RULES FOR SMALL, UNMANNED AIRCRAFT IN EASA

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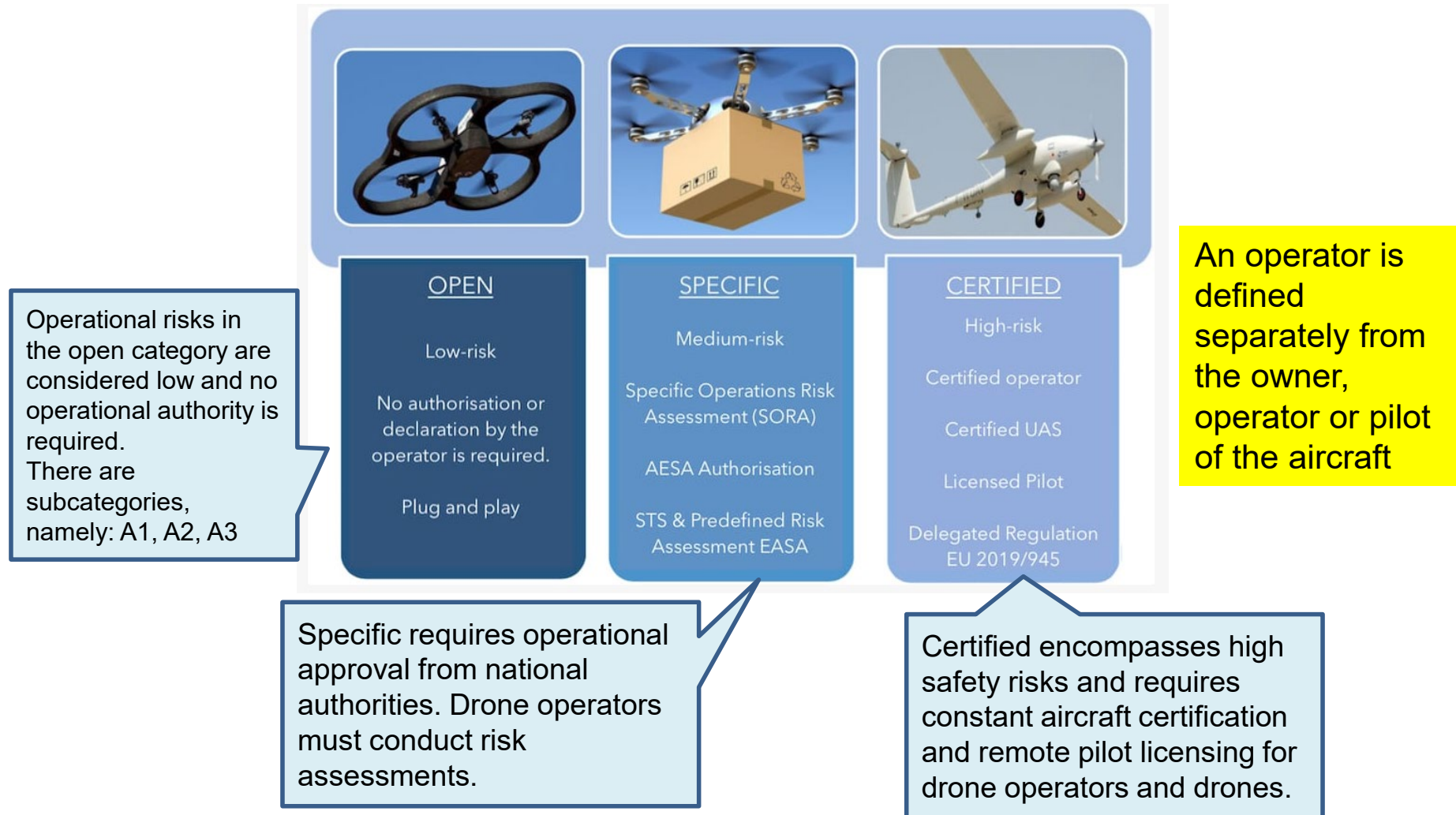
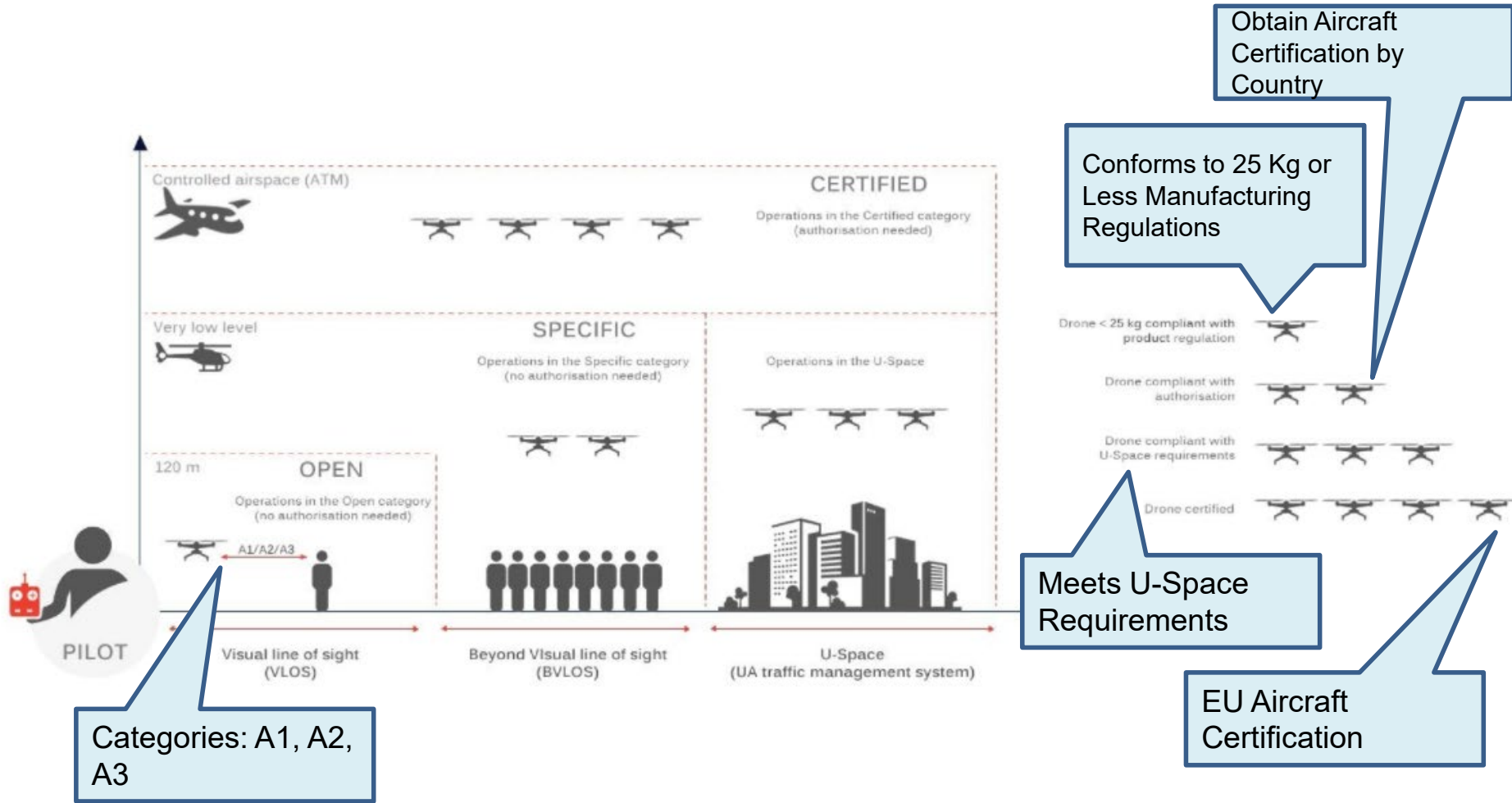2021.9.21

