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.2.2 ensure that the maintenance staff follow the UAS maintenance instructions when performing maintenance;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.2.3 keep for a minimum of 3 years and maintain up to date a record of the maintenance activities conducted on the UAS;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.2.4 establish and maintain up to date a list of the maintenance staff employed by the operator to carry out maintenance activities;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.2.5 comply with point UAS.SPEC.100, if the UAS uses certified equipment.	*Please include a reference to the relevant chapter/section of the OM or n/a.*	'I declare compliance.' or 'n/a'

PDRA characterisation and conditions				
Topic	**Assurance level**	**Condition**	**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
External services	Self-declaration	4.3 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.	*Please describe how this condition is met.*	'I declare compliance.'
		4.4 The UAS operator should define and allocate the roles and responsibilities between the UAS operator and the external service provider(s), if applicable.		
5. Conditions for the personnel in charge of duties essential to the UAS operation				
General		5.1 The UAS operator should keep and maintain up to date a record of all the relevant qualifications and training courses completed by the remote pilot and the other personnel in charge of duties essential to the UAS operation and by the maintenance staff for at least 3 years after those persons have ceased to be employed by the organisation or have changed position within the organisation.	*Please describe how this condition is met.*	'I declare compliance.' Record-keeping data is available for inspection at the request of the competent authority.
		5.2 The remote pilot should have the authority to cancel or delay any or all flight operations under the following conditions:		
		5.2.1 the safety of persons is jeopardised; or	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.2.2 property on the ground is jeopardised; or	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Assurance level**	**Condition**	**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
		5.2.3 other airspace users are in jeopardy; or	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.2.4 there is a violation of the terms of the operational authorisation.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Remote pilot	Self-declaration	5.3 The remote pilot should:		
		5.3.1 not perform any duties under the influence of psychoactive substances or alcohol, or when they are unfit to perform their tasks due to injury, fatigue, medication, sickness or other causes;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.2 be familiar with the manufacturer's instructions provided by the manufacturer of the UAS;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.3 ensure that the UA remains clear of clouds;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.4 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;	*Please describe how this condition is met.*	'I declare compliance.' or 'n/a'
		5.3.5 hold an accreditation of completion of a practical-skills 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 recognised by the	*Please describe how this condition is met.*	'I declare compliance.' or 'n/a'

PDRA characterisation and conditions				
Topic	**Assurance level**	**Condition**	**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
		competent authority of a Member State; or (b) a UAS operator that has been authorised by the competent authority of the Member State of registration to operate according to this PDRA (or declared to the same competent authority, compliance with STS-01) and with the requirements of Appendix 3 to the Annex to the UAS Regulation.		
		5.3.6 If operations are conducted at a height between 120 and 150 m, the remote pilot should undergo additional theoretical knowledge training in the following topics:		
		(a) raising awareness about the air risk and about the existence of other airspace users;	*Please describe how this condition is met.*	'I declare compliance and that the training syllabus is available for inspection at the request of the competent authority.'
		(b) checking height determination/ limitation devices; and	*Please describe how this condition is met.*	'I declare compliance and that the training syllabus is available for inspection at the request of the competent authority.'
		(c) using applicable procedures in case a manned aircraft is detected.	*Please describe how this condition is met.*	'I declare compliance and that the training syllabus is available for inspection at the request of the competent authority.'
		5.3.7 As an alternative to holding a certificate of remote pilot theoretical knowledge, according to point 5.3.4, and to holding an accreditation of completion of a practical-skills training course according	*Please describe how this condition is met.*	'I declare compliance and that the training syllabus is available for inspection at the request of the competent authority.' or

PDRA characterisation and conditions				
Topic	Assurance level	Condition	Demonstration of integrity[1]	Demonstration of assurance[2]
		to point 5.3.5, the operator may propose a dedicated training syllabus to the competent authority;		'n/a'.
		5.3.8 Before starting the UAS operation, the remote pilot should:		
		(a) verify that the means to terminate the UA flight and the remote identification system are operational;	*Please describe how this condition is met.*	'I declare compliance.'
		(b) obtain updated information relevant to the intended operation about any geographical zones defined in accordance with Article 15 of the UAS Regulation; and	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		(c) ensure that the UAS is in a safe condition to complete the intended flight safely and, if applicable, check whether the direct remote identification is active and up to date.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.9 During the flight:		
		(a) keep the UA in VLOS and maintain thorough visual scan of the airspace that surrounds 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;	*Please describe how this condition is met.*	'I declare compliance.'
		(b) for the purpose of point (a) above, possibly being assisted by a UA	*Please describe how this condition is met.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Assurance level**	**Condition**	**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
		observer[1]; 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	*Please describe how this condition is met.*	'I declare compliance.'
		(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;	*Please describe how this condition is met.*	'I declare compliance.'
		(e) keep the UA at a ground speed of less than 5 m/s in case of untethered UA;	*Please describe how this condition is met.*	'I declare compliance.'
		(f) activate the direct remote identification system[2].	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
6. Technical conditions				
UAS		6.1 The UAS operator should use a UAS marked as class C5 and complies with the requirements of that class, as defined in		'I declare that the UAS is marked with a class C5 identification label.' or 'n/a'

[1] Please refer to point UAS.STS-02.050 for the responsibilities of the UA observer.

[2] Applicable from 1 July 2022.

PDRA characterisation and conditions				
Topic	**Assurance level**	**Condition**	**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
		Part 16 of the Annex to Regulation (EU) 2019/945.		
	Self-declaration[1]	6.2 As an alternative to point 6.1, the UAS operator may use a UAS that complies with the requirements of Part 16 of the Annex to Regulation (EU) 2019/945, except that the UAS does not need to: • bear a class C3 UAS or a class C5 UAS identification label; • have an MTOM of less than 25 kg; • 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; • include an information notice that is published by EASA and provides the applicable limitations and obligations, as required by the UAS Regulation; and • 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 that Regulation.	*Please describe how this condition is met.*	'I declare compliance.' or 'n/a'

[1] The containment requirements (reference to point 5 of Part 16 of Regulation (EU) 2019/945) should be demonstrated with a medium assurance level.

