

Intelligent Emergency Rescue UAV

—LOONGS(LOONG EE & LOONG ER)

Speaker: AngeL Express



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LOONGS' Structural Features

LOONG--EE

Functions

- To manually complete the logistics delivery of emergency relief supplies, blood bags, medical supplies and the wounded.

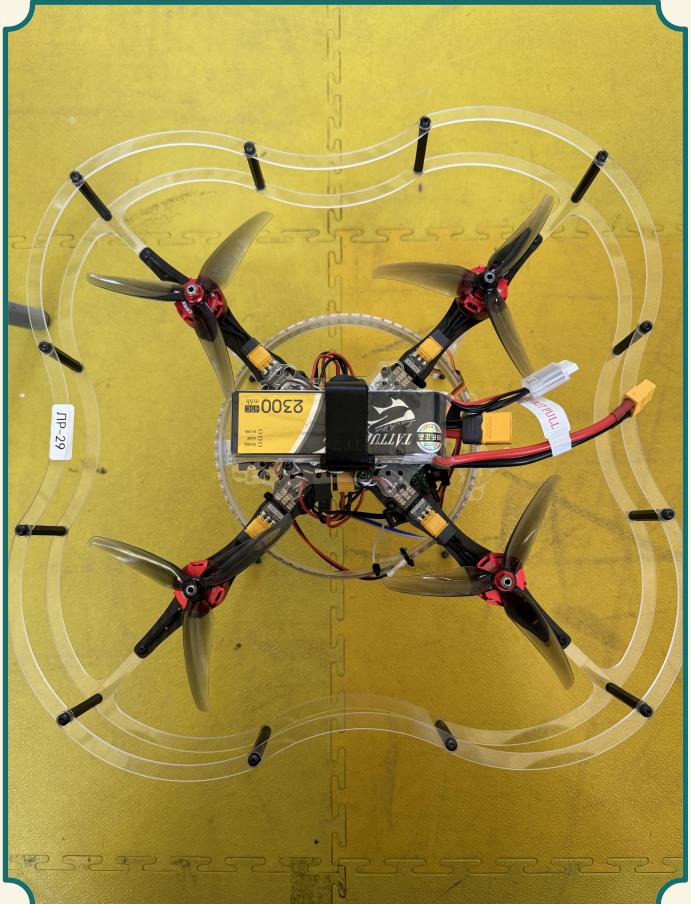
Features

1. High flexibility
2. Real-time and accuracy
3. Broad applicability





LOONGS' Structural Features



LOONG--ER

Functions

1. Autonomous flight
2. Diversified task execution
3. Intelligent management and control

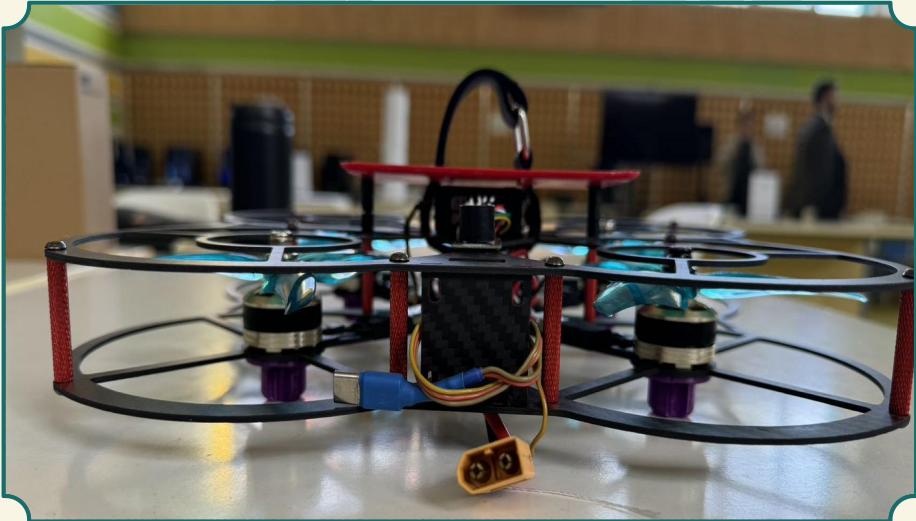
Features

1. Highly automated
2. Highly efficient and convenient

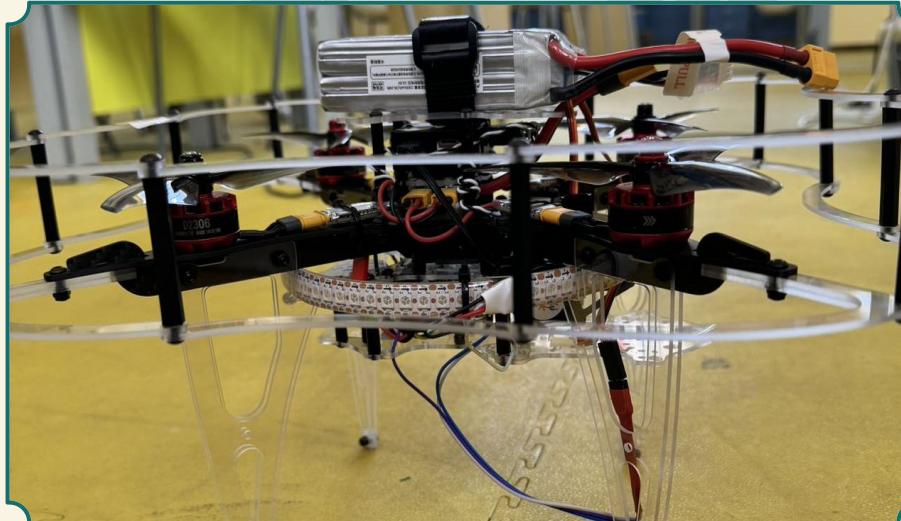


LOONGS' Structural Features

Mechanical System



LOONG-EE



LOONG-ER



LOONGS' Structural Features

Control System

```
take off to [1] wait [2]
wait [3] seconds
set LED effect fill [red] with color [red]
navigate to point
x [0]
y [5]
z [1]
relative to [marker]
with ID [62]
with speed [0.5]
wait [2]
wait [3] seconds
set LED effect fill [red] with color [red]
navigate to point
x [6.5]
y [0]
z [1]
relative to [marker]
with ID [27]
with speed [0.5]
wait [2]
wait [3] seconds
set LED effect fill [red] with color [red]
navigate to point
x [0]
y [5]
z [1]
relative to [marker]
with ID [89]
