## Weekly Report May15-27 S2 Week 9/10 (3/9/15 – 3/22/15)

Advisors: Dr. Jones, Dr. Elia

Team Members:

Alberto Di Martino * Team Co-Web *
Dylan Gransee * Webmaster *
Robert Larsen * Team Leader *
Ian McInerney * Team Key Concept Holder *
Aaron Pederson * Team Communications *
Rohit Zambre * Team Secretary *
Fengxing Zhu * Team Comm. Co-leader *

## Weekly Summary

We have logged some tests of Eris controlling the pendulum to try to root out why it is randomly failing. Plotting the data showed that as far as the code was concerned, it seemed to be working fine. We changed the log file to use system time of the computer instead of VRPN time, and immediately found that packets were indeed being held up, likely due to the TCP connection, which is blocking. VRPN has been added to Eris directly, and uses the UDP connection VRPN uses. This seems to have solved the issue, but more testing is needed.

## Pending Issues:

## Individual Contributions:

Aaron:

- Integrated base for joint model
- Updated and fixed bugs on GUI and writing documentation

Alberto:

- Designed and co-integrated base for joint model

Dylan:

- Purchased two ¾ inch square tubes to potentially replace the current pendulum
- Began restructuring the code - made good progress
- Added support for VRPN on Eris (successfully)
    - Just finished this and it seems to have solved the balancing issue (we will verify this before the meeting tomorrow)

Fengxing:

- Went through some tutorials of Solidworks.
- Met with Alberto and worked on designing the base.

Ian:

- Assisted Microcart with revision 2 of their circuit boards
- Tested gimbal motor with old ESC from Aerospace department
- Discovered report from previous years testing of the I/O board

Robert:

- Ran tests to get log files of system
    - Didn't tell much due to how time was logged. Made so it used current system time.
    - Using current system time, we immediately found that packets were being dropped

Rohit:

- Worked more on quaternion to euler conversion.

## Next week goals:

Aaron:

- Complete GUI documentation
- Take suggestions and make changes to base model
- If possible, Get construction of joint base started

Alberto:

- Finish some details about the solidworks model
- Put in production the parts left of the model

Dylan:

- Continue restructuring code
- Integrate my changes with Roberts

Fengxing:

- Work with Aaron and Alberto to finish the base design.

Ian:

- Research ESCs capable of driving the gimbal motor
- Test I/O board on the stack

Robert:

- Test pendulum with VRPN on Eris
    - May also tune PIDs a bit, try to see if I can eliminate roll direction oscillating
- Meet with Ian to test I/O board

Rohit

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## Work Hour Totals:

| Team Member | Weekly Hours | Running Total |
|---|---|---|
| Aaron | 6.00 | 171.80 |
| Alberto | 2.00 | 156.00 |
| Dylan | 7.50 | 199.00 |
| Fengxing | 5.00 | 147.00 |
| Ian | 6.00 | 176.00 |
| Robert | 5.00 | 165.50 |
| Rohit | 1.00 | 147.00 |