# THE DRONE REGULATORY ENVIRONMENT

# 1 THE BASICS

# The basics

Since January 2021, the new European regulation (EU IR 2019/947) concerning drones entered into force, also in Belgium. This regulation provided a totally new framework which replaced EU-wide all national legislation as we used to know before.

The new rules can be split in two main pieces:

(1) the EU-wide do's-and-don'ts that apply to your flight where ever you are and

(2) those still defined at national level through a concept called GeoZones. In case you plan to fly in one of those GeoZones you will also need to comply with access conditions that only apply there.

By the way: just make sure you comply with both at all times.

Feel free to get familiar with it all, piece by piece, and let's get started with the basics.

**FLIGHT**

A flight is and will always remain a flight of course but under the current EU rules **flights are categorized in three very distinct categories: Open, Specific or Certified**. Before take-off, you'll have to figure out what it is you want to do and what drone you plan on using so you can figure out which flight category applies to your flight. Depending on that, things might look quite different and both the operator as well as the pilot will need to comply to a totally **different set of do's-and-don'ts**. Flights in the Open category are for example always limited to maximum height of 120m.

# The basics

**OPERATOR**

**The operator is the legal entity responsible for the operation** and therefor needs to make sure all is done safely while respecting all applicable rules. That's the entity which as of January 1st **needs to be registered as drone operator** in the country it resides in. By the way, **it could be a company employing one or more remote pilots but in case a drone operator is a person,** he or she may at the same time also be the remote pilot. It's for example with the operator that you would find an Operational Authorisation for flights in the Specific category.

**PILOT**

The remote pilot is the **person that actually controls the drone** during the flight. Depending on the flight category he or she will need to have a different set of **required competencies**. For flights in the subcategory Open A1 an on-line training and examination for example suffices while flights in the Certified category require the pilot to be fully licensed.

**AUTHORITY**

The **Competent Authority (CA) is the official national organisation** appointed by each EU Member State responsible for o.a. issuing operator registrations, confirming operational declaration and issuing operational authorisations. In Belgium that is the Belgian Civil Aviation Authority known under the name Directoraat Generaal LuchtVaart (DGLV) in Dutch or Directorat General du Transport Aérien (DGTA) in French.

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

Flight
(vlucht)

Operator
(exploitant)

Pilot
(pilot)

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Get your registration number BELxyz

**Operator (exploitant)**

Get the required competencies

**Pilot (pilot)**

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# EU legal basis

1. Implementing act (IA 947)
   Requirements related to **operation** and **registration**

2. Delegated act (DA 945)
   Requirements related to **CE marking**, **technical requirements**, **maintenance** of UAS and **third-country operators**

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# THREE CATEGORIES DRONE OF FLIGHTS

**OPEN**

**SPECIFIC**

**CERTIFIED**

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# THREE CATEGORIES DRONE OF FLIGHTS

**OPEN**

“ BUY & FLY ”

**SPECIFIC**

Declaration
or
Operational authorisation
or
Light UAV Certificate (LUC)

**CERTIFIED**

Rules equivalent to manned aviation

Whatever the category:
ALWAYS make sure you ALSO comply with the Geo-Zone requirements

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# EU legislation flight category details

Including **automated** flights

## OPEN

- Low risk
- No operational authorisation or declaration required by operator before start of flight
- VLOS, 25kg MTOM, 120m AGL

Including **BVLOS** & **autonomous** flights

## SPECIFIC

- Increased risk
- Operational authorisation required by CA based on SORA

  **or** Declaration suffices for Standard Scenario's (STS-x)

  **or** LUC with self-authorisation

Think of Air Taxi's
or
Cargo over dense urban area

## CERTIFIED

- Risk as manned aviation
- Certified operator
- Certified UAS with CoA
- Licensed pilot

For each of these categories
there are minimum pilot competencies !

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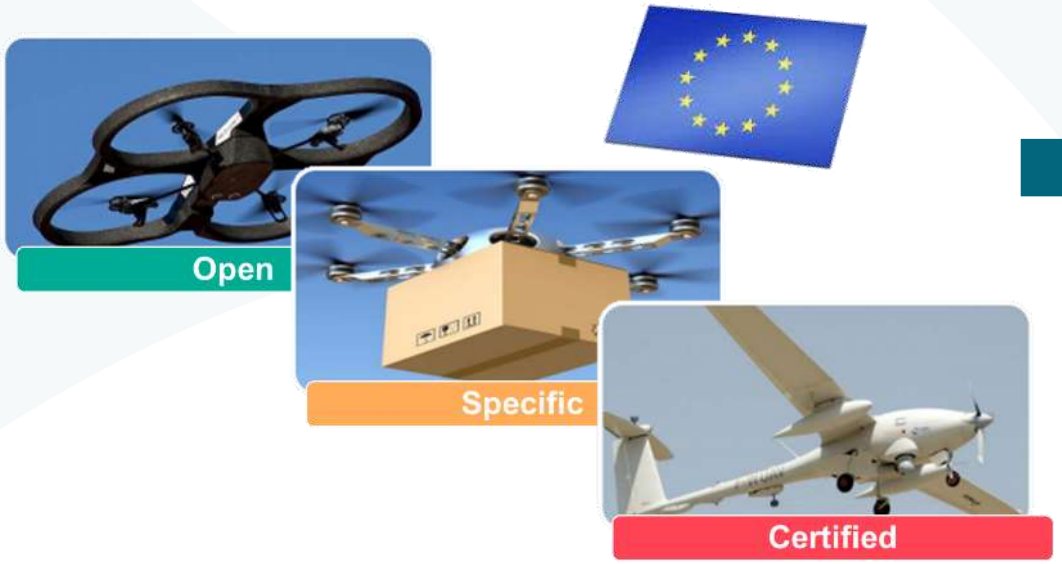
# SUMMARY OF WHAT TO KEEP IN MIND

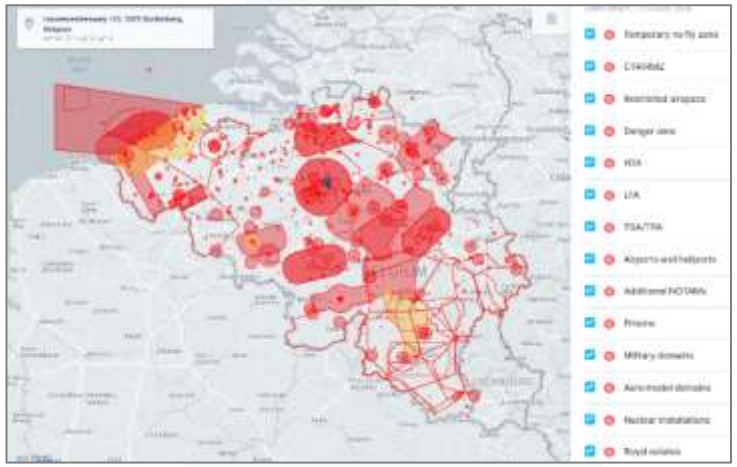
## NEED TO RESPECT

### Generic rules




### On top of generic rules:

### National GeoZones



- Aerodrome zones (incl. heliports)
- P/D/R + Military zones
- CTRs
- Seaports
- UAS test-zones
- ….

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# 2 “OPEN” FLIGHT CATEGORY

# New EU legislation as from January 1st

Including **automated** flights

## OPEN

- Low risk
- No operational authorisation or declaration required by operator before start of flight
- VLOS, 25kg MTOM, 120m AGL

Including **BVLOS** & **autonomous** flights

## SPECIFIC

- Increased risk
- Operational authorisation required by CA based on SORA

  **or** Declaration suffices if Standard Scenario (STS-x)

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Think of Air Taxi's
or
Cargo over dense urban area

## CERTIFIED

- Risk as manned aviation
- Certified operator
- Certified UAS with CoA
- Licensed pilot

Whatever the category:
there are minimum pilot competencies !

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# EU legislation flight category details

Including **automated** flights

## OPEN

- Low risk
- No operational authorisation or declaration required by operator before start of flight
- VLOS, 25kg MTOM, 120m AGL

Including **BVLOS** & **autonomous** flights

## SPECIFIC

- Increased risk
- Operational authorisation required by CA based on SORA

  or Declaration suffices for Standard Scenario's (STS-x)

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Think of Air Taxi's
or
Cargo over dense urban area

## CERTIFIED

- Risk as manned aviation
- Certified operator
- Certified UAS with CoA
- Licensed pilot

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# OPEN category : NEW EU LEGISLATION

**OPEN**

- Low risk
- No operational authorisation or declaration required by operator before start of flight
- VLOS, 25kg MTOM, 120m AGL

Including **automated** flights

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# OPEN category

**OPEN**

No operational authorisation or declaration required

## UAS

<25kg MTOM with 3 possibilities:

- **C0, C1,C2,C3 or C4**
- **privately build**
- **certain (older) non-Cx drones**

## Operation

VLOS only (except follow-me or using UA observer)

Max 120m AGL

3 subcategories:

- **“over people” (A1),**
- **“close to people” (A2)**
- **“far from people” (A3)**

Not carry dangerous goods and no dropping of any material

Not over assemblies of people

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# OPEN category

OPEN

**Open A1/C0**
**“Over people”**

## Drone:

- C0 drone (by default <250g)
- privately build <250g
- Non Cx-compliant drone <250g
  (put on the market before January 1st 2024)

## Flight:

- You can fly over people (involved or not)
- No flying over “assemblies of people”

No need for operator registration (unless drone has a camera), no need for geo-awareness and remote-ID on the drone

# OPEN category

OPEN

**Open A1/C1**

**“Over people”**

**Drone:**

C1 drone (by default <900g)

**Flight:**

You can fly over involved people (= with explicit OK)

In case of unexpected flight over uninvolved people, the pilot shall reduce that time as much as possible

No flying over assemblies of people

Operator needs to be registered and the drone by default has geo-awareness and remote-ID

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# OPEN category

OPEN

## DJI DRONE MAVIC 3


**Open A1/C1**

**“Over people”**

**Flight:**

You can fly over involved people (= with explicit OK)

In case of unexpected flight over uninvolved people, the pilot shall reduce that time as much as possible

No flying over assemblies of people

Operator needs to be registered and the drone by default has geo-awareness and remote-ID

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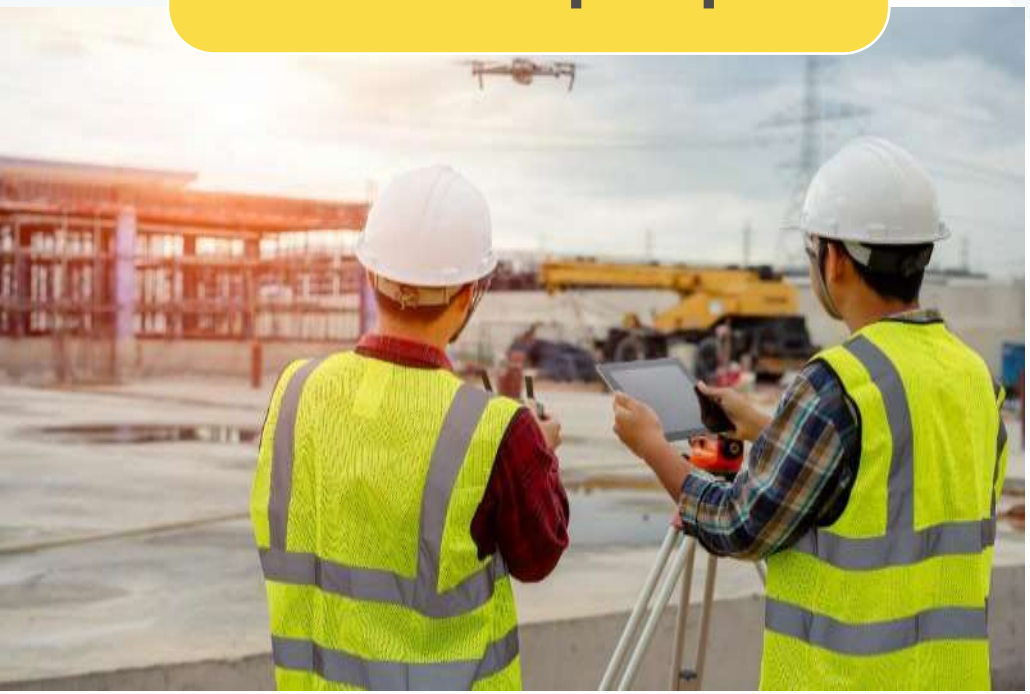
# OPEN category

**OPEN**

## Open A2
## “Close to people”



### Drone:

C2 drone (by default <4kg)

### Flight:

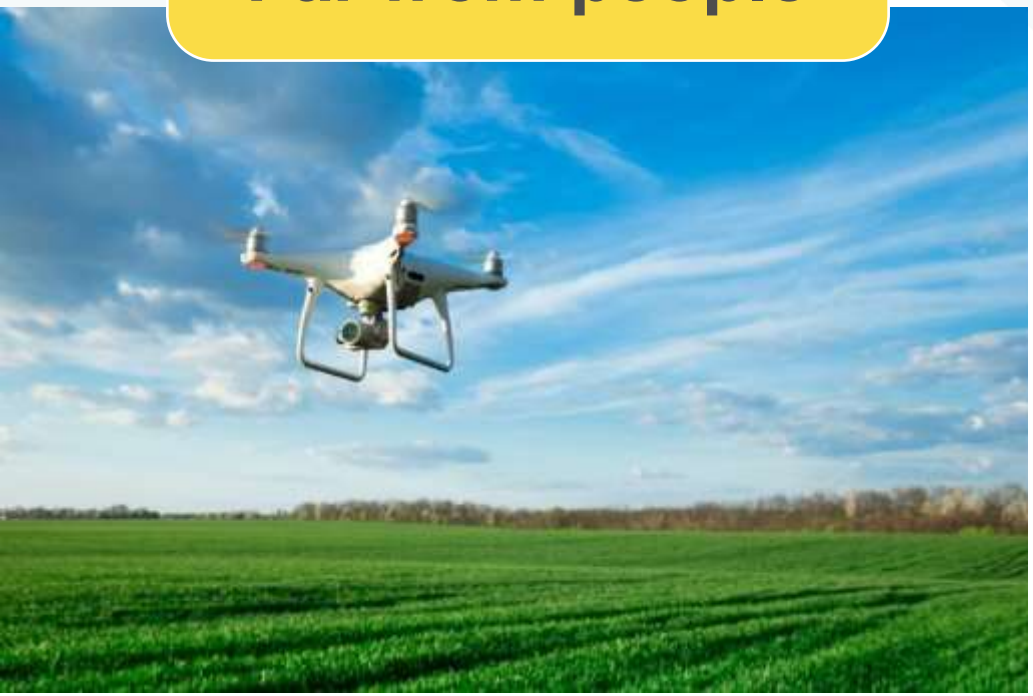
- You can fly over involved people (= with explicit OK)
- No flying over uninvolved people and keep horizontal distance of at least 30m from them, or distance of up to 5m when low-speed mode function is activated
- No flying over assemblies of people

Operator needs to be registered and the drone by default has geo-awareness and remote-ID

# OPEN category

**OPEN**

## Open A3
## “Far from people”



### Drone:

C2 drone (by default <4kg)

C3 drone(by default <25kg and <3m)

C4 aero-model drone (by default <25kg)

Privately build <25kg

Non-Cx compliant drones <25kg
(put on the market before January 1st 2024)

### Flight:

- You can fly over involved people (= with explicit OK) but only fly in an area where the pilot reasonably expects that no uninvolved person will be ***endangered***
- Keep a safe horizontal distance of 150m from residential, commercial, industrial or recreational areas

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# OPEN category

OPEN

**Open A3**

**“Far from people”**

- How do I make sure that no uninvolved person will be ***endangered?***

**AMC states this:**

*A minimum horizontal distance from the person that is passing the area could be estimated as follows:*

*(1) no less than 30 m;*

*(2) no less than the height (‘1:1 rule’, i.e. if the UA is flying at a height of 30 m, the distance of the UA from the uninvolved person should be at least 30 m), and*

*(3) no less than the distance that the UA would cover in 2 seconds at the maximum speed (this assumes a reaction time of 2 seconds).*

*This minimum horizontal distance is intended to protect people on the ground, but can be extended to property and animals.*

# OPEN category

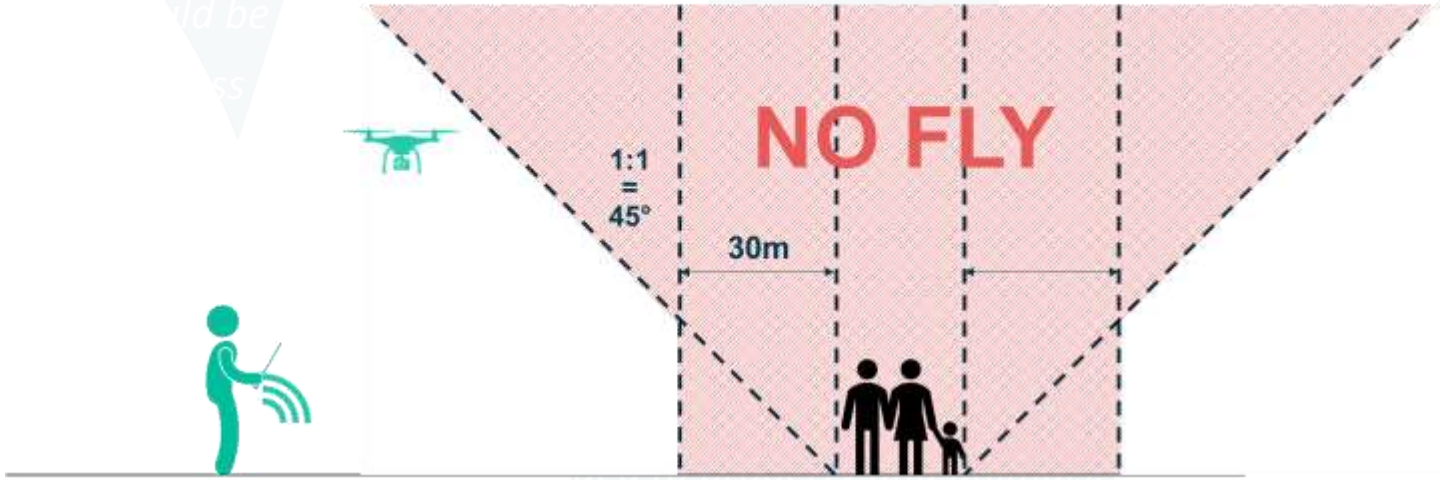
OPEN

**Open A3**

**“Far from people”**

- How do I make sure that no uninvolved person will be ***endangered?***

1:1 rule with minimum of 30m



# OPEN category


## Pilot responsibility:

- **Explicit OK** from **all involved people** after risk briefing (otherwise they are consider ‘uninvolved’)
- Keep VLOS, eventually through help of an observer (e.g. FPV)
- Not fly close to or inside area where an emergency response effort is ongoing (unless approval)

# How about FPV?

OPEN

No worries, you're still flying VLOS **for as long as there is an 'UA observer' standing next to you** who helps you to keep the drone in his un-aided VLOS

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# OPEN category overview

**OPEN**

**OPEN CATEGORY: not over assemblies of people; up to 120m above the ground***
**VLOS/EVLOS only, except in follow-me mode within 50m distance from pilot; not drop any material**

| Operation | | Remote pilot competency | UAS | | | | UAS operator registration |
|---|---|---|---|---|---|---|---|
| Sub-Cat. | Area of operation | | Class | MTOM / Joule | Main technical requirements (CE marking) | Remote ID & geo-awareness | |
| A1 Fly over people | You can fly over uninvolved people (not over assemblies) | • Minimum age to be set by Member States between 12 and 16<br>• No minimum age for privately build drone or true toy drone marked as C0<br>• Familiarised with the user's manual | Non-Cx compliant** | < 250g | N/A | No | No, not for true toy drones or for as long as not equipped with a camera<br>250g or 80J impact |
| | | | Privately build | | Max speed 19m/s | | |
| | | | **C0** ('toy drone') | | Max speed 19m/s, max attainable height above the take-off point of 120m, no sharp edges, follow-me within max 50m | | |
| | You cannot intentionally fly over uninvolved people | • Minimum age to be set by Member States between 12 and 16<br>• Familiarised with the user's manual<br>• On-line theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*) | **C1** ('hobby drone') | < 80J impact at $V_{term}$ or <900g | Max speed 19m/s, max height above the take-off point of 120m or selectable and visualised height limitation, no sharp edges, follow-me within max 50m, mechanical strength, lost-link management, geo-awareness pilot warning, battery warning, be equipped with green lights, max sound power level | Yes + unique SN for identification | Yes |
| A2 Fly close to people | You cannot fly over uninvolved people and need to keep a safe horizontal distance of 30m from them, reduced to 5m when flying in low-speed mode | • Minimum age to be set by Member States between 12 and 16<br>• Familiarised with the user's manual<br>• Hold a certificate of remote pilot competency after:<br>  • Online examination (idem as for cat A1/C1)<br>  • Declaring practical self-training<br>  • Additional cat A2 theoretical knowledge examination (with *Certificate of remote pilot competency*) | **C2** ('prosumer drone') | < 4kg | Max height above the take-off point of 120m or selectable and visualised height limitation, no sharp edges, mechanical strength, lost-link management, geo-awareness pilot warning, low-speed mode (3m/s), battery warning, max sound power level, be equipped with green lights, protected C2 link | | |
| A3 Fly far from people | You should:<br>• fly in an area where it is reasonably expected that no uninvolved people will be endangered<br>• keep a safe horizontal distance of 150m from residential, commercial, industrial, or recreational areas | • Minimum age to be set by Member States between 12 and 16<br>• Familiarised with the user's manual<br>• On-line theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*)<br>(idem as for cat A1/C1) | **C0 C1 C2** | See rows above | See rows above | | |
| | | | **C3** ('professional') | < 25kg<br>< 3m in size | Max height above the take-off point of 120m or selectable and visualised height limitation, mechanical strength, lost-link management, geo-awareness pilot warning, battery warning, max sound power level, be equipped with green lights, protected C2 link | | |
| | | | **C4** (aero-model) | < 25kg | No automatic flight, lost-link management | if required by zone of operations | |
| | | | Privately build or non-Cx compliant** | | N/A | | |

*: Exception: when flying a drone within a horizontal distance of 50m from an artificial obstacle taller than 105m, the maximum height of the operation may be increased up to 15 meters above the height of the obstacle at the request of the entity responsible for the obstacle

**: Only valid when the non-Cx drone has been put on the market by its manufacturer before January 1st 2024

JDM16032022

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# OPEN category overview

OPEN

**OPEN CATEGORY: not over assemblies of people; up to 120m above the ground***
**VLOS/EVLOS only, except in follow-me mode within 50m distance from pilot; not drop any material**

| Operation | | Remote pilot competency | UAS | | | | UAS operator registration |
|---|---|---|---|---|---|---|---|
| Sub-Cat. | Area of operation | | Class | MTOM / Joule | Main technical requirements (CE marking) | Remote ID & geo-awareness | |
| A1 Fly over people | You can fly over uninvolved people (not over assemblies) | • Minimum age to be set by Member States between 12 and 16<br>• No minimum age for privately build drone or true toy drone marked as C0<br>• Familiarised with the user's manual | Non-Cx compliant** | < 250g | N/A | | No, not for true toy drones or for as long as not equipped with a camera<br>250g or 80J impact |
| | | | Privately build | | Max speed | | |
| | | | C0 ('toy drone') | | | | |
| | You cannot intentionally fly over uninvolved people | • Minimum age to be set by Member States between 12 and 16<br>• Familiarised with the user's manual<br>• On-line theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*) | C1 ('hobby drone') | <900g | Max height above the take-off point of 120m or selectable and visualised height limitation, no sharp edges, follow-me within max 50m, mechanical strength, lost-link management, geo-awareness pilot warning, battery warning, be equipped with green lights, max sound power level | | |
| A2 Fly close to people | You cannot fly over uninvolved people and need to keep a safe horizontal distance of 30m from them, reduced to 5m when flying in low-speed mode | • Minimum age to be set by Member States between 12 and 16<br>• Familiarised with the user's manual<br>• Hold a certificate of remote pilot competency after:<br>  • Online examination (idem as for cat A1/C1)<br>  • Declaring practical self-training<br>  • Additional cat A2 theoretical knowledge examination (with *Certificate of remote pilot competency*) | C2 ('prosumer drone') | < 4kg | Max height above the take-off point of 120m or selectable and visualised height limitation, no sharp edges, mechanical strength, lost-link management, geo-awareness pilot warning, low-speed mode (3m/s), battery warning, max sound power level, be equipped with green lights, protected C2 link | Yes + unique SN for identification | Yes |
| A3 Fly far from people | You should:<br>• fly in an area where it is reasonably expected that no uninvolved people will be endangered<br>• keep a safe hor… distance of 150… residential, commercial, in… or recreational | • Minimum age to be set by Member States between 12 and 16<br>• Familiarised with the user's manual | C0<br>C1<br>C2 | See rows above | See rows above | | |
| | | | C2 | < 25kg | Max height above the take-off point of 120m or selectable and visualised height limitation, mechanical strength, lost-… management, geo-awareness pilot warning, battery …ning, … power level, be equipped with green …ts, pr… | | |
| | | | | | …nagement | if required by zone of operations | |

*: Exception: when flying a dron… at the request of the entity responsible for the obstacle … to 15 meters above the height of the obstacle

**: Only valid when the non-Cx drone has been put on the market by its manufacturer before January 1st 2024

JDM16032022

**Registration of operator + obligation to display reg. nr on UAS**

*Operatornummer - Numéro de l'opérateur - Operator number*

**BELj5lo7de5jruil**

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# OPEN category, pilot competences

**OPEN**

| Operation | | Remote pilot competency |
|---|---|---|
| **Sub-Cat.** | **Area of operation** | |
| **A1**<br>**Fly over people** | You can fly over uninvolved people (not over assemblies) | • Familiarised with the user's manual |
| | You cannot intentionally fly over uninvolved people | • On-line training & theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*) |
| **A2**<br>**Fly close to people** | You cannot fly over uninvolved people and need to keep a safe horizontal distance of 30m from them, reduced to 5m when flying in low speed mode | • Hold a certificate of remote pilot competency after:<br>  • Online examination (idem as for cat A1/C1)<br>  • Declaring practical self-training<br>  • Additional cat A2 theoretical knowledge examination (in classroom, with *Certificate of remote pilot competency*) |
| **A3**<br>**Fly far from people** | You should:<br>• fly in an area where it is reasonably expected that no uninvolved people will be endangered<br>• keep a safe horizontal distance of 150m from residential, commercial, industrial or recreational areas | • On-line training & theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*)<br>(idem as for cat A1/C1) |

**BE: min age = 14**

**A1/A3**

**BE: min age = 14**

**A1/A3**

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# OPEN category, pilot competences

OPEN

| Operation | | Remote pilot competency |
|---|---|---|
| Sub-Cat. | Area of operation | |
| **A1**<br>**Fly over people** | You can fly over uninvolved people (not over assemblies) | • Familiarised with the user's manual |
| | You cannot intentionally fly over uninvolved people | • On-line training & theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*) |
| **A2**<br>**Fly close to people** | You cannot fly over uninvolved people and need to keep a safe horizontal distance of 30m from them, reduced to 5m when flying in low speed mode | • Hold a certificate of remote pilot competency after:<br>• Online examination (idem as for cat A1/C1)<br>• Declaring practical self-training<br>• Additional cat A2 theoretical knowledge examination (in classroom, with *Certificate of remote pilot competency*) |
| **A3**<br>**Fly far from people** | You should:<br>• fly in an area where it is reasonably expected that no uninvolved people will be endangered<br>• keep a safe horizontal distance of 150m from residential, commercial, industrial or recreational areas | • On-line training & theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*)<br>(idem as for cat A1/C1) |

BE: min age = 16

A2

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# OPEN category, pilot competences

**OPEN**

Can be based on self-study

**OPEN A2**

Additional theoretical knowledge examination
***''Certificate of remote pilot competency''*** *by CA or DE*

Practical-skill self-training declaration

**OPEN A1 & A3**

On-line theoretical examination
***'Proof of completion of on-line theoretical knowledge examination'***
*by CA or Designated Entity*

On-line theoretical training

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# OPEN category, pilot competences

OPEN

Can be based on self-study

OPEN A2

Additional theoretical knowledge examination

Practical self-training declaration

**Conversion was possible from former Class 1 licenses**

OPEN A1 & A3

On-line theoretical examination

**Conversion was possible from former Class 2 attestations and Class 1 licenses**

On-line theoretical training

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# How about night flights?

**OPEN**

- Drone needs to be equipped with green flashing light to be considered as VLOS
- Can be in Open category (with green light switched on), unless prohibited by GeoZone
- Definition: ‘night’ means the hours between the end of evening civil twilight and the beginning of morning civil twilight.

  June 21st in Ghent: starts at 47min after sunset until 47 min before sunrise

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# How about non-Cx-compliant drone? What if I still buy one tomorrow?

**OPEN**

- You can fly in the OPEN category for as long as the drone will last, provided it was put on the market by the manufacturer before January 1st 2024, but only:
  - in the Open A1 category if MTOM < 250g
    - *you can fly over people (involved or not)*
    - *no flying over "assemblies of people"*
  - in the Open A3 category if MTOM < 25kg
    - *you can fly over involved people but only in an area where the pilot reasonably expects that no uninvolved person will be endangered*
    - *keep a safe horizontal distance of 150m from residential, commercial, industrial or recreational areas*
- Can fly in the Specific category if the technical characteristics comply with the Operational Authorisation

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# How about non-Cx-compliant drone? What if I still buy one tomorrow?

**OPEN**

- Up to 1/1/2024 a special ‘Limited’ Open category was created to temporarily allow you to fly in more than just the Open A1 (<250g) or Open A3 category:
  - In Open A1/C1 conditions if MTOM < 500g (in stead of 900g)
    - *You can fly over involved people*
    - *In case of unexpected flight over uninvolved people, the pilot shall reduce that time as much as possible*
    - *No flying over assemblies of people*
  - Keeping a safe horizontal distance of 50m from people (in stead of 30m) if MTOM < 2kg (in stead of 4kg)

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# OPEN category overview for Belgium

**OPEN**

**OPEN CATEGORY: not over assemblies of people; up to 120m above the ground***
**VLOS/EVLOS only, except in follow-me mode within 50m distance from pilot; not drop any material**

| Operation | | UAS | | Remote pilot competency | UAS operator registration |
|---|---|---|---|---|---|
| Sub-Cat. | Area of operation | Class | MTOM | | |
| **A1 Fly over people** | You can fly over people, involved or not (not over assemblies) | Non-Cx compliant** | < 250g | • Minimum age 14<br>• No minimum age for privately build drone or true toy drone marked as C0<br>• Familiarised with the user's manual | No, not for true toy drones or for as long as not equipped with a camera (250g or 80J impact) |
| | | Privately build | | | |
| | | **C0** | | | |
| | You can fly over involved people but cannot intentionally fly over uninvolved people | Non-Cx compliant (up to 1/1/2024)*** | <500g | • Minimum age 14<br>• Familiarised with the user's manual<br>• On-line theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*) | |
| | | **C1** | <900g | | |
| **A2 Fly close to people** | You need to keep a min. horizontal distance of 50m from people (involved or not) | Non-Cx compliant (up to 1/1/2024)*** | < 2kg | • Minimum age 16<br>• Familiarised with the user's manual<br>• Hold a certificate of remote pilot competency after:<br>  • Online examination (idem as for cat A1/C1)<br>  • Declaring practical self-training<br>  • Additional cat A2 theoretical knowledge examination (with Certificate of remote pilot competency) | Yes |
| | You can fly over involved people but cannot fly over uninvolved people and need to keep a safe horizontal distance of 30m from them, reduced to 5m when flying in low-speed mode | **C2** | < 4kg | | |
| **A3 Fly far from people** | • You can fly over involved people but only in an area where you reasonably expect that no uninvolved person will be endangered (AMC: by keeping a safe distance of at least 30m)<br>• You should keep a safe horizontal distance of 150m from residential, commercial, industrial or recreational areas | **C0 / C1 / C2** | See above | Minimum age 14<br>• Familiarised with the user's manual<br>• On-line theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*)<br>(idem as for cat A1/C1) | |
| | | **C3** | < 25kg<br>< 3m in size | | |
| | | **C4** (aero-model) | < 25kg | | |
| | | Privately build or non-Cx compliant** | | | |

*: Exception: when flying a drone within a horizontal distance of 50m from an artificial obstacle taller than 105m, the maximum height of the operation may be increased up to 15 meters above the height of the obstacle at the request of the entity responsible for the obstacle

**: Only valid when the non-Cx drone has been put on the market by its manufacturer before January 1st, 2024

***: Temporary 'Limited' Open category (up to 1/1/2024)

JDM16032022

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# I have a Mavic Mini and I want to do take pictures for a real estate agency

**OPEN**

- Drone is non-Cx-compliant and assuming MTOM = 249g

Open A1/C0

“you can fly over people”

Pilot needs to be familiarised with the user’s manual

# I have a Mavic Air and I want to do take pictures for a real estate agency

**OPEN**

- Drone is non-Cx-compliant and assuming MTOM = 430g

Limited Open A1

“you can fly over involved people but cannot intentionally fly over uninvolved people”

Pilot needs A1/A3 “Proof of completion of on-line theoretical knowledge examination”

# I have a Mavic Mavic 2 Pro and I want to do take pictures for a real estate agency

OPEN

- Drone is non-Cx-compliant and assuming MTOM = 905g

Limited Open A2

“You need to keep a safe horizontal distance of 50m from all people ”

(AMC stipulates 1:1 rule)

Pilot needs A2 “Certificate of remote pilot competency”

# OPEN category

OPEN

What if I cannot comply with all Open category conditions?

What if my flight meets none of the A1, A2 or A3 conditions?

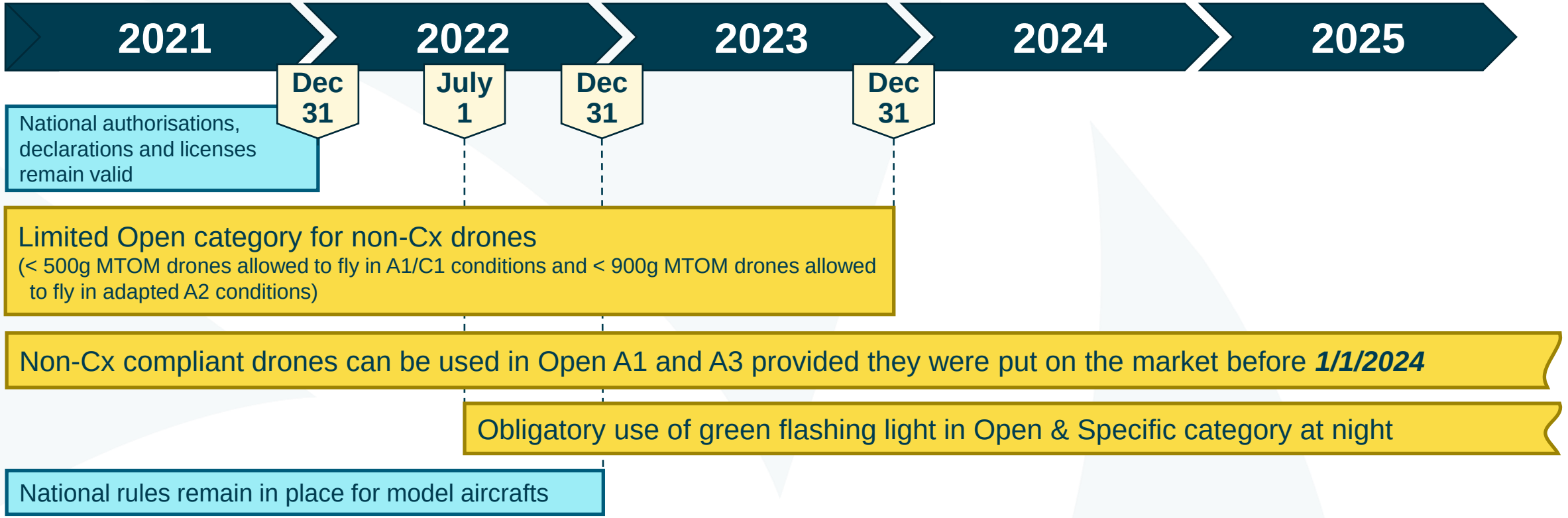
ANSWER:

Your flight is to be categorized as SPECIFIC

(or maybe even CERTIFIED)

# Open category “NEED TO KNOWS” BEFORE TAKE-OFF

# Applicability overview

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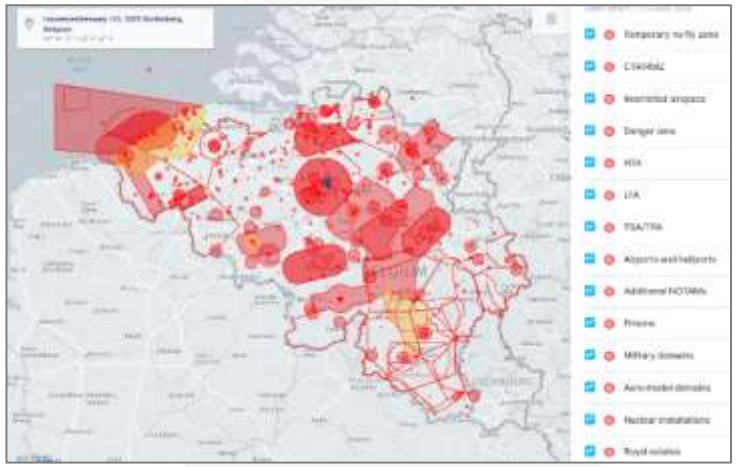
# SUMMARY OF WHAT TO KEEP IN MIND

## NEED TO RESPECT

### Generic rules


### National GeoZones



- Aerodrome zones (incl. heliports)
- P/D/R + Military zones
- CTRs
- Seaports
- UAS test-zones
- ….

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# SUMMARY OF WHAT TO KEEP IN MIND

## NEED TO RESPECT

### Generic rules

**No individual flight approval nor notification required**

+

### National GeoZones

**Individual flight approval and/or notification might be required**

- Aerodrome Zones (incl. Heliports)
- P/D/R + Military zones
- CTRs
- Seaports
- UAS test-zones
- ….

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# HAVE A SAFE FLIGHT


**map.droneguide.be**

Check on that map which GeoZones overlap with your flightplan and list all of them in YOUR LIST of relevant GeoZones.

For each GeoZone on YOUR LIST you will have to go and see who the GeoZone Manager is and what extra rules he imposes

Make sure you comply with all additional conditions for each zone (e.g. max flight height, drone requirements, ...)

Get all your authorisations from the different Geozone managers (if required)

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# 3 SPECIFIC FLIGHT CATEGORY

# New EU legislation as from January 1st

Including **automated** flights

## OPEN

- Low risk
- No operational authorisation or declaration required by operator before start of flight
- VLOS, 25kg MTOM, 120m AGL

Including **BVLOS** & **autonomous** flights

## SPECIFIC

- Increased risk
- Operational authorisation required by CA based on SORA

  **or** Declaration suffices if Standard Scenario (STS-x)

  **or** LUC self-authorisation

Think of Air Taxi's
or
Cargo over dense urban area

## CERTIFIED

- Risk as manned aviation
- Certified operator
- Certified UAS with CoA
- Licensed pilot

Whatever the category:
there are minimum pilot competencies !

