



Inspectie Leefomgeving en Transport  
Ministerie van Infrastructuur en Waterstaat



## Standard Scenario (STS)

# UAS OPERATIONS IN CLOSE PROXIMITY AND ABOVE AN OBJECT WITHIN AND OVER CONGESTED AREAS

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# Introduction

In order to avoid time consuming appraisals of repetitive individual approvals, CAA-NL applies the methodology to define “Standard Scenarios” for a growing number of identified types of ConOps with known threats and acceptable risk mitigations. Standard Scenarios limit the administrative burden for both UAS operators and the authorities and stimulates innovation by lowering the entry level for certain types of operation.

A standard scenario includes a declaration that shall be signed by the operator’s accountable manager and submitted to the authorities. By submitting the declaration the operator indicates the covered operation will be conducted in accordance with the indicated general conditions and that all mitigation measures are in place and verified.

This methodology is in line with all known elements of upcoming EU drone legislation. Some underlying elements of this legislation and associated guidance material are still under construction. Therefore, until further notice, all operators wishing to conduct the operation covered by this standard scenario in The Netherlands, also need to obtain the specific approval of CAA-NL by applying for extension of the privileges under their RPAS Operators Certificate (ROC).

Dutch ROC-holders may send their applications for authorisations to [ILTDocumentManagement@ilent.nl](mailto:ILTDocumentManagement@ilent.nl). They should make sure that all required documents as mentioned in the electronic application form are included an updated operations manual.

This standard scenario covers the operation of UAS in close proximity and above an object within congested areas of cities, town and settlements, as described in the ConOps. Any part of an operation outside the ConOps and general conditions is not covered by the obtained privilege associated with this standard scenario. It is obvious however that UAS ops in close proximity to an object outside congested areas involves less risk than inside, and are therefore included.

Another standard scenario covering UAS operations over congested areas where the operational volume is not limited to the proximity a a particular object is under construction.

The contents of this standard scenario is based on JARUS guidelines on Specific Operations Risk Assessment (SORA), edition number 1.2 dated 31/05/2018, published by JARUS. All mitigation measures have been scrutinised by the Dutch Drone Expert Group, including experts of the Ministry of Infrastructure and Water Management, CAA-NL, ATC, trade associations and various knowledge institutions. This does not render the content of this document to be perfect. Any comment is welcome. Please send these to [maarten.bonnenma@ilent.nl](mailto:maarten.bonnenma@ilent.nl).

# Glossary of Terms

## **Abnormal procedure:**

Abnormal (or Contingency) procedures are procedures for a situation in which it is no longer possible to continue the flight using normal procedures but the safety of the aircraft or persons on board or on the ground is not in danger.

## **AGL:**

In aviation, atmospheric sciences and broadcasting, a height above ground level (AGL) is a height measured with respect to the underlying ground surface.

## **AIP:**

Aeronautical Information Publication (or AIP) is defined by the International Civil Aviation Organization as a publication issued by or with the authority of a state and containing aeronautical information of a lasting character essential to air navigation. For The Netherlands see <http://www.ais-netherlands.nl>.

## **Airspace Class C:**

Class C airspace is defined in SERA. In The Netherlands Class C airspace comprises:

- CTRs: Eelde, Maastricht, Rotterdam, Schiphol.
- Military CTR: Eindhoven.

## **Airspace Class D:**

Class D airspace is defined by SERA. In The Netherlands Class D comprises:

- Military CTRs: Deelen, De Kooy, De Peel, Gilze Rijen, Leeuwarden, Volkel, Woensdrecht.
- CTRs extending over the Netherlands territory: Niederrhein
- Military CTRs extending over the Netherlands territory: Kleine-Broegel

## **AMC:**

Acceptable Means of Compliance.

## **ATC:**

Air Traffic Control, Luchtverkeersleiding Nederland in The Netherlands.

