

Autonomous Scout/Delivery UAV/UxV Competition

Sponsor: Raytheon, an RTX Business:

Raytheon is sponsoring another West Coast drone competition. UCSB won the first ever drone competition last year, defeating none other than Cal Poly and CS Long Beach. Let's do it again! This project is going to be a lot of fun...don't believe me, check out the [video](#) from last year's team.

2024-2025 Raytheon Autonomous Vehicle Competition Mission Full Send

Engineering Design Focus:

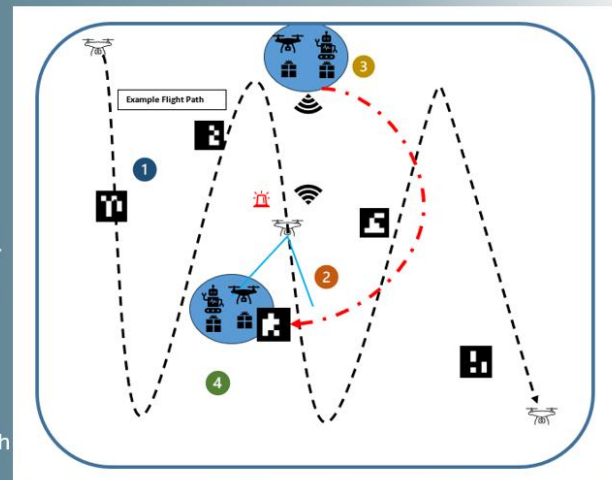
- Vehicle Design
- Autonomous Navigation
- Delivery Zone Identification
- Peer 2 Peer Command and Control
- Payload Delivery

Scenarios:

A Scout Unmanned Aerial Vehicle (UAV) will map the area, discover the landing zone, and communicate the location directly to the Delivery Vehicle, UxV (Air or Ground Vehicle). The Delivery UxV will receive the location of the landing zone, fly/drive to it, and deliver the package on the delivery zone.

High Level Design Constraints:

- UAV and UxV are to behave autonomously
- The two unmanned vehicles may *only* communicate with each other (outside of overriding manual controls)
- Potential: All Autonomous Vehicles use ROS 1.2 (and equivalents if authorized)



The UxVs are placed at starting area. Exact starting area to be determined at time of event.

- 1 SCOUT UAV autonomously searches for the correct ArUco Marker
- 2 SCOUT UAV discovers the correct ArUco Marker
- 3 SCOUT UAV communicates location directly to Delivery Drone (UxV) (without a ground station)
- 4 Delivery Drone (UxV) delivers package to location of ArUco marker

Project Requirements

- No US citizenship requirement but preferred by sponsor.
- There **are not** invention assignment requirements for this project.