Sprint 8 Start

Long Flight Time Buoyant Drone May 30th, 2021 7:00 PM(PST)

horizontal lineATTENDEES

* Excused absences: N/A
* Unexcused absences: N/A
* Late: N/A

## AGENDA

* Administrative Stuff
  + Idea Hub slides for Dylan and George practiced
* Define Goals (General, see where we need dependencies etc) - 7:01
  + Hardware
    - Conduct final flight test
    - Verification for Development board setup
    - Verification for Sensors
  + Software
    - Finish RC control of servos and motors
    - Get Closed loop RC into V-REP
    - State machine for RC flight test
  + Writing
    - Finish All Chapters of Final Report
    - Prepare for Idea hub and sponsor day pitches
* Define End Date - 7:03
  + June 7th
* Tasks (Specific) - 7:04
  + Leon (**57 hours**) - 7:18
    - Verify all four servos and motors work off same signal (**2 hours**)
    - Implement remote controller moving servos and motors independently of each other (**10 hours**)
    - Implement state machine on PIC32 with remote control functionality, device/sensor checking, and error checking (**10 hours**)
    - Write sections for report (**20 hours**)
      * Chapter 4: Servo and motor interface (5 hours)
      * Chapter 5: Sensors programming (5 hours)
      * Chapter 6: Remote control implementation (5 hours)
      * Chapter 6: System state machine (5 hours)
    - Group meetings (**10 hours**)
    - Sub-team meetings (**5 hours**)
  + Jeremy (50 hours) - 7:20
    - Fix Power Management Chapter(5 hours)
    - Write Legal and Safety Requirements chapter(10 hours)
    - Write Ch9, testing in controlled environment(10 hours)
    - Read other final report chapters and leave comments and suggestions(10 hours)
    - Assist with final flight test(10 hours)
    - Group Meetings(10 hours)
    - Subteam Meetings(5 hours)
  + Isaac - **66** **hours - 7:22**
    - Finish simulation chapter (**16 hours**)
    - Finish closed loop RC (**35 hours**)
      * Send V-rep inputs to VSCode (15 hours)
      * Convert V-rep Code in VSCode to C++ output (5 hours)
      * Send back outputs in VSCode to V-rep (10 hours)
    - Group meetings (10 hours)
    - Sub-team meetings (5 hours)
  + Dylan - **70 hours - 7:23**
    - Conduct Final Hover Test **(8 hours)**
      * Patch envelope (1 hours)
      * Pick up more helium(2 hours)
      * Conduct Flight test (5 hours)
    - Write Chapter 2 **(12 hours)**
      * Convert detailed outline to draft (4 hours)
      * Revise to Final(8 hours)
    - Write Chapter 3 (**16 hours)**
      * Detailed Outline of chapter(4 hours)
      * Convert to Draft(4 hours)
      * Revise to Final (8 hours)
    - Write about actuator selections in chapter 4 (7)
    - Write about physical testing and results in chapter 9 (8)
    - Group meetings (10 hours)
    - Sub-team meetings (5 hours)
      * Helping Isaac with coding
    - Prep for idea hub **(4 hours)**
  + George (95 hours) - (Can contribute additional time since capstone is his only course) - 7:24
    - Write Outline for Controls Chapter (2 hours)
    - Write outline for Introduction (2 Hours)
    - Generate Relevant data graphs in matlab for report (5 hours)
    - Generate relevant images for visualization in report (3 hours)
    - Create block diagrams and flow charts for report (5 hours)
    - Write Rough Draft of Controls Chapter (15 hours)
    - Write Final Draft of Controls Chapter (5 hours)
    - Simulate flight test in Vrep
      * Help Issaac with program setup (5 hours)
      * Run test with Closed Loop RC (3 hours)
      * Incorporate auto land and auto takeoff features (2 hours)
      * Repeat test and generate data for tracking system stability (3 hours)
    - Ideahub pitch (10 hours)
    - Sponsor day pitch (5 hours)
    - Poster design (5 hours)
    - Writing and outline review (10 hours)
    - Group meetings (10 hours)
    - Subteam meetings (5 hours)
  + Ryan (57 hours) -
    - Make a verification method for RC Receiver to PIC32 PWM signal (5 hours)
    - Make a verification method for PIC32 PWM signal output to ESC motor (5 hours)
    - Make a verification method for PIC32 PWM signal output to servo (5 hours)
    - Finish Sensor Array Draft Section 1, Chapter 5 (15 hours)
      * Altimeter wiring with PIC32 (3 hours)
      * IMU wiring with PIC32 (3 hours)
      * GPS wiring with PIC32 (3 hours)
      * Balloon pressure sensor wiring with PIC32 (3 hours)
      * Ultrasonic Sensor wiring with PIC32 (3 hours)
    - Finish PCB Interface Draft Section 3, Chapter 5 (12 hours)
      * I2C Bus between sensor array to PIC32 (3 hours)
      * SPI bus sensor array data and state machine estimation between PIC32 microcontroller and Raspberry Pi CM3+ microprocessor (3 hours)
      * Output Capture Motor PWM pinout from PIC32 (3 hours)
      * GPIO Servo PWM pinout from PIC32 (3 hours)
    - Group Meeting (10 hours)
    - Sub-team meetings (5 hours)

Meeting End: