

ENAC for standard scenarios supporting a declaration

IT-STS-02 – VLOS over a controlled ground area in a non-urban populated environment

General provisions

1. This standard scenario applies unmanned aircraft with the following characteristics:
 - Maximum dimension up to 3 metres;
 - MTOM < 25 kg including payload;
 - Be a rotorcraft or a tethered aircraft.
2. During flight, the unmanned aircraft shall be maintained within 120 m from the closest point of the surface of the earth. The measurement of distances shall be adapted according to the geographical characteristics of the terrain, such as plains, hills, mountains.
3. When flying an unmanned aircraft within a horizontal distance of 50 m from an artificial obstacle taller than 105 metres, 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.
4. The maximum height of the operational volume shall not exceed 30 m above the maximum height allowed in points 2) and 3).
5. During flight, the unmanned aircraft shall not carry dangerous goods.

UAS operations

UAS operations shall meet all of the following conditions:

- (a) be conducted with the unmanned aircraft kept in VLOS at all times;
- (b) be conducted with one unmanned aircraft system at a time;
- (c) be conducted by a remote pilot not in a moving vehicle;
- (d) be conducted without hand over the control of the unmanned aircraft to another command unit;
- (e) be conducted in accordance with the operations manual referred to in point a) of paragraph “Responsibilities of the UAS operator”;
- (f) be conducted over a controlled ground area comprising:
 - (i) for the operation of an untethered unmanned aircraft:
 - A. the flight geography area;
 - B. the contingency area, with its external limit(s) at least 10 m beyond the limit(s) of the flight geography area; and
 - C. the ground risk buffer, which shall cover a distance beyond the external limit(s) of the contingency area that meets at least the following parameters:

	Minimum distance to be covered by the ground risk buffer for untethered unmanned aircraft	
Maximum height above ground	with an MTOM up to 10 kg	with an MTOM above 10 kg
30 m	10 m	20 m
60 m	15 m	30 m

90 m	20 m	45 m
120 m	25 m	60 m

- (ii) for operation above an obstacle taller than 105 m, the table above shall be considering new entries +30m / +5 m to determine the relevant ground risk buffer.
- (iii) for operation of a tethered unmanned aircraft, a radius equal to the tether length plus 5 m and centred on the point where the tether is fixed over the surface of the earth.
- (g) be conducted in a portion of airspace in accordance with conditions and limitations of ATM-09 ENAC circular.
- (h) be conducted at a ground speed of less than 5 m/s in the case of untethered unmanned aircraft;
- (i) be conducted by a remote pilot who:
 - (i) holds a certificate of remote pilot for Critical Operations pursuant Art.22.1 ENAC Regulation “Mezzi Aerei a Pilotaggio Remoto” Rel.3 11/11/2019 and in adherence with Art. 5.3 ENAC Circular LIC-15A and
 - (ii) having passed an additional theoretical knowledge examination and having completed an VLOS-02 practical skill training, provided by the competent authority or by an entity recognised by the competent authority of a Member State, as referred to Art.5.4 ENAC Circular LIC-15A.

Those pilots holding a certificate of remote pilot for Critical Operations pursuant Art.22.2 ENAC Regulation “Mezzi Aerei a Pilotaggio Remoto” Rel.3 11/11/2019 achieved before the date of applicability of (EU) 2019/947 shall be allowed to conduct operations in adherence with the present scenario without meet the requirements of points (b).

UAS Technical features

VLOS operation has to be conducted with an unmanned aircraft with the following features:

- (a) during flight provide the remote pilot with clear and concise information on the height of the UA above the surface or the take-off point;
- (b) unless tethered, be equipped with a low speed mode selectable by the remote pilot and limiting the ground speed to not more than 5 m/s;
- (c) unless tethered, for UA with 4 kg < MTOM < 25 kg provide means for the remote pilot to terminate the flight of UA which shall:
 - (i) be easily accessible, testable and independent from the automatic flight control and guidance system; this applies also to the activation of this means;
 - (ii) force the descent of the UA and prevent its powered horizontal displacement.
- (d) unless tethered, provide the remote pilot with means to continuously monitor the quality of the command and control link and receive an alert when it is likely that the link is going to be lost or degraded to the extent of compromising the safe conduct of the operation, and another alert when the link is lost. In addition, provide the remote pilot with clear warning when the battery of the UA or its control station reached a low level such that the remote pilot has sufficient time to safely land the UA.
- (e) In the case of tethered UA, have a tensile length of the tether that is less than 50 m and a mechanical strength of no less than:
 - (i) for heavier-than-air aircraft, 10 times the weight of the aerodyne at maximum mass;

- (ii) for lighter-than-air aircraft, 4 times the force exerted by the combination of the maximum static thrust and the aerodynamic force of the maximum allowed wind speed in flight.
- (f) be equipped with lights for the purpose of controllability of the UA and conspicuity of the UA at night.

Responsibilities of the UAS operator

In addition to the responsibilities defined in ENAC Regulation, the UAS operator shall:

- (a) develop an operations manual including the elements defined in ENAC Linea Guida 2020&001-NAV Annex D;
- (b) define the operational volume and ground risk buffer for the intended operations, including the controlled ground area covering the projections on the surface of the earth within both the volume and the buffer;
- (c) ensure the adequacy of the contingency and emergency procedures through any of the following:
 - (i) dedicated flight tests;
 - (ii) simulations, provided that the representativeness of the simulation means is appropriate for the intended purpose;
- (d) develop an effective emergency response plan (ERP) suitable for the operation that includes at least:
 - (i) the plan to limit any escalating effects of the emergency situation;
 - (ii) the conditions to alert the relevant authorities and organisations;
 - (iii) the criteria to identify an emergency situation;
 - (iv) clear delineation of the duties of the remote pilot(s) and any other personnel in charge of duties essential to the UAS operation;
- (e) ensure that the level of performance for any externally provided service necessary for the safety of the flight is adequate for the intended operation;
- (f) define the allocation of the roles and responsibilities between the operator and the external service provider(s), if applicable;
- (g) upload updated information into the geo-awareness, if the function is installed on the UAS, when required by the UAS geographical zone for the intended location of operation;
- (h) ensure that, before starting the operation, the controlled ground area is in place, effective and compliant with the minimum distance defined in the table above and, when required, coordination with the appropriate authorities has been conducted;
- (i) ensure that, before starting the operation, all persons present in the controlled ground area:
 - (i) have been informed of the risks of the operation;
 - (ii) have been briefed or trained, as appropriate, on the safety precautions and measures established by the UAS operator for their protection;
 - (iii) have explicitly agreed to participate in the operation; and
- (j) ensure that the UAS is in compliance with the requested technical features.