Framework Announced in 2019

- In 2019, EU regulations 2019/947 and 2019/945 established a framework to integrate the rules for small, unmanned aircraft in Europe, mainly in EU member states.

- There are three categories for civil, unmanned aircraft, classified according to risk: Open, Specific, and Certified.

- The framework for operational control is determined by U-Space rules (adopted 2021.4)

- Starting December 31, 2020, drone operators will register with each national authority (NAA)
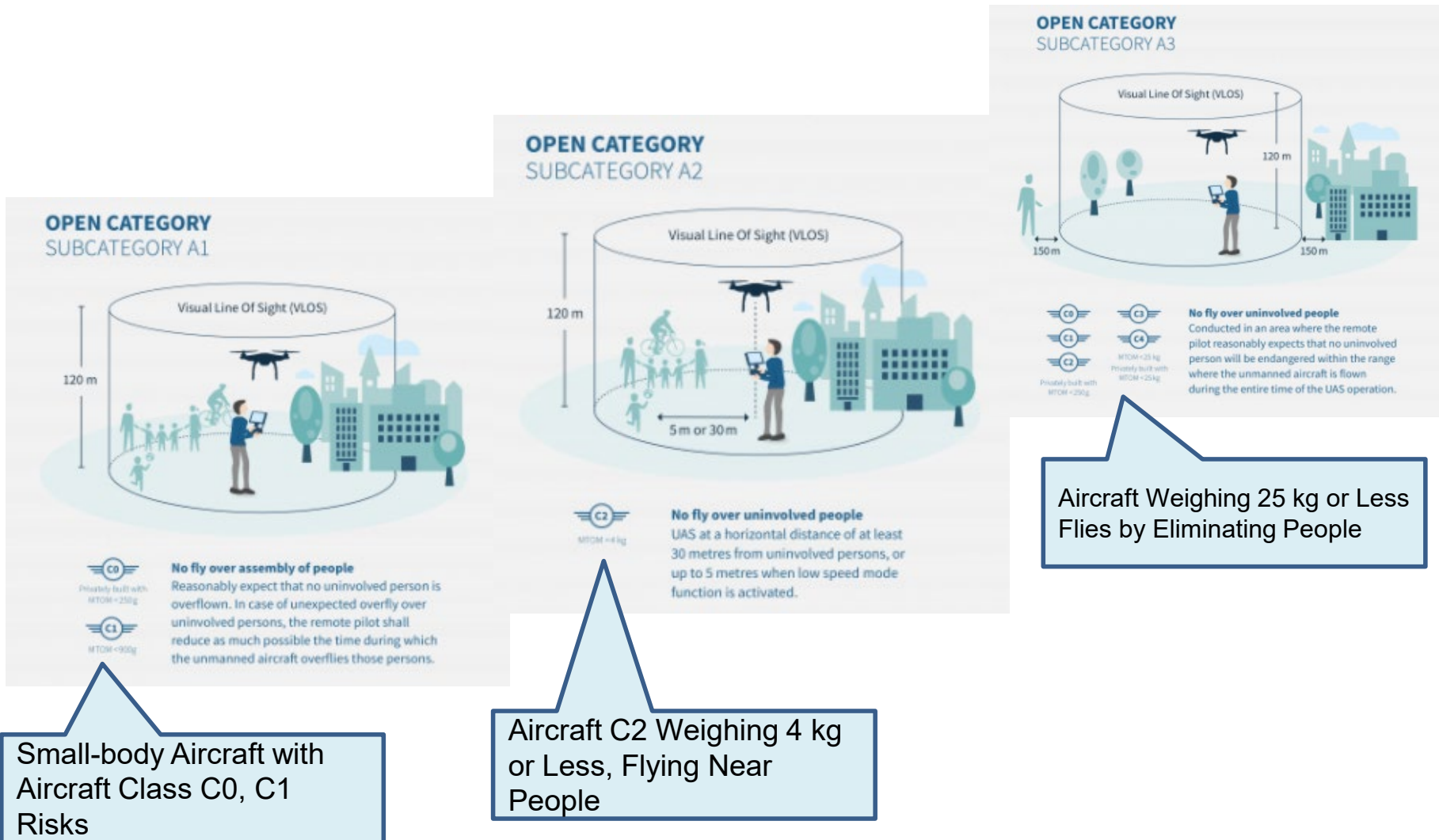
- Drone pilots will receive properly training.

https://www.easa.europa.eu/domains/civil-drones-rpas

Drone Operation Categories

Operational risks in the open category are considered low and no operational authority is required.
There are subcategories, namely: A1, A2, A3

OPEN

Low-risk

No authorisation or declaration by the operator is required.

Plug and play

SPECIFIC

Medium-risk

Specific Operations Risk Assessment (SORA)

AESA Authorisation

STS & Predefined Risk Assessment EASA

CERTIFIED

High-risk

Certified operator

Certified UAS

Licensed Pilot

Delegated Regulation EU 2019/945

An operator is defined separately from the owner, operator or pilot of the aircraft

Specific requires operational approval from national authorities. Drone operators must conduct risk assessments.

Certified encompasses high safety risks and requires constant aircraft certification and remote pilot licensing for drone operators and drones.

New EASA Drone Regulations | 2021 Updated | Grupo One Air

Relationship Between Aircraft and Airspace

Obtain Aircraft Certification by Country

Conforms to 25 Kg or Less Manufacturing Regulations

Meets U-Space Requirements

EU Aircraft Certification

Categories: A1, A2, A3

Three categories in Open: A1, A2, A3

https://www.easa.europa.eu/domains/civil-drones-rpas/open-category-civil-drones

OPEN CATEGORY
SUBCATEGORY A3

Visual Line Of Sight (VLOS)

120 m

150m   150m

C0   C3
C1   C4
C2

MTOM <25 kg

Privately built with
MTOM <250g

Privately built with
MTOM <25 kg

No fly over uninvolved people
Conducted in an area where the remote
pilot reasonably expects that no uninvolved
person will be endangered within the range
where the unmanned aircraft is flown
during the entire time of the UAS operation.