## **Atypical Air Space:**

- Restricted Airspace
- Airspace so designated by the Competent Authority
- Airspace where manned aircraft normally cannot go (e.g. airspace within 100 ft. of buildings or structures)
- Airspace characterisation where the unmitigated encounter rate of manned aircraft and the UAS can be shown to be less than;
  - ❖ Encounter rates less than 1E-4 encounters per flight hour during the operation in
    - AEC 7, 8, 9, and 10
    - AEC 4 and 5, 1200 ft. AGL and below.
  - ❖ Encounter rates less than 1E-6 encounters per flight hour during the operation in
    - AEC 6a, 6b, and 6c
    - AEC 1, 2, and 3 below FL180

- AEC 4 and 5 above 1200 ft. AGL and below FL180

**C3 Link:**

The term "C3 link" encompasses:

- The Command and Control (C2) link, and
- Any communication link required for the safety of the flight.

**CAA-NL:**

Civil Aviation Authority The Netherlands, Inspectie Leefomgeving & Transport department Vergunningen Luchtvaart for The Netherlands

**ConOps:**

A user-oriented document that describes systems characteristics for a proposed system from a user's perspective. A CONOPS also describes the user organisation, mission, and objectives from an integrated systems point of view and is used to communicate overall quantitative and qualitative system characteristics to stakeholders.

**Congested areas:**

Any area in relation to a city, town or settlement that is largely used for housing, commercial activity or recreation. Draft versions of SORA and the Commission Implementing Regulation do not mention the term 'congested areas' and use 'populated environment' instead. However, populated environment is not defined in either document.

**Controlled ground area:**

A controlled ground area is defined as the intended UAS operational area that only involves active participants (if any).

**CTR:**

A control zone (CTR) in aviation is a volume of controlled airspace, normally around an airport, which extends from the surface to a specified upper limit (ICAO standard: 3000 feet), established to protect air traffic operating to and from that airport.

**EASA:**

The European Aviation Safety Agency or EASA is an agency of the European Union with responsibility for civil aviation safety. It carries out certification, regulation, and standardisation, and also performs investigation and monitoring. It collects and analyses safety data, drafts and advises on safety legislation, and coordinates with similar organisations in other parts of the world.

**ERP:**

Emergency Response Plan. Plan of actions to be conducted in a certain order or manner, in response to an emergency event.

**EVLOS:**

Extended Visual Line of Sight. A UAS operation whereby the PIC maintains an uninterrupted situational awareness of the airspace in which the UAS operation is being conducted, while the UAS and all relevant elements in the surrounding airspace are in direct sight of one or more observers. The PIC has a direct control of the UAS at all time.

**External services provider:**

Encompasses any service provider necessary for the safety of the flight , e.g.

- Communication Service Provider (CSP)
- UTM service provider

**External system:**

External systems supporting the operation are defined as systems not already part of the UAS but used to:

- Launch / take-off the UAS,
- Make pre-flight checks,
- Keep the UA within its operation volume (e.g. GNSS, Satellite Systems, Air Traffic Management, UTM).

External systems activated/used after the loss of control of the operation are excluded from this definition.

**HMI:**

Human Machine Interface. The interaction between a human (pilot) and a machine (UAS).

**ICAO:**

International Civil Aviation Organisation. A specialised agency of the United Nations. It codifies the principles and techniques of international air navigation and fosters the planning and development of international air transport to ensure safe and orderly growth.

**LAPL**

Light Aircraft Pilot License

**OSO**

Operational Safety Objectives are a series of prescribed mitigation measures at various levels of robustness. These can be found in Annex E to SORA.

**JARUS:**

Joint Authorities for Rulemaking on Unmanned Systems. An advisory body to various (European) regulators.

**LVNL:**

Luchtverkeersleiding Nederland. Air Traffic Control in The Netherlands.

**Medical Certificate:**

Certificate given to a (remote) pilot after have conducted a medical examination. Minimum standard for LAPL in The Netherlands.

**PIC**

Pilot in Command

**ROABL:**

Regeling op afstand bestuurdde luchtvaartuigen. Dutch regulation covering the professional operation of RPAS in the Netherlands.