with speed [0.5]
wait [2]
wait [3] seconds
set LED effect fill [yellow] with color [yellow]
rotate by [90] relative to [body] wait [2]
set LED effect fill [yellow] with color [yellow]
navigate to point
x [0]
y [-5]
z [1]
relative to [marker]
with ID [27]
with speed [0.5]
wait [2]
wait [3] seconds
set LED effect fill [yellow] with color [yellow]
rotate by [-90] relative to [body] wait [2]
set LED effect fill [yellow] with color [yellow]
navigate to point
x [0]
y [0]
z [0]
relative to [marker]
with ID [62]
with speed [0.5]
wait [2]
wait [3] seconds
set LED effect fill [green] with color [green]
rotate by [90] relative to [body] wait [2]
set LED effect fill [green] with color [green]
navigate to point
x [0]
y [0]
z [0]
relative to [marker]
with ID [0]
with speed [0.5]
wait [2]
wait [3] seconds
set LED effect fill [green] with color [green]
land wait [2]
```



Blocks Python

- Flight
- State
- LED
- GPIO
- Logic
- Loops
- Math
- Text
- Lists
- Colour
- Variables
- Functions

```
take off to [1] wait [2]
wait [3] seconds
set LED effect fill [red] with color [red]
navigate to point
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relative to [marker]
with ID [0]
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wait [2]
wait [3] seconds
set LED effect fill [green] with color [green]
land wait [2]
```

