Kanazawa Institute of Technology
DreamLab UAV Project

狗鷲

Team members
Hirotaka Wanibe　　Fumiya Taga
Takayuki Nagawara　　Ryo Shinohara
Ken sasaki

Concept

Stabilize flight in the state equipped with control unit and payloads

Design method

We used CAD software(Solid Edge ST4) to design aircraft. We design aircraft and make main wing, tail wings and other parts in 1week～2week .

How to make

Our aircraft is handcrafted.
Body, main wing and tail wings made of Carbon and Balsa. also important parts made by using veneer.

Safety of aircraft

- Fail safe system that stop a aircraft in just a sec is equipped on it.
- A propeller is put backwards on a aircraft to avoid injuring people who have it in motion.

Control unit

- We use Ardino nano as an control boad, It equips 9qxis censor cacceleration,compass,gyrol and atomosphere censor.
- We use a landing way that photographing light from LED light Adopted on tip of aircraft by a macine on the ground which Rasberry pie, Xbee and camera.

EPP

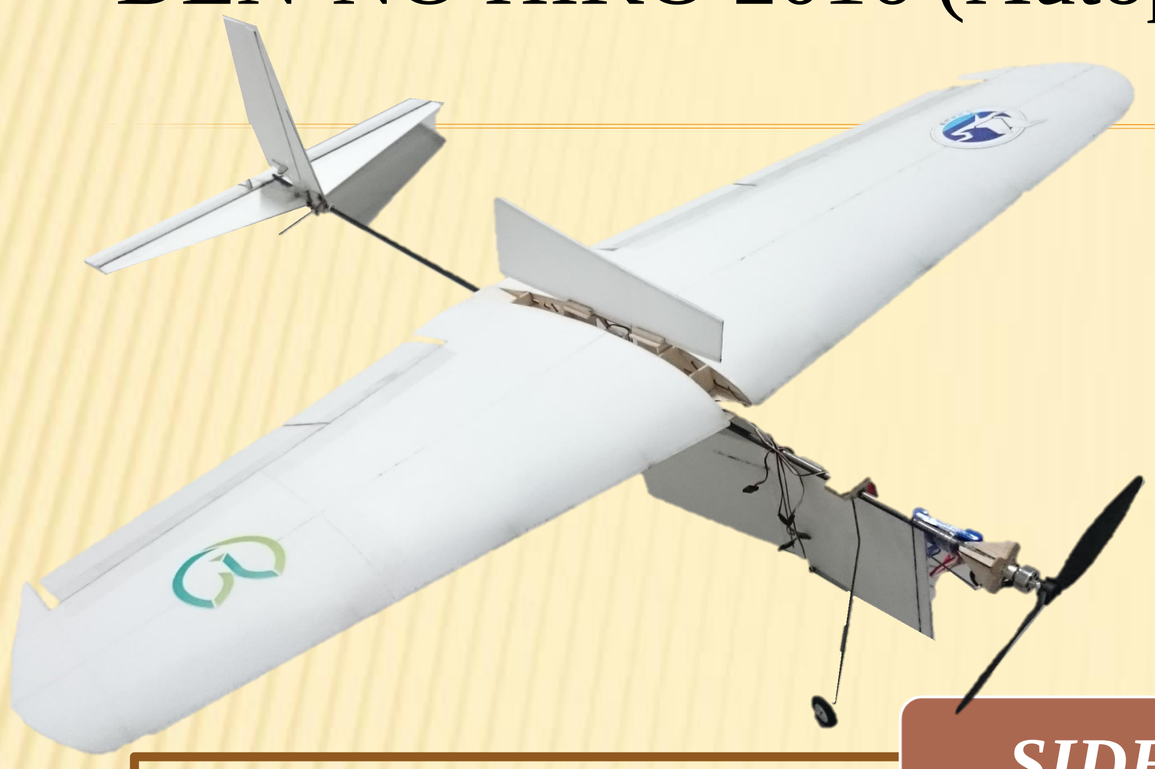
Main wing to Low speed ,High-speed flight and improve the strength of the leading edge and trailing edge reinforced with carbon.