**ROC:**

RPAS Operator Certificate. Dutch permit for organisations that professionally operate RPAS.

**RPA-L:**

Remotely Piloted Aircraft License.

**RPAS:**

Remotely Piloted Aircraft System. Also referred to as drone or UAS.

**SERA:**

Standardised European Rules of the Air. Common rules of the air and operational provisions regarding services and procedures in air navigation in the European Union.

**SORA:**

Specific Operations Risk Assessment. A means by which an aircraft operator is granted approval by certifying authorities to operate an unmanned aircraft system within the limitations set forth by the authorities in the Specific Category.

**UAS:**

Unmanned Aerial System. Also referred to as drone or RPAS.

**UDP:**

Uniform Daylight Period. The UDP is based on sunrise and sunset time at a specific geographical location and covers the period from 15 minutes before sunrise until 15 minutes after sunset.

**VFR:**

Visual Flight Rules. Rules for visual flight dictating parameters such as minimum visibility, visual contact with ground or water, and horizontal and vertical distance to clouds.

**VLOS:**

Visual Line Of Sight. VLOS is the pilot in command and the person manipulating the flight controls, keeping the UAS close enough to be capable of seeing the aircraft with vision unaided by any device other than corrective lenses, and seeing and avoiding all threats and hazards. Currently in The Netherlands, the maximum distance between the pilot and the UAS is 500 meters.

# ConOps; introduction

Operations with UAS's in close proximity and above an object within congested areas in The Netherlands are desirable. Numerous innovative UAS applications will be made possible by allowing these operations, serving not only the commercial interest of the operators but public interest as well. An example of this are inspections of buildings and rooftops by insurance companies. The deployment of UAS's and high-tech sensors for inspection and surveillance purposes is not only considered a cost effective means of collecting valuable data in hard to reach places, by itself the deployment is considered a mitigating measure that contributes to the safety of people involved in these otherwise dangerous operations.

UAS operations in close proximity and above an object within congested areas are currently not possible by restrictions in national regulations. However, the upcoming European regulations allow operations with UAS's over a 'populated environment' provided the requirements for mitigating measures resulting from an extensive risk assessment are met. SORA, under development by JARUS may be used as AMC. These requirements are specified in this Standard Scenario.

Basic criteria for professional UAS operations in The Netherlands are governed by the Dutch regulation 'Regeling op afstand bestuurd vliegtuig' and SERA. These dictate the following requirements:

for the operator:

- An approved Operations Manual
- An insurance in accordance with EC 785/2004
- ROC

for the Pilot:

- A licence (RPA-L)
- A medical certificate (LAPL)

for the UAS:

- A Certificate of Registration
- A special Certificate of Airworthiness

for the Operational Volume:

- Atypical airspace
- in or outside Congested Areas
- VLOS
- VFR conditions
- UDP

**Caution:** Other exemptions, special permits or Standard Scenario authorisations may also be required (e.g. operations within class C or D airspace or EVLOS operations). If in doubt, operators should contact the Dutch CAA (IL&T) for more information.



