Project Antenna

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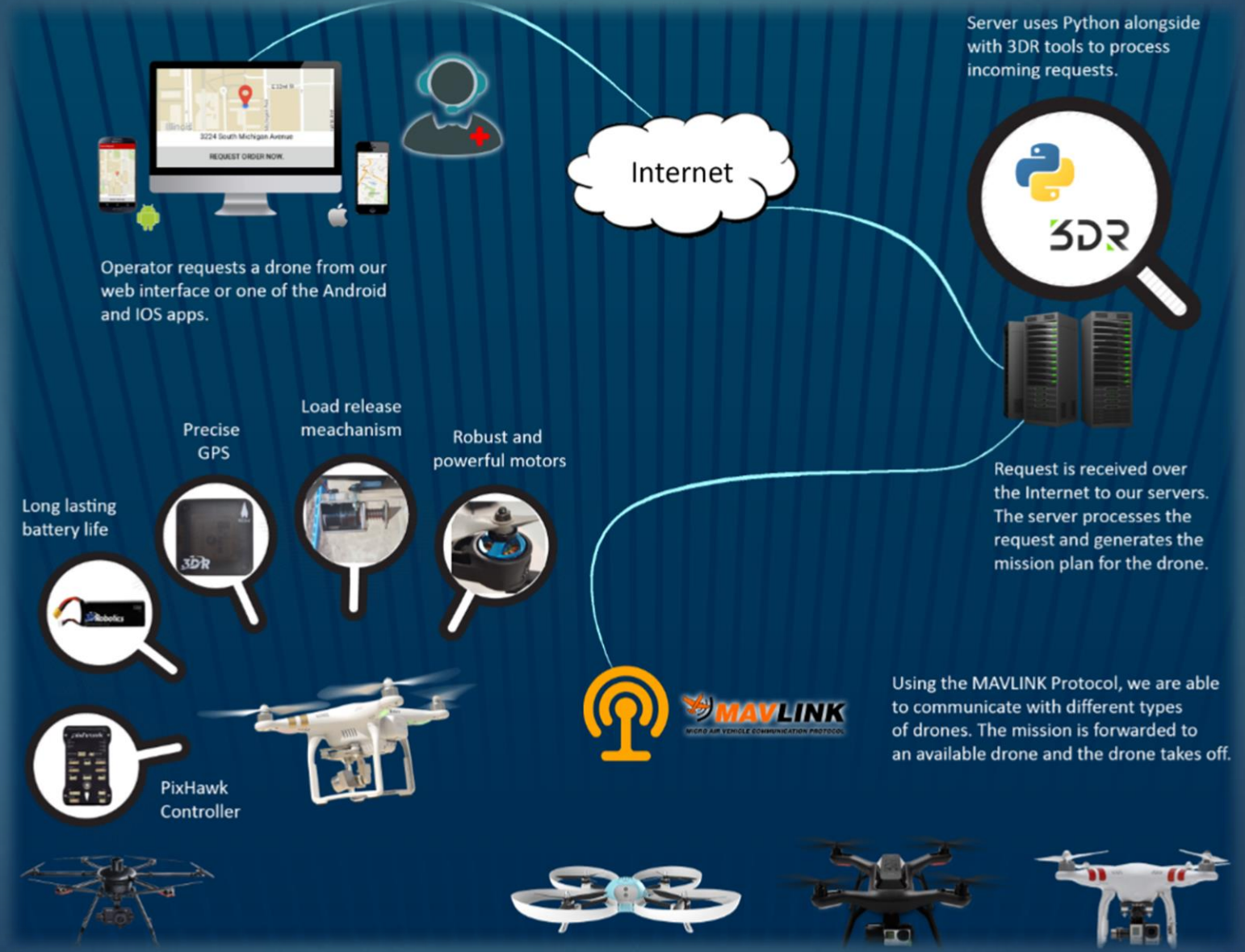
Autonomous movement framework

- What is AMF?

The Autonomous Movement Framework is a hardware and software system that lets unmanned aerial vehicles (UAVs) fly and navigate autonomously.

The PixHawk controller, GPS, and transmitter aboard the drone automatically calculate a flight plan after a destination is given.

Functional prototype



Hardware components

- 3DR IRIS+ quadcopter drone
- • PixHawk controller
- • GPS antenna
- • 3DR antennas

- Prototype
- • Custom solenoid-activated cargo hook, 1-2kg capacity

Problem

Server

Mission upload...

Solution

Server

Mission upload...

Demo

Initial attempts

Demo

Final results

Autonomous movement framework

- Consumer delivery drone challenges:

• Safety/security/privacy—Drones may crash, be hacked and be intrusive

- Current use cases:

• AMF commercializes drones by providing a autonomous navigation system that can be adapted to diverse aircraft/missions

• AMF is aimed at disaster relief, utilizing its flexibility and adaptability while resolving issues of safety, security and privacy

Use case


User indicates emergency
and sends their location.


The drone arrives at the destined
location and drops off the package.

Costs and commercial viability: Options

- Selling drones complete with AMF framework
- • Selling licenses to use and customize the AMF framework
- • Providing maintenance and support for the AMF system

Conclusion

- The Autonomous Movement Framework project seeks to commercialize unmanned aerial vehicles not by standardizing aircraft, but by offering a flexible, autonomous navigation system.

- Slight hardware modifications on the drone, coupled with the server, web interface, operators, and user apps allow easy drone mobilization that can be adapted to many uses.

- Disaster relief is the initial application because it overcomes many current obstacles, but the AMF itself is not limited to a single mission or aircraft

Questions?