CanSat ARLISS Project

Tokyo Institute of Technology B team

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OUR MAIN MISSION

Removing vibration and speed control

●Removing vibration when the cansat is falling

・When the Cansat is falling, it vibrates because of wind.

→To avoid this vibration , we make air hall on the top of parachute.
Wind blows to the hall , so the vibration becomes small

Good points

・The Structure is very simple!

Structure

・The parachute's diameter is 1.41m , and the hall diameter is 0.58m. There is a string around the hall. When the string is pulled , the hall size becomes small.

●Speed control using parachute

・When we make air hall on the top of parachute , the projection area of parachute becomes small , so the fall speed becomes faster, and the damage when it lands is bigger.

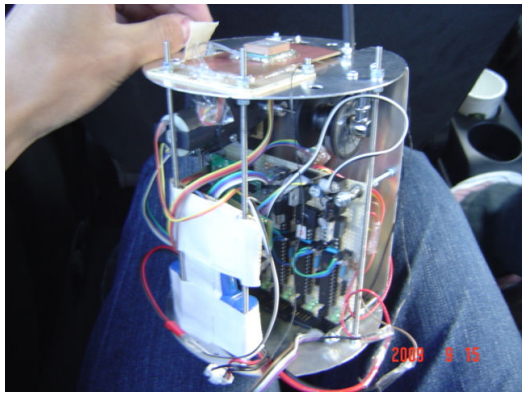
→To avoid this , before the cansat lands , we make the hall size become small by pulling the string., and the speed becomes slower.

CINFIRM THIS THEORY

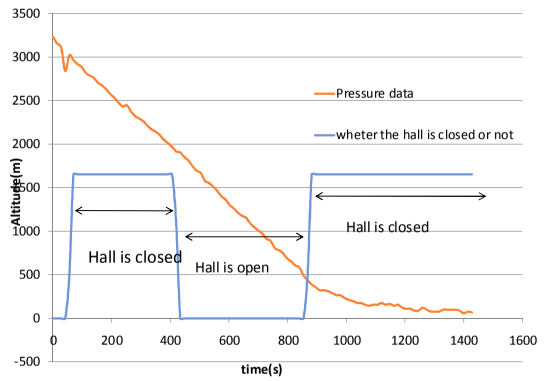
・We use gyro and acceleration sensor to detect vibration and pressure sensor
to detect the speed.

This is the hall on the top of the parachute. When the string is pulled , the hall becomes small.

THE SHAPE OF AEROSMITH -1



RESULTS

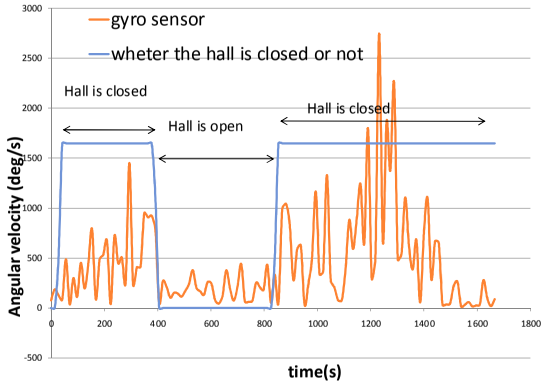


The altitude data. When the hall is closed , the hall data is high.

RESULTS

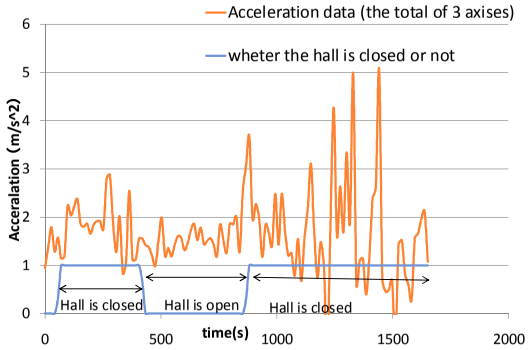
Altitude	The average speed
3000m~2000m	2.94 m/s
2000m~500m	3.27 m/s
500m~	0.495 m/s

RESULTS



The gyro data

RESULTS



The acceleration sensor data (not including the effect of gravity)

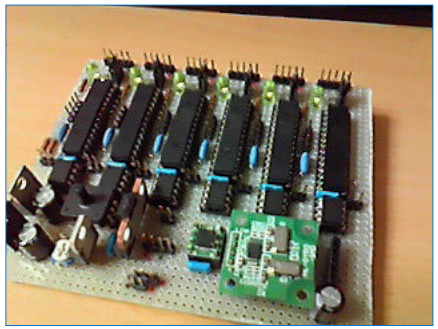
ACHIEVEMENT

●To make air hall on the top of parachute……

・We can control the fall speed by pulling the string around the hall.
・We can remove the vibration by making the air hall

And it is very simple structure!!

THE MAIN CIRCUIT



おつかれさまでした。