Raspberry PI code



LOONGS' Structural Features

Easy-to-dismantle interface



Drawing



Prototype

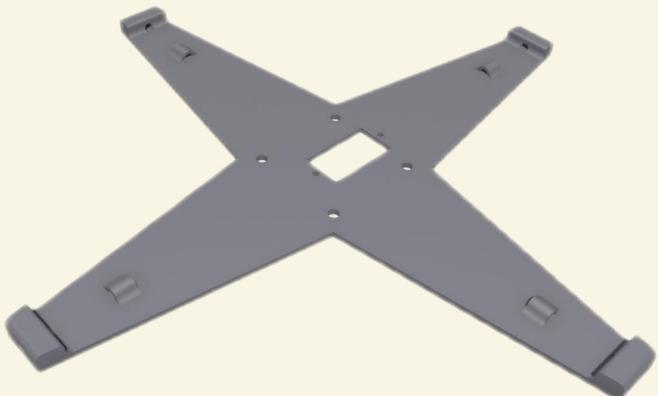
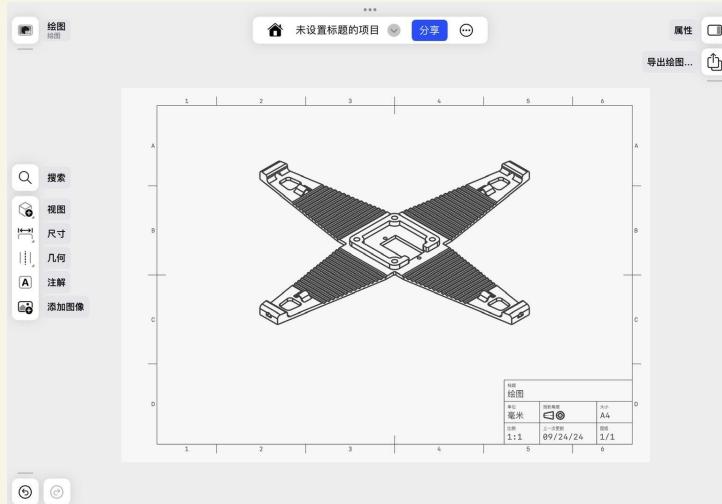


