



Development of UAVs and MAVs in Osaka Prefecture University

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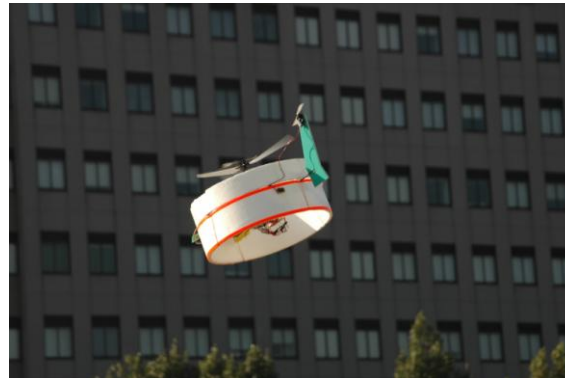
Osaka Prefecture University



Span: 60cm
Weight: 300g



Span: 42cm
Weight: 350g



Diameter: 40cm
Weight: 500g

■ MAVC1
(Micro Aerial Vehicle controller 1)



Size:75×55mm
Weight:29g

■ MAVC2
(Micro Aerial Vehicle controller 2)

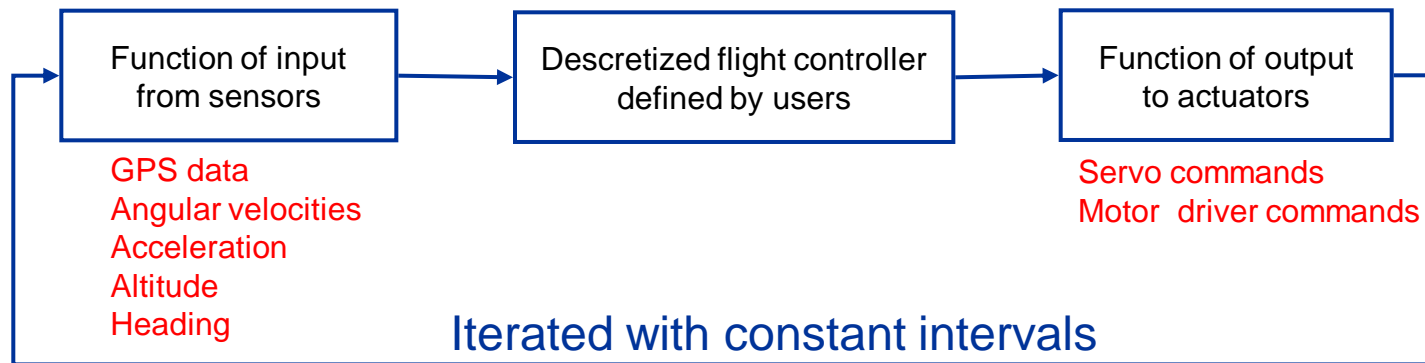


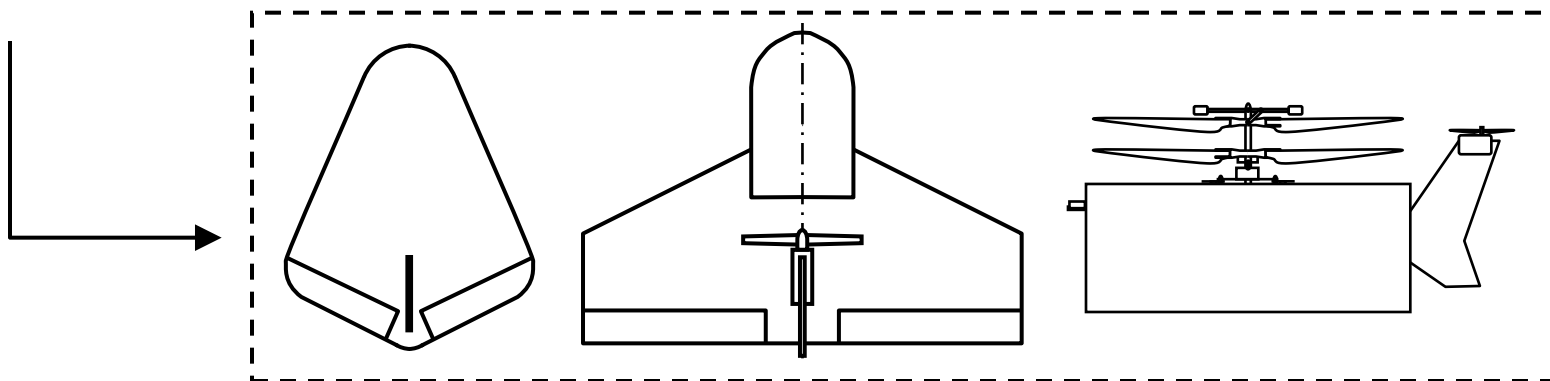
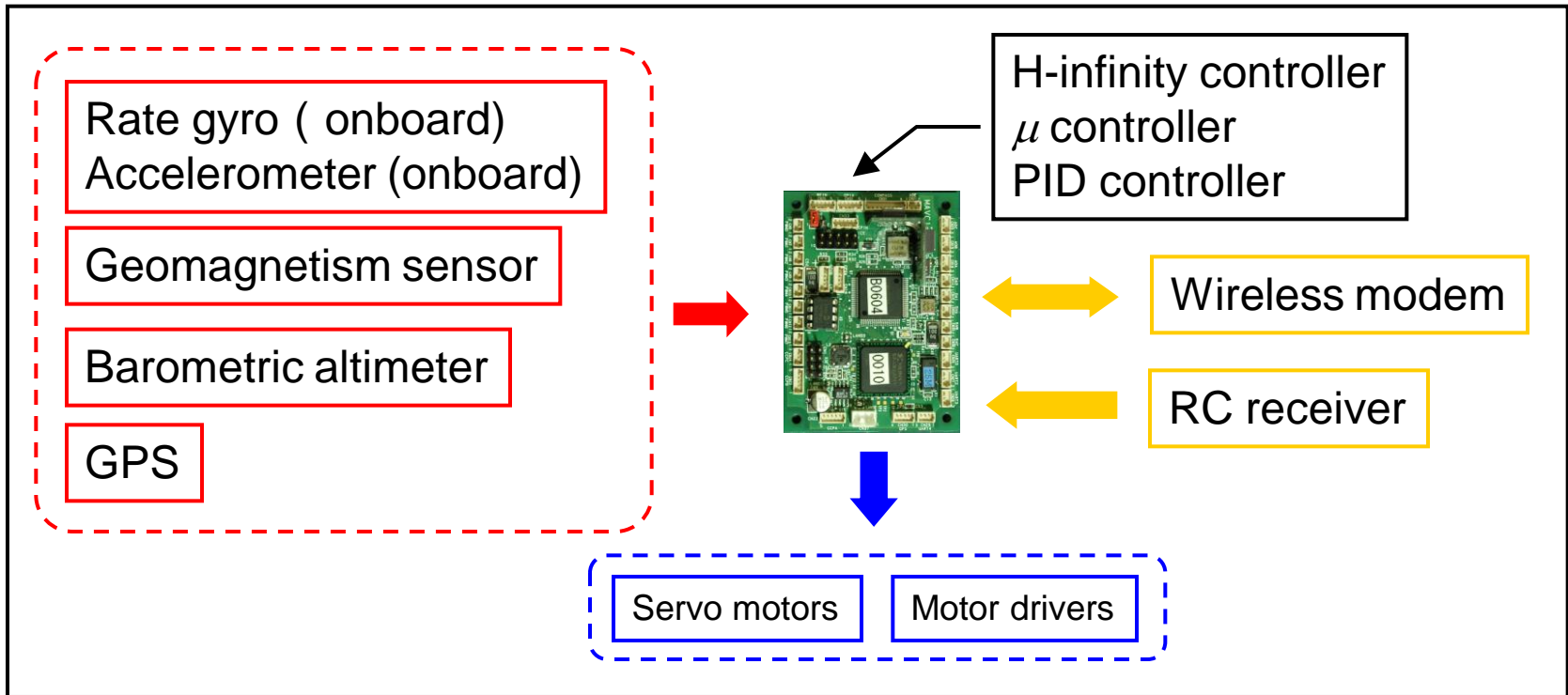
Size:40×35mm
Weight:4.6g

	MAVC1	MAVC2
PWM	8ch	3ch
Motor driver		1ch
CCP	10ch	3ch
A/D	6ch	1ch
D/A	2ch	
I/O	16ch	4ch
UART	4ch	2ch
Rate gyro	3ch (onboard)	2ch (onboard)
Accelerometer	3ch (onboard)	3ch (onboard)
Geomagnetism sensor	1ch	1ch (onboard)
GPS	1ch	Enable (UART)
Rotary encoder input	1ch	
5V output	3ch	1ch
Power supply	7.4-12V	3.4-4.5V-

1. Free C development environment can be used.
2. Many functions are provided.
3. Complicated flight controller can be implemented easily.

Provided basic structure



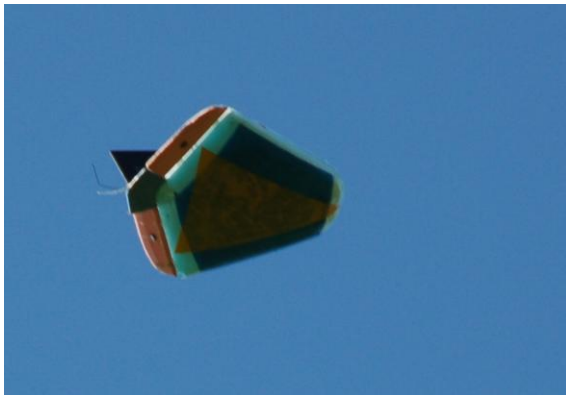


■ Autonomous aircraft (MANTA)



Span: 60cm
Weight: 300g
Duration: 15 minutes

■ Autonomous gliding aircraft (Mola mola)



Span: 42cm
Weight: 350g
Flying test model of Re-Entry Vehicle
Dropped from balloon

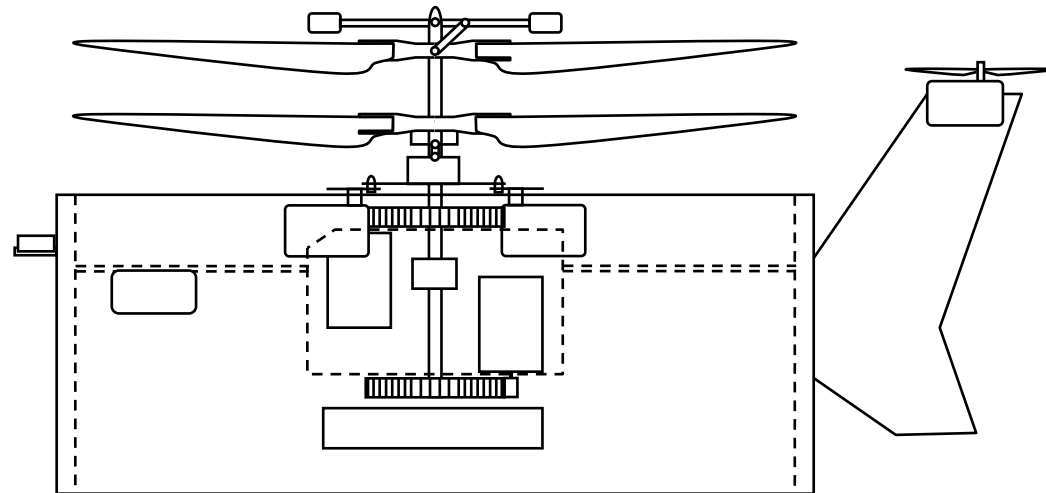
■ Autonomous co-axial Helicopter

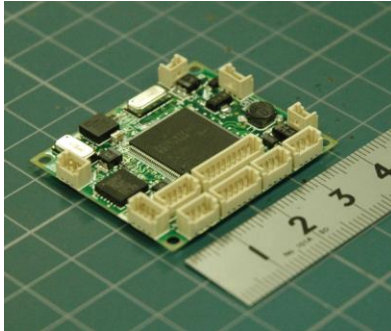


Diameter: 40cm

Weight: 500g

Duration: 3 minutes

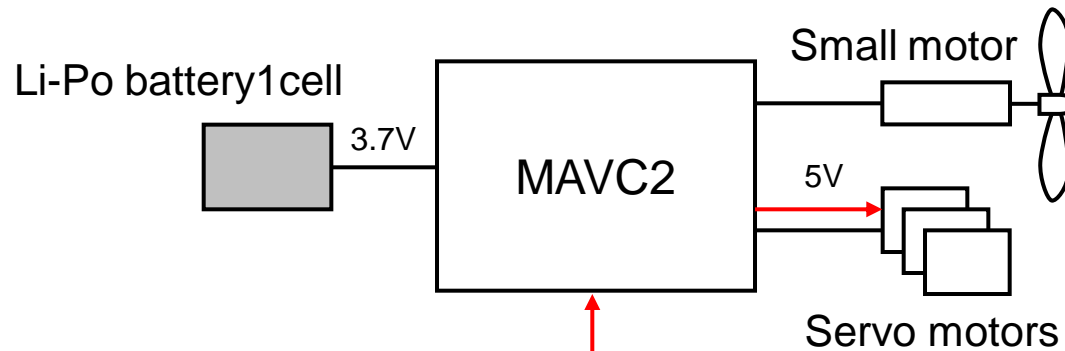




Size:40×35mm
Weight:4.6g

MAVC2 will be applied to Indoor MAVs.

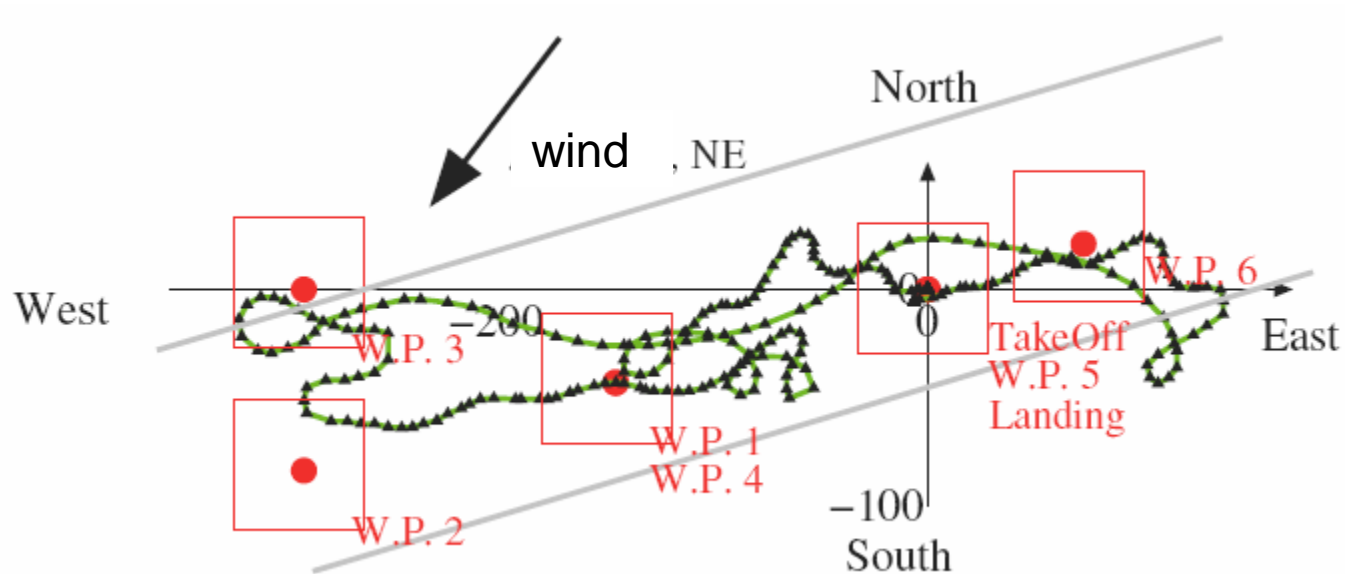
- Fixed wing aircraft
- Airship
- Ornithopter



Inertial navigation system using rate gyros, accelerometers and geomagnetic sensor.

Autonomous flight is performed.

1. Hand launch
2. Waypoints tracking
3. Automatic landing



Example of results