OPEN CATEGORY
SUBCATEGORY A2

Visual Line Of Sight (VLOS)

120 m

5 m or 30 m

C2

MTOM <4 kg

No fly over uninvolved people
UAS at a horizontal distance of at least
30 metres from uninvolved persons, or
up to 5 metres when low speed mode
function is activated.

OPEN CATEGORY
SUBCATEGORY A1

Visual Line Of Sight (VLOS)

120 m

C0
Privately built with
MTOM <250g

C1
MTOM <900g

No fly over assembly of people
Reasonably expect that no uninvolved person is
overflown. In case of unexpected overfly over
uninvolved persons, the remote pilot shall
reduce as much possible the time during which
the unmanned aircraft overflies those persons.

Aircraft Weighing 25 kg or Less
Flies by Eliminating People

Aircraft C2 Weighing 4 kg
or Less, Flying Near
People

Small-body Aircraft with
Aircraft Class C0, C1
Risks

https://www.flynex.io/news/the-new-eu-drone-regulation-part-2-operation-categories/

category after January 1, 2023

Source: European Aviation Safety Agency (easa.europa.eu)

Open Category

UAS		Operation		Drone Operator/pilot		
Class	MTOM	Subcategory	Operational restrictions	Drone Operator registration	Remote pilot competence	Remote pilot minimum age
Privately			- may fly over uninvolved people (should be avoided when possible) - no flying over assemblies of people	No, unless camera / sensor on board and a drone is not a toy	- no training needed	No minimum age
C0	< 250 g	A1 (can also fly in subcategory A3)			- read user manual	16*, no minimum age if drone is a toy
C1	< 900 g		- No flying expected over uninvolved people (if it happens, should be minimised) - no flying over assemblies of people	Yes	- read user manual - complete online training - pass online theoretical exam	16*
C2	< 4 kg	A2 (can also fly in subcategory A3)	- no flying over uninvolved people - keep horizontal distance of 30 m from uninvolved people (this can be reduced to 5 m if low speed function is activated)	Yes	- read user manual - complete online training - pass online theoretical exam - conduct and declare a self-practical training - pass a written exam at the NAA (or at recognized entity)	16*
C3						
C4	< 25 kg	A3	- do not fly near people - fly outside of urban areas (150 m distance)	Yes	- read user manual - complete online training - pass online theoretical exam	16*
Privately built						

Figure 2 - Open category after January 1, 2023

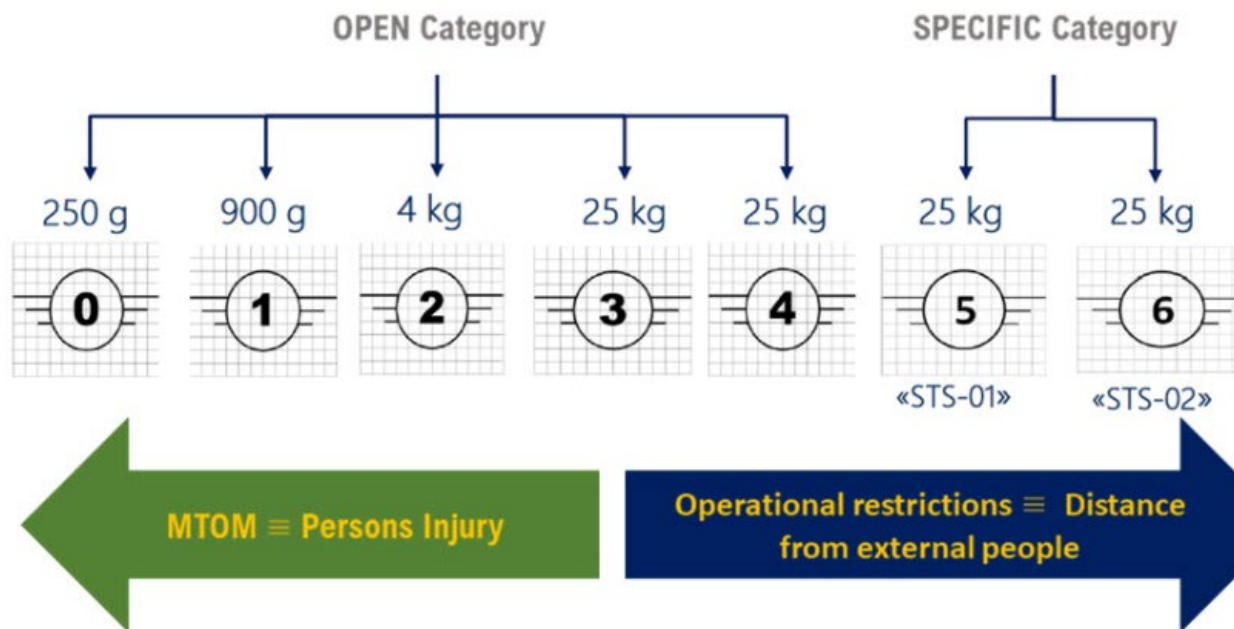*Until the end of 2022, flying over people is prohibited, in the same way as C1.*

