

ARIES-GPS Payload

Inter-American University of Puerto Rico

April 2013 Monthly Report

Electrical System

There was a problem with the ordered components of the boards. The packages of the components weren't the expected, so we make arrangements to use those components for the prototype version of the Novatel GPS and Power boards. We were able to test the prototype version of the Novatel GPS by sending and receiving data, and the tests were successful. Because the PCB design is already done the next step on this board is to send the PCB design to a fabhouse for construction, then we can solder the components and test the board again. Right now we are testing the prototype of the Power board.

Mechanical System

The group start working on the mechanical improvements proposed during the last month, the biggest achievements is that the new changes reuse most of the work previously developed. The structural changes developed during the month include the holes for the power connector, the RS-232 for serial communication and a debugging port for last minutes changes.

All this changes are because of experience of last flights and improve substantially the payload integration and use. The picture below gives a better understanding of the changes in development.

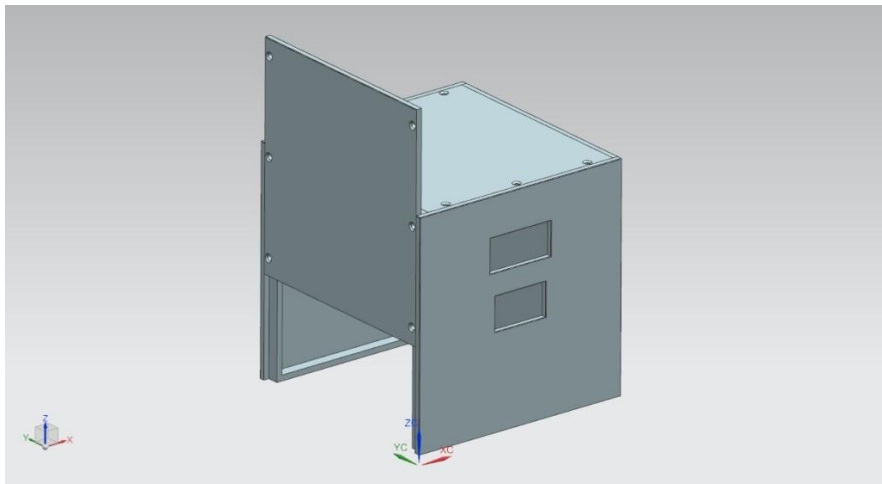


Figure 1 – External Structure with the latest changes

Thermal System

The team still is studying the possible solutions for the thermal environment on the payload, even though several proposals are being considered the team is preparing the payload for the newly added structural changes.

Software System

During the month our team finished dealing with the bugs reported in the serial interface, which were successfully improved. The mission does not require the GPS string from HASP platform however we developed the software to block those strings if they are not in the same format as our command interface. In addition it is valid to point out that this project is reusing most of the software from the previous flight so the main activities of the group are directed to test and fix all incoming bugs and issues.

Current Members and Leaders

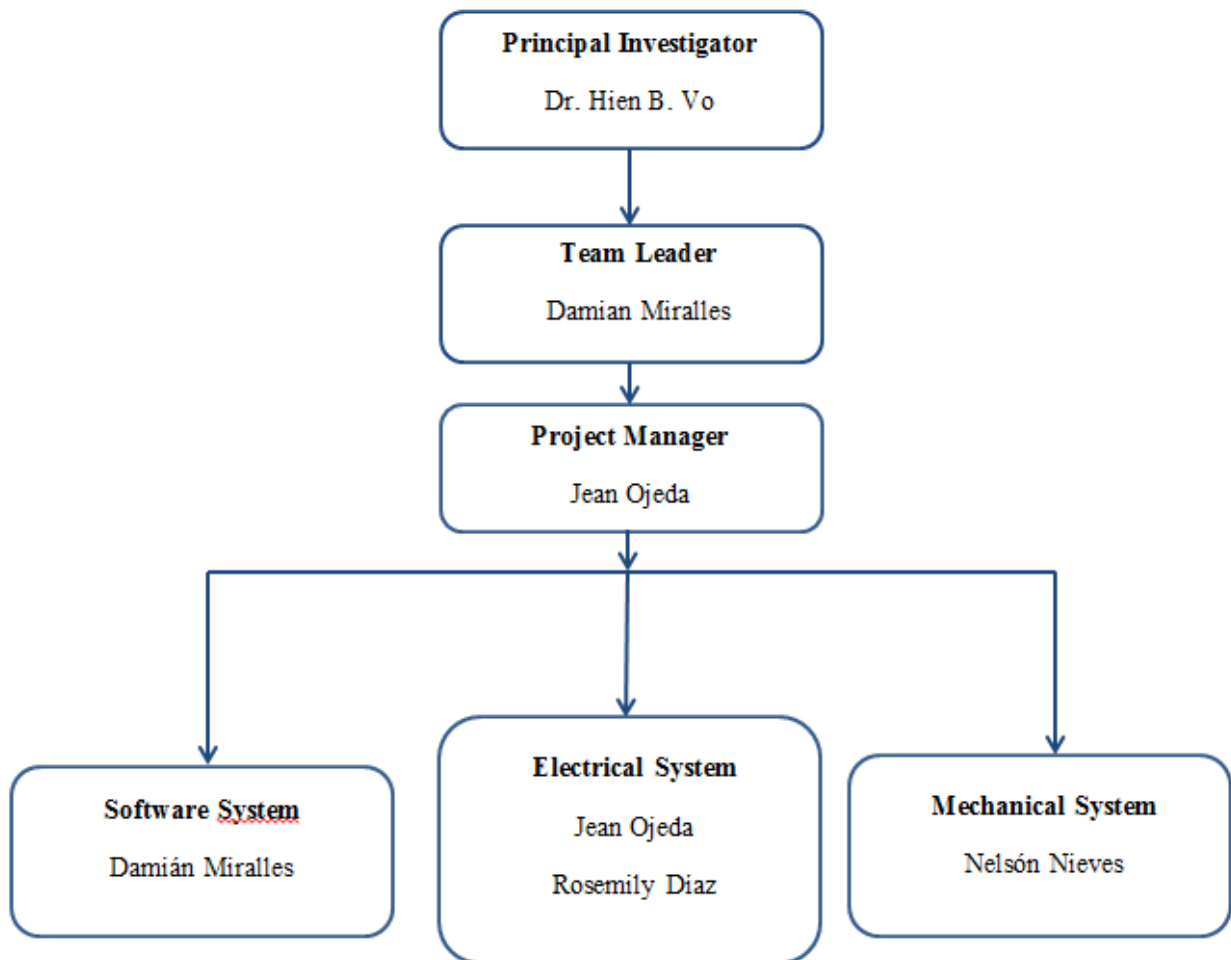


Figure 2 – Structure of the current team leaders and members of the GPS Payload

GPS Payload Students and Tasks

Students	Task
Damian Miralles	Processor Programming
Nelson Nieves	Thermal Analysis/Mechanical Structure
Rosemily Diaz	Power Board/PCB design
Jean Ojeda	Power Board/PCB design

Table 1 – Team names with the respective tasks