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# EU legislation flight category details

Including automated flights

OPEN

- Low risk
- No operational authorisation or declaration required by operator before start of flight
- VLOS, 25kg MTOM, 120m AGL

Including **BVLOS** & **autonomous** flights

**SPECIFIC**

- Increased risk
- Operational authorisation required by CA based on SORA

  **or** Declaration suffices for Standard Scenario's (STS-x)

  **or** LUC with self-authorisation

Think of Air Taxi's or Cargo over dense urban area

CERTIFIED

- Risk as manned aviation
- Certified operator
- Certified UAS with CoA
- Licensed pilot

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# SPECIFIC category

NEW :
Including **BVLOS** & **autonomous** flights

- Increased risk
- Operational Declaration suffices if you fly a Standard Scenario (STS-x)

**or** SORA-based Operational Authorisation required by CA

**or** LUC needed

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# SPECIFIC category


**Authorisation required before flight, granted by CA based on assessment of Specific Operational Risk Assesment (SORA)**

OR

**Declaration suffices if standard scenario is followed, confirmation of receipt by CA required before flight**

Self-authorisation for operators with an **LUC**

## UAS:

Any UAS (as from 1/1/2024: with Direct Remote ID)

## FLIGHT:

- Any operation which is not ‘Open’ nor ‘Certified’
- Registration of operator
- Operational conditions defined in either the authorisation or the standard scenario
- Rules of the air apply
- Logbook keeping and operational handbook is required

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# SPECIFIC category


**Authorisation required before flight, granted by CA based on assessment of Specific Operational Risk Assesment (SORA)**

OR

**Declaration suffices if standard scenario is followed, confirmation of receipt by CA required before flight**

Self-authorisation for operators with an **LUC**

## PILOT COMPETENCY:

- Minimum age 16 (possibility by MS to lower to 14)
- Defined in either the standard scenario or in the authorisation

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# SPECIFIC category: STS


**Authorisation required before flight, granted by CA based on assessment of Specific Operational Risk Assesment (SORA)**

OR

**Declaration suffices if standard scenario is followed, confirmation of receipt by CA required before flight**

Self-authorisation for operators with an **LUC**

## STANDARD SCENARIO:

- Declaration to CA suffices, confirmation of receipt required
- Two versions will be available **but only as from 1/1/2024:**
  - STS-01 – VLOS over a controlled ground area in a populated environment
  - STS-02 – BVLOS with Airspace Observers over a controlled ground area in a sparsely populated environment
- Temporary **Belgian BE-STS-01** already available as from 1/1/2021 (declaration possible up to 31/12/2023, such declarations remain valid maximum up to 31/12/2025)

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# Delegated Act C-classes of drones for Standard Scenario's

| UAS | | |
|---|---|---|
| **Class** | **MTOM / Joule** | **Main technical requirements** |
| **C5** For STS-01 | < 25kg<br>< 3m in size | ~~Max height above the take-off point of 120m or selectable and visualised height limitation~~, mechanical strength, lost-link management, optional geo-awareness pilot warning, battery warning, max sound power level, be equipped with green lights, protected C2 link, no fixed wing, height info to pilot, low speed mode 5m/s, independent flight termination system (incl. impact dynamics reduction), C2 link quality info |
| **C6** For STS-02 | < 25kg<br>< 3m in size | ~~Max height above the take-off point of 120m or selectable and visualised height limitation~~, mechanical strength, lost-link management, optional geo-awareness pilot warning, battery warning, max sound power level, be equipped with green lights, protected C2 link, max. speed 50m/s, height info to pilot, geo-caging, independent flight termination system (not incl. impact dynamics reduction), trajectory programming, C2 link quality info |

STS-01

STS-02

- C5 drone can also be based on C3 drone + ***Class C5 accessories kit***, such kit then needs to be compliant with all C5 requirements except height info to pilot
- Technical requirement exemptions do exist for tethered C5 drones

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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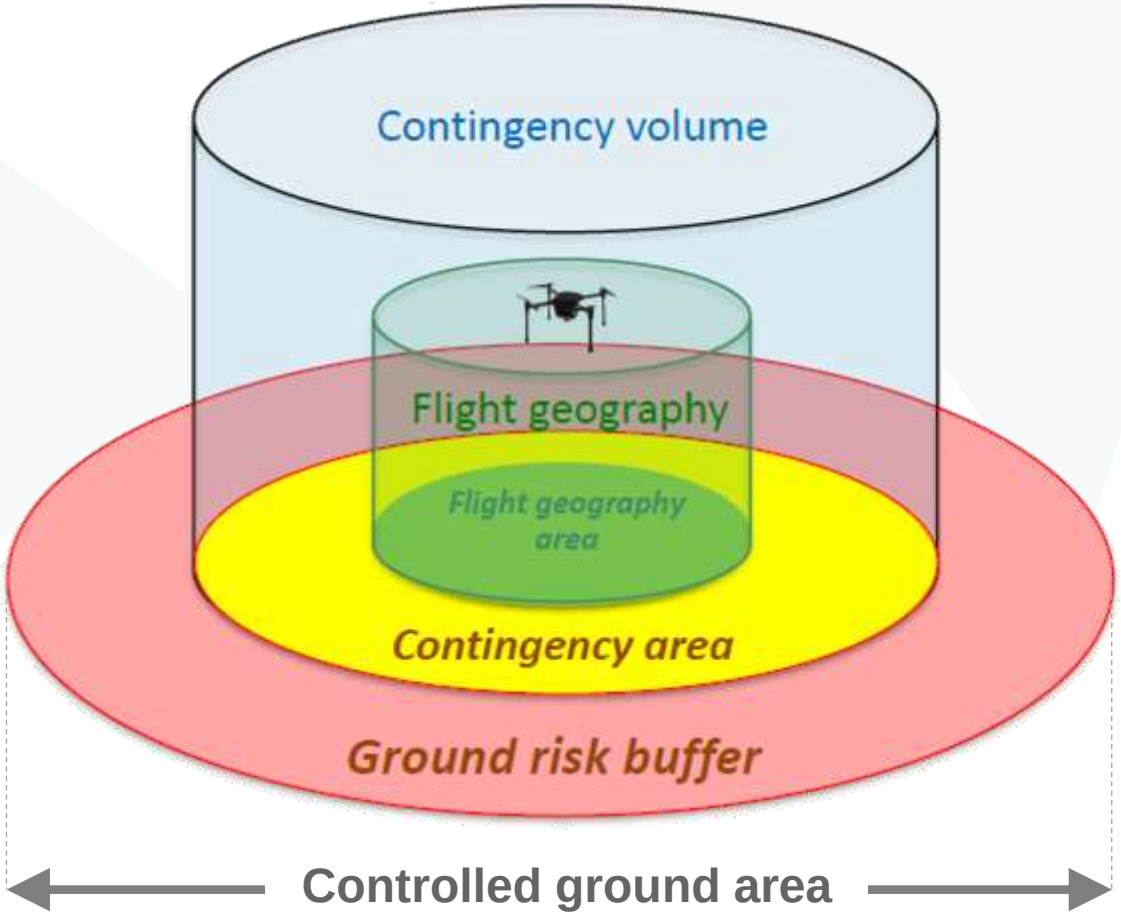
# SPECIFIC category


## Operational volume



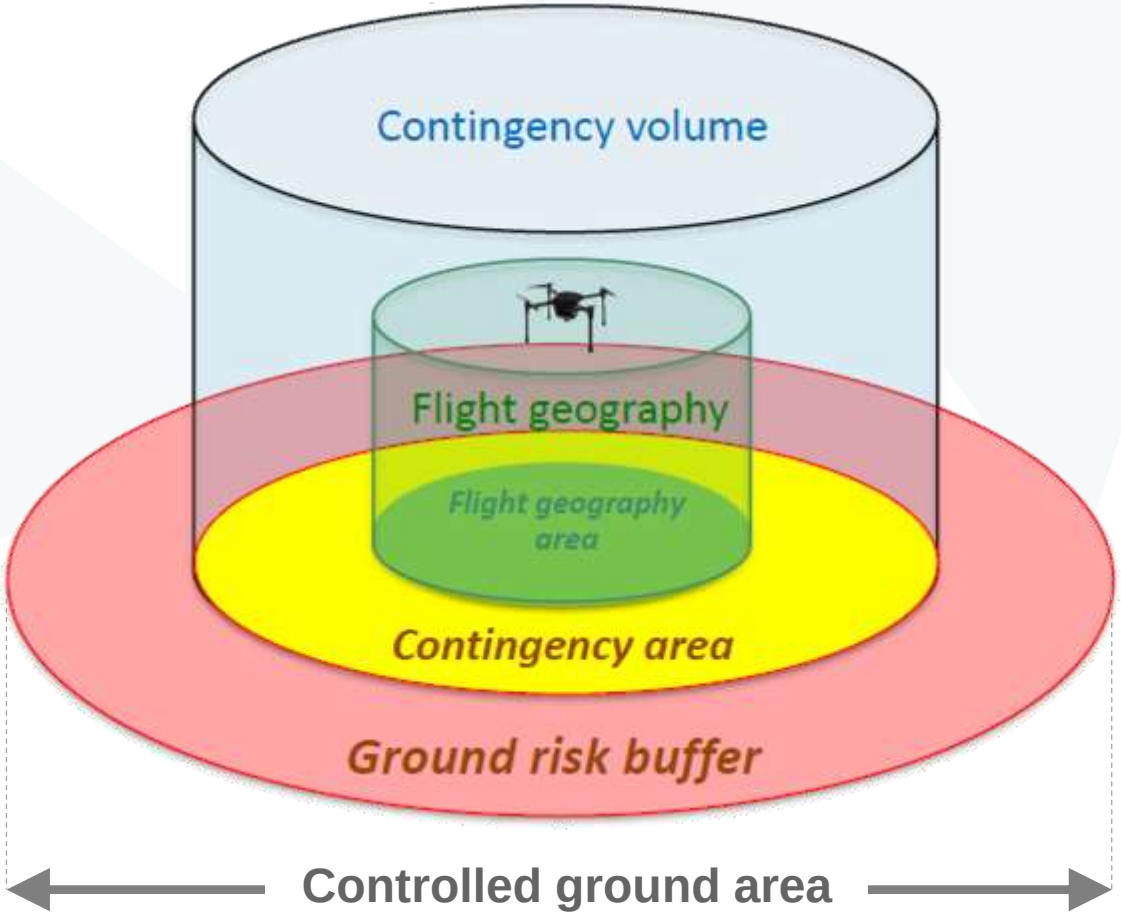

The '**flight geography**' is the spatially and temporally defined volume of airspace in which the UAS operator plans to conduct the operation under normal procedures.

To cope with abnormal situations (e.g. navigation errors, UA drifting due to wind/gusts, etc.), the UAS operator should define the '**contingency volume**' as an airspace volume where contingency procedures are applied in order to bring the UA back to a normal situation within the 'flight geography'

The '**ground risk buffer**' is the area on the surface of the Earth surrounding the operational volume, which is defined by the UAS operator to minimise the risk to third parties on the surface in case the UA leaves the operational volume

# SPECIFIC category


Operational volume




**Operational volume**

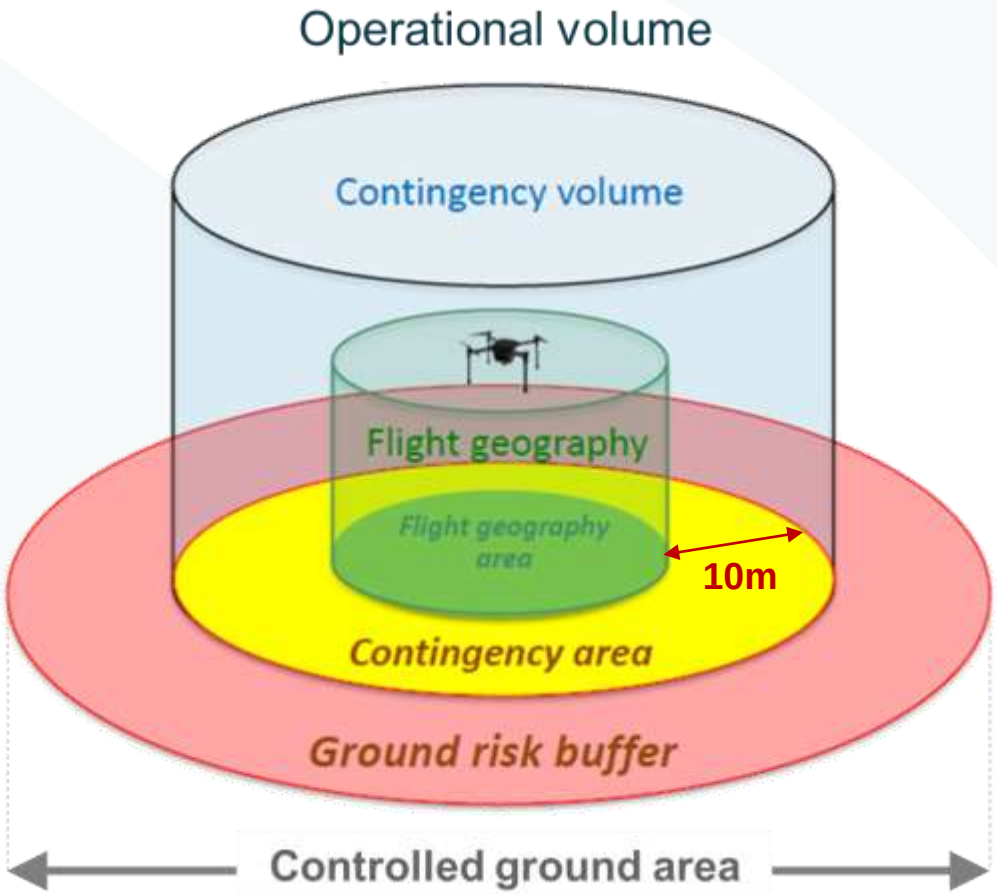
= flight geography + contingency volume

**Controlled ground area**

= flight geography area + contingency area + ground risk buffer

= area where the UAS operator is able to ensure that ***only involved people are present***, by means of fencing or using other methods, as appropriate, considering the population density.

# SPECIFIC category


## STANDARD SCENARIO STS-01
## as from 1/1/2024

VLOS operations at a maximum height(1) of 120m,

over controlled ground areas(2)

that can be in populated (e.g. urban) environments,

using UAS with MTOMs of up to 25 kg, <3m in size

Tethered or untethered C5 drone operated at less than 5m/s ground speed

Using pre-defined Ops Manual

(1) 120m above GND or 15m above obstacle

(2) Ground Buffer dependent on flight height

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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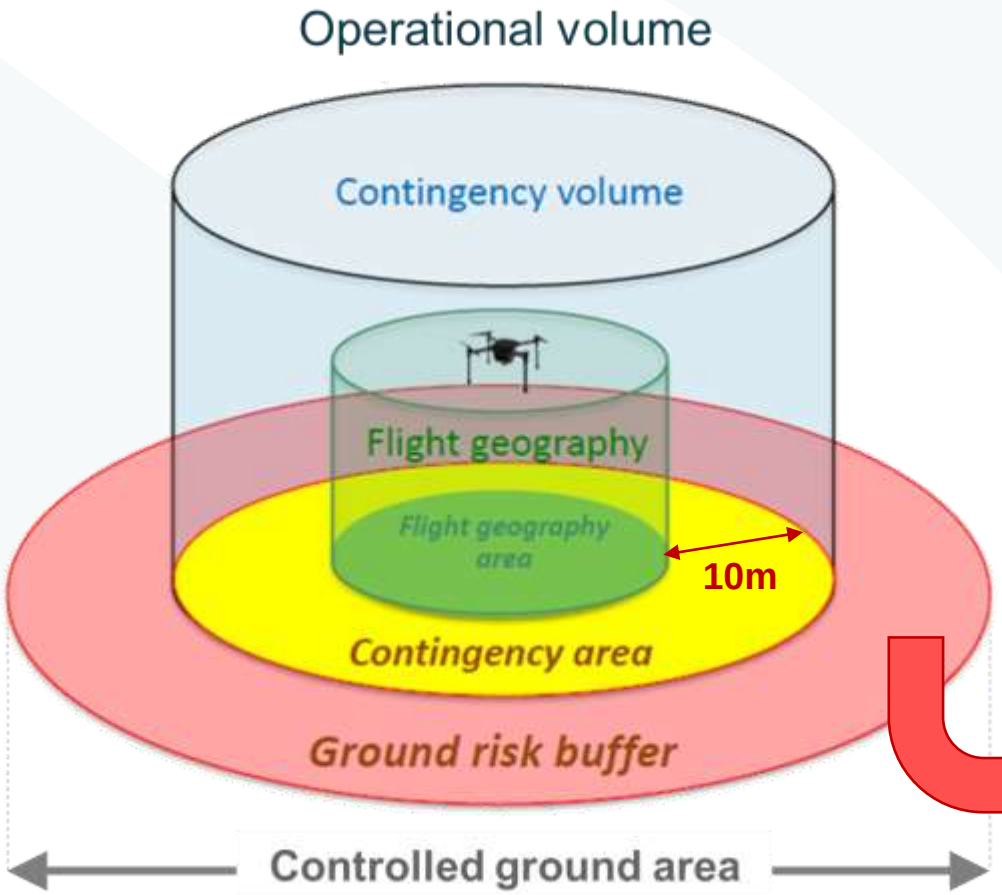
# SPECIFIC category


## STANDARD SCENARIO STS-01

VLOS operations at a maximum height(1) of 120m,

over controlled ground areas(2) → *Only involved people present!*

that can be in populated (e.g. urban) environments,

using UAS with MTOMs of up to 25 kg, <3m in size

Tethered or untethered C5 drone operated at less than 5m/s ground speed

Using pre-defined Ops Manual

| Flight height | MTOM < 10kg | MTOM > 10kg |
|---|---|---|
| 30m | 10m | 20m |
| 60m | 15m | 30m |
| 90m | 20m | 45m |
| 120m | 25m | 60m |

(1) 120m above GND or 15m above obstacle

(2) Ground Buffer dependent on flight height

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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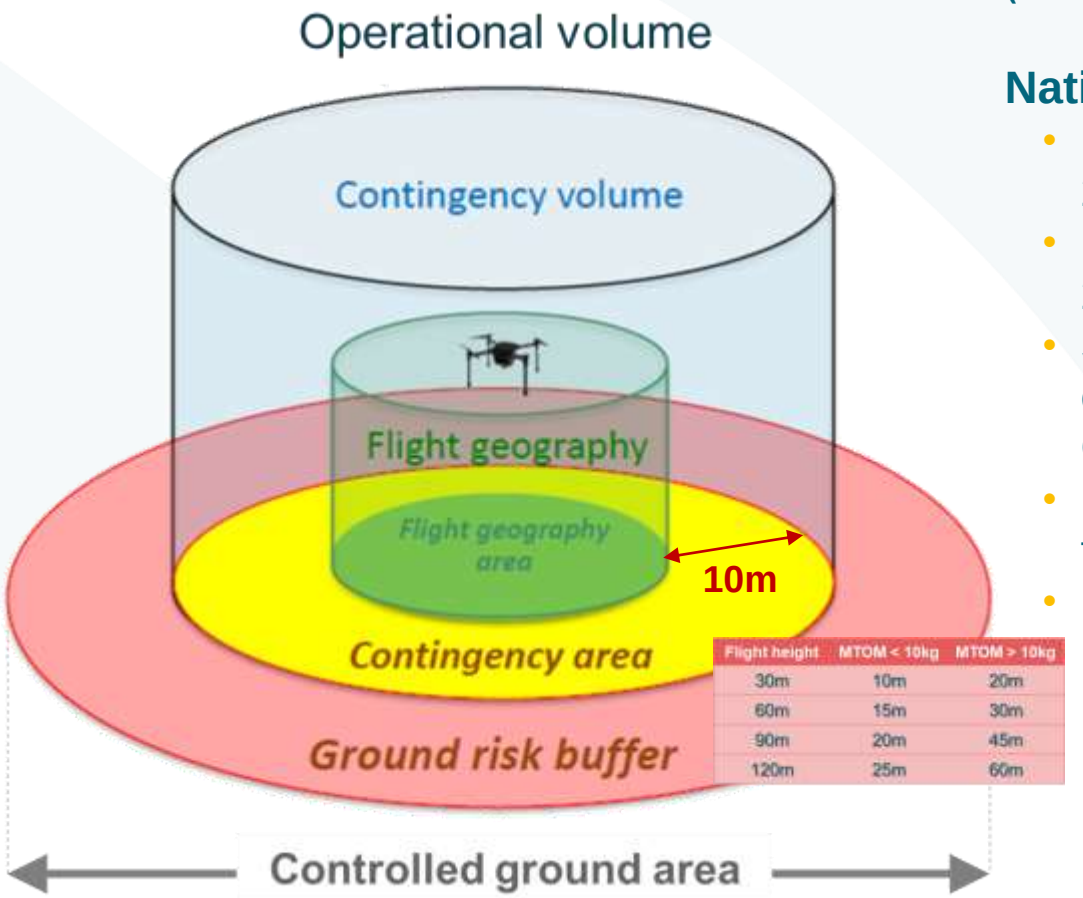
# SPECIFIC category

**SPECIFIC**




| Flight height | MTOM < 10kg | MTOM > 10kg |
|---|---|---|
| 30m | 10m | 20m |
| 60m | 15m | 30m |
| 90m | 20m | 45m |
| 120m | 25m | 60m |

## STANDARD SCENARIO BE-STS-01
**(MD publicised in 'Staatsblad/Moniteur 31/12/2020)**

**National Belgian STS-01** is very similar to the EU version, except:

- Instead of C5 drone: rotary drone certified ('homologated') according to 2016 KB, can be tethered, no fixed wing
- Max. characteristics 2m instead of 3m, max. MTOM 22kg instead of 25kg
- Some additional mandatory technical specs found in Cx drones such as e.g.: speed and height indication, low speed mode (<5m/s), protected C2 link, low battery warning a.o. *(Appendix 3)*
- Mandatory content template for Ops Manual *(Appendix 2)* (your OM needs to be compliant when audited, but no pre-approval required by BCAA)
- Pilot competencies *(Appendix 1)*:
  - Having a former Class1 pilot license converted in to Open A2 'Certificate of remote pilot competency' + declaration of being knowledgeable about the Specific category and associated risk assessment
    or
  - Having 'Certificate of remote pilot theor. knowledge for operations in the national BE-STS01' issued by the BCAA or Designated Entity + 'Accreditation of completion of BE-STS01 practical skill training' issued by Recognized Entity

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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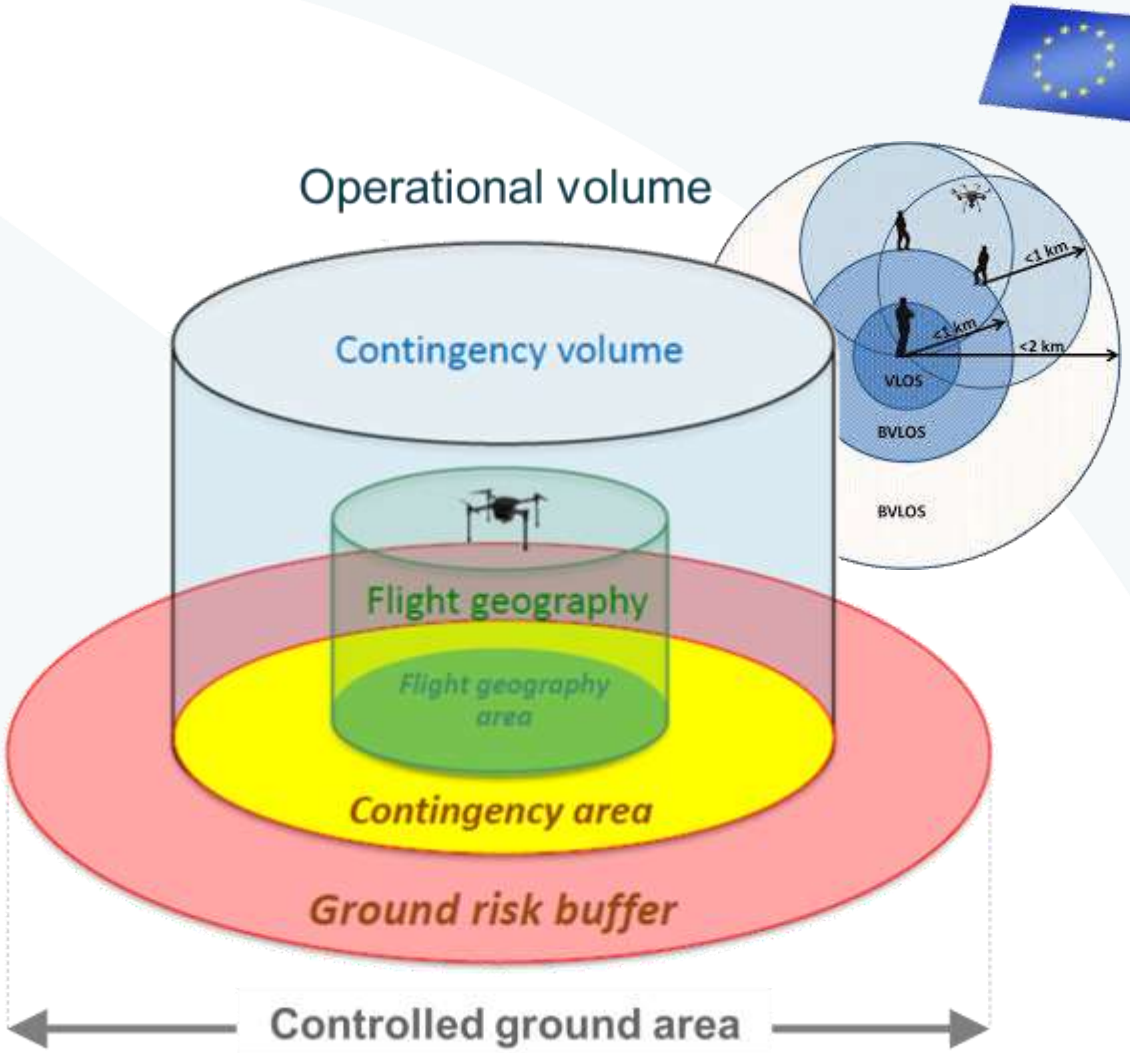
# SPECIFIC category


## STANDARD SCENARIO STS-02

## as from 1/1/2024

- BVLOS operations
- with the UA at not more than 2 km from the remote pilot, if visual observers are used
- at a maximum height of 120 m
- over controlled ground area
- in sparsely populated environments
- using C6 UAS with MTOMs of up to 25 kg
- using pre-defined Ops Manual

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# SPECIFIC category


**Authorisation required before flight, granted by CA based on assessment of Specific Operational Risk Assesment (SORA)**

OR

**Declaration suffices if standard scenario is followed, confirmation of receipt by CA required before flight**

Self-authorisation for operators with an **LUC**

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# SPECIFIC category


## OPERATIONAL AUTHORISATION =

- authorisation to execute certain type of flights, at places with certain characteristics (**‘generic’ authorisation**) OR at a certain known locations identified by geographical coordinates (**‘precise’ authorisation**)
- Request to be SORA-based (Specific Operational Risk Analysis)

**Air risk**

**Ground risk**

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# SPECIFIC category

**SPECIFIC**

There is a step-by-step Methodology helping you to write your own SORA as backbone of your Operational Authorisation request

(details provided in EASA's "Easy Access Rules for Unmanned Aircraft Systems")

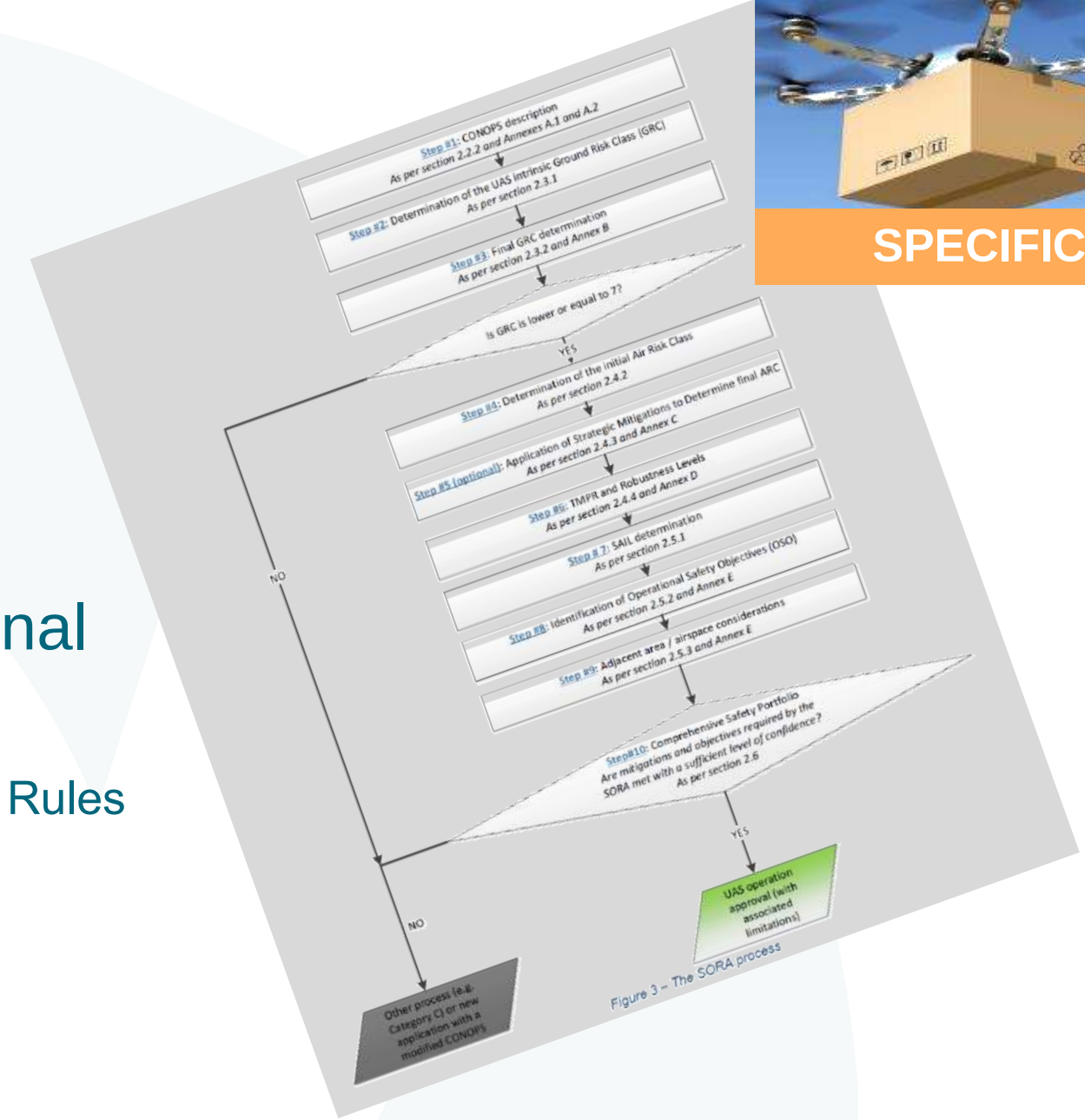


Figure 3 – The SORA process

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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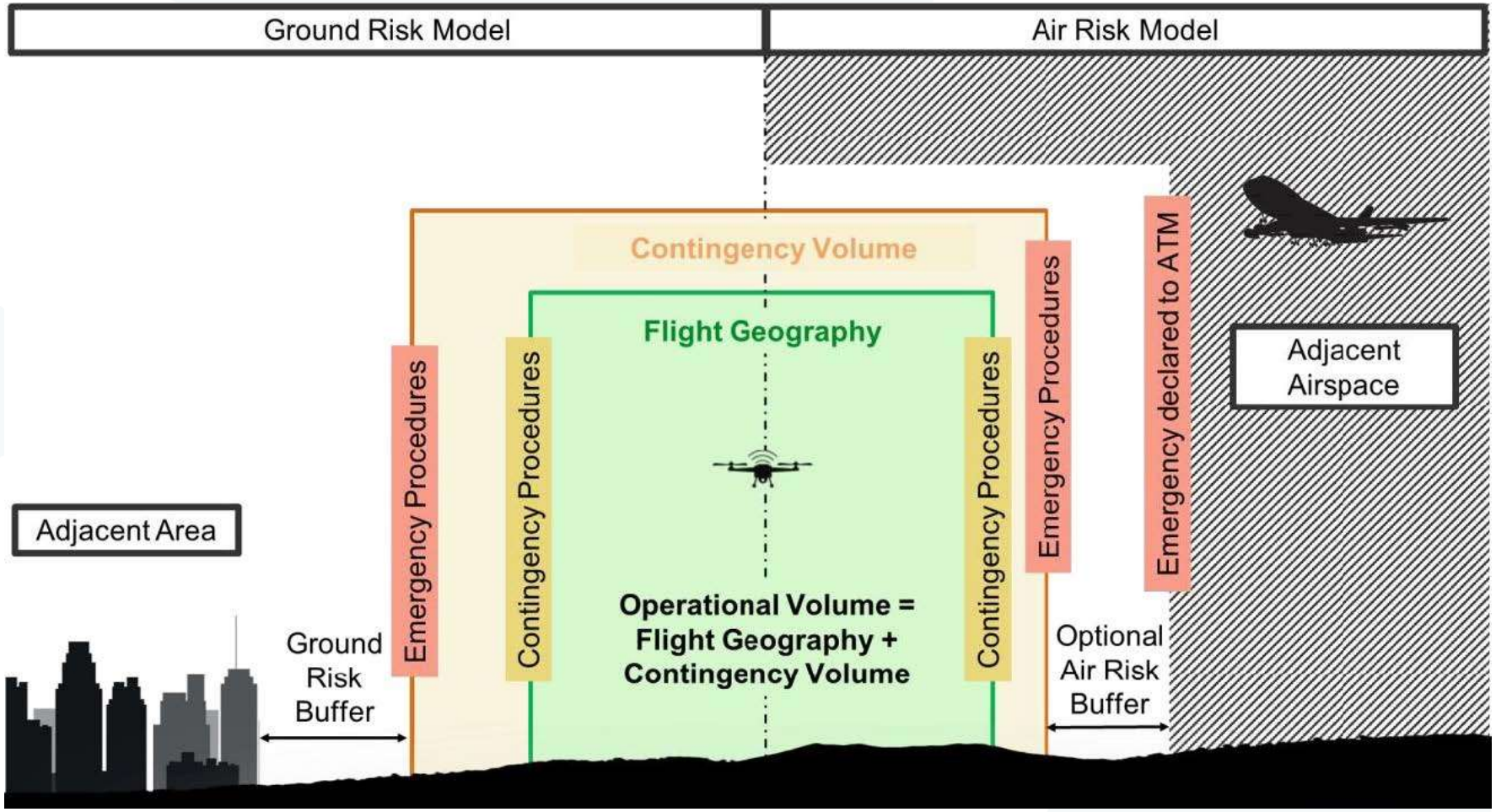
# Risk cross section (semantic model)




For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# Robustness of a risk mitigation

## Level of integrity (= safety gain) provided by a mitigation

- Example: if drone crashes, it remains within 1:1 rule

## Level of assurance (= method of proof) that a mitigation has been achieved

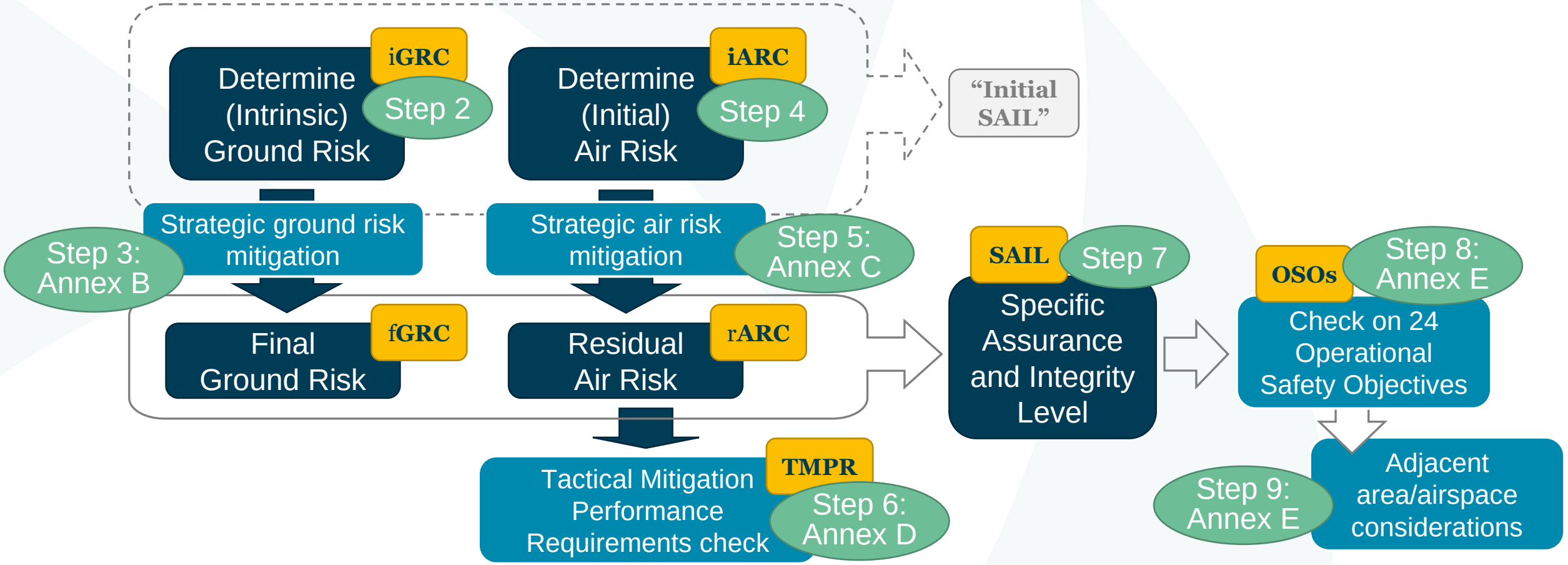
- Low: by own declarartion
- Medium: by supporting evidence (technical: test report, human; by proof of experience)
- High: integrity has been found to be acceptable by a competent third party.

| | Low assurance | Medium assurance | High assurance |
|---|---|---|---|
| Low integrity | Low robustness | Low robustness | Low robustness |
| Medium integrity | Low robustness | Medium robustness | Medium robustness |
| High integrity | Low robustness | Medium robustness | High robustness |

Robustness level is determined by the ***lowest*** level of either integrity or assurance

# SORA process: outline


- Step 1: drafting a Conops (see AMC Annex A for content)
- Then go through step-by-step assesment:



# SORA process: outline

SPECIFIC

START

Determine (Intrinsic) Ground Risk — iGRC

Determine (Initial) Air Risk — iARC

"Initial SAIL"

Strategic ground risk mitigation

Strategic air risk mitigation

Final Ground Risk — fGRC

Residual Air Risk — rARC

SAIL — Specific Assurance and Integrity Level

OSOs — Check on 24 Operational Safety Objectives

Tactical Mitigation Performance Requirements check — TMPR

SAFE TO FLY

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# SORA process: step 2
# Determine iGRC


| Intrinsic UAS ground risk class | | | | |
|---|---|---|---|---|
| Max UAS characteristics dimension | 1 m / approx. 3 ft | 3 m / approx. 10 ft | 8 m / approx. 25 ft | >8 m / approx. 25 ft |
| Typical kinetic energy expected | < 700 J (approx. 529 ft lb) | < 34 kJ (approx. 25 000 ft lb) | < 1 084 kJ (approx. 800 000 ft lb) | > 1 084 kJ (approx. 800 000 ft lb) |
| **Operational scenarios** | | | | |
| VLOS/BVLOS over a controlled ground area[3] | 1 | 2 | 3 | 4 |
| VLOS over a sparsely populated area | 2 | 3 | 4 | 5 |
| BVLOS over a sparsely populated area | 3 | 4 | 5 | 6 |
| VLOS over a populated area | 4 | 5 | 6 | 8 |
| BVLOS over a populated area | 5 | 6 | 8 | 10 |
| VLOS over an assembly of people | 7 | | | |
| BVLOS over an assembly of people | 8 | | | |

**'populated area'** is used in the context of ground risk and should be understood as 'congested area', as defined in Regulation (EU) No 965/2012 (the 'Air Operations Regulation'): *'in relation to a city, town or settlement, any area which is substantially used for residential, commercial or recreational purposes'*

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# SORA process: step 3 mitigate down to fGRC

## Final GRC after mitigation measures

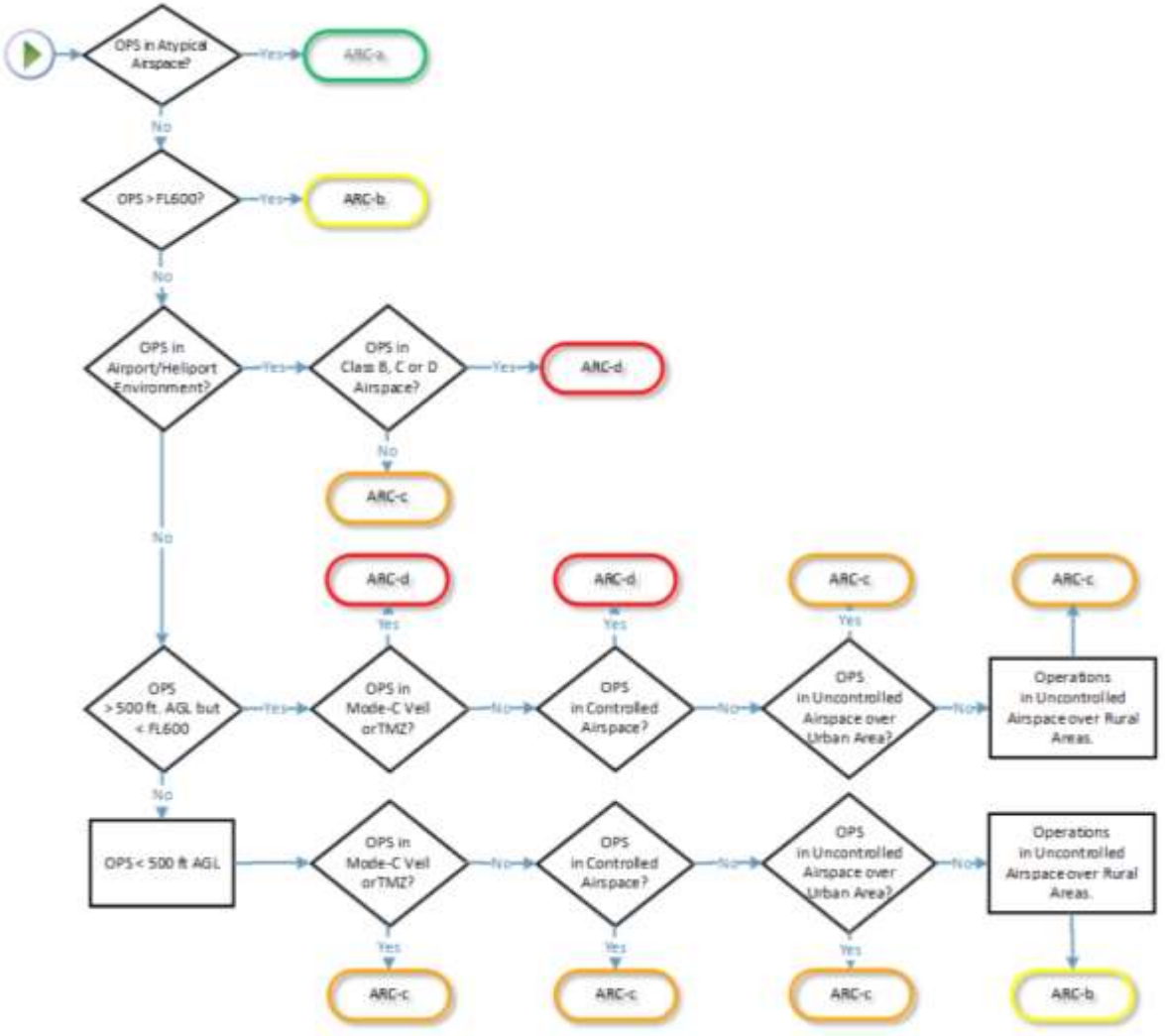

Criterion #1: Definition of the ground risk buffer
Criterion #2: Evaluation of people at risk

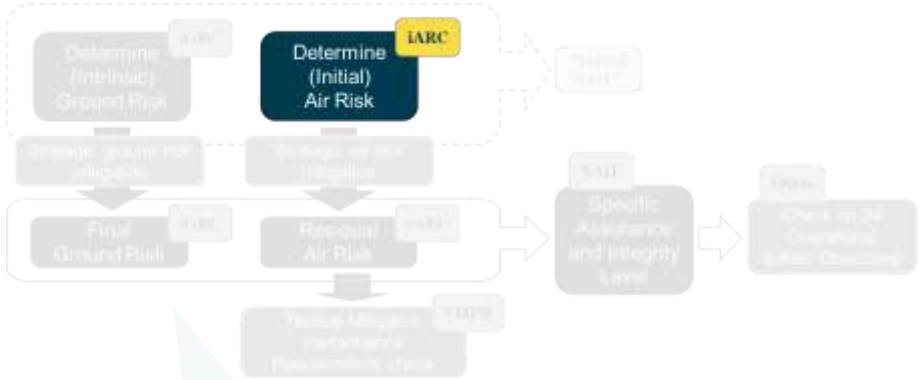
| | | Robustness | | |
|---|---|---|---|---|
| **Mitigation Sequence** | **Mitigations for ground risk** | Low/None | Medium | High |
| 1 | M1 — Strategic mitigations for ground risk[10] | **0: None<br>-1: Low** | **-2** | **-4** |
| 2 | M2 — Effects of ground impact are reduced[11] | **0** | **-1** | **-2** |
| 3 | M3 — An emergency response plan (ERP) is in place, the UAS operator is validated and effective | **1** | **0** | **-1** |

Criterion #1: Technical design, e.g. parachute
Criterion #2: Procedures, e.g. maintenance
Criterion #3: Training

(10): Definition of the ground risk buffer; Evaluation of people at risk
(11): Technical design (e.g. parachute); Procedures (e.g. maintenance); Training

# SORA process: step 4 Determine iARC




**'rural area'** is used in the context of the air risk and it means the volume outside a populated area and not within the aerodrome traffic zone (ATZ) of an aerodrome.

