Inter-American University of Puerto Rico
HASP 2012
April Monthly Status Report

During this month our team addressed some problems related to the schematics and Printed Circuit Board (PCB) designs. Furthermore we were able to finish our PCB design and send it to the company for fabrication. We are currently awaiting the arrival of the PCB to perform the necessary electrical testing and then populated. In addition we manage to finish the Critical Design Review document and perform all the necessary sensors validation and testing of the whole system. Right now we are focus working with the ADCS software since we have minor issues that need to be fixed. In addition the Flight Readiness Report (FRR) is already started with a good progress up to now.

1. Activities of team members

The Electrical team (ELEN) manage to finish the two PCB, the ADS and ACS/ flight computer respectively. These boards were verified to ensure a proper design following the PC/104 standards and to ensure that we do not encounter any electrical issue later on. **Figure 1** shows the PCB for the ADS and ACS/Flight Computer.

The mechanical team (MECN) started the manufacturing of the 1U structure using the parameters limits in dimension required. In addition we are analyzing several thermal insulation options for the insulation of the payload. **Figure 2** shows the latest Payload design including the boards that we are going to flight.

The ADCS and software team finish the code of the attitude determination. The gyro offset that was affecting the performance of the determination was corrected by using a compensated off the shelf IMU instead of using separated sensors. In addition we tested the UART and SPI interface to ensure proper functionality. Since is vital that the two boards communicate each thru UART interface, we are using a SPI to UART converter. The SPI to UART converter will be providing the necessary additional UART channel since all of the available UART in the dsPIC33 are in used. All the testing were successfully and we manage to communicate the two microcontroller and sent data between each other this ensure that the ADS microcontroller will sent the data of the sensors to the ACS/Flight Computer.
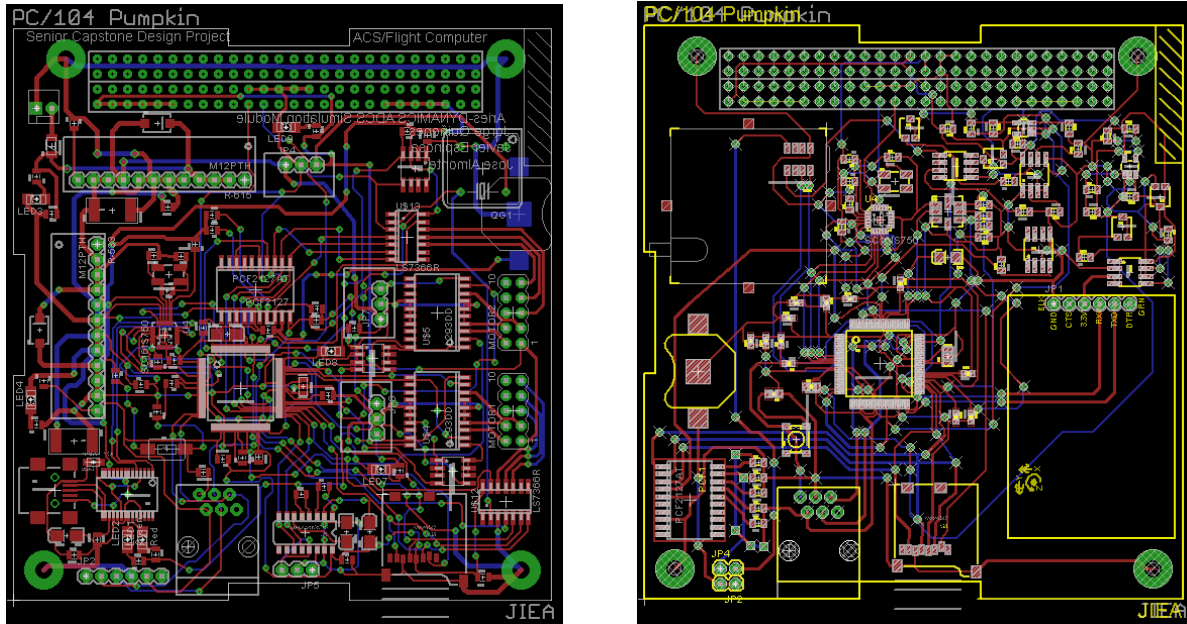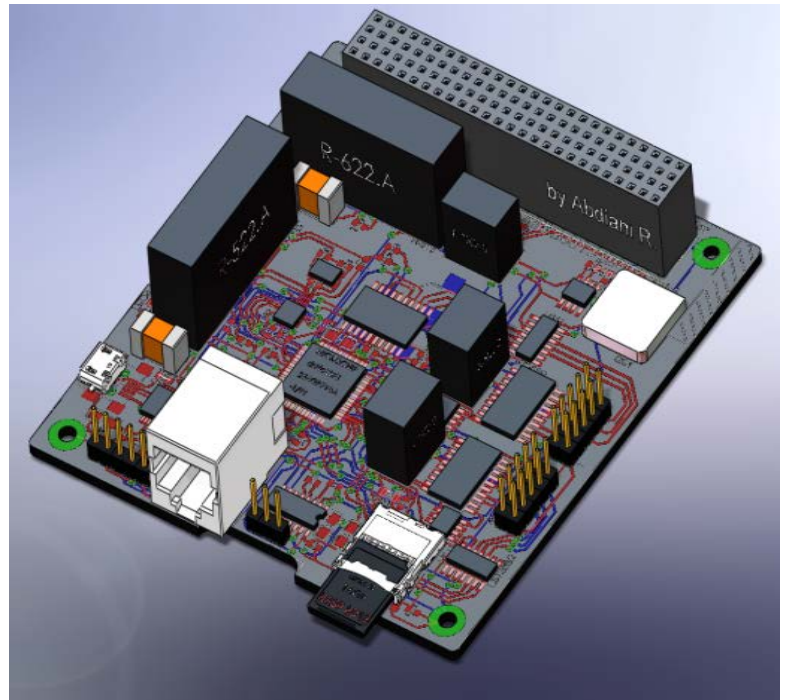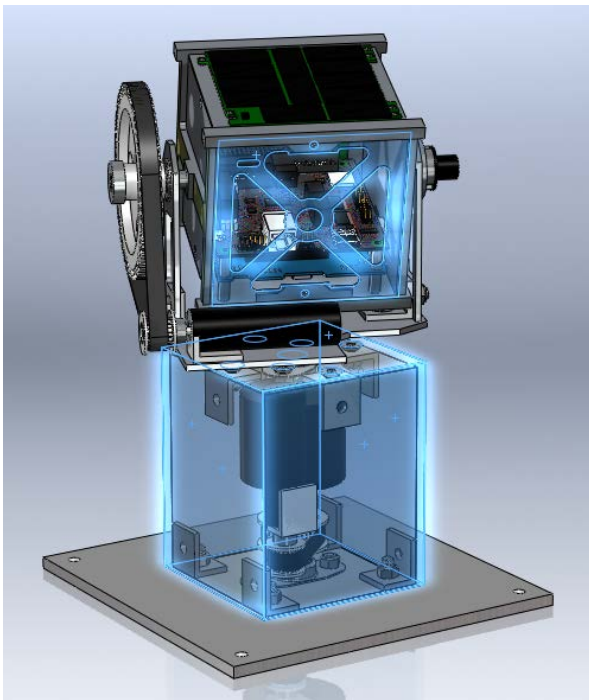
Figure 1: ADS & ACS/Flight Computer PCB's

Figure 1: Mechanical Structure & ACS PCB

2. Current team members

During April no additional changes has been made to the team structure.