ARLISS2014 breakfast meeting

Kyushu Institute of Technology

KINGS

-Team member-

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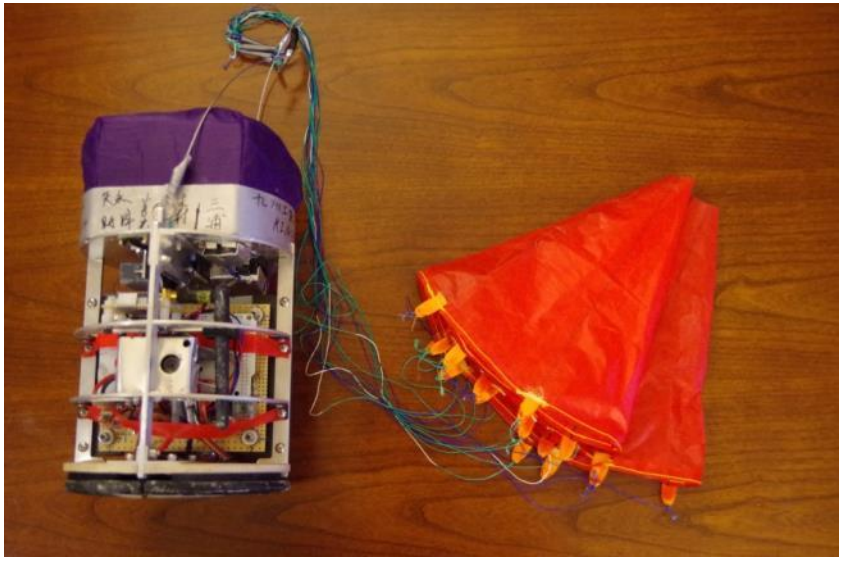
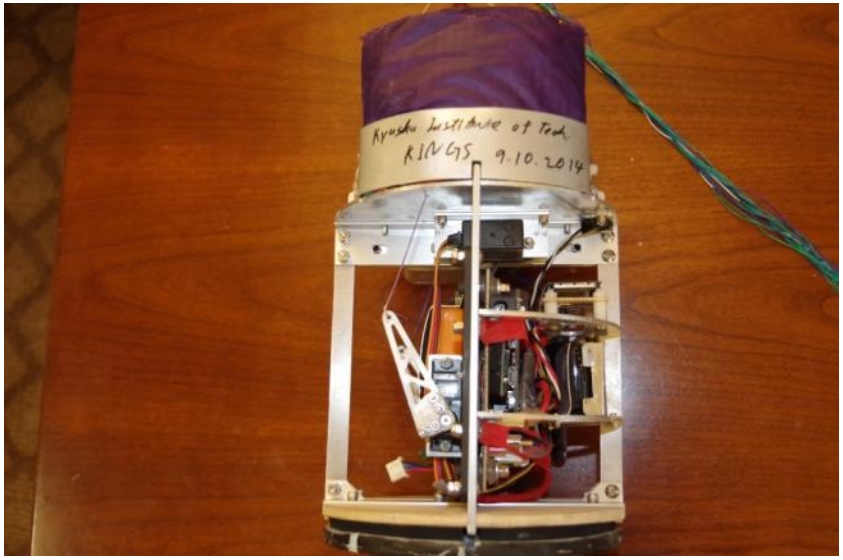
Our CanSat