Until the end of 2022, will become strict for 500 g or less.

Until the end of 2022, it will become strict for 2 kg or less.

Source: European Aviation Safety Agency (easa.europa.eu)

CE Mark on the Aircraft

- Under Regulation 2019/945, drones flying within the EU are required to bear the CE mark of C0 to C6 (planned for 2022 and beyond)
- C0 to C4 are open (C4 is for model aircraft), C5 and C6 are specific (Sora standard scenarios 01 (in-sight), 02 (out-of-sight))

https://www.dronescelab.com/class-label/

	C0	C1	C2	C3	C 4 (Model)
Weight	< 250 g	< 900g	< 4 kg	< 25kg	< 25kg
Sub-category	A1,A3	A1,A3	A2 (Near People), A3	A3	A1,A3
Operational Restrictions	No flying over crowds	No flying over crowds	• No flying over people • Keep 5, 30 m away from people	• No flying near people • Keep 150 m away from homes	Keep 150 meters away from homes
Flight Registration	No camera, no toy drone required	Required	Required	Required	Required
Pilot Requirements	Understand User Manuals	• User Manuals • A1, A3 Online Training, Online Examinations	• User Manuals • Online training for A1 and A3 • **Theory Examinations in Each Country**	• User Manuals • Online training for A1 and A3 • Online Theory Examination	• User Manuals • Online training for A1 and A3 • Online Theory Examination
Pilot Age Limit	16 (Not required for toys)	16	16	16	16

https://www.easa.europa.eu/domains/civil-drones-rpas/open-category-civil-drones

Open Category Pilot License

• Required from 2023.

Proof of completion for online training for A1/A3 'open' subcategory

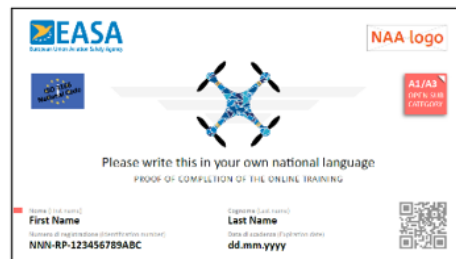If your drone meets one of the following conditions:

- has one of the following class identification labels:

- or is purchased before 31 December 2022, without a class identification label, and with a maximum weight of less than 25 kg,

then, after familiarising yourself with the manufacturer's instructions, you need to undertake an online training and take an exam for the A1/A3 category. Please check the NAA's website to find out how to receive this training and exam. **You may undertake the training and take the exam in any EASA Member State.**

After answering 40 questions, with at least a 75 % pass rate, you will receive the following certificate:

Please write this in your own national language
PROOF OF COMPLETION OF THE ONLINE TRAINING

First Name   Last Name
NNN-RP-123456789ABC   dd.mm.yyyy

Online training provided by National Authorities (NAAs)
• Must answer 75% of the 40 questions on the online test correctly

Remote pilot certificate of competency for A2 'open' subcategory

If your drone has a C2 class identification label , you need to:

- familiarise yourself with the manufacturer's instructions;
- complete the online training and pass the online exam as defined for drones with a C1, C3 or C4 class identification label;
- identify a safe area that meets the requirements for subcategory A3 (an area where no uninvolved persons are present in the range of the drone, at least 150 m away from residential, industrial or commercial areas) and conduct a practical self-training.