# Conops; General Conditions

SUMMERY OF GENERAL CRITERIA FOR UAS OPERATIONS ABOVE CONGESTED AREAS	
ConOps description	Operator/applicant provides additional details of deviations with a separate SORA to CAA-NL when operations are not fully covered by this narrative.
UAS dimension	Not more than 3 meters
UAS typical kinetic energy	<p>&lt; 34 KJ, implying rotorcraft with maximum total mass of 25kg at maximum 120 meters AGL.</p> <p>Kinetic energy depends on mass and speed. In order for the kinetic energy be less than 34 KJ a UAS with a MTOM of 25 kg may not fall at a greater speed than 52 m/s in case of engine failure. This speed is reached when falling from 120 m AGL, if the cross sectional area of the UAS is approximately 0,21 m<sup>2</sup>, or 46 cm x 46 cm. Most commercial rotorcraft have a more favourable seize-to-mass ratio, therefore it is safe to claim that the 'typical' kinetic energy of a UAS with a maximum mass of 25 kg at a maximum height of 120 meters, will not generate more energy than 34 KJ.</p>
UAS category	<p>Rotorcraft.</p> <p>This is a heavier-than-air flying machine that uses lift generated by rotor blades and includes helicopters. In The Netherlands this category is identified by the letter 'H'.</p> <p>Fixed wing and 'other aircraft' are not considered in this standard scenario in order to meet conditions associated with controlled ground area and staying within 30 meters of an object.</p>
Flight conditions	VLOS - VFR - UDP
Horizontal (air) speed	<p>Low speed.</p> <p>Speed of UAS that will not result in a crash outside the controlled ground area in case of total (engine) failure.</p>
SORA Airspace class	<p>Atypical Airspace</p> <p>For the purpose of this assessment Atypical Airspace is defined as airspace where manned aircraft normally cannot go. Therefore, operators shall keep the UAS within 30 meters distance from buildings or structures (objects) to sufficiently mitigate the the risk of encountering manned aircraft.</p>
SERA airspace classes	As atypical airspace implies the risk of encountering manned aircraft is low, the SERA airspace classification scheme has no particular impact on this standard scenario. However, other legal requirements associated with airspace classification still have to be met. UAS operations in class C and D airspace in The Netherlands, require the specific approval from the Dutch CAA.
Area in relation to ground risk class	Congested areas. When operating outside congested area less stringent mitigation measures may be sufficient.

## SUMMARY OF GENERAL CRITERIA FOR UAS OPERATIONS ABOVE CONGESTED AREAS

Ground conditions	<p>Controlled Ground Area.</p> <p>The intended UAS operational area only involves active participants (if any)</p> <p>Active participants are those persons directly involved with the operation of the UAS or fully aware that the UAS operation is being conducted near them. Active participants are fully aware of the risks involved with the UAS operation and have accepted these risks. Active participants are informed on and able to follow relevant effective emergency procedures and/or contingency plans.</p> <p>Non-Active participants are those persons who are located near a UAS operation and may or may not be aware that a UAS operation is being conducted. Non-active participants may or may not be aware of the risks associated with the operation and have not accepted these risks.</p>
National regulations	<p>Limitations and conditions in the 'Regeling op afstand bestuurd luchtvaartuigen' (Roabl) are adhered to, amongst which;</p> <ul style="list-style-type: none"> <li>• Operator <ul style="list-style-type: none"> <li>- RPAS Operator Certificate</li> <li>- an operations manual</li> <li>- insurance against liability</li> </ul> </li> <li>• UAS <ul style="list-style-type: none"> <li>- special Certificate of Airworthiness</li> <li>- Certificate of Registration</li> </ul> </li> <li>• pilot <ul style="list-style-type: none"> <li>- medical certificate</li> <li>- license: RPA-L</li> </ul> </li> </ul>

# Operator Requirements

## General

The requirements below are subtracted from the Operational Safety Objectives that resulted from the Specific Operations Risk Assessment (SORA) that was conducted for this Standard Scenario. Many OSO requirements are covered under the current national regulations in The Netherlands related to professional UAS operations; ROC, RPA-L and special Certificate of Airworthiness. Where this is the case, this will be stated in the 'Implementation' column below. Information about the implementation of any additional mitigation measures is identified by the header "Action:" and printed in *italic* letters.