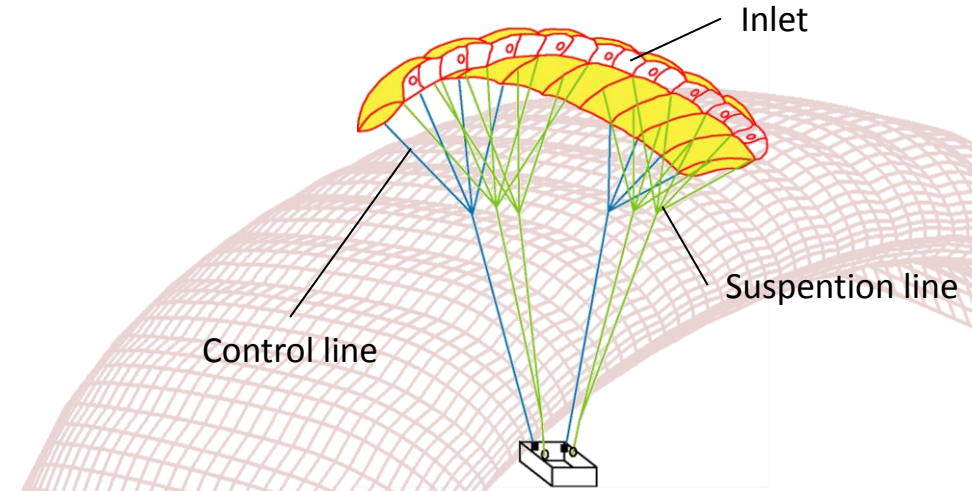


Front view



Side view

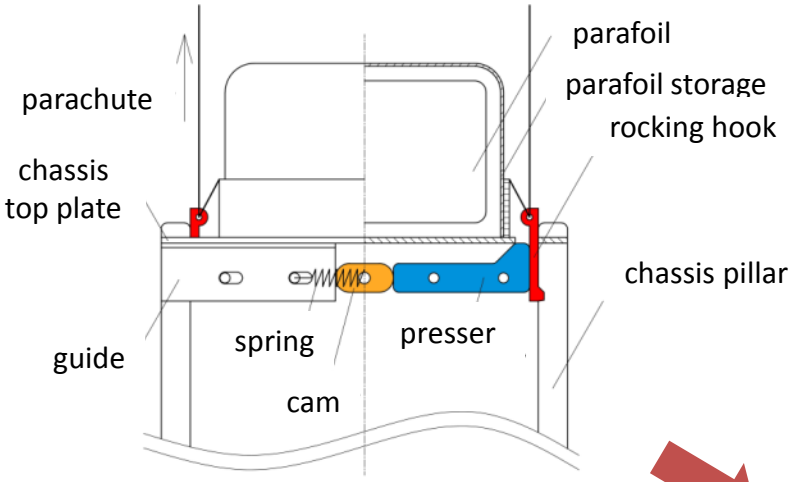
- W ϕ140mm H238mm Weight 990g
- Parachute and parafoil , two-step slowdown system
- Flyback type using parafoil
- Guidance flight control by pulling control line
- Front cam , top cam



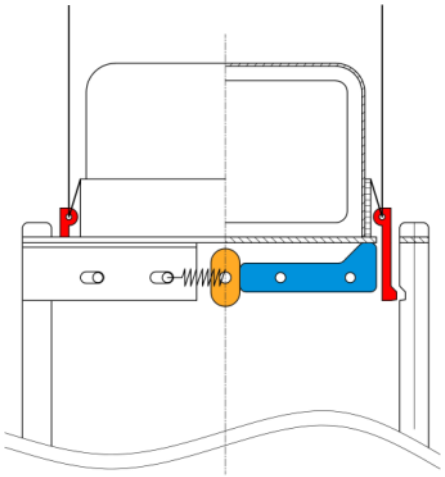
Parafoil structure

Mechanism of opening parafoil

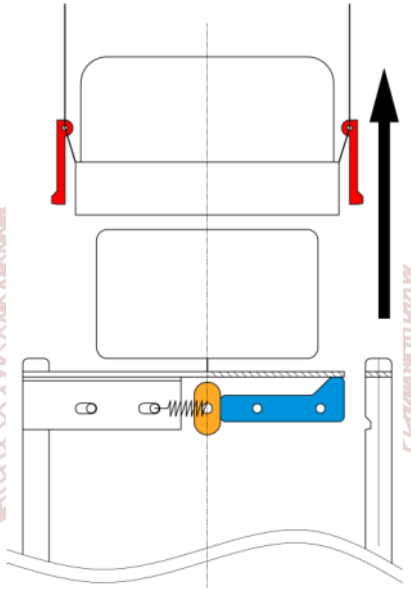
We developed tough and reliable new opening mechanism



Rocked



Cam action



Opened

- Opening shock of parachute conduct to hard parts
- Two pins separate from CanSat at the same time by action of a cam.