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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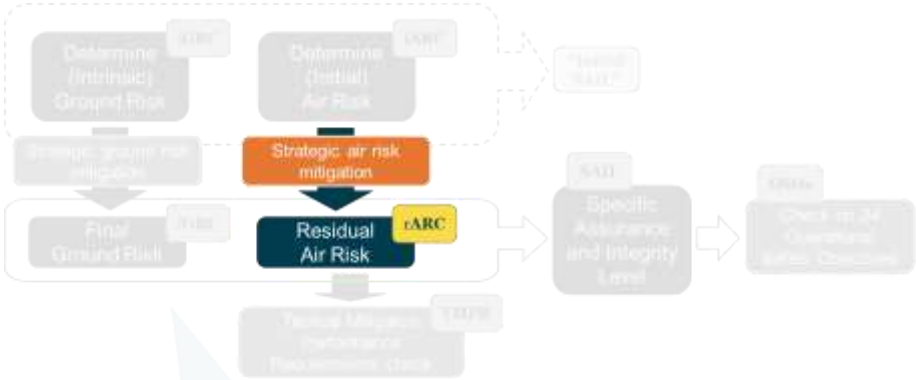
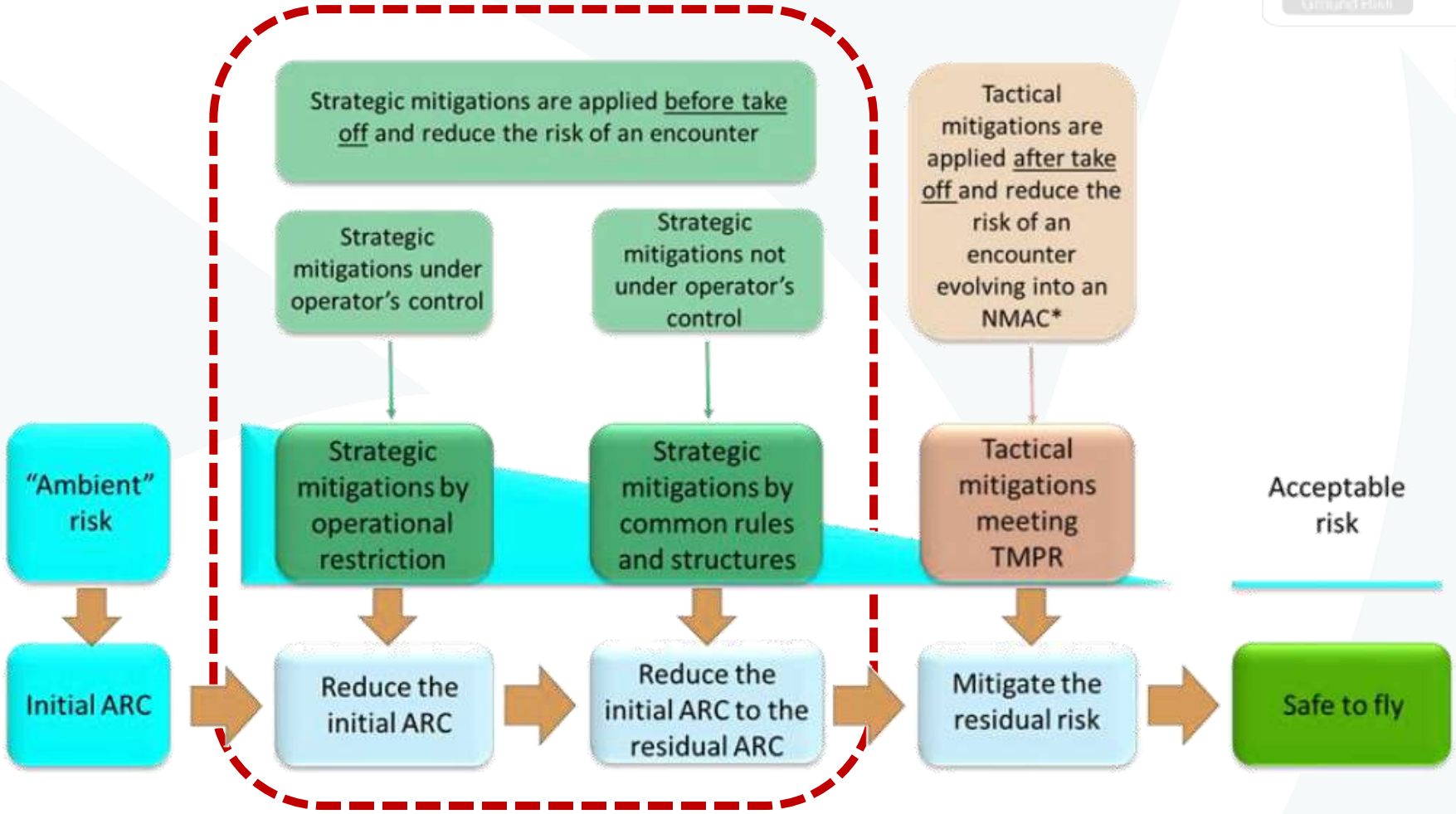
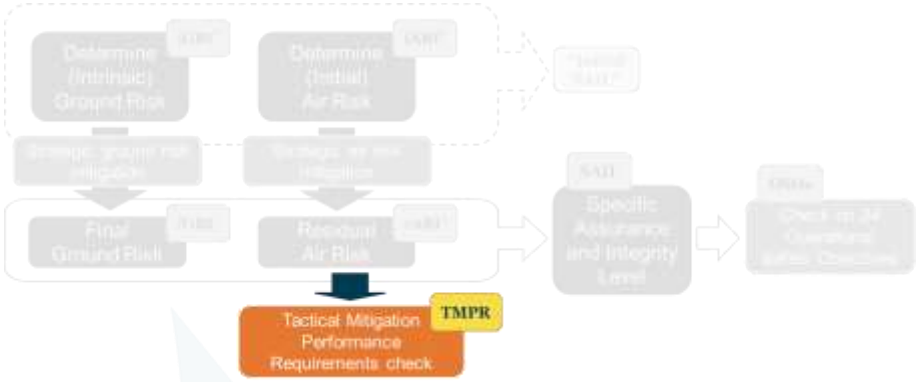
# SORA process: step 5 mitigate down to fARC

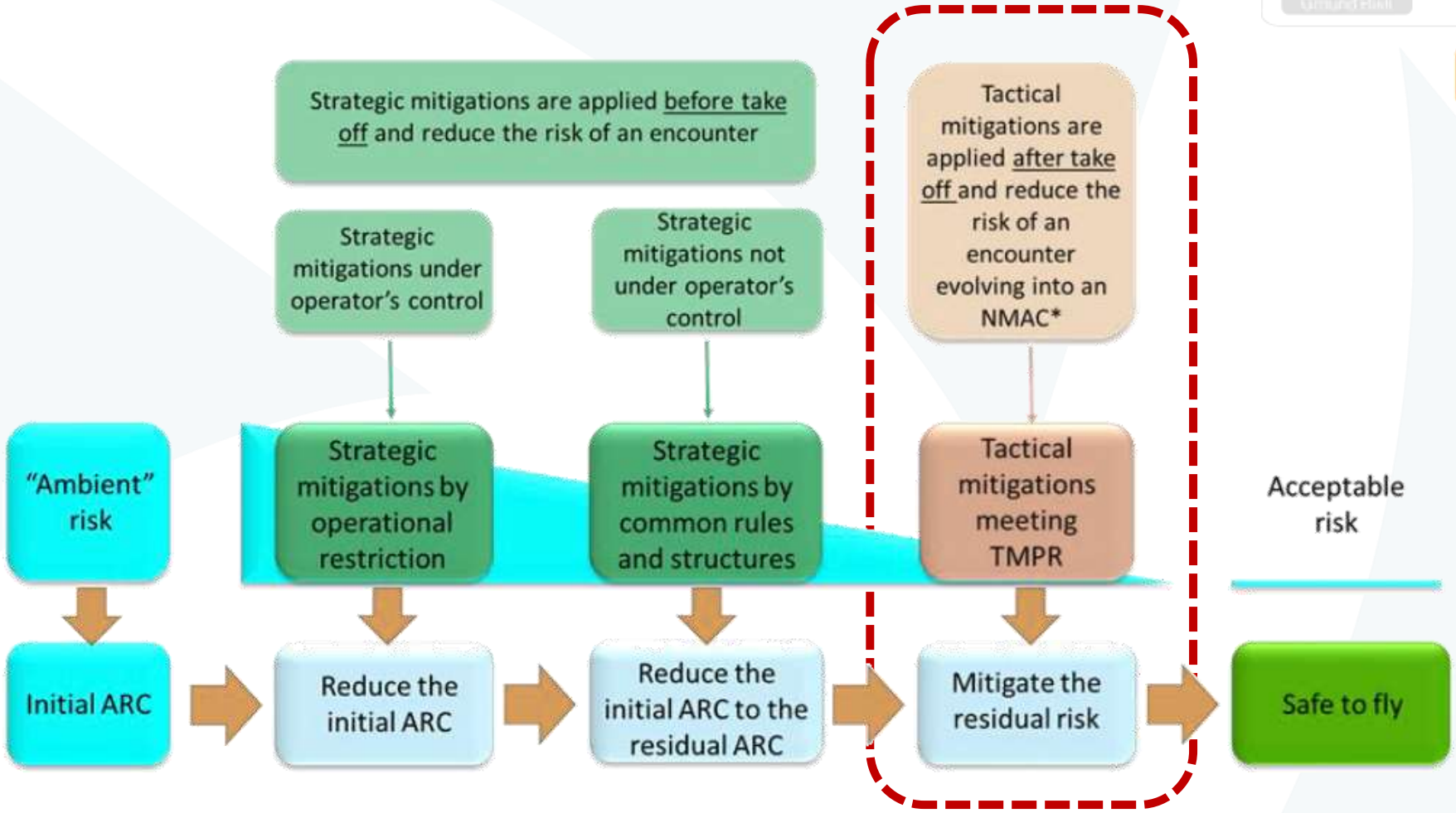



Pre-flight 'Strategic' Air Risk Mitigation

# SORA process: step 6 check in-flight TMPRs



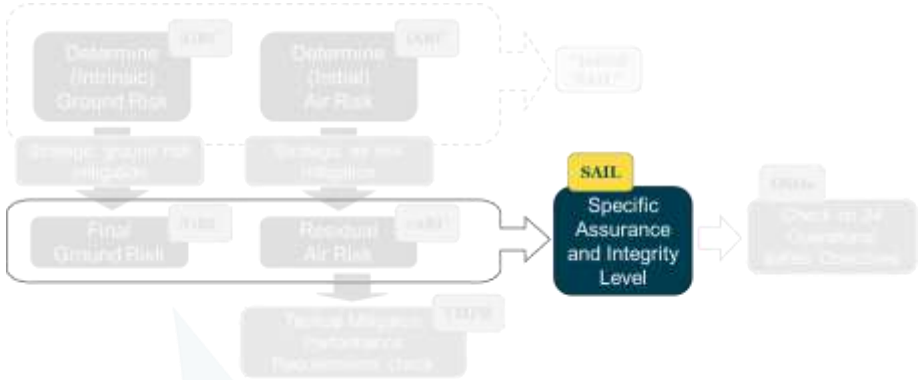




* NMAC: near mid-air collision

## In-flight 'Tactical' Air Risk Mitigation

by complying with the right level of performance requirements

# SORA process: step 7 determine SAIL




| SAIL determination | | | | |
|---|---|---|---|---|
| | Residual ARC | | | |
| Final GRC | a | b | c | d |
| ≤2 | **I** | **II** | **IV** | **VI** |
| 3 | **II** | **II** | **IV** | **VI** |
| 4 | **III** | **III** | **IV** | **VI** |
| 5 | **IV** | **IV** | **IV** | **VI** |
| 6 | **V** | **V** | **V** | **VI** |
| 7 | **VI** | **VI** | **VI** | **VI** |
| >7 | Category C operation | | | |

SAIL level = consolidation of final ground and residual air risk

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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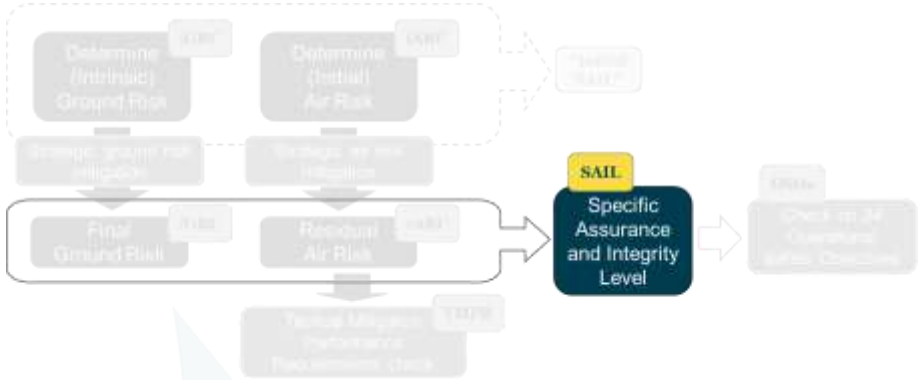
# SORA process: step 7 determine SAIL




EXAMPLE

| SAIL determination | | | | |
|---|---|---|---|---|
| | Residual ARC | | | |
| Final GRC | a | b | c | d |
| ≤2 | I | II | IV | VI |
| 3 | II | II | IV | VI |
| 4 | III | III | IV | VI |
| 5 | IV | IV | IV | VI |
| 6 | V | V | V | VI |
| 7 | VI | VI | VI | VI |
| >7 | Category C operation | | | |

***EXAMPLE:***

iGRC was GRC-4 and got mitigated to fGRC = GRC-3

iARC was ARC-c and got mitigated to fARC = ARC-b

(be aware: SAIL higher than II requires design verification of the UAS by EASA!)

# SORA process: step 8
# Check all OSOs


- Motivation and demonstration of SAIL
- Determination of level of required robustness of mitigations (for all 24 OSO's)
- Example of first 3 OSO's:

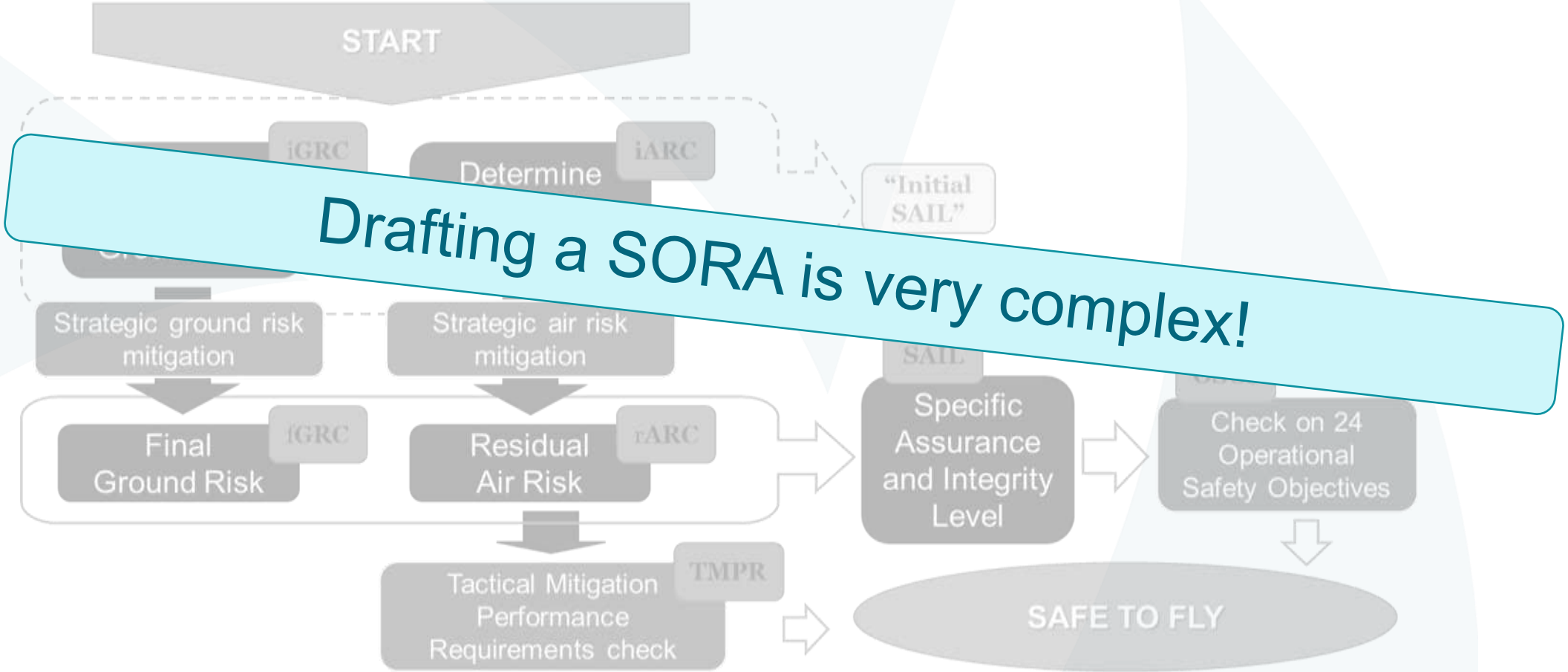
| OSO number (in line with Annex E) | | SAIL | | | | | |
|---|---|---|---|---|---|---|---|
| | | I | II | III | IV | V | VI |
| | **Technical issue with the UAS** | | | | | | |
| OSO#01 | Ensure the UAS operator is competent and/or proven | O | L | M | H | H | H |
| OSO#02 | UAS manufactured by competent and/or proven entity | O | O | L | M | H | H |
| OSO#03 | UAS maintained by competent and/or proven entity | L | L | M | M | H | H |

O: optional
L: low robustness
M: medium robustness
H: high robustness

# SORA process: conclusion

SPECIFIC

- Start with Step 1: drafting a Conops (see AMC for content)
- Go through step-by-step assesment:




Drafting a SORA is very complex!

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# SORA process: conclusion

SPECIFIC

- Start with Step 1: drafting a Conops (see AMC for content)
- G… …by step assesment:

To help you out EASA made several **pre-defined risk assessments (PDRAs),** which you can simply refer to and prove compliance so it allows the CA to speed up the Operational Authorisation process.

You can find more details in the 'EASA Easy Access Rules' for drones

Tactical Mitigation Performance Requirements check

TMPR

SAFE TO FLY

# Intrinsic Ground Risk Class vs PDRAs

| Intrinsic UAS ground risk class | | | | |
|---|---|---|---|---|
| Max UAS characteristics dimension | 1 m / approx. 3 ft | 3 m / approx. 10 ft | 8 m / approx. 25 ft | >8 m / approx. 25 ft |
| Typical kinetic energy expected | < 700 J (approx. 529 ft lb) | < 34 kJ (approx. 25 000 ft lb) | < 1 084 kJ (approx. 800 000 ft lb) | > 1 084 kJ (approx. 800 000 ft lb) |
| **Operational scenarios** | | | | |
| VLOS/BVLOS over a controlled ground area[3] | 1 | 2 | 3 | 4 |
| VLOS over a sparsely populated area | 2 | 3 | 4 | 5 |
| BVLOS over a sparsely populated area | 3 | 4 | 5 | 6 |
| VLOS over a populated area | 4 | 5 | 6 | 8 |
| BVLOS over a populated area | 5 | 6 | 8 | 10 |
| VLOS over an assembly of people | 7 | | | |
| BVLOS over an assembly of people | 8 | | | |

## Published PDRAs

**PDRA-S01**
VLOS – 150m height – Class D&G

**PDRA-S02**
BVLOS – 2km range – 150m height – Class D&G

**PDRA-G01**
BVLOS – 1km range – 150m height – Class G airspace only

**PDRA-G02**
BVLOS – TSA

**PDRA-G03**
BVLOS –50m heigt or TSA – Class D&G

**PDRA-05**
BVLOS – 110m height - direct C2 link – Class G airspace only

## PDRAs under development

**PDRA-06**
VLOS – 120m height – Prototype testing

**PDRA-07**
BVLOS – Airport Env. – Airport/RWY Ins.

**PDRA-08**
VLOS – TSA - Swarming

# SPECIFIC category PDRA

**'populated area'** should be understood as 'congested area', as defined in Regulation (EU) No 965/2012 (the 'Air Operations Regulation'): *'in relation to a city, town or settlement, any area which is substantially used for residential, commercial or recreational purposes'*

| PDRA # | UAS characteristics | BVLOS / VLOS | Overflown area | range remote pilot | | | 11 |
|---|---|---|---|---|---|---|---|
| PDRA-S01 | Maximum characteristic dimension of up to 3 m and take-off mass of up to 25 kg | VLOS | Controlled ground area that might be located in a populated area | VLOS | 150m | Controlled or uncontrolled, with low risk of encounter with manned aircraft | AMC4 |
| PDRA-S02 | Maximum characteristic dimension of up to 3 m and take-off mass of up to 25 kg | BVLOS | Controlled ground area that is entirely located in a sparsely populated area | 2 km with AO(s)<br>1 km, if no AO | 150m | Controlled or uncontrolled, with low risk of encounter with manned aircraft | AMC5 |
| PDRA-G01 | Maximum characteristic dimension of up to 3 m and typical kinetic energy of up to 34 kJ | BVLOS | Sparsely populated areas | If no AO, up to 1 km | 150 m (operational volume) | Uncontrolled, with low risk of encounter with manned aircraft | AMC2 |
| PDRA-G02 | Maximum characteristic dimension of up to 3 m and typical kinetic energy of up to 34 kJ | BVLOS | Sparsely populated areas | n/a (direct C2 link) | As established for the reserved or segregated airspace | Reserved or segregated for the UAS operation | AMC3 |
| PDRA-G03 NEW! | Maximum characteristic dimension of up to 3 m and typical kinetic energy of up to 34 kJ | BVLOS | Sparsely populated areas | n/a (direct C2 link) | 50 m from ground unless in reserved or segregated airspace | Controlled or uncontrolled airspace if height is below 50 m, otherwise reserved or segregated airspace | AMC6 |

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# NEW! PDRA G-03 for BVLOS flights

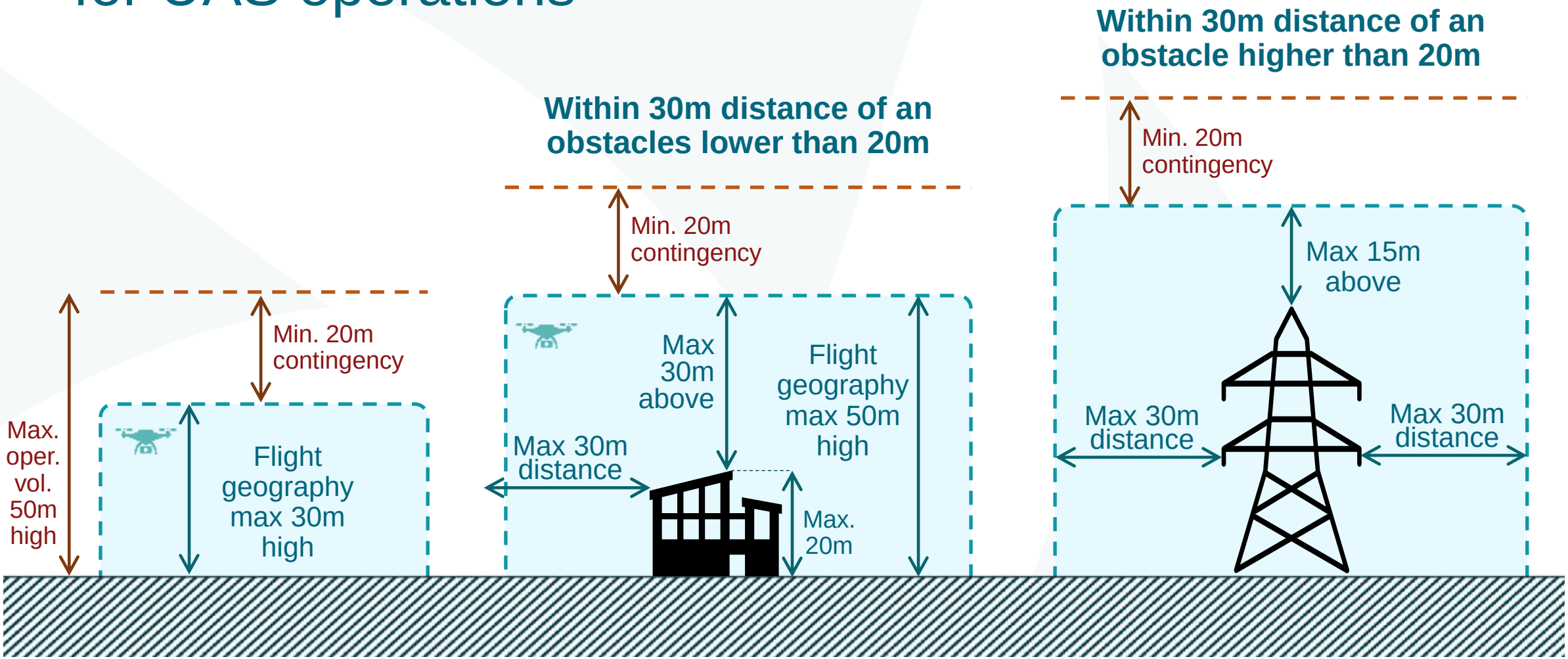
- Made to facilitate operational authorisations for UAS operations for routine and automated surveillance and inspection of facilities and infrastructures, with the UA flying very close to such facilities and infrastructures.
- Flight geography
  - limited in height (max 30m AGL or above obstacle)
  - Limited in its lateral boundaries by the range of the DIRECT C2 link (no network-based C2 link allowed)

Ground risk

- Ground risk: in addition to the conditions included in previous PDRAs, the UAS operator should ensure that the person or the entity responsible for the facility or infrastructure over which the operation takes place, has taken the necessary measures to protect the uninvolved persons present within its limits during the entire UAS operation.

NEW!

# PDRA G-03 MAXIMUM flight height when in airspace not reserved nor segregated for UAS operations

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# NEW! PDRA G-03 for BVLOS flights

- Drone characteristics: maximum characteristic dimensions up to 3 m and typical kinetic energy up to 34 kJ;
- over sparsely populated areas;
- at very low level, see previous slide;
- operated in BVLOS within the range of a direct C2 link;
- the operation should be limited to pre-programmed or pre-planned flexible routes, which decrease the risk of collision with obstacles (given the short distance to those), allowing for a better protection of third parties on the ground, also due to prior knowledge of the routes (thus avoiding overflight above people)

# SPECIFIC: Cross-border operations or operations outside the State of registration

Authorisation granted by CA of registration based on assessment of SORA

**OR**

Declaration with conf. of receipt by CA of registration based on standard scenario

Cross border operations or operation outside state of registration

- Operator revises mitigation measures for e.g.: local airspace, terrain, population and climate
- Revision sent by operator to CA of operation using application form for a cross-border UAS operation
- Other CA assesses the update and issues statement of acceptance to operator and CA of registration
- After receiving the confirmation of acceptability, the UAS operator may start its operation.
- The CA of the MS of registration issues a revision of the operational authorisation listing the additional new location(s), and provide a copy of the revised operational authorisation to the MS of authorisation and to the UAS operator

- Operator forwards declaration and confirmation of receipt (sent by CA of registration) to the CA of operation

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# SPECIFIC: Cross-border operations or operations outside the State of registration

**UAS operator holds a LUC**

Cross border operations or
operation outside state of registration

Operator must provide to the CA of operation:

1. the location(s) of the intended operation
2. a copy of the terms of approval received by the CA of registration

If the LUC terms of reference include the privileges to assess the local conditions and to apply the mitigation measures in other locations, than the UAS operator may start the operation as soon as it has received confirmation of receipt and completeness of the application.

If the LUC terms of reference do not include the privileges to assess the local conditions and/or apply the mitigation measures in other locations, than the UAS operator may start the operation only after it has received the confirmation of acceptability that the updated mitigation measures and procedures are satisfactory for the intended location(s).

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# SPECIFIC category, pilot competences

**SPECIFIC**

| | |
|---|---|
| Non -STS | Competencies defined in the Operational Authorisation |
| STS-2 | Extended practical skill training and assesment (continuous evaluation)<br>*'Accreditation of completion of STS2 practical skill training" by RE or Operator* |
| STS-1 | Practical skill training and assesment (continuous evaluation)<br>*'Accreditation of completion of STS1 practical skill training" by RE or Operator* |
| | Additional theoretical knowledge examination (2 versions)<br>*''Certificate of remote pilot theor. knowledge for operations in the STSes" by BCAA or DE* |
| OPEN A2 | ***''Certificate of remote pilot competency''*** *by CA or DE* |

Can be based on self-study

**SPECIFIC**

There is **no** such thing as an overall official "**SPECIFIC Certificate of remote pilot competency**"

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# Specific category “NEED TO KNOWS” BEFORE TAKE-OFF

# WHAT TO KEEP IN MIND

## Operational authorisation ≠ Flight authorisation

(« Autorisation d'exploitation » – « Exploitatievergunning »)

- Relevant for the Specific category only
- Tied to type of flight and characteristics of the location
- Always based on SORA
- NOT tied to actual GPS coordinates
- Remains valid for a long period of time
- **Granted by the BCAA**

(« Autorisation de vol » – « Vluchtvergunning »)

- Only required in certain GeoZones (nationally defined)
- Can be relevant for all categories (Open, Specific and/or Certified)
- Valid for a short period of time
- Can be granted automatically (= notification)
- **Granted by a GeoZone Manager**

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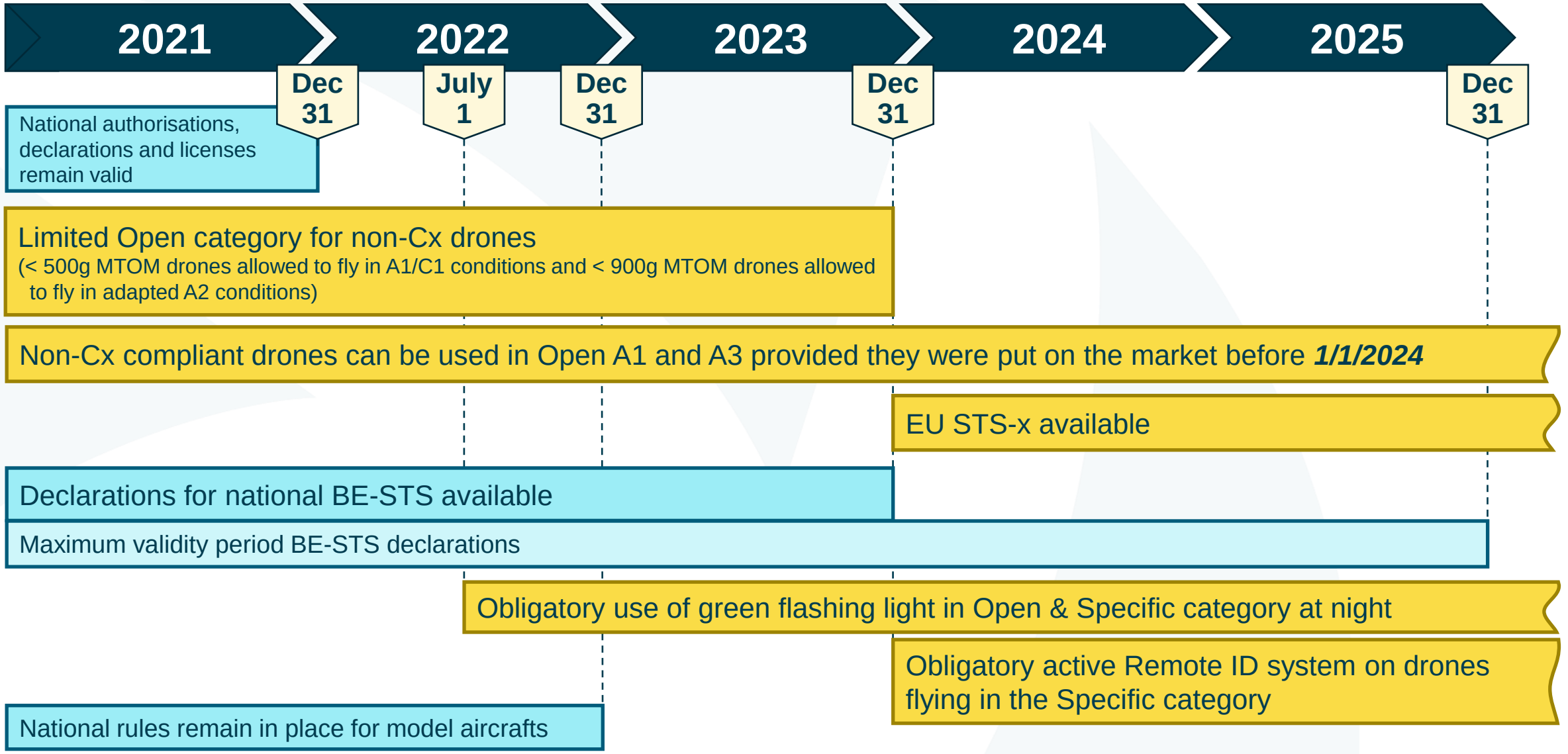
# Applicability overview

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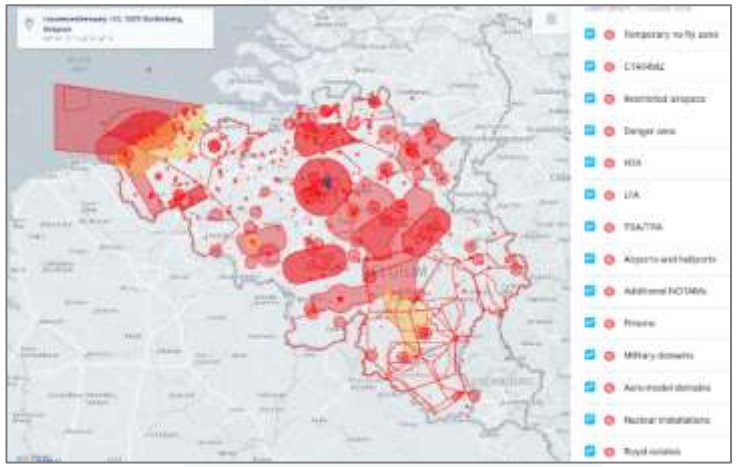
# SUMMARY OF WHAT TO KEEP IN MIND

## NEED TO RESPECT

### Generic rules


### National GeoZones



- Aerodrome zones (incl. heliports)
- P/D/R + Military zones
- CTRs
- Seaports
- UAS test-zones
- ….

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# SUMMARY OF WHAT TO KEEP IN MIND

## NEED TO RESPECT

### Generic rules

**No individual flight approval nor notification required**

+

### National GeoZones

**Individual flight approval and/or notification might be required**

- Aerodrome Zones (incl. Heliports)
- P/D/R + Military zones
- CTRs
- Seaports
- UAS test-zones
- ….

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# HAVE A SAFE FLIGHT


For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# HAVE A SAFE FLIGHT


**map.droneguide.be**

Check on that map which GeoZones overlap with your flightplan and list all of them in YOUR LIST of relevant GeoZones.

For each GeoZone on YOUR LIST you will have to go and see who the GeoZone Manager is and what extra rules he imposes

Make sure you comply with all additional conditions for each zone (e.g. max flight height, drone requirements, ...)

Get all your authorisations from the different Geozone managers (if required)

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# 4 CERTIFIED FLIGHT CATEGORY



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# New EU legislation as from January 1st

Including **automated** flights

## OPEN

- Low risk
- No operational authorisation or declaration required by operator before start of flight
- VLOS, 25kg MTOM, 120m AGL

Including **BVLOS** & **autonomous** flights

## SPECIFIC

- Increased risk
- Operational authorisation required by CA based on SORA

  **or** Declaration suffices if Standard Scenario (STS-x)

  **or** LUC self-authorisation

Think of Air Taxi's
or
Cargo over dense urban area

## CERTIFIED

- Risk as manned aviation
- Certified operator
- Certified UAS with CoA
- Licensed pilot

Whatever the category:
there are minimum pilot competencies !

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# EU legislation flight category details

Including automated flights



## OPEN

- Low risk
- No operational authorisation or declaration required by operator before start of flight
- VLOS, 25kg MTOM, 120m AGL

Including BVLOS & autonomous flights



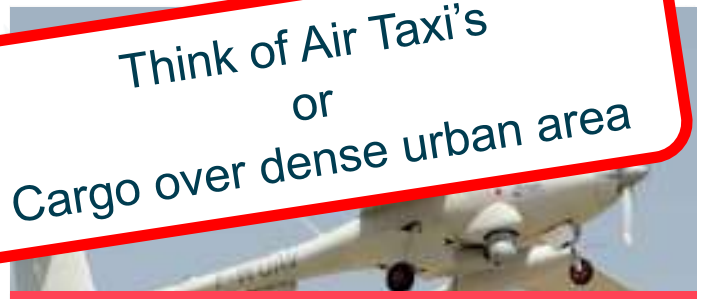
## SPECIFIC

- Increased risk
- Operational authorisation required by CA based on SORA

  or Declaration suffices for Standard Scenario's (STS-x)

  or LUC with self-authorisation

Think of Air Taxi's
or
Cargo over dense urban area



## CERTIFIED

- Risk as manned aviation
- Certified operator
- Certified UAS with CoA
- Licensed pilot

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# CERTIFIED category :

**CERTIFIED**

- Risk as manned aviation
- Certified operator
- Certified UAS with CoA
- Licensed pilot

Think of Air Taxi's
or
Cargo over dense urban area

# CERTIFIED category: manned aviation procedures


## UAS Certification needed if:

- it is designed  to be operated over assemblies of people and characteristic dimension more than 3m
- it is designed for transporting people
- it is designed for transport of dangerous goods, requiring high level of robustness to mitigate risk
- It is used in the ‘Specific Category’ of operations but the operational authorisation mentions the need for certification (following risk assessment)

## Operation falls in category ‘Certified’ if:

- The UAS is certified because of (a),(b) or (c) AND the operation is conducted in any of the following conditions:
  - **over assemblies of people**
  - **involves transport of people**
  - **involves the carriage of dangerous goods, resulting in high risk in case of accident**
- OR **the risk assessment shows risk cannot be mitigated without certification of the UAS** and the operator, and where needed, without licensing the pilot

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# CERTIFIED category: manned aviation procedures


## CONCLUSION:

- the transport of people is always in the ‘certified’ category
- flying over assemblies of people with a UAS that has a characteristic dimension of less than 3m may be in the ‘specific’ category unless the risk assessment and subsequent operational authorisation concludes that it is in the ‘certified’ category
- the transport of dangerous goods is in the ‘certified’ category if the payload is not in a crash-protected container, such that there is a high risk for third parties in the case of an accident.

## IMPORTANT NOTE:

- The use of a certified UA in the ‘specific’ category of operation does not imply a transfer of the operation into the ‘certified’ category.
- However, the use of a certified UA in the ‘specific’ category should be considered as a risk reduction and/or mitigation measure to be taken in to account in the SORA.

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

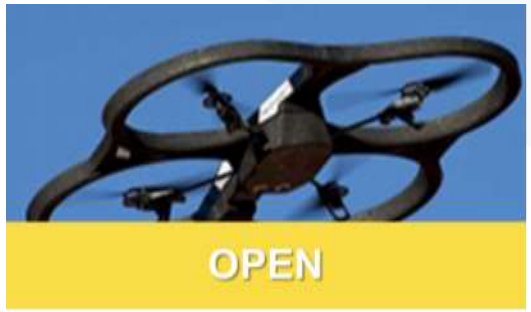
# CERTIFIED category: manned aviation procedures


## Definition of ‘Dangerous goods’

- ‘Dangerous goods’ should be considered any articles or substances which are capable of posing a hazard to health, safety, property or the environment, and which are listed as dangerous goods in the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Doc 9284), known as the ‘Technical Instructions’, or which are classified as such according to the Technical Instructions.
- articles and substances required to be on board the aircraft for the propulsion of the UAS or for the operation of its equipment, which would be classified as dangerous goods (e.g. fuel), should not be considered as transported dangerous goods as their safety is verified during the design verification of the UAS.
- a clarification has been added in the AMC on the use of a crashworthy container for the transport of dangerous goods in the ‘specific’ category and on the need to establish and maintain a training programme as required by the ICAO Technical Instructions.

