

CAPABILITIES AND POTENTIAL OF RPAS SYSTEM IN A CIVILIAN AND INDUSTRIAL ENVIRONMENTS



5th MILITARY METROLOGY FOR AEROSPACE SYMPOSIUM

B. GEN. PILOT (ITAF – RET.) GIOVANNI SAVOLDELLI PEDROCCHI TORINO 19 GIUGNO 2019

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 - **HOW TO GET A RPAS DEGREE IN ITALY**
- **RPAS TRAINING IN AN INDUSTRIAL ENVIRONMENT**
 - **WHY WE USE A RPAS SYSTEM**

A SIMPLE DRONE DEFINITION



**DRONE IS A TOOL THAT USES
AN INTELLIGENT SENSOR TO ACQUIRE
INFORMATION**

RPAS SYSTEM MC/FW



PAYLOADS IN CIVILIAN AND INDUSTRIAL ENVIRONMENT

PAYLOADS ARE INTELLIGENT SENSOR AS VIDEO CAMERA
FOR PHOTOGRAMMETRY OR THERMOGRAPHY



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PAYLOADS IN CIVILIAN AND INDUSTRIAL ENVIRONMENTS



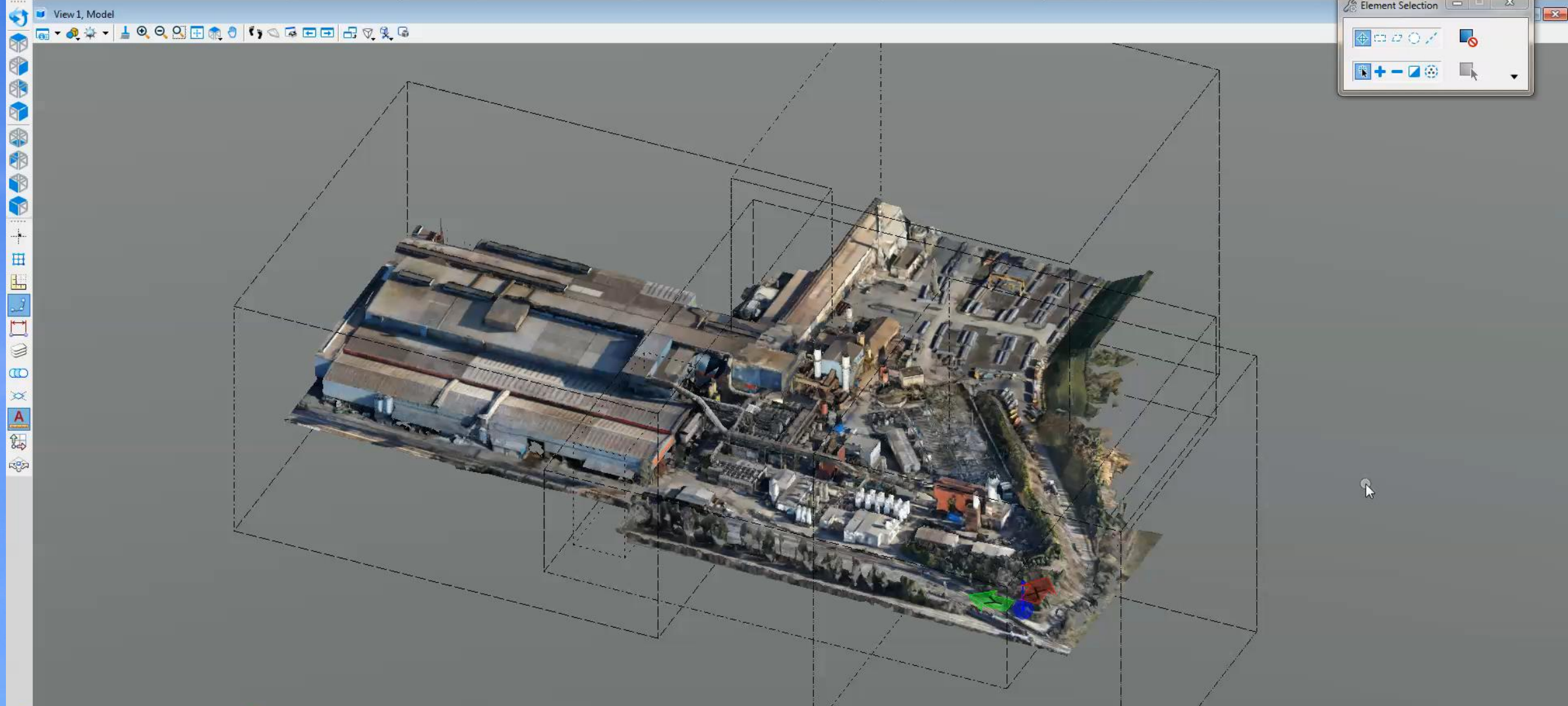
File Home View Curves Solids Surfaces Mesh Content Analyze Constraints Utilities Drawing Aids Search Ribbon (F4) Sign in

