weekly memorandum

|  |  |
| --- | --- |
| to: | James Pettit |
| from: | TOMMY ARRINGTON |
| subject: | My progress on determining payload ideas |
| date: | September 13, 2015 |
|  |  |

**LAST WEEK**

Last week I familiarized myself with the competition rules, and researched various payload selections and assessed the feasibility of each choice. My three ideas were a cold gas fuelled three-axis stabilized Reaction Control System (RCS) for proof of concept, a hardware comparison experiment for testing flight progress with various quality IMUs and comparing the results, and a radio science experiment consisting of a radar altimeter that collects flight data to examine how the unique electromagnetic properties of carbon fiber affect altimetry measurements. I chose to only propose the altimetry test because of its practicality: it is simple to design, small, and would reliably provide useful data for future composite structures. The RCS unit would be very complex to construct and possibly interfere with contest rules, and the IMU comparison would yield relatively little data.

**THIS WEEK**

This week I will research previous work done on aerial seed distribution systems, and develop a possible preliminary design for dispersing seeds from the rocket. This will be a contribution with the other team members as we finalize our choice of payload, and will continue past this week. I also plan to look into air brake designs to support the D&O team, and attend a Propulsion meeting (if schedules permit) to learn more about the engine and begin to determine what processes will be required to integrate it with the flight computer.