

Management of Launchsite by Student

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@UNISEC-Global Student presentation

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Presenter

Kyohei Yashima

- Tokyo Institute of Technology
- Research area : deployable membrane
- Representative of UNISON-Japan, Rocket WG



Back ground

- In Japan, **17 teams** are developing and launching about **30 hybrid rockets** in 2016
- We have **three launch site** for hybrid rocket, Noshiro-Akita, Oshima-Tokyo and Kada-Wakayama
- All experiments in these launch site mainly **managed by students**



Launch site in Japan

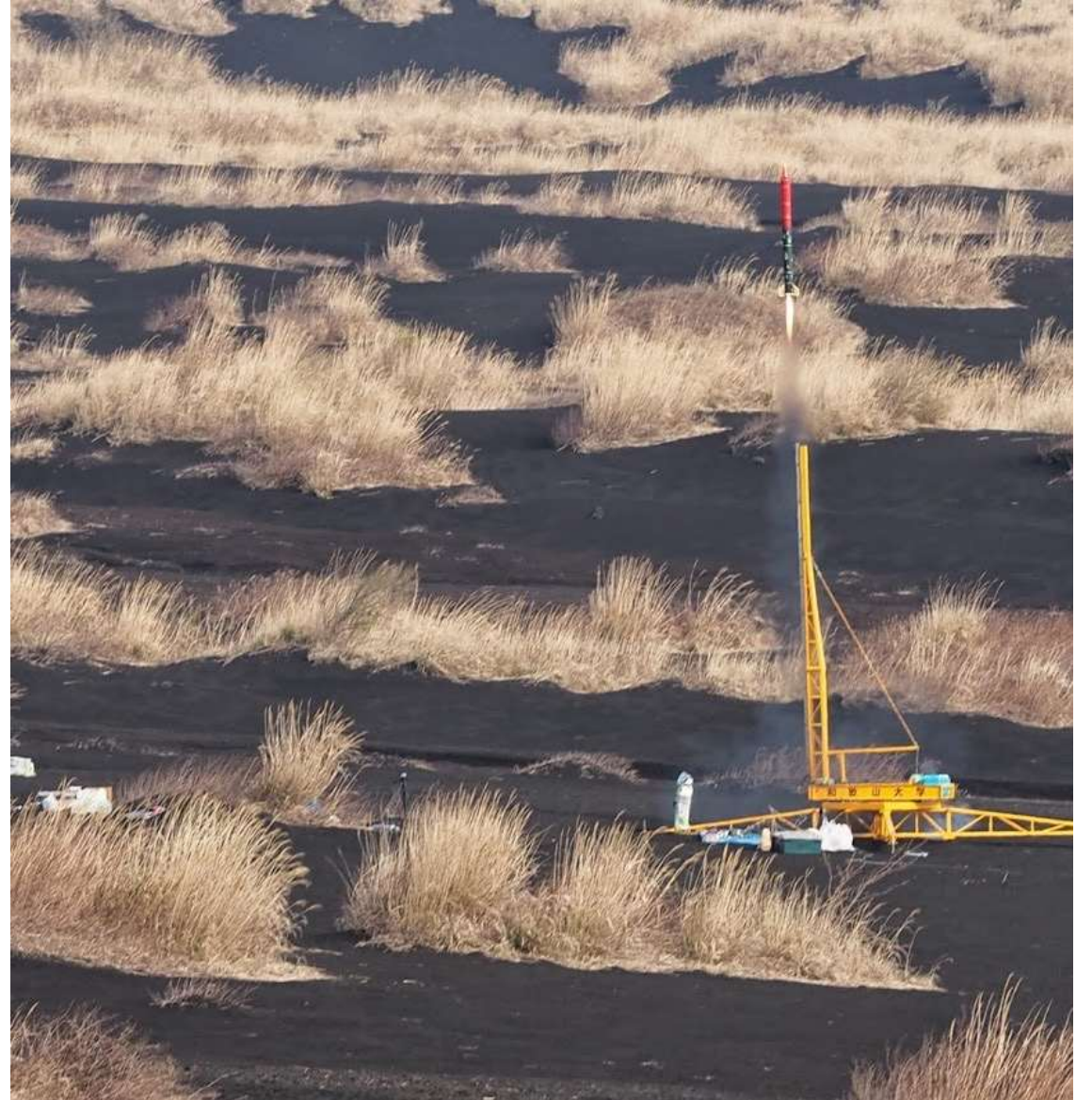
- Noshiro - Akita pref.
 - Most biggest launch site for hybrid rocket
 - The event in August contain Rocket, CanSat competition
- Kada – Wakayama pref.
 - In this launch site, we launch mainly model rocket
 - Lectures of rocket girl & boy



Oshima

- 90.76km², about 7600 people
- Famous for camellia & Mt Mihara
- The only desert in Japan



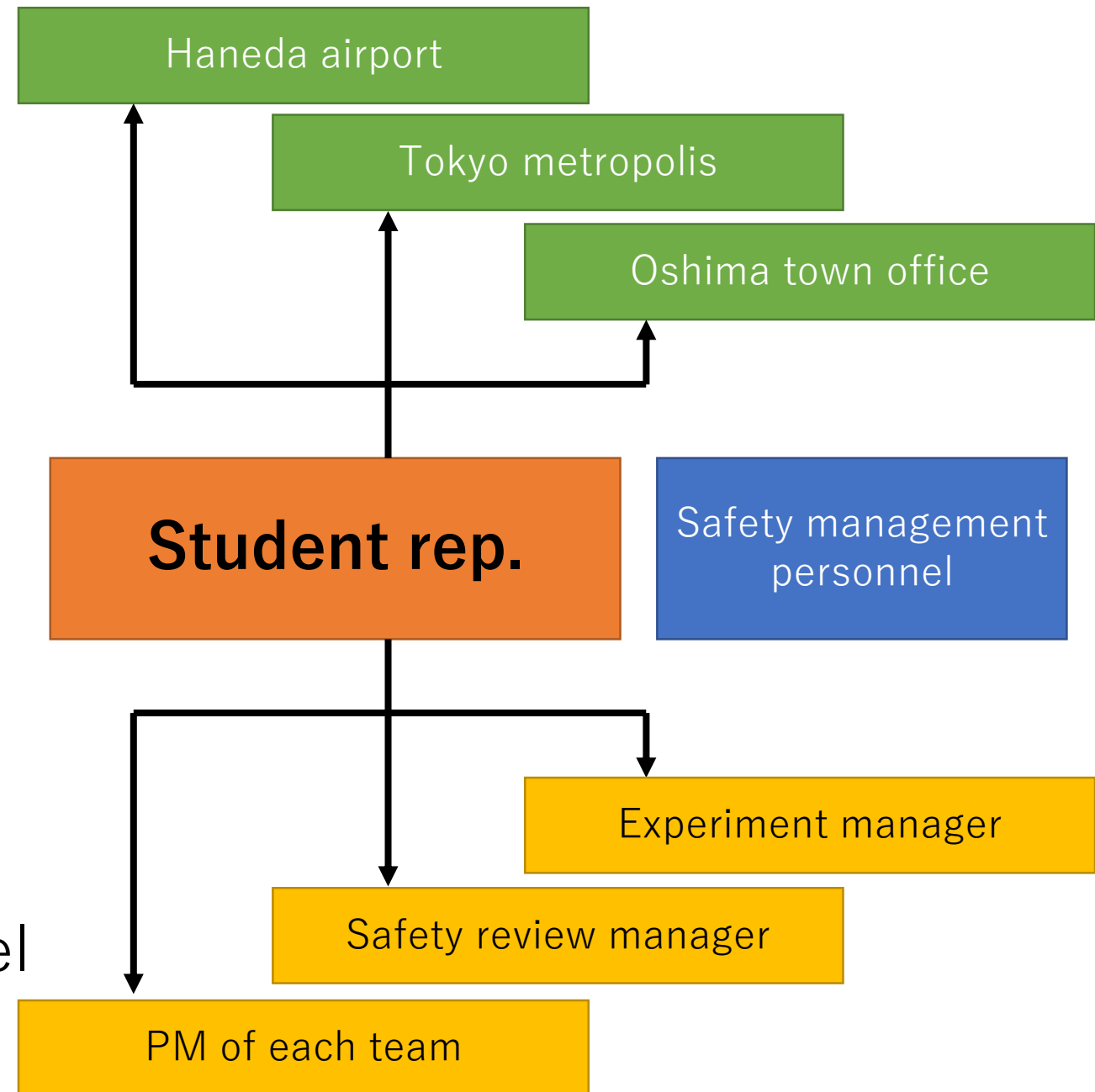




@chihiromasaki_2

Management team

- Three main role (student)
 - Representative
 - Experiment manager
 - Safety review manager
- Representative
 - Adjustment with the Oshima town office, airport, Tokyo metropolis
- Safety management personnel
 - From the university of the participating team



Schedule

Registration

- Correct the information about team by using Google foam

Kick off

- Hold kick off meeting and announce about the point of launch

Safety review

- Each team make document about safety of rocket launch and checked by management team

Launch

- Go to Oshima by ship
- Launch

Registration & Kick off

- 4mounth before the experiment, we start to correct information, because of the application
- Kick off meeting
 - Announce about the point of safety review
 - Behavior in the desert
 - Check the schedule

2015年度伊豆大島共同打上実験参加登録

2015年度11月および3月の打上実験への参加登録フォームです。
7月中のキックオフを予定しています。

***必須**

団体名を記入してください。*

代表者の名前を記入してください。*

代表者の連絡先を記入してください。*

例) 090-xxxx-xxxx izuoshima....@gmail.com

副代表の名前、連絡先を記入してください。*

例) 大島花子 090-xxxx-xxxx izuoshima....@gmail.com

Safety review

- From the kick off meeting to launch day, we perform two review
- Reviewer are the OB of each team
- Participating team write down the document, and reviewer team check each item(structure, propulsion system, recovery)

The image shows a screenshot of a document titled "図 12 □ フィンの固定図" (Figure 12: Fin Fixing Diagram). The document content includes a section "9. 搭載計器" (9. On-board Instruments) which describes the use of an Arduino data logger to record sensor data (3-axis acceleration, 3-axis gyro, 3-axis magnetometer, air pressure, and air temperature) on an SD card. It also details the logic for opening the parachute based on altitude and acceleration data, with specific thresholds like 0.5 seconds and 0.5g. The document is marked as "改ページ" (Revised Page) at the bottom.

On the right side, there is a sidebar showing the revision history for the document. The revisions are listed in a table-like format with columns for the reviewer's name, the revision number, and the description of the change. The revisions are as follows:

Reviewer	Revision	Description
西村恵寿	削除: 8.1	
Kyohei	不要	
Naoko Kita	削除しました。	
Naoko Kita	書式変更	
Naoko Kita	書式変更	
Naoko Kita	削除:	
Naoko Kita	書式変更	
Kyohei	検知方法	
Naoko Kita	加速度が9Gを0.5秒以上継続	
Naoko Kita	書式変更	
Kota Goto	"降下判定"の具体的な基準を記述	
Naoko Kita	気圧センサの読み取る値が	
Kyohei	降下判定ってなに?	
Naoko Kita	気圧センサの読み取る値が	
Naoko Kita	書式変更	
Kyohei	何を実行するの?	
Naoko Kita	書き足しました。サーボを	
Naoko Kita	削除:	
Naoko Kita	書式変更	
Kota Goto	0.5s 間継続した後、と 0.5s 間の継続	
Naoko Kita	にくかったので本文	
Kota Goto		

Application

- Haneda airport office
 - To make launch window
 - The flight path to Haneda airport are above oshima
 - In Japan, in the case of launch more than 150m, we need to apply
- Tokyo metropolis
 - 98% of oshima land are environmental protection area



Launch

- Set up the launcher
- Final review
 - Mainly check the center of gravity and size
 - If the error of CG is larger than 10%, the rocket can't launch
- Launch operation



Launch



Participation from other country

- South Korean team contact us to launch hybrid rocket in Noshiro
- Difference of law
 - Treatment of the high pressure gas and explosives
- To make it easy...
 - Make a checklist (or database ?) of difference of law
 - Early announcement and opening of registration



Summary

- Through the management, we learn about the adjustment with the stakeholder of our launch
- For global and more convenient launch, we should prepare
- Come to Japan and launch rocket

Thank you !!

Reference

<https://kadaevent.space/experiment/outline/>

<http://gojinka100.blog27.fc2.com/blog-date-20110707.html>