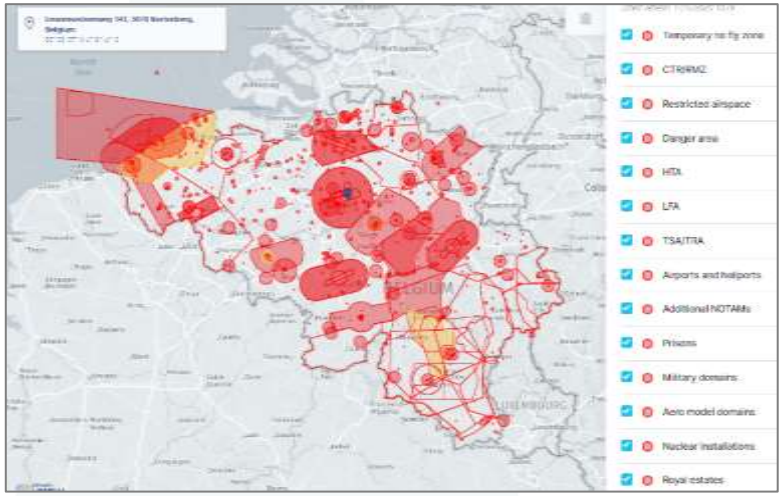
# 5 GEOZONES

# THREE CATEGORIES DRONE OF FLIGHT






What ever the category you fly in
(each with their own generic rules and requirements which apply everywhere)
ALWAYS make sure you ***ALSO*** comply with
the ***Geo-Zone requirements***



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# GEO-ZONES

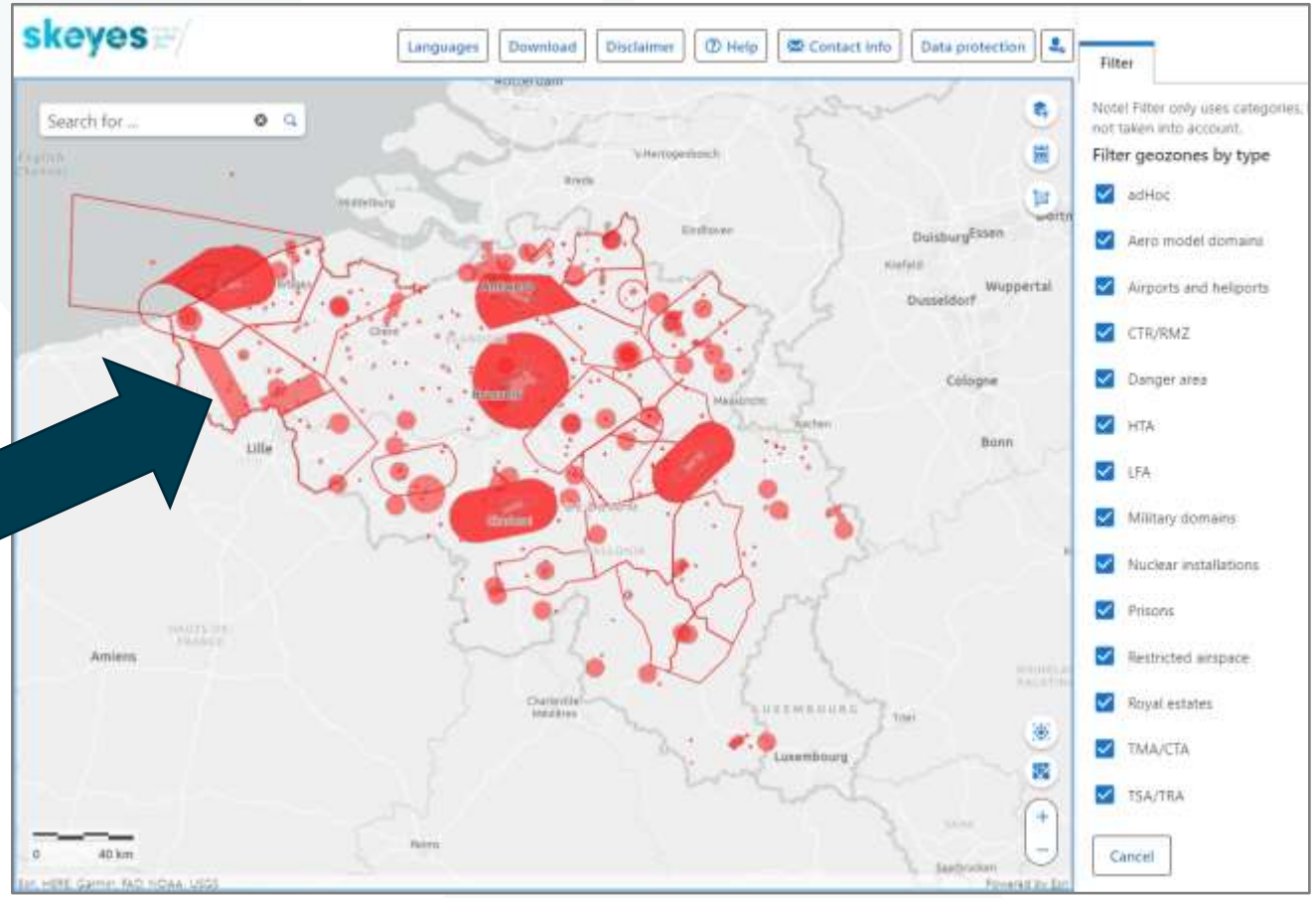
**! ALL FLIGHT CATEGORIES NEED TO COMPLY !**
OPEN / SPECIFIC / CERTIFIED

- Nationally defined
- Deviations from the general rules for reasons of safety, security, environment or privacy

**map.droneguide.be**
(click on “Viewer”)

Each zone has its own
do's-and-don’ts

e.g.
- Only certain drones allowed
- Flight authorisation required
- Only fly up to 10m
- Complete no-fly zone

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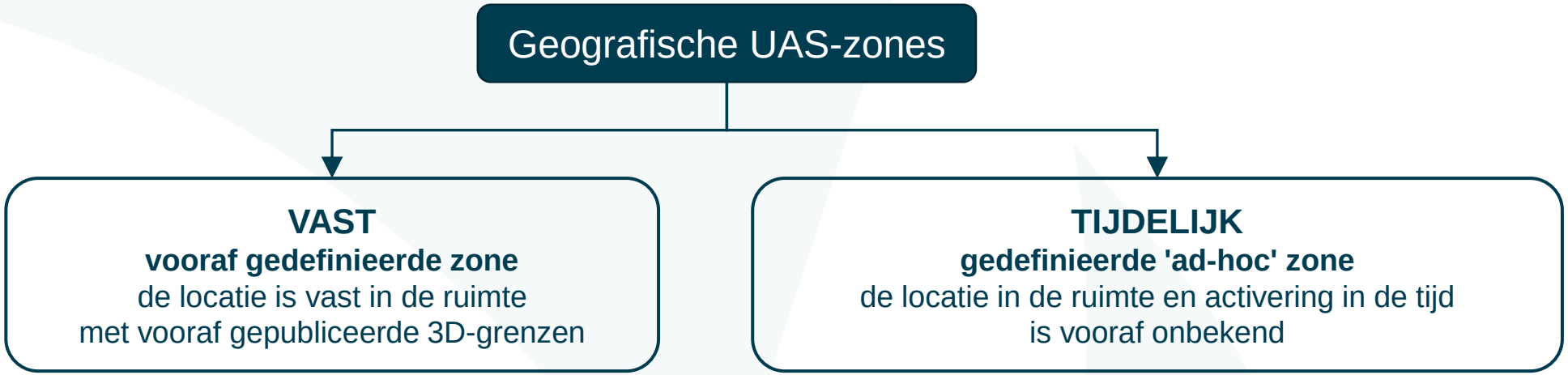
# GEO-ZONES





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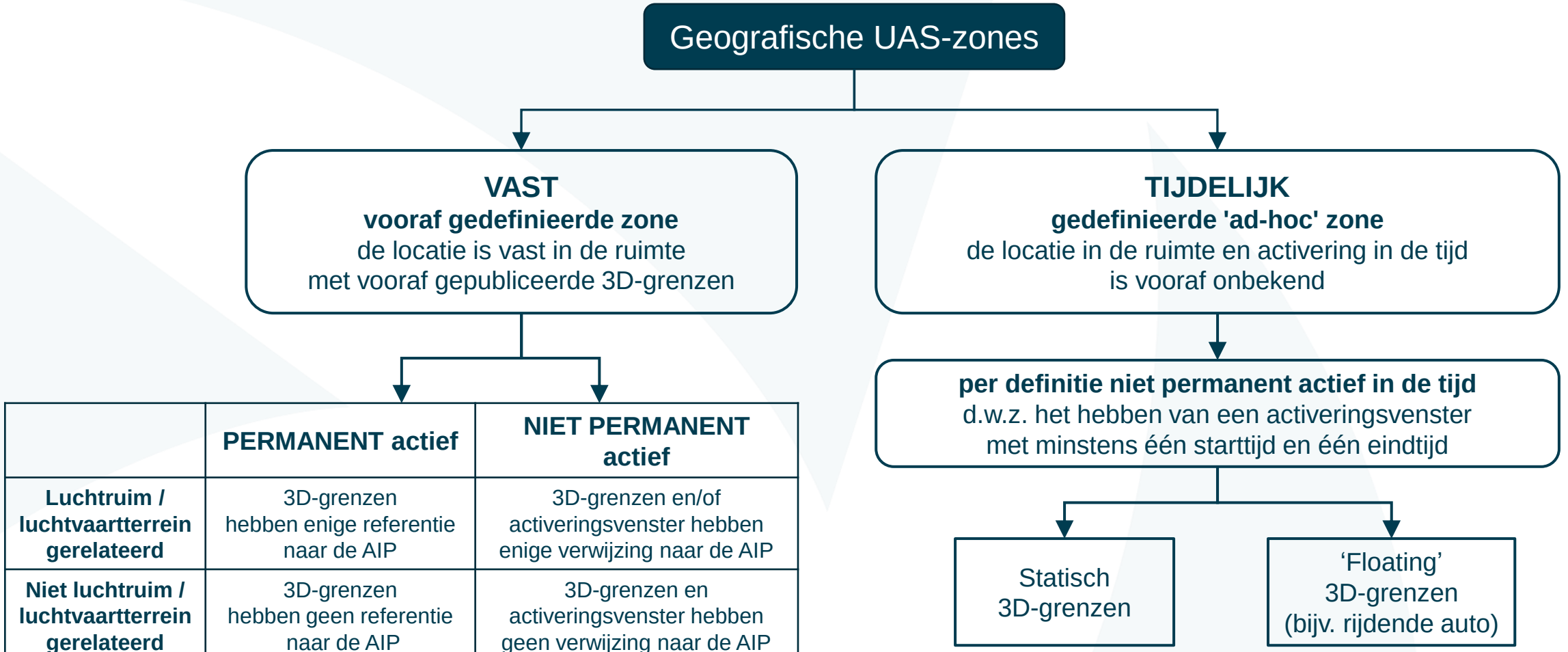
# GEO-ZONES




| | PERMANENT actief | NIET PERMANENT actief |
|---|---|---|
| **Luchtruim / luchtvaartterrein gerelateerd** | 3D-grenzen hebben enige referentie naar de AIP | 3D-grenzen en/of activeringsvenster hebben enige verwijzing naar de AIP |
| **Niet luchtruim / luchtvaartterrein gerelateerd** | 3D-grenzen hebben geen referentie naar de AIP | 3D-grenzen en activeringsvenster hebben geen verwijzing naar de AIP |


For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# GEO-ZONES

**! ALL FLIGHT CATEGORIES NEED TO COMPLY !**
OPEN / SPECIFIC / CERTIFIED

**map.droneguide.be**

- [x] adHoc

Temporary zones created ad hoc by the BCAA

- [x] Aero model domains
- [x] Airports and heliports
- [x] CTR/RMZ
- [x] Danger area
- [x] HTA
- [x] LFA
- [x] Military domains
- [x] Nuclear installations
- [x] Prisons
- [x] Restricted airspace
- [x] Royal estates
- [x] TMA/CTA
- [x] TSA/TRA


For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# GEO-ZONES managed by skeyes using Drone Service Application

- [x] Aero model domains
- [x] Airports and heliports — Only the mil. Ones!
- [x] CTR/RMZ
- [x] Danger area — All of them are military
- [x] HTA — All of them are military
- [x] LFA — All of them are military
- [x] Military domains — All of them are military
- [x] Nuclear installations
- [x] Prisons
- [x] Restricted airspace — Only the mil. ones!
- [x] Royal estates
- [x] TMA/CTA
- [x] TSA/TRA — All of them are military

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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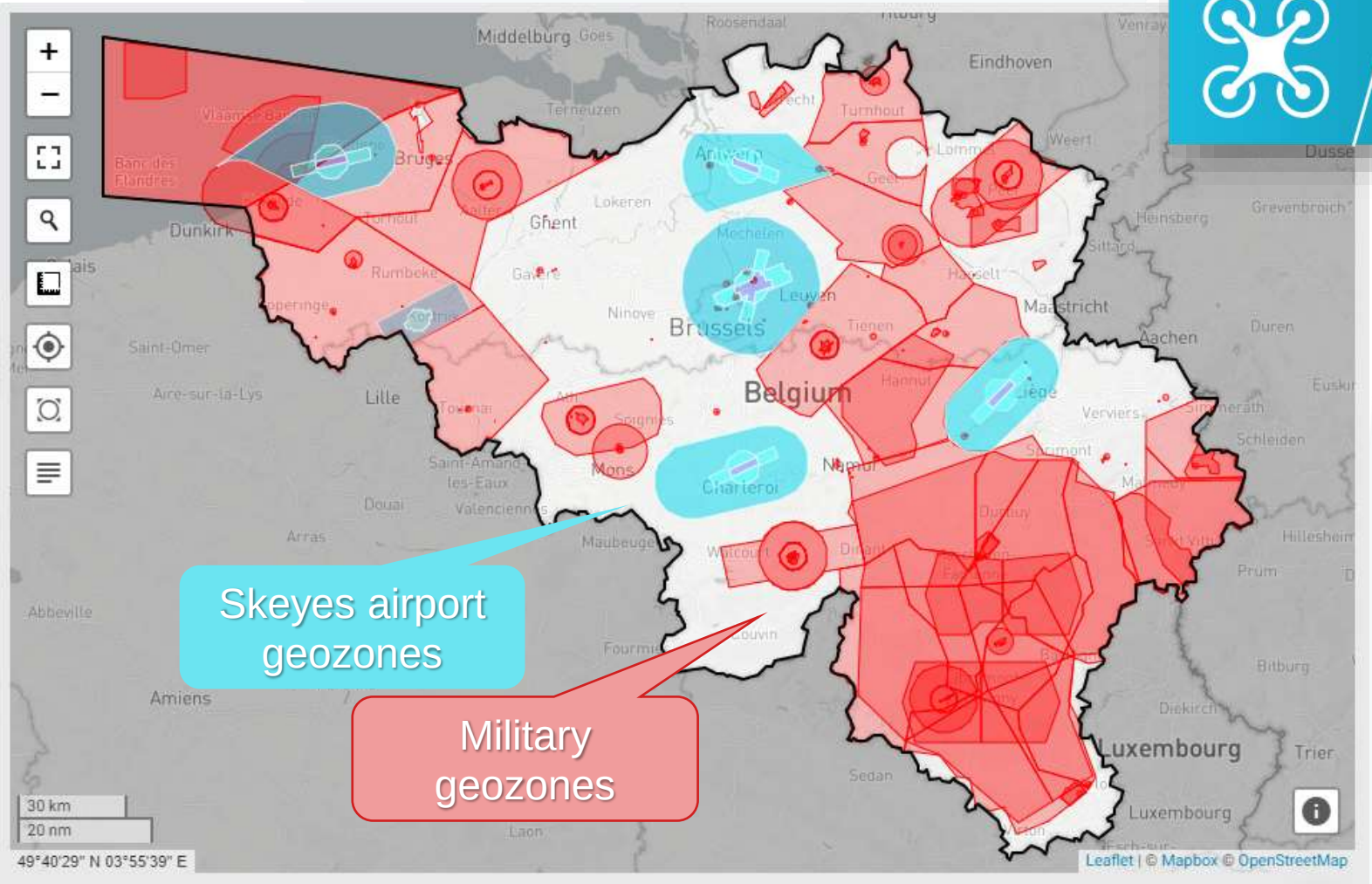
# All geozones where you are obliged to use




Drone Service Application

https://www.skeyes.be/nl/diensten/drone-home-page/you-and-your-drone/

https://www.skeyes.be/fr/services/drone-home-page/you-and-your-drone/

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# Other GEO-ZONES

- Aero model domains
- Airports and heliports — Only the CIV. Ones, excl. EBKT!
- CTR/RMZ
- Danger area — All of them are military
- HTA — All of them are military
- LFA — All of them are military
- Military domains — All of them are military
- Nuclear installations
- Prisons
- Restricted airspace — Only the CIV. ones!
- Royal estates
- TMA/CTA — Special case, all above 1500ft
- TSA/TRA — All of them are military

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# Other GEO-ZONES: all require prior flight authorization by Geozone Mgr

- Model aircraft terrains
- Civ. uncontrolled aerodromes excl. EBKT
- Civ. Heliports excl. EBKT
- Nuclear installations: geo-awareness + direct remote ID obligation*
- Prisons: direct remote ID obligation*
- Civ. Restricted area's
  - Seaport (with additional access conditions)
  - UAS test facilities (with additional access conditions)
  - Brussels wider city area
- Royal estates

*: exemptions for Geo-awareness and Remote-ID requirements until 1/1/2024 for Open category flights with MTOM < 900g and Specific category flights

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# Before you fly


## Make sure you have an operator registration

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

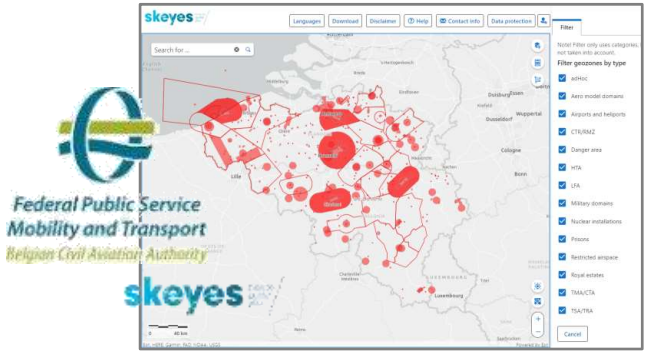
# As of December 31st : **STEP 1** before each flight

Aviation portal
Operator registration

Federal Public Service
Mobility and Transport

***Official new GeoZone publication tool (including NOTAM parsing)***

**https://map.droneguide.be**




**TO DO:**
**Check on that map which GeoZones overlap with YOUR FLIGHTPLAN and list all of them in YOUR LIST of relevant GeoZones.**

**You will have to comply with ALL additional rules they EACH impose.**

## How do you get to know what those are?

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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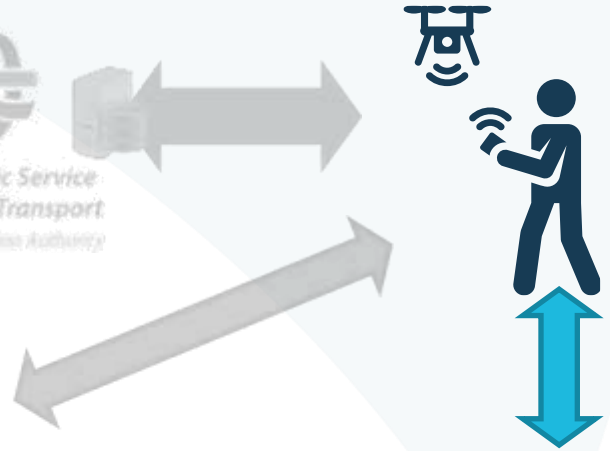
Enabling safe drone operations

# As of December 31st : **STEP 2** before each flight

Aviation portal
Operator registration

Federal Public Service
Mobility and Transport



*Official new GeoZone publication tool (including NOTAM parsing)*

**https://map.droneguide.be**


**Go and check for each relevant GeoZone**


**For each GeoZone on YOUR LIST you will have to go and see who *the GeoZone Manager* is and what extra rules he imposes**

Some GeoZone Managers, might impose individual **flight authorisation** (e.g. skeyes who does so for each flight within any of its civil CTR GeoZones)

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# As of December 31st : **STEP 3** before each flight

Aviation portal
Operator registration

Federal Public Service
Mobility and Transport

Rules + **flight auth. procedure**

skeyes as GeoZone Manager for controlled airspace

Rules + **flight auth. procedure**

Geo Zone Mgr. Zone B

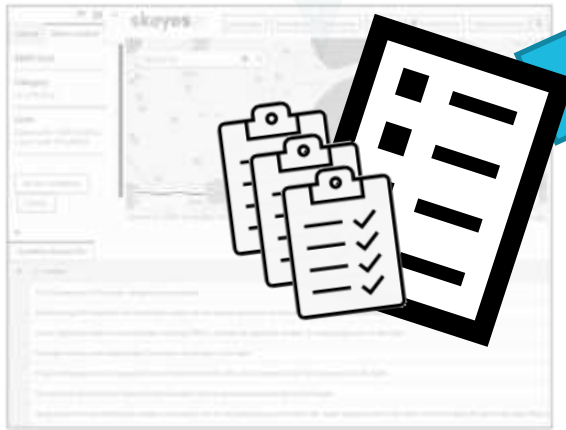
Rules

Geo Zone Mgr. Zone A

***Official new GeoZone publication tool (including NOTAM parsing)***

https://map.droneguide.be

Go and check for each relevant GeoZone



**Make sure you comply with all additional conditions for each zone (e.g. max flight height, drone requirements, …)**

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# As of December 31st : **STEP 4** before each flight

Aviation portal
Operator registration

Federal Public Service Mobility and Transport

Drone Service Application in skeyes GeoZones

skeyes

Flight auth.

Flight auth.

Geo Zone Mgr. Zone B

***Official new GeoZone publication tool (including NOTAM parsing)***

https://map.droneguide.be

Go and check for each relevant GeoZone

**Make sure you request individual flight authorisation if/where required by the GeoZone Manager**

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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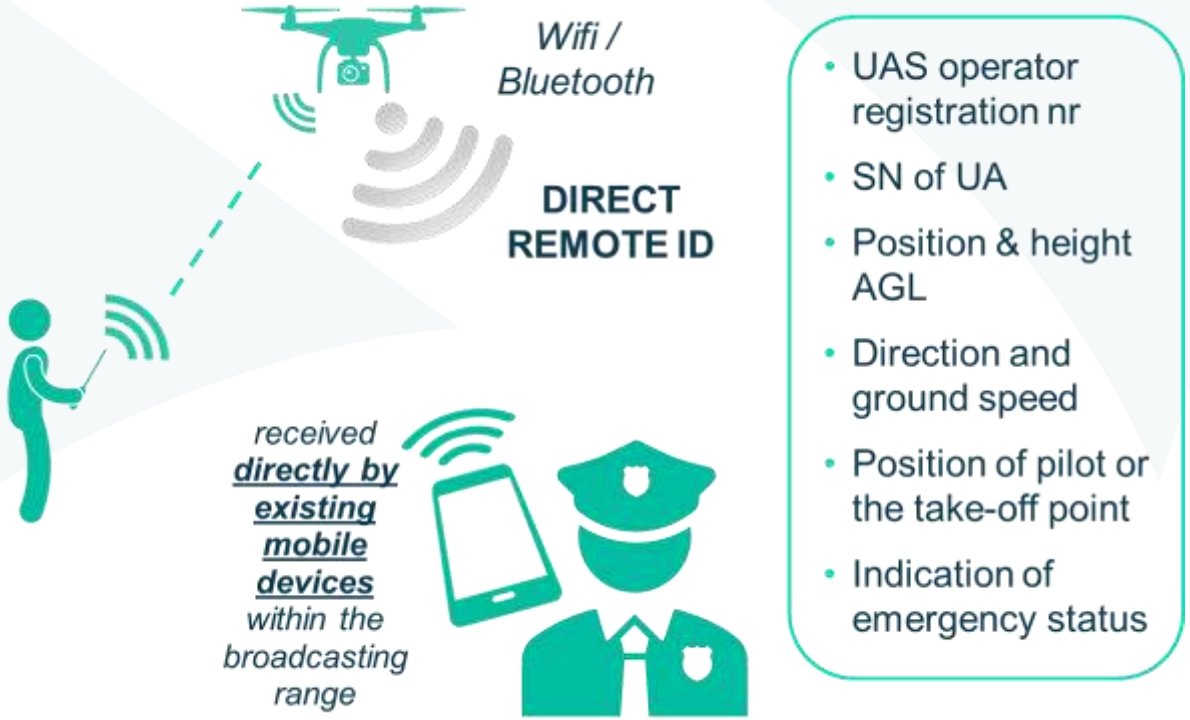
# What is Direct Remote ID when imposed in a GeoZone?

## Definition as per 945/947 EU reg.




## When/where is it mandatory?
(if not imposed by a GeoZone)

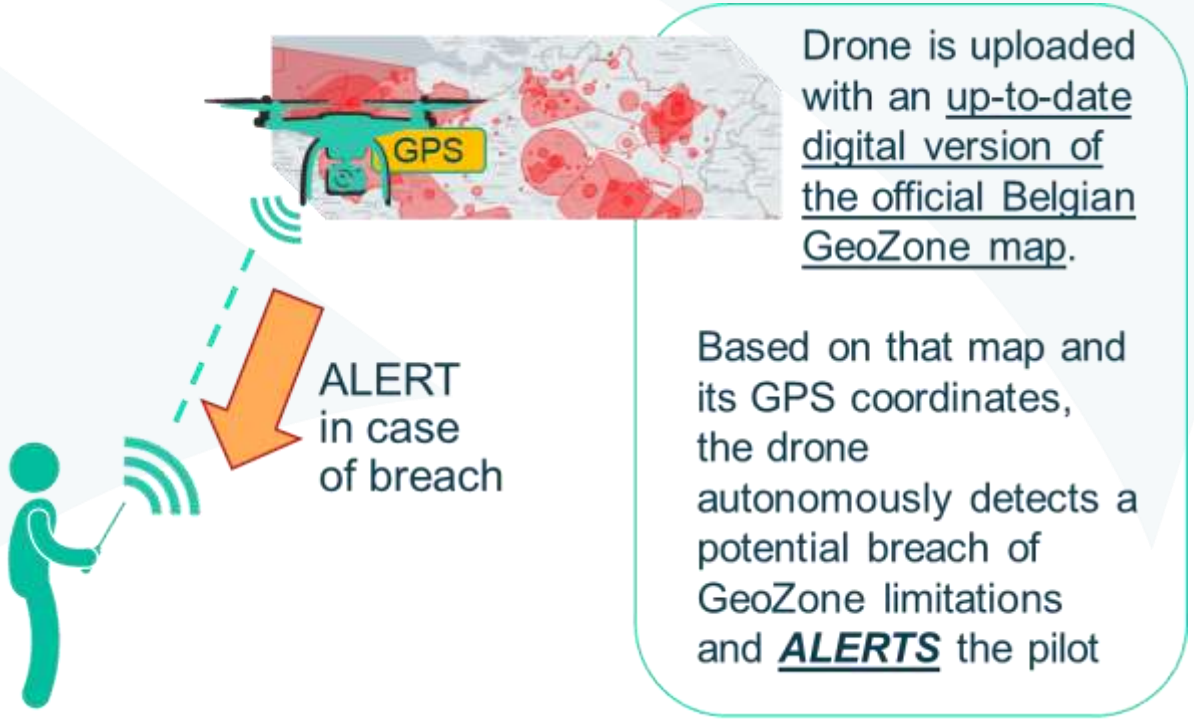
- For flights in the Open category: C1, C2, non-tethered C3, C5 and C6 drones by definition have this feature on board and only when using those drones is there an obligation in the Open category to have direct remote ID active during the flight.
  Such Cx-compliant drones are however not yet available on the market.

- Its use is obligatory for all flights in the Specific category only as from 1/1/2024

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# What is Geo-Awareness when imposed in a GeoZone?

## Definition as per 945/947 EU reg.




not be confused with the functionality offered on DJI drones called 'DJI geofencing' as this DJI drone feature refers to the alerting of the pilot based on a bespoke map designed and made public by DJI based on its very own safety criteria.

## When/where is it mandatory?
(if not imposed by a GeoZone)

- C1, C2 and C3 drones operated in the Open category by definition have this feature on board and should have it activated during all flights. It is optionally available on C5 and C6 drones (to be used to execute STS1 and STS2 as of 1/1/2024), if present on them it should be activated during all flights.
- Cx-compliant drones are however not yet available on the market today (1/1/2022).

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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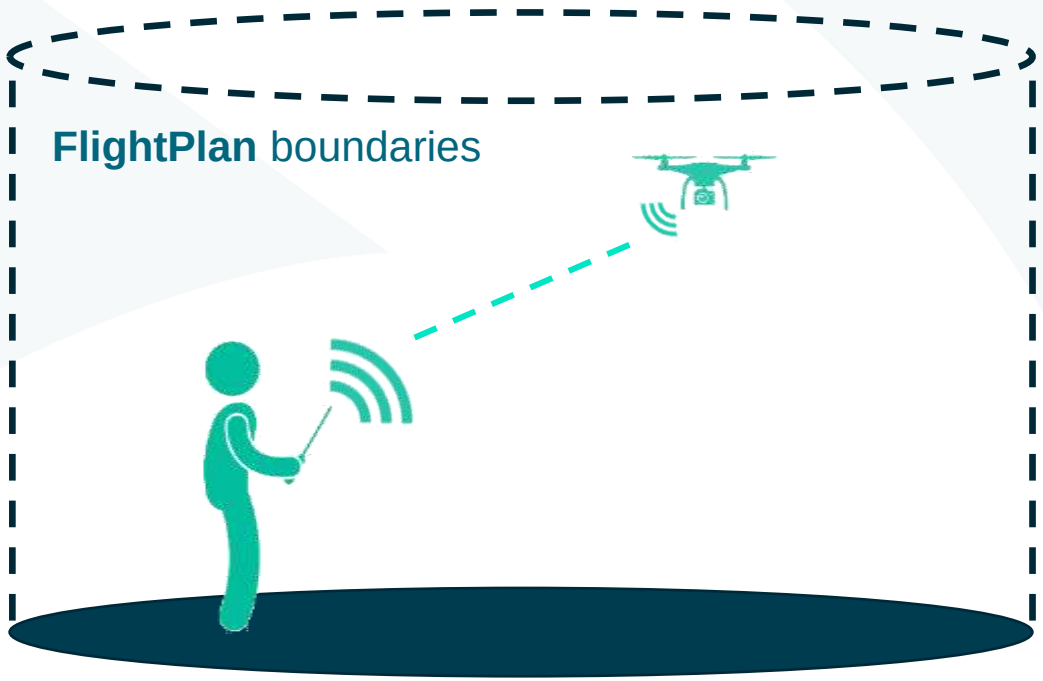
# What is Geo-Caging when imposed in a GeoZone?

## No definition in the 945/947 EU reg.



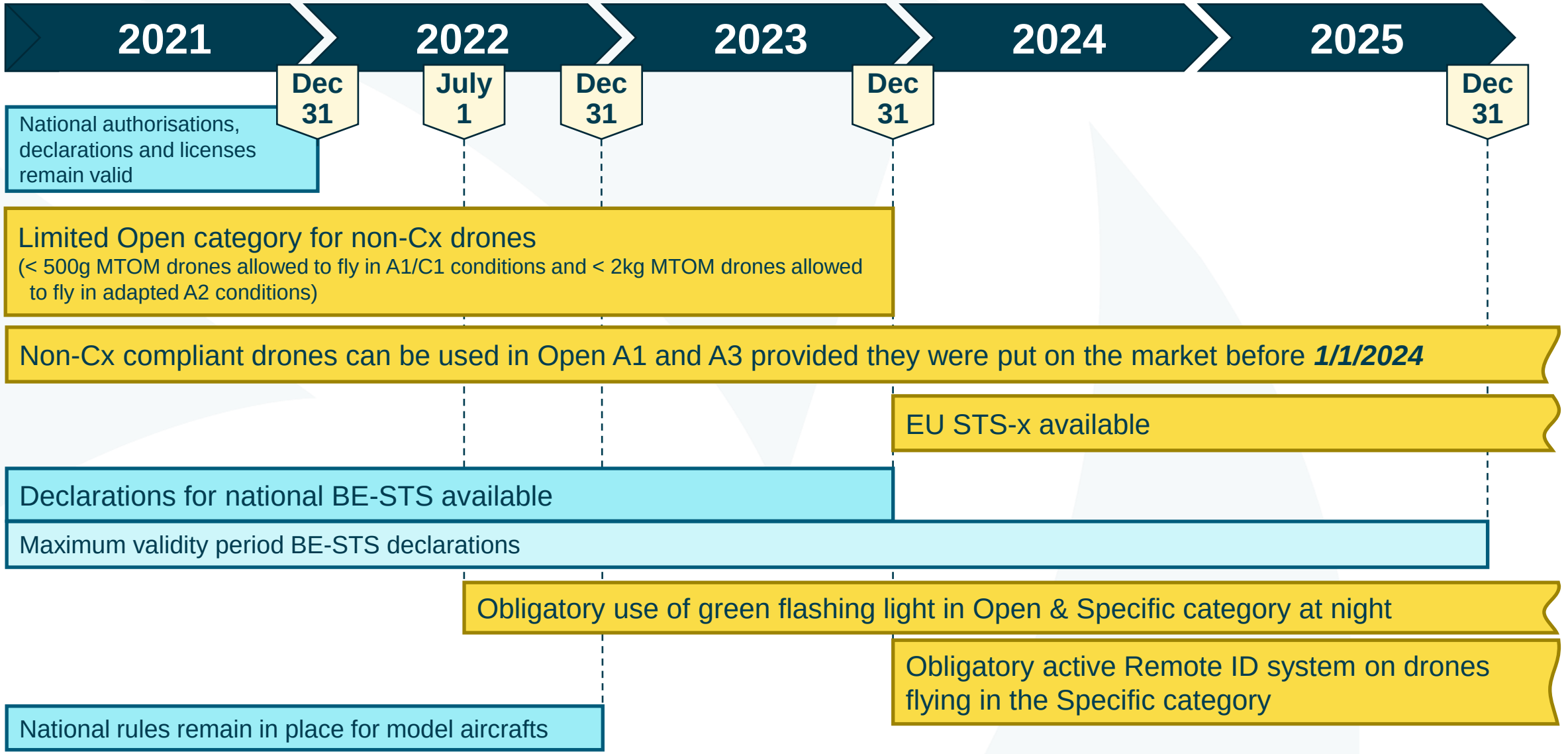

Can only be imposed by a GeoZone

- Referred to as a system that prevents the drone from flying over a given altitude and a given distance outside a given volume of airspace (vertically and horizontally) as defined during the flight planning phase of the drone operation.

- It is equivalently referred to in the EU Delegated Act in the section used to define the obligatory characteristics of a C6 drones as being ‘a system that prevents the UA from breaching the horizontal and vertical limits of a programmable operational volume’.

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# Applicability overview




For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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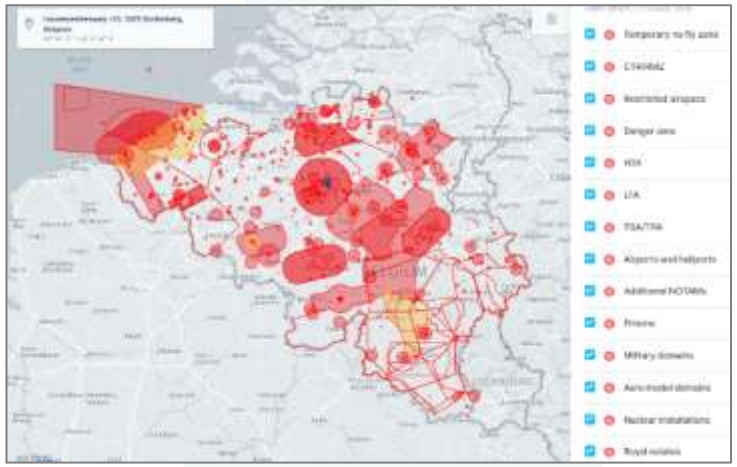
# SUMMARY OF WHAT TO KEEP IN MIND

## NEED TO RESPECT

### Generic rules


### DELTA's vs. generic rules:

### National GeoZones



- Aerodrome zones (incl. heliports)
- P/D/R + Military zones
- CTRs
- Seaports
- UAS test-zones
- ….

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# SUMMARY OF WHAT TO KEEP IN MIND

## NEED TO RESPECT

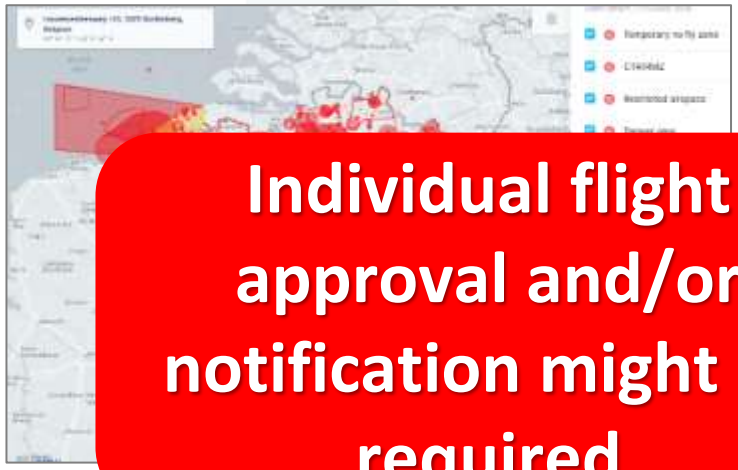
### Generic rules


**No individual flight approval nor notification required**

+

### DELTA's vs. generic rules:

### National GeoZones



**Individual flight approval and/or notification might be required**

- Aerodrome zones (incl. heliports)
- P/D/R + Military zones
- CTRs
- Seaports
- UAS test-zones
- ….

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# HAVE A SAFE FLIGHT


For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# HAVE A SAFE FLIGHT


**map.droneguide.be**

Check on that map which GeoZones overlap with your flightplan and list all of them in YOUR LIST of relevant GeoZones.

For each GeoZone on YOUR LIST you will have to go and see who the GeoZone Manager is and what extra rules he imposes

Make sure you comply with all additional conditions for each zone (e.g. max flight height, drone requirements, ...)

Get all your authorisations from the different Geozone managers (if required)

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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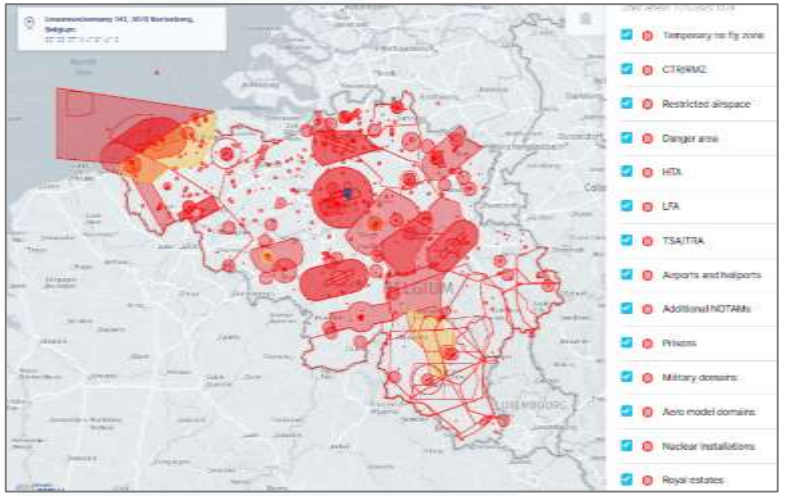
# 6 CTRs & Military areas AS GEOZONES

# THREE CATEGORIES DRONE OF FLIGHT




What ever the category you fly in
(each with their own generic rules and requirements which apply everywhere)
ALWAYS make sure you ***ALSO*** comply with
the ***Geo-Zone requirements***



For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# GEO-ZONES managed by skeyes using Drone Service Application

- [x] Aero model domains
- [x] Airports and heliports — Only the mil. Ones!
- [x] CTR/RMZ
- [x] Danger area — All of them are military
- [x] HTA — All of them are military
- [x] LFA — All of them are military
- [x] Military domains — All of them are military
- [x] Nuclear installations
- [x] Prisons
- [x] Restricted airspace — Only the mil. ones!
- [x] Royal estates
- [x] TMA/CTA
- [x] TSA/TRA — All of them are military

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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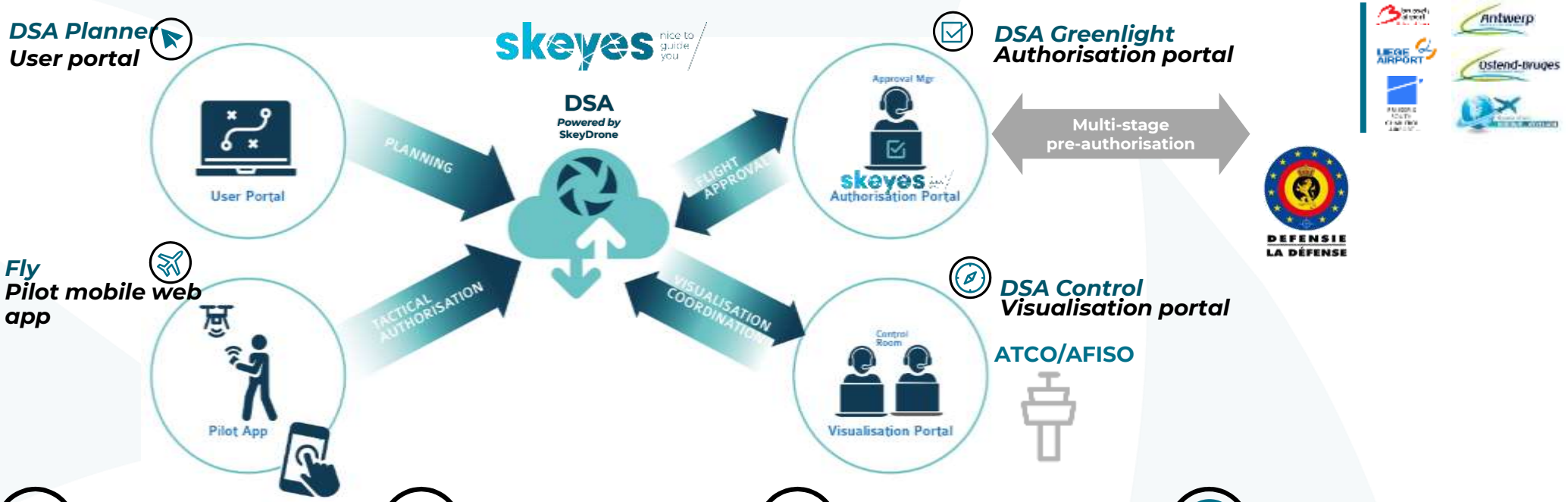
https://www.skeyes.be/nl/diensten/drone-home-page/you-and-your-drone/drone-service-application/

# Drone Service Application




## Planner

Allows operators to manage their fellow operators, pilots and drones, as well as plan and manage their operations in skeyes' CTR's and EBKT RMZ/TMZ.