Mission

We aim to develop the technology which control the small UAVs with flexible wings from the sky to the destination correctly

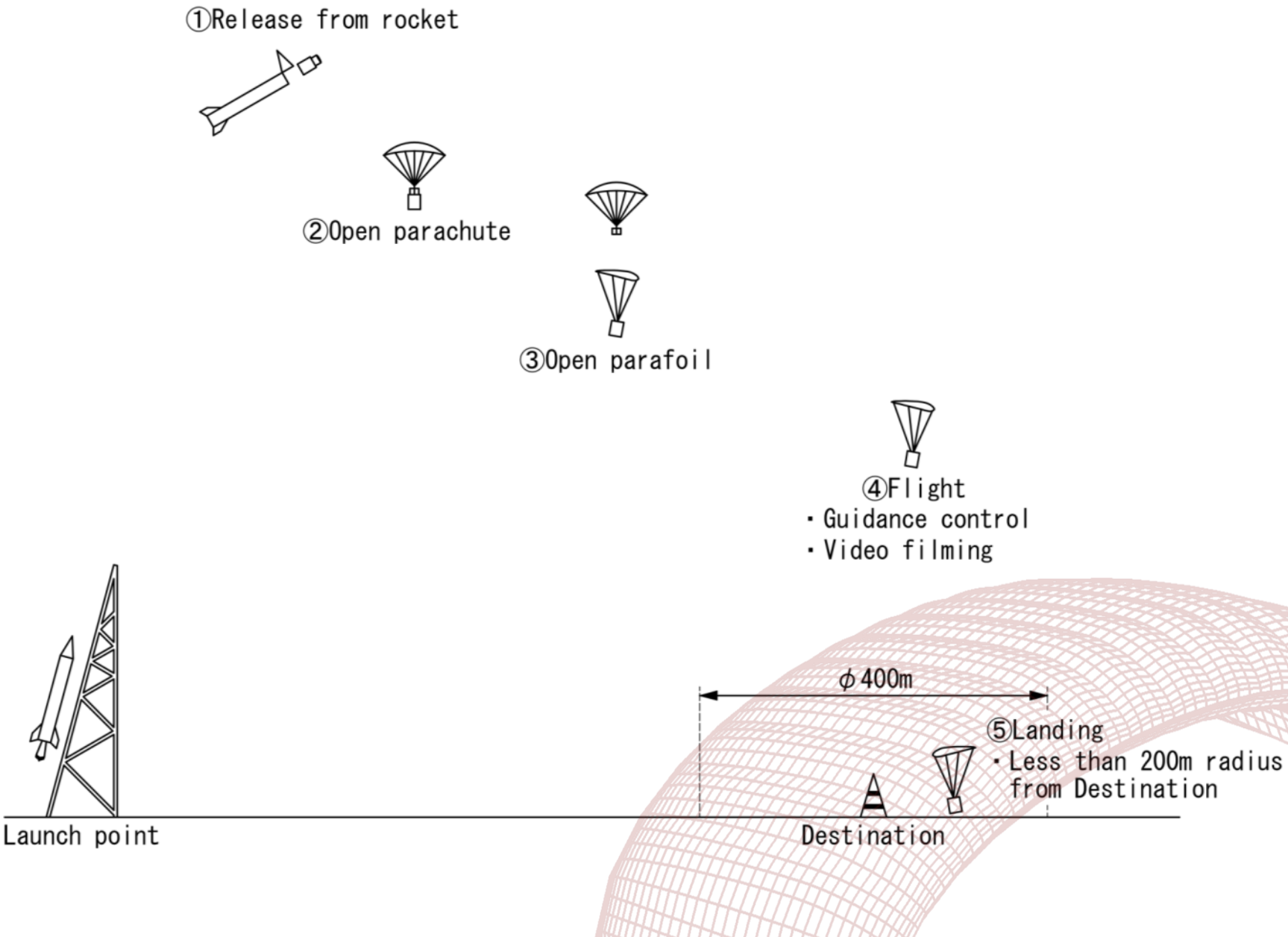
Minimum success

- Recover CanSat
  (Normal operation of a two-step slowdown system is needed)