Now you can contact an NAA to take an additional theoretical exam. Before taking the exam, you must declare the successful completion of the practical training. The exam may be either administered in a classroom or online; in the latter case, a system provided by the respective NAA for the identification of your identity (e.g. an online proctoring system) is required. After answering 30 questions with a 75 % pass rate, you will receive the following certificate:

Online training provided by National Authorities (NAAs)
• Online or class theory examination (must answer 75% of the 30 questions correctly)

'Open' category: remote pilot competency
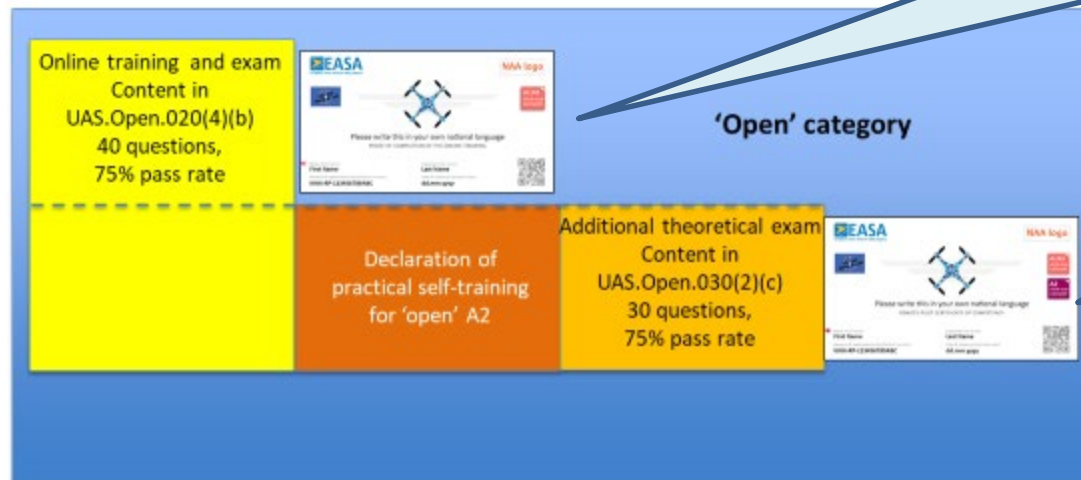
C1, C3, C4
• Must answer 75% of the 40 questions on the online test correctly

C2 Online from National Authorities (NAAs)
• Conversely, must answer 75% of the 30 questions on the class test correctly