YOKORYOKUN

YAMAGUCHI UNIVERSITY

DEN-NO HIKO 2016 (Autopilot)

Takeshita Tomohiro,
Sugano Yusuke, Hashimoto Ryuichi,
Okaya Tatsuya, Nomoto Masaaki

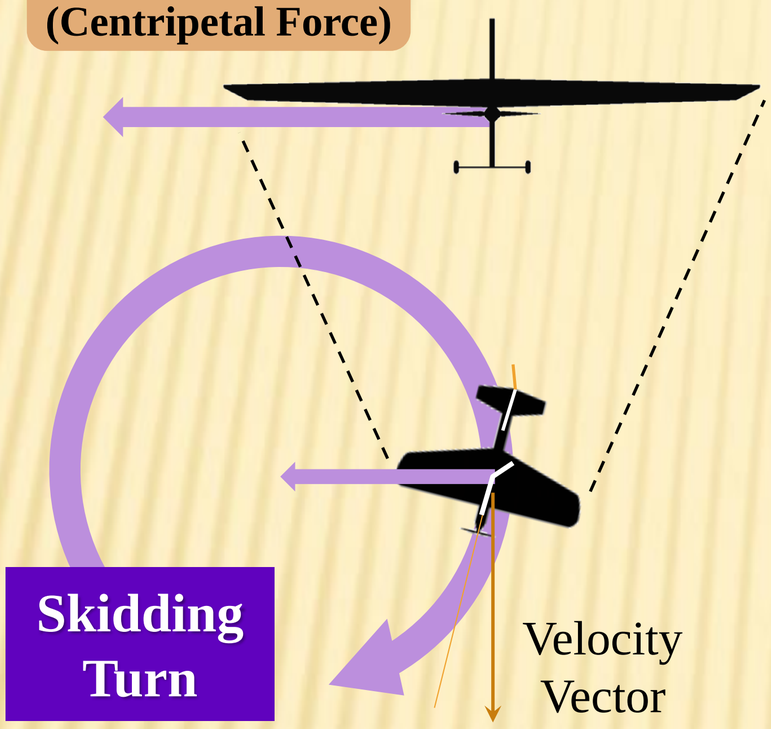


LENGTH x WIDTH x HEIGHT [mm]	1140x1100x280
WING AREA [dm^2]	29.6
EMPTY WEIGHT [g]	240
WING LOADING [g/dm^2]	8.1
CONTROL SURFACE	Rudder, Elevator, Ailerons, Side Force Fins

SIDE FORCE FINs

TURNING WITHOUT BANKING

Side Force (Centripetal Force)

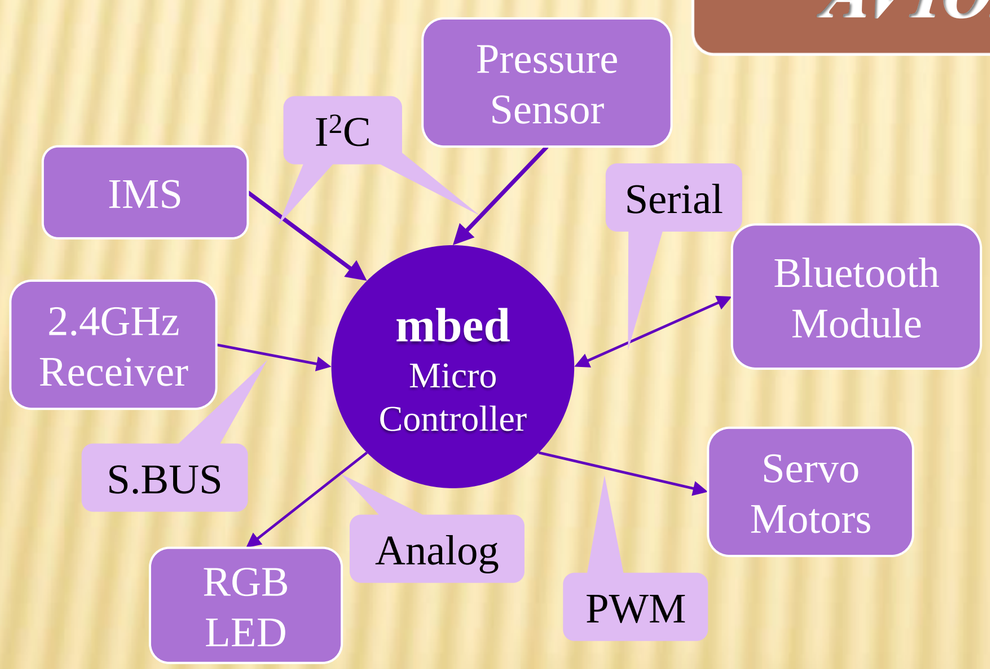


Movable Side Force Fin

Bigger side force is produced by a movable side force fin.

Turning without banking is enabled at a bigger turning rate.