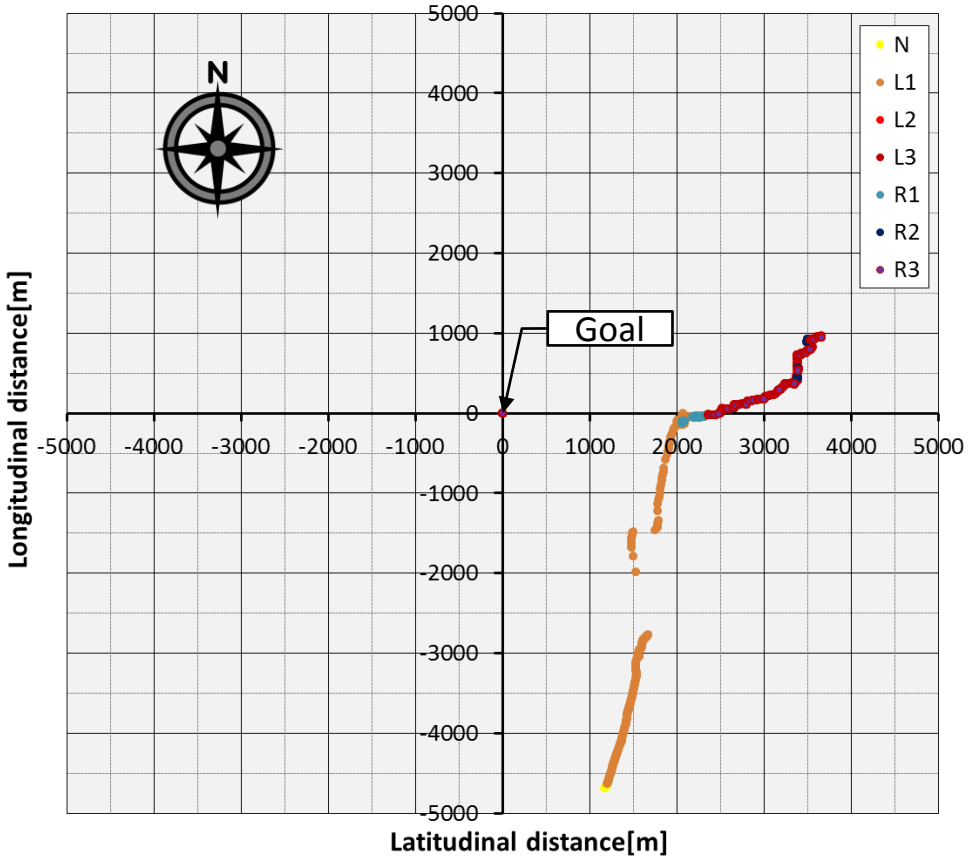
Full success

- Flyback within 200m radius from destination
- Video filming by front can and top cam during flight

Mission sequence

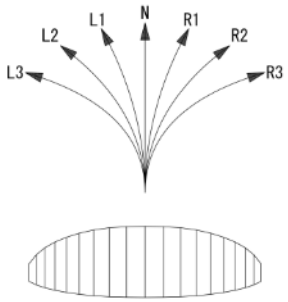


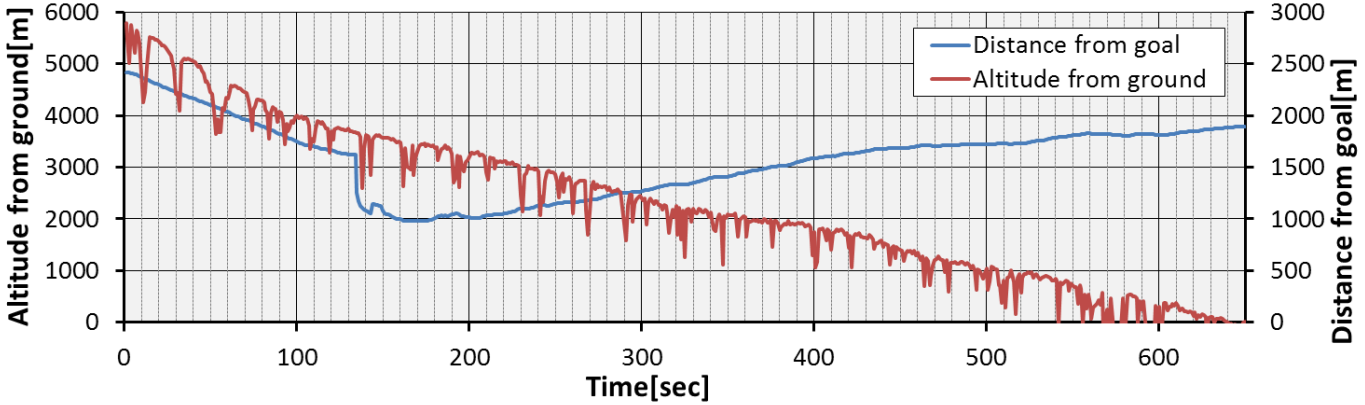
1st flight result



Result

Down link	Succeed
Recover CanSat	Succeed
Guidance Control	Succeed
Distance from the goal	3787[m]
Average velocity	9.5[m/s]





