ArduPilot development news



A busy year!

- Over the last year our patch rate has remained at about 10 patches a day
 - plus lots more in PX4Firmware and PX4NuttX!
- More committers
 - we've had about 80 people contribute patches, including lots of new developers
- More code
 - ArduPilot git tree has grown to about 700k lines of code

System Level Development

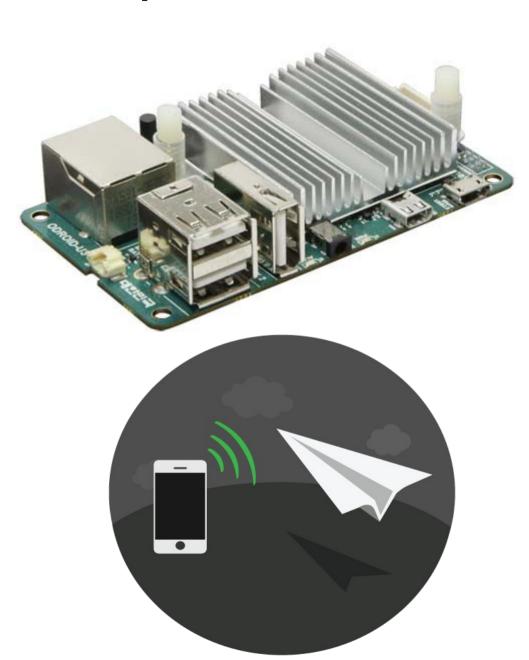
- finally dropped APM1/APM2 from copter
 - lives on for plane/rover for now
- Linux port is flying, with several hardware options
- Much improved SITL simulation
 - more models on the way
- Mavlink routing support
 - helps a lot with companion computers
- Great collaboration with PX4!
 - lots of cooperative development
 - Much better NuttX performance





Companion Computers

- Much more popular now!
 - used for imaging, high level control and advanced communications
 - Improved MAVLink routing really helps
 - Low cost multi-core ARM boards very widely available
 - DroneAPI/DroneKit perfect to take advantage of extra computing capacity
 - Leverage existing ROS modules



Core Algorithms

- EKF has now come of age
 - much greater robustness
 - indoor/outdoor mode
 - optical flow support
 - completely replaced lnav on copter
- New IMU strategy
 - much faster sampling and better filtering
 - big improvement for high vibration systems



Sensor Developments

UAVCAN support

- very bright future for UAVCAN sensors and peripherals
- great collaboration with Pavel and PX4 project



- low cost Lidars now widely available
- huge difference for fixed wing landing
- scanning Lidars being developed
- Sensor failure improvements
 - much more robust handling of sensor errors





Community Interfaces

- Split off support forum
 - big improvement over old release threads
- Better communitations
 - gitter for IM
 - much better website design
 - wider use of mumble
- Developer interfaces
 - DroneKit and DroneAPI will make application development much easier





What's next?

- Some personal favourites
 - SITL for windows
 - better logging via companion computers
 - NuttX level crash dump analysis
 - TiltRotor and other hybrid aircraft
 - terrain following for copter

What do you want to see in ArduPilot?