



HASP 2018 Monthly Status Report

Report Month: January 2018
Submitted by: Stacey Burrows
Submit Date: 01 / 26 / 2018
Institution: American River College
Payload Number: 2018-(unspecified)
Payload Name: Stratospheric Spectropolarimeter Gamma-X (SSGX)

I. January Activities

- ◆ Stacey updated schematic files to include footprint data for all components relevant for PCB development. Stacey is also enrolled in an intro to computer aided drafting and design course this semester, which they will be using to draft the experiment.
- ◆ Justin has been importing schematic pages into the PCB file, placing components, and progressing the signal routing.
- ◆ Neeraj developed templates and wireframe views for multiple pages within the ASTER software. Graphing and functionality are currently in-progress. Neeraj is enrolled in an algorithms and logic course this semester, which is improving his skills with computer program design.
- ◆ Yolanda has spent considerable time and effort learning GEANT and terminal applications including MEGALib and its constituent simulation tools, Geomega and Cosima. They have been in communication with Yaroslav regarding GEANT and the development of simulations for the experiment. Yolanda is also enrolled in algorithms and logic this semester, which is helping them to better understand compilation.
- ◆ Jessica has been advancing her understanding of PCBs, with a specific focus on surface mount soldering techniques, as well as revisiting her previous experience with soldering and electronics.

II. Issues Encountered

- ◆ Both Justin and Yolanda have required considerable time to thoroughly learn and setup new design and simulation software. Yolanda initially encountered compatibility issues between necessary programs and the operating system they use.
- ◆ There are multiple items in the application that require attention based on feedback from the HASP committee, therefore some time at the end of January and beginning of February will be spent addressing these items.

III. Milestones Achieved

- ◆ Justin designed a signal simulation circuit utilizing the CPLD to produce repeating analog signals at a similar amplitude and duration as expected from the detector for the purpose of testing the system.

IV. February Goals

- ◆ Submit PCB for manufacturing.
- ◆ Assemble and validate all PCB subsections.
- ◆ Minimize electronic noise in DAISI.
- ◆ Complete visual aspect of PC software (ASTER).
- ◆ Acquire housing materials and PCB components.
- ◆ Debug Geomega file.
- ◆ Cosima file development.
- ◆ Determine location for assembling and curing of housing.

V. Other Comments

While everyone in the group is familiar with their own respective ethnic background, no one was able to provide a clear and consistent definition of race other than the one provided for us by the biological sciences. Since race is defined as a reference to subspecies and not as a continental heritage or any other clear association, there has been some amount of uncertainty regarding the racial category as separate and distinct from the ethnic category. We have thus completed the following table with intentions of being both respectful and precise.

VI. Team Composition and Organization

During the month of January, the following individuals progressed the project.

Name	Start Date	End Date	Role	Student Status	Race	Ethnicity	Gender	Disabled
Stacey Burrows	03/2017	Present	Project Lead	Undergrad	<i>Homo sapiens sapiens</i>	White	Non-Binary	No
Justin Forrester	03/2017	Present	Electronics Lead	Grad / Undergrad	<i>Homo sapiens sapiens</i>	White	Male	No
Neeraj Menon	03/2017	Present	Software Developer	Undergrad	<i>Homo sapiens sapiens</i>	Indian	Male	No
Yolanda Reyes	03/2017	Present	Technical Illustrator	Undergrad	<i>Homo sapiens sapiens</i>	Yaqui / Mexican American	Two-Spirit	Yes
Jessica Shults	03/2017	Present	Assembly Technician	Undergrad	<i>Homo sapiens sapiens</i>	Tohono O'odham	Female	No