## Fly

The mobile web interface for operators and pilots for operators and pilots in the field, on the day of the flight.

## Greenlight

skeyes' dedicated module for reviewing and approving operation requests. Allows for flawless authorisation, commenting and communication with operators & pilots.

## Control

The module specifically designed for ATS. Allows an advanced visualisation & monitoring over all drone operations in skeyes' CTR's and EBKT RMZ/TMZ.

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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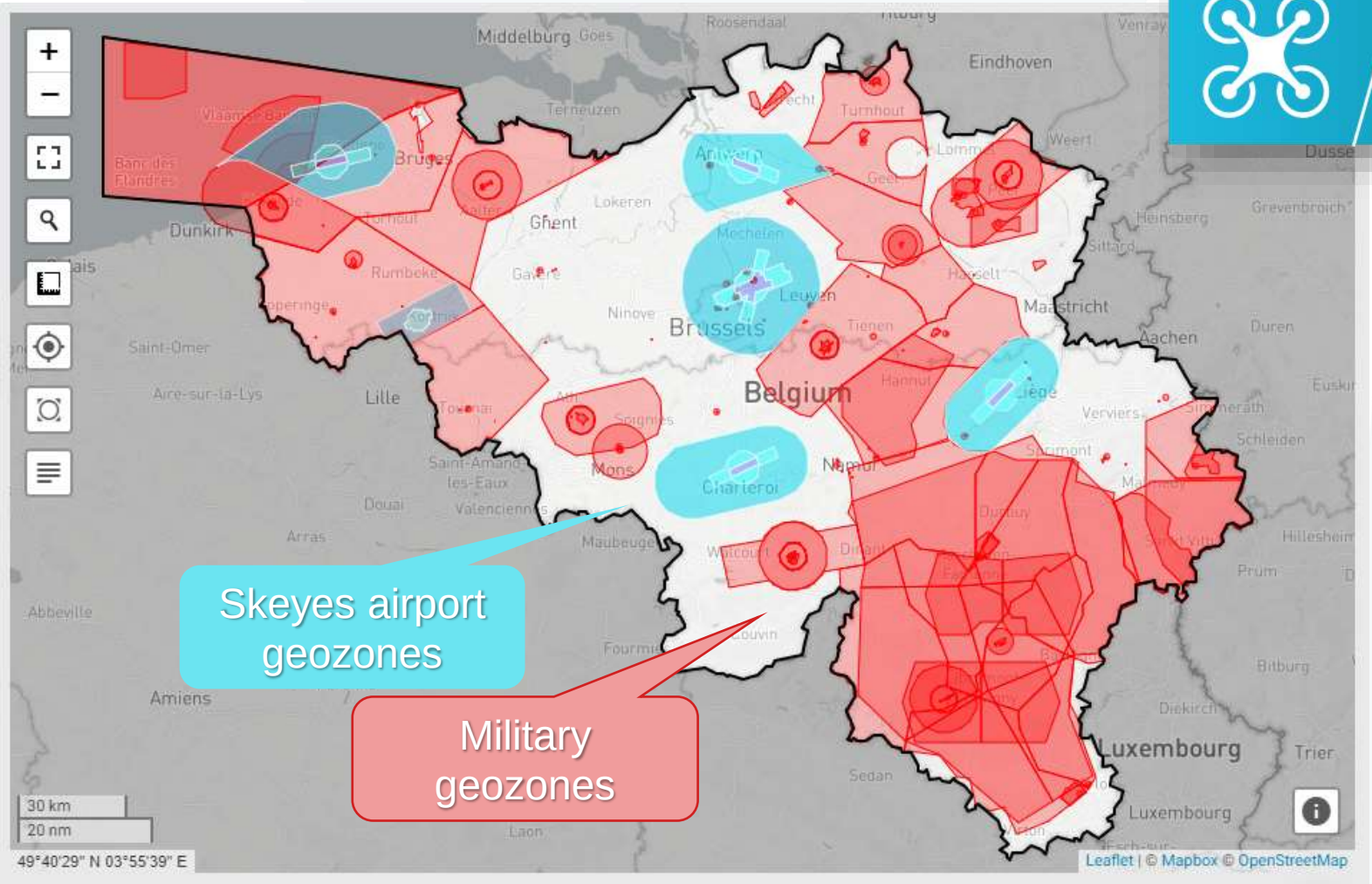
# All geozones where you are obliged to use




Drone Service Application

https://www.skeyes.be/nl/diensten/drone-home-page/you-and-your-drone/

https://www.skeyes.be/fr/services/drone-home-page/you-and-your-drone/

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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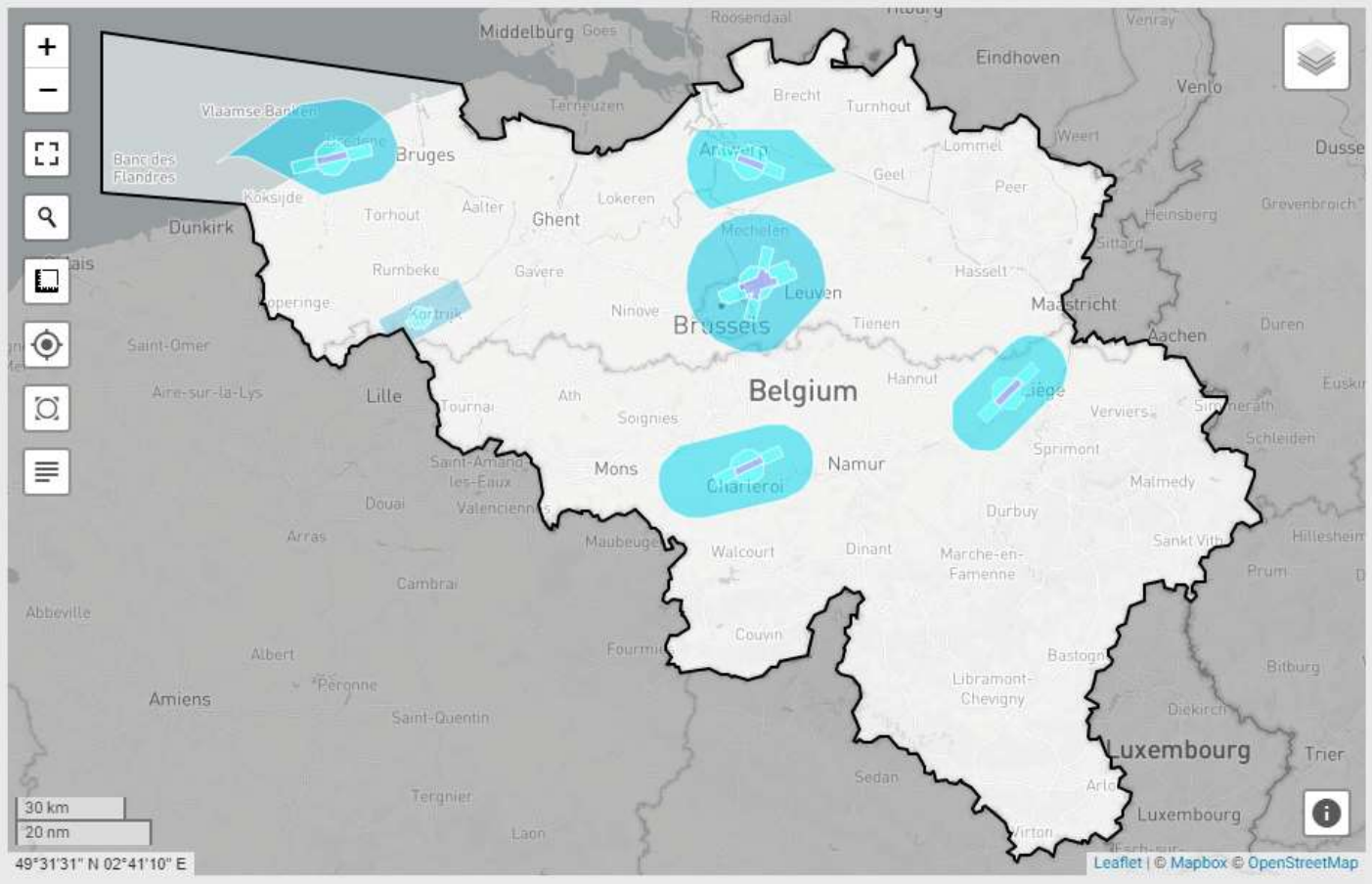
# 6.1 CIVIL CTR zoom-in

# GeoZones in low airspace managed by skeyes




Drone Service Application

CTRs around the 5 civil airports + RMZ around Kortrijk airport

brussels airport the heart of Europe

Antwerp

LIEGE AIRPORT

Ostend-Bruges

BRUSSELS SOUTH CHARLEROI AIRPORT S.A.

Business Airport KORTRIJK - WEVELGEM

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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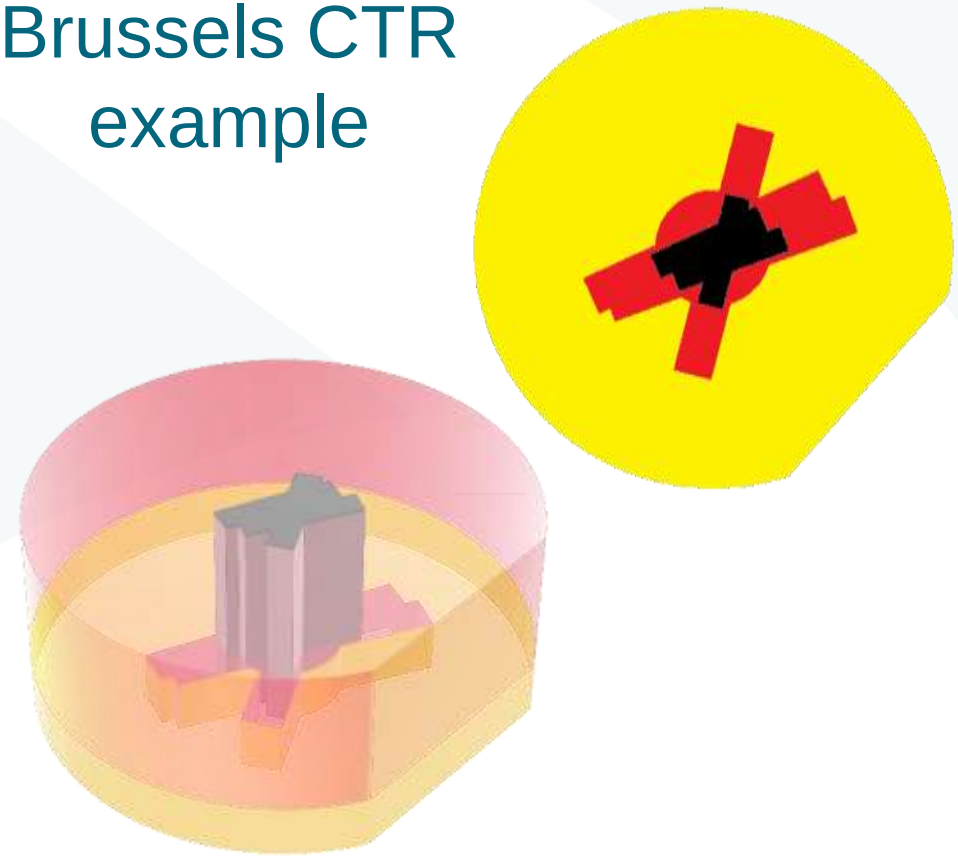
# Civil CTRs no longer one monolithic block

Brussels CTR example

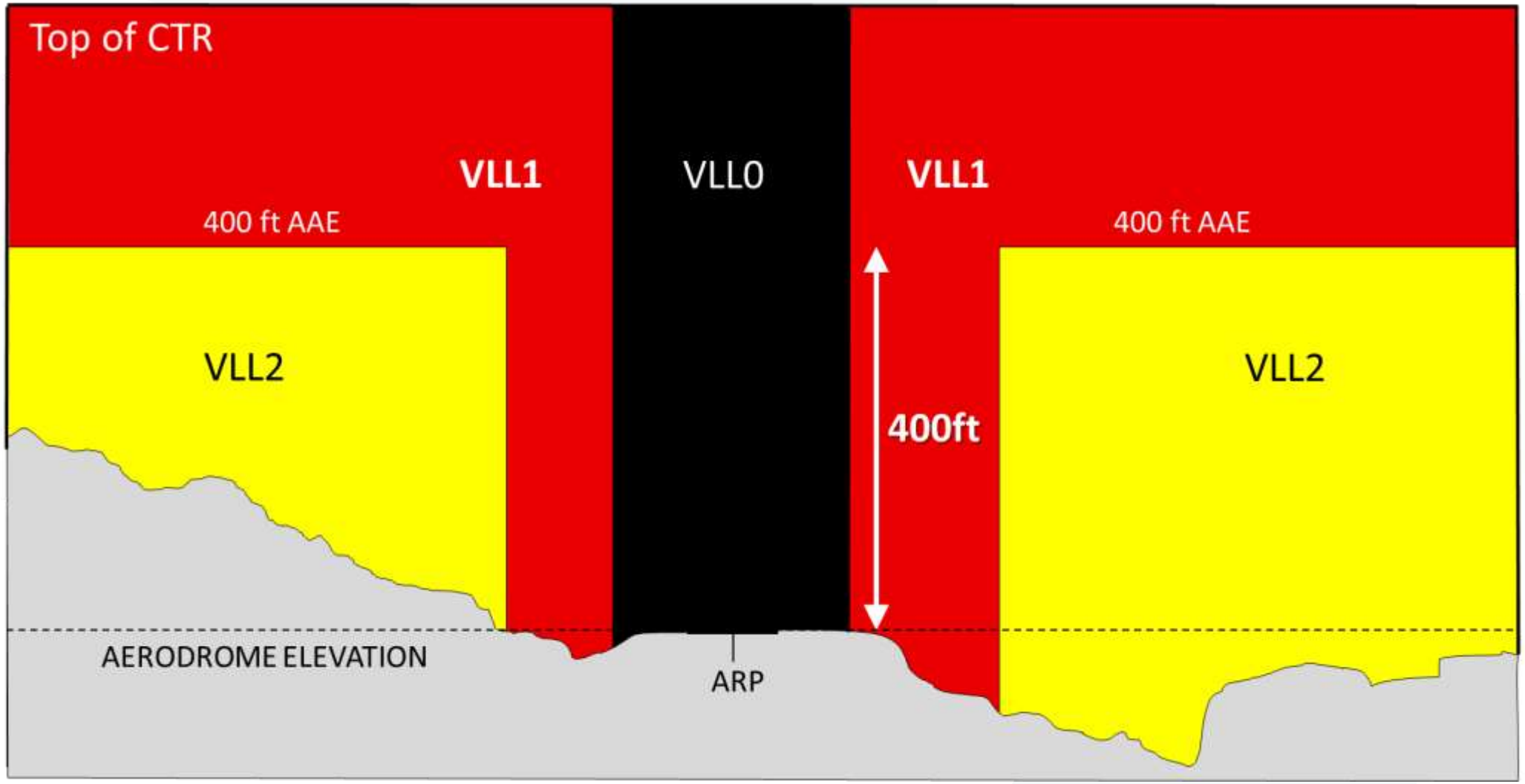


- Definition of 3 sectors within CTRs taking into account the impact of drone activity on manned aircraft activity :
  - VLL0 ‘black’: very high
  - VLL1 ‘red’: high
  - VLL2 ‘yellow’: moderate

- Rules and procedures in order to handle drone activity depending on mainly:
  - Location of the activity (VLLx)
  - Category of drone flight (OPEN or SPECIFIC)

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# CTR VLL topology (Brussels, Antwerp, Liège, Charleroi, Ostend)




For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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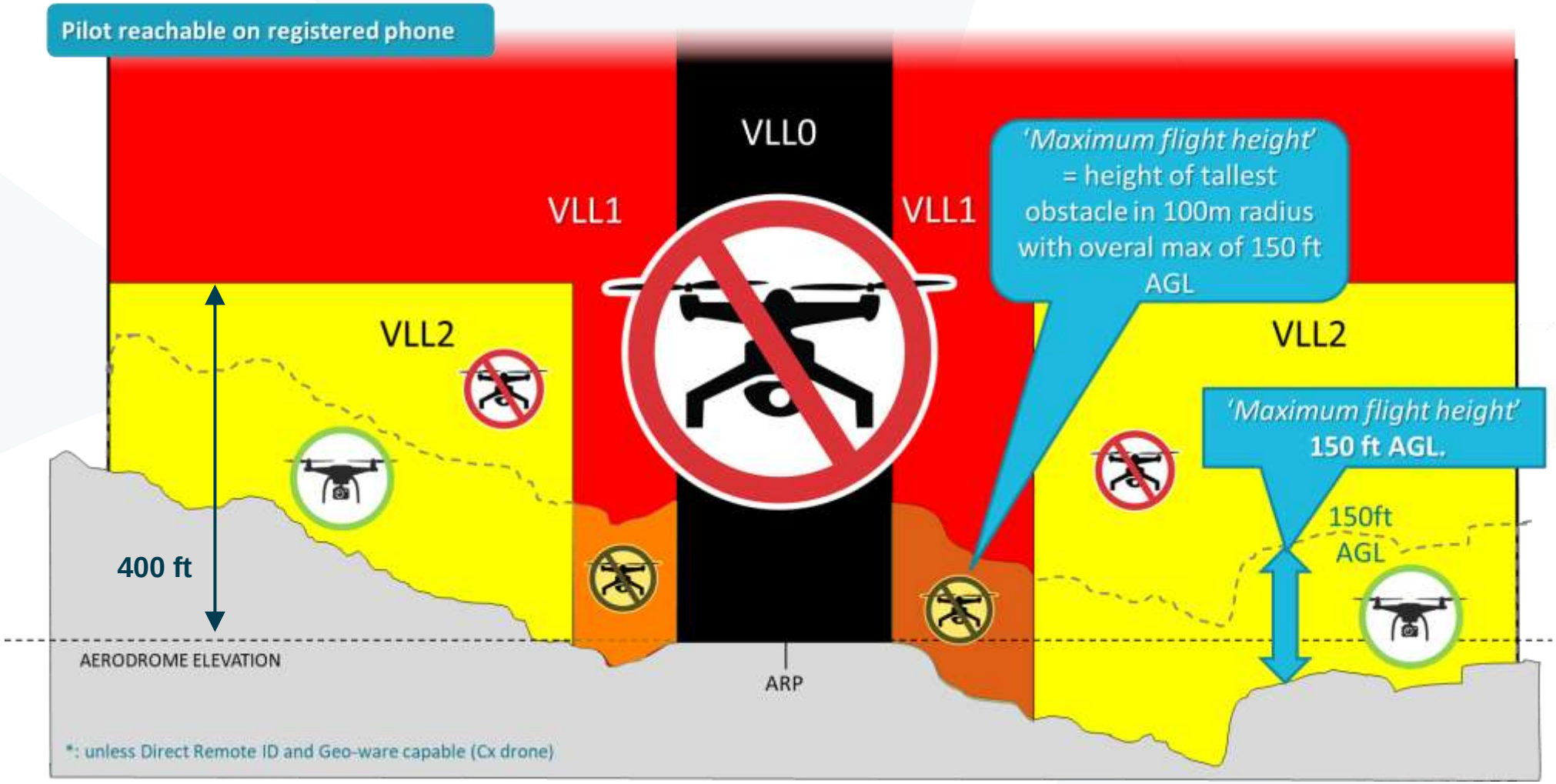
# CTR VLL rules

Obligatory use of Drone Service Application

**OPEN category summary: only allowed if drone MTOM < 900g***

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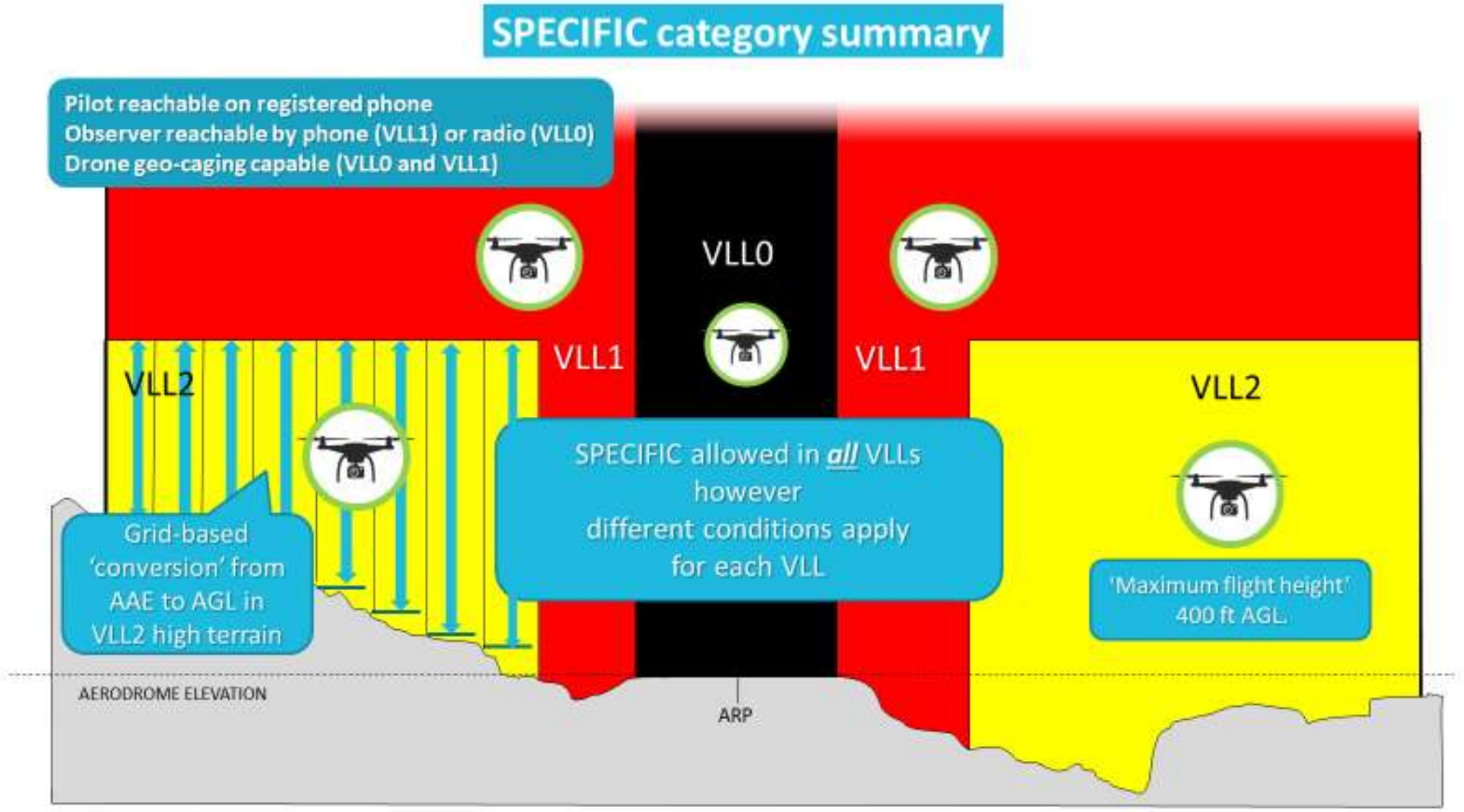
# CTR VLL rules

Obligatory use of Drone Service Application




For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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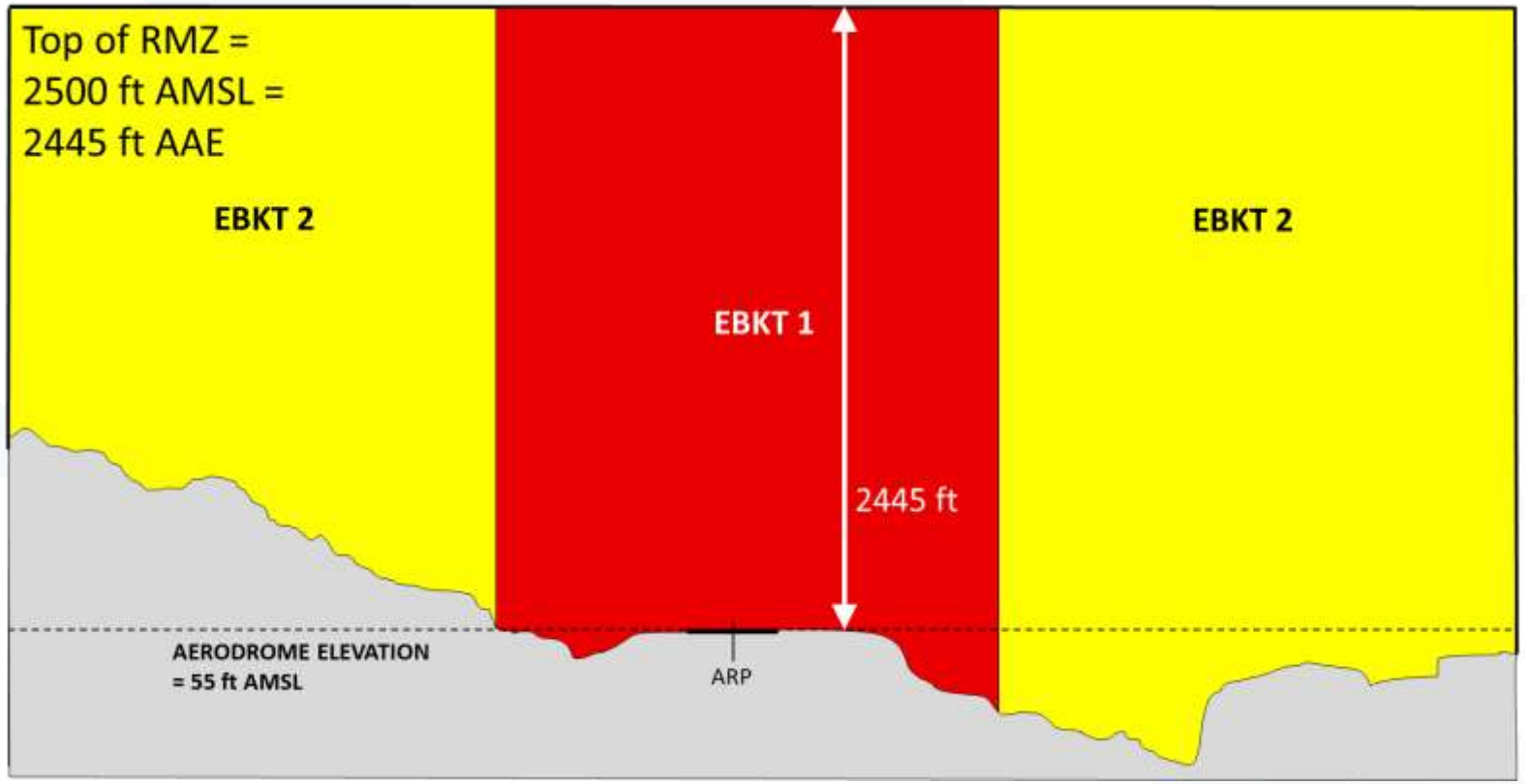
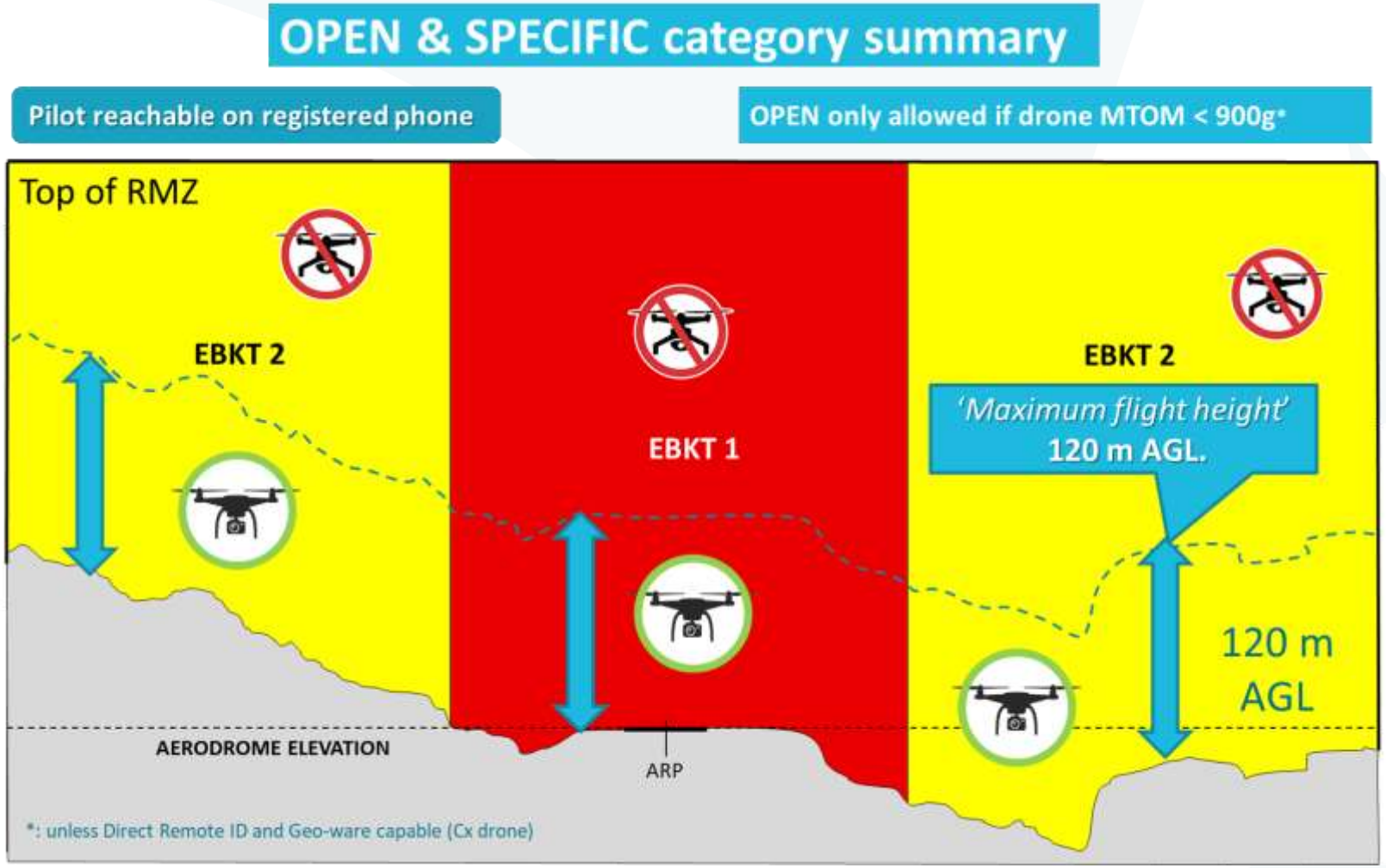
# Kortrijk EBKT RMZ topology



# Kortrijk EBKT RMZ rules

## Obligatory use of

Drone Service Application

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# Mandatory drone characteristics as per GeoZone Ministerial Decree

| artnr | GeoZone type | UAS equipped with certain technical features |
|---|---|---|
| art. 29 | Civil CTR VLL 0 | Geo-awareness, direct remote ID & geo-fencing |
| art. 30 | Civil CTR VLL 1 | Geo-awareness, direct remote ID & geo-fencing (only for Specific) |
| art. 31 | Civil CTR VLL 2 | Geo-awareness, direct remote ID |
| art. 32 | Civil TMA&CTA | Geo-awareness, direct remote ID & geo-fencing |
| art. 34 | EBKT Zone 1 | Geo-awareness, direct remote ID |
| art. 35 | EBKT Zone 2 | Geo-awareness, direct remote ID |

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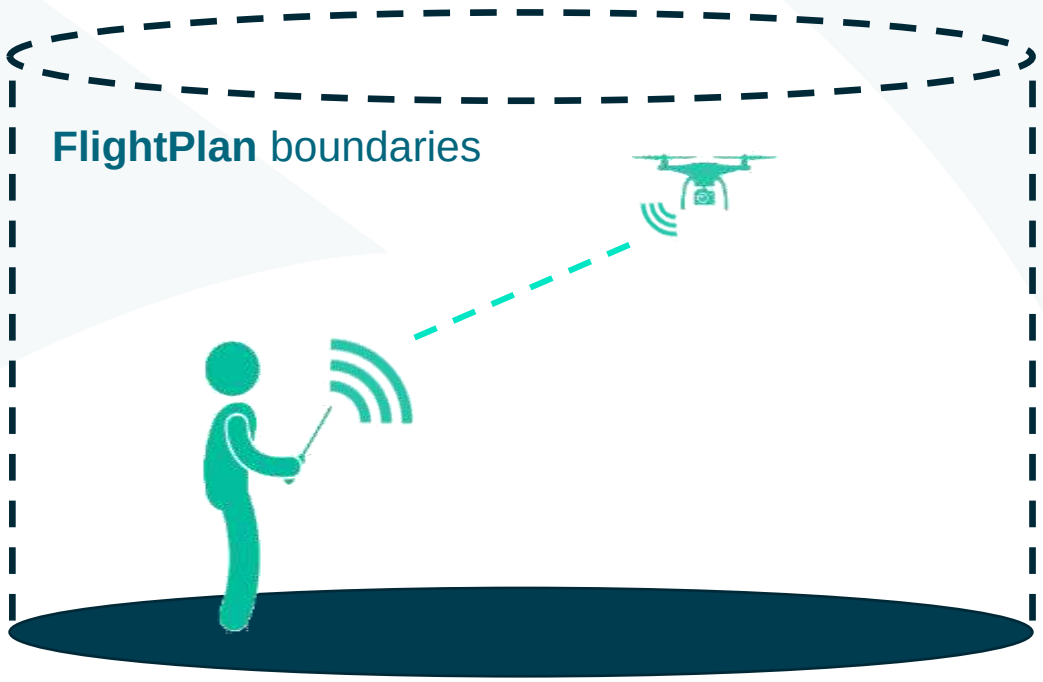
# What is Geo-Caging when imposed by skeyes nice to guide you ?

## No definition in the 945/947 EU reg.




## Can only be imposed by a GeoZone

- Referred to as a system that prevents the drone from flying over a given altitude and a given distance outside a given volume of airspace (vertically and horizontally) as defined during the flight planning phase of the drone operation.

- It is equivalently referred to in the EU Delegated Act in the section used to define the obligatory characteristics of a C6 drones as being ‘a system that prevents the UA from breaching the horizontal and vertical limits of a programmable operational volume’.

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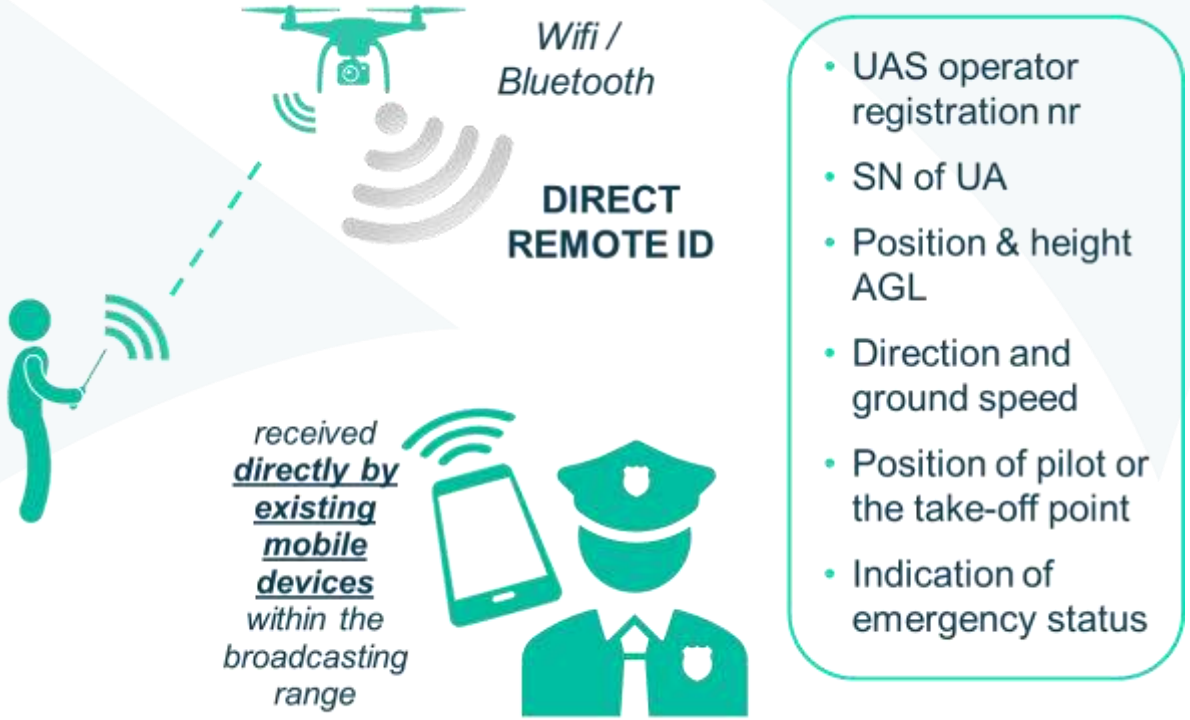
# What is Direct Remote ID when imposed by skeyes nice to guide you ?

## Definition as per 945/947 EU reg.




## When/where is it mandatory?
(if not imposed by a GeoZone)

- For flights in the Open category: C1, C2, non-tethered C3, C5 and C6 drones by definition have this feature on board and only when using those drones is there an obligation in the Open category to have direct remote ID active during the flight.
  Such Cx-compliant drones are however not yet available on the market.

- Its use is obligatory for all flights in the Specific category only as from 1/1/2024.

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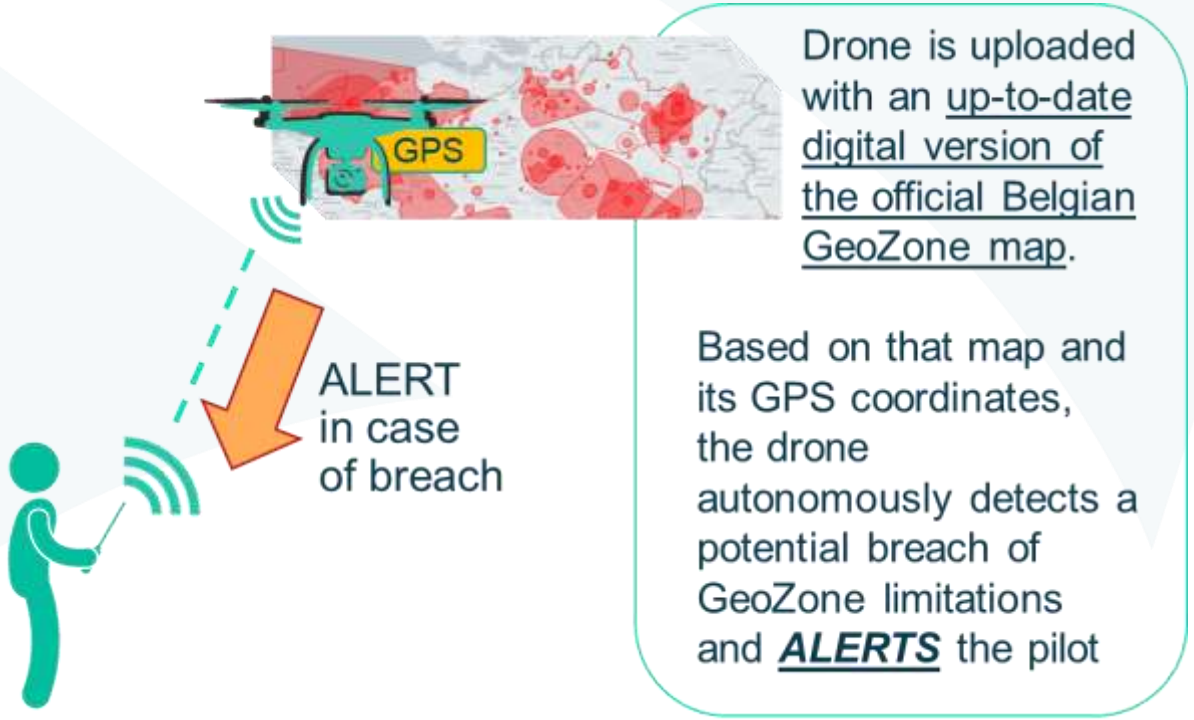
# What is Geo-Awareness when imposed by skeyes nice to guide you ?

## Definition as per 945/947 EU reg.




not be confused with the functionality offered on DJI drones called 'DJI geofencing' as this DJI drone feature refers to the alerting of the pilot based on a bespoke map designed and made public by DJI based on its very own safety criteria.

## When/where is it mandatory?
(if not imposed by a GeoZone)

- C1, C2 and C3 drones operated in the Open category by definition have this feature on board and should have it activated during all flights. It is optionally available on C5 and C6 drones (to be used to execute STS1 and STS2 as of 1/1/2024), if present on them it should be activated during all flights.
- Cx-compliant drones are however not yet available on the market today 1/1/2022.