Product



LOONGS-Structural Features of Load

Mechanical Arm



Drawing

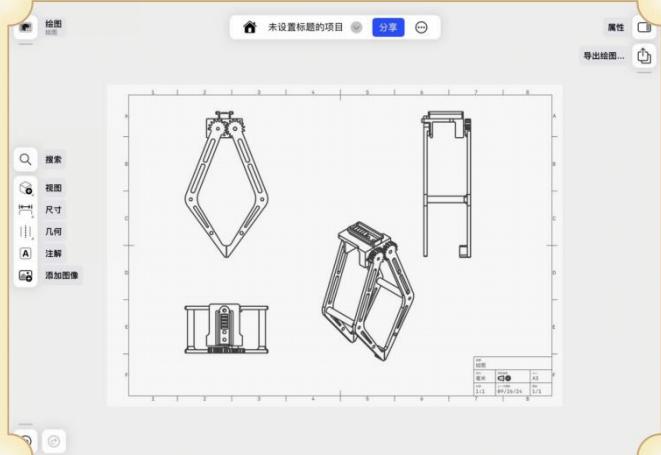
Prototype

Product



LOONGS-Structural Features of Load

Mechanical Grab



Drawing



Prototype

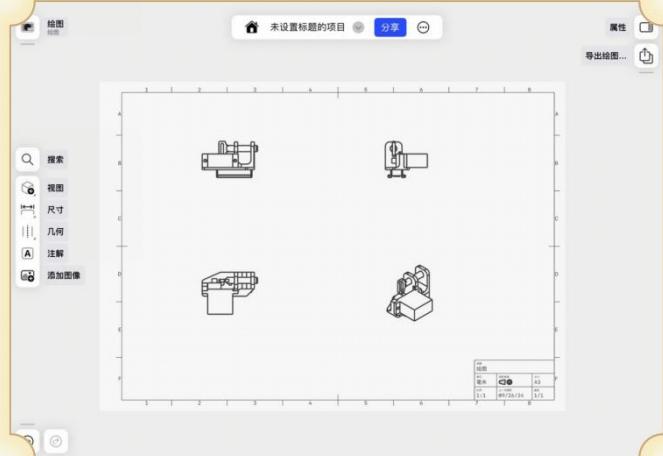


Product

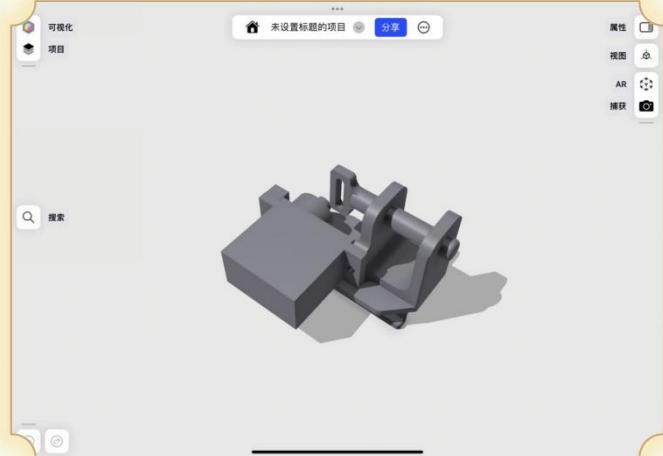


LOONGS-Structural Features of Load

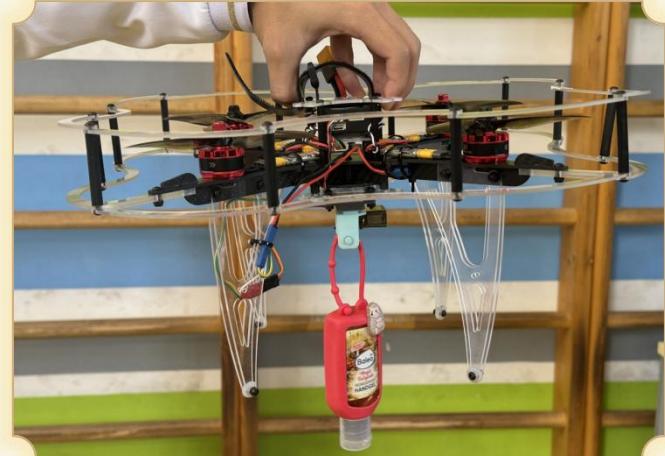
Throwing device



Drawing



Prototype

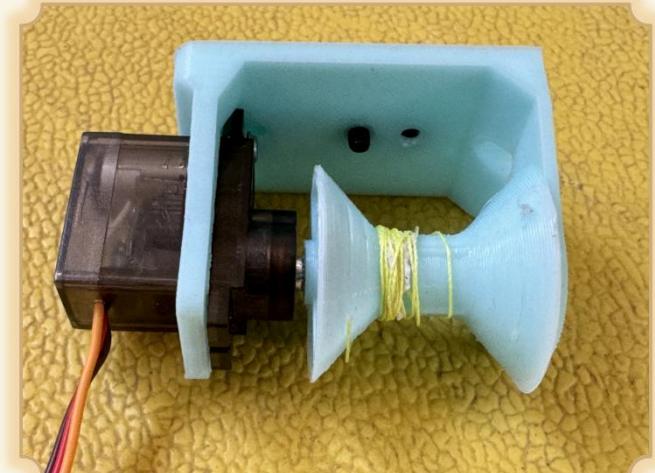
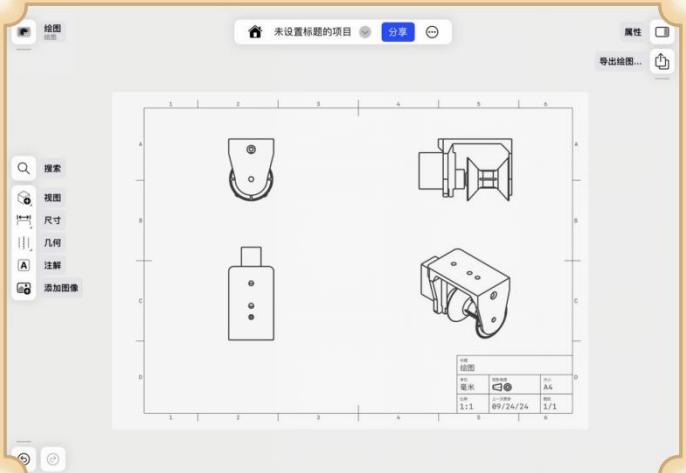