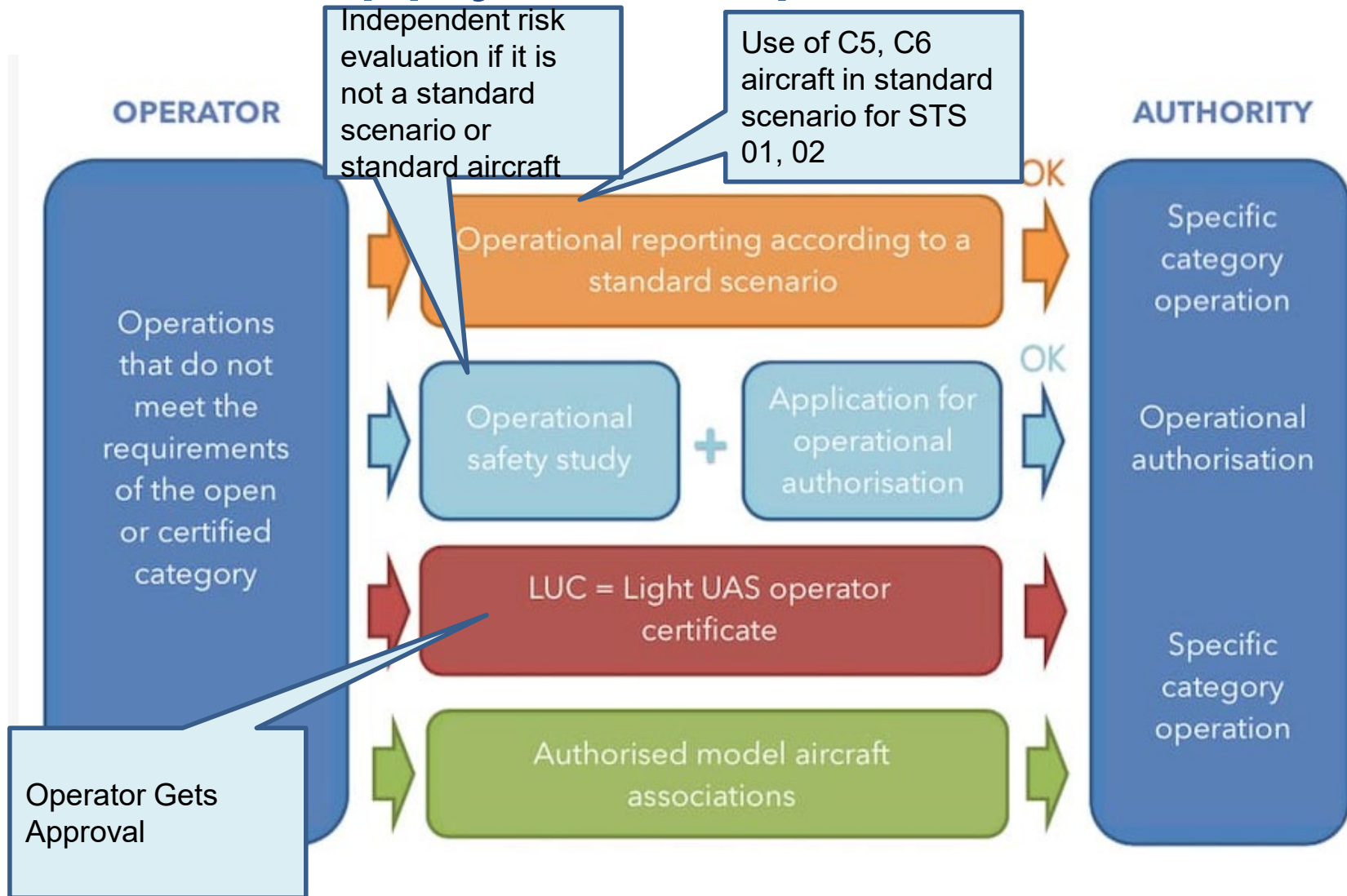https://www.easa.europa.eu/faq/116457

Specific Category

- If there is a risk that is higher than the open category
  - BVLOS
  - Flight at an altitude of 120 meters or higher
  - Drones weighing 25 kg or more
  - Flying in urban areas with a drone weighing 4 kg or more
  - Aircraft without EC certification
  - Dropping Onto Property
  - Flying Over Crowds
- Meet the Following Requirements
  - Pilot must be 16 years of age or older.
  - Operator Registration
  - Implement SORA (Specific Operations Risk Assessment) for operators before applying to EASA
  - In the event that STS-01 (VLOS) and STS-02 (BVLOS) standard scenarios are not met, the operator must have an operating license

https://www.grupooneair.com/new-easa-drone-regulations/

Standard Specific Applications and Permissions

- Applies to standard scenarios STS01 (VLOS), STS02 (BVLOS), and if using a C5 or C6 drone, it is possible to send an application to the each national authority NAA and confirm receipt.

- If it is not standard:

  - Apply to countries for risk evaluations and reduction in SORA or in a manner acceptable in each country

  - Submit PDRA results to NAA if covered by an EASA-published PDRA (pre-defined risk evaluation)

  - If a UAS operator obtains a lightweight UAS operator certificate (LUS) from NAA, NAA will grant self-approving a self-evaluation for the operator.

https://www.easa.europa.eu/domains/civil-drones-rpas/specific-category-civil-drones

How to Apply for a Specific License

Independent risk evaluation if it is not a standard scenario or standard aircraft

Use of C5, C6 aircraft in standard scenario for STS 01, 02

OPERATOR

AUTHORITY

Operations that do not meet the requirements of the open or certified category

OK
Operational reporting according to a standard scenario

OK
Operational safety study + Application for operational authorisation

LUC = Light UAS operator certificate

Authorised model aircraft associations

Specific category operation

Operational authorisation

Specific category operation

Operator Gets Approval

Pilot Qualifications in Specific Categories

- For Standard Scenario
  - Complete and pass online training courses for operation under standard scenarios
  - Receive STS-01 Practical Training Completion Certification
- If it is not a standard scenario, propose a training course to the NAA, obtain its certification, and provide training
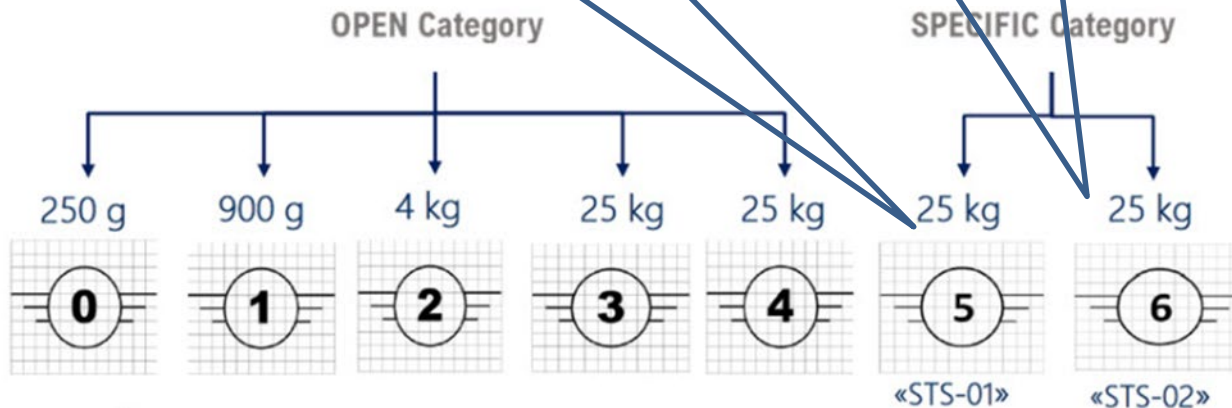- Certificates and accreditations may be issued by NAA-approved entities