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# Exemption to Geo-awareness and Remote ID obligation up to 1/1/2024 for the Open category when using drones with MTOM < 900g and the Specific category

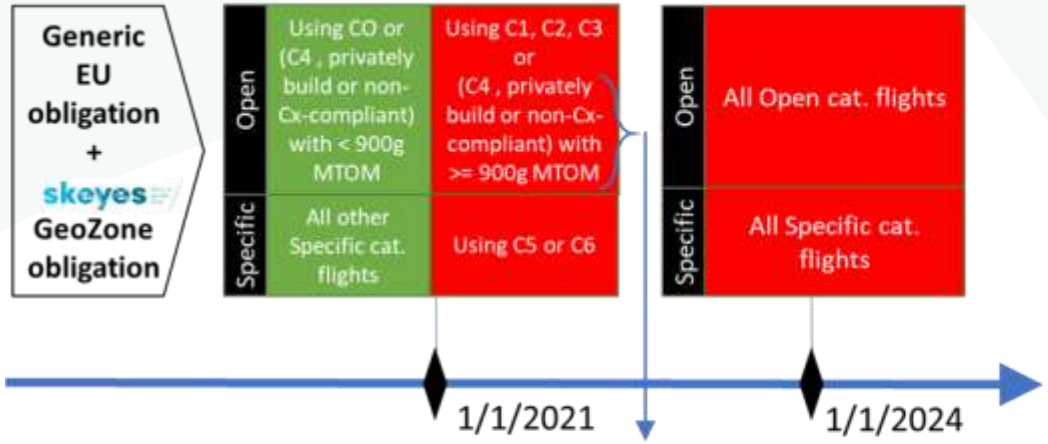
(Art. 37 of the GeoZone MB)

## IN skeyes nice to guide you CIVIL CTR/RMZ/TMA GEOZONES

### Direct Remote ID obligation

Reminder: all C1, C2, C3, C5 and C6 drones are by definition Direct Remote ID compliant (once they become available)

Overall conclusion

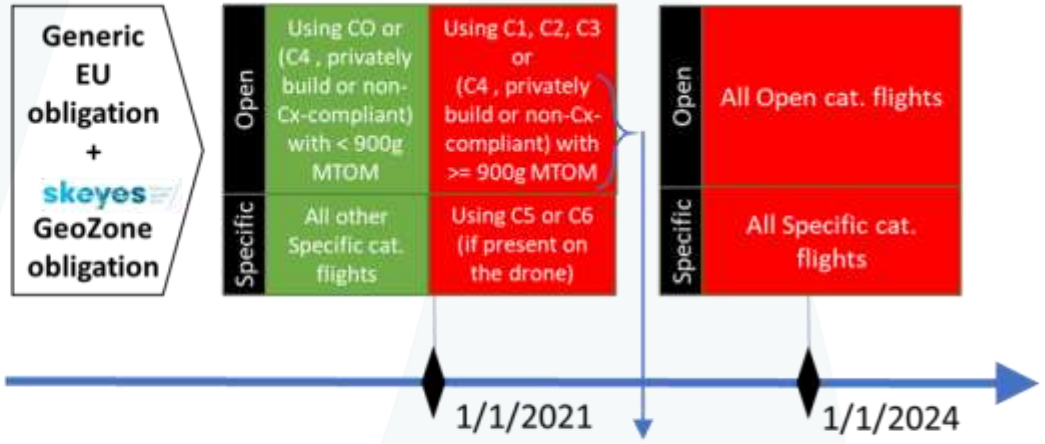



Flights with these type of drones would require a Direct Remote-ID add-on device to be compliant (if not supported by the drone itself)

### Geo-awareness obligation

Reminder: all C1, C2 and C3 drones are by definition Geo-awareness compliant (once they become available)

Overall conclusion




These type of drones have currently (1/1/2022) no real possibility to be geo-aware compliant as defined bij the EU-rules

= made mandatory for ...

= ***NOT*** made mandatory for ...

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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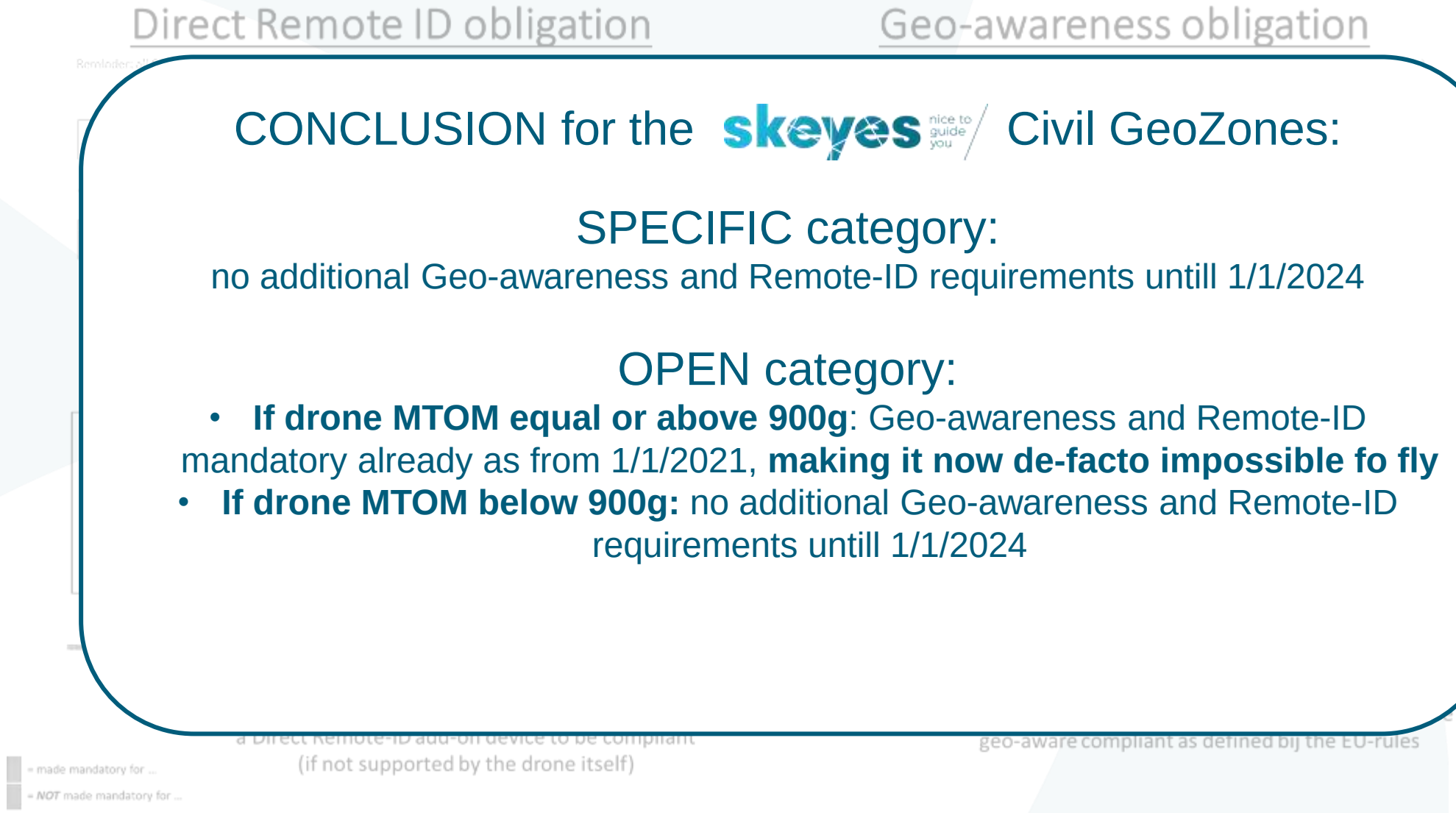
# Impact of the delay for Geo-awareness en Remote ID to 1/1/2024 for drones with MTOM < 900g in the Open category (Art. 37 of the GeoZone MB)




## CONCLUSION for the skeyes nice to guide you Civil GeoZones:

### SPECIFIC category:

no additional Geo-awareness and Remote-ID requirements untill 1/1/2024

### OPEN category:

- **If drone MTOM equal or above 900g**: Geo-awareness and Remote-ID mandatory already as from 1/1/2021, **making it now de-facto impossible fo fly**
- **If drone MTOM below 900g:** no additional Geo-awareness and Remote-ID requirements untill 1/1/2024

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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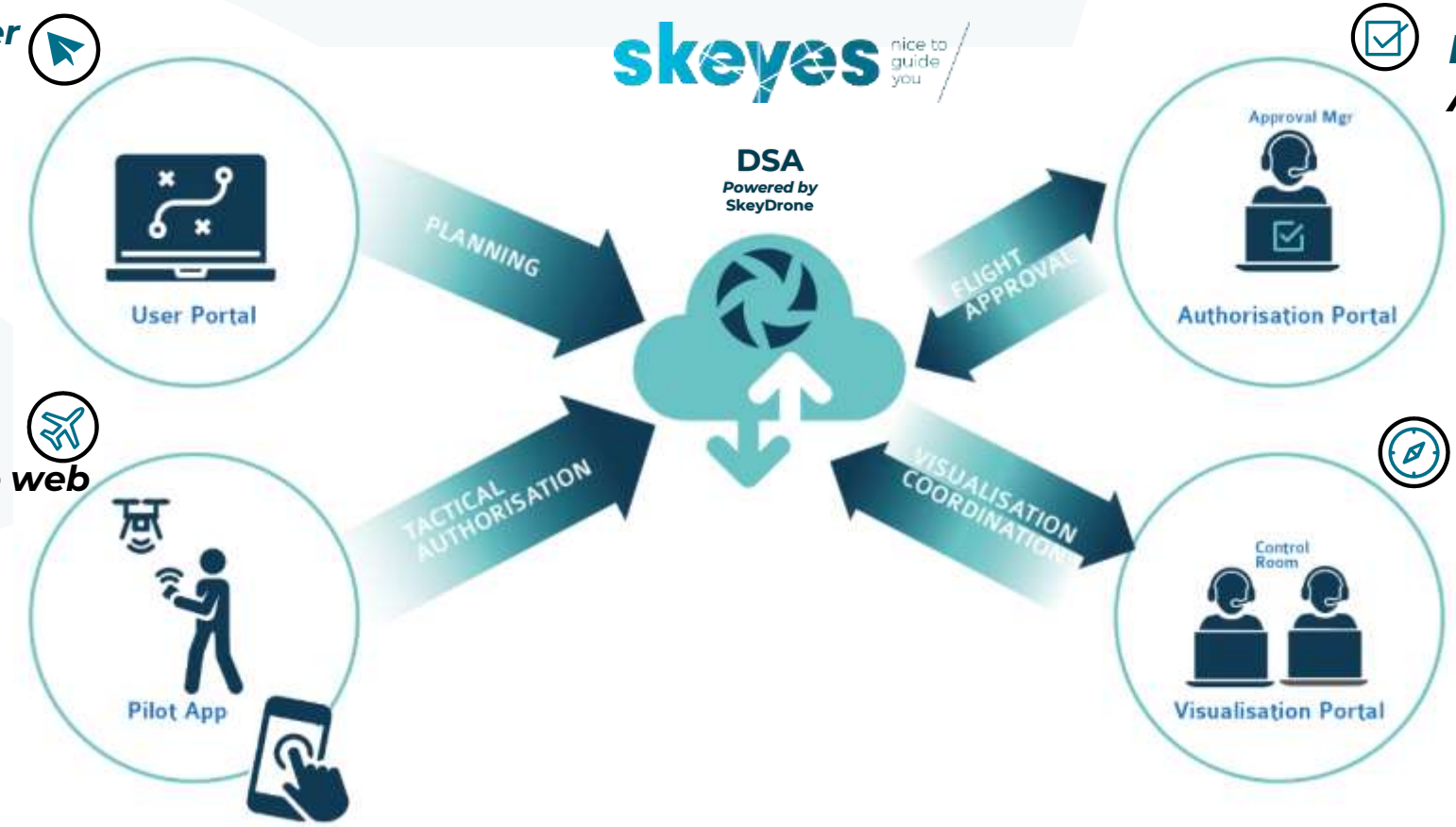
# Drone Service Application

***DSA Planner***
***User portal***

***Fly***
***Pilot mobile web app***




***DSA Greenlight***
***Authorisation portal***

**SPACC**

skeyes nice to guide you

***DSA Control***
***Visualisation portal***

skeyes nice to guide you
**ATCO**
**ATCO SVR**

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# two stage authorisation process

***DSA Planner***
***User portal***

**PRE-AUTHORISATION**
**(i.e. 'strategic' APPROVAL)**

***DSA Greenlight***
***Authorisation portal***


***Fly***
***Pilot mobile web app***

***DSA Control***
***Visualisation portal***

**AUTHORISATION**
**(i.e. 'tactical', just befor take-off)**

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# full authorisation workflow

## Operator = legal entity (company or person) responsible for the operation


- **Obligatory operator registration, unless flights only occur in the Open category with:**
  - true toy drone
    or
  - a drone < 250g not equipped with a camera
- **Is the holder of a Operational Authorisation or a LUC (if applicable)**
- **Is represented by a** **OPERATOR Contact Person**

## Pilot = person, in control of the flight


**Proven pilot competencies**
**In the form of a pilot license**, e.g.:

- “Proof of completion of on-line theoretical knowledge examination” required for Open category A1 flights
- “Certificate of remote pilot competency” required for Open category A2 flights
- “Accreditation of completion of STS1 practical skill training” required for STS1 flights

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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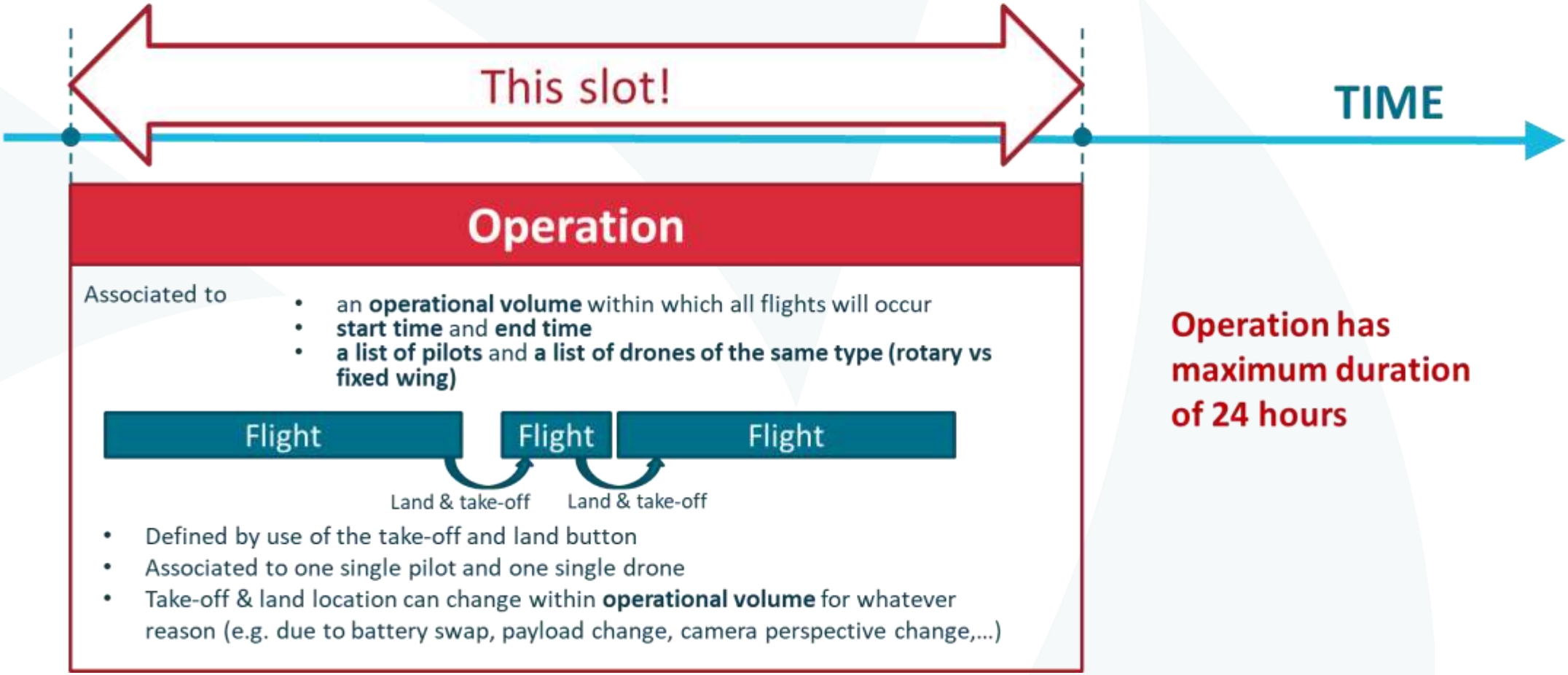
# full authorisation workflow

## What is being (pre-) authorized?




**Operation has maximum duration of 24 hours**

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# full authorisation workflow

## Operator = legal entity (company or person) responsible for the operation


**There is no access to a drone operator registration data base, listing the official 'Operator Admin' contact person**

No verification is done in DSA on the claim done by a person that he/she is the official 'Operator Admin'

- ➔ remains the responsibility of the person that issues such claim
- ➔ more than one person can be Operator Contact
- ➔ Operator contact needs to consent with every flight authorisation request

## Pilot = person, in control of the flight


**Proven pilot competencies**
**In the form of a pilot license**, e.g.:

- "Proof of completion of on-line theoretical knowledge examination" required for Open category A1 flights
- "Certificate of remote pilot competency" required for Open category A2 flights
- "Accreditation of completion of STS1 practical skill training" required for STS1 flights

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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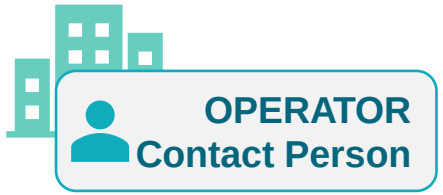
# full authorisation workflow

A DSA user can not create an operation and issue an authorisation request if he/she does not assign these two roles:

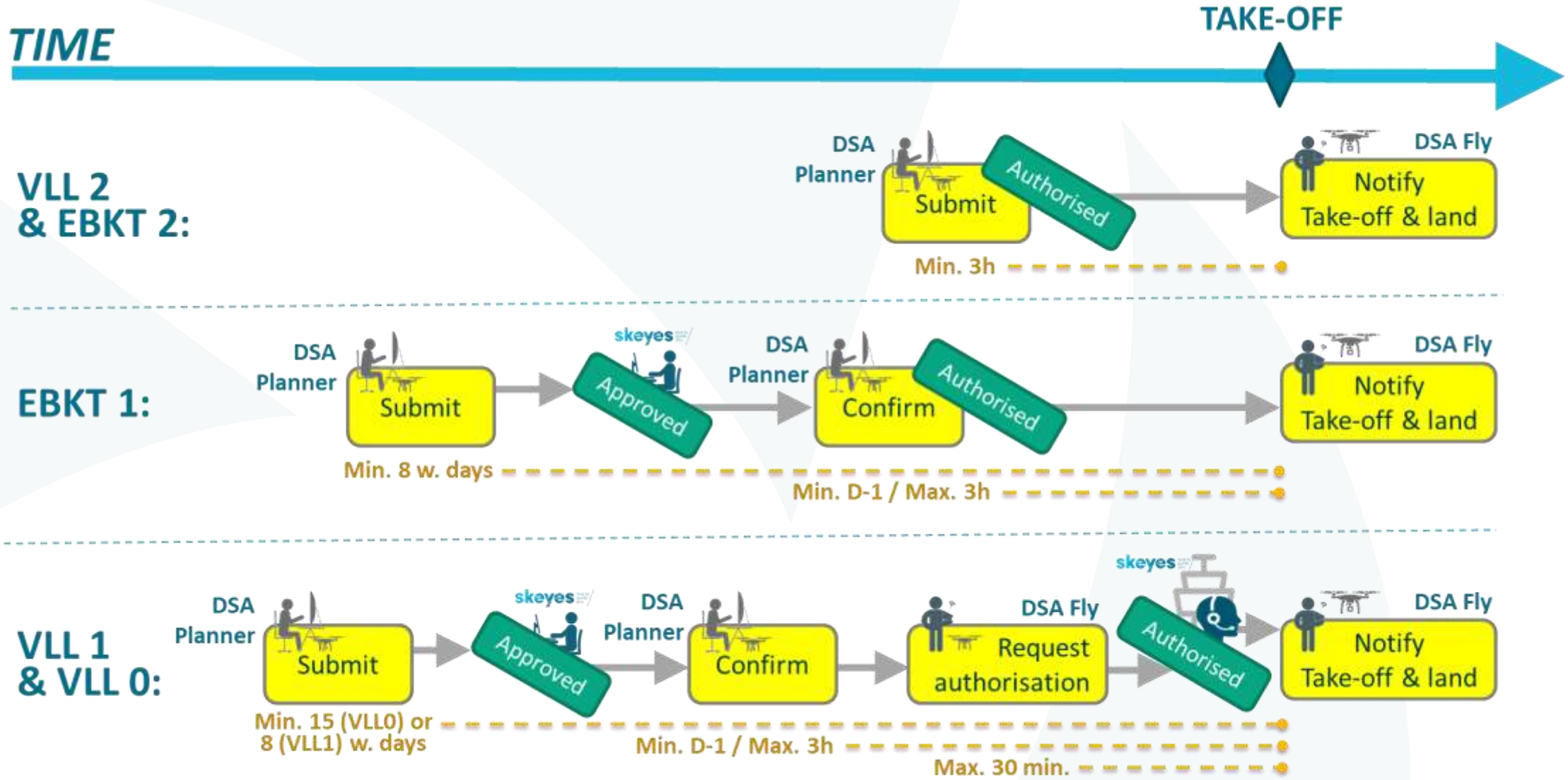
**Operator Contact = person, representing the operator** (responsible for the operation)




**Pilot = person, in control of the flight**


For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# Drone Service Application authorisation workflow overview




For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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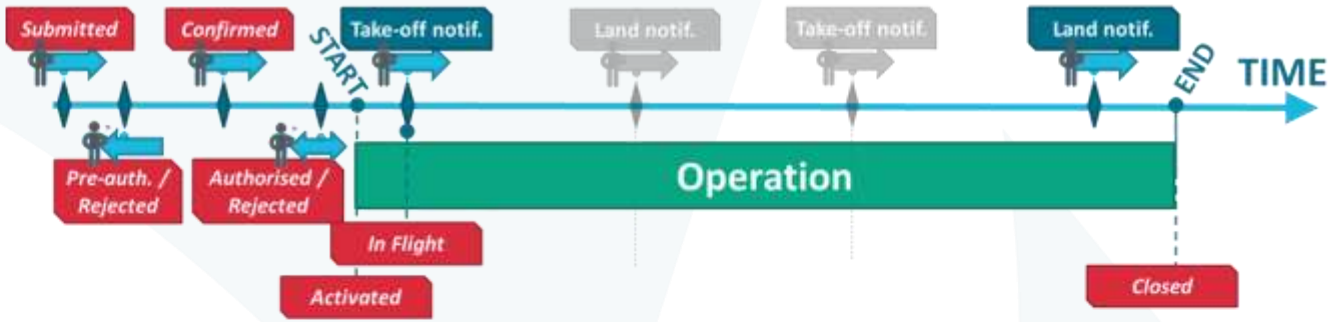
# Drone Service Application who can do what?




| | Creator | Operator contact | Prime pilot |
|---|---|---|---|
| **Create and submit flight authorisation request** | Using DSA Planner | - | - |
| **Confirm the flight** (not required in VLL2 and EBKT2) | - | Using DSA Planner or Fly *OR* | Using DSA Planner or Fly |
| **Request (tactical) authorisation** (not required in VLL2, EBKT1 and EBKT2) | - | - | Using DSA Fly |
| **Notify take-off & land** *ALWAYS REQUIRED EVERYWHERE* | - | - | Using DSA Fly |

| | | | |
|---|---|---|---|
| **Cancel/discard the flight authorisation request** | Using DSA Planner *OR* | Using DSA Planner *OR* | Using DSA Planner |
| **Close the operation** (declare end of operations before the planned end-time = early termination of the flight) | - | - | Using DSA Fly |

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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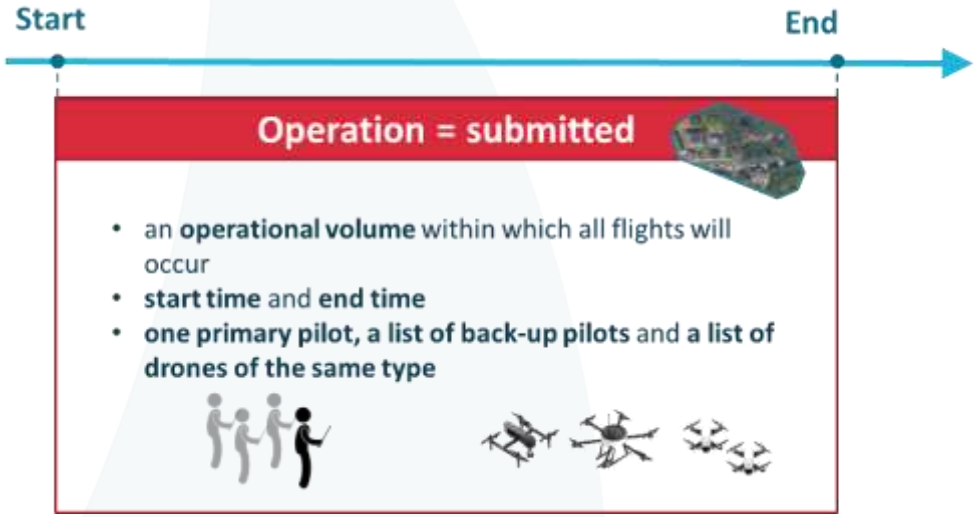
# end2end authorisation workflow (1)

***User portal***
***DSA Planner***

Planning (incl. upload) & authorisation mgmt

DSA
Powered by Skeydrone

| | |
|---|---|
| **VLL 0:** | No later than D-15 |
| **VLL 1:** **EBKT1** | No later than D-8 |
| **VLL 2:** **EBKT2:** | No later than H-3 |




For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# end2end authorisation workflow (2)

***User portal***
***DSA Planner***

Planning (incl. upload) & authorisation mgmt

DSA
Powered by Skeydrone

Flight pre-authorisation

***Authorisation portal***
***DSA Greenlight***

SPACC
skeyes

| | |
|---|---|
| **VLL 0:** | Manual proces in skeyes |
| **VLL 1:** | |
| **EBKT1** | |
| **VLL 2:** | Automated & immediate |
| **EBKT2:** | |

# end2end authorisation workflow (3)

***Authorisation portal***

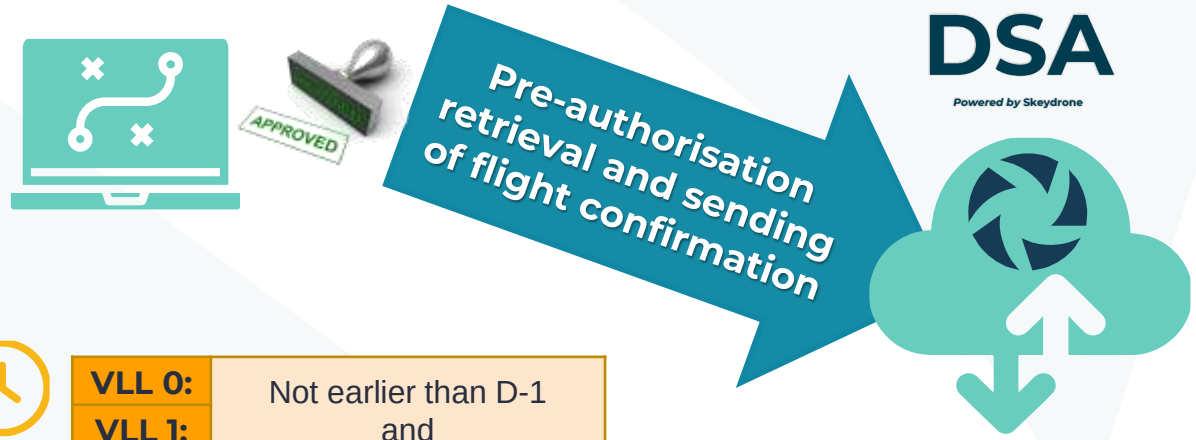
***DSA Greenlight***


| | |
|---|---|
| **VLL 0:** | No later than D-1 |
| **VLL 1:** | |
| **EBKT1** | |
| **VLL 2:** | Automated & immediate |
| **EBKT2:** | |

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

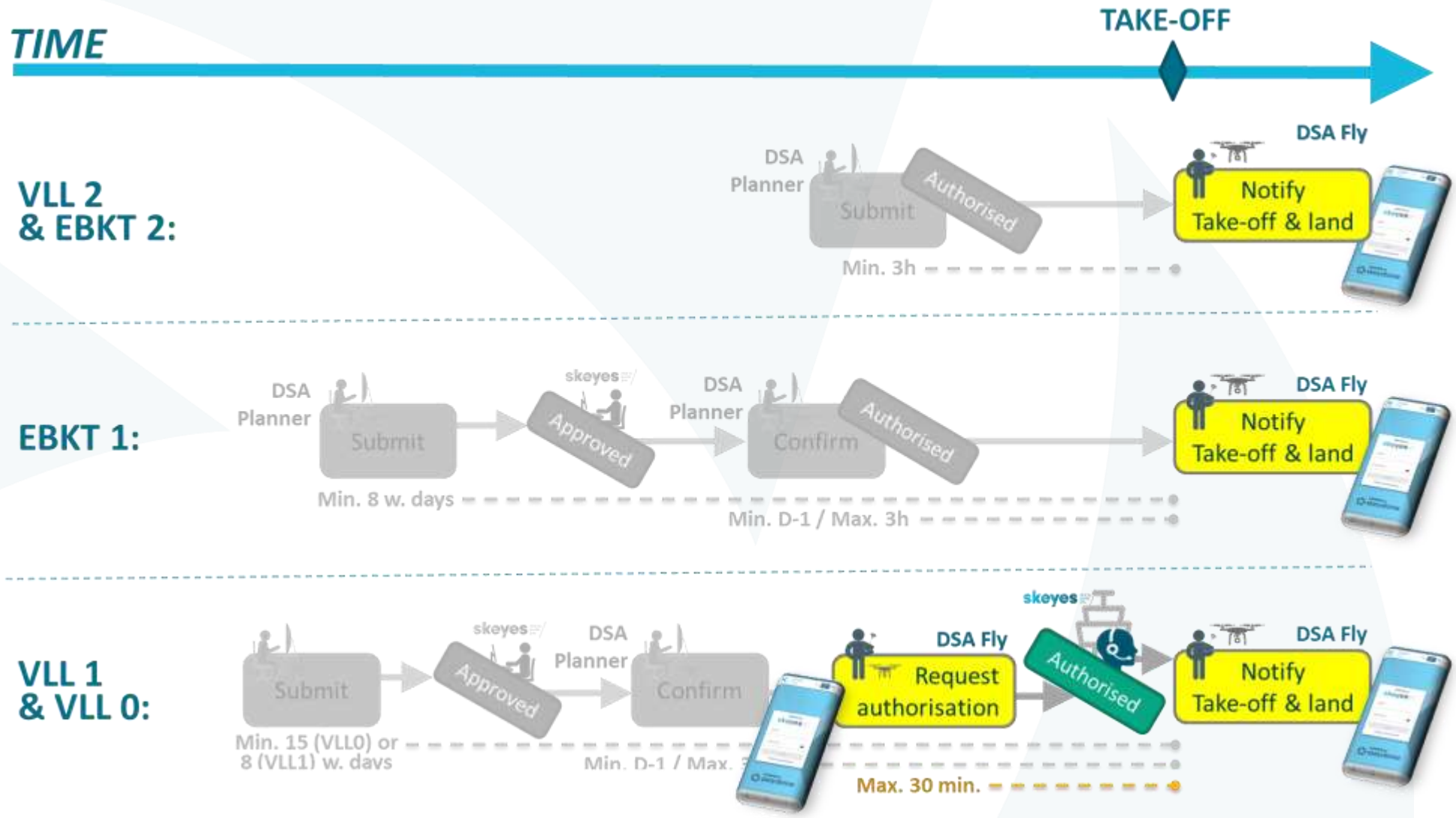
# end2end authorisation workflow (4)

***User portal***
***DSA Planner***




| | |
|---|---|
| **VLL 0:** | Not earlier than D-1 and no later than H-3 |
| **VLL 1:** | |
| **EBKT1** | |
| **VLL 2:** | **Not required** |
| **EBKT2:** | |

# Drone Service Application when to use the Fly mobile web app




For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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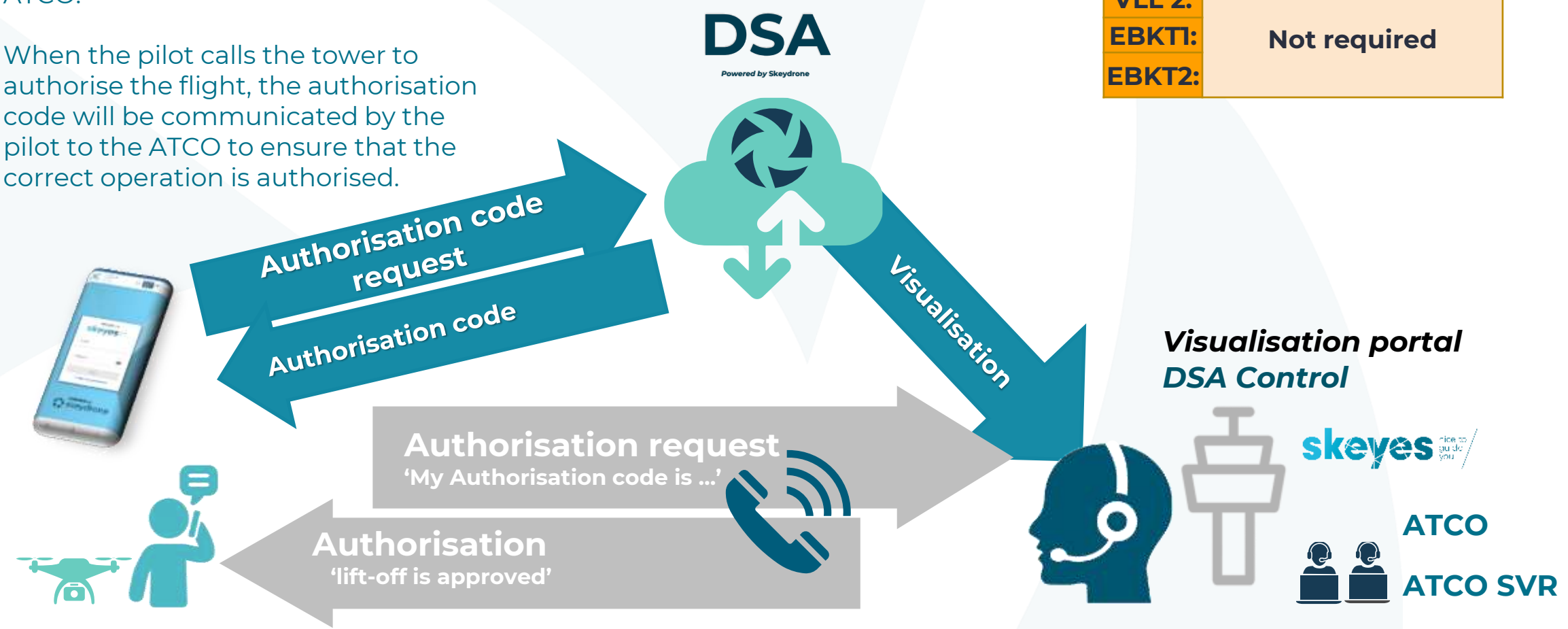
# Drone Service Application end2end authorisation workflow (5)

Upon Authorisation request, the DSA generates an **Authorisation code** that is shown both to the Pilot and the ATCO.

