



S.A.T.I.R.E. Milestone 2

Software Team

Faculty Sponsor
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Goals For Milestone 2

- Compile and run the MOOS platform on each of our personal computers
- Change some of the attributes that MOOS has so it will fit our UAV (Ex. MOOS has vehicles travel at 40 knots, which is much too fast for our tire)
- Implement MOOS apps for sensor data, motor controls, and an emergency system
- Create a demo to show the creation of a cartesian grid, and the navigation from one point to another.
- Revise the requirements and design document, along with the test plan, if needed

Milestone 2 Task Matrix

Task	Total	Robert	Taylor	Clayton	Sean
GPS NAVIGATION	65%	5%	5%	50%	5%
Dead Reckoning	40%	5%	5%	25%	5%
Motor Controls	25%	5%	5%	10%	5%

GPS Navigation

- Implemented local mission using GPS coordinates and the MOOS cartesian coordinate system to move to a target location and back.
- We need to implemented an auto generator for MOOS missions next.

Dead Reckoning

- MOOS dead reckoning is a part of the IvP Helm and functional. We need to determine if this alone will be sufficient or if additional functionality will need to be implemented.
- MOOS cartesian coordinates system converts latitude/longitude to meters and navigates based on this.

Motor Control

- Implemented MOOS Apps for internal sensor, external sensor, emergency, and motor controllers. These apps currently have the capability to both post and fetch messages to the MOOSDB communication system.
- Next will be to implement the hardware interfaces to connect hardware input to the messaging system.

Goals for Milestone 3

- Continue to add to the motor controls
- Start to implement a collision avoidance system
- Continue to investigate what apps we can add from MOOS
- Add an emergency system to the UAV
- Implement hardware interfaces

Milestone 3 Task Matrix

TASK	Robert	Taylor	Clayton	Sean
Implement hardware interfaces	20%	20%	40%	20%
Implement Collision Avoidance System	20%	40%	20%	20%
Implement Emergency System.	30%	20%	20%	30%

Hardware Interface

- Meet with hardware team
- Determine specifications
- Create test data
- Implement demo

Collision Avoidance System

- Determine specifications
- Collect test data based on hardware
- Run tests
- Implement vision system
- Conduct a demo

Emergency System

- Determine internal sensor specification
- Determine test cases for each sensor
- Prescribe specific actions to take in case of emergency
- Demo emergency cases

Questions?

