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Copter

Copter

 ·  [copter-introduction](#) · CC BY-SA 3.0



Copter

Copter ArduPilot Copter

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· [introduction](#) · CC BY-SA 3.0



Four empty boxes followed by a long row of 20 empty boxes.

- Ten empty boxes
- Fifteen empty boxes followed by a slash and three empty boxes
- Failsafe GeoFence Fifteen empty boxes
- Fifteen empty boxes
- Ten empty boxes

A long row of 20 empty boxes.

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GPSXXXX XXX XXXXXXXX ,XXXXXX

MultiCopter XXXXXXXX

<https://youtu.be/GyPqHeg2v0Y> (XX (XX)).



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<https://youtu.be/f8nAF6s-dwY> (XX (XX)).



Robert LefebvreXX XXXXXXXXXXXXXXX XXXX 60X 90XXXXXXXXXX
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-  SD ()
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-  IMU(s) ,  
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-  I2C



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LiPo 



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ArduPilot,
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- [3 DR QUAD ZERO Kit \(□□ \).](#)
- [□□□□ _____](#)
- [□ phải□□ - AeroDrone MR4](#)
- [CUAV - Xunwing X4 \(□□ \).](#)
- [NW □□□□ _____](#)
- [Holybro - S500 V2 Kit \(□□ \).](#)
- [Holybro - X500 Kit \(□□ \).](#)
- [Holybro - X650 Kit](#)
- [Raefly - Xunwing 2](#)
- [TT Robotix - H2-X6 Phoenix H6 Multirotor](#)
- [TT Robotix - X-450 Scout Quadcopter](#)
- [TT Robotix - X-1300 EagleEyes Quadcopter](#)
- Various from [UAVSystems](#)
- VimDrones [Mazzy Star Drone - Light Show RTF](#)

Helicopters from Partners

- [Raefly - HC600](#)
- [TT Robotix - CX-180 ICEMAN Helicopter](#)
- [TT Robotix - SIRIUS Helicopter](#)
- [TT Robotix - T-150 Maverick Helicopter](#)

[/site]

[site wiki="plane"] Planes from Partners =====

- [Dual RC - Elanus Duo](#)
- [Event38 - e384](#)
- [MakeFLyEasy - Believer](#)
- ****MakeFLyEasy - Fighter ****
- ****MakeFLyEasy - Striver Mini ****
- ****MakeFLyEasy - Striver Mini Hand Throw ****
- Various from [UAVSystems](#)

VTOL/QuadPlanes from Partners

- [ARACE ROC Pro QuadPlane](#)
- [ARACE Griffin Pro QuadPlane](#)
- [Event38 - E400](#)
- [Event38 - E455](#)
- ****Holybro Swan-K1 ****
- [MakeFLyEasy - Freeman 2100](#)
- [MakeFLyEasy - Freeman 2300](#)
- ****MakeFLyEasy - Fighter VTOL ****
- ****MakeFLyEasy - Striver Mini VTOL ****
- [Raefly VT240 Pro](#)
- [Raefly VT290](#)
- [Raefly VT370 Hybrid](#)

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[site wiki="rover"] Rovers from Partners =====

- [Robot to Society - SPARK Kit](#)
- [TT Robotix - Rhino 6x6](#)
- [TT Robotix - Base 1 Rover](#)

Boats from Partners

- BlueRobotics BlueBoat

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[site wiki="sub"] Subs from Partners =====

- Blue Robotics - BlueROV2

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```
[site wiki="copter,plane,rover"] Vehicles from Non-Partners
===== [/site]
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[site wiki="copter"] * [SkyRocket - Journey](#) * 3DR Solo from [Amazon](#) [/site] [site wiki="plane"] * [DRONEE Easy to Use Mapping Plane](#) * [MotoDoro Farm Mapper \(Plane\)](#) * [UAV Mapper from TuffWing](#) * [LP Mini Orca HVTOL Drone](#) [/site] [site wiki="rover"] * [BathyDrone mapping boats](#) [/site]



If you are a manufacturer of a RTF vehicle based on ArduPilot and do not appear in this list, please get in touch through one of the methods listed on our **[**Contact Us page**](#)**.

