



**DRONESVIP** | CIVIL AERONAUTICAL  
TRAINING CENTER

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# DRONES MULTIROTORS

CERTIFICATE COMPETENCES OF **PILOT TO DISTANCE**

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# AGENDA

## FIRST PART

- **What is a Drone?**
- **TYPES of Flights. Automatic vs. Self-employed**
- **TYPES of Drones . Military s and Civilians**
- **HOW ARE THEY DIVIDED?**
- **Topology and classification - Part 1**

## SECOND PART

- **T o p o l o g y and class i f i c a t i o n - Part 2**
- **U s e s and Applications**
- **Basic composition of a UAV equipmentControl**
- **Remote – M o d e s o f l e v e r**
- **M o v e m e n t s about the axes**

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# WHAT IS A DRONE ?





# WHAT IS A **DRONE** ?

Unmanned aerial vehicles (UAVs), also known as **drones** , are **aircraft** that They fly unmanned and can be controlled by pilots on the ground remotely with manual flights , either with flights automatic. Also **could** fly of shape autonomous.

## + ETYMOLOGY



In the english voice , the word DRONE means "buzzing". Formerly it was used this term for talk of thebuzz that produced the bees male to fly. The term "drone" is highly popular as a replacement for UAV.

## UAV, UAS

Unmanned Aerial Vehicle, of acronym UAV. It is also widely used the denomination Unmanned Aerial System and of acronym UAS.



## TYPES OF FLIGHTS: **MANUAL , AUTOMATIC O EITHER SELF - EMPLOYED?**



# TYPES OF DRONES



# MILITARY DRONES



# MILITARY DRONES

PREDATOR

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# MILITARY DRONES

# DRONES MILITARY



Global Hawk



Reaper MQ-9

## SOME CHARACTERISTICS

01

They can prowl in the distance a lot further than the manned airplanes.

02

Are used as a platform for reconnaissance and surveillance.

03

They are operated by several agencies, such as the national security, and by the armed forces of several countries.

04

The Reaper MQ-9 can fly at 482 km/h, carry 4 missiles and stay in the air 14 hours fully charged. Its ceiling is 15,000m.

# DRONES MILITARY



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# DRONES MILITARY

## SOME CHARACTERISTICS

Global

Ingress Protection  
or International  
Protection

# IP 55

Protected against quantity of dust that could interfere with the normal operation of the product but not fully dust tight. Complete protection against solid objects.

Protection assured against water jets projected by a nozzle (6.3mm) from any angle.

They can provide a lot of information that the airplanes manned.

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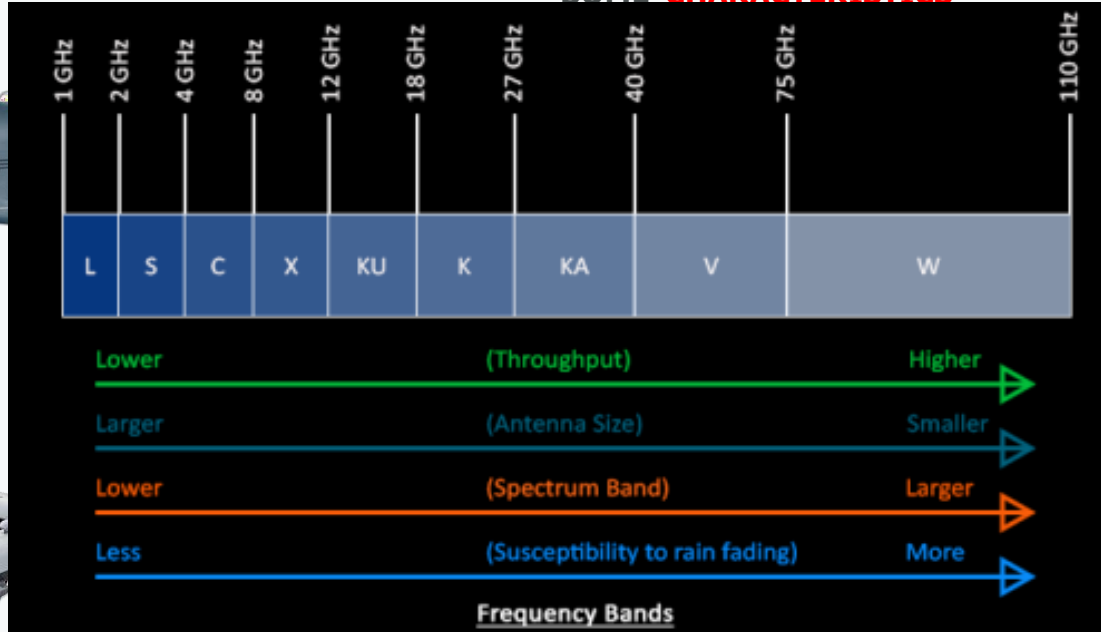
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# CIVIL DRONES





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# CIVIL DRONES – CLASSIFICATION BY MANUFACTURERS

## TRANSPORT

They are not economical, and are intended to transport goods and people in the short term.

For example, the Brazilian SpeedBird line of drones that they work with 4G or 5G networks or the CARGO Drone line.



## AGRICULTURE

They are larger equipment and with the possibility of lifting greater weight to carry out sprinkling or broadcast seeding.

Intended for field use, they need certification of pilots in higher classes. Example the DJI AGRAS line



## Commercial

They are not within the reach of any pocket, since they need certain characteristics that allow them to provide a professional service to companies for surveys.

We find, for example, the DJI ENTERPRISE line



## Amateur / Recreational

They are the most economical, and are intended for leisure, e.g. Like the DJI Mavic Mini/Air/Mavic/Phantom line, capable of recording and tracking lenses while playing sports.



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# DRONES CIVILIANS



DJI Phantom 4



DJI Inspire 1



DJI Mavic Air 2



AUTEL EVO II RTK Dual

## SOME CHARACTERISTICS

01

They possess dimensions thought for hitransportability.

02

Their price makes them extremely accessible, and due to their characteristics individuals, They arrive to fulfill functionsof a drone professional..

03

Some have 360 ° cameras specials for obtain photos and videosvery professionals.

04

They can be operated from a remote control or connected to a Smartphones either Tablet

# BY ITS SUPPORT, **IT IS DIVIDED INTO:**

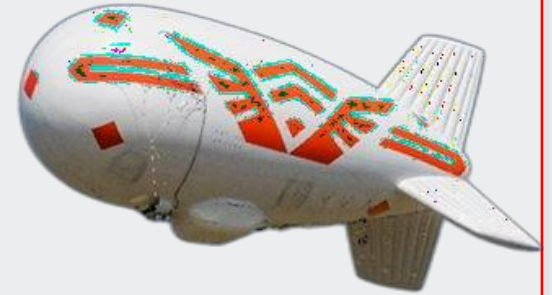
TO THE FIXED  
TO THE STEERING  
WHEEL  
(FIX WINGS)



MULTIROTOR  
OR  
HELIRROTOR  
TO THE ROTARY  
(QUADCOPTER – HEXACOPTER -  
OCTACOPTER)



AEROSTATS



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**QUESTION TIME!**