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Save, Watch, Airdrop, & Navigate



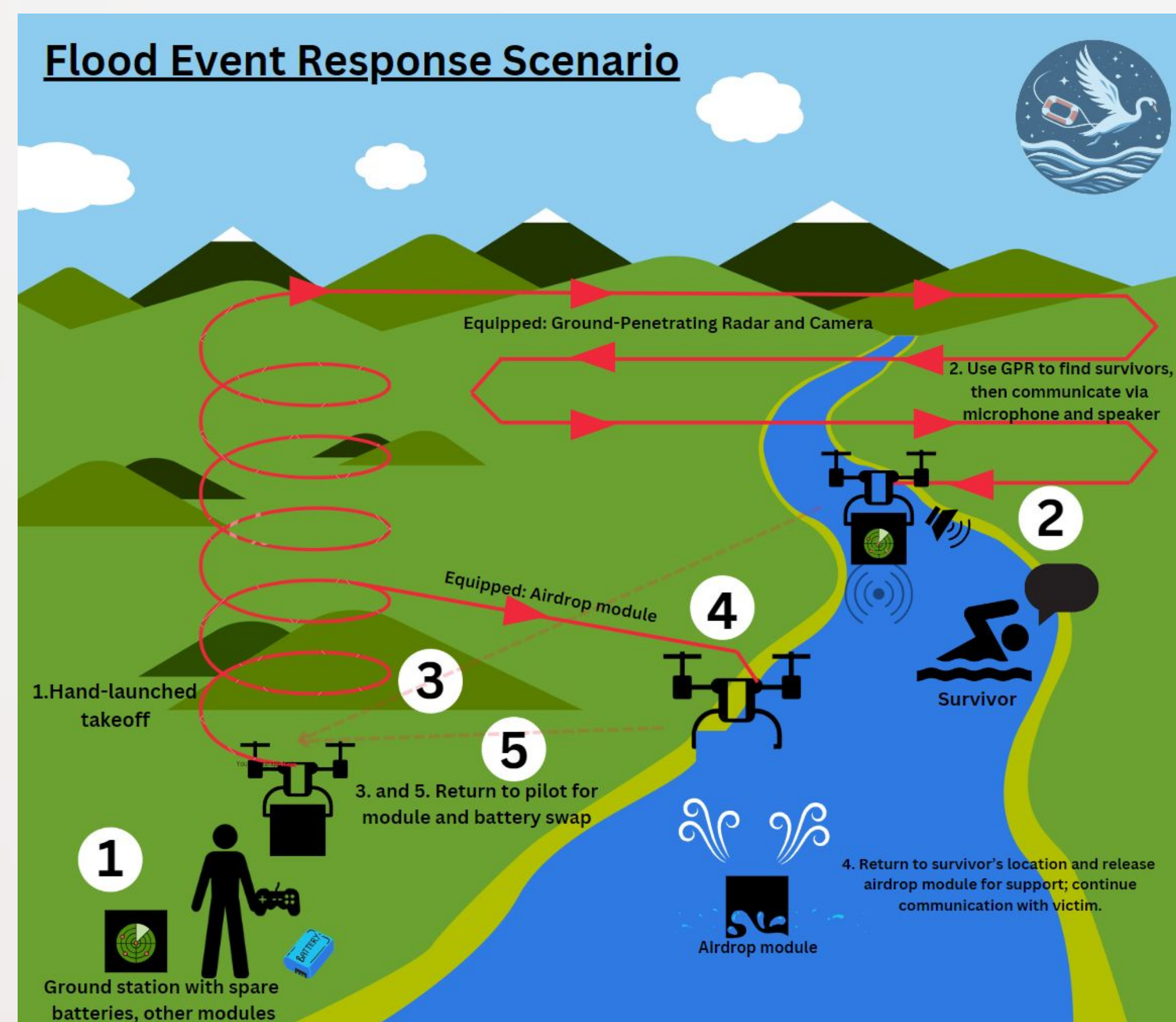
Taha Ahmed, Gregory Capps, Rajesh Guiang, Lexie Nifong, Jack Reimer

Project Overview

Purpose: Design UAV for Search and Rescue missions for flood relief.

