

CprE / SE / EE – sddec26-11

CyFlyBot: Collaborative CyBot and UAV System for Faster Missions

Week 5 Report

September 23 2026 – September 30 2026

Client: Dr. Rover and Dr. Jones

Faculty Advisor: Dr. Rover and Dr. Jones

Team Members:

Daniel Bieber

John Brittain

Jake Nickel

Caleb Sanchez

Tu Reh

Ping Wu

Mitchell Fowler

Weekly Summary

This week saw progress on all fronts. There were setbacks, including the system failure of the UGV, but they were fully diagnosed and the problematic components are in the process of being replaced. ROS2 Hardware/Software node integration progress was made, with movement nodes being tested. Software made progress with the crazyflie simulation, as well as specific issues like the start and stop trigger on the issue board.

Past Week Accomplishments

- Hardware
 - UGV
 - Diagnosed failure of entire system
 - Ordered replacement parts
 - ROS2 Nodes
 - Node developed for movement
 - Ran simulated tests
- Software
 - Simulation
 - Fully upgraded to incorporate crazyflie sim software
 - Frontend and Backend
 - Advised revisions made
 - Issue Board
 - Fixed Trigger Issue

Individual Contributions:

NAME	Contributions	Weekly Hours	Total Hours
John Brittain	Work on UAV ROS Integration + Imaging Deck prototype built on bread board	5	20
Daniel Bieber	Developed UGV Ros2 node for movement and ran simulated tests	5.5	24.5
Jake Nickel	Worked on mapping mission start and stop issue	5	25
Caleb Sanchez	Worked on crazyflie sim and automated drone flight	6	31
Tu Reh	Worked on Backend and Frontend	3	21
Ping Wu	Worked on Backend and Frontend Assisted with Diagram building	3	18
Mitchell Fowler	Diagnosed UGV Error UGV Repair Diagram Building	5	27.5

General Meeting Review

The general meeting was held on Tuesday, September 29th at 2:00 p.m. The team reviewed progress across the hardware, software, and simulation components of the project and discussed priorities for the upcoming week. On the hardware side, the team discussed rebuilding the UGV by replacing the slave board, integrating the motors and UPS board, integrating the Raspberry Pi, and setting up ROS2 nodes. For software, the team reviewed continued development of the web application, including frontend optimization and backend integration with robot data. The simulation team will continue working with the Crazyflie in Gazebo while beginning to explore automation capabilities. Team members also checked in with one another regarding any current issues or areas where additional support may be needed. Due to upcoming exams and a hackathon, progress on some software tasks may be slower until Thursday evening, after which development is expected to continue.

Summary of Weekly Advisor Meeting

During this week's advisor meeting, the team received several recommendations for improving the current system design. One suggestion was to reuse and update the existing

system diagram from last semester. We were also advised to improve the naming of components in the diagrams by using more specific and descriptive labels. Another recommendation was to consider using faster Wi-Fi to better support video streaming tasks. The advisors also suggested creating a network diagram to clearly show how the different system components communicate with one another. In addition, the organization of component names and colors should be improved so that each robot and subsystem can be easily identified. Lastly, the hardware and software diagrams should better align with one another to clearly demonstrate how both sides of the system work together.

Extended Discussion

This week saw the aftermath of the UGV setback. There was going to be a presentation on said UGV next week, but this has taught us a lesson on preparing for the worst. A lot of the team also had other obligations, so the theme of the week was balance. Could we balance immediate priorities in our lives with our work in this project? For most of us, we believe this is the case.

Pending Issues

- Hardware
 - Defunct UGV
 - UPS board and slave board need replacement
- Software
 - No current pending issues at the moment

Plans for Coming Week

- Hardware
 - Rebuild UGV
 - Replace slave board
 - Integrate motors and UPS board
 - Integrate Raspberry Pi
 - Setup Ros2 nodes
 - Continue integrating the UAV
- Software
 - Continue optimize and polish the front end from any feedback and testing issue for smoother user experience.
 - Work on crazyflie in gazebo and beginning automation exploration
 - Continue to develop asdfasdasdfasdasdfasda the backend by getting more data from the robots

Resources and Documentation

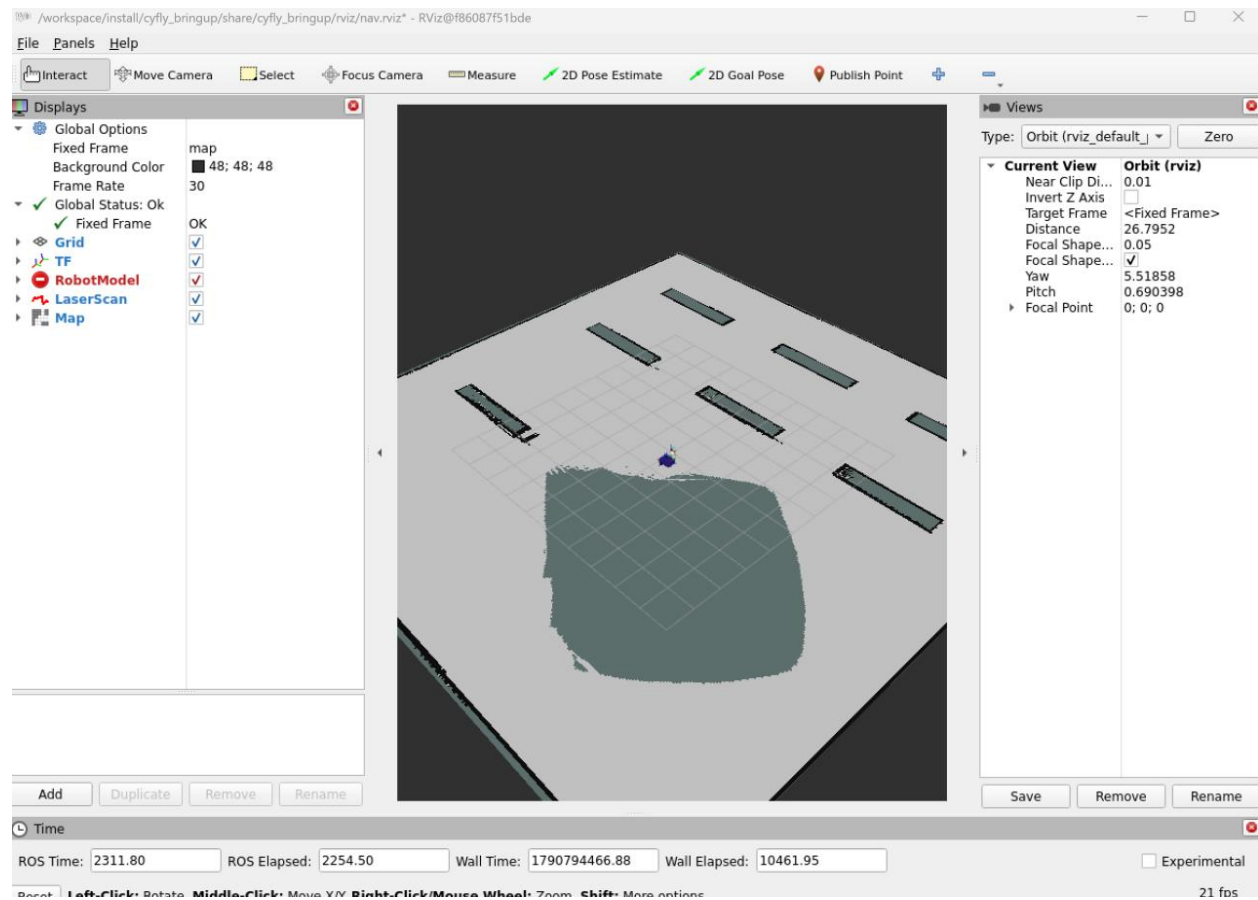


Figure 1: Successful Start and Stop Trigger Test