HASP 2018 Monthly Status Report

Report Month: February, 2018
Submitted by: Ricardo J. Saborio
Submit Date: 2 / 23 / 2018
Institution: University of Minnesota
Payload Number: 2018-03
Payload Name: High Altitude X-Ray/Gamma-Ray Detector Testbed (HAXDT)

I) Activities During Previous Month:

Electrical Power Systems: We have been focusing on recruiting new members. In addition, we have developed Eagle libraries for a new set of I2C sensors that will be used in new revisions of circuit boards. We have begun the design of new revisions of various circuit boards within the payload, such as the flight computer and the high voltage power supply.

Detector: The detector team has been focused upon implementing two functional detection channels. Currently, two have been shown to function properly up until the second stage of amplification. Next, the hardware will be expanded to accommodate for two channels of detection. Focus has also been drawn towards making purchases for expansion into 16 channels as well as recruitment of new students. March will be focused on expanding from two channels to eight.

Communications: For communications, the new radios arrived. We're currently trudging through legal barriers to ensure that we can all safely discuss and use the provided radio-customization software - which also arrived.

Flight Computer: We are moving away from the Teensy 3.6 in our main Flight Computer and focusing on only using the BeagleBone Black rev C. There are differences in the languages used to program each so we have focused on the translation process from C++ to Python during the last month.

II) Issues Encountered:

None encountered.

III) Milestones Achieved:

- We completed the first sessions of all team presentations for recruitment purposes. The presentations were part of our outreach for new members for spring and summer 2018. Over 90 individuals showed interest in our team.
- The Revised HASP 2018 Application was completed and submitted.
- The GANTT charts for this year's work have been completed and revised.

IV) Plans for Coming Month:

We are planning on completing the following tasks during the next month:
- Train new members recruited for each sub-team. This involves getting them familiar with hardware, software, and documentation.
- Finish the translation process of the code for the flight computer.
- Begin the interfacing process of the FPGA and the flight computer.
- Start redesigning boards from last year's HASP so that they work with the most recent versions of our system.

V) Other Comments:

None.

VI) Team Composition and Organization:

Name	Start Date	End Date	Role	Student Status	Race	Ethnicity	Gender	Disability
Abigail Valero	Summer 2017	Present	Chief Engineer	Undergraduate Junior	Caucasian	Hispanic	Female	None
Ricardo Saborio	Jan 2017	Present	HASP Lead	Undergraduate Junior	Caucasian	Hispanic	Male	None
Joel Runnels	Sept 2015	Present	Technical Consultant (Detector Engineering and physics) Payload Lead	Graduate Student	Caucasian	Non-Hispanic	Male	None
Samuel Drehmel	Spring 2017	Present	Detector Systems Physicist (Calibration and testing)	Undergraduate Senior	Caucasian	Non-Hispanic	Male	None
Jenna Burguet	Spring 2017	Present	Detector Systems Physicist (Calibration and testing)	Undergraduate Sophomore	Caucasian	Non-Hispanic	Female	None
Maxwell Yurs	Jan 2016	Present	Detector Systems Lead (Calibration and testing)	Undergraduate Senior	Caucasian	Non-Hispanic	Male	None

Gaurav Manda	Spring 2017	Present	FPGA Lead	Undergraduate Senior	Asian	Non-Hispanic	Male	None
Runsheng Ma	Summer 2017	Present	FPGA Team Member	Undergraduate Sophomore	Asian	Non-Hispanic	Male	None
Inho Jong	Summer 2017	Present	FPGA Team Memeber	Undergraduate Senior	Asian	Non-Hispanic	Male	None
Andrew Mosin	Spring 2017	Present	Payload Systems Software Lead	Undergraduate Junior	Caucasian	Non-Hispanic	Male	None
Anas Ghazanfar	Summer 2017	Fall 2017	Flight Computer Team Member	Undergraduate Junior	Asian	Non-Hispanic	Male	None
Aaron Nightingale	May 2016	Present	Payload Systems Hardware Lead	Undergraduate Senior	Caucasian	Non-Hispanic	Male	None
Athanasios Pantazides	Spring 2017	Present	Payload Systems Hardware	Undergraduate Junior	Caucasian	Non-Hispanic	Male	None
Melissa Nightingale	Fall 2016	Present	Flight Structures Engineer Lead	Undergraduate Sophomore	Caucasian	Non-Hispanic	Female	None
Spencer Zwashka	Spring 2017	Present	Flight Structures Engineer	Undergraduate Junior	Caucasian	Non-Hispanic	Male	None
Mitch Rogalsky	Spring 2017	Present	Power Systems Lead	Undergraduate Senior	Caucasian	Non-Hispanic	Male	None
Stephanie Wilson	Spring 2017	Present	Power Systems Engineer	Undergraduate Senior	Caucasian	Non-Hispanic	Female	None
Lukas Zumwalt	Summer 2017	Present	Communications Lead	Undergraduate Sophomore	Caucasian	Non-Hispanic	Male	None
Ryan Thomas	Summer 2017	Present	ADCS Team Lead	Undergraduate Junior	Caucasian	Non-Hispanic	Male	None