

Gannon University HARD payload

Status Report #5

5/30/2013

1. Achievements/Work in Progress

- All subsystems for the payload are constructed and unit-tested. They are:
 - 30V to 60 V DC-DC converter circuit board (a series connection of two 18~30 V to 30 V DC-DC converter)
 - SiPM Voltage supply circuit board (that outputs 3 different voltages to support an optimum operation of SiPM, 35.6V, 34.1V and 33.2 V)
 - Detector module (SiPM + amplifier): 4 sets are carefully tested and selected (but still, one of them exhibits unreliable behavior during a preliminary integration test, and that is to be revised by using another SiPM amplifier for further testing)
 - Comparator module: constructed to operate in a closed-loop OP amp. mode as opposed to an open-loop comparator mode as the open-loop configuration exhibits fairly unstable when SiPM amplifiers are connected.
 - Microcontroller Uno32 – all analog and digital pins are assigned and codes are written to interact with all subsystems
 - SD Card and holder (team determined to use 2GB memory and its adapter with the built-in lock-on/off spring removed)
 - GPS module
 - eCompass module
 - Rotator module (servo)
 - RS 232 interface circuit board (for interface between HASP serial and GU HARD payload)
- Flight tickets are purchased to send 4 student team members for thermal/vacuum testing and integration in Palestine, TX (arriving Sunday afternoon, leaving Saturday morning, at/from Dallas/Ft. Worth airport)
 - Aaron Neiman (HASP 2013 Team Lead), Bennett, Joseph, Codi Wasser, and Kelvin Joefield

2. Issues

- No major issues.

3. Next Steps

- To finish final PSIP and send to the program office by 6/21/13
- To complete integration test with all subsystems.
- Finish construction of HASP 2013 payload.

4. Current team members and leader

Aaron Neiman, Computer Engineering (HASP 2013 Team Lead)
Bennett, Joseph, Electrical Engineering
Codi Wasser, Computer Engineering
Kelvin Joefield, Electrical Engineering
Yousef Samkari, Electrical Engineering

Dr. Wookwon Lee, ECE Faculty Advisor
Dr. Nicholas Conklin, Physics Faculty co-advisor
Prof. Donald MacKellar, ECE Faculty co-advisor