PDRA characterisation and conditions				
Topic	**Assurance level**	**Condition**	**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
		Note 2: If the UA does not bear 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 that Regulation.		
		6.3 In addition, if: • the adjacent area does not include a populated area or an assembly of people; and • the adjacent airspace is classified as ARC-a or ARC-b, point 5 of Part 16 of the Annex to Regulation (EU) 2019/945 may be replaced with the following basic containment conditions: • no probable failure of the UAS or of any external system that supports the operation would lead to operation outside the operational volume; and • it is reasonably expected that a fatality will not occur due to any probable failure of the UAS or of any external system that supports the operation.	*Please describe how this condition is met.*	'Basic containment applies and I declare that a design and installation appraisal is available and it covers at least: — the design and installation features (independence separation, and redundancy); and — the particular risks (e.g. hail, ice, snow, electromagnetic interference, etc.) relevant to the type of operation.' or 'Enhanced containment applies and I declare compliance with MoC Light-UAS.2511. Analysis and/or test data with supporting evidence is available.' or 'The UAS has a DVR demonstrating compliance with the enhanced containment requirements.'

PDRA characterisation and conditions				
Topic	**Assurance level**	**Condition**	**Demonstration of integrity[1]**	**Demonstration of assurance[2]**
		6.4 If designed to spray, the UA should:		
		6.4.1 be designed to avoid an accidental release of any substance;		
		6.4.2 have means for the remote pilot to immediately stop the spraying of liquids or dropping of substances in case of an emergency.		

Table PDRA-S01.1 — Main limitations and conditions for PDRA-S01

AMC5 Article 11 Rules for conducting an operational risk assessment

ED Decision 2022/002/R

PREDEFINED RISK ASSESSMENT PDRA-S02 Version 1.1

EDITION January 2022

(a) Scope

This PDRA addresses the same type of operations that are covered by the standard scenario STS-02 (Appendix 1 to the Annex to the UAS Regulation); however, it provides the UAS operator with the flexibility to use UASs that do not need to be marked as class C6.

This PDRA addresses UAS operations that are conducted:

(1) with UA with maximum characteristic dimensions (e.g. wingspan, rotor diameter/area or maximum distance between rotors in case of a multirotor) of up to 3 m and MTOM of up to 25 kg;

(2) at a distance of up to 2 km from the remote pilot if airspace observers (AOs) are employed; otherwise at a distance of up to 1 km;

(3) over a controlled ground area that is entirely located in a sparsely populated area;

(4) below 150 m above ground level (AGL) (except when close to obstacles); and

(5) in controlled or uncontrolled airspace, provided that there is a low probability of encountering manned aircraft[1].

(b) PDRA characterisation and conditions

The characterisation and conditions for this PDRA are summarised in **Table PDRA-S02.1** below:

[1] Member States are required to establish the appropriate measures (e.g. UAS geographical zones) to ensure this low probability of encounter. Such low probability of encounter is equivalent to an ARC that is no higher than ARC-b. Thus, ARC-b is to be considered here as the highest residual (final) ARC.

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
1. Operational characterisation (scope and limitations)				
Level of human intervention	Self-declaration	1.1 No autonomous operations: the remote pilot should maintain control of the UA, except in case of a loss of the command-and-control (C2) link.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.2 The remote pilot should operate only one UA at a time.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.3 The remote pilot should not operate the UA from a moving vehicle.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.4 The remote pilot should not hand the control of the UA over to another command unit.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
UA range limit	Self-declaration	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;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		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	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		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.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Overflown areas	Self-declaration	1.6 UAS operations should be conducted over a controlled ground area.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
UA limitations	Self-declaration	1.7 The UA should have an MTOM of less than 25 kg, including payload.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.8 The UA should have maximum characteristic dimensions (e.g. wingspan, rotor diameter/area	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

[69] To be filled in by the UAS operator.

[70] To be filled in by the UAS operator.

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
		or maximum distance between rotors in case of a 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.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Flight height limit	Self-declaration	1.10 The remote pilot should maintain the UA within 120 m (unless making use of the option defined in point 1.12) 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.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		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 that is responsible for the obstacle.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.12 The UAS operator may propose to operate at a height above 120 m, but up to 150 m. In that case, the UAS operator should define a risk buffer according to point 3.7 below.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Airspace		1.13 The UA should be operated:		
		1.13.1 in uncontrolled airspace, 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	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.13.2 in controlled airspace after coordination and flight authorisation in accordance with the published procedures for the area of operation, to ensure that the probability of encountering manned aircraft is low.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
		Note: 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.		
Visibility	Self-declaration	1.14 The UA operation should be conducted in an area where the flight visibility is greater than 5 km. *Note: Please refer to GM1 UAS.STS-02.020(3).*	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Others	Low	1.15 The UA should not be used to carry dangerous goods, except for dropping items in connection with agricultural, horticultural or forestry activities where the carriage of such items does not contravene any other applicable regulations.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
2. Operational risk classification (according to the classification defined in AMC1 to Article 11 of the UAS Regulation)				
Final GRC	**3**	**Final ARC**	**ARC-b**	**SAIL**	**II**
3. Operational mitigations				
Operational volume (see Figure 2 of AMC1 Article 11)	Self-declaration	3.1 The UAS operator should define the operational volume for the intended operation, including the flight geography and the contingency volume.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		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).	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		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.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.4 The remote pilot should apply emergency procedures as soon as there is an indication that	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
		the UA may exceed the limits of the operational volume, as per point 5.3.10(h) below.		
Ground risk	Self-declaration	3.5 The UAS operator should establish a ground risk buffer to protect third parties on the ground outside the operational volume.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.
		3.6 The ground risk buffer should cover a distance that is at least equal to the distance most likely to be travelled by the UA after activation of the flight termination system specified by the UAS manufacturer's instructions, considering the operational conditions within the limitations specified by the UAS manufacturer.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.
Air risk	Declaration supported by data	3.7 If the UAS operation is performed above 120 m and up to 150 m, the UAS operator should:		
		3.7.1 establish an air risk buffer to protect third parties in the air outside the operational volume; and	*Please include a reference to the relevant chapter/section of the OM, or otherwise indicate 'n/a'.*	'I declare compliance.' Justification supporting the reduction of the air risk buffer is documented in […]. or 'n/a'
		3.7.2 if the air risk buffer is part of controlled airspace, coordinate the operations with the respective ANSP.	*Please include a reference to the relevant chapter/section of the OM, or otherwise indicate 'n/a'.*	'I declare compliance and that supporting evidence is included in the OM.' […]. or 'n/a'
		3.7.3 develop appropriate procedures to not jeopardise other airspace users.	*Please include a reference to the relevant chapter/section of the OM.* *Please describe how the remote pilots and, if employed, the AOs are able to assess the height of the UA compared to other airspace users[71], or otherwise indicate 'n/a'.*	'I declare compliance and that supporting evidence is included in the OM.' […]. or 'n/a'

[71] The UAS operator should demonstrate that they have sufficient confidence in the accuracy of the information about the height of the UA and the means to advert and avoid other airspace users and obstacles in the vicinity of the UA.