Subject	Description SORA Requirement	Implementation
Controlled Ground Area	<p>Within SORA controlled ground area is an input parameter for determining the GRC and not a mitigation.</p> <p>A controlled ground area is defined as the intended UAS operational area that only involves active participants (if any)</p> <p>Operational area, as such, is not defined by SORA. However, the operational volume is, and includes the containment area. UAS leaving the containment area triggers the deployment of emergency procedures.</p>	<p><b>Action:</b></p> <p><i>Typical urban factors in relation to the physical characteristics of the controlled ground area shall be addressed in the Operations Manual. Factors that need to be included are (but are not limited to);</i></p> <ul style="list-style-type: none"> <li>• <i>height above ground (or water)</i></li> <li>• <i>horizontal speed of UAS</i></li> <li>• <i>wind speed and direction</i></li> <li>• <i>the effects of turbulence and the Venturi-effect</i></li> <li>• <i>the proximity and number of expected uninvolved people</i></li> </ul> <p><i>The specifics of these considerations and related procedures shall be covered in a section of the Operations Manual dedicated to flights in close proximity and above an object within congested areas.</i></p> <p><i>Controlled ground area shall include roof tops and balconies.</i></p>

Subject	Description SORA Requirement	Implementation
<p>C3 link performance is appropriate for the operation</p>	<p>The applicant determines that performance, RF spectrum usage and environmental conditions for C3 links are adequate to conduct safely the intended operation.</p> <p>The UAS remote pilot has the means to continuously monitor the performance of C3 to ensure the adequacy of that performance to the operation requirements.</p>	<p>Existing national airworthiness requirements do not contain specific elements related to flights in congested areas.</p> <p><b>Action:</b>  <i>Typical urban factors in relation to C3 link performance shall be considered and included in (technical) specification requirements in the relevant section of the Operations Manual. Equipment used for flights in congested areas shall meet this requirements.</i></p> <p><i>Urban factors that shall be addressed are (not limited to);</i></p> <ul style="list-style-type: none"> <li>• data security, spoofing, hacking</li> <li>• C2 issues related to WIFI signals</li> <li>• effects of failures and redundancy of system</li> </ul>

Subject	Description SORA Requirement	Implementation
Safe design	<p>No probable failure of the UAS or any external system supporting the operation leads to operation outside of the operation volume.</p> <p>It can <i>reasonably</i> be expected that a fatality will not occur from any probable failure of the UAS or any external system supporting the operation.</p>	<p><b>Partly covered by Dutch regulations related Airworthiness Requirements</b></p> <p><i>A design and installation appraisal shall be made available. In particular, the design and installation features (independence, separation and redundancy) allowing to meet the low integrity criteria shall be explained.</i></p> <p><i>All probable failures related to satellite navigation systems shall also be considered, including total failure.</i></p> <p><i>A single failure may not lead to a catastrophic failure. Besides other (non technical) mitigation measures, at least two of the following features shall be available:</i></p> <ul style="list-style-type: none"> <li><i>a) geofence: GPS controlled maximum range and height/altitude (functioning GPS and magnetic compass, 'low' Kp) (if combined with option b, the combination is considered as one feature)</i></li> <li><i>b) Return to Home capability (if combined with option a, the combination is considered as one feature)</i></li> <li><i>c) tethering (acceptable as only measure when on-board battery power is limited to power required for a controlled landing in case of ground power/tether failure)</i></li> <li><i>d) manual override capability in case of automatic (GPS/GNSS / compass / altimeter) system failure or unexpected behaviour</i></li> <li><i>e) automatic landing when GPS/GNSS fails</i></li> <li><i>f) kill-switch (forced landing, straight down)</i></li> </ul>

Subject	Description SORA Requirement	Implementation
<p>External services supporting UAS operations are adequate to the operation</p>	<p>The applicant ensures that the level of performance for any externally provided service necessary for the safety of the flight is adequate for the intended operation.</p> <p>Roles and responsibilities between the applicant and the external service provider are defined.</p>	<p><b>Action:</b></p> <p><i>In case the operator uses external service other than governmental entities (e.g. KNMI, LVNL, etc.) operator shall ensure the information presented by used resources is correct and reliable. In particular information presented by flight management apps, when used, shall be considered.</i></p> <p><i>The applicant declares that the requested level of performance for any externally provided service necessary for the safety of the flight is achieved (without evidence being necessarily available).</i></p>