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Copter allows you to easily get to locations and take pictures/video that would otherwise be difficult (or impossible) to reach. For this reason, photography applications are currently the most highly developed use-case.

Copter provides a stable platform for photography, with additional stability and independent control of camera position (relative to the vehicle) provided by brushless camera gimbals. Copter supports camera-friendly flight modes like **Follow Me** and allows you to control/maintain the camera target at a specific region of interest.

Advanced systems like [3DR Solo implement even more advanced vehicle/camera control \("smart shots"\) using `DroneKit-Python`](#) running on a Companion Computer.

First Person View (FPV)

First Person View allows you to fly your copter from the perspective of an actual on board pilot. This use case is discussed in the topic **First Person View (FPV)**.

Disaster response

Copters can help save lives/provide relief in the event of major disasters (fires, flood, tornadoes, earthquakes, volcanic eruptions etc).

They are particularly useful for search and survey tasks, and for delivery of low-weight critical supplies, information and assistance. They can do this relatively cheaply without putting additional lives at risk (freeing up other resources to do actual recovery).

Search (and rescue)

Copter makes an excellent platform for locating missing individuals and groups. Vehicles can perform a grid search and take photographs for either on-board (using a companion computer) or later analysis. Copter can search in hard-to-reach areas, and may be used in large numbers due to their low cost.



Fixed wing vehicles have much greater range than Copter, and may be more suitable for searching large areas with low ground-cover.

Agricultural applications

Agricultural inspection is a growing field for UAV applications. Examples include:

- Tile and drainage inspections

- Barn roof and silo inspections
- Irrigation pivot inspections
- Hail and cattle damage inspection for crop insurance claims
- Scare off pest-wildlife that eat crops
- Patrol for hunters on your private land
- Locate missing cattle (This is where a thermal camera comes in handy.)
- Video check-ins for landlords



This promises to be one of the most important and earliest adopted civilian uses of Multicopters. One benefit is that there are fewer restrictions when flying over private land.

Forest fire mitigation

Copter has great potential for fire monitoring and detection (with an infrared camera, a Plane or Copter UAV can detect small camp fires even in heavy tree cover).

Hazard/danger mitigation

More generally, Copter and Plane are useful for other hazard mitigation as a cost-effective alternative to patrolling using airplanes, helicopters, or ground-based services.

They are already being used for shark patrols in beach areas, and there is no reason they could not similarly be used in any other "patrol" activity.

3D Mapping and GIS (Geographic Information Systems)

Copter makes an effective 3D Mapping platform with a wide variety of potential applications. For more information see the topic ****3D Mapping****.

Inspection, Verification and Sample Collection

Architectural and building inspection/verification are possibly the fastest growing UAV use case - due to the obvious benefits to being able to check construction quality and condition without having to create expensive scaffolding and other safety infrastructure. Copter is similarly useful for contour analysis, drainage and verifying adherence to plans.

Copter is also useful for sample collection in difficult to reach or hazardous areas (this requires that the vehicle is fitted with a small probe or other sample device). The [Modcopter Sample Collection System](#) is an excellent government-backed student project for accessing a variety of samples.

Payload Based Applications

Copter is suitable for delivery of low-mass emergency supplies, including flotation devices, communications devices, shark repellent etc.

There are active investigations into other commercial applications including crop spraying and package delivery.

Other applications

Copters are being used or considered in many other applications:

- Initial "pilot line" stringing for power lines from hilltop to hill top.
- Painting, touch up and maintenance.
- Tree trimming and spraying.
- Building and home cleaning.

More detail and additional use case information is covered in the section ****Use Cases and Applications****.





../images/reference-frames-top-image.jpg

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 **RTF
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`#include <stdio.h>`

`int main()`

`{`

`printf("ardupilot.\n");`

`return 0;`

`}`