

Salish Kootenai College March Status Report:

Hello from Salish Kootenai College.

We have received the payload mounting plate and are currently double-checking our measurements against the plate's exact measurements.

- We have made progress with the I2C generation on the FPGA. We have successfully communicated between the Cyclone II FPGA on our DEII development board and an I2C compliant device (The DEII board to an LCD screen). Our next step from here is to increase the clock speed of the communication from the default 50 MHz.

- We have decided to affix thermally conductive strips between the heat generating ICs and the radiators using thermal paste. We will use thermal paste to better transfer the heat from the ICs to the conductive strips that will, in turn, be held to the ICs with a simple clamp system.

- In the February progress report we stated we would be using the teensy++ microcontroller as a method to develop I2C driver code, however we have utilized the Gumstix Overo Earth. The Overo requires no I2C development on our part because I2C development is built in. We will utilize the Overo Earth to test control of the camera headboard in the next few weeks. This allows us a path to start testing the camera headboard without waiting for the FPGA to be finished. This will help ensure we remain on schedule if the FPGA requires more time than currently anticipated.

- We have decided to use SD cards as our choice of flash storage. After a consult with Berk Knighton we decided soldering an SD card receptacle would be a robust enough solution for our needs. Allow us to retrieve image data post flight.

- Weighing the pros and cons of adding an additional connection point to our power and data lines, we have decided to not directly solder the pigtail lines to our project. We feel the benefit of quick removal outweighs the additional failure point.

- Some students on the team are currently learning the Eagle Schematic capture program that will be used to draw the controller board and ship the schematic to the circuit board manufacture.

- Using the PC software included with the camera headboard we have developed a set of default register values needed to control the camera headboard. At this point we do plan to utilize the built in auto-exposure feature for much of the flight. Testing has shown we will want to use manual exposure during the night portion of the flight. We now have a control of the camera and basic settings. Based on our testing we have decided to also use auto-white balance and gamma correction but not auto-lens correction.