None 0

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Attributes Primary Selection Placement Manipulate Modify Groups

Explorer Attach Tools Models Level Display Element Selection Fence Tools Slab Sphere Solid By Profile Cylinder Move Copy Rotate Modify Solid Features Boolean Tools Create Region



Element Selection

This is a floating tool palette for the 'Element Selection' command. It contains several icons for different selection methods: a box selection tool, a window selection tool, a lasso selection tool, a pick tool, and a selection set management tool. There are also plus and minus signs for adding or removing elements from the selection set.

RPAS DEFINITION ITALIAN CIVIL AVIATION AUTHORITY (ENAC)

Article 743 of the Italian Navigation Code, titled "Concept of aircraft", introduces in the definition of aircraft, the notion of remotely piloted aerial vehicle:

"Aircraft shall mean any machine designed for the transportation by air of persons or property. **Remotely piloted aerial vehicles are also considered aircraft**, as defined by special laws, ENAC regulations and, for the military, by decrees of the Ministry of Defence.

ENAC Regulation ED. 2 16 JULY 2015 EM. 4 21 MAY 2018, as implementing art. 743 of the Italian Navigation Code, splits remotely piloted aerial vehicles in

Remotely Piloted Aircraft Systems and
Model Aircraft for the purpose of applying the provisions of the Code.

RPAS UAS EASA REGULATION

To ensure the free circulation of drones and a level playing field within the European Union, EASA has developed common European rules. They contribute to the development of a common European market while ensuring safe operations and respecting the privacy and security of EU citizens.

The definition of drones is quite wide, as it includes all remotely piloted and autonomous aircraft: from small consumer devices used for recreation to large aircraft, used over very long distances for security or other critical operations.

EASA UAS/RPAS DEFINITION

‘unmanned aircraft system’ (‘UAS’) means an unmanned aircraft and the equipment to control it remotely;

UAS operations shall be performed in the ‘Open’, ‘Specific’ or ‘Certified’ category.

EASA REGULATION



OPEN category - Low risk
NO-PRE APPROVAL
LIMITATIONS: 25 kg, VLOS,
height <120m, system of
zones
3 Sub-categories: fly over,
close, far from people

General public
Model Flying
Photographers



SPECIFIC - Increased risk
Authorisation by NAA
based on specific
operation risk assessment
(SORA)
Declaration in case of
standard scenario; LUC

BVLOS operations (linear
inspections, aerial work, ...)
Transport of goods



CERTIFIED - Risk as
manned aviation
Certification of UAS,
approval of the operator
and licensed pilot (unless
autonomous flight)

Air Taxi
International IFR (cargo,
passengers)
Package delivery over people

HOW TO GET A RPAS DEGREE IN ITALY

RPAS PILOT CERTIFICATE

In order to pilot RPAS with RPA having operating take-off mass less than 25 kg , in VLOS operations it is necessary to hold the RPAS pilot certificate, issued by a recognized RPAS Training Centre approved by ENAC.

The RPAS Pilot need:

- A certificate of medical fitness,
- To learn applicable rules of the air, basic aeronautical knowledge, safety aspects and relevant operational risks, by successfully attending a Theoretical Training Course with an approved Training Centre (16 HOURS).
- To attend a RPAS Flight Course of 5 hours and pass a practical examination (*Skill Test*) with an APR Examiner of an approved Training Centre.

IX Validità / Validity

Questo Attestato è valido fino al, a meno che non sia stato sospeso o revocato da ENAC. This Attestation is valid until is suspended or revoked by ENAC.

Le attività consentite possono essere esercitate solo se il titolare è in possesso di una pertinente certificazione medica in corso di validità. Il titolare deve avere con se un documento di identità valido. The associated privileges shall be exercised only if the holder has a valid medical certification as applicable. An identification document containing photo shall be carried out by the Attestation holder.

