

titre	sous titre	prix	capacité	site	Point fort	point faible				
ardupilot	ArduCopter  APM:Copter (anciennement appelé ArduCopter) est un système de stabilisation de vol et de pilotage automatique	gratuit	full-list-of-flight-modes: Stabilize Alt Hold Loiter RTL (Return-to-Launch) Auto Additional flight modes:  Acro AutoTune Brake Circle Drift Guided (and Guided_NoGPS) Land PosHold Sport Throw Follow Me Simple and Super Simple Smart RTL (Return-to-Launch) Avoid_ADSB for ADS-B based avoidance of manned aircraft. Should not be set-up as a pilot selectab	Help: <a href="http://ardupilot.org/copter/docs/flight-modes.html#full-list-of-flight-modes">http://ardupilot.org/copter/docs/flight-modes.html#full-list-of-flight-modes</a>  Source code: Stable release: <a href="https://github.com/ArduPilot/ardupilot/releases/tag/Copter-3.5.5">https://github.com/ArduPilot/ardupilot/releases/tag/Copter-3.5.5</a>  master: <a href="https://github.com/ArduPilot/ardupilot/tree/master/ArduCopter">https://github.com/ArduPilot/ardupilot/tree/master/ArduCopter</a>						
	Copter SITL/MAVProxy Tutorial		j'arrive pas à lancer sim_vehicle.py -j4 --map --console	<a href="http://ardupilot.org/dev/docs/copter-sitl-mavproxy-tutorial.html#copter-sitl-mavproxy-tutorial">http://ardupilot.org/dev/docs/copter-sitl-mavproxy-tutorial.html#copter-sitl-mavproxy-tutorial</a>						
	OpenKai + ArduPilot + TX1 + ZED Visual Odometry ( <b>Non-GPS Navigation</b> )			<a href="https://discuss.ardupilot.org/t/copter-3-5-0-has-been-released/19241">https://discuss.ardupilot.org/t/copter-3-5-0-has-been-released/19241</a>						
				<a href="https://en.wikipedia.org/wiki/Odometry">https://en.wikipedia.org/wiki/Odometry</a>						
hangar		30 euro	« bien développé »	<a href="https://autoflight.hangar.com/autopilot/flightchool#modes">https://autoflight.hangar.com/autopilot/flightchool#modes</a>						
dji		Gratuit (à verif)	<a href="https://developer.dji.com/onboard-sdk/">https://developer.dji.com/onboard-sdk/</a>			STM32				
Dronecode:	<b>px4: Flight code</b>		<b>The autopilot</b> provides guidance, navigation and control algorithms for autonomous fixed wing, multirotor and VTOL airframes, along with estimators for attitude and position	<a href="http://px4.io/">http://px4.io/</a> <a href="https://github.com/dronecore/DroneCore">https://github.com/dronecore/DroneCore</a> <a href="https://docs.dronecore.io/en/examples/fly_mission.html">https://docs.dronecore.io/en/examples/fly_mission.html</a> <a href="https://dev.px4.io/en/">https://dev.px4.io/en/</a>		The flight code runs on flight controller hardware, including the Pixhawk, Qualcomm Snapdragon Flight, and Intel® Aero Ready to Fly Drone, and connects to various sensors, telemetry radios and other peripherals.  <b>je vois pas de Rasberry :(</b>				
	Comms		Communications between the flight stack and ground control currently use <b>MAVLink</b>	<a href="https://mavlink.io/en/">https://mavlink.io/en/</a>						
	QGroundControl :GCS		Ground Control Station	<a href="http://qgroundcontrol.com/">http://qgroundcontrol.com/</a>	runs on Windows, OS X, Linux, iOS and Android	Supports multiple autopilots: PX4 Pro, ArduPilot or any vehicle that communicates using the <b>MAVLink</b> protocol  Works with all vehicle types supported by <b>PX4 Pro</b> and <b>ArduPilot</b> (multi-rotor, fixed-wing, VTOL, etc.)				
	DroneKit (API)		DroneKit-Python 2.x helps you create powerful apps for <b>UAVs</b> . These apps run on a UAV's <b>Companion Computer</b> , and augment the autopilot by performing tasks that are both computationally intensive and require a low-latency link (e.g. computer vision). DroneKit enables developers to write new applications quickly and easily that push the boundaries of autonomous vehicle navigation. DroneKit is compatible with all vehicles using the <b>MAVLink protocol</b> .	<a href="https://www.dronecode.org/documentation/">https://www.dronecode.org/documentation/</a>	DroneKit-Python DroneKit-Android					
	ROS		ROS (Robot Operating System) is a general purpose robotics library that can be used with PX4 for offboard control. It uses the MAVROS node to communicate with PX4 running on hardware or using the Gazebo Simulator.			ROS is only officially supported on Linux platforms				
	<b>Gazebo (Simulation, used with ROS)</b>									
<a href="http://diydrones.com">http://diydrones.com</a>	mafiñ chay el site hetha pourtant yothhor fhemtech --:									
Ardupilot Mega (APM)						The ArduPilot Mega (APM) has been discontinued, and as such, has very limited support and development.				
			imu Mathew, right now, the IMU and the autopilot have seperate code bases, since each has its own micr							
	ardu-imu		Over the next month or two, we'll be releasing ArduPilot Mega, which combines all this on a more pow	<a href="https://code.google.com/archive/p/ardu-imu/">https://code.google.com/archive/p/ardu-imu/</a>	basé sur arduino					
Glunopilot	fin .exe (pas de code)		open source effort to create an affordable, easy-to-use and easy-to-adapt autopilot. It's an all-in-one <b>IMU-based module</b>	<a href="http://www.glunopilot.com/wiki/OSD#Features">http://www.glunopilot.com/wiki/OSD#Features</a>		carte moch rasberry				
			Just flash it onto SD card (128MB is well enough)!							
			<a href="https://github.com/rpicopter/images">https://github.com/rpicopter/images</a>  - very fast (boot time of around 2-3sec) - small size - Xenomai enabled - stabilization done in 200Hz (limit of MPU6050) - standalone setup (no need for a computer to adjust PIDs) - Support for quadcopters in X configuration of any size - PS3 controller support over bluetooth or USB - Uses stabilized mode to control your quadcopter - Based on MPU6050/MPU9150 gyroscope - Flight log - Out of box bluetooth connectivity (PAN) for receiving flight logs and accessing the file system (NFS & - image created using fully automated process	<a href="https://github.com/rpicopter/">https://github.com/rpicopter/</a>	Rasberry Pi 3 :))) et ça stabilise bien à ce que je vois	ce n'est pas un autopilote				
Quadcopter+Raspberry Pi = PiCopter										
	MPU6050 : imu		For gyro/stabilization most people use MPU6050. It features i2c interface so it can easily be connected to you RPi. There is also plenty of code available. Here is my test app for testing it:	<a href="https://github.com/rpicopter/MotionSensorExample">https://github.com/rpicopter/MotionSensorExample</a>						
Quadcopter	git			<a href="https://github.com/vjaunet/QUADCOPTER">https://github.com/vjaunet/QUADCOPTER</a>		It will not work if no MPU6050 is connected, but you can comment out all the related stuff in the code.	mafhemtech winou hai autopilote, bon fama el communication: PILOT/net.cpp PILOT/net.h w peu etre camera fabatech			
	tuto installation			<a href="https://www.raspberrypi.org/forums/viewtopic.php?t=35746&amp;start=100#p771275">https://www.raspberrypi.org/forums/viewtopic.php?t=35746&amp;start=100#p771275</a>		related stuff in the code.				
	ServoBlaster		ServoBlaster This is software for the RaspberryPi, which provides an interface to drive multiple servos via the GPIO pins.							
			my repo : <a href="https://github.com/vjaunet/">https://github.com/vjaunet/</a>							
	camera		FYI, I could stream data from the Raspicam while the PID controller was working							
Quadcopter_V2	mafihech autopilote		use a Xbee Pro. à verif <a href="http://sonyarouje.com/2014/12/20/connec..._pberry-pi/">http://sonyarouje.com/2014/12/20/connec ..._pberry-pi/</a>	<a href="https://github.com/vjaunet/QUADCOPTER_V2">https://github.com/vjaunet/QUADCOPTER_V2</a>		sur arduino				
Flybase	Raspberry + FlytOS = Fly 300 \$			<a href="https://flytbase.com/product/flytpi/">https://flytbase.com/product/flytpi/</a>						
Quadcopter - Pistaffing (5edmet masmoudi)				<a href="https://github.com/PiStuffing/Quadcopter">https://github.com/PiStuffing/Quadcopter</a>						
FlightGear autopilot	simulateur avec autopilote intégré en XML					AP en xml				

ground control stations	
site pour plus de details	<a href="http://ardupilot.org/plane/docs/common-choosing-a-ground-station.html#common-choosing-a-ground-station">http://ardupilot.org/plane/docs/common-choosing-a-ground-station.html#common-choosing-a-ground-station</a>
	On desktop there is (Mission Planner, APM Planner 2, MAVProxy, QGroundControl and UgCS. For Tablet/Smartphone there is Tower(DroidPlanner 3), MAVPilot, AndroPilot and SidePilot that can be used to communicate with ArduPilot (i.e. Copter, Plane, Rover, AntennaTracker).
<a href="https://code.google.com/p/owenquad/">https://code.google.com/p/owenquad/</a> for the Android app	

Gazebo Simulator
JMavSim
AirSim
X-Plane



RTL	RTL will command the copter to return to the home position,							
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