

# Quadcopter

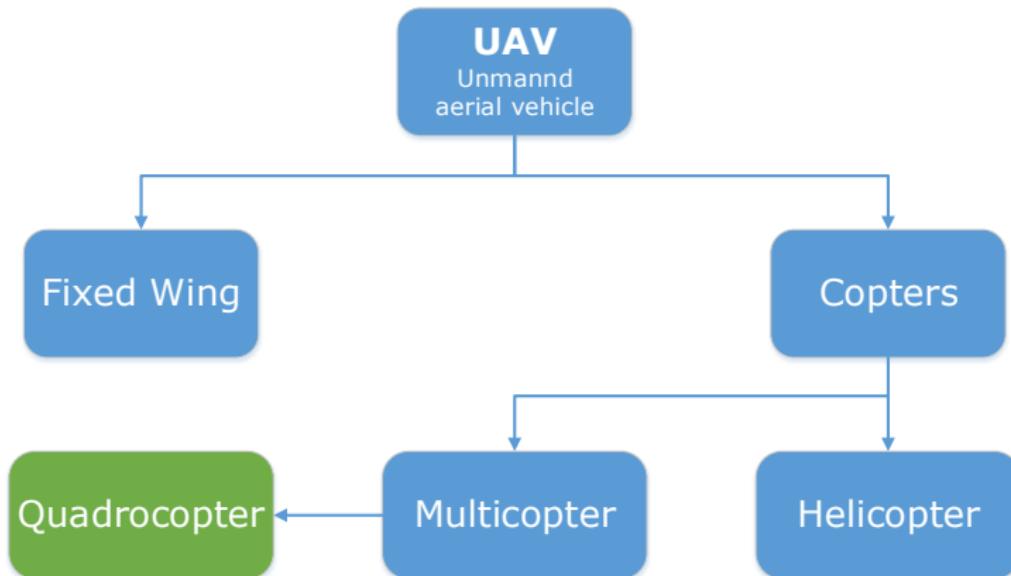
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2. Mai 2016

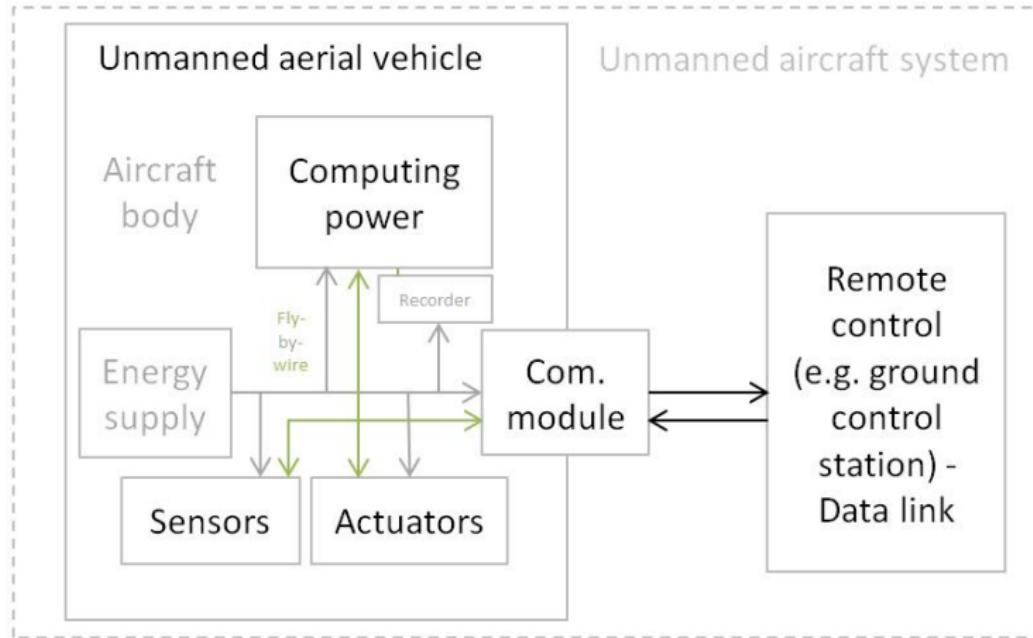
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# Introduction



# Introduction



# Introduction



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Compromise between:

- Flight time
- Agility
- Durability
- Control
- (Money)

# Self build kit

- No special knowledge required
- Very sturdy
- A lot of auxiliary
- Payload
- Price-Performance ratio

