



Physical Assessment for Team Kalpana(2022ASI-049)

(By ASI, IN-SPACe & ISRO)

TESTING VIDEOS



Our Progress till CDR Stage



Accomplishments

Electronics



- Completed XBEE Communication testing.. .
- The Ground Control System has been finished and is currently being tested.
- The PCB design is finished.
- Integration and testing of the gyroscope system with the CanSat system.

Mechanical



- Printing the CanSat's final prototype and conducting different tests.
- A brand-new gyro model has been proposed.
- Parachute testing done.
- Verification of descent rates using the competition's actual parachutes

Software



- Antenna was assembled and tested.
- Enhanced the general functionality of the GUI and removed unusable components to enhance the UI.
- The Cansat Algorithm is now completed.

Unfinished Work

- Integration of Electronics Board into CanSat.
- Procurement of PCB

- Parachute compartment is still in prototyping stage.
- More iterations on kill switch positioning.

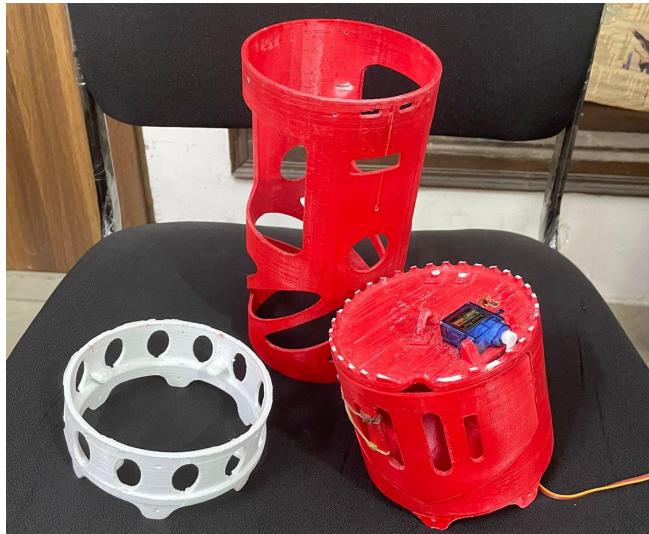
- Integrating, testing, and fine-tuning the CanSat algorithm with the sensors.