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
	Self-declaration	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 appropriate permission.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.
		3.9 Prior to the flight, the UAS operator should assess the proximity of the planned operation to manned aircraft activity.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.
Observers[72]	Self-declaration	3.10 If the UAS operator decides to employ one or more airspace observers (AOs), the UA may be operated at a distance from the remote pilot greater than that referred to in point 1.5.2 above.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.
		3.11 In relation to AOs, the UAS operator should comply with the conditions of point 4.1.15 below.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.
		3.12. AOs should comply with the conditions of point 5.4 below.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.
UAS operator and UAS operations conditions				
UAS operator and UAS operations	Declaration supported by data	4.1 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));	*Please describe how this condition is met.*	'I declare compliance and that supporting evidence is included in the OM.'
		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;	*Please describe how this condition is met.*	'I declare compliance and that supporting evidence is included in the OM.'

[72] Please refer to point UAS.STS-02.050 for the AO's main responsibilities.

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
		4.1.3 develop procedures to ensure that the security requirements applicable to the area of operations are complied with during the intended operation;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.4 develop measures to protect the UAS against unlawful interference and unauthorised access;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.5 develop procedures to ensure that all operations comply with Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data. In particular, the UAS operator should carry out a data protection impact assessment, when this is required by the data protection national authority of the Member State with regard to the application of Article 35 of that Regulation;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.6 develop guidelines for its remote pilots to plan UAS operations in a manner that minimises nuisance, including noise and other emissions-related nuisance, to people and animals;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.7 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;	*Please describe how this condition is met.*	'I declare compliance and evidence is available to the competent authority for review.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
		4.1.8 develop an emergency response plan (ERP) that is suitable for the intended operation in accordance with the conditions for a 'medium' level of robustness (please refer to AMC3 UAS.SPEC.030(3)(e);	*Please describe how this condition is met*	'I declare compliance and that the ERP is available to the competent authority for review.'
		4.1.9 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;	*Please describe how this condition is met*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.10 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 3.6 above and, when required, coordinate with the appropriate authorities;	*Please describe how this condition is met*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.11 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;	*Please describe how this condition is met.*	'I declare compliance and that supporting evidence is included in the OM.'
		(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	*Please describe how this condition is met.*	'I declare compliance and that supporting evidence is included in the OM.'
		(c) have explicitly agreed to participate in the operation;	*Please describe how this condition is met.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.12 designate for each flight a remote pilot with adequate competency and other personnel in charge of duties essential to the UAS operation if needed;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
		4.1.13 ensure that the UAS operation effectively uses and supports the efficient use of the radio spectrum in order to avoid harmful interference;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.14 keep for a minimum of 3 years and maintain up to date a record of the information on UAS operations, including any unusual technical or operational occurrences and other data as required by the declaration or by the operational authorisation;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that record-keeping data is available to the competent authority.'
		4.1.15 before starting the operation, and if airspace observers (AOs) are employed:		
		(a) ensure the correct placement and the appropriate number of AOs along the intended flight path;	*Please describe how this condition is met*	'I declare compliance and that supporting evidence is included in the OM.'
		(b) verify that:		
		(i) the visibility and the planned distance of the AOs are within the acceptable limits as defined in the OM;	*Please describe how this condition is met*	'I declare compliance and that supporting evidence is included in the OM.'
		(ii) there are no potential terrain obstructions for each AO;	*Please describe how this condition is met*	'I declare compliance and that supporting evidence is included in the OM.'
		(iii) there are no gaps between the zones that are covered by each of the AOs;	*Please describe how this condition is met*	'I declare compliance and that supporting evidence is included in the OM.'
		(iv) the communication with each AO is established and effective;	*Please describe how this condition is met*	'I declare compliance and that supporting evidence is included in the OM.'
		(v) if means are used by the AOs to determine the position of the UA, those means are functioning and effective; and	*Please describe how this condition is met*	'I declare compliance and that supporting evidence is included in the OM.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
		(c) ensure that the AOs have been briefed on the planned flight path of the UA and on the associated timing.	*Please describe how this condition is met*	'I declare compliance and that supporting evidence is included in the OM.'
		4.2 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 1.5.2 above and following a preprogrammed trajectory when the UA is not in the VLOS of the remote pilot	*Please describe how this condition is met.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.3 If one or more AOs are employed in the operation, the following conditions should be complied with:		
		4.3.1 the AO(s) should be positioned so as to adequately cover the operational volume and the surrounding airspace, having the minimum flight visibility that is indicated in point 1.14 above;	Please describe how this condition is met.	'I declare compliance and that supporting evidence is included in the OM.'
		4.3.2 the UA should be operated no further than 1 km from the AO who is nearest to the UA;	Please describe how this condition is met.	'I declare compliance and that supporting evidence is included in the OM.'
		4.3.3 the distance between any AO and the remote pilot should not be greater than 1 km; and	Please describe how this condition is met.	'I declare compliance and that supporting evidence is included in the OM.'
		4.3.4 robust and effective means are available for communication between the remote pilot and the AO(s).	*Please describe how this condition is met.*	'I declare compliance and that supporting evidence is included in the OM.'
UAS maintenance		4.4. The UAS operator should:		
		4.4.1 ensure that the UAS maintenance instructions that are defined by the UAS operator are included in the OM and cover at least the UAS manufacturer's instructions and requirements when applicable; and	*Please describe how this condition is met.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
	Self-declaration	4.4.2 that maintenance staff follow the UAS maintenance instructions when performing maintenance;	*Please describe how this condition is met.*	'I declare compliance.'
		4.4.3 keep for a minimum of 3 years and maintain up to date a record of the maintenance activities conducted on the UAS;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.4.4 establish and maintain up to date a list of the maintenance staff employed by the operator to carry out maintenance activities;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.4.5 comply with point UAS.SPEC.100, if the UAS uses certified equipment.	*Please include a reference to the relevant chapter/section of the OM or indicate 'n/a'*	'I declare compliance.' or 'n/a'
External services	Self-declaration	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.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		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.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
5. Conditions for the personnel in charge of duties essential to the UAS operation				
General		5.1 The UAS operator should keep and maintain up to date a record of all the relevant qualifications and training courses completed by the remote pilot and other personnel in charge of duties essential to the UAS operation and by the maintenance staff for at least 3 years after those persons have ceased to be employed by the organisation or have changed position within the organisation.	*Please describe how this condition is met*	'I declare compliance.' Record-keeping data is available for inspection at the request of the competent authority.

