Customer Meeting Notes 8-30-2017:

Meeting with Dr. Patru in Meteor

Room Maintenance:

Everyone will be getting swipe. Do not put things on the floor in Meteor room anymore. Keep the garbage to a reasonable size. 1 Garbage and 1 Recycling. Food is fine but please throw food away in the hallway.

2 Teams last year. They recommended that there should be only 1 team for less documentations. Last year the team designed a platform of which can be seen in the lab. The goal was to design a platform which collects temp, pressure, video at different altitudes and a flywheel (reaction wheel) to maintain Z axis stability. The size of the motor will determine the size of the battery. Eventually we may need a smaller motor. Look into this (MEs). Steve and the ME girl wrote the control algorithm. The problem was that a short occurred at some point before launch and something didn’t work (IMU?). Goal is to move from the MSP430 implementation to a raspberry pi for control.

Digital cameras worked (and two didn’t) because of user error. The main board was a bigger issue. A DC DC was overheating as well (could be cause of short?). Motor controller should still fly as it is needed to control the motor. Each pi 0 provides sensor information to the mainboard and records video locally to an SD.

Analog cameras are plugged into the Multiplexor and goes to the on screen display. That is then sent to the amateur video transmitter at about 4W of power.

In our case, we will be forgetting about the analog TV. We will be moving to digital TV. So we will be transmitting the raspberry pi video digitally. There is possibility to overlap 3 video channels and a high rate data channel which would allow data from IMU and a 3d rendering. We will have the SDR. We will need to be talking with the students who made the SDR for assistance with it.

For the September launch, the second board will need to be populated and programmed/tested. Good news: we have boards for the SDR already. Bad news: not sure if we even have 500 bucks of funding.

Below 6 pounds, we don’t need to notify anyone other than the local tower. Above 6 pounds, we need to contact them. Send 1 video channel down OR high data rate channel. High data rate only for IMU. Lets see how much time we can get out of the reaction wheel battery. Above 70k feet, you essentially have no conduction.

The first step is a review of customer requirements. Then we have a concept exploration. Then preliminary design. Then final design. Every launch is about 500 bucks. The budget is always too small. We will always go over to do something right. We will give Boeing a few more weeks to give us money. Otherwise we have a couple other channels. Analog components will be removed after September flight.

Get launch done by early October latest. New PCBs designed and sent out by the end of SD1.

Antenna-wire, used an omni-directional antenna on the bottom but a suggestion has been made to hang down a dipole and another dipole going up for the balloon. 2.4GHz dipole between parachute and payload. And the 2m dipole below the payload.

User should be able to control just about everything w/ the uplink. Figure out what is going on with release.

Conformal coating. No software should have to be redone for the Sept/Oct launch.

Need to get swipe to SMT lab. Should get access to meteor by Friday.

Pour over the documentation and write down any questions you have just to ask Dr. Patru.