Specific Aircraft Classification

VLOS
In addition to Open Aircraft
Requirements
• Providing Advanced Information
• Emergency Flight Termination
Function
• Response to Lost Links
• Excluding Fixed Wing Aircraft

BVLOS
• In addition to Open Aircraft
Requirements and C5
Requirements
• Means Not to Exceed the Flight
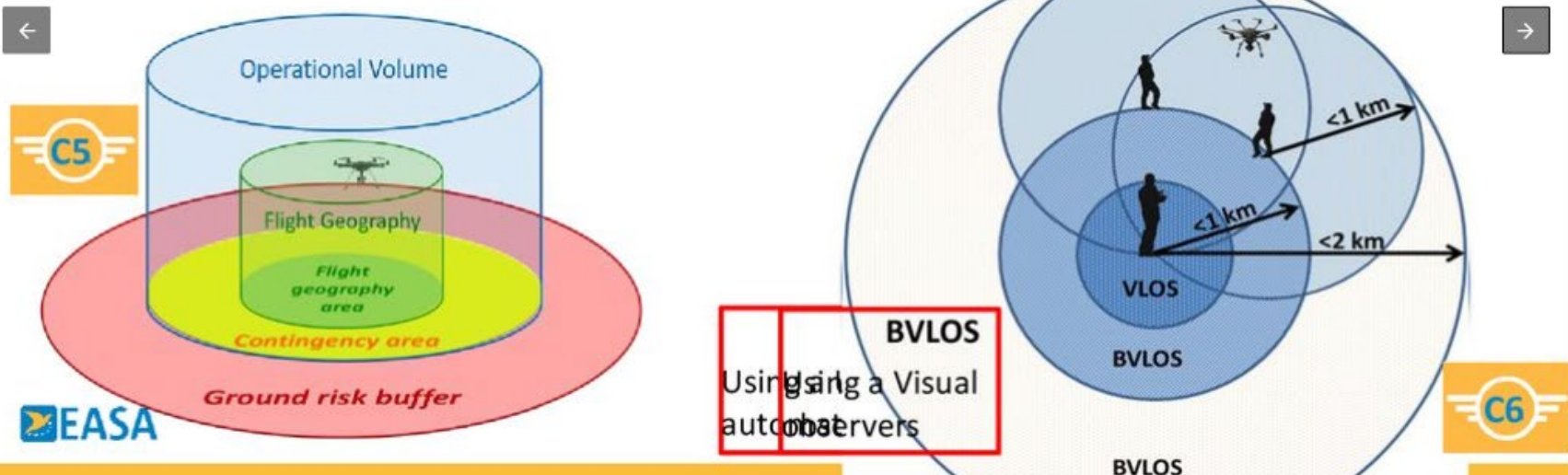Range (Horizontal/Vertical)
• Flight Program Function

OPEN Category   SPECIFIC Category

250 g	900 g	4 kg	25 kg	25 kg	25 kg	25 kg
0	1	2	3	4	5	6
					«STS-01»	«STS-02»

MTOM ≡ Persons Injury

Operational restrictions ≡ Distance
from external people

Standard Scenario for Specific STS 01, 02

EU Regulation - Opinion on Standard Scenarios

➢ Operations based on <u>declarations,</u> it will be Appendices to the IA

➢ <u>Published</u> on 7/11/2019: 2 STS (based on scenarios already used in some MS)

➢ **STS-01**: VLOS, below 120m in urban environment, with UA MTOM<25kg

➢ **STS -02**: BVLOS, below 120m in sparsely populated area environment, with UA MTOM<25kg
  • range <2km when using VO, otherwise <1km

[The European UAS regulation Ljubljana 28 November 2019 - ppt download (slideplayer.com)](slideplayer.com)

Certified Category

• Drones Certified by EU 2019/945

• Wing Size Exceeds 3 m and Flies Over People

• Significant Risk of Accidents Such as by Flying Over Crowds and Transporting Hazardous Materials

• Carrying Passengers

• If the submitted SORA indicates the need to certify a UAS operator and obtain the associated pilot's license.

• Details are Under Consideration.