Progress Evaluation

Human-autonomous teamwork of ground and air vehicles

Team Members
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Faculty Advisor & Client
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https://ajhordesky.github.io/tastefulpanthers/Tasteful%20Panthers%20Milestone%201%20Progress%20Evaluation.pdf

Current Milestone task matrix:

Task	Completion %	**Yav**	**Young**	**Pop**	To do
Direct control of robots	100%	33%	33%	33%	N/A
Isolate factors that are relevant to our final demonstration and find methods to implement them with the minimal work.	100%	33%	33%	33%	N/A
Using prebuilt blocks, implement a basic search algorithm for the robot to find a stationary target	100%	33%	33%	33%	N/A
Enabled human-robot cooperation to locate the stationary target	0%	50%	25%	25%	Needs proper interface integration.
Abstract Wrapper Layer	65%	33%	33%	33%	Needs robot discovery
Compare and select Collaboration Tools	100%	33%	33%	33%	N/A
Requirement Document	100%	25%	25%	50%	N/A
Design Document	100%	50%	25%	25%	N/A
Test Plan	100%	25%	50%	25%	N/A

Discussion of accomplished tasks:

- Direct control of robots - After initially configuring the LIMO robot's, we were able to setup and run the ROS1 demos. However, we found that the current firmware on the LIMO's did not natively support ROS2 and had to build the ROS2 drivers and ROS1 bridge from source in order to control the robots directly with ROS2.

- Isolation of factors - The LIMO robot's have support for mapping and 6DOF tracking via SLAM and Google's Cartographer directly in their driver set, allowing for intelligent navigation and search.

- Using prebuilt blocks - Leveraging the ROS2 toolchain, we have access to a control interface, room mapping, etc. These tools are also extensible via custom programs. ROS2 allows for us to focus on the actual human-agent collaboration rather than tedious boilerplate.

- Select collaboration tools - G Suite, Github, Timeful

- Design, Requirements, and Test Plan documents - Complete

Discussion of team member contribution:

- Yavanni Ensley: During this period, I worked together with Younghoon to troubleshoot our LIMO robots and get them installed with ROS2. I also worked to repair our broken robots and contact the manufacturers support team.

- Younghoon Cho: For Milestone 1, I focused on getting used to understanding the basic concepts of ROS2. By studying the baseline of ROS2 and the current operating robots related to it, we were able to update every ROS2 on the LIMO PRO robots and were able to move the undamaged ones. Now, we have established a baseline for future integration.

- Jaylin Ollivierre: For this first milestone, I focused on creating the service/client communication for our robots' integration. This was being done through Python with a ROS2 workspace and turtlesim. The services offered by turtlesim allow for entities to be spawned, move (relative to current position/to a position on the screen), removed from simulation.

Next milestone task matrix:

Task	**Yav**	**Young**	**Pop**
Enabled human-robot cooperation to locate the stationary target	33%	33%	33%
Abstract Wrapper Layer	33%	33%	33%
Complete repair of LIMO robots	33%	33%	33%
Interface prototype from design document	50%	25%	25%
Defining robot capabilities	25%	25%	50%
Experimentation with aerial drones	25%	50%	25%
Complete Control of Ground Vehicles	33%	34%	33%

Discussion of planned tasks for the next Milestone:

- Human-robot cooperation for stationary target - Finish implementation of human-robot cooperation, run demonstration in lab.
- Abstract Wrapper Layer - Mock/simulate a demonstration with the ROS2 turtle simulation.
- Complete repair of LIMO robots - Remove motors from at least the broken LIMOs in order to do multi-agent testing.
- Interface prototype from design document - Implement the defined interface to demonstrate how mission operators can work with the agents.
- Defining robot capabilities - Implement capabilities for the LIMO robots: Move, Location, Vision, and potentially Actuator
- Experimentation with aerial drones - Examine our fleet of aerial drones and decide on one to be used in our experiments.
- Complete Control of Ground Vehicles - Gain complete control of Ground Robots.

Date(s) of meeting(s) with Client during the current milestone:

- See faculty advisor dates below

Client feedback on the current milestone

- See faculty advisor feedback below

Date(s) of meeting(s) with Faculty Advisor during the current milestone:

- 9/11/25
- 9/25/25

Faculty Advisor feedback on each task for the current Milestone

- Direct control of robots: Moving to a standard like ROS2 will make further development much easier and make the work more generalizable.
- Isolation of factors:
- Using prebuilt blocks: N/C
- Select collaboration tools: N/C
- Design, Requirements, and Test Plan documents: Complete

Faculty Advisor Signature: ____Thomas C Eskridge_____ Date: ___9/29/2025__

Evaluation by Faculty Advisor

- Faculty Advisor: detach and return this page to Dr. Chan (HC 209) or email the scores to pkc@cs.fit.edu
- Score (0-10) for each member: circle a score (or circle two adjacent scores for .25 or write down a real number between 0 and 10)

Yav Ensley	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Young Cho	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Pop Ollivierre	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10