

AirFlexi
Flex your air journey



AIRFLEXI
Make everyone's life easy and simple



Scenarios



What new advertising methods can I suggest to my company?



I want to monitor my child safety to school

I forgot my passport for a work trip...

I want to ensure my safety at night..

I got injured during a hike...anyone can give me medication quickly?

Problem Definition



Problem Definition

Drone services are not popular enough because current commercial UAVs cannot collaborate effectively with each other, limiting their operational capabilities to become popular in daily applications



Ineffective communication network

Current UAVs are good at performing individual tasks, but not group tasks



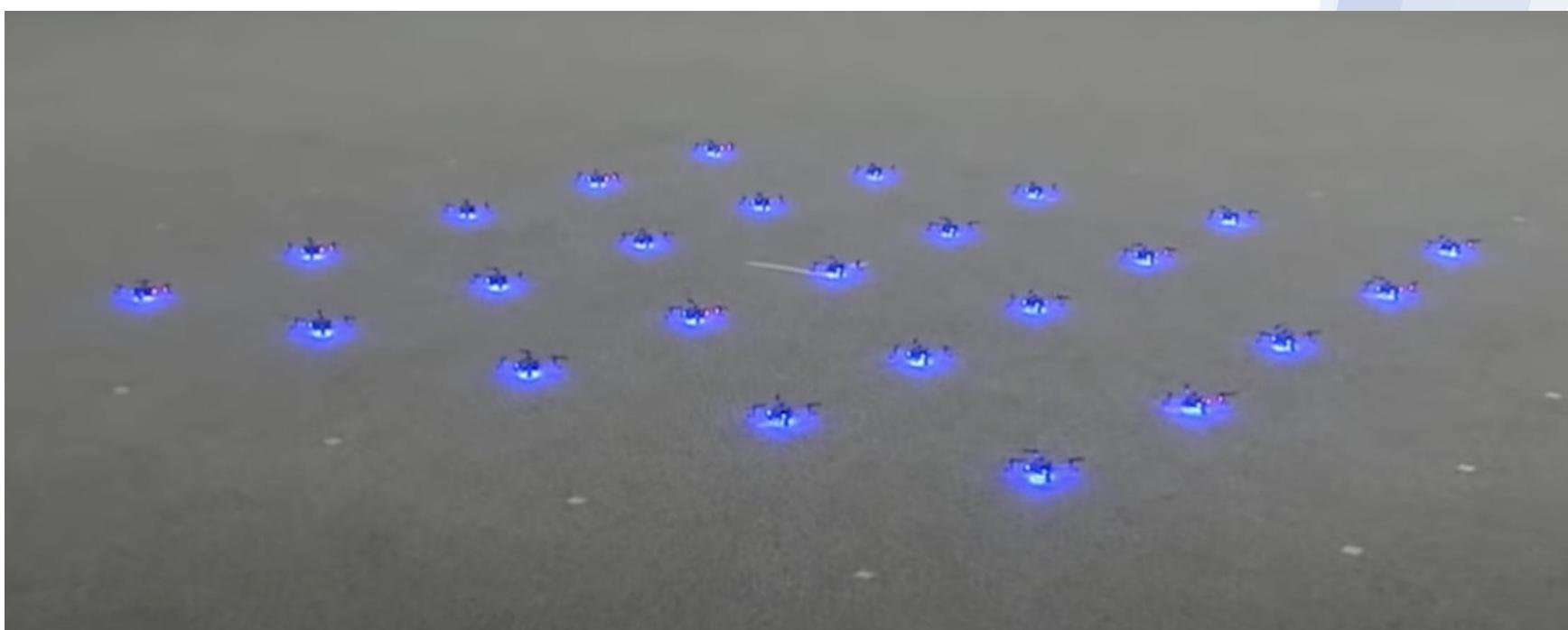
Limited operational capabilities

Current UAV design has very limited payload and battery life

Our Solution

What if ...

We can coordinate serval small drones to perform certain daily tasks, but not limited to drone show?

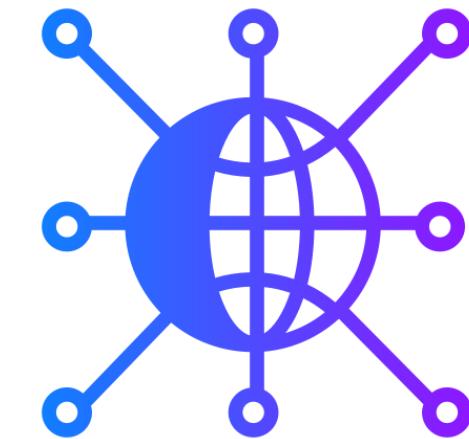


Value Proposition

AirFlexi is a service provider where businesses and individuals can easily utilize drone technology for daily tasks



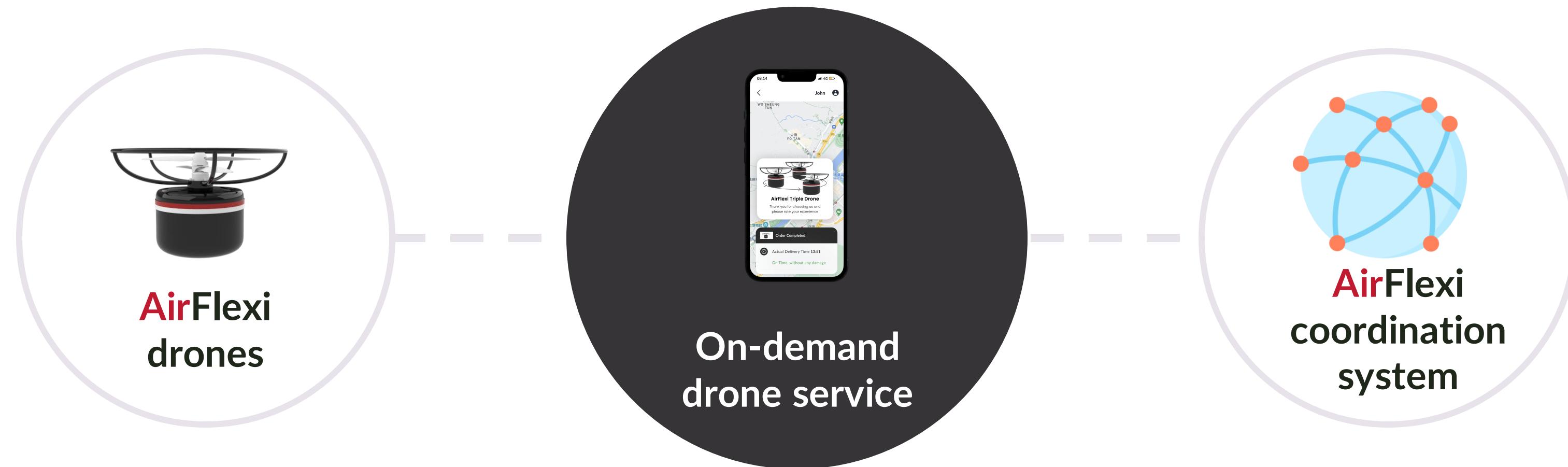
**1 + 1 > 2
Unique payload
mechanism**



**Decentralized
Cooperative
Network**

Our Solution

AirFlexi, a platform which combines our drones and coordination system to provide on-demand drone services





Our Solution – Comparison with conventional drones

Coaxial drone design outperform the conventional drone design



(Other Conventional Drones)

Less Power Efficient
(ie. Lower Lift Capacity)
due to Single-rotor designs

Less Stability

Unbalanced Torque and
Gyroscopic Precession

Louder Noises

Uncancelled Mechanical
noise and Aerodynamic Noise



AIRFLEXI_BFQ1100

Efficient Use of Power

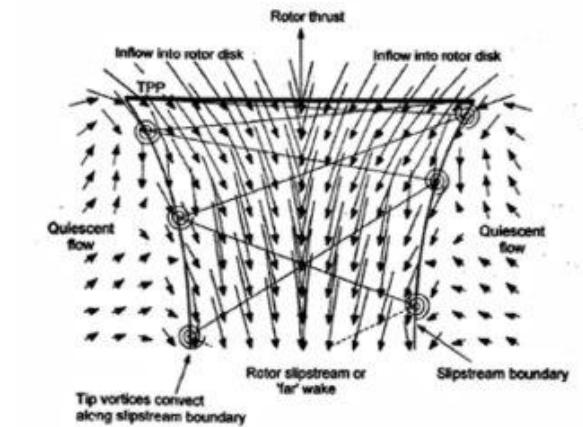
The downwash from the upper rotor is utilized by the lower rotor, turbulent air is effectively smoothed out and used to **generate additional thrust**. Put differently, this can achieve an **Increased Lift Capacity** with the same amount of energy input

Enhanced Stability

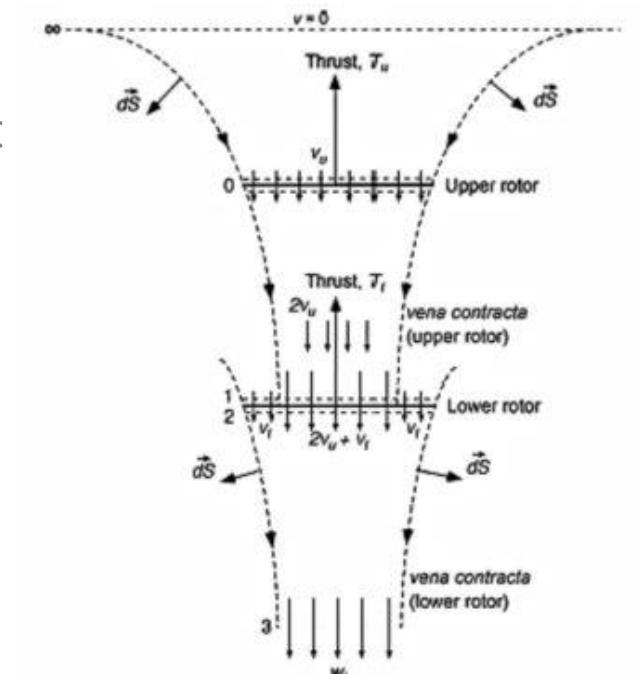
Superior stability, even in challenging conditions, enabling precision control for tasks like aerial photography or industrial inspections by **Counteracting Torque and Managing Gyroscopic Precession**

Lower Noises

Reduced Aerodynamic Noise

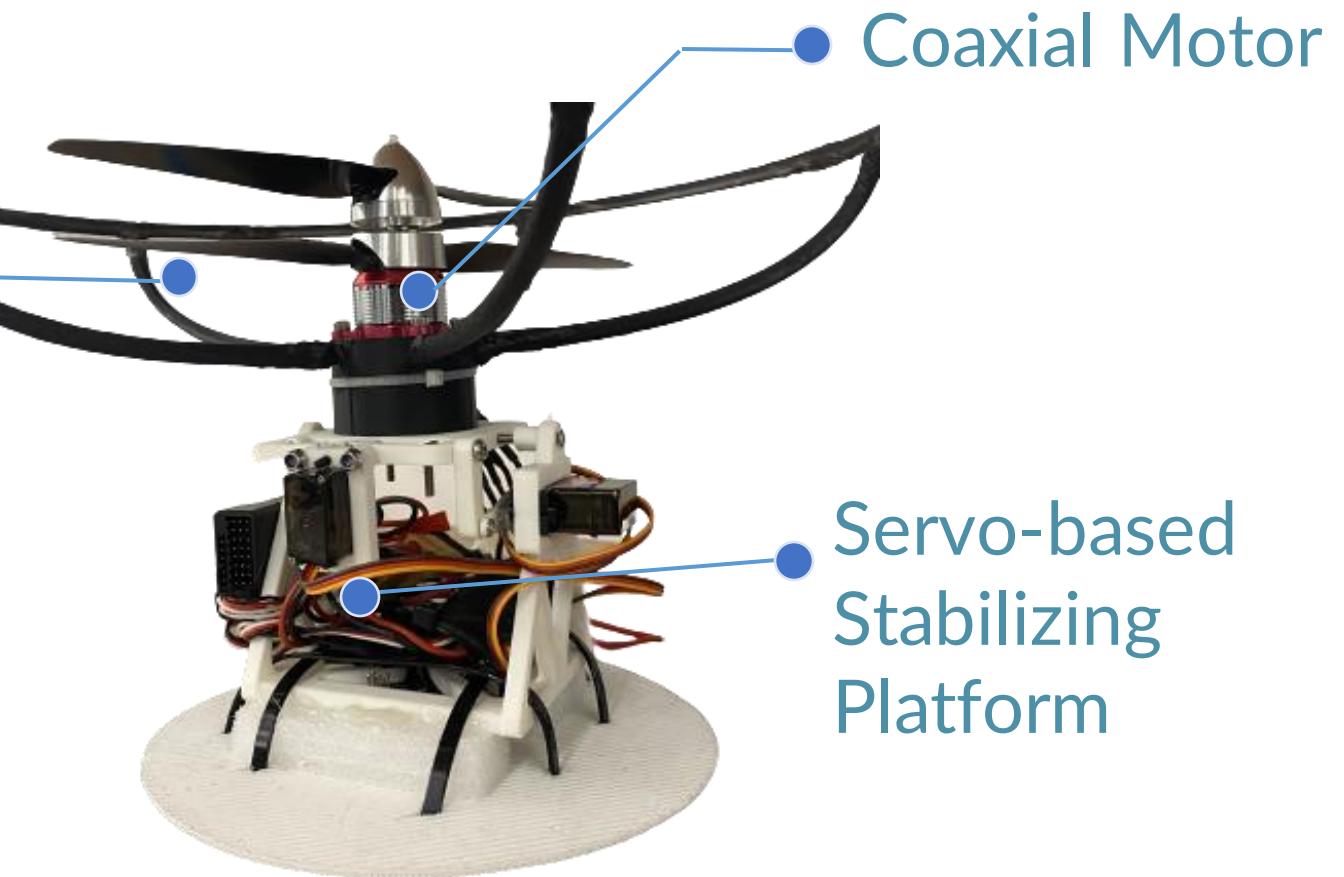
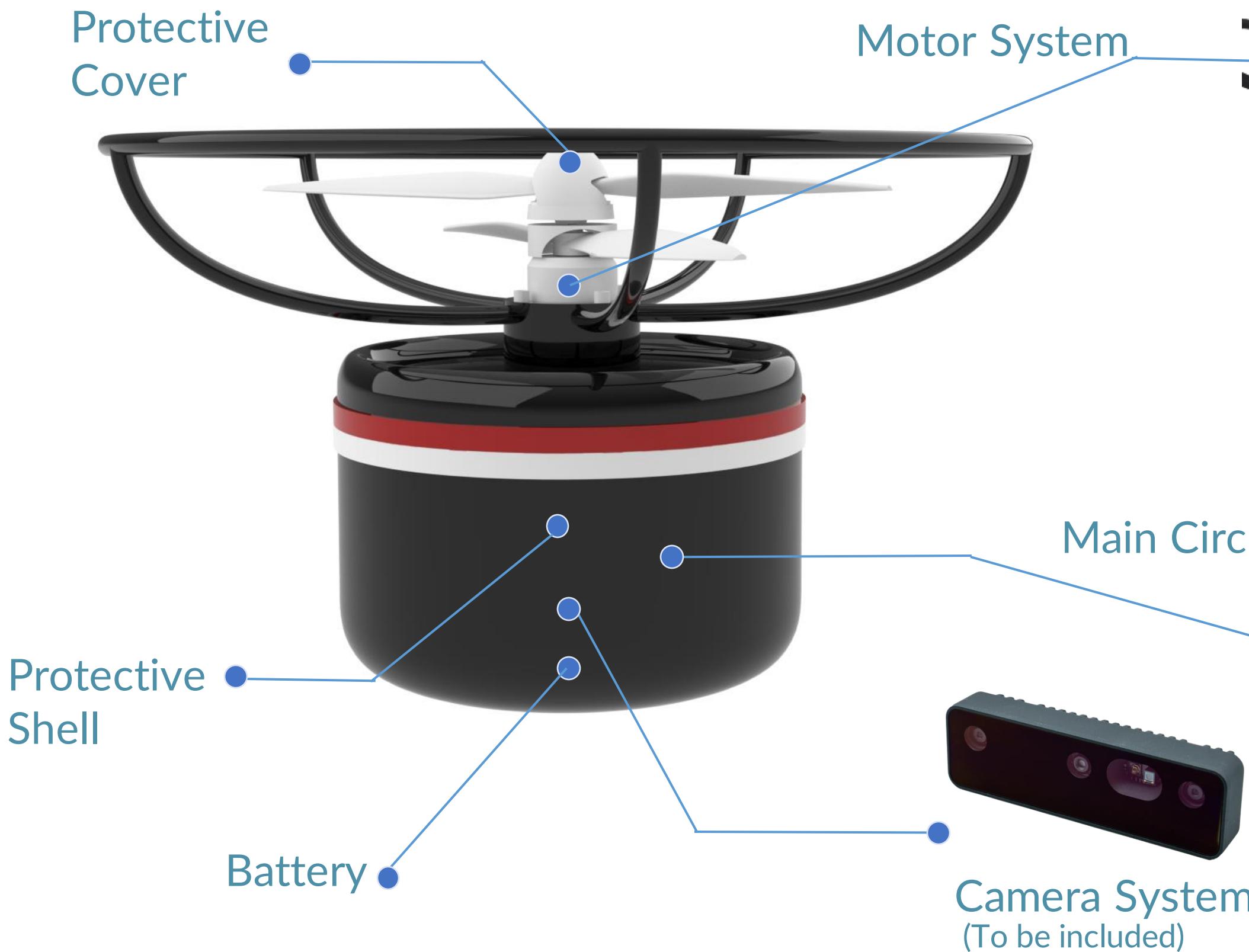


Single Propeller Wake



Co-axial Propeller Wake

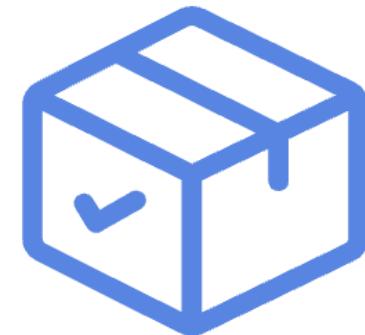
AirFlexi_BFQ1100 Design



AirFlexi Drone Specifications

Payload Limit

Currently about **0.8- 1kg per drone**



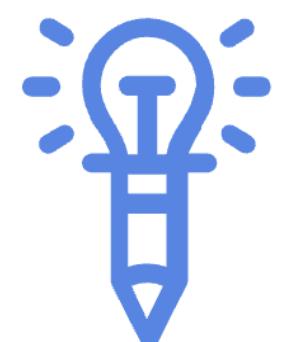
Battery Life

Lithium Battery provides about **10- 15 minutes** full speed propelling



Shape and design

Small size, easy to carry with high safety
Suitable for **flying in narrow places**



Dimension & Weight

300* 300 * 250mm, ~600kg



Material

3D printed with **high rigidity** and
high impact resistance



Safety Precaution

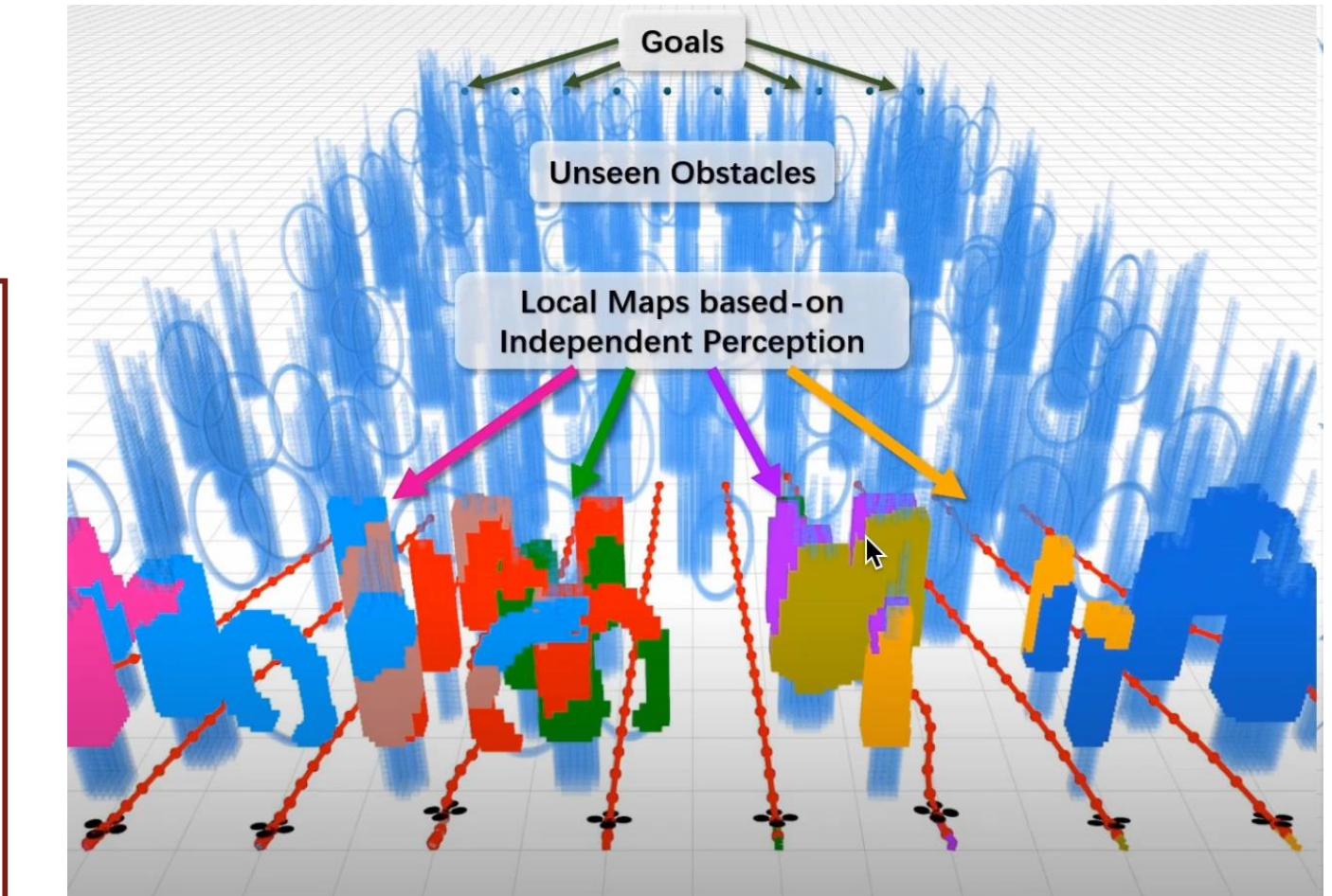
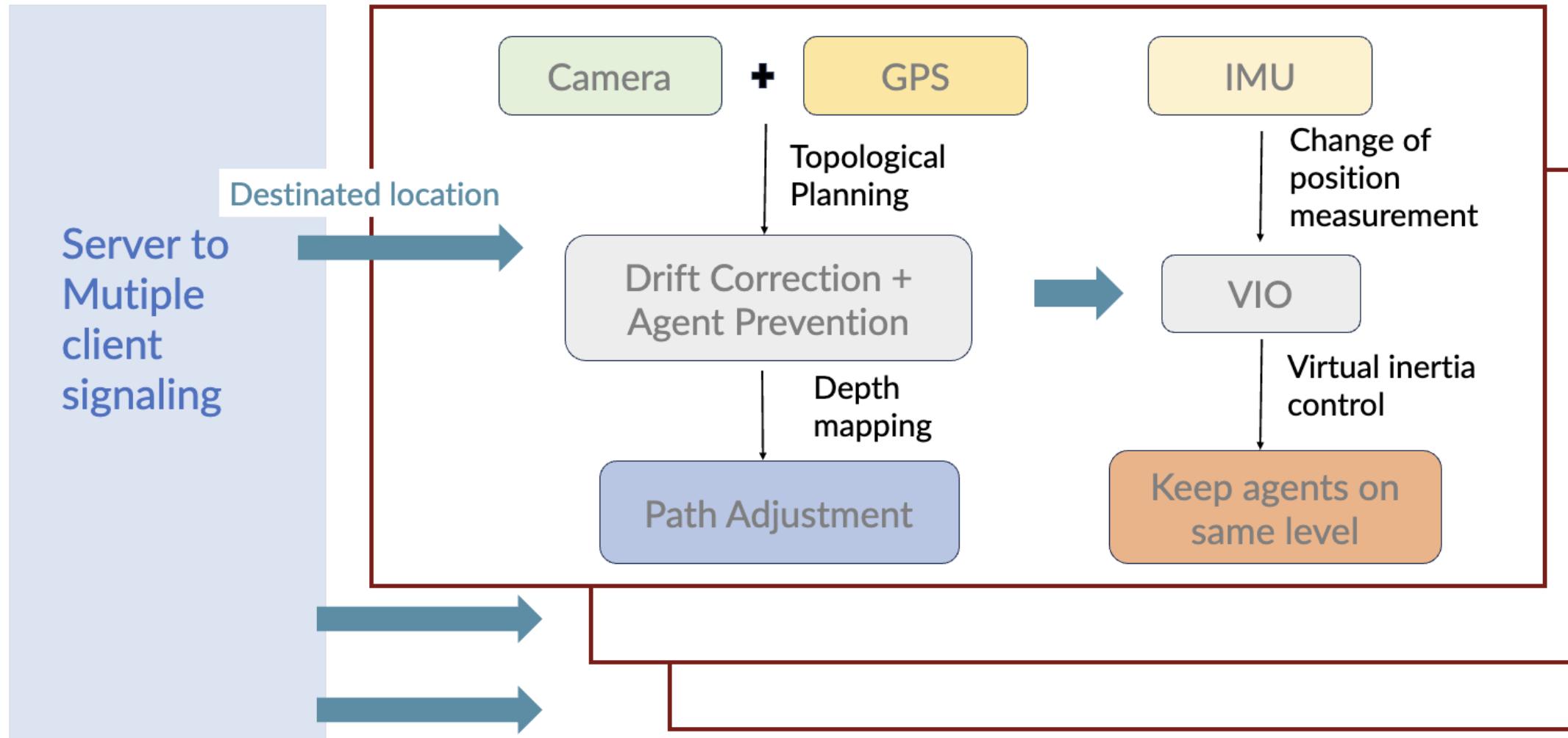
Blade protecting cover
Lithium battery foam protection



Our Solution - Proof of Concept

Decentralized Drones Cooperative Network

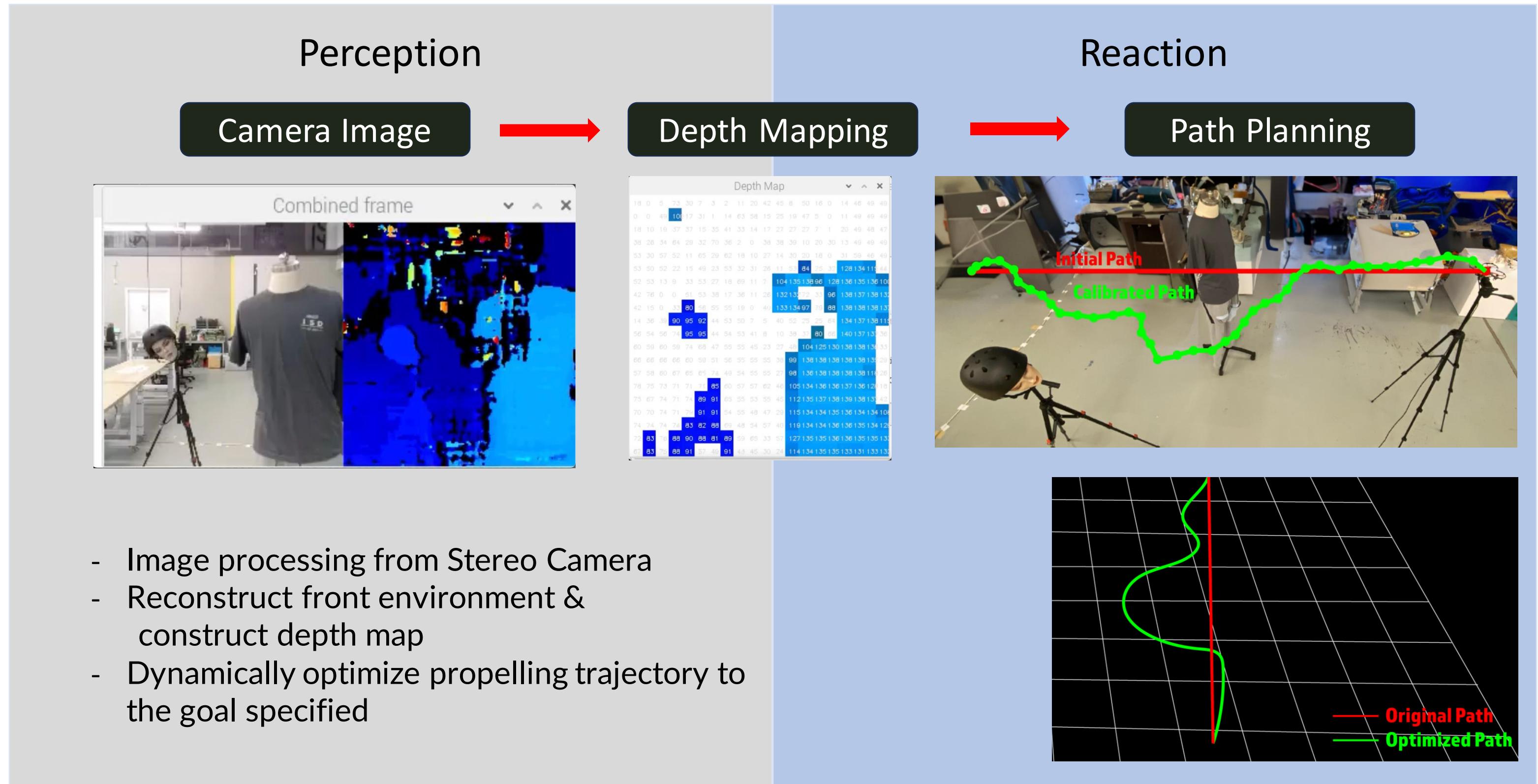
How different drones coordinate to perform certain tasks?



Zhou, X., Zhu, J., Zhou, H., Xu, C., & Gao, F. (2021, May). Ego-swarm: A fully autonomous and decentralized quadrotor swarm system in cluttered environments. In *2021 IEEE international conference on robotics and automation (ICRA)* (pp. 4101-4107). IEEE.

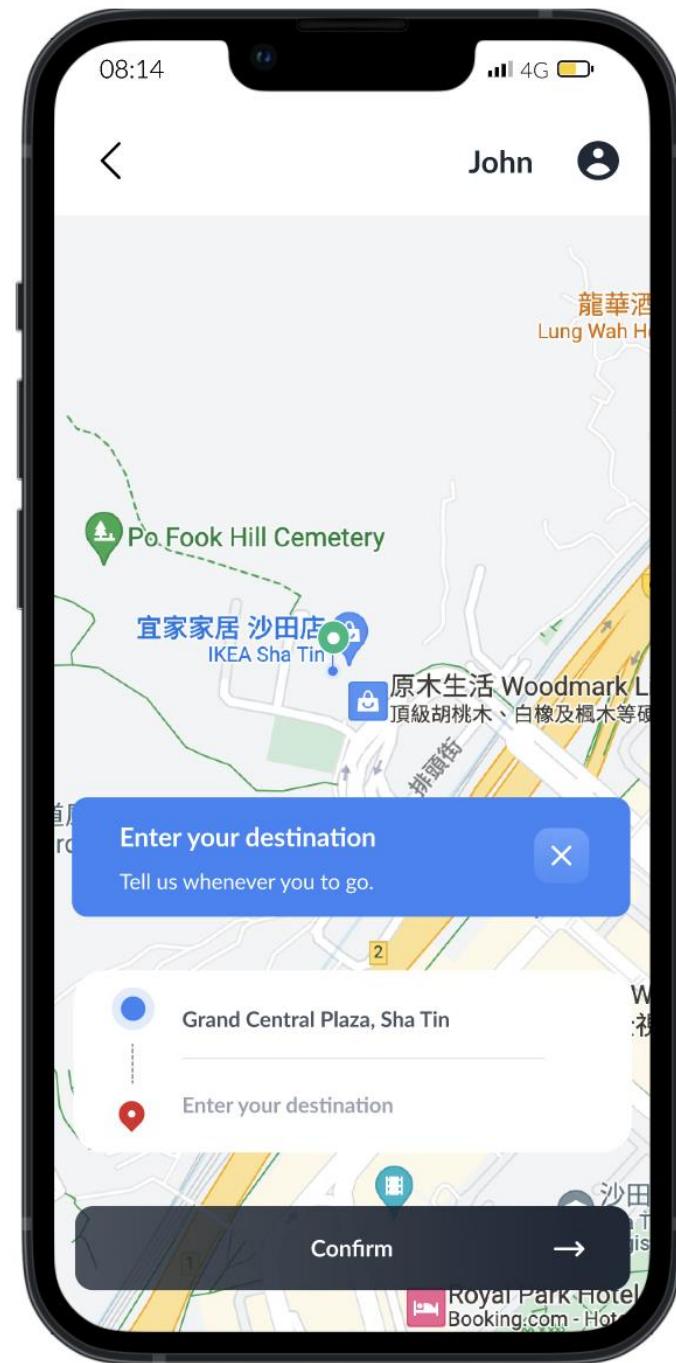
Our Solution - Proof of Concept

Safety Measures - Responsive System



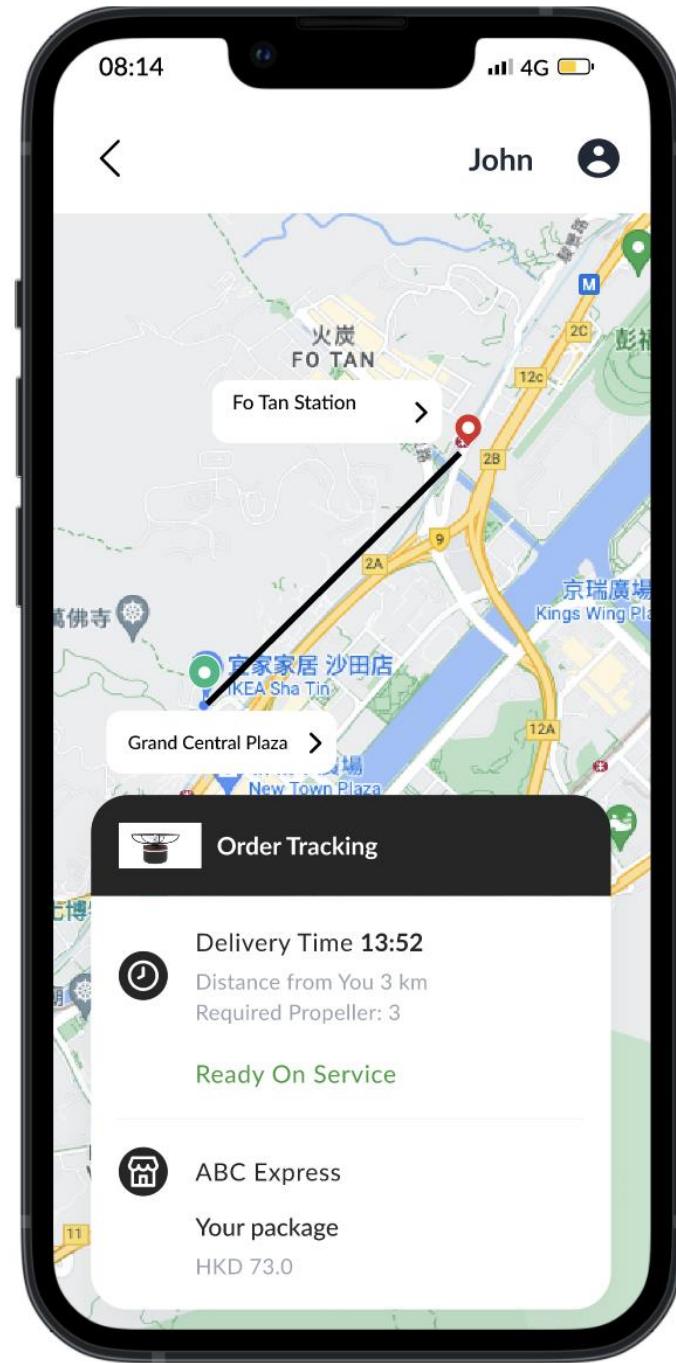
Our Solution – UI/UX

Tap the app, get delivered



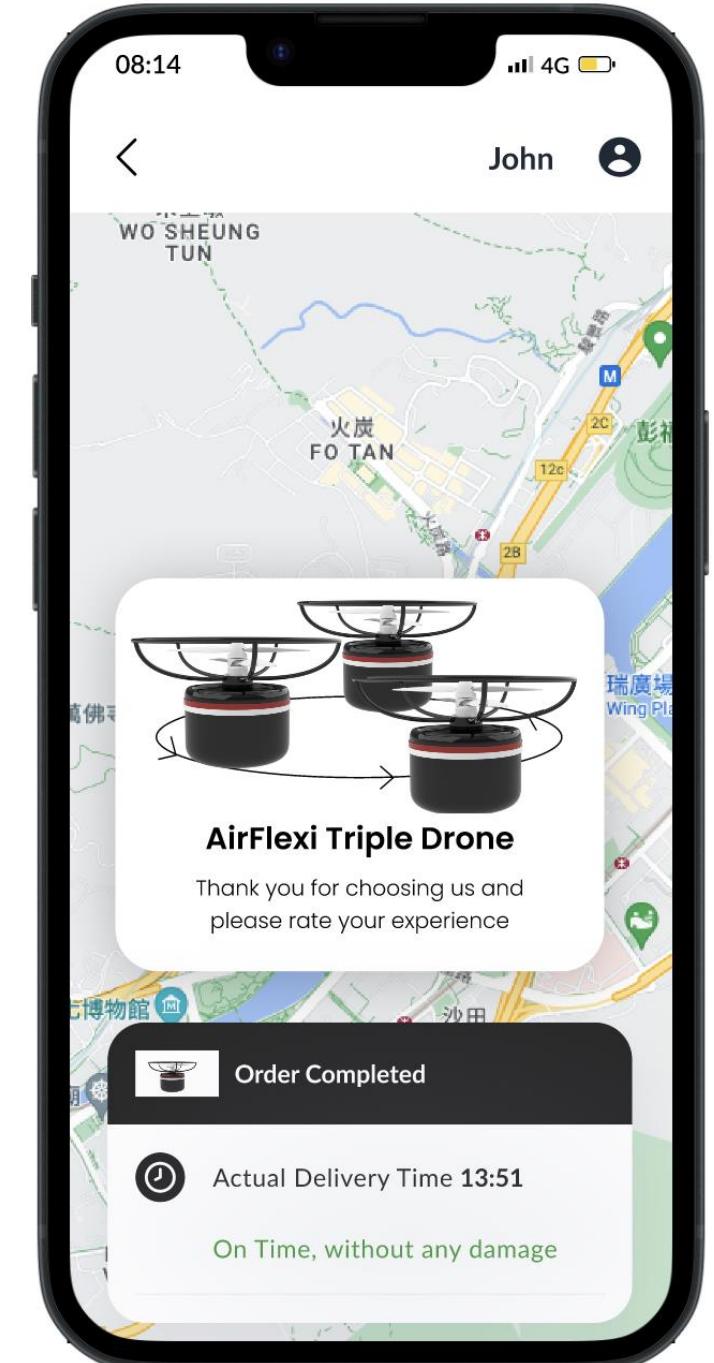
1

Enter Address & Cargo Information



2

Price Quotation

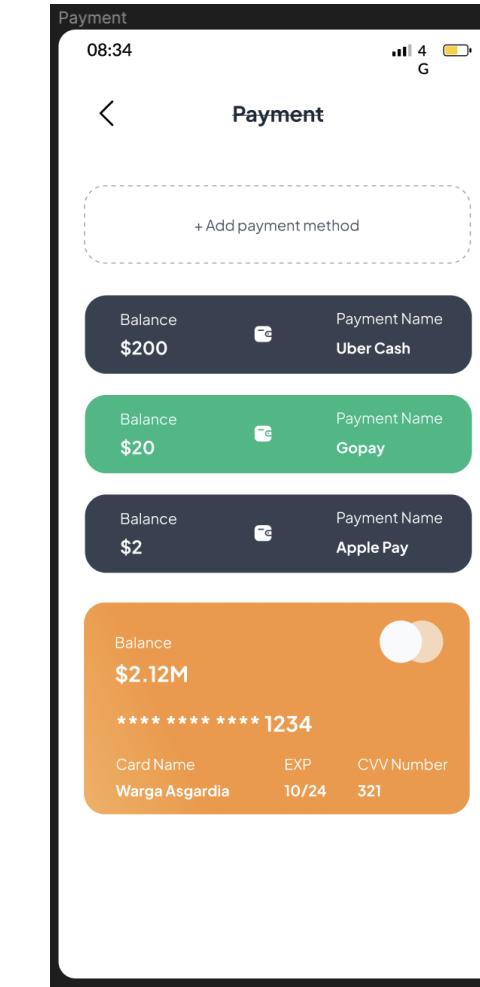
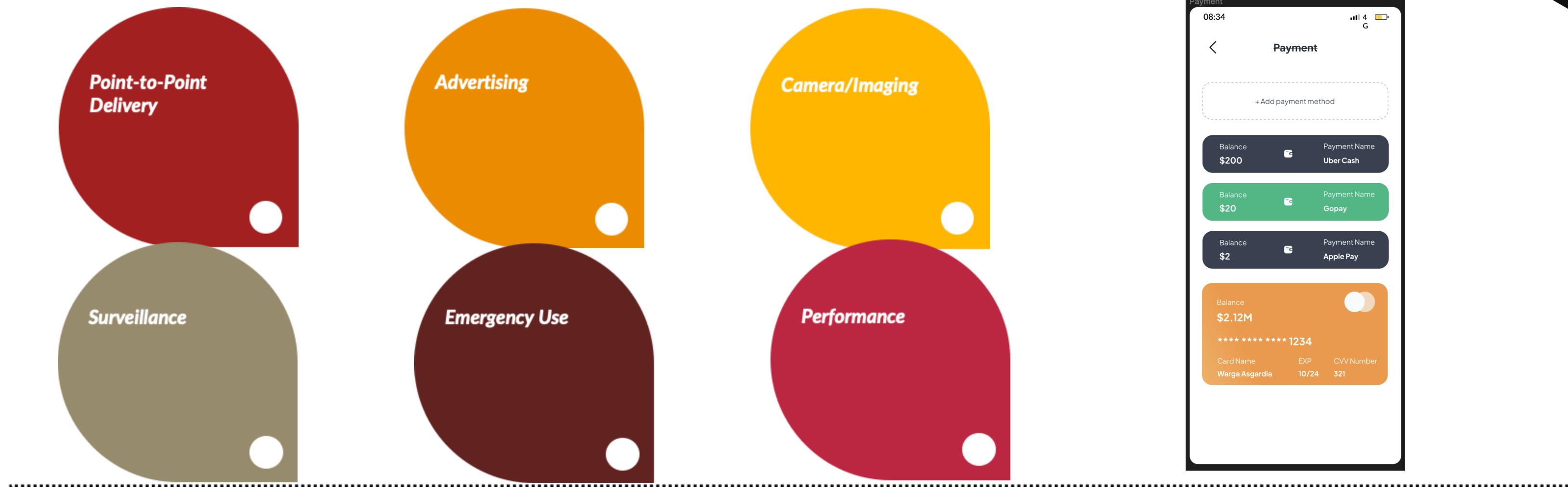


3

Receiving Cargo



Business Model



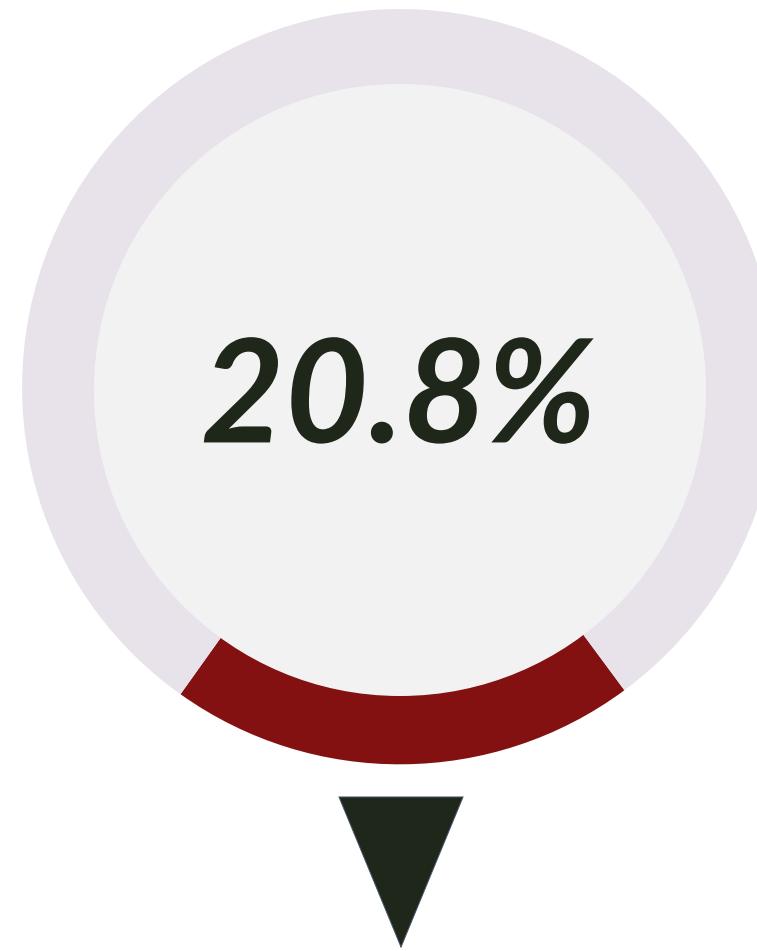
- Request of Services

- Our system will collect the data and parameters as described, such as drone types, weight limits, customer segments, and distance calculations in real time.

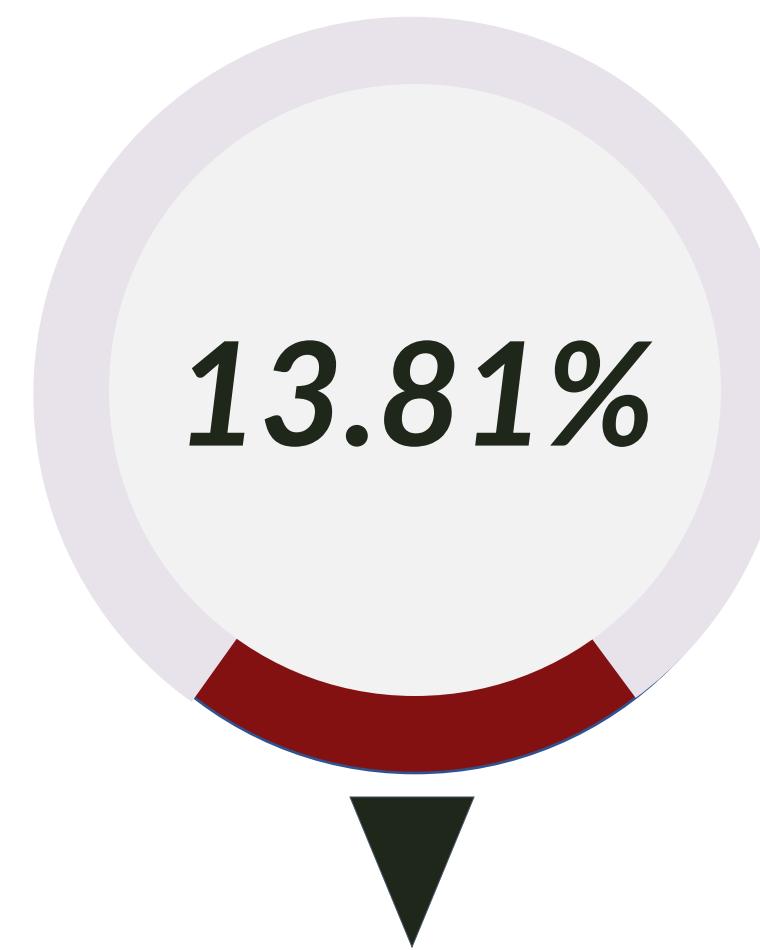
- Then our algorithm would take the input factors and calculates the cost of each delivery based on a combination of the factors. This could involve assigning a base price for each drone type and adding weight-based fees, distance charges, and customer-specific adjustments.

- Embed the pricing algorithm into the user interface for instant delivery quotes.