When the pilot calls the tower to authorise the flight, the authorisation code will be communicated by the pilot to the ATCO to ensure that the correct operation is authorised.

| | |
|---|---|
| **VLL 0:** | At H-½, by RADIO |
| **VLL 1:** | At H-½, by PHONE |
| **VLL 2:** | **Not required** |
| **EBKT1:** | |
| **EBKT2:** | |




For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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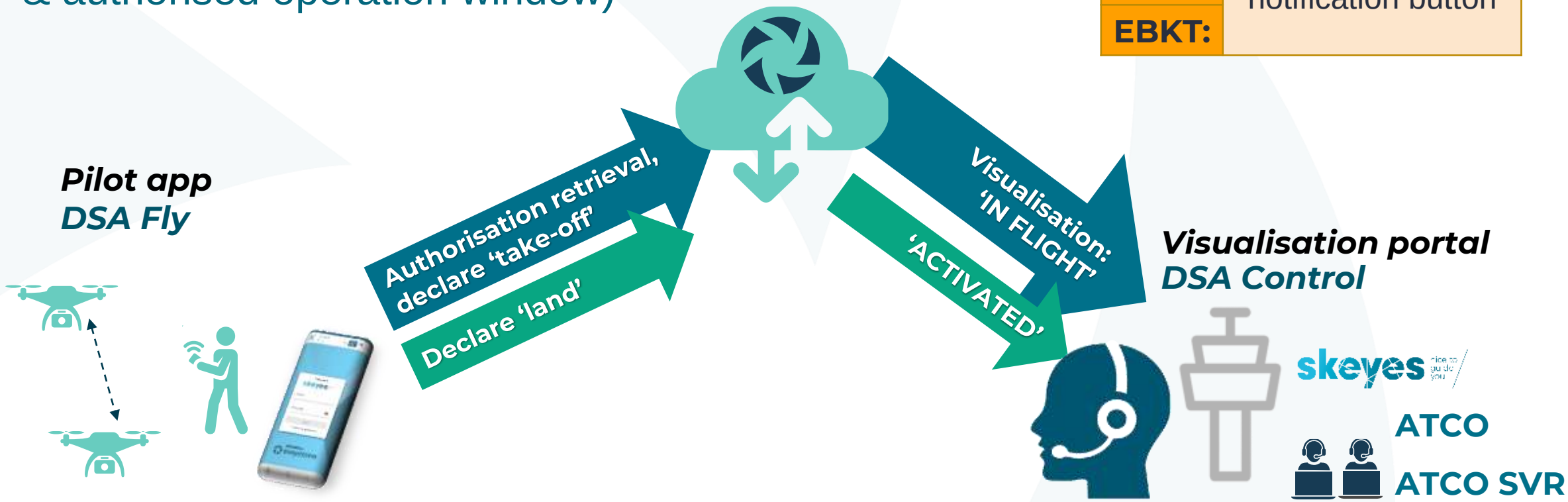
# end2end authorisation workflow (6)

Pilot notifies “take off” & “land”
(can be multiple times within approved
& authorised operation window)

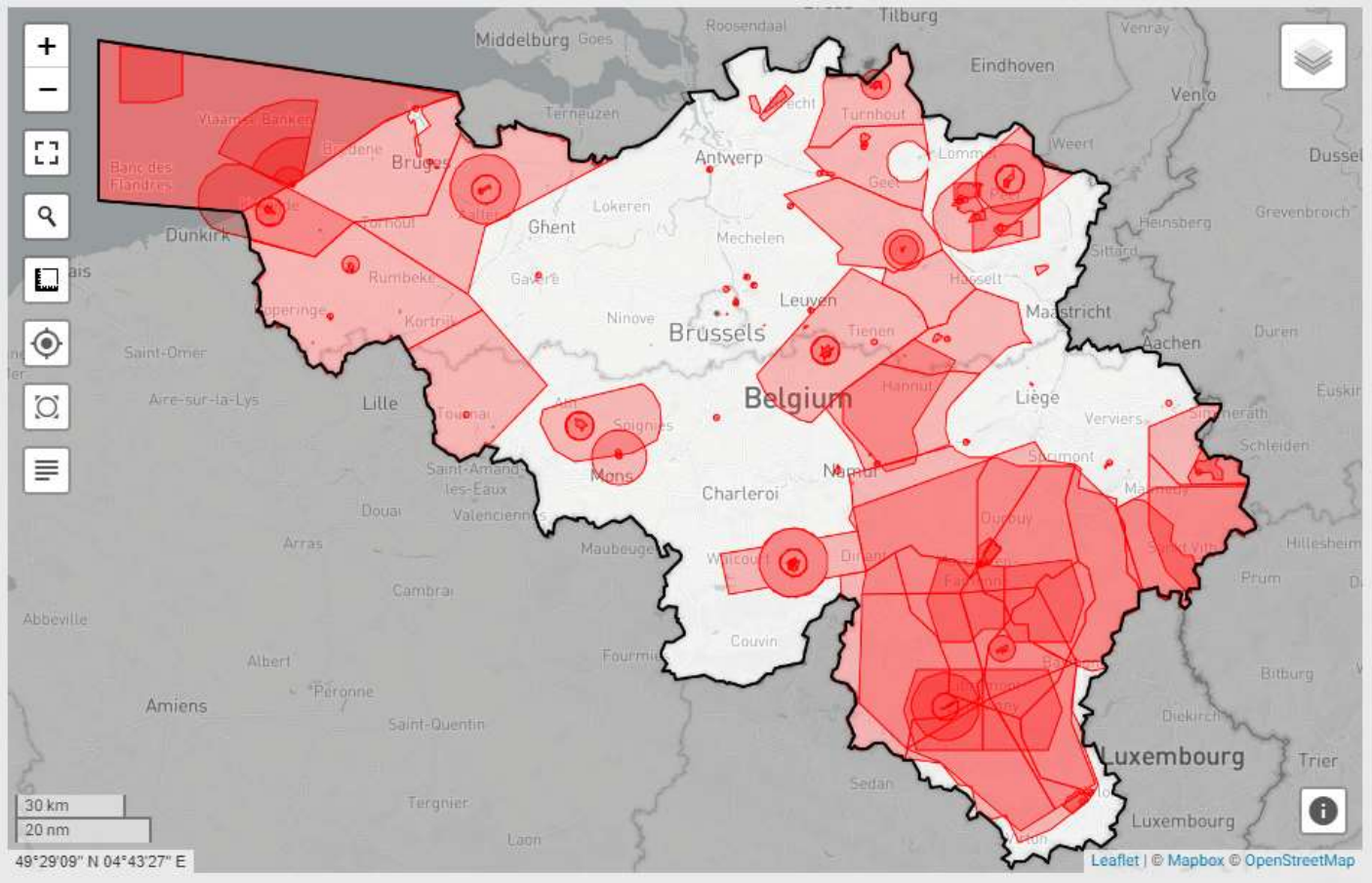
| | |
|---|---|
| VLL 0: | Obligatory use of the “take-off” & “land” notification button |
| VLL 1: | |
| VLL 2: | |
| EBKT: | |




For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be


# 6.2 Military areas zoom-in

# GeoZones in low airspace managed by skeyes




Obligatory use of

Drone Service Application

in all military geozones

DEFENSIE
LA DÉFENSE

- [x] **Military Geozones**
- [x] Mil Controlled Aerodromes
- [x] Mil Uncontrolled Aerodromes
- [x] Mil Helistrips
- [x] Helicopter Training Areas (HTA)
- [x] Low Flying Area (LFA)
- [x] Temporary Segregated Areas (TSA)
- [x] Danger Areas
- [x] Restricted Areas
- [x] Mil Domains

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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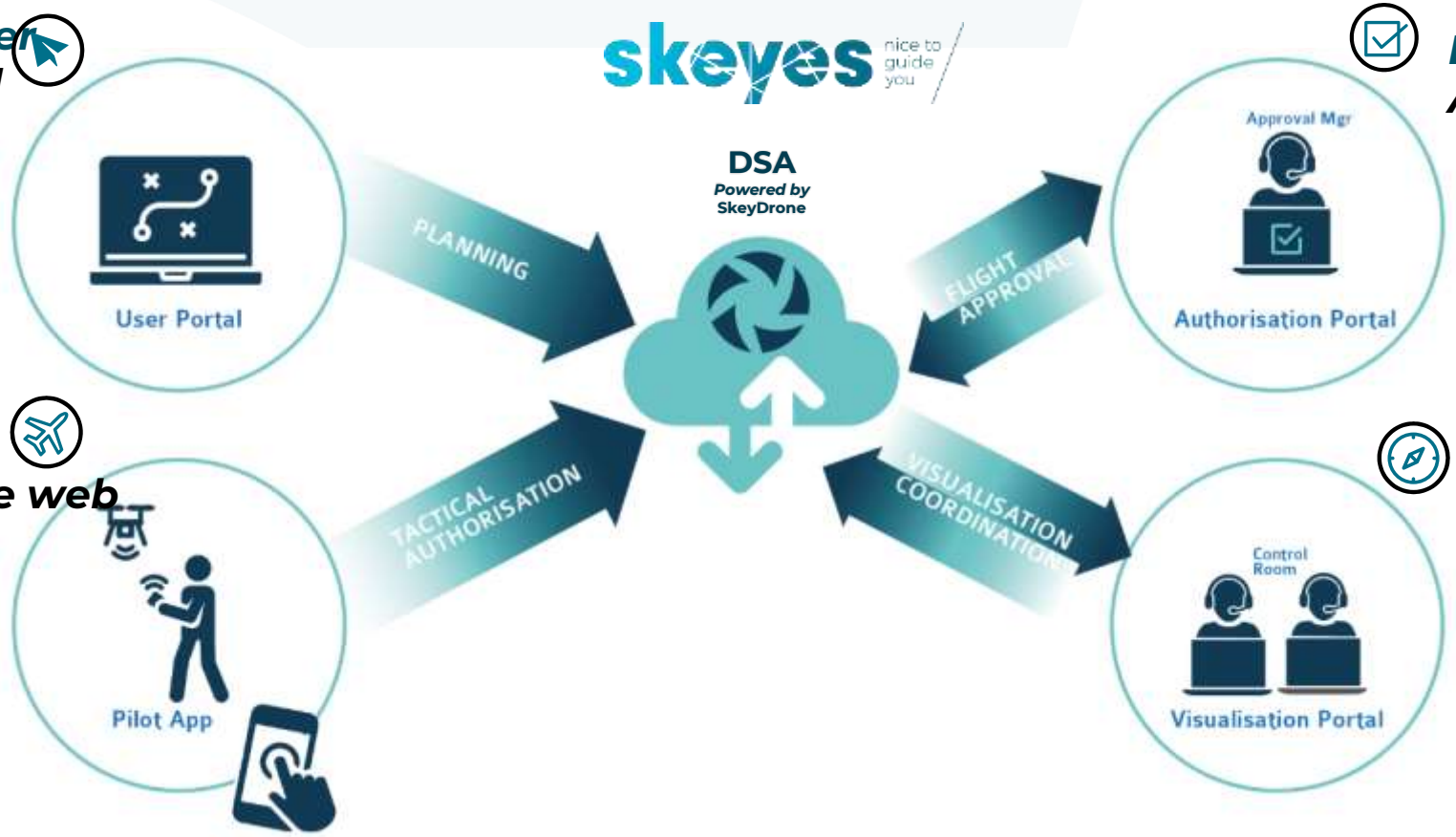
# Drone Service Application

***DSA Planner***
***User portal***

***Fly***
***Pilot mobile web app***




***DSA Greenlight***
***Authorisation portal***

SPACC

DEFENSIE
LA DÉFENSE

***DSA Control***
***Visualisation portal***

skeyes nice to guide you
ATCO
ATCO SVR

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# Drone Service Application single stage authorisation process

**PRE-AUTHORISATION REQUIRED**
**(i.e. 'strategic' APPROVAL)**

***DSA Planner***
***User portal***

***DSA Greenlight***
***Authorisation portal***

**SPACC**

DEFENSIE
LA DÉFENSE


***Fly***
***Pilot mobile web app***

***DSA Control***
***Visualisation portal***

**NO AUTHORISATION**
**(i.e. no 'tactical' clearance for take-off required by the ATCO just before take-off)**

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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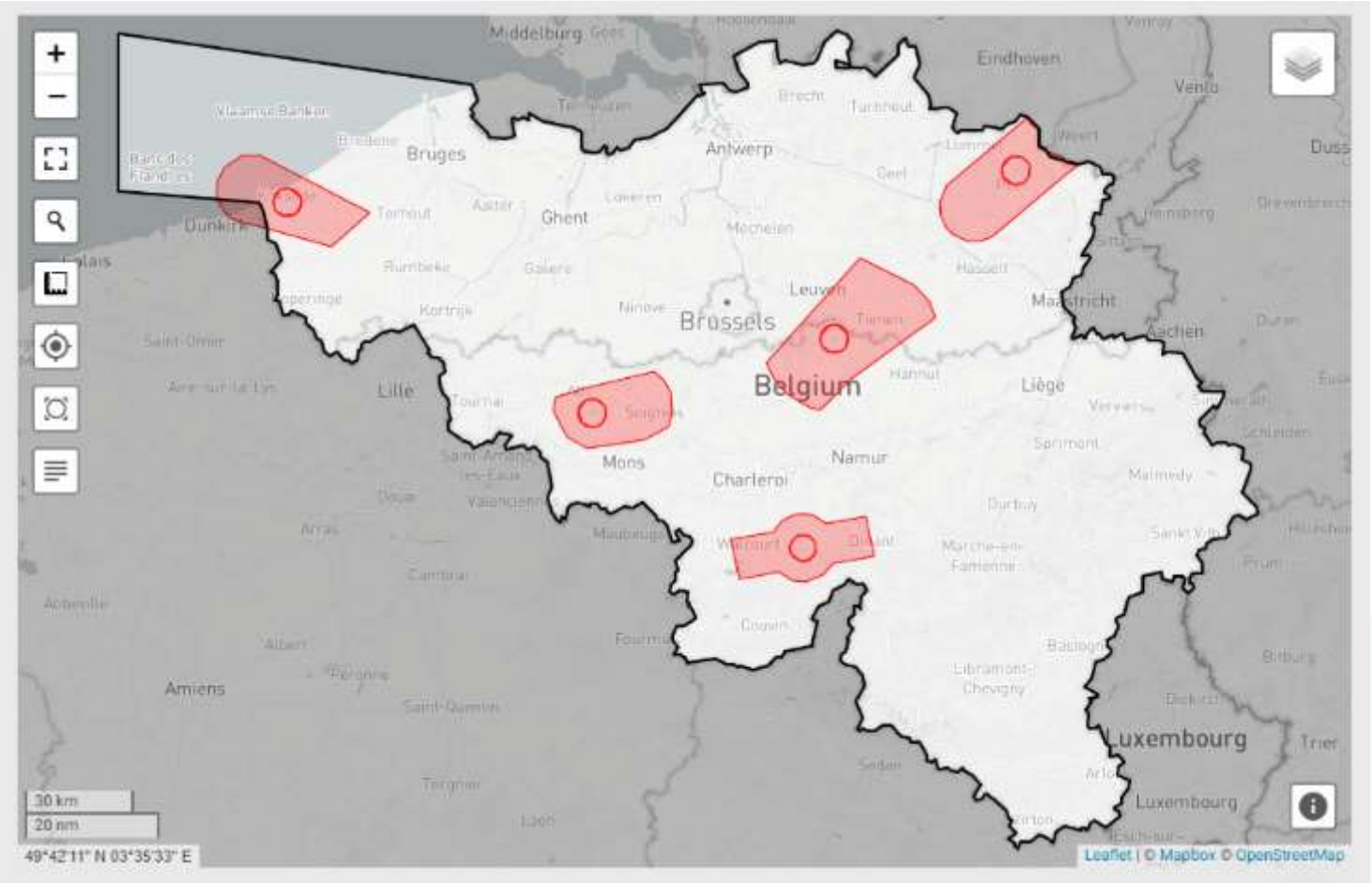
# Military CTRs

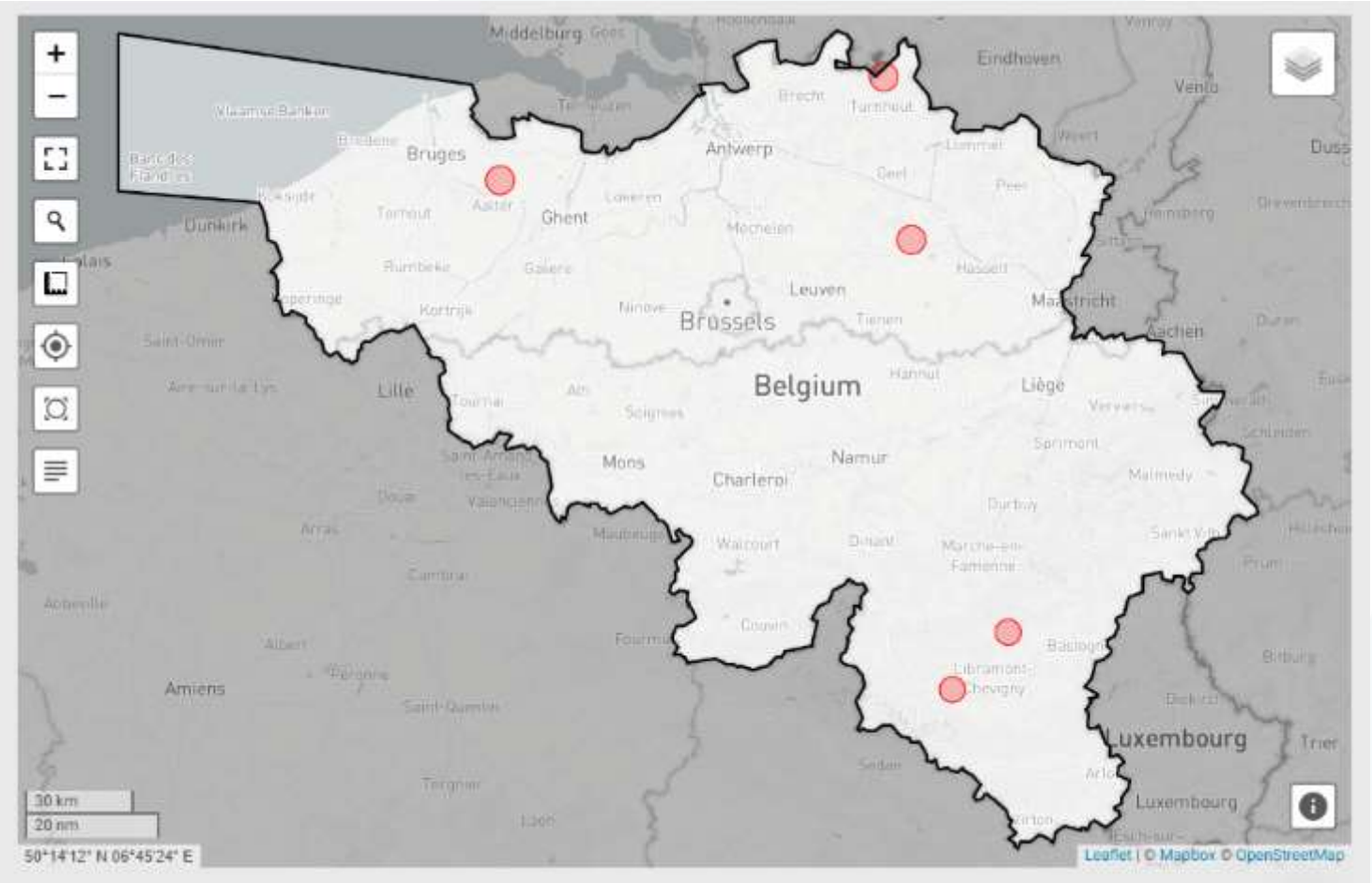



If/when CTR is active:

- Reject of all flights above 35ft
- Reject of all flights within circle of 2NM around airport.

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

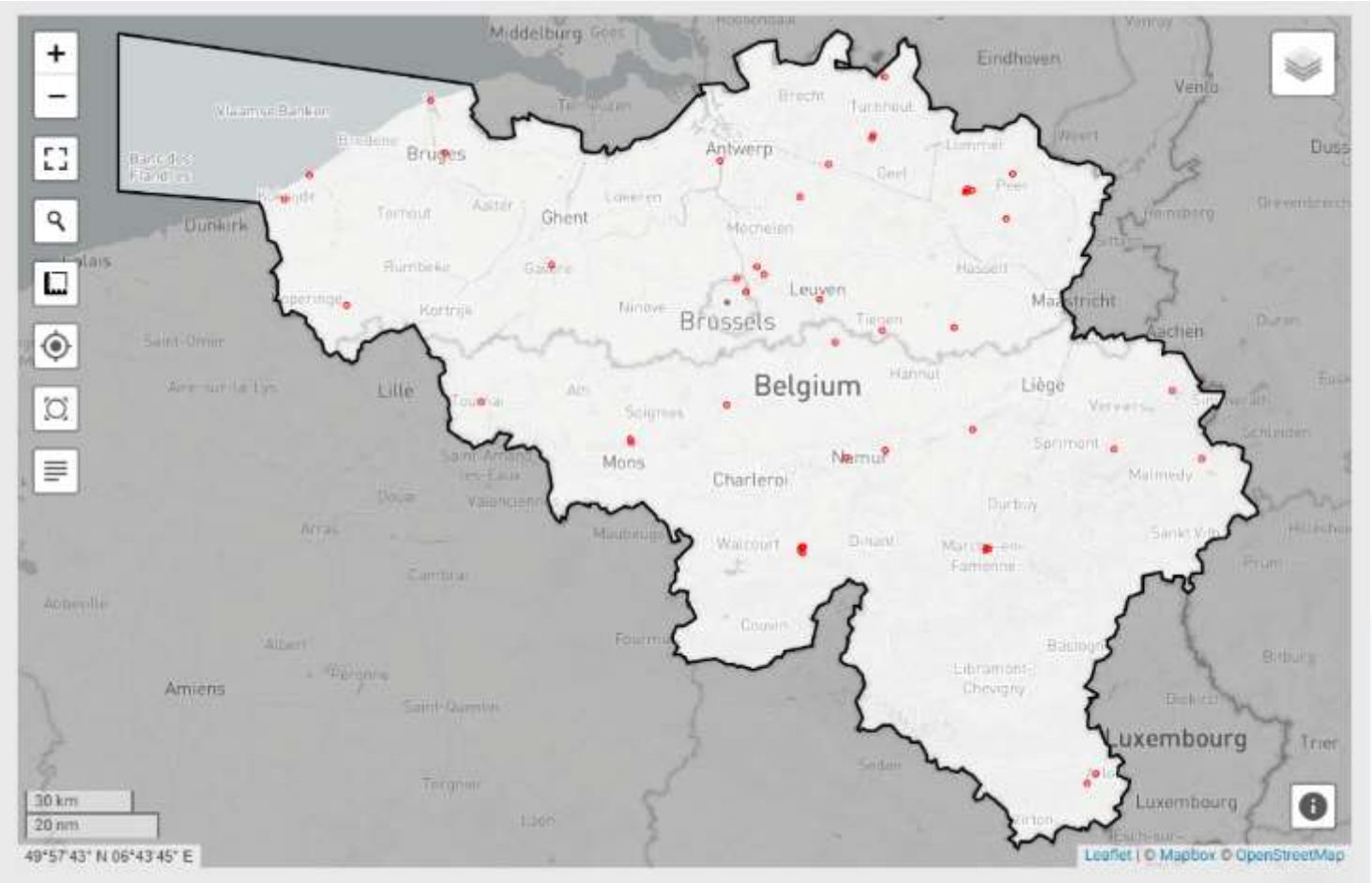
# Military uncontrolled areodromes




Approval review done by SPACC for all flights

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# Military helistrips

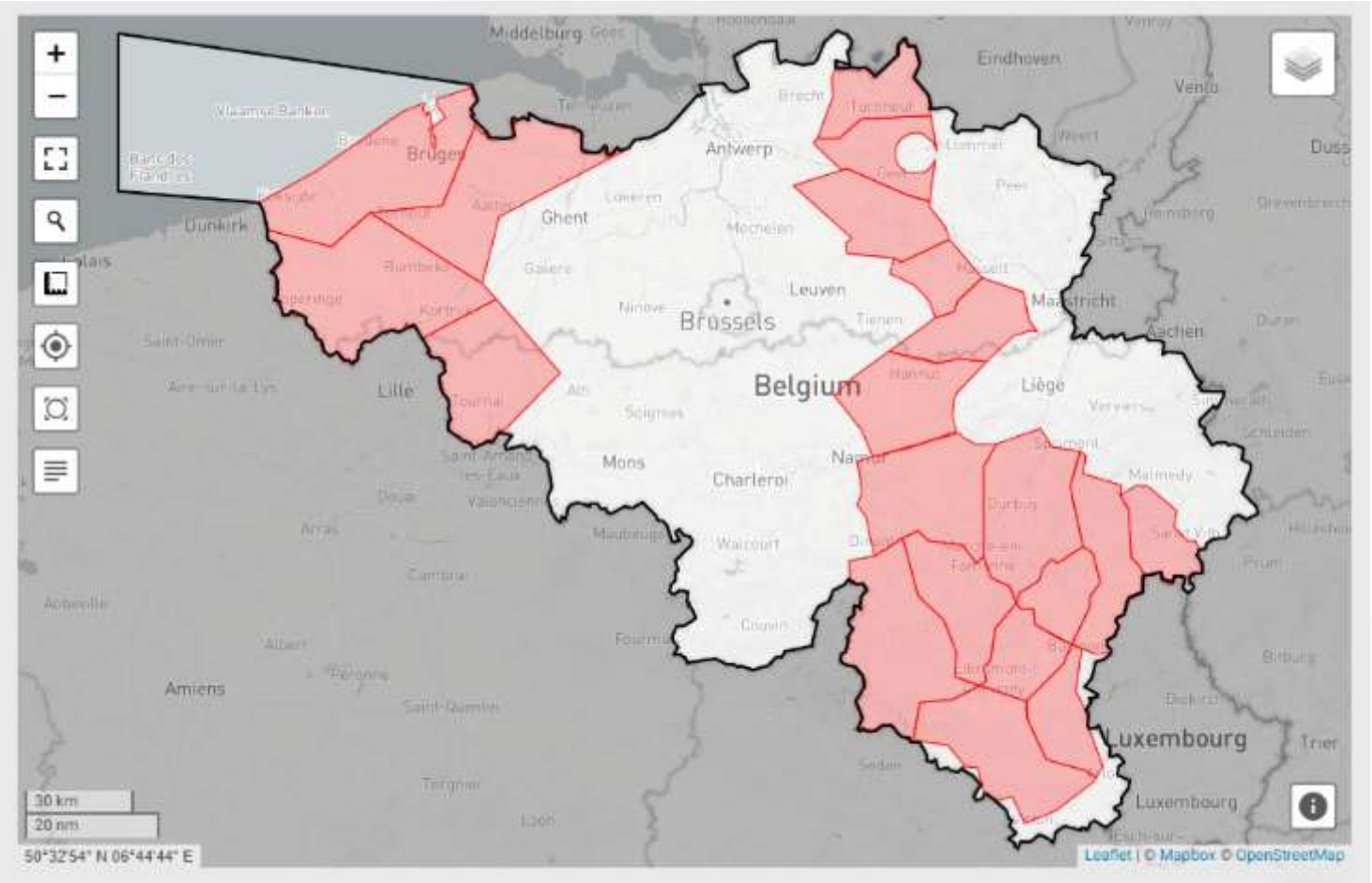



Auto approval of all flights with drone of MTOM<900g below 35ft

Approval review done by SPACC of all flights with drone of MTOM>900g

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# Helicopter Training Area (HTA)

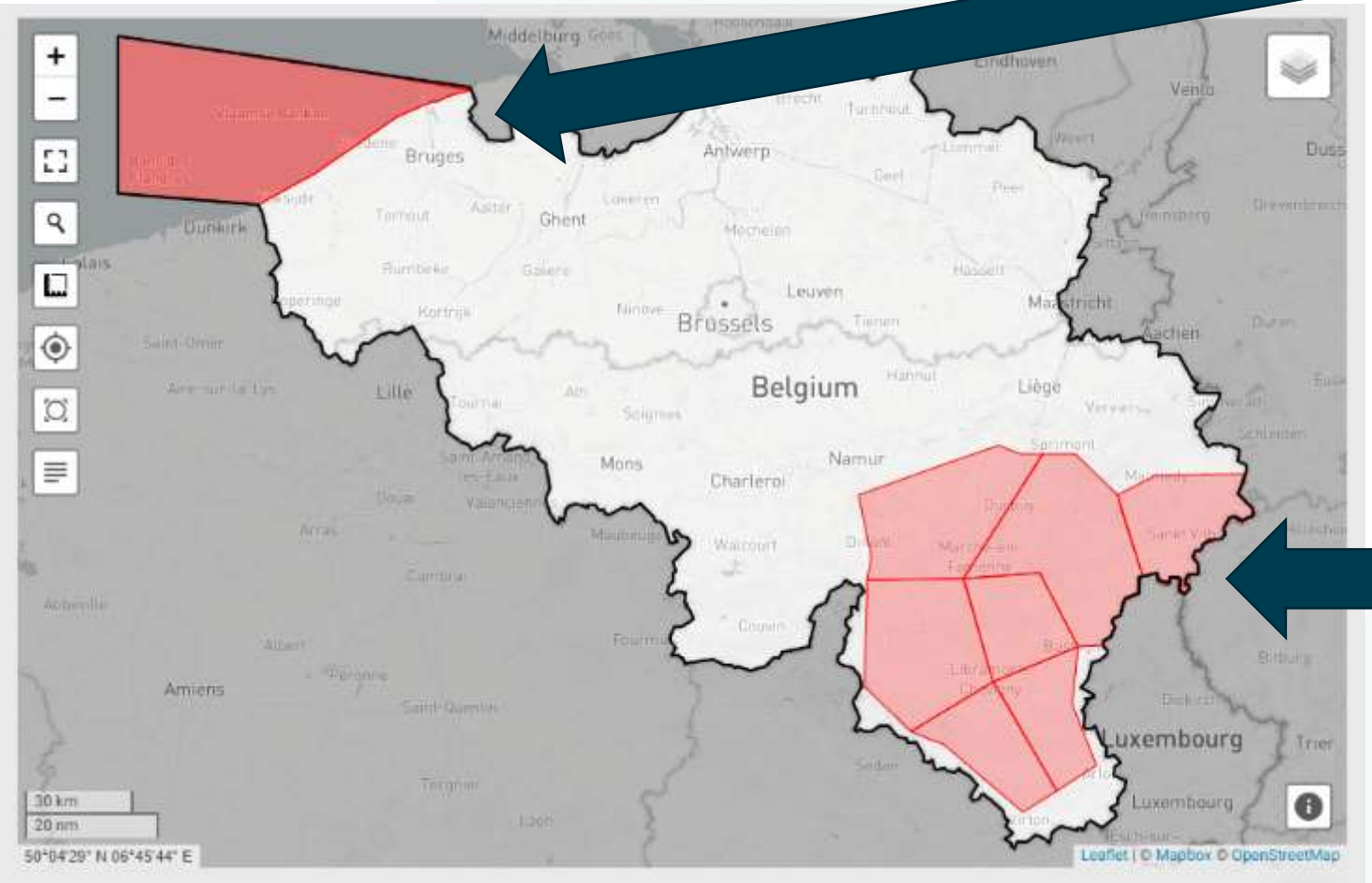



If/when zone is active:

- Reject of all flights with drone of MTOM>900g
- Reject of all flights above 35ft

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# Low Flying Area (LFA)




If/when zone is active

Reject of all flights with drone of MTOM>900g

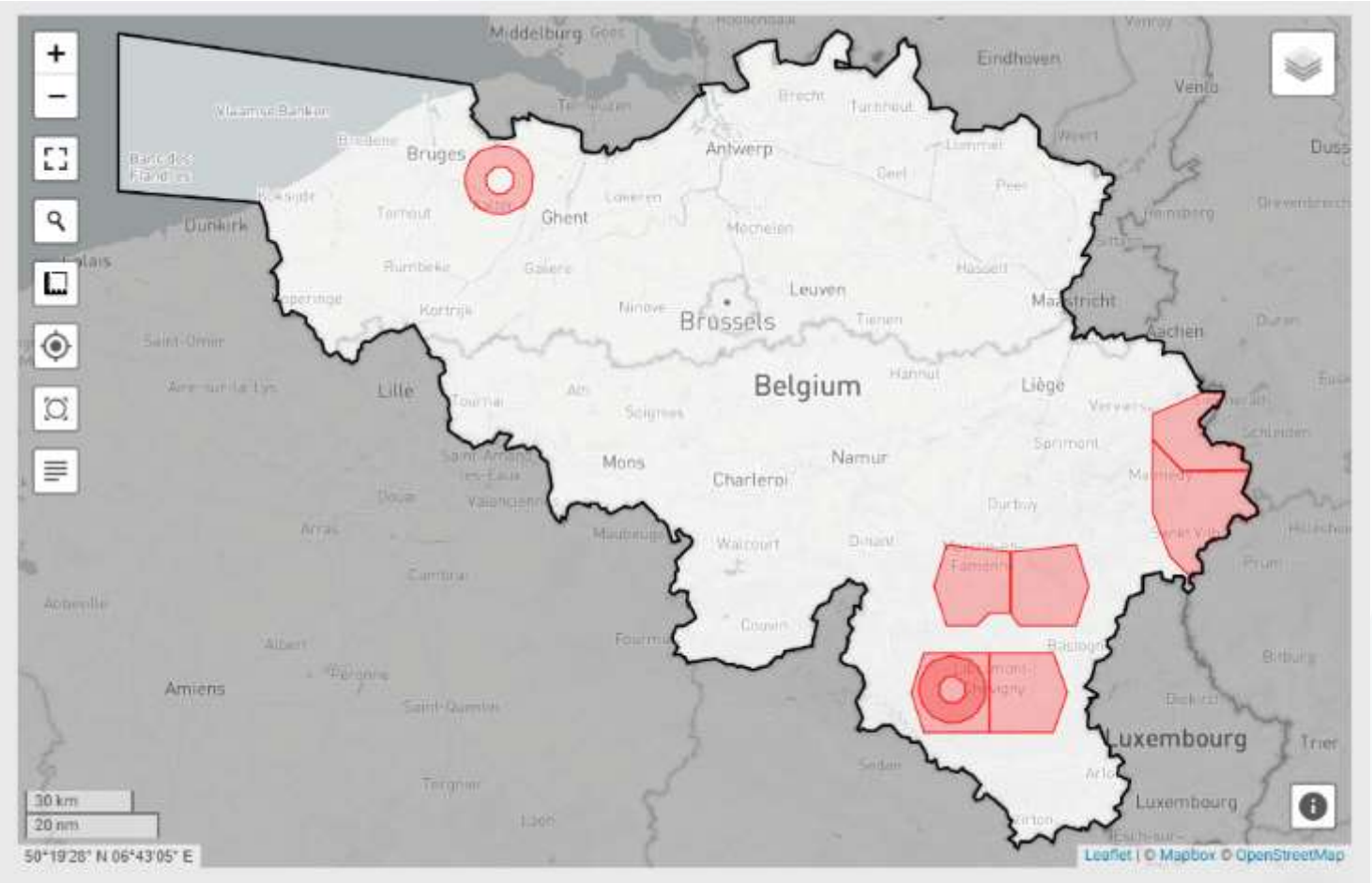
Reject of all flights above 35ft

If/when zone is active

Reject of all flights above 150ft

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# Military Temporary Segregated Area (TSA)




If/when zone is active:

approval review done by SPACC of all flights above 35ft

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# Military Danger Area

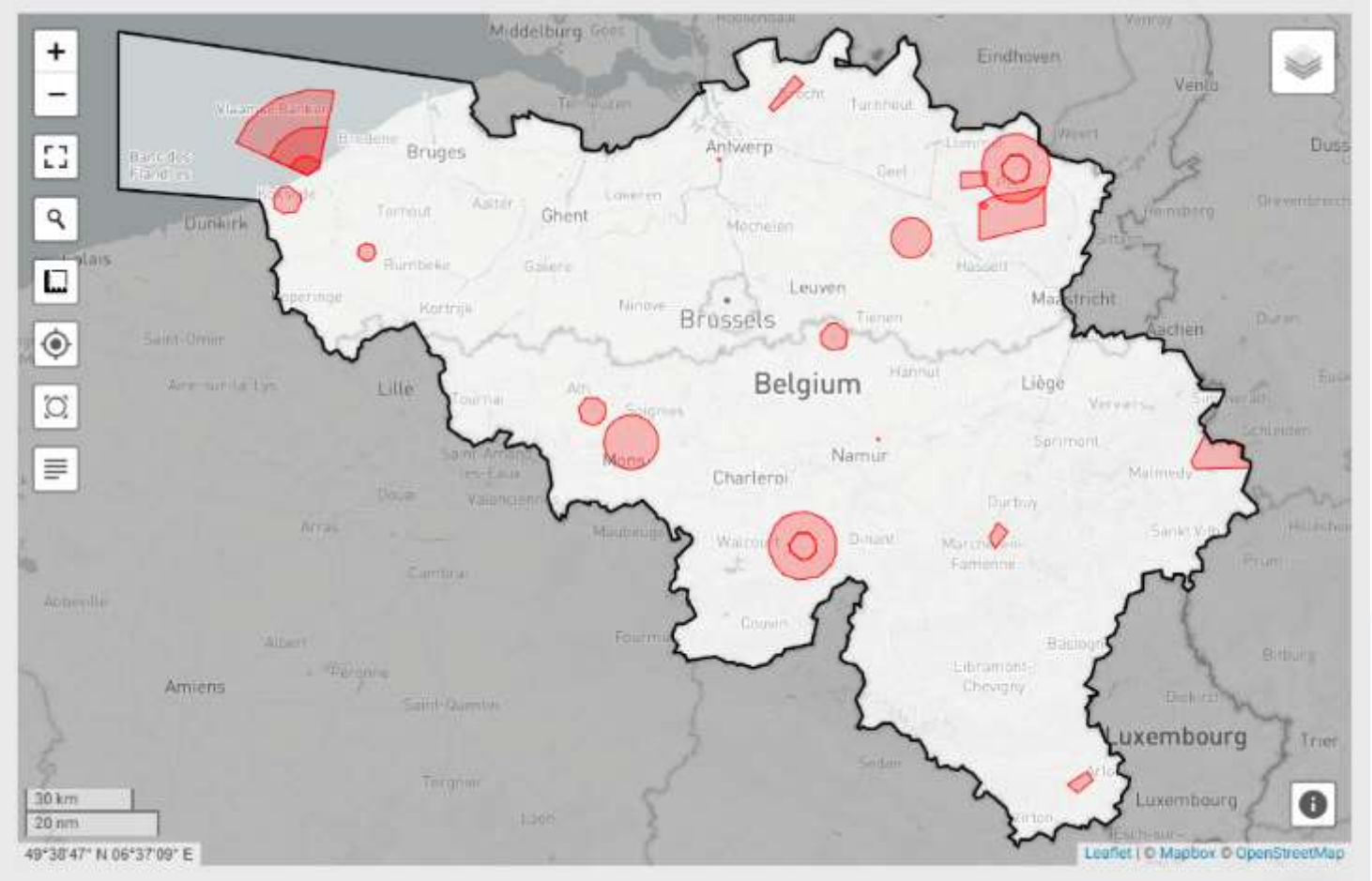

If/when zone is active:

Reject of all flights with drone of MTOM>900g

Reject of all flights above 35ft

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

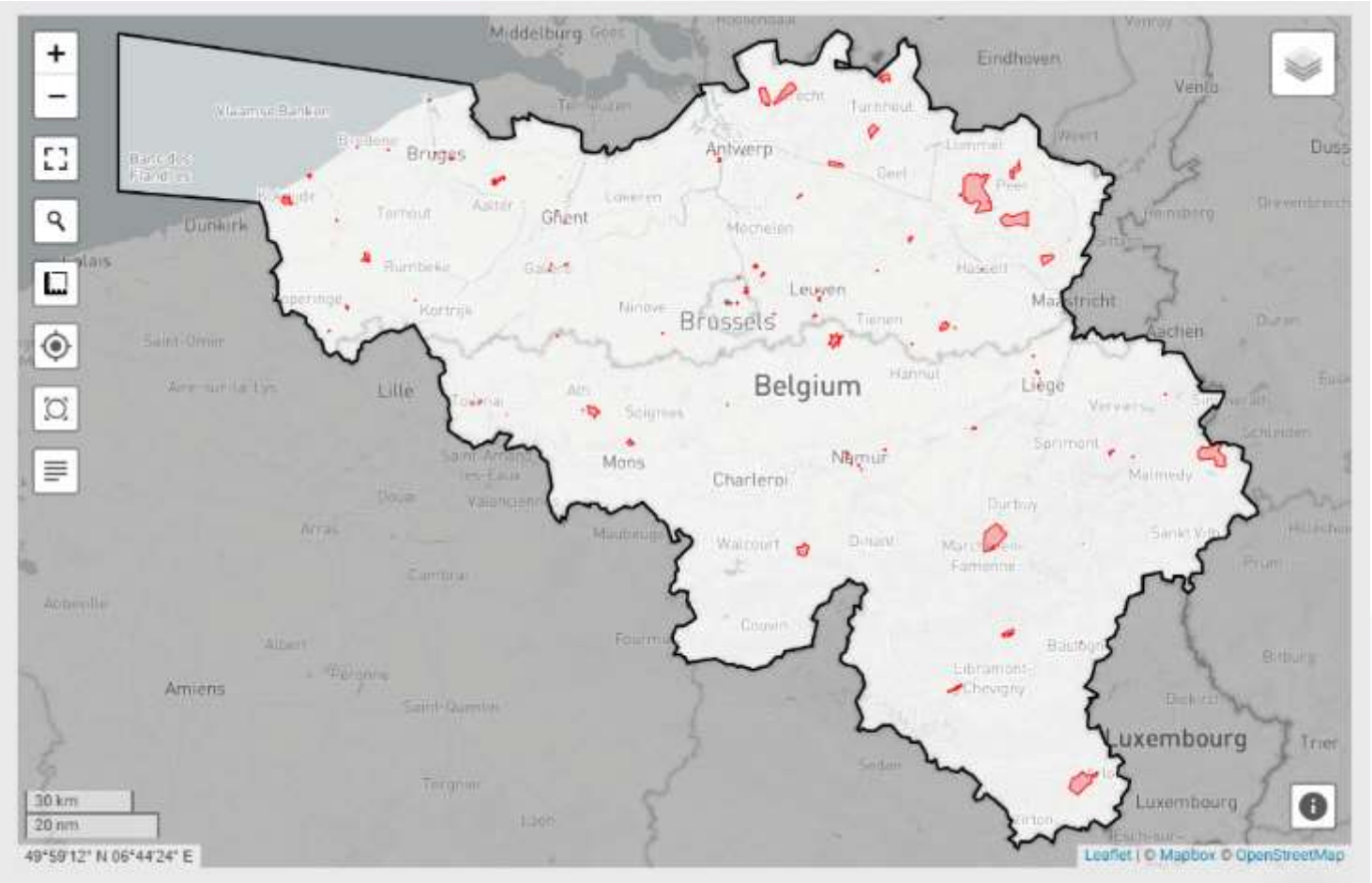
# Military Restricted areas




Approval review done by SPACC of all flights above 35ft or with drone of MTOM>900g

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# Military domains




Approval review done by SPACC for all flights

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# HAVE A SAFE FLIGHT


For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# HAVE A SAFE FLIGHT


**map.droneguide.be**

Check on that map which GeoZones overlap with your flightplan and list all of them in YOUR LIST of relevant GeoZones.

For each GeoZone on YOUR LIST you will have to go and see who the GeoZone Manager is and what extra rules he imposes

Make sure you comply with all additional conditions for each zone (e.g. max flight height, drone requirements, ...)

Get all your authorisations from the different Geozone managers (if required)

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# 6.3 All other geozones

# Other GEO-ZONES

- Aero model domains
- Airports and heliports — Only the CIV. Ones, excl. EBKT!
- CTR/RMZ
- Danger area — All of them are military
- HTA — All of them are military
- LFA — All of them are military
- Military domains — All of them are military
- Nuclear installations
- Prisons
- Restricted airspace — Only the CIV. ones!
- Royal estates
- TMA/CTA — Special case, all above 1500ft
- TSA/TRA — All of them are military

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# Other GEO-ZONES: all require prior flight authorization by Geozone Mgr

- Model aircraft terrains
- Civ. uncontrolled aerodromes excl. EBKT
- Civ. Heliports excl. EBKT
- Nuclear installations: geo-awareness + direct remote ID obligation*
- Prisons: direct remote ID obligation*
- Civ. Restricted area's
  - Seaport (with additional access conditions)
  - UAS test facilities (with additional access conditions)
  - Brussels wider city area
- Royal estates

*: exemptions for Geo-awareness and Remote-ID requirements until 1/1/2024 for Open category flights with MTOM < 900g and Specific category flights

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# 7 DRONE CATEGORIES

# THREE CATEGORIES DRONE OF FLIGHT

**OPEN**

**SPECIFIC**

**CERTIFIED**

## Which drone am I allowed to use in which category?

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

# Allowed drone types per flight category

## OPEN

- **Cx- compliant drones:**
  - C0 labelled ‘toy drone’
  - C1 labelled ‘hobby drone’
  - C2 labelled ‘prosumer drone’
  - C3 labelled ‘professional drone’
  - C4 labelled ‘aero-model drone’
- **Privately build drones <25kg**
- **Non-Cx compliant drones <25kg**
  (put on the market before January 1st 2024)
- **Registration of the drone is *NEVER* required**

## SPECIFIC

- **Any type of drone**
  but technical characteristics should comply with either the Operational Declaration (in case of STS) or the Operational Authorisation
- **Remote ID obligatory as from 1/1/2024** (e.g. through add-on device on existing drones)
- **For very high risk operations** the issued Operational Authorisation might require the **drone to be certified** (and hence also registered)
- In all other cases **registration of the drone is not required**

## CERTIFIED

- **Any type of certified drone**
  (Remote ID obligatory as from 1/1/2024)
- **Drone needs to be registered**
- *OUT OF SCOPE FOR THIS DOCUMENT SECTION*

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# Allowed drone types per flight category

**OPEN**

**SPECIFIC**

**CERTIFIED**

**It is the OPERATOR that ALWAYS needs to be registered, not necessarily the DRONE!**

- C2 labelled 'prosumer drone'
- C3 labelled 'professional drone'
- C4 labelled 'aero-model drone'

- **Privately build drones <25kg**
- **Non-Cx compliant drones <25kg**
  (put on the market before January 1st 2024)

- **Registration of the drone is *NEVER* required**

Operational Authorisation

- **Remote ID obligatory as from 1/1/2024** (e.g. through add-on device on existing drones)
- **For very high risk operations** the issued Operational Authorisation might require the **drone to be certified** (and hence also registered)
- In all other cases **registration of the drone is not required**

- **Drone needs to be registered**
- *OUT OF SCOPE FOR THIS DOCUMENT SECTION*

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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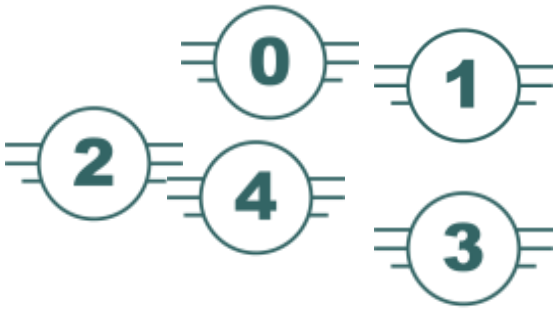
# Delegated Act 945

## C-classes for Open category flights

| Class | Nickname | MTOM/J | Remote ID/ Geo-awareness | Operator Registration |
|---|---|---|---|---|
| C0 | Toy drone | <250g | No | No, if no camera |
| C1 | Hobby drone | <80J at $V_{term}$ or <900g | Yes | Yes |
| C2 | Prosumer drone | <4kg | Yes | Yes |
| C3 | Professional | <25kg | Yes | Yes |
| C4 | Aero-model | <25kg | No | Yes |




*if a drone was not marked with a Cx label by the manufacturer before it was sold then it is <u>not</u> a Cx drone*

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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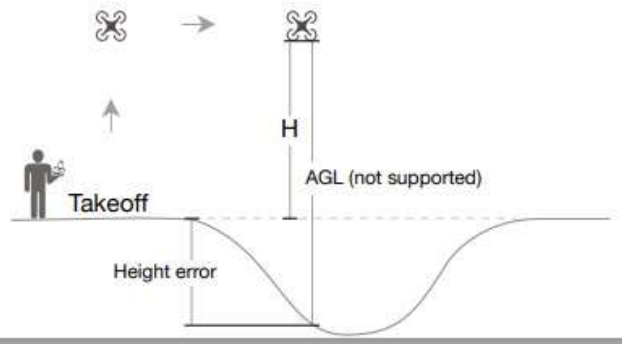
# Delegated Act 945

Status June 2023:

- Mavic 3 and Mavic 3 Cine: C1-compliant
- Mavic 3 Pro: C2-compliant
- Inspire 3: C3-compliant
- HOWEVER …. see extract DJI manuals (UGZ = UAS Geographical Zone = geozone)

**AGL (Above Ground Level) Statement**

The vertical limits of Geo-awareness may use the AMSL altitude or the AGL height. The choice between these two references is specified individually for each UGZ. Neither AMSL altitude nor the AGL height is supported by this product. H (Height) appears in the app camera view, which is the height from the aircraft takeoff point to the aircraft. The height above the takeoff point may be used as an approximation but may differ more or less from the given altitude/height for a specific UGZ. The remote pilot remains responsible for not breaching the vertical limits of the UGZ.