1st flight result

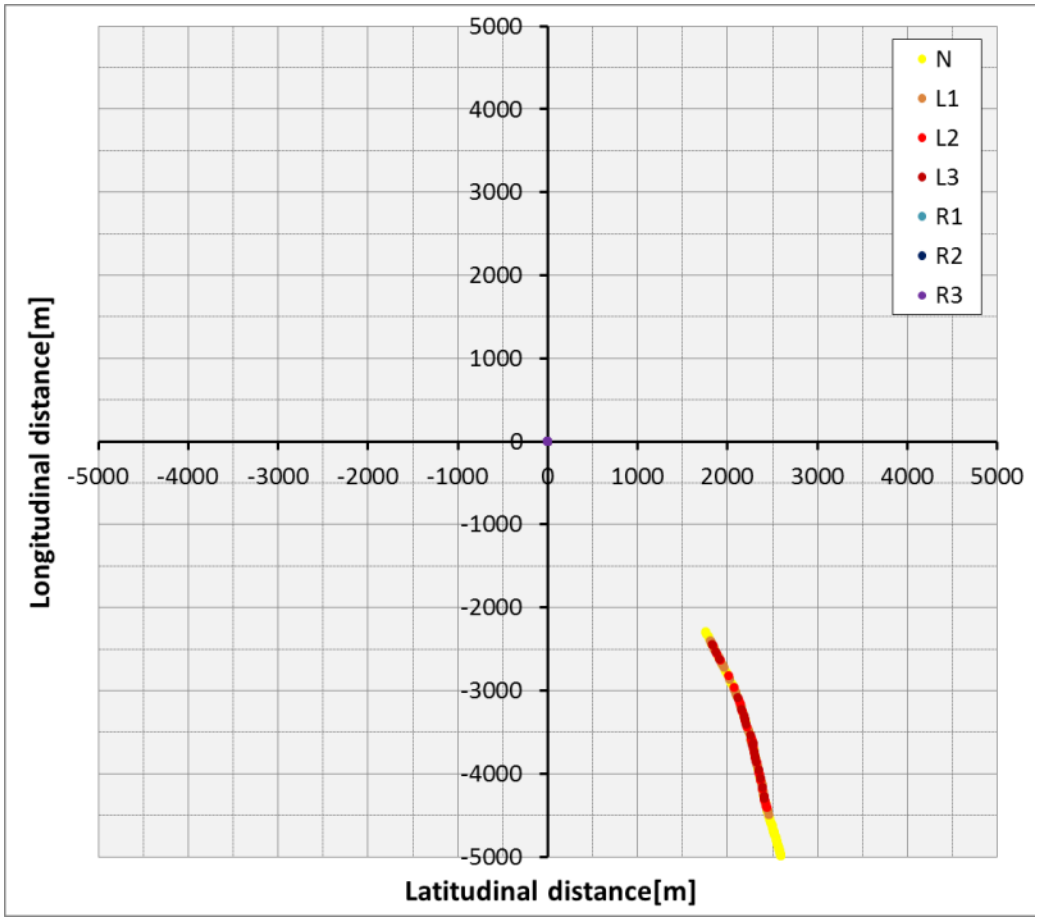
Front Cam

Top Cam

Acquired information from the videos

- Integrity of control and a flight path from the beep
- 3-axis motion of CanSat
- Status of opening parafoil

2nd flight result



Result

Down link	Failure
Recover CanSat	Succeed
Guidance Control	No-control
Distance from the goal	2306[m]
Average velocity	-

Summary

Comeback competition

- Distance from the goal … **3787[m] (1st flight)**
- Average velocity … **9.5[m/s] (1st flight)**

Mission competition

◆ Minimum success
- Recover CanSat … **Succeed** ✓

◆ Full success
- Flyback within 200m radius from destination … **Failure** ✘
- Video filming … **Succeed** ✓

Special thanks to AEROPAC , UNISEC
and your watching
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