SPARROW

SGM 5/17

LAUNCH WEEK

WHO

Kevin Mott (and his co-worker Alvin)
Former Army captain, experienced with drones and military R&D

WHAT

Executed specified SAR simulations with the drone via our iPad app

WHEN / WHERE

Thursday, May 12
Open field on Mayfield & Dolores

TESTING PLAN

Scenario 1: Undirected use, try manual movement (lateral movement, rotation, altitude), as well as autonomous movement (navigating to waypoints)

Scenario 2: SAR-specific scenario, fly SAR path around cone and mark where people are while viewing video feed

RESULTS

- How **intuitive** was the app?   **6/10**
- How easy was it to understand how to fly a **pre-loaded SAR path**?   **8/10**
- How easy was it to understand how to **maneuver the drone**?   **8/10**
- How much **value** do you think this app would provide for SAR?   **8/10**
- Did you feel **safe** using the app and the drone?   **9/10**

- Most intuitive features: lateral movement
- Least intuitive features: relative rotation and altitude controls
- Desired features: SAR path visualization on map before execution, map display summarizing points of interest

OTHER TAKEAWAYS

Found lateral movement functionality to be most intuitive, understood both tapping and pressing/holding

Relative nature of altitude/rotation slider was least intuitive - would have preferred an absolute scale

Saw core value as being able to run predetermined SAR paths, gather video feed, and drop pins when having found people or items of interest

Wanted to see preview of SAR plan on map to be able to understand the scale, and to be able to have a map view of pinned objects of interest

DRONE

- Tested accuracy of Tango location system and conversions indoors

- Seemed to fall within the 1-2m accuracy when walking around the Loft

- Currently replacing all GPS functions with Tango equivalents in the navigation components of ArduPilot-Solo

QUESTIONS

- Lots of moving parts, and somewhat hesitant to just go and fly the drone after replacing so much source code. Any thoughts on how to modularize the process, break less things?