

## Weekly Report

May15-27

S2 Week 11 (3/23/15 – 3/29/15)

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

The pendulum balances in both dimensions, but one of the dimensions would oscillate no matter the PID tuning. We narrowed it down to what looks like one culprit ESC. We've also managed to get the VHDL compiling. Robert has created a new .bit file that functioned as expected when downloaded to Eris.

## Pending Issues:

## Individual Contributions:

Aaron:

- Completed GUI documentation, Now in review by Rohit, Alberto and Matt
- Made modifications to CAD models for base
- Sent Lee models for base
- Talked with Lee and decided on a quick solution for the base and joint system

Alberto:

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Dylan:

- Tested pendulum with Robert
- Documented on wiki
  - How to set up new dev environment
- Added zip files to git
  - Old versions of code (with documentation on what they do)
  - zip of Eris dependencies (with documentation on how to compile/install)

Fengxing:

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Ian:

- Ordered sensor for Aaron to test
- Found Open Source gimbal controller to use for the motor
- Assisted Robert and Dylan with pendulum testing
  - Found one ESC that seems to be source of oscillation issues

Robert:

- Tested pendulum on North-South axis, using both motor pairs
  - Determined one pair of motors seems to behave differently, causing oscillation
- Got VHDL to compile with factory source
  - Then with modified ucf
  - Programmed new modified bit file on Eris, seems to function normally

Rohit:

- Found cause of error in the quaternion to Euler conversion
- Reviewed command-line interface for the Data Analysis tool

## **Next week goals:**

Aaron:

- Change the frame of Eris
- Implement base and joint system for robot
- Finalize GUI and Documentation and commit them to git

Alberto:

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Dylan:

- Work on testing the system more
- Continue restructuring the code

Fengxing:

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Ian:

- Implement Integral anti-windup in the controller
- Test actuator motor controller/modify to suit our needs

Robert:

- Look into VHDL modifications now that I know it's possible
- Make modifications to I calculation in controller

Rohit

- Work on detailed documentation of Data Analysis tool on wiki

### Work Hour Totals:

Team Member	Weekly Hours	Running Total
Aaron	13.00	184.80
Alberto	2.00	158.00
Dylan	11.00	210.00
Fengxing	6.50	153.50
Ian	9.00	185.00
Robert	11.50	177.00
Rohit	7.00	154.00