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
		5.2 The remote pilot should have the authority to cancel or delay any or all flight operations under the following conditions:		
		5.2.1 the safety of persons is jeopardised; or	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.2.2 property on the ground is jeopardised; or	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.2.3 other airspace users are in jeopardy; or	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.2.4 there is a violation of the terms of the operational authorisation.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Remote pilot	Self-declaration	5.3 The remote pilot should:		
		5.3.1 not perform any duties under the influence of psychoactive substances or alcohol, or when they are unfit to perform their tasks due to injury, fatigue, medication, sickness or other causes;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.2 be familiar with the manufacturer's instructions provided by the manufacturer of the UAS;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.3 ensure that the UA remains clear of clouds; and	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.4 hold a certificate of remote pilot theoretical knowledge, in accordance with Attachment A to Chapter II 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;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.5 hold an accreditation of completion of a practical-skills training course for this PDRA, in accordance with Attachment A to Chapter	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
		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 recognised by the competent authority of a Member State; or (b) a UAS operator that has been authorised by the competent authority of the Member State of registration to operate according to this PDRA (or declared to the same competent authority compliance with STS-01) and with the requirements of Appendix 3 to the Annex to the UAS Regulation;		
		5.3.6 if operations are conducted at a height between 120 and 150 m, receive additional theoretical knowledge training in the following topics:		
		(a) raising awareness about the air risk and about the existence of other airspace users;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		(b) checking height determination/ limitation devices;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		(c) using procedures for the coordination between the remote pilot and the AO(s);	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		(d) using the applicable procedures in case a manned aircraft is detected;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.7 obtain updated information relevant to the intended operation about any geographical zones defined in accordance with Article 15 of the UAS Regulation; and	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
		5.3.8 ensure that the UAS is in a safe condition to complete the intended flight safely and, if applicable, check whether the direct remote identification is active and up to date;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.9 before starting the UAS operation:		
		(a) verify that the remote identification system is operational;	*Please describe how this condition is met*	'I declare compliance.'
		(b) obtain updated information relevant to the intended operation about any geographical zones defined in accordance with Article 15 of the UAS Regulation;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		(c) ensure that the UAS is in a safe condition to complete the intended flight safely and, if applicable, check whether the direct remote identification is active and up to date;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		(d) set the programmable flight volume of the UA to keep it within the flight geography; and	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		(e) verify that the means to terminate the flight as well as the programmable flight volume functionality of the UA are operational; and	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.10 during the flight:		
		(a) unless supported by aerial observers (AOs), maintain thorough visual scan of the airspace that surrounds 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;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
		(b) maintain control of the UA, except in case of a loss of the command-and-control link;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		(c) operate only one UA at a time;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		(d) not operate the UA from a moving vehicle;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		(e) not hand the control of the UA over to another control unit;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		(f) inform the AO(s), when employed, in a timely manner of any deviations of the UA from the intended flight path, and of the associated timing;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		(g) 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;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		(h) 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;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		(i) activate the system to prevent the UA from exceeding the limits of the flight geography; and	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
		(j) activate the direct remote identification system[73].	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Airspace observer (AO)	Self-declaration	5.4 The AO's main responsibilities are laid down in point UAS.STS-02.050 of the Annex to the UAS Regulation.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.5 If operations are conducted at a height between 120 and 150 m, the AO(s) should undergo additional theoretical knowledge training in the following topics:		
		(a) raising awareness about the air risk and about the existence of other airspace users;	*Please include a reference to the relevant chapter/section of the OM, or otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		(b) checking height determination/ limitation devices;	*Please include a reference to the relevant chapter/section of the OM, or otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		(c) using the procedures for the coordination between the remote pilot and the AO(s); and	*Please include a reference to the relevant chapter/section of the OM, or otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		(d) using the applicable procedures in case a manned aircraft is detected.	*Please include a reference to the relevant chapter/section of the OM, or otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
6. Technical conditions				
UAS		6.1 The UAS operator should use a UAS marked with a class C6 identification label and which complies with the requirements of that class, as defined in Part 17 of the Annex to Regulation (EU) 2019/945.		'I declare that the UAS is marked with a class C6 identification label.' or 'n/a'

[73] Applicable from 1 July 2022.

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[69]**	**Proof[70]**
	Self-declaration[74]	6.2 As an alternative to point 6.1, the UAS operator may use a UAS that complies with the requirements of Part 16 of the Annex to Regulation (EU) 2019/945, except that the UAS does not need to:	*Please describe how this condition is met.*	'I declare compliance.' or 'n/a'
		6.2.1 bear a class C3 or a class C6 UAS identification label;		
		6.2.2 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;		
		6.2.3 include a notice that is published by EASA and provides the applicable limitations and obligations, as required by the UAS Regulation; and		
		6.2.4 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 that Regulation.* ***Note 2**: If the UA does not bear a physical serial number that is compliant with standard ANSI/CTA-2063-A*		

[74] The containment requirements (reference to points 4 and 5 of Part 17 of Regulation (EU) 2019/945) should be demonstrated with a 'medium' assurance level.

PDRA characterisation and conditions				
Topic	Method of proof	Condition	Integrity[69]	Proof[70]
		'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 by using an add-on that complies with Part 6 of the Annex to that 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.*		

Table PDRA-S02.1 — Main limitations and conditions for PDRA-S02

AMC6 Article 11 Rules for conducting an operational risk assessment

ED Decision 2023/012/R

PREDEFINED RISK ASSESSMENT PDRA-G03 Version 1.1

EDITION September 2023

(a) Scope

This PDRA is the result of applying the methodology described in AMC1 Article 11 of the UAS Regulation to UAS operations performed in the 'specific' category:

(1) with UA with maximum characteristic dimensions (e.g. wingspan, rotor diameter/area or maximum distance between rotors in case of a multirotor) of up to 3 m and typical kinetic energies of up to 34 kJ;

(2) BVLOS of the remote pilot;

(3) over sparsely populated areas;

(4) within the range of the direct C2 link in an operational volume under 30 m above the overflown area (or any other altitude reference defined by the Member State of operations);

(5) following preprogrammed or preplanned flexible routes within the operational volume;

(6) in one of the following conditions:

(i) reserved or segregated airspace for UAS operations;

(ii) operating at a maximum height not exceeding 30 m from the ground;

(iii) when operating at no more than 30 m horizontally from an obstacle, operating at a maximum height not exceeding 15 m from the obstacle; if the height of the obstacle does not exceed 20 m, then the hight of the operation may be up to 30 m from the obstacle (meaning no more than a total of 50 m from the ground);

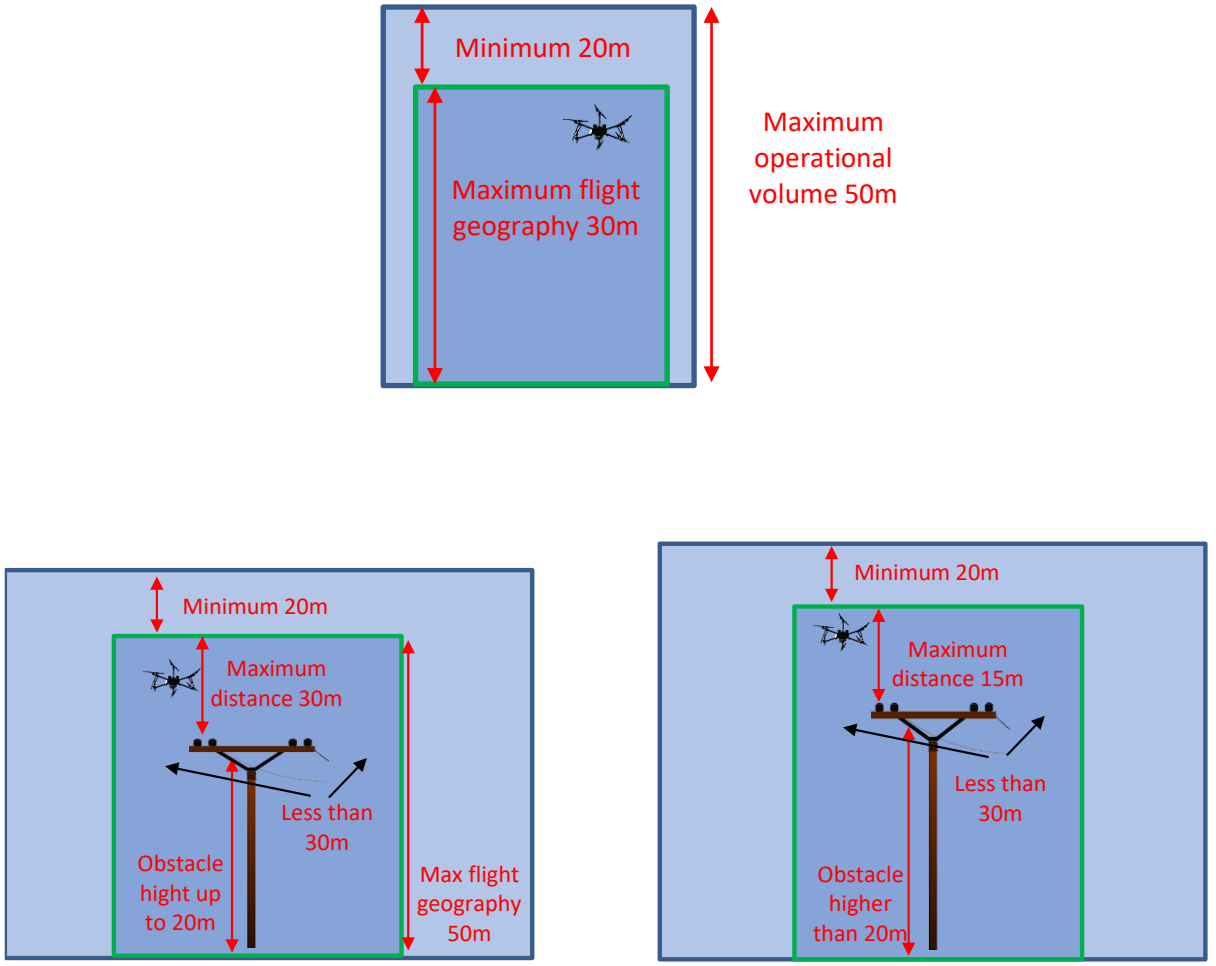

Figure 1 — Flight geography and operational volume when the operation is not conducted in reserved or segregated area

(7) operated routinely for regular inspections of facilities and infrastructure, e.g. industrial plants and similar, and operating in the atypical airspace within the shielding of such artificial obstacles as well as the natural obstacles, if any. The area of operation should be clearly identified within the application and the competent authority should issue a 'precise' operation authorisation according to GM1 UAS.SPEC.040(1).

Note 1: This PDRA has been tailored for routine automated surveillance operation and inspection of facilities and infrastructures. It may be used as a basis for other purposes and, thus, may require an additional risk assessment.

Note 2: Many UAS operations under this PDRA may be conducted with a high level of automation, which should be considered by the competent authorities in terms of the required level of practical-skills training and assessment, as it should be proportionate to the lower level of intervention required by the remote pilot.

(b) PDRA characterisation and conditions

The characterisation and conditions for this PDRA are summarised in Table PDRA-G03.1 below:

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
1. Operational characterisation (scope and limitations)				
Level of human intervention	Self-declaration	1.1 No autonomous operations: the remote pilot should have the ability to maintain control of the UA, except in case of a loss of the command-and-control (C2) link.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.2 The remote pilot should always be able to terminate the flight.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.3 Either the flight path should be preprogrammed or flexible routes should be preplanned to ensure the UA avoids obstacles in the operational volume.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.4 The remote pilot should not hand the control of the UA over to another command unit.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.5 The remote pilot should not operate the UA from a moving vehicle.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

[1] To be filled in by the UAS operator.

[2] To be filled in by the UAS operator.