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# Payload

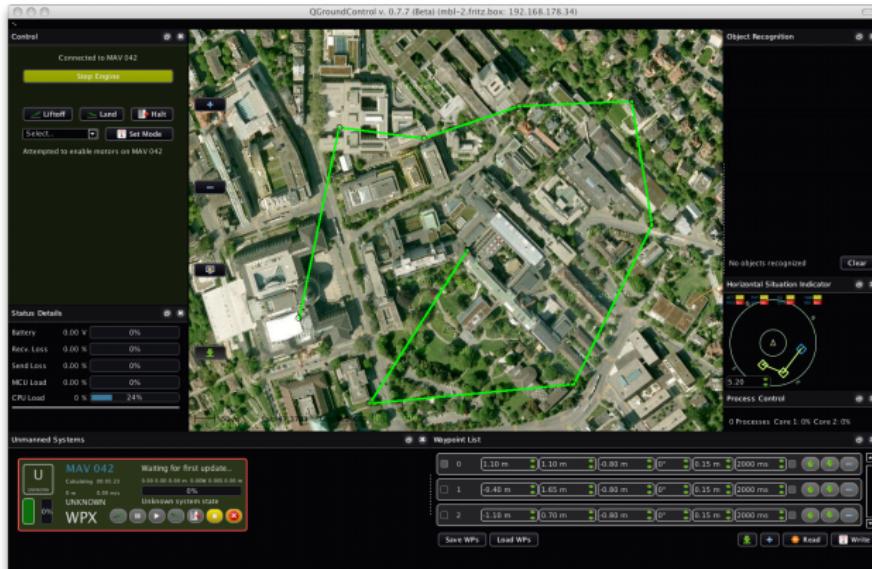


# Controller, modes

- Stabilize
- Way-points
- Follow + obstacle avoidance
- Acrobat
- Manual
- 6 additional modes

# Tools, way-point

## Configure and calibration



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# Gimbal



# FPV - First Person View

- Camera attached to the drone
- Transmitter
- Receiver
- Black & white picture
- Noise

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# FPV - First Person View

Add picture from FPV

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# Out of the box



# Disturbance ,hazards

- Wind - Light weight
- Electronic Fields - 2.5 GHz band
- Water

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# Disturbance



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# Disturbance



# Power supply

- Li-Po Battery: 14V, ...Ah → way less than 1 kWh
- Flight time: 5min - 20min
- Charge time: about 2 hours
- Gasoline

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# Power supply



# Distance

- 1.2 miles normal
- 6.2 miles Yagi antenna

# Law, Risk towards others

- Register devices
- Fish drones from sky

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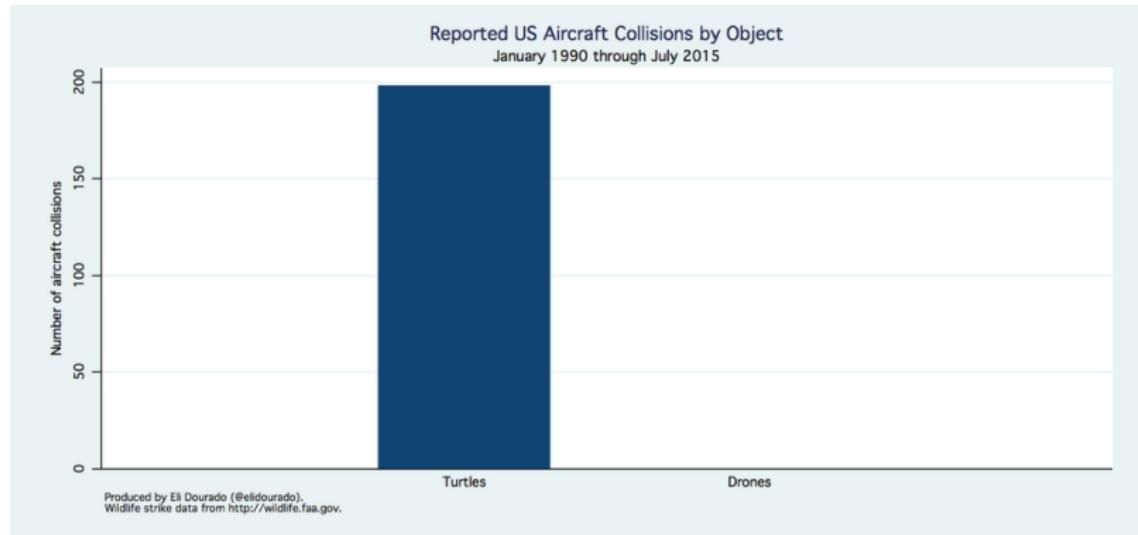
# Law, Risk towards others



# Law, Risk towards others



# Law, Risk towards others



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# Learning the basics

- Software
- Hardware
- Away from Flight Simulator -> Real flight behaviour

# Learning the basics

- A lot of auxiliary
- Photography

# Testing

- Cheap version of a quad
- Test new control software
- Allowed to crash

# Education

- Software and Hardware is changeable, expandable
- A good mix of everything
- Mostly indoors

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# Sources

<<<< HEAD http://store.dji.com/product/f450-naza-m-v2-  
landing-gear-h3-3d

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<https://www.bazl.admin.ch/bazl/de/home/gutzuwissen/drohnen-und-flugmodelle.html>

<http://store.dji.com/product/f450-naza-m-v2-landing-gear-h3-3d>

<http://www.bbc.com/news/technology-30932395>

<http://www.popsci.com/airplanes-hit-more-turtles-than-drones>

>>>> origin/master