X Annotazioni / Remarks

Abbreviazioni

Abbreviations used in this certificate

VL	Molto leggero: 0,3Kg <Peso Operativo ≤ 4kg	Very Light: 0,3Kg <Operational Weight ≤ 4kg
L	leggero: 4kg <Peso Operativo ≤ 25 Kg	Light: 4kg <Operational Weight ≤ 25kg
Ap	Aeroplano	Aeroplane
Hc	Elicottero	Helicopter
Mc	Multicottero	Multicopter
As	Dirigibile	Airship
FI	Istruttore di volo	Flight Instructor
CRO	Operazioni critiche	Critical Operations



ENAC.CA.APR.004

ATTESTATO DI PILOTA APR
(APR Pilot Attestation)

Rilasciato in conformità al Regolamento Mezzi
Aerei a Pilotaggio Remoto
(Issued in accordance with Remotely Piloted
Aerial Vehicles Regulation)

Mod. ENAC APR 05

Giugno 2016

RPAS TRAINING CENTRE

- RPAS Training Centre are approved by ENAC and they can provide both theoretical and RPAS flight training.
- They shall have an adequate organization and hold appropriate procedures, training material and training tools, at least one RPAS Instructor and at least one RPAS Examiner, recognized by ENAC for practical tests needed for the issuance and renewal of the RPA pilot certificates.
- ENAC approves the RPAS Training Centre upon investigations on the organization, on the capability to grant the entire training to the pilot, on the procedures, on the training material and on the qualification of the personnel, instructor and examiner.

RPAS TRAINING COURSE IN AN INDUSTRIAL ENVIRONMENT

ANALYSIS AND EVALUATION OF THE FLIGHT OPERATION WITH RPAS AS:

- **ANALYSIS AND EVALUATION OF THE OPERATIONAL AREA,**
 - **ANALYSIS AND EVALUATION OF SECURITY ASPECTS OF THE INDUSTRIAL SITE AS SAFETY PLAN, SECURITY PLAN, EMERGENCY PLAN, PRIVATE POLICY AND DATA RESULTS;**
- **RISK ANALYSIS OF THE AREA INCLUDING ELETTROMAGNETIC SPECTRUM EVALUATION;**
 - **HOW TO REQUEST AN AUTORIZATION TO ENAC OR CITY COUNCIL, POLICE HQ,**
 - **HOW TO PLAN A FLIGHT MISSION,**
 - **HOW TO WRITE OPERATIONAL MANUAL INCLUDING ALL INFORMATION RELATED TO THE INSPECTION AT THE INDUSTRIAL SITE,**
- **CREW RESOURCES MANAGEMENT COURSE (C.R.M) PILOT AND ASSISTANT;**
 - **A THEORICAL COURSE ON AEROPHOTOGRAMMETRY AND TERMOGRAPHY,**
 - **A FLIGHT COURSE WITH SENSOR ON BOARD TO PRACTICE MANOUVRES ON INFRASTRUCURES**



WHY WE USE A RPAS SYSTEM

- **LOW COST**
- **SHORT TERM INSPECTION RESULTS**
- **UPGRADED LEVEL OF SAFETY & SECURITY ON THE INDUSTRIAL SITE**
- **DATA OUTCOME IN A DATABASE FORMAT**

FOLLOWING THE ITALIAN NAVIGATION CODE

**THE RPAS PILOT IS RESPONSIBLE TO FLY ACCORDING TO
FLIGHT RULES AND FLIGHT SAFETY**





GRAZIE

**THANK YOU FOR
YOUR ATTENTION**

WWW.ENAC.GOV.IT

QUESTIONS?????



HOW TO GET A RPAS DEGREE IN ITALY



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HOW TO GET A RPAS DEGREE IN ITALY



Italdron

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HOW TO GET A RPAS DEGREE IN ITALY

The operations of UAS in Europe will be classified in 3 main categories:

the 'open' category is a category of UAS operation that, considering the risks involved, does not require a prior authorisation by the competent authority nor a declaration by the UAS operator before the operation takes place;

the 'specific' category is a category of UAS operation that, considering the risks involved, requires an authorisation by the competent authority before the operation takes place, taking into account the mitigation measures identified in an operational risk assessment, except for certain standard scenarios where a declaration by the operator is sufficient or when the operator holds a light UAS operator certificate (LUC) with the appropriate privileges;

the 'certified' category is a category of UA operation that, considering the risks involved, requires the certification of the UAS, a licensed remote pilot and an operator approved by the competent authority, in order to ensure an appropriate level of safety.

The proposed regulation is focusing on the open and specific categories.



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REMOTELY PILOTED AERIAL VEHICLES

Operated or intended to be operated for

SPECIALISED OPERATIONS or

FOR EXPERIMENTAL, SCIENTIFIC OR RESEARCH ACTIVITIES,

are established to be Remotely Piloted Aircraft Systems (RPAS) and the provisions of the Italian Navigation Code apply, in accordance with this Regulation.

Model aircraft shall not be regarded as aircraft for the applicability of the provisions of the Italian Navigation Code and can be used only for **Recreational and sporting activities only**.

Nevertheless, this Regulation sets out specific provisions and limitations applicable to the use of the model aircraft to ensure the safety of persons and property on the ground and of other airspace users.