Product



LOONGS-Structural Features of Load

Halyard drop



Drawing

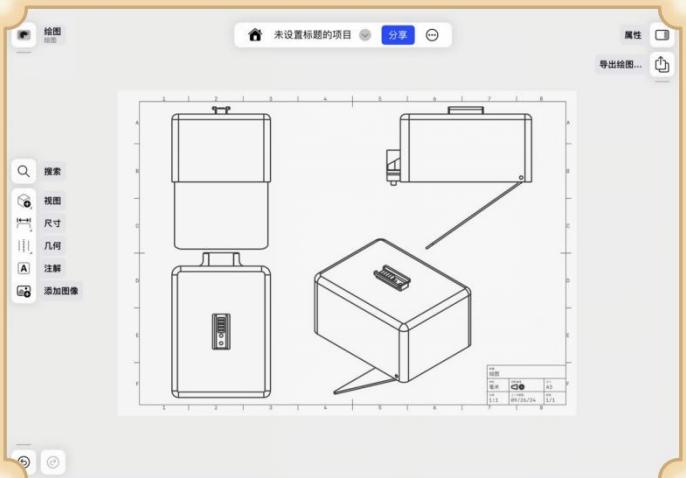
Prototype

Product



LOONGS-Structural Features of Load

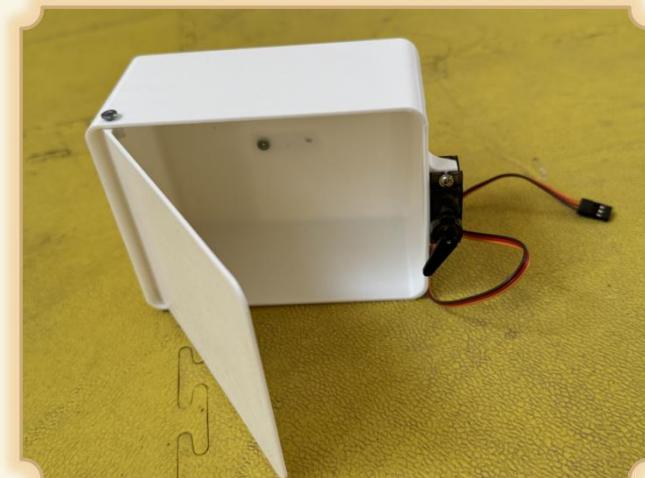
Dropping box



Drawing



Prototype



Product



LOONGS-Optimized configuration of assembly parameters

LOONGS Assembly

- parameters configuration in structural design, propulsion system, flight control system, sensor system and communication system

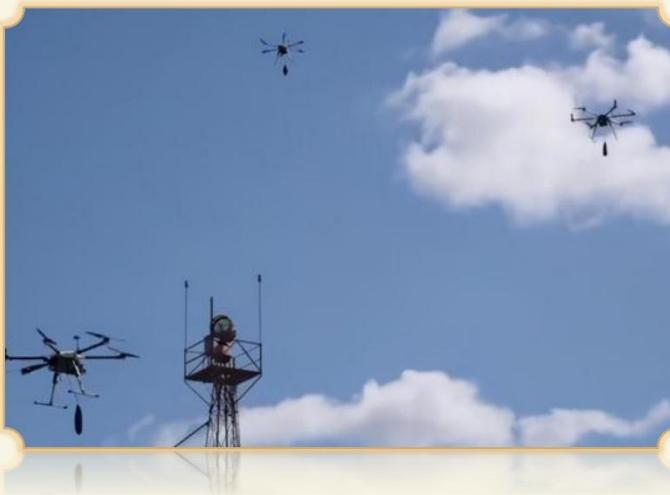




Functions & Innovation of LOONGS



Manual & Automatic Flight



Multifunctional & Multicontrol Flight

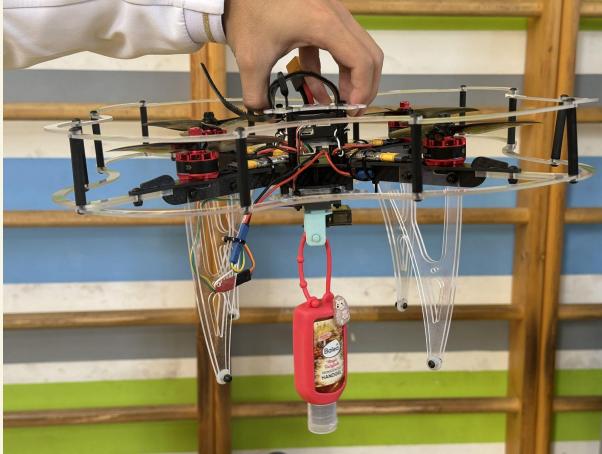


Cooperative Control of Automatic Cluster



LOONGS-Optimized configuration of assembly parameters

LOONGS' problem-solving demonstration



Regular Polygon



Sphere



Irregular Shapes



Blood



Ice Tube



LOONGS' Prospect Forecast



Graph transfer links of UAV

Broad prospects of UAV in scale and commercialization