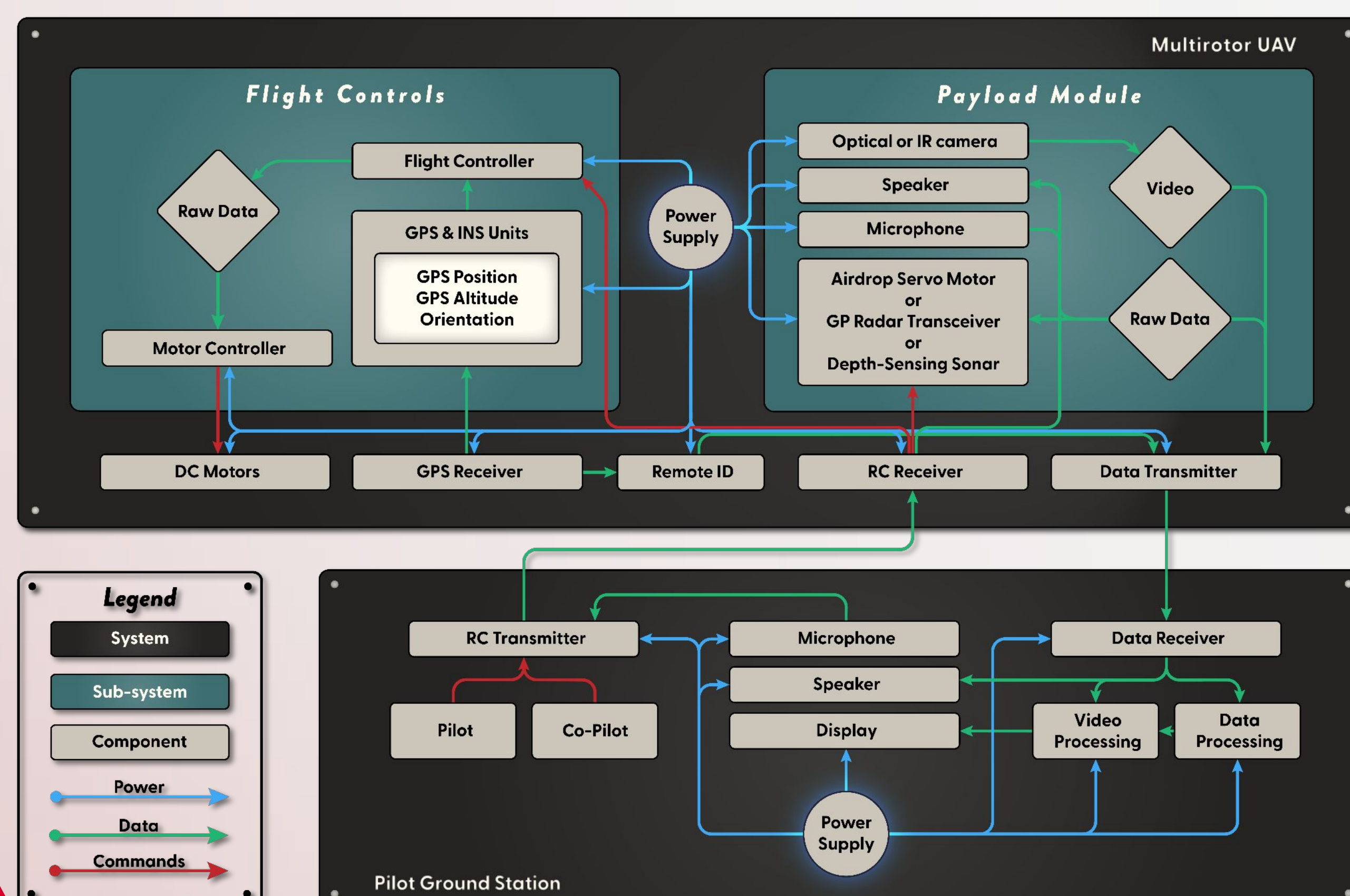
Goals: Improve rescue teams' safety and effectiveness by identifying victims' needs.

ConOps



The Concept of Operations shows the UAVs planned mission integration, including the use of interchangeable modules for various uses.

Functional Block Diagram



Design Solution



- Six rotors
- 2-way comm. system
- Modular payloads
- 4 Landing legs
- Water resistance



Manufacturing



- In-house composite manufacturing
 - PCB fabrication
 - 3D printing
 - Electronics assembly
- Specs (w/o payload):**
- Flight time: 12-30 min
 - Range: 0.9-1.8 mi
 - Max payload: 6 lbs
 - Max TWR: 2.2

Final Prototype



- Extra landing legs and feet for support
- Motor mounts added
- External GPS mount added

Flight Testing

A 20 minute flight test (no payload) was achieved with ~50% battery remaining. Additional flight tests were completed in wind and light rain to ensure the UAV can withstand realistic post-hurricane/flood conditions.

