Getting Started: Primary Communication Systems

What is the goal of the communications team?

The communications team is responsible for developing an infrastructure through which data can be transferred from the on-board computers inside the rocket to the ground station.

How will we be transmitting the data?

Using the TeleMetrum system. This is an off the shelf system which supports the following features:

- Recording altimeter for model rocketry
- Supports dual deployment (can fire 2 ejection charges)
- 70cm ham-band transceiver for telemetry downlink
- Barometric pressure sensor good to 100k feet MSL
- 1-axis 105-g accelerometer for motor characterization
- On-board, integrated GPS receiver
- On-board non-volatile memory for flight data storage
- USB for power, configuration, and data recovery
- Integrated support for LiPo rechargeable batteries
- Uses LiPo to fire e-matches, can be made to support separate pyro battery
- 2.75 x 1 inch board designed to fit inside 29mm airframe coupler tube

What are the major checkpoints for this year?

1. HAM radio licensing (This is necessary for the radio downlink)
2. Local start up and test. (Ensure all sensors are responsive)
3. Scale model rocket launch with data downlink
4. Scale model rocket launch with ejection charge
5. Incorporate downlink into Ground System

What is the timeline?

October	November	January	February	March
1	2	3	4	5

*Note: This timeline is to allow for gradual learning and iteration, if possible, we will move faster than this.

Next steps:

- Revise and study exam material here.
    - The examination is done in person on Campus by a certified examiner.
    - We choose when we schedule the exam, but we will only do so when the team is ready
- Read and watch YouTube videos about the TeleMetrum to familiarize yourself with it's use cases.