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		1.6 The remote pilot should not hand the control of the UA over to another command unit.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
UA range limit	Self-declaration	1.7 Launch/recovery: at VLOS distance from the remote pilot, if not operating from a safe prepared area. *Note: 'Safe prepared area' means a controlled ground area that is suitable for the safe launch/recovery of the UA.*	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.8 In flight: The range limit should be within the C2 link direct coverage which ensures the safe conduct of the flight.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Overflown areas	Declaration supported by data	1.9 UAS operations should be conducted:		
		1.9.1 over sparsely populated areas, and	*Please include a reference to the relevant chapter/section of the OM where the procedures for determining the population density are provided.*	'I declare compliance.' *Please describe how the population density data is identified.*
		1.9.2 over or up to 15 m horizontal distance from a facility or infrastructure at the request of the person or entity that is responsible for that facility or infrastructure.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
UA limitations	Self-declaration	1.10 Maximum characteristic dimensions (e.g. wingspan, rotor diameter/area or maximum distance between rotors in the case of a multirotor): up to 3 m	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.11 Typical kinetic energy: up to 34 kJ	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Flight height limit	Self-declaration	1.12 The maximum height of the operational volume should not be greater than the size of the reserved or segregated airspace, if applicable, or the height defined according to para 3.9. *Note: See point 3.10 defining the air risk buffer to be considered*	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions					
Topic	**Method of proof**	**Condition**		**Integrity[1]**	**Proof[2]**
Airspace	Self-declaration	1.13 The UA should be operated: *(refer also to point 3.9)*			
		1.13.1 in 'atypical airspace' that is included in uncontrolled airspace;		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		1.13.2 in controlled airspace which the competent authority has defined it meets 'atypical airspace' requirements and with the relevant coordination as defined by competent authority; or		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Visibility	Self-declaration	1.14 If take-off and landing are conducted in VLOS of the remote pilot, the visibility should be sufficient to ensure that no people are in danger during the take-off /landing phase. The remote pilot should abort the take-off or landing in case people on the ground are in danger.		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Others	Self-declaration	1.15 The UA should not be used to drop material or to carry dangerous goods, except for dropping items in connection with agricultural, horticultural or forestry activities where the carriage of such items does not contravene any applicable regulations.		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
2. Operational risk classification (according to the classification defined in AMC1 to Article 11 of the UAS Regulation)					
Final GRC	**3**	**Final ARC**	**ARC-a**	**SAIL**	**II**
3. Operational mitigations					
Operational volume (see Figure 2 of AMC1 Article 11)	Self-declaration	3.1 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).		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.2 In particular, the accuracy of the navigation solution, the flight technical error of the UAS and the path definition error (e.g. map error) and latencies should be considered and		*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		addressed when determining the operational volume.		
		3.3 The remote pilot should apply the emergency procedures as soon as there is an indication that the UA may exceed the limits of the operational volume.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Ground risk	Self-declaration	3.4 The UAS operator should establish a ground risk buffer to protect third parties on the ground outside the operational volume.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.4.1 The default criterion should be the use of the '1:1 rule' (e.g. if the UA is planned to operate at a height of 25 m, the ground risk buffer should at least be 25 m).	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.4.2 A smaller ground risk buffer value may be applied by the applicant for a rotary wing UA using a ballistic methodology approach acceptable to the competent authority. The 1:1 rule may in certain cases not be sufficient to meet the target level of safety. In such a case, the competent authority may ask for a refinement of the definition of the ground risk buffer, based on criteria defined in SORA Step #9 depending on the adjacent air and ground risks.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.5 The operational volume and the ground risk buffer should be all contained in a sparsely populated area.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.6 The UAS operator should evaluate the area of operations, typically by means of on-site inspection or appraisal, and should be able to justify the significantly lower density of people at risk than in sparsely populated areas within	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		the entire operational volume including the ground risk buffer.		
		3.7 The UAS operator should ensure that the person or entity responsible for the facility or infrastructure has taken the necessary measures to protect the uninvolved persons present within the limits of the facility or infrastructure during the UAS operation.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.8 The UAS operator should include points 3.4 to 3.7 in the Operations Manual (OM) (see point 4.1.1) and declare compliance with those conditions.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Air risk	Self-declaration	3.9 The UAS operation should be conducted: 3.9.1 in 'atypical airspace' which, for the purpose of this PDRA, is one of the following: 3.9.1.1 in reserved or segregated airspace; the claim for ARC-a is met if a reserved or segregated airspace is established and approved for the purpose of conducting UAS operations under this PDRA, with the operational volume and air risk buffer, if applicable, being entirely contained in that reserved or segregated airspace; 3.9.1.2 at a height of the flight geography of less than 30 m; 3.9.1.3 when operating in the proximity of natural or artificial obstacles (e.g. trees, buildings, towers, cranes, fences, power lines, etc.) whose height is below 20 m, keeping the UA within the following distances:	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	Method of proof	Condition	Integrity[1]	Proof[2]
		(i) 30 m horizontal distance; (ii) 30 m vertical distance from the top of the overflown obstacle; 3.9.1.4 when operating in the proximity of natural or artificial obstacles (e.g. trees, buildings, towers, cranes, fences, power lines, etc.) whose height is above 20 m, keeping the UA within the following distances: (i) 30 m horizontal distance; (ii) 15 m vertical distance from the top of the overflown obstacle; 3.9.2 away from all of the following: (i) any known permanent or temporary take-off and landings areas for all types of manned aircraft; this also includes parking lots, parks and other areas where helicopters occasionally operate from, as well as sites where police and helicopter emergency medical services (HEMS), and search and rescue (SAR) helicopters occasionally operate from in cases of accidents or other emergencies; (ii) known military aircraft low-flying routes; (iii) any other known low-level manned aircraft operations in the intended area of operation (e.g. balloon operations authorised en route below 500 ft); (iv) harbour/coastal areas where SAR operations may transit or operate; (v) any known areas where other unmanned aircraft operate (including areas for model aircraft clubs or associations).		