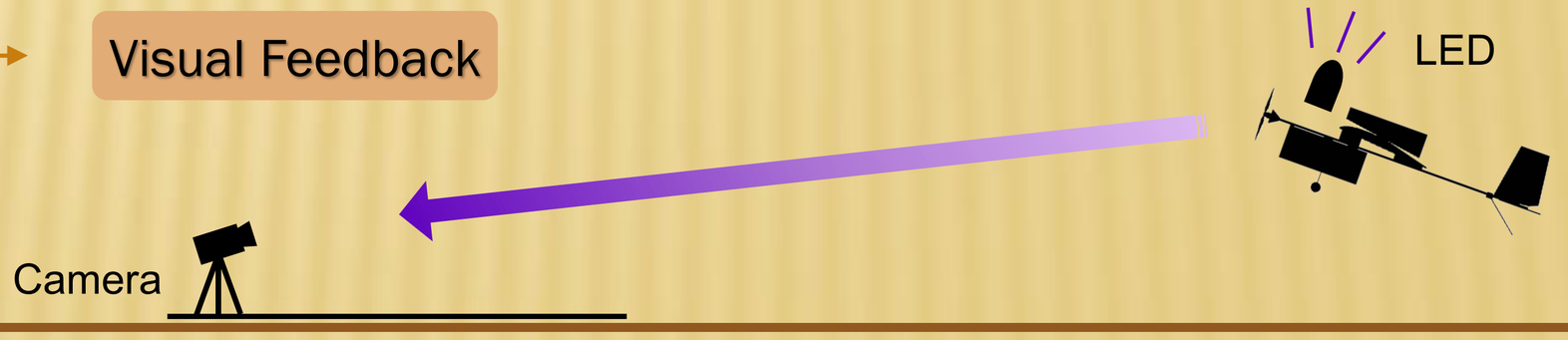
AVIONICS



Low Pass Filter (IIR)

AUTO LANDING

Tracking → Visual Feedback

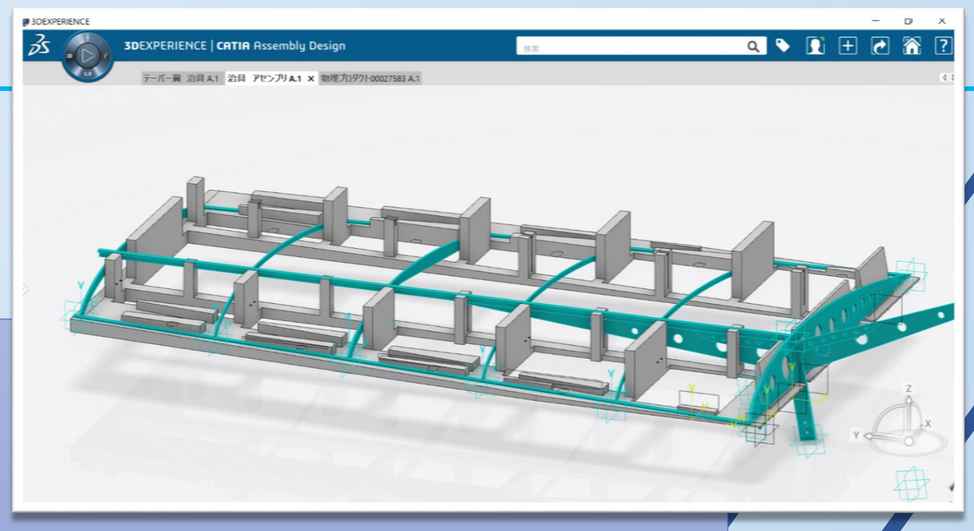


Alpha

The University of Tokyo

Team Leader: Toshiya Maki
Programmer: Ken Takaki
Pilot: Morito Katsuyama

Manager: Masaya Ido
Parts Designer: Tomoaki Yabu



Concept

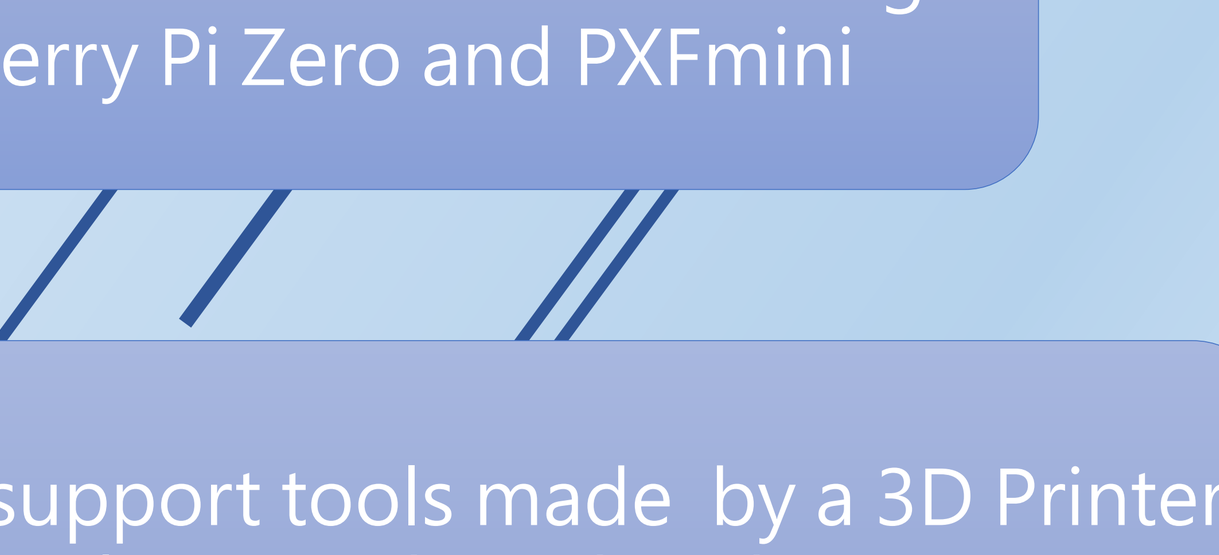
- Low wing loading
- Stable at low speed
- Automatic landing system using camera

Design

- Main wing designed by CATIA
- Three dimensional structure for torsional strength
- Avionics using Raspberry Pi Zero and PXFmini

Craft

- Main wing built using support tools made by a 3D Printer
- Composite Material of Balsa Woods and Carbon
- Laser-cut parts used



Safety

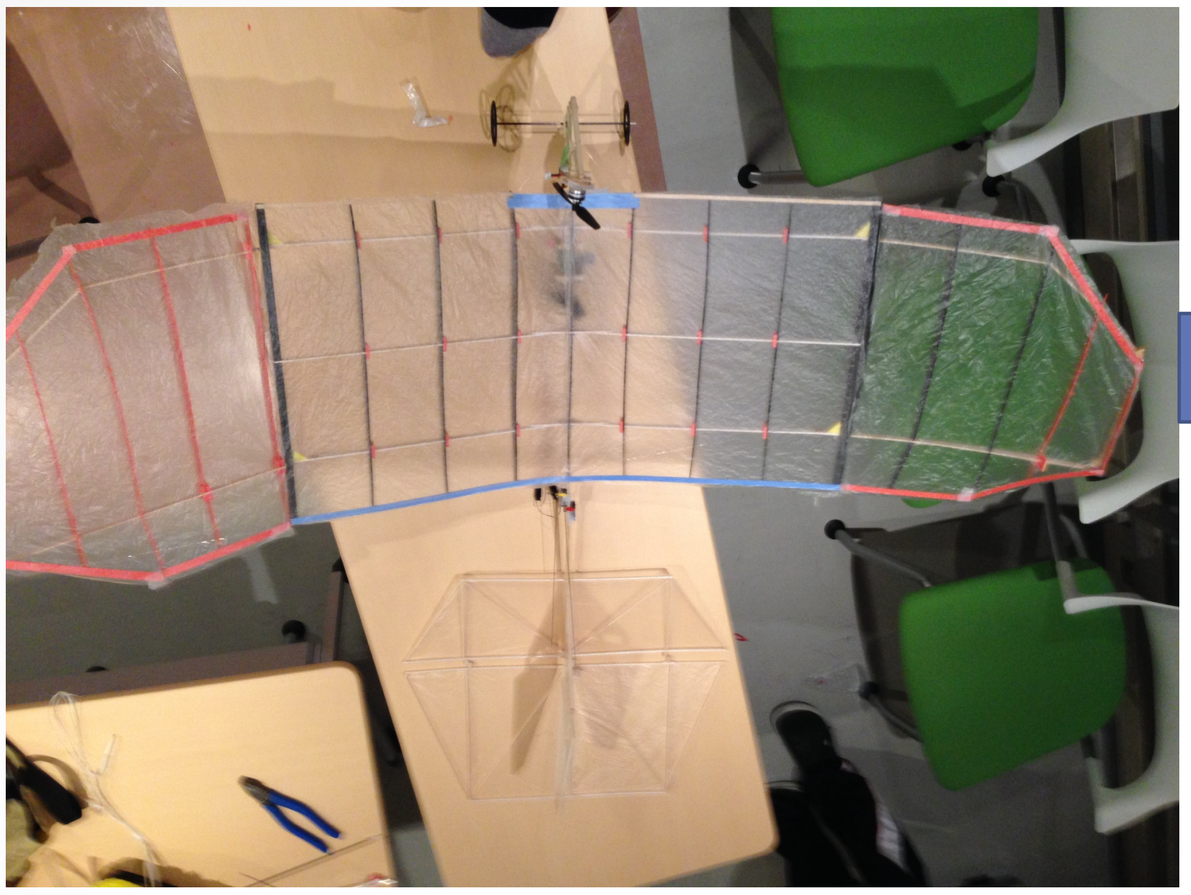
- Fail-safe system
- Using skid instead of tires to shorten landing run

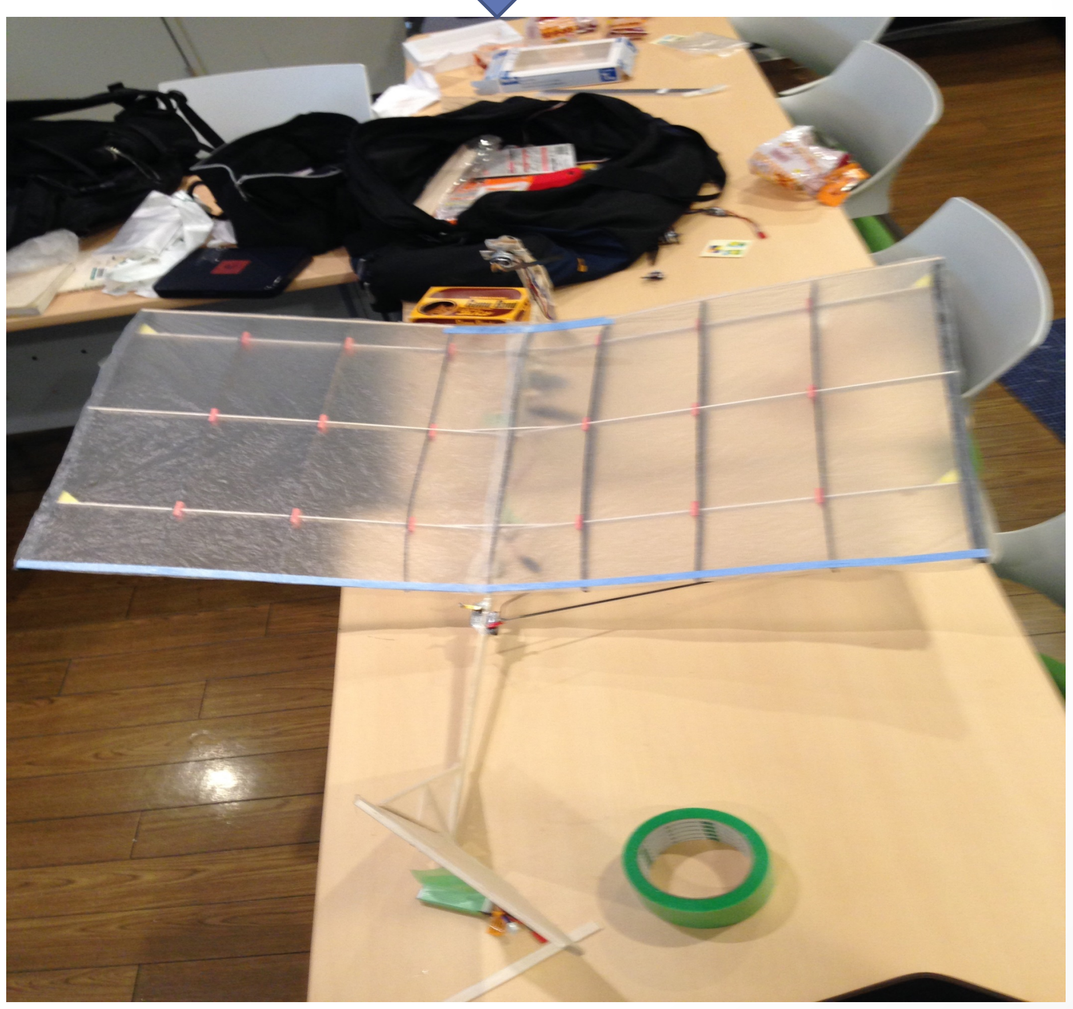
Nagoya University

ASAI Toshihiko
KURODA Kazuhide
SUGIUCHI Taiki

NAVI X-g

Separation of the Wing Tip





- The wing tip to the separation formula
  - Enable to increase in the size of the aircraft
  - The creation of spare parts can be easily