Model Inspection



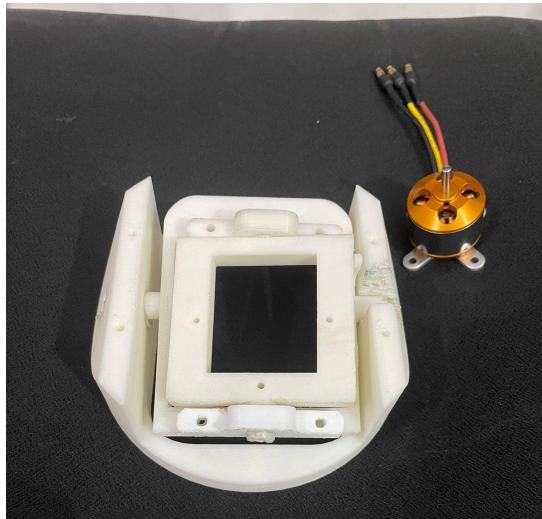
Model Inspection - Mechanical



Prototypes of the Initial Design
of CanSat



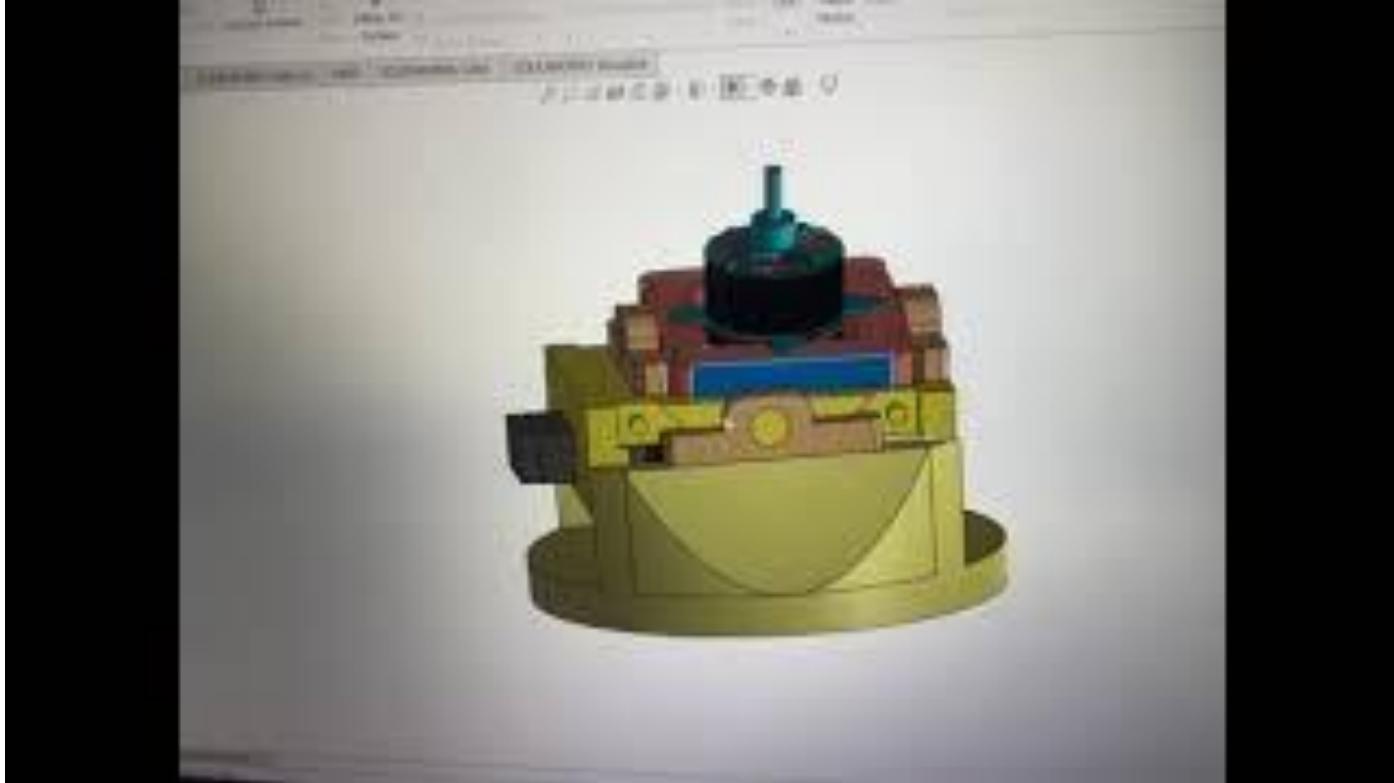
Model Inspection - Mechanical



Prototype of Initial Gyro Control Mechanism



Model Inspection - Mechanical





Model Inspection - Mechanical



**Final 3D Printed Models with the Exception
of Parachute Compartments**



Model Inspection - Mechanical



**Assembled Configuration of CanSat
model with the final 3D printed
models(ABS)**



Model Inspection - Mechanical



Assembled Configuration of New Gyro Control Mechanism with the final 3D printed models

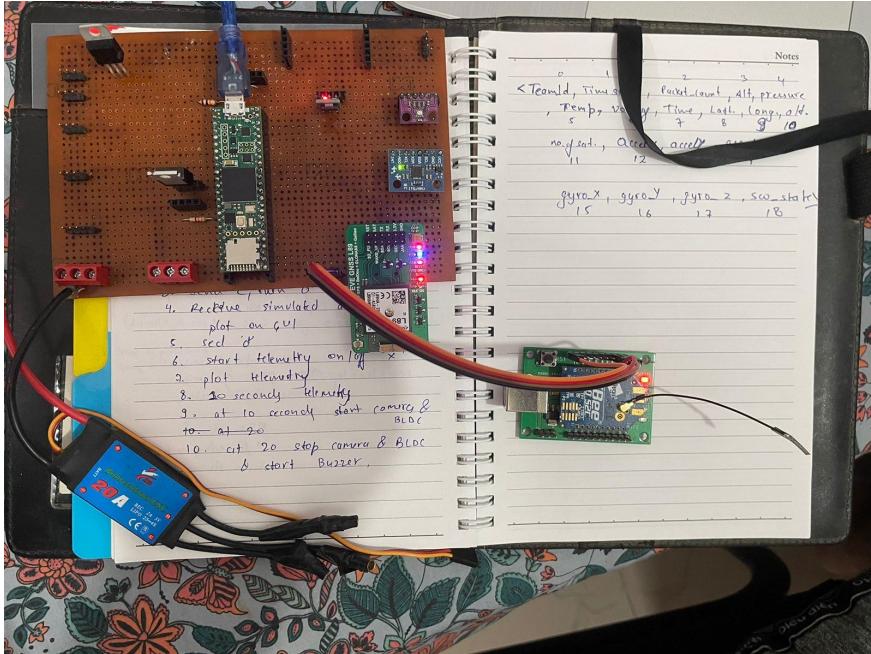


Model Inspection - Mechanical





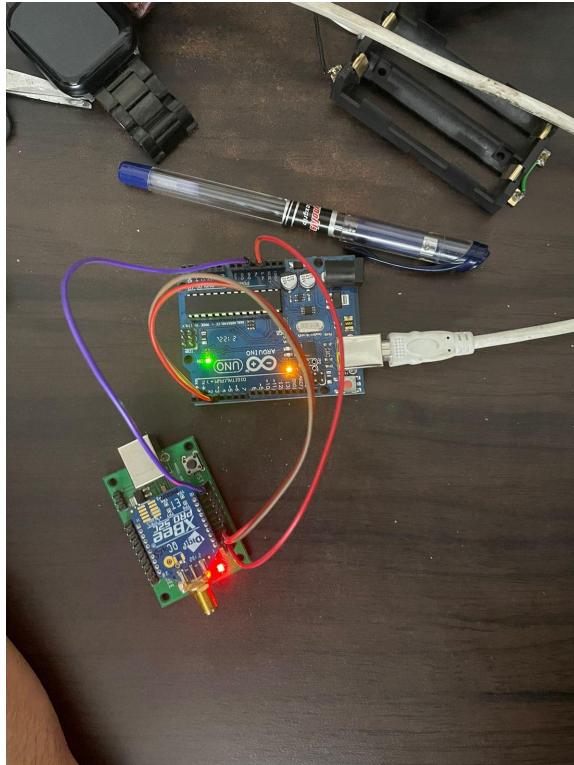
Model Inspection - Electronics



Perf Board Testing & Patch Antenna Testing



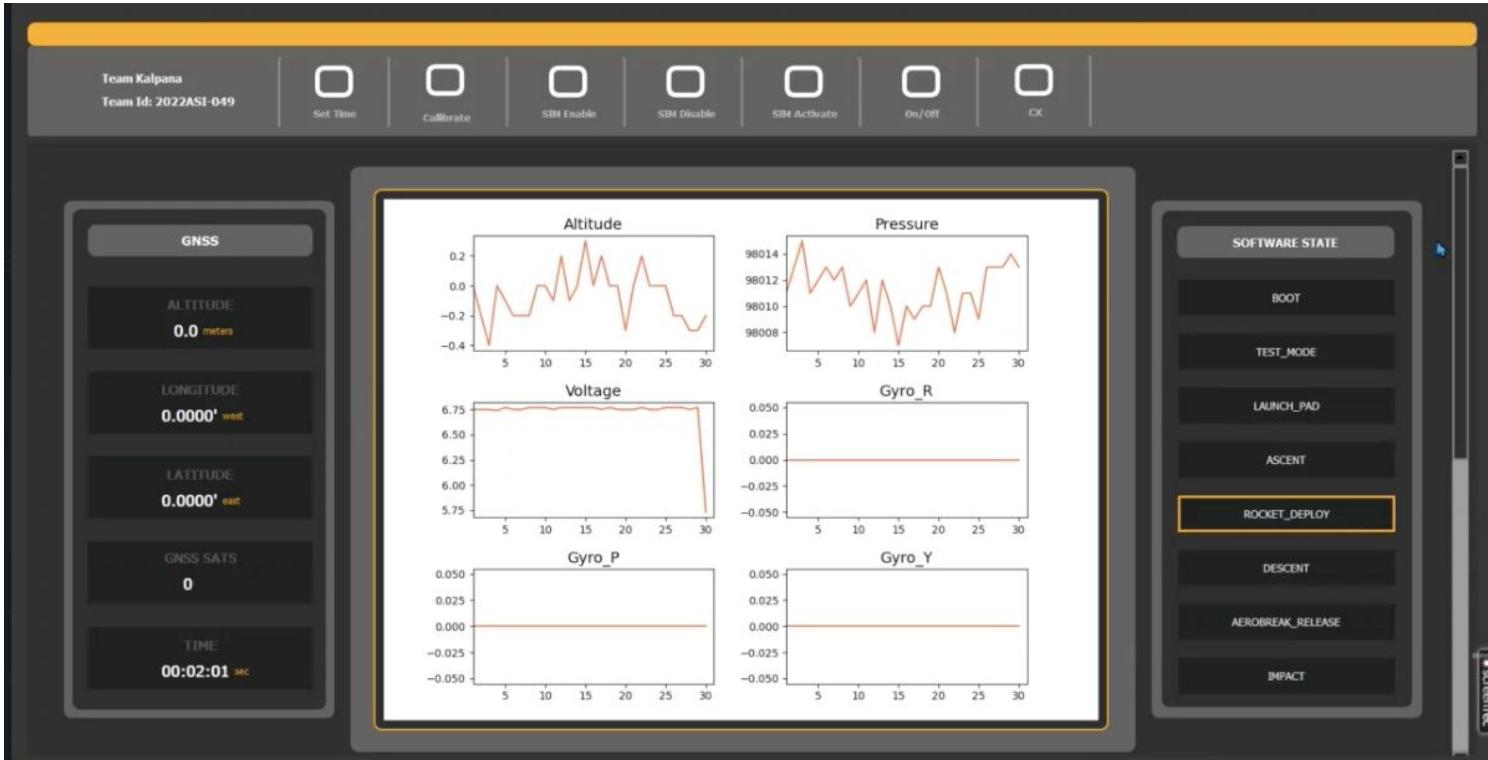
Model Inspection - Electronics



XBee and Patch Antenna Testing



Model Inspection - Software



- Software states updating
- Significant drop in voltage at rocket deployment stage as BLDC motor turns on



Model Inspection - Software



The screenshot shows a software interface for model inspection. At the top, there is a header bar with the text "Team Kalpana" and "Team Id: 2022ASI-049". Below the header are seven buttons labeled "Set Time", "Calibrate", "SIM Enable", "SIM Disable", "SIM Activate", "On/off", and "CX". On the left side, there is a map of a city area with a blue location marker. Below the map is a button labeled "DETECT LOCATION". To the right of the map are two panels displaying telemetry data. The top panel shows the following data:

TIME STAMPING	:	0:00:15
PACKET COUNT	:	8
ALTITUDE	:	8.1
PRESSURE	:	98175
VOLTAGE	:	6.75
TEMPERATURE	:	31.2

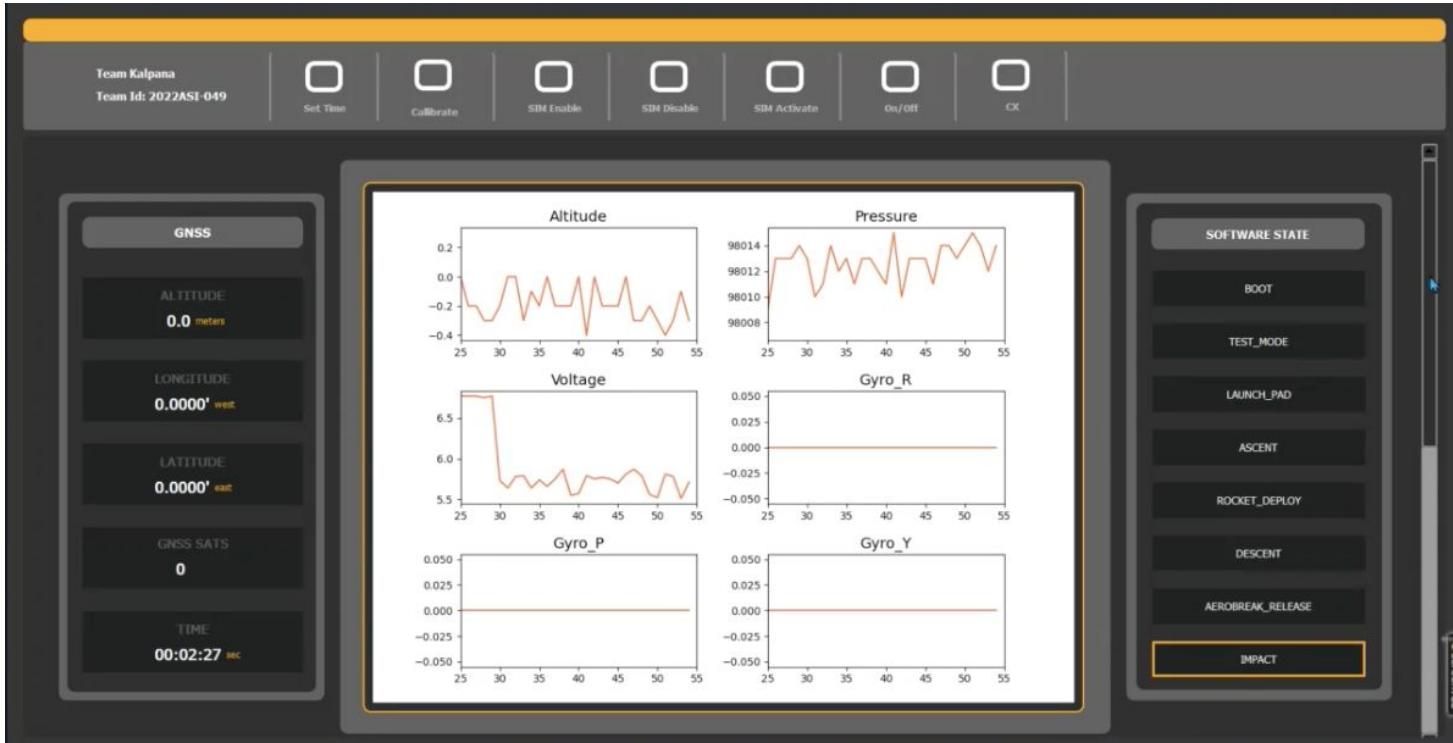
The bottom panel shows the following data:

ACCEL_R	:	0.00
ACCEL_P	:	0.00
ACCEL_Y	:	0.00
GYRO_R	:	0.00
GYRO_P	:	0.00
GYRO_Y	:	0.00

- Fields are updated in real time from the telemetry received
- Current location is also plotted on map



Model Inspection - Software



Telemetry stops
at impact



Testing Video



CanSat Testing





THANK YOU

TESTING VIDEOS