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		3.10 The UAS operator should establish an air risk buffer to protect third parties in the air, outside the operational volume, if: 3.10.1 airspace classified as ARC-d is adjacent to the operational volume; or 3.10.2 the competent authority or the entity responsible for the airspace management considers it necessary to require that the protection of third parties in the air be ensured.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.11 The air risk buffer as per point 3.10 should be contained where the probability of encounter with manned aircraft and other airspace users is low, as defined by the competent authority.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		3.12 Before the flight, the UAS operator should assess the proximity of the planned UAS operation to manned aircraft activity.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Observers		n/a		
4. UAS operator and UAS operations conditions				
UAS operator and UAS operations	Declaration supported by data	4.1 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));	*Please describe how this condition is met.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.2 develop a procedure to ensure that the security requirements applicable to the area of operations are complied with during the intended operation;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.3 develop measures to protect the UAS against unlawful interference and unauthorised access;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		4.1.4 develop procedures to ensure that all operations comply with Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data. In particular, the UAS operator should carry out a data protection impact assessment, when this is required by the data protection national authority of the Member State with regard to the application of Article 35 of that Regulation;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.5 develop guidelines for its remote pilots to plan UAS operations in a manner that minimises nuisance, including noise and other emissions-related nuisance, to people and animals;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.6 develop an emergency response plan (ERP) in accordance with the conditions for a 'medium' level of robustness (please refer to AMC3 UAS.SPEC.030(3)(e);	*Please describe how this condition is met.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.7 validate the operational procedures in accordance with the provisions for a 'medium' level of robustness included in AMC2 UAS.SPEC.030(3)(e);	*Please describe how this condition is met.*	'I declare compliance and that the description for meeting this condition is available to the competent authority for review.'
		4.1.8 ensure the adequacy of the contingency and emergency procedures and prove it through any of the following: (a) dedicated flight tests; (b) simulations, provided that the representativeness of the simulation means is proven for the intended purpose with positive results;	*Please describe how this condition is met*	'I declare compliance and that the description for meeting this condition is available to the competent authority for review.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		(c) any other means acceptable to the competent authority;		
		4.1.9 have a policy that defines how the remote pilot and any other personnel in charge of duties essential to the UAS operation can declare themselves fit to operate before conducting any operation;	*Please describe how this condition is met*	'I declare compliance and that the description for meeting this condition is available to the competent authority for review.'
		4.1.10 if the operation takes place in reserved or segregated airspace, as part of the procedures that are contained in the OM (point 4.1.1 above), include the description of the following:		
		(a) the method and means of communication with the authority or entity that is responsible for the management of the airspace during the entire period of the reserved or segregated airspace being active, as mandated by the authorisation; *Note: The communication method should be published in the notice to airmen (NOTAM), which activates the reserved airspace to also allow coordination with manned aircraft.*	*Please describe how this condition is met.*	'I declare compliance and that evidence is available to the competent authority for review.'
		(b) the personnel in charge of duties essential to the UAS operation, who are responsible for establishing that communication;	*Please describe how this condition is met.*	'I declare compliance and that evidence is available to the competent authority for review.''
		4.1.11 designate for each flight a remote pilot with adequate competency and other personnel in charge of duties essential to the UAS operation if needed;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		4.1.12 ensure that the UAS operation effectively uses and supports the efficient use of the radio spectrum in order to avoid harmful interference;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that supporting evidence is included in the OM.'
		4.1.13 keep for a minimum of 3 years and maintain up to date a record of the information on UAS operations, including any unusual technical or operational occurrences and other data as required by the declaration or by the operational authorisation;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance and that record-keeping data is available to the competent authority.'
UAS maintenance	Self-declaration	4.2 The UAS operator should:		
		4.2.1 ensure that the UAS maintenance instructions that are defined by the UAS operator are included in the OM and cover at least the UAS manufacturer's instructions and requirements, when applicable; and	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.2.2 ensure that maintenance staff follow the UAS maintenance instructions when performing maintenance;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.2.3 keep for a minimum of 3 years and maintain up to date a record of the maintenance activities conducted on the UAS;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.2.4 establish and keep up to date a list of the maintenance staff employed by the operator to carry out maintenance activities;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		4.2.5 comply with point UAS.SPEC.100, if the UAS uses certified equipment.	*Please include a reference to the relevant chapter/section of the OM or indicate 'n/a'.*	'I declare compliance.' or 'n/a'
External services		4.3 The UAS operator should ensure that the level of performance for any externally provided service necessary for the safety of the flight is adequate for the intended operation. The UAS	*Please describe how this condition is met.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		operator should declare that this level of performance is adequately achieved.		
	Self-declaration	4.4 The UAS operator should define and allocate the roles and responsibilities between the UAS operator and the external service provider(s), if applicable.	*Please describe how this condition is met.*	'I declare compliance.'
5. Conditions for the personnel in charge of duties essential to the UAS operation				
General	Self-declaration	5.1 The UAS operator should ensure that all personnel in charge of duties essential to the UAS operation are provided with competency-based theoretical and practical training specific to their duties, which consists of theoretical elements defined in AMC1 UAS.SPEC.050(1)(d) and practical elements defined in AMC2 UAS.SPEC.050(1)(d).	*Please describe how this condition is met.*	'I declare compliance. Evidence of training is available for inspection at the request of the competent authority or its authorised representative. The training programme is documented in the OM.'
		5.2 The UAS operator should keep and maintain up to date a record of all the relevant qualifications and training courses completed by the remote pilot and the other personnel in charge of duties essential to the UAS operation and by the maintenance staff for at least 3 years after those persons have ceased to be employed by the organisation or have changed position within the organisation.	*Please describe how this condition is met.*	'I declare compliance. Record-keeping data is available for inspection at the request of the competent authority.'
Remote pilot		5.3 The remote pilot has the authority to cancel or delay any or all flight operations under the following conditions:		
		5.3.1 the safety of persons is jeopardised;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.2 property on the ground is jeopardised;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
	Self-declaration	5.3.3 other airspace users are in jeopardy;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.3.4 there is a violation of the terms of the operational authorisation.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.4 The remote pilot should:		
		5.4.1 not perform any duties under the influence of psychoactive substances or alcohol, or when they are unfit to perform their tasks due to injury, fatigue, medication, sickness or other causes;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.4.2 be familiar with the manufacturer's instructions provided by the manufacturer of the UAS;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.4.3 obtain updated information relevant to the intended operation about any geographical zones defined in accordance with Article 15 of the UAS Regulation; and	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		5.4.4 ensure that the UAS is in a safe condition to complete the intended flight safely and, if applicable, check whether the direct remote identification is active and up to date.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Multi-crew cooperation (MCC)	Self-declaration	5.5 Where multi-crew cooperation (MCC) is required, the UAS operator should:		
		5.5.1 designate the remote pilot-in-command to be responsible for each flight;	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		5.5.2 include procedures to ensure the coordination between the remote crew members with robust and effective communication channels; those	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		procedures should cover as a minimum the following:		
		5.5.2.1 the assignment of tasks to the remote crew members; and	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		5.5.2.2 the establishment of step-by-step communication; and	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
		5.6 ensure that the training of the remote crew covers MCC.	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.' or 'n/a'
Maintenance staff	Self-declaration	5.7 Any staff member authorised by the UAS operator to perform maintenance activities should have been duly trained regarding the documented maintenance procedures.	*Please describe how this condition is met.*	'I declare compliance. Evidence of training is available at the request of the competent authority or its authorised representative.'
Personnel in charge of duties essential to the UAS operation are fit to operate	Self-declaration	5.8 The personnel in charge of duties essential to the UAS operation should declare that they are fit to operate before conducting any operation based on the policy defined by the UAS operator.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
6. Technical conditions				
General		6.1 The UAS should be equipped with means to monitor the critical parameters for a safe flight, and in particular the following:		
		6.1.1 UA position, height or altitude, ground speed or airspeed, attitude, and trajectory;	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.1.2 UAS energy status (fuel, battery charge, etc.); and	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
	Self-declaration	6.1.3 the status of critical functions and systems; as a minimum, for services based on RF signals (e.g. C2 link, GNSS, etc.), means should be provided to monitor the adequate performance and trigger an alert when the performance level becomes too low.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.2 The UAS performance and in particular its capability to keep the position in 4D space (latitude, longitude, height, and time) should be such that allows the remote pilot to conduct safely operations close to natural or artificial obstacles. *Note: The UA should be able to fly safely at a distance closer than 30 m to artificial or natural obstacles.*	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.3 The UAS should provide means to programme the UA flight path prior to take-off, or if utilising flexible routes, be equipped with means to avoid obstacles while staying within the intended operational volume.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.3.1. If flexible routes are utilised, the UAS should provide means to prevent the UA from breaching the horizontal and vertical limits of a programmable operational volume.	*Please include a reference to the relevant chapter/section of the OM, otherwise indicate 'n/a'.*	'I declare compliance.'
		6.4 The UAS should be protected against potential electromagnetic interferences from the infrastructure/facilities in the overflown area.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Human–machine interface (HMI)		6.5 The UAS information and control interfaces should be clearly and succinctly presented and should not confuse, cause unreasonable fatigue, or contribute to causing any disturbance to the personnel in charge of duties essential to the UAS operation such that this	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		could adversely affect the safety of the operation.		
	Self-declaration	6.6 The UAS operator should conduct a UAS evaluation that considers and addresses human factors to determine whether the HMI is appropriate for the operation.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
C2 links and communication	Self-declaration	6.7 The UAS should comply with the appropriate requirements for radio equipment and the use of the RF spectrum.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.8 Protection mechanisms against interference should be used, especially if unlicensed bands (e.g. ISM) are used for the C2 link (mechanisms such as FHSS, DSSS or OFDM technologies, or frequency deconfliction by procedure).	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.9 The UAS should be equipped with a C2 link that is protected against unauthorised access to the C2 functions.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.10 In case of a loss of the C2 link, the UAS should have a reliable and predictable method for the UA to recover the C2 link or terminate the flight in a way that reduces the effect on third parties in the air or on the ground.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
		6.11 In the event of an emergency, the remote pilot should have effective means to communicate with the relevant bodies.	*Please include a reference to the relevant chapter/section of the OM.*	'I declare compliance.'
Tactical mitigation		n/a		
Containment	Declaration supported by data	6.12 To ensure a safe recovery from a technical issue that involves the UAS or an external system that supports the operation, the UAS should comply with the following basic containment provisions:		

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		6.12.1 no probable failure of the UAS or any external system that supports the operation should lead to operation outside the operational volume; and	*Please describe how this condition is met.*	'n/a since enhanced containment applies.' or 'I declare compliance. A design and installation appraisal is available, and covers at least the following: — the design and installation features (independence, separation, and redundancy); and — the particular risks (e.g. hail, ice, snow, electromagnetic interference, etc.) relevant to the type of operation.'
		6.12.2 it is reasonably expected that a fatality will not occur from any probable failure of the UAS, or any external system that supports the operation. *Note: The term 'probable' should be understood in its qualitative interpretation, i.e. 'anticipated to occur one or more times during the entire system/operational life of an item'.*	*Please describe how this condition is met.*	
		6.13 The following enhanced containment conditions should apply if the adjacent area includes an assembly of people or if the adjacent airspace is classified as ARC-c or ARC-d (in accordance with SORA):		
		6.13.1 The UAS should be designed to standards that are considered adequate by the competent authority and/or in accordance with a means of compliance that is acceptable to that authority such that:	*Please include a reference to the relevant chapter/section of the OM or indicate 'n/a'.*	'N/A since the basic containment applies' or 'I declare compliance with MoC Light-UAS.2511. Analysis and/or test data with supporting evidence are/is available.'
		6.13.1.1 the probability of the UA leaving the operational volume should be less than 10–4 /FH; and	*Please include a reference to the relevant chapter/section of the OM or indicate 'n/a'.*	

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		6.13.1.2 no single failure of the UAS or of any external system supporting the operation should lead to operation outside the ground risk buffer. *Note: The term 'failure' should be understood as an occurrence which affects the operation of a component, part, or element such that it can no longer function as intended. Errors may cause failures but are not considered to be failures. Some structural or mechanical failures may be excluded from the criterion if it can be shown that these mechanical parts were designed according to aviation industry best practices.*	*Please include a reference to the relevant chapter/section of the OM or indicate 'n/a'.*	or 'The UAS has a DVR demonstrating compliance with Light-UAS.2511.
		6.13.2 SW and AEH whose development error(s) could directly lead to operations outside the ground risk buffer should be developed according to an industry standard or methodology that is recognised as adequate by EASA. *Note 1: The proposed additional safety conditions cover both the integrity and the assurance levels.* *Note 2: The proposed additional safety conditions do not imply a systematic need to develop the SW and AEH according to an industry standard or methodology recognised as adequate by the competent authority. For instance, if the UA design includes an <u>independent</u> engine shutdown function that systematically prevents the UA from exiting the ground risk buffer due to single failures or an SW/AEH error of the flight controls from occurring, the intent of the conditions of point 6.13.1 above could be considered met.* *Note 3: For this PDRA, having adjacent airspace classified as ARC-c like a hospital heliport in uncontrolled airspace is also deemed subject to the*	*Please include a reference to the relevant chapter/section of the OM or indicate 'n/a'.*	

PDRA characterisation and conditions				
Topic	**Method of proof**	**Condition**	**Integrity[1]**	**Proof[2]**
		above additional conditions (in addition to ARC-d, as per SORA Step #9 (c)).		
Remote identification[1]	Self-declaration	6.14 The UAS bears a unique serial number compliant with standard ANSI/CTA2063-A-2019, *Small Unmanned Aerial Systems Serial Numbers*, 2019, according to Article 40(4) of Regulation (EU) 2019/945.	*Please describe how this condition is met.*	'I declare compliance.'
		6.15 The UAS is equipped with a remote identification system according to Article 40(5) of Regulation (EU) 2019/945.	*Please describe how this condition is met.*	'I declare compliance.'
Lights[2]	Self-declaration	6.16 If the UAS is operated at night, it is equipped with at least one green flashing light according to point UAS.SPEC.050(1)(l)(i) of the UAS Regulation.	*Please describe how this condition is met or indicate 'n/a'.*	'I declare compliance.' or 'n/a'

Table PDRA-G03.1 — Main limitations and provisions for PDRA-G03

[1] Applicable from 1 July 2022.

[2] Applicable from 1 July 2022.