**GEO Awareness**

**Drone Geo-Zones and DJI Geo Zones**

DJI is committed to maintaining a safe flying environment. This includes abiding by local regulations and Unmanned Geographical Zones (UGZs) defined by EU national authorities. DJI has its own Geospatial Environment Online system (GEO) with broader geographical zones, including regulated areas where flight may raise concerns. DJI's GEO system has been running successfully for many years, effectively protecting flight safety and public safety in the absence of official UGZ databases.

In the future, DJI Geo zones will coexist with EU UGZs, as UGZs are still not available in many countries. Users are responsible for checking local regulations and for any flight restrictions where they intend to operate.

The GEO zones mentioned in the manual and DJI official website refers to the DJI Geo zones and Geo fencing function, not the UGZs for Geo awareness function required by regulations.

# Delegated Act 945

## C-classes for Open category flights

| Class | Nickname | MTOM/J | Remote ID/ Geo-awareness | Operator Registration |
|---|---|---|---|---|
| C0 | Toy drone | <250g | No | No, if no camera |
| C1 | Hobby drone | <80J at $V_{term}$ or <900g | Yes | Yes |
| C2 | Prosumer drone | <4kg | Yes | Yes |
| C3 | Professional | <25kg | Yes | Yes |
| C4 | Aero-model | <25kg | No | Yes |

## C-classes for flying a Standard Scenario in the Specific category

| Class | Purpose | Specs |
|---|---|---|
| C5 (STS-01) | STS-01 VLOS operations over controlled ground area in populated environments | C3 based |
| C6 (STS-02) | STS-02 BVLOS operations using visual observers over controlled ground area in sparsely populated environments | C3 based |

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

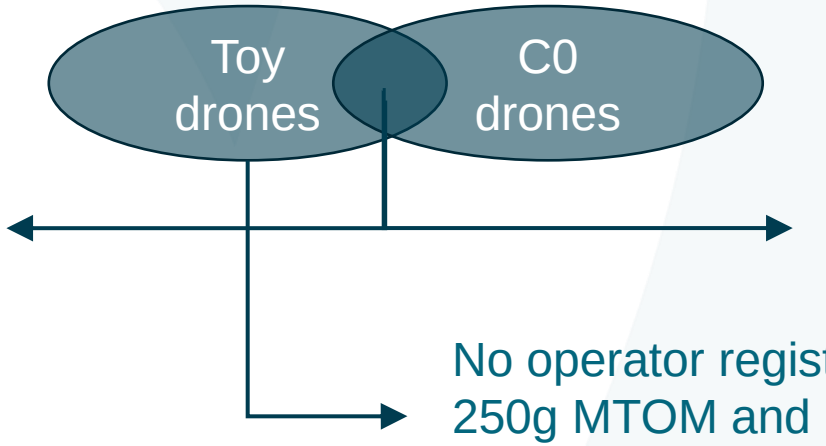
# Delegated Act: drone as a toy

- Directive 2009/48/EC: *a toy is a product designed or intended (whether or not exclusively) for use in play by children under 14 years of age*

- Not all C0 drones are toys, not all toy drones are C0

Exemption on three C0 technical requirements:

(4) be safely controllable with regards to stability, manoeuvrability and the command and control link performance, by a remote pilot following the manufacturer's instructions, as necessary under all anticipated operating conditions including following the failure of one or, if appropriate, more systems;
(5) be designed and constructed in such a way as to minimise injury to people during operation, sharp edges shall be avoided, unless technically unavoidable under good design and manufacturing practice. If equipped with propellers, the UA shall be designed in such a way as to limit any injury that may be inflicted by the propeller blades;
(6) be exclusively powered by electricity;




No pilot minimum age required for Open Category A1 flights

No operator registration required if below 250g MTOM and below 80J impact, even when equipped with camera

# Delegated Act C-classes of drones for Open category

| UAS | | | |
|---|---|---|---|
| **Class** | **MTOM / Joule** | **Main technical requirements** | **Remote ID & geo-awareness** |
| **C0** ('toy drone') | < 250g | Max speed 19m/s, max attainable height above the take-off point of 120m, no sharp edges, follow-me within max 50m | No |
| **C1** ('hobby drone') | < 80J impact at $V_{term}$ or <900g | Max speed 19m/s, max height above the take-off point of 120m or selectable and visualised height limitation, no sharp edges, follow-me within max 50m, mechanical strength, lost-link management, geo-awareness pilot warning, battery warning, be equipped with green lights, max sound power level | Yes + unique SN for identification |
| **C2** ('prosumer drone') | < 4kg | Max height above the take-off point of 120m or selectable and visualised height limitation, no sharp edges, mechanical strength, lost-link management, geo-awareness pilot warning, low-speed mode (3m/s), battery warning, max sound power level, be equipped with green lights, protected C2 link | |
| **C3** ('professional') | < 25kg<br>< 3m in size | Max height above the take-off point of 120m or selectable and visualised height limitation, mechanical strength, lost-link management, geo-awareness pilot warning, battery warning, max sound power level, be equipped with green lights, protected C2 link | |
| **C4** (aero-model) | < 25kg | No automatic flight, lost-link management | if required by zone of operations |

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# How about non-Cx-compliant drone? What if I still buy one tomorrow?

- You can fly in the OPEN category for as long as the drone will last, provided it was put on the market by the manufacturer before January 1st 2024, but only:
  - in the Open A1 category if MTOM < 250g
    - *you can fly over people (involved or not)*
    - *no flying over "assemblies of people"*
  - in the Open A3 category if MTOM < 25kg
    - *you can fly over involved people but only in an area where the pilot reasonably expects that no uninvolved person will be endangered*
    - *keep a safe horizontal distance of 150m from residential, commercial, industrial or recreational areas*
- Can fly in the Specific category if the technical characteristics comply with the Operational Authorisation

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# How about non-Cx-compliant drone? What if I still buy one tomorrow?

- Up to 1/1/2024 a special ‘Limited’ Open category was created to temporarily allow you to fly in more than just the Open A1 (<250g) or Open A3 category:
  - In Open A1/C1 conditions if MTOM < 500g (in stead of 900g)
    - *You can fly over involved people*
    - *In case of unexpected flight over uninvolved people, the pilot shall reduce that time as much as possible*
    - *No flying over assemblies of people*
  - Keeping a safe horizontal distance of 50m from people (in stead of 30m) if MTOM < 2kg (in stead of 4kg)

# OPEN category overview for Belgium

**OPEN**

**OPEN CATEGORY: not over assemblies of people; up to 120m above the ground***
**VLOS/EVLOS only, except in follow-me mode within 50m distance from pilot; not drop any material**

| Operation | | UAS | | Remote pilot competency | UAS operator registration |
|---|---|---|---|---|---|
| Sub-Cat. | Area of operation | Class | MTOM | | |
| **A1 Fly over people** | You can fly over people, involved or not (not over assemblies) | Non-Cx compliant** | < 250g | • Minimum age 14<br>• No minimum age for privately build drone or true toy drone marked as C0<br>• Familiarised with the user's manual | No, not for true toy drones or for as long as not equipped with a camera (250g or 80J impact) |
| | | Privately build | | | |
| | | **C0** | | | |
| | You can fly over involved people but cannot intentionally fly over uninvolved people | Non-Cx compliant (up to 1/1/2024)*** | <500g | • Minimum age 14<br>• Familiarised with the user's manual<br>• On-line theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*) | |
| | | **C1** | <900g | | |
| **A2 Fly close to people** | You need to keep a min. horizontal distance of 50m from people (involved or not) | Non-Cx compliant (up to 1/1/2024)*** | < 2kg | • Minimum age 16<br>• Familiarised with the user's manual<br>• Hold a certificate of remote pilot competency after:<br>  • Online examination (idem as for cat A1/C1)<br>  • Declaring practical self-training<br>  • Additional cat A2 theoretical knowledge examination (with Certificate of remote pilot competency) | Yes |
| | You can fly over involved people but cannot fly over uninvolved people and need to keep a safe horizontal distance of 30m from them, reduced to 5m when flying in low-speed mode | **C2** | < 4kg | | |
| **A3 Fly far from people** | • You can fly over involved people but only in an area where you reasonably expect that no uninvolved person will be endangered (AMC: by keeping a safe distance of at least 30m)<br>• You should keep a safe horizontal distance of 150m from residential, commercial, industrial or recreational areas | **C0 / C1 / C2** | See above | Minimum age 14<br>• Familiarised with the user's manual<br>• On-line theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*)<br>(idem as for cat A1/C1) | |
| | | **C3** | < 25kg<br>< 3m in size | | |
| | | **C4** (aero-model) | < 25kg | | |
| | | Privately build or non-Cx compliant** | | | |

*: Exception: when flying a drone within a horizontal distance of 50m from an artificial obstacle taller than 105m, the maximum height of the operation may be increased up to 15 meters above the height of the obstacle at the request of the entity responsible for the obstacle

**: Only valid when the non-Cx drone has been put on the market by its manufacturer before January 1st, 2024

***: Temporary 'Limited' Open category (up to 1/1/2024)

JDM16032022

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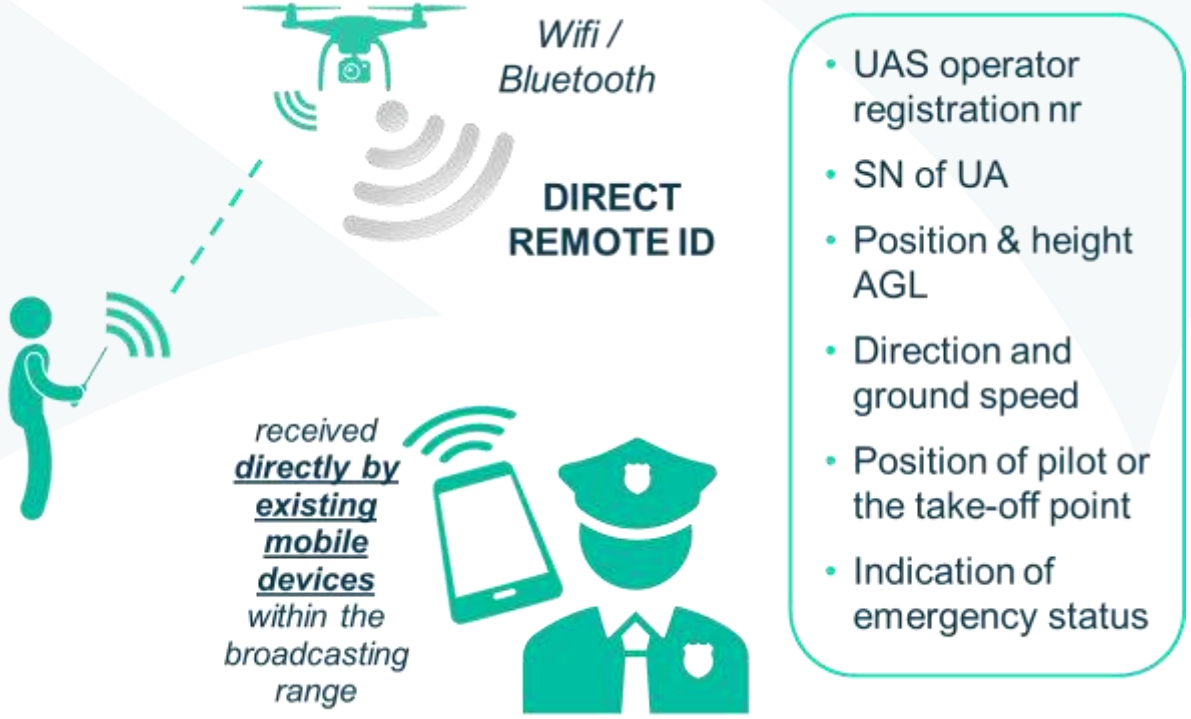
# What is Direct Remote ID?

## Definition as per 945/947 EU reg.




- UAS operator registration nr
- SN of UA
- Position & height AGL
- Direction and ground speed
- Position of pilot or the take-off point
- Indication of emergency status

## When/where is it mandatory?

(if not imposed by a GeoZone)

For flights in the Open category: C1, C2, non-tethered C3, C5 and C6 drones by definition have this feature on board and only when using those drones is there an obligation in the Open category to have direct remote ID active during the flight. Such Cx-compliant drones are however not yet available on the market.

Its use is obligatory for all flights in the Specific category only as from 1/1/2024.

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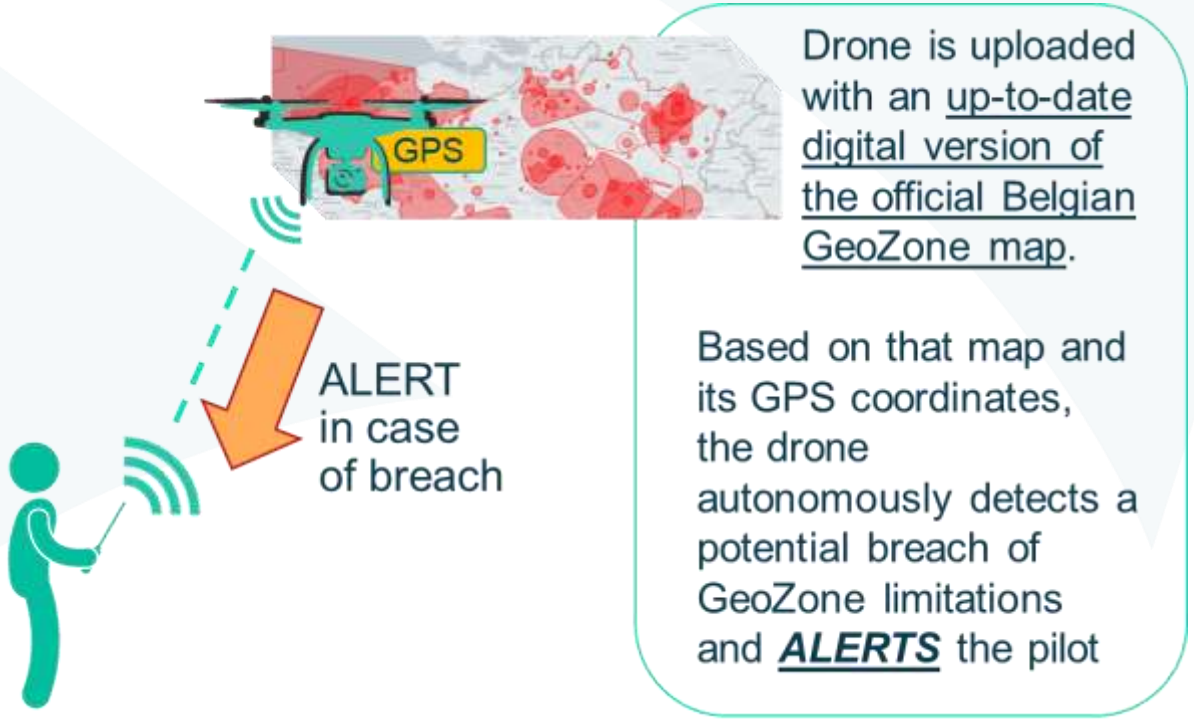
# What is Geo-awareness?

## Definition as per 945/947 EU reg.




not be confused with the functionality offered on DJI drones called 'DJI geofencing' as this DJI drone feature refers to the alerting of the pilot based on a bespoke map designed and made public by DJI based on its very own safety criteria.

## When/where is it mandatory?

(if not imposed by a GeoZone)

C1, C2 and C3 drones operated in the Open category by definition have this feature on board and should have it activated during all flights. It is optionally available on C5 and C6 drones (to be used to execute STS1 and STS2 as of 1/1/2024), if present on them it should be activated during all flights.

Cx-compliant drones are however not yet available on the market today 1/1/2022.

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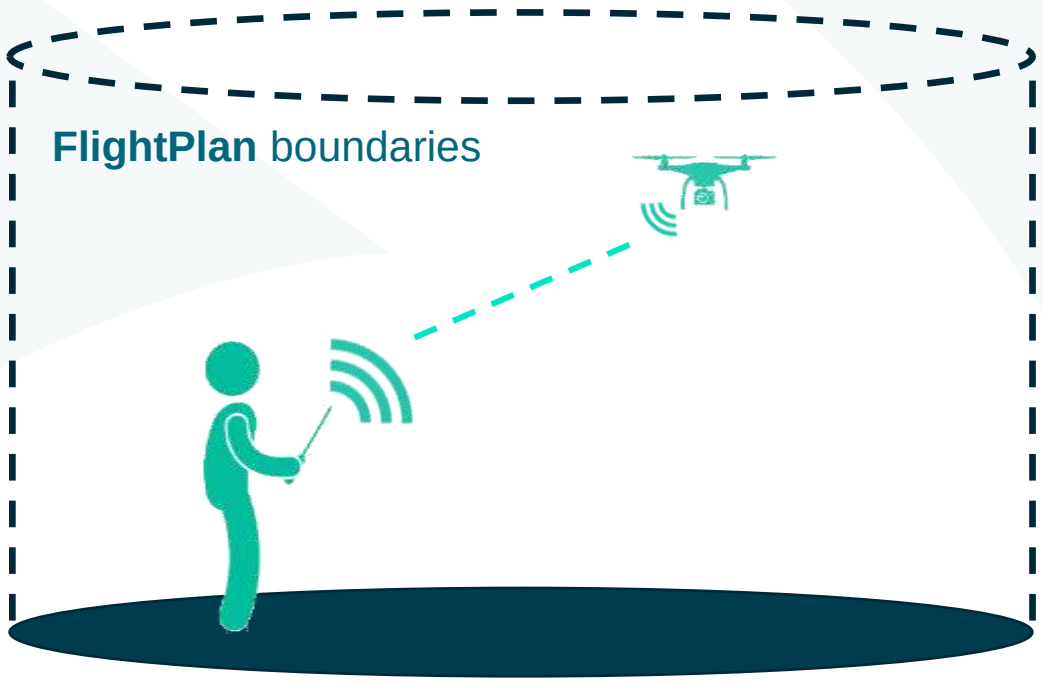
# What is Geo-caging?

## No definition in the 945/947 EU reg.




## Can only be imposed imposed by a GeoZone

Referred to as a system that prevents the drone from flying over a given altitude and a given distance outside a given volume of airspace (vertically and horizontally) as defined during the flight planning phase of the drone operation.

It is equivalently referred to in the EU Delegated Act in the section used to define the obligatory characteristics of a C6 drones as being ‘a system that prevents the UA from breaching the horizontal and vertical limits of a programmable operational volume’.

# Delegated Act C-classes of drones for Specific category

| UAS | | |
|---|---|---|
| **Class** | **MTOM / Joule** | **Main technical requirements** |
| **C3** ('professional') | < 25kg<br>< 3m in size | Max height above the take-off point of 120m or selectable and visualised height limitation, mechanical strength, lost-link management, geo-awareness pilot warning, battery warning, max sound power level, be equipped with green lights, protected C2 link |
| **C5** For STS-01 | < 25kg<br>< 3m in size | ~~Max height above the take-off point of 120m or selectable and visualised height limitation~~, mechanical strength, lost-link management, optional geo-awareness pilot warning, battery warning, max sound power level, be equipped with green lights, protected C2 link, no fixed wing, height info to pilot, low speed mode 5m/s, independent flight termination system (incl. impact dynamics reduction), C2 link quality info |
| **C6** For STS-02 | < 25kg<br>< 3m in size | ~~Max height above the take-off point of 120m or selectable and visualised height limitation~~, mechanical strength, lost-link management, optional geo-awareness pilot warning, battery warning, max sound power level, be equipped with green lights, protected C2 link, max. speed 50m/s, height info to pilot, geo-caging, independent flight termination system (not incl. impact dynamics reduction), trajectory programming, C2 link quality info |

STS-01

STS-02

- C5 drone can also be based on C3 drone + ***Class C5 accessories kit***, such kit then needs to be compliant with all C5 requirements except height info to pilot
- Technical requirement exemptions do exist for tethered C5 drones

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# How about privately build drones?

- Definition = a drone assembled or manufactured for the builder's own use, not including drones from sets of parts sold as a single ready-to-assemble kit
- Can fly in the Open A1 category if MTOM < 250g, provided the operating speed is limited to 19m/s
  - *You can fly over people (involved or not)*
  - *No flying over "assemblies of people"*
- Can fly in the Open A3 category if MTOM < 25kg
  - *You can fly over involved people but only in an area where the pilot reasonably expects that no uninvolved person will be endangered*
  - *Keep a safe horizontal distance of 150m from residential, commercial, industrial or recreational areas*
- Can fly in the Specific category if technical characteristics comply with the Operational Authorisation

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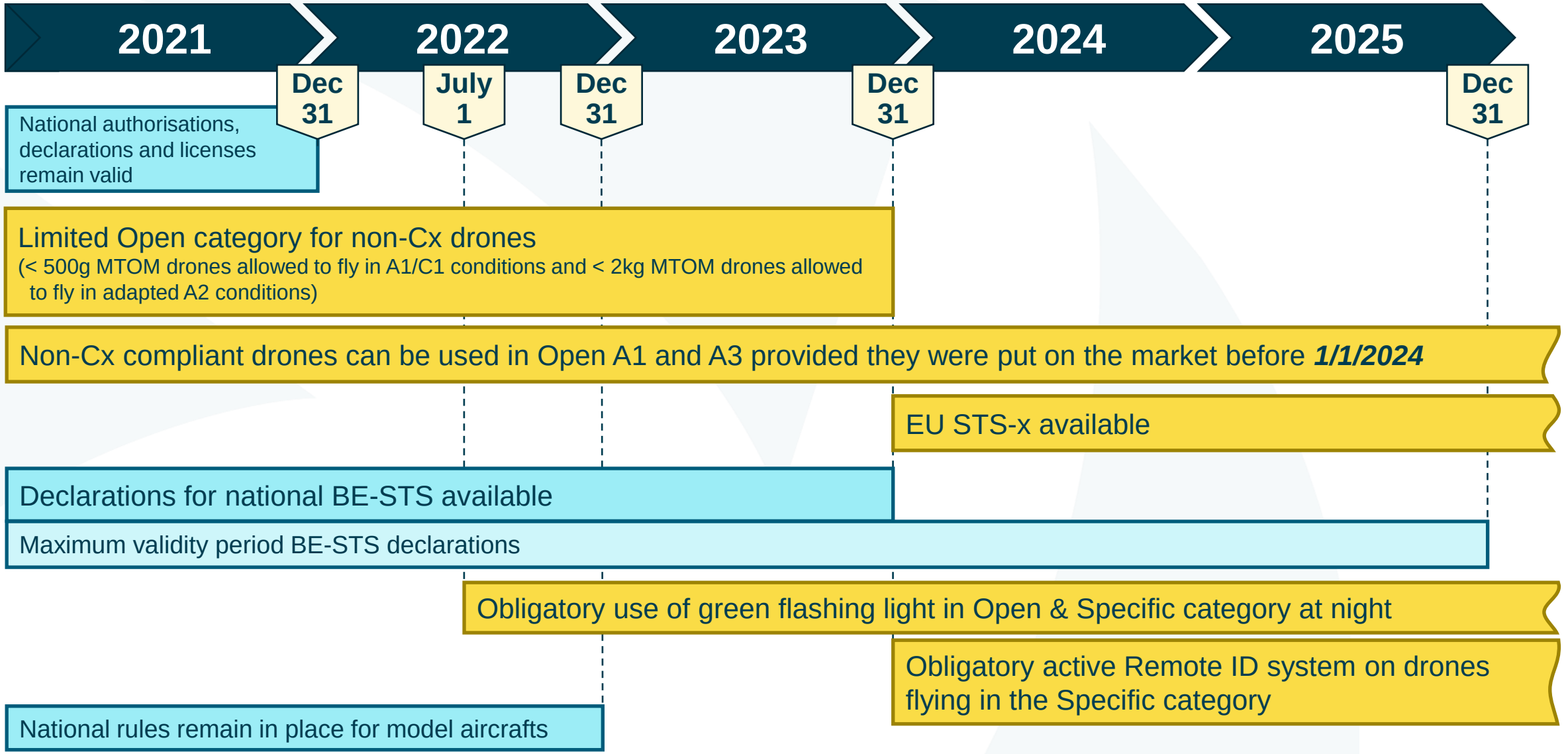
# Applicability overview

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Check on that map which GeoZones overlap with your flightplan and list all of them in YOUR LIST of relevant GeoZones.

For each GeoZone on YOUR LIST you will have to go and see who the GeoZone Manager is and what extra rules he imposes

Make sure you comply with all additional conditions for each zone (e.g. max flight height, drone requirements, ...)

Get all your authorisations from the different Geozone managers (if required)

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# 8 PILOT COMPETENCIES

# OPEN category, pilot competences

OPEN

| Operation | | Remote pilot competency |
|---|---|---|
| Sub-Cat. | Area of operation | |
| **A1**<br>**Fly over people** | You can fly over uninvolved people (not over assemblies) | • Familiarised with the user's manual |
| | You cannot intentionally fly over uninvolved people | • On-line training & theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*) |
| **A2**<br>**Fly close to people** | You cannot fly over uninvolved people and need to keep a safe horizontal distance of 30m from them, reduced to 5m when flying in low speed mode | • Hold a certificate of remote pilot competency after:<br>  • Online examination (idem as for cat A1/C1)<br>  • Declaring practical self-training<br>  • Additional cat A2 theoretical knowledge examination (in classroom, with *Certificate of remote pilot competency*) |
| **A3**<br>**Fly far from people** | You should:<br>• fly in an area where it is reasonably expected that no uninvolved people will be endangered<br>• keep a safe horizontal distance of 150m from residential, commercial, industrial or recreational areas | • On-line training & theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*)<br>(idem as for cat A1/C1) |

BE: min age = 14

A1/A3

BE: min age = 14

A1/A3

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# OPEN category, pilot competences

OPEN

| Operation | | Remote pilot competency |
|---|---|---|
| **Sub-Cat.** | **Area of operation** | |
| **A1**<br>**Fly over people** | You can fly over uninvolved people (not over assemblies) | • Familiarised with the user's manual |
| | You cannot intentionally fly over uninvolved people | • On-line training & theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*) |
| **A2**<br>**Fly close to people** | You cannot fly over uninvolved people and need to keep a safe horizontal distance of 30m from them, reduced to 5m when flying in low speed mode | • Hold a certificate of remote pilot competency after:<br>• Online examination (idem as for cat A1/C1)<br>• Declaring practical self-training<br>• Additional cat A2 theoretical knowledge examination (in classroom, with *Certificate of remote pilot competency*) |
| **A3**<br>**Fly far from people** | You should:<br>• fly in an area where it is reasonably expected that no uninvolved people will be endangered<br>• keep a safe horizontal distance of 150m from residential, commercial, industrial or recreational areas | • On-line training & theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*)<br>(idem as for cat A1/C1) |

BE: min age = 16

A2

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# OPEN category overview for Belgium

**OPEN**

**OPEN CATEGORY: not over assemblies of people; up to 120m above the ground***
**VLOS/EVLOS only, except in follow-me mode within 50m distance from pilot; not drop any material**

| Operation | | UAS | | Remote pilot competency | UAS operator registration |
|---|---|---|---|---|---|
| Sub-Cat. | Area of operation | Class | MTOM | | |
| **A1 Fly over people** | You can fly over people, involved or not (not over assemblies) | Non-Cx compliant** | < 250g | • Minimum age 14<br>• No minimum age for privately build drone or true toy drone marked as C0<br>• Familiarised with the user's manual | No, not for true toy drones or for as long as not equipped with a camera (250g or 80J impact) |
| | | Privately build | | | |
| | | **C0** | | | |
| | You can fly over involved people but cannot intentionally fly over uninvolved people | Non-Cx compliant (up to 1/1/2024)*** | <500g | • Minimum age 14<br>• Familiarised with the user's manual<br>• On-line theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*) | |
| | | **C1** | <900g | | |
| **A2 Fly close to people** | You need to keep a min. horizontal distance of 50m from people (involved or not) | Non-Cx compliant (up to 1/1/2024)*** | < 2kg | • Minimum age 16<br>• Familiarised with the user's manual<br>• Hold a certificate of remote pilot competency after:<br>  • Online examination (idem as for cat A1/C1)<br>  • Declaring practical self-training<br>  • Additional cat A2 theoretical knowledge examination (with Certificate of remote pilot competency) | Yes |
| | You can fly over involved people but cannot fly over uninvolved people and need to keep a safe horizontal distance of 30m from them, reduced to 5m when flying in low-speed mode | **C2** | < 4kg | | |
| **A3 Fly far from people** | • You can fly over involved people but only in an area where you reasonably expect that no uninvolved person will be endangered (AMC: by keeping a safe distance of at least 30m)<br>• You should keep a safe horizontal distance of 150m from residential, commercial, industrial or recreational areas | **C0 / C1 / C2** | See above | Minimum age 14<br>• Familiarised with the user's manual<br>• On-line theoretical knowledge examination (with *Proof of completion of on-line theoretical knowledge examination*)<br>(idem as for cat A1/C1) | |
| | | **C3** | < 25kg<br>< 3m in size | | |
| | | **C4** (aero-model) | < 25kg | | |
| | | Privately build or non-Cx compliant** | | | |

*: Exception: when flying a drone within a horizontal distance of 50m from an artificial obstacle taller than 105m, the maximum height of the operation may be increased up to 15 meters above the height of the obstacle at the request of the entity responsible for the obstacle

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***: Temporary 'Limited' Open category (up to 1/1/2024)

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# OPEN category, pilot competences

**OPEN**

Can be based on self-study

**OPEN A2**

Additional theoretical knowledge examination
***''Certificate of remote pilot competency''*** *by CA or DE*

Practical-skills self-training declaration

**OPEN A1 & A3**

On-line theoretical examination
***'Proof of completion of on-line theoretical knowledge examination'***
*by CA or Designated Entity*

On-line theoretical training

For further details and possible updates on the applicable regulations in Belgium: please consult: https://mobilit.belgium.be

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# SPECIFIC category, pilot competences


| | |
|---|---|
| Non -STS | Competencies defined in the Operational Authorisation |
| STS-2 | Extended practical skill training and assesment (continuous evaluation)<br>*'Accreditation of completion of STS2 practical skill training" by RE or Operator* |
| STS-1 | Practical skill training and assesment (continuous evaluation)<br>*'Accreditation of completion of STS1 practical skill training" by RE or Operator* |
| | Additional theoretical knowledge examination (2 versions)<br>*''Certificate of remote pilot theor. knowledge for operations in the STSes" by BCAA or DE* |

***''Certificate of remote pilot competency''" from the OPEN category***

There is **no** such thing as an official

**"Certificate of remote pilot competency for the SPECIFIC category"!**

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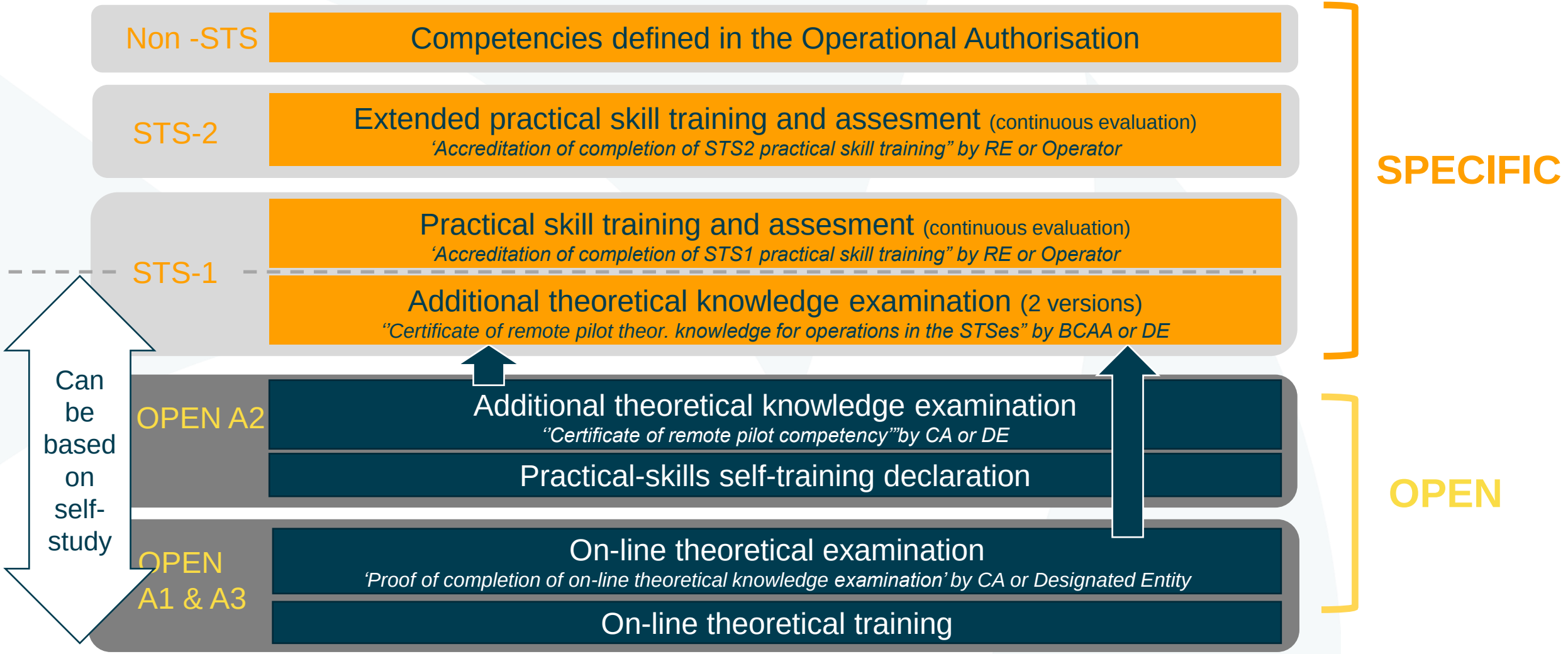
# Pilot licenses OVERVIEW

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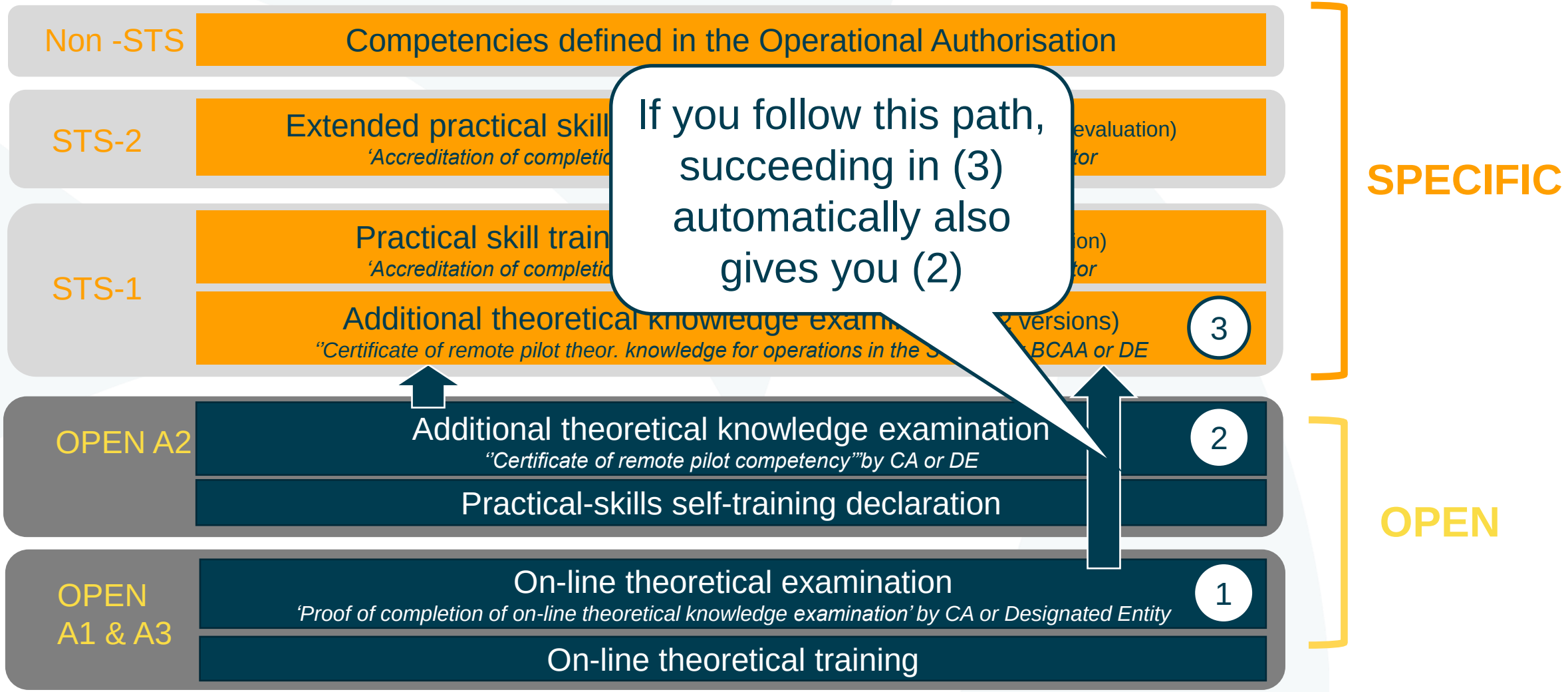


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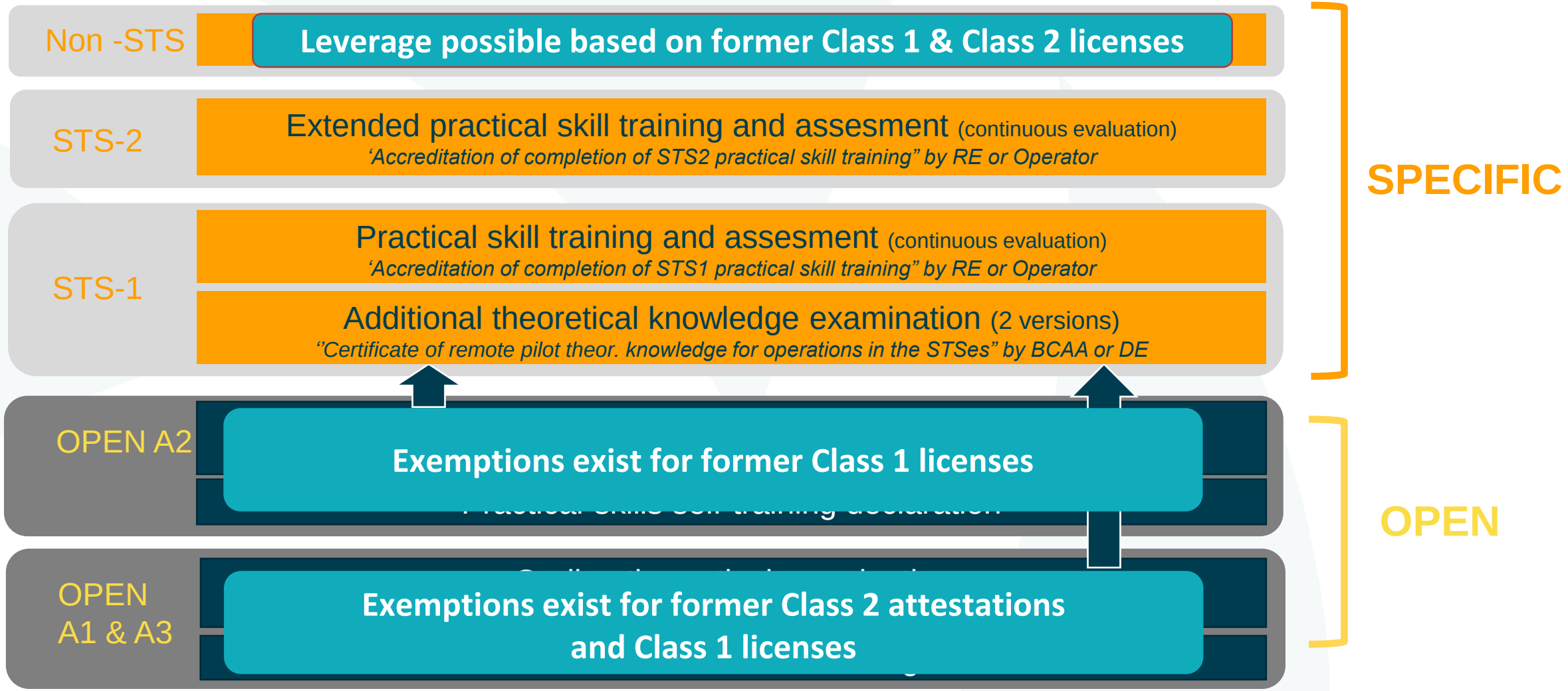


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