## Operations Manual and Procedures

Subject	Description SORA Requirement	Implementation
Emergency Response Plan (ERP)	<p>An ERP should be defined by the applicant to cope with cases of loss of control of the operation, i.e. cases of emergency situations where the operation is in an unrecoverable state.</p> <p>The ERP:</p> <ul style="list-style-type: none"> <li>- is suitable for the situation;</li> <li>- defines criteria to identify an emergency situation;</li> <li>- reduces the risk to people on the ground (by limiting the escalating effect)</li> <li>- is practical to use;</li> <li>- clearly delineates Remote Crew member(s) duties.</li> </ul> <p>The competency-based theoretical and practical training proposed by the applicant covers the ERP and includes related proficiency requirements and training recurrences.</p>	<p><b>Covered by Dutch regulations related to Operations Manual and Airworthiness Requirements</b></p> <p>The adequacy of the procedures is proved through:</p> <ul style="list-style-type: none"> <li>- Dedicated flight tests, or</li> <li>- Simulation, provided that the representativeness of the simulation means is proven for the intended purpose with positive results.</li> </ul> <p>Any flight test performed to validate the procedures cover the complete flight envelope or be proven to be conservative.</p> <p>The procedures, flight tests and simulations are validated by a competent third party.</p> <p>The training syllabus is validated by a competent third party.</p> <p>Remote crew competencies are verified by a competent third party.</p>

Subject	Description SORA Requirement	Implementation
VLOS Deconfliction Scheme	The documented VLOS de-confliction scheme shall be provided to the competent authority for approval.	<p><b>Covered by Dutch regulations related to general UAS operations and the Operations Manual</b></p> <p>The operator should have a documented VLOS de-confliction scheme, including right-of-way (article 15a Roabl), in which the operator explains which methods will be used for detection and what the criteria are that will be applied for the decision to avoid incoming traffic. In case the remote pilot relies on detection by observers, the use of phraseology will have to be described as well.</p>
Ensure the operator is competent and/or proven (e.g. ROC)	The applicant has knowledge of the UAS being used and has relevant operational procedures including at least: checklists, maintenance, training, responsibilities, and duties.	<p><b>Covered by Dutch regulations</b></p> <p>A competent third party performs inspection prior to first operation and checks recurrently the operator competences</p>
UAS maintained by competent and/or proven entity (e.g. industry standards)	<p>The UAS maintenance procedures are defined and cover at least the UAS designer instructions and requirements.</p> <p>The maintenance team (i.e. the personnel authorized to conduct maintenance on the UAS in line with the maintenance procedures) is defined.</p>	<p><b>Mostly covered by Dutch regulations related to Operations Manual and Airworthiness Requirements</b></p> <p>The maintenance procedures are documented. The maintenance conducted on the UAS are document in a maintenance log.</p> <p><b>Action:</b>  <i>The maintenance team training to maintenance procedures is self-declared (with evidence available).</i></p>



Subject	Description SORA Requirement	Implementation
<p>Inspection of the UAS (product inspection) to ensure consistency to the ConOps</p>	<p>The remote crew performs pre-flight inspection to ensure the UAS is in a condition for safe operation and conforms to the approved concept of operations.</p>	<p><b>Covered by Dutch regulations related to Operations Manual and Airworthiness Requirements</b></p> <p>Pre-flight inspection procedure is documented.</p> <p>The remote crew's training to the pre-flight inspection procedure is self-declared (with evidence available).</p>

Subject	Description SORA Requirement	Implementation
Operational procedures	<p>Operational procedures appropriate for the specificities of the operation to be approved are defined and cover at least the following elements:</p> <ul style="list-style-type: none"> <li>- Flight planning,</li> <li>- Pre and post-flight inspections,</li> <li>- Procedures to evaluate environmental conditions before and during the mission,</li> <li>- Procedures to cope with adverse operating conditions</li> <li>- Normal procedures,</li> <li>- Contingency procedures (to cope with abnormal situations),</li> <li>- Emergency procedures (to cope with emergency situations), and</li> <li>- Occurrence reporting procedures.</li> </ul> <p>Normal, Abnormal and Emergency procedures are compiled in an Operation Manual.</p> <p>The limitations of the external systems supporting UAS for safe operations are defined in an Operation Manual.</p> <p>Operational procedures involve the remote pilot to take manual control when the UAS is usually automatically controlled.</p> <p>Operational procedures take considerations of human errors.</p>	<p><b>Mostly covered by Dutch regulations related to Operations Manual, Crew Qualification and Airworthiness Requirements</b></p> <p>The adequacy of the Contingency and Emergency procedures is proved through:</p> <ul style="list-style-type: none"> <li>- Dedicated flight tests, or</li> <li>- Simulation, provided that the representativeness of the simulation means is proven for the intended purpose with positive results.</li> </ul> <p>Operational procedures are validated against recognised standards.</p> <p><b>Action:</b>  <i>Contingency procedures and procedures taking into account adverse operating conditions have to be described in the Operations Manual, including urban related elements like procedures related to object generated turbulence and the Venturi effect.</i></p>

Subject	Description SORA Requirement	Implementation
Multi crew coordination	<p>Procedure(s) to ensure a coordination between the crew members with robust and effective communication channels is (are) available and covers at minimum:</p> <ul style="list-style-type: none"> <li>- assignment of tasks to the crew,</li> <li>- establishment of a step-by-step communication.</li> </ul> <p>Remote Crew training covers multi crew coordination.</p>	<p><b>Covered by Dutch regulations related to Operations Manual</b></p> <p>The adequacy of the procedures and checklists is declarative.</p> <p>Training is self-declared (with evidence available)</p> <p>Procedures for step-by-step communication have to be described.</p>
Remote crew is fit to operate	<p>The applicant has a policy defining how the remote crew can declare themselves fit to operate before conducting any operation.</p>	<p><b>Covered by Dutch regulations including those related to Operations Manual</b></p> <p>The remote crew declare they are fit to operate before conducting any operation based on the policy defined by the applicant.</p>
Environmental conditions for safe operations defined, measurable and adhered to	<p>Environmental conditions for safe operations are defined and reflected in the flight manual or equivalent document.</p> <p>Procedures to evaluate environmental conditions before and during the mission are available and include assessment of meteorological conditions (METAR, TAF, etc.) with a simple record system.</p> <p>Training covers assessment of meteorological conditions.</p>	<p><b>Covered by Dutch regulations including those related to Operations Manual, Crew Qualification and Airworthiness Requirements</b></p> <p>Procedures are not required to be validated against a recognized standard.</p> <p>The adequacy of the procedures and checklists is declarative.</p> <p>Training is self-declared (with evidence available).</p>

## Crew Qualification

Subject	Description SORA Requirement	Implementation
Remote Crew Training	<p>The competency-based theoretical and practical training should consist of the following elements:</p> <ul style="list-style-type: none"> <li>- Basic competencies from the competency framework necessary to ensure a safe flight: <ul style="list-style-type: none"> <li>a) Application of operational procedures (normal, contingency and emergency procedures, flight planning, pre-flight and post-flight inspections...)</li> <li>b) Communication</li> <li>c) RPA flight path management, automation</li> <li>d) Leadership, teamwork and self-management</li> <li>e) Problem solving and decision-making</li> <li>f) Situational awareness</li> <li>g) Workload management</li> <li>h) Coordination and handover</li> </ul> </li> <li>- A rating training specific for the operation.</li> </ul>	<p><b>Partly covered by Dutch regulations related to Crew Qualification</b></p> <p>Current Dutch crew qualification requirements do not include flights over congested areas.</p> <p>Training is self-declared (with evidence available)</p> <p><b>Action:</b>  <i>Elements of training related to urban drone operations shall be included in an internal crew qualification scheme. This training shall include all particulars addressed by this standard scenario.</i></p> <p><i>The training programme and internal qualification requirements shall be incorporated in the company's Operations Manual</i></p>

## Other specifics

Subject	EU Basic Regulation	Implementation (Dutch)
Privacy	<p>If necessary to mitigate risks pertaining to safety, privacy, protection of personal data, security or the environment, arising from the operation, the unmanned aircraft shall have the corresponding and specific features and functionalities which take into account the principles of privacy and protection of personal data by design and by default.</p> <p>Article 1.3 BR Annex IX</p>	<p>Om aan de privacywetgeving te voldoen moet rekening gehouden worden met artikel 10 van de Grondwet. Hierin is het recht op privacy geregeld: 'Ieder heeft, behoudens bij of krachtens de wet te stellen beperkingen, recht op eerbiediging van zijn persoonlijke levenssfeer.' Een foto maken van een persoon of diens huis/tuin kan gezien worden als inbreuk op de persoonlijke levenssfeer. Wanneer echter toestemming wordt gegeven voor het maken en gebruiken van de foto is er geen sprake meer van inbreuk.</p> <p>De Algemene verordening gegevensbescherming (AVG) geeft aan dat een persoonsgegeven alle informatie is over een geïdentificeerde of identificeerbare natuurlijke persoon. Dit betekent dat informatie ofwel direct over iemand gaat, ofwel naar deze persoon te herleiden is. Dit kunnen bijvoorbeeld kentekens van auto's, maar ook adressen zijn.</p> <p>Er zijn verschillende redenen die het verwerken van persoonsgegevens rechtvaardigen. Dit zijn:</p> <ul style="list-style-type: none"> <li>• Toestemming</li> <li>• Voldoen aan een overeenkomst</li> <li>• Wettelijke verplichting</li> <li>• Vitale belangen</li> <li>• Algemeen belang</li> <li>• Gerechtigd belang</li> </ul> <p>Een UAS operator mag persoonsgegevens verwerken op gronde van het voldoen aan een overeenkomst met klanten.</p> <p>Foto's van personen kunnen in bepaalde gevallen echter vallen onder de categorie biometrische gegevens en zijn in dat geval bijzondere persoonsgegevens. Hier gelden andere regels voor. Het voldoen aan een overeenkomst is in dat geval niet voldoende reden om deze gegevens te mogen verwerken. Een UAS operator kan gebruik maken van overeenkomsten met zowel de eigenaar van het gebouw als de gebruiker van het gebouw waarin toestemming gegeven wordt dat afbeeldingen waarop persoonsgegevens te zien zijn, verwerkt mogen worden. Toestemming is in alle gevallen gegronde reden om persoonsgegevens te mogen verwerken.</p> <p>Het gebruik van een controlled ground area voorkomt dat onbevoegde mensen zich in het vlieggebied begeven. Hiermee wordt ook het risico dat mensen tegen hun wil (hoewel onbedoeld) gefotografeerd worden.</p> <p>Op elke gemaakte foto moet een blurringstool gebruikt worden om ramen, gezichten, kentekens en andere persoonsgegevens onherkenbaar te maken. Echter valt het verwijderen van persoonsgegevens ook onder de verwerking van persoonsgegevens. Hierom is alsnog een gegronde reden nodig om deze persoonsgegevens te verwerken.</p>

# Application for Authorization

Standard Scenarion (STS):

This standard scenario covers the operation of UAS operations in close proximity and above an object within and over congested area as described in the ConOps. Any part of an operation outside the ConOps and general conditions is not covered by the obtained privilege associated with this standard scenario.

Version: STS-CAA-NL-CLOSEPROX-V1.2

Restriction of declaration:

As EU regulations on drones are not implemented yet, Dutch law is still in effect and governing privileges related to the professional use of drones. This implies that a declaration related to this standard scenario, by itself does not qualify the operator to legally operate according this scenario. The privilege may be obtained by extending the existing ROC.

## **Declaration**

With this declaration I assure that all safety measures identified by this standard scenario have effectively been carried out and implemented by my organisation,

Name Accountable Manager:

Name of Applicant/Operator:

RPAS Operator Certificate Nr.:

Signature:

Place:

Date: