CySat Senior Design Team

sdmay21-25

Report Period: October 12 – October 18

Team Members:

Alexis Aurandt - OBC Lead and Payload Sub-Lead
Alex Constant - Ground Station Front-End Lead and Voltage Boost Board Sub-Lead
Chandler Jurenic - Payload Lead and OBC Sub-Lead
Jeffrey Richardson - ADCS Lead/Team Lead
John Lenz - Radio Lead
Scott Dressler - EPS Lead and Voltage Boost Board Sub-Lead

Summary of Progress in this Period:

OBC

- Put OBC fixes up for review on GitLab
- Installed PuTTy on my Mac
    - Able to receive and transmit from the OBC over UART to my Mac
- Implemented UART interrupt to echo on PuTTy (pushed this to GitLab branch)

Ground Station Front-End

- Created mock UART response project for Ground Station UART connection testing
- Threaded listener in WorkingConsole.py
- Created documentation to demonstrate functionality of console UART connection

Payload

- Attempted to work on Hello World via SDR.

EPS

- I2C update

Radio

- Talked to Kelly about coming to see what is wrong with UHF
- Reviewed merge requests
- Started creating documentation for other to learn UHF

ADCS

- Set up Dev environment from Alexis' tutorial
- Dr. Lee approved my high-level mode workflow diagram for ADCS mode switching

Boost Board

- Reviewed documentation from last year

Pending Issues:

OBC

- Contact Bryan about pin-out spreadsheet
    - He references numbers on a header rather than the proper pin name (i.e “PA9”)

ADCS

- Mathew Nelson hasn’t responded to my latest email. Currently there is no way to remotely connect to ADCS to my knowledge. Will bring this up at M2I meeting.
- No entirely sure how the final code will work without multiple threads. Dr. Lee shares my concerns.

Radio

- Set up camera to debug radio

Payload

- Need SDR board in order to communicate the message from the payload to the OBC. Communication for these subsystems wasn’t finished by last group, stated in the pending issues pdf left by last group.

Boost Board

- Do we have the components?

Individual Contributions:

Team Member	Contributions	Hours Worked	Total Hours
Alexis Aurandt	Finalized OBC fixes, installed PuTTy for Mac, implemented UART interrupts	4	35
Alex Constant	Set up Ground Station UART Connection and created Documentation for Demo	13	36
Chandler Jurenic	Attempted to get communication working via SDR/OBC.	3	15
Jeffrey Richardson	Ethics Reflection, Development Environment	3	17
John Lenz	Talked to Kelly about coming to see what is wrong with UHF. Reviewed merge requests. Documentation for other to learn UHF	5	24
Scott Dressler	Reviewed boost board documentation	1	23

Plans for Upcoming Reporting Period:

Team:

- Design Document 2.0
- Technical Challenges Lightening Talk

OBC:

- Get the OBC changes reviewed and merged to master
- Make sure Bryan's pin-out table matches the new discoboard project
- Work on implementing interrupts for I2C and UART for the other subsystems
- Start looking at mock mock launch

Ground Station Front-End:

- Integrate Working Console UART Connection into Ground Station Interface
- Begin work on Packet Protocol

EPS:

- Finish I2C updates

Boost Board

- Attempt to contact previous lead (Talon Stromgren)
- Get oriented with the documentation
    - No next steps were specified other than testing instructions

Payload:

- Finish Hello World/communication with OBC, presentation practice for Lightning Talk.

Radio:

- Try to go in to M2I and work on getting radio up and running
- Finish UHF guide
- Start working with another subsystem

ADCS

- Meeting with Dr. Lee to plan operational mode workflow
- Hopefully within this week or the next, testing hello world code with ADCS and disco board