GRiffin : THE INTEGRATION

05.05.2021 - Raphael Zufferey
E-Flap: Recent Progress

510 g

Wingtips
Wingtip actuation
Roll control

[Mar, Fran, Jesus]
E-Flap: Recent Progress

510 g

Wingtips
Wingtip actuation
Roll control

[Mar, Fran, Jesus]

New hinges
[Cristina, Lorena]

To wingtip

Tendon guide

Asymmetric Servo Drive
E-Flap: Recent Progress

510 g

Wingtips
Wingtip actuation
Roll control
E-Flap: Recent Progress

510 g

Wingtips
Wingtip actuation
Lift improvement

[Mar, Cristina]
**E-Flap : Recent Progress**

510 g

- Stabilization while perched

- Possible mission: Flying through hazardous environments, narrow spaces, higher maneuverability.

**Wing Folding**

3x span reduction

173g folding system

[Lorena]
E-Flap: Recent Progress

510 g

- Drag reduction? Impact protection?
- Weight?
E-Flap: Recent Progress

510 g

Wings
Fabric tension
Leading-edge spar
Improved airfoil
Sweep angle

[Ema, Vicente]
E-Flap: Recent Progress

510 g

Herkulex DRS-0101
STM32F303
End effector
Carbon fibre links
Pololu micro servo

Manipulator
2 DoF
Servo controlled
[Ivan, Alejandro]
E-Flap: Recent Progress

510 g

Launch
Free flight
1000 Hz force measure
6 cm branch

Legs
Currently 105 g
Absorb impact energy
Last meter position control

[Daniel, Saeed]
E-Flap: Recent Progress

510 g

*new leg

Legs
Currently 105 g
Absorb impact energy
Last meter position control
[Daniel, Saeed]
E-Flap: Recent Progress

510 g

Legs
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[Daniel, Saeed]
E-Flap: Recent Progress

510 g

Compression reopening driver

Claw
High speed / force
Misalignment tolerance
[Vicente, Daniel, Saeed]
Claw
High speed / force
Misalignment tolerance
[Vicente, Daniel, Saeed]
E-Flap: Recent Progress

510 g

Claw
High speed / force
Misalignment tolerance
[Vicente, Daniel, Saeed]
E-Flap: Recent Progress
510 g

- Motor
- Strain gauges
- Flexible link
- Gauges amplifier + microprocessor

Manipulator
Ultralight
Environment interaction
Estimation of contact point along manipulator

[Daniel]
E-Flap : Recent Progress
510 g

To reduce flight velocity:

• Higher angle of attack
• Improve lateral manoeuvrability
• Increase upwards tail deflection