Sprint 5 Conclusion Meeting

Long Flight Time Buoyant Drone 3/22/2021 7:30 - TIME(PST)

horizontal lineATTENDEES

* Excused absences:
* Unexcused absences:

## AGENDA

* **Review of progress:**
  + Dylan-7:30
    - Finalized Envelope Material, force analysis with Pugh Chart
    - Added Extra 3D printed parts to CAD for support
    - Didn’t need a heat sink added
    - Changed ESC and doubled check Servos
    - Found Screws for Ultrasonics
    - Finalized all vendors except Helium, 90% complete
    - Remote Controller not finalized
  + George-7:39
    - Wrote alpha angle programming in C
    - Throttle Factor programming is complete in C as well
    - PD control complete
    - integral control to system Not finished, 50% complete
    - Discrete system with zero order hold, 80% complete
    - Needs to run simulation to test robustness, path following/terrain tracking, and non-linear responses
    - Developed nonlinear system model to act as system response to control commands
  + Isaac 7:43
    - Gui variables for RC and code for it complete
    - Open loop RC implementation is complete
    - Drag force dependencies on speed is incomplete
    - Most updated CAD is imported
  + Jeremy 7:44
    - Finalize Power Budget incomplete, need to check motor and voltage regulators, 90% done
    - Helped Leon Write up C library to communicate between microcontroller and sensors
    - Did passive component power by hand instead of simulating
  + Ryan 7:48
    - Updated documentation with current version, 80% complete
    - Wired up balloon pressure sensor and add to BoM
    - Updated all parts in Bom in weight allocation, incomplete, 90% done
    - 0% complete, hand wire board with ground plane, wire all ICs
    - Verify Pic32 external oscillator complete
    - Helped Leon Wire up C library with microcontroller sensors
  + Leon 7:51
    - Write library for each sensor to read from them using interrupts complete
    - Write code to use every sensor at the same time, 25% done
    - Perform test run around neighborhood showing sensors working over time logging data and make data presentable complete
* **Team Improvements**- 7:52
  + Many incompletes due to final week and final presentation
    - Sprint was too short, sprints need to be longer
    - Sprints need to be based on milestones
      * Milestones that are farther off could be used to delegate other work
  + Need to implement a peer review system for checking each other’s work
    - Sub-team group meetings should be used to check each other’s work
      * These should also rotate once at a time
      * Possible to have a day of peer-evals
  + Slides need to be done earlier, not a day before presentation
  + Still underestimating time needed for research tasks
  + Overall, quality of work has been increasing
* **Individual Improvement**-: 8:07
  + Dylan- 8:07
    - Underestimates research tasks still
    - Needs to have an order to do tasks in instead of doing them at any time
  + George- 8:08
    - Needs to get better at estimating tasks time needed
  + Isaac- 8:09
    - Needs to talk more during group work and sharing his criticisms
    - Needs to have better time management with tasks
  + Jeremy- 8:10
    - Peer evaluation on power management
  + Ryan- 8:11
    - Do more research on tasks before doing them
    - Needs more peer checking on his work
    - Estimate task time with better time management
  + Leon- 8:12
    - Manage time better, allocate more time to tasks
    - Present more work to the team in understandable terms
* **Next Goals**-: 8:13(Goals over spring break)
  + Dylan- 8:14
    - Finalize helium vendor
    - Check in with Mircea about the lab space
    - Order all needed parts for fabrication on the BoM, envelope and lift bag already done
  + George- 8:15
    - Get the PID control working in simulation
  + Isaac- 8:16
    - Get drag force working in simulation
  + Jeremy- 8:17
    - Check motor power usage with dylan’s equation
    - Confirm switching voltage regulator with Ryan
    - Guide someone through everything on the power budget to check for mistakes
  + Ryan- 8:18
    - Add switching voltage regulator to schematic
    - Finish PCB wiring diagram
    - Send PCB design to OSH Park for fabrication
  + Leon- 8:19
    - Finish setting up all sensors working at the same time
    - Implement servo and motor control in software
* **Other Business**- 8:20
  + Will send most of the ordered parts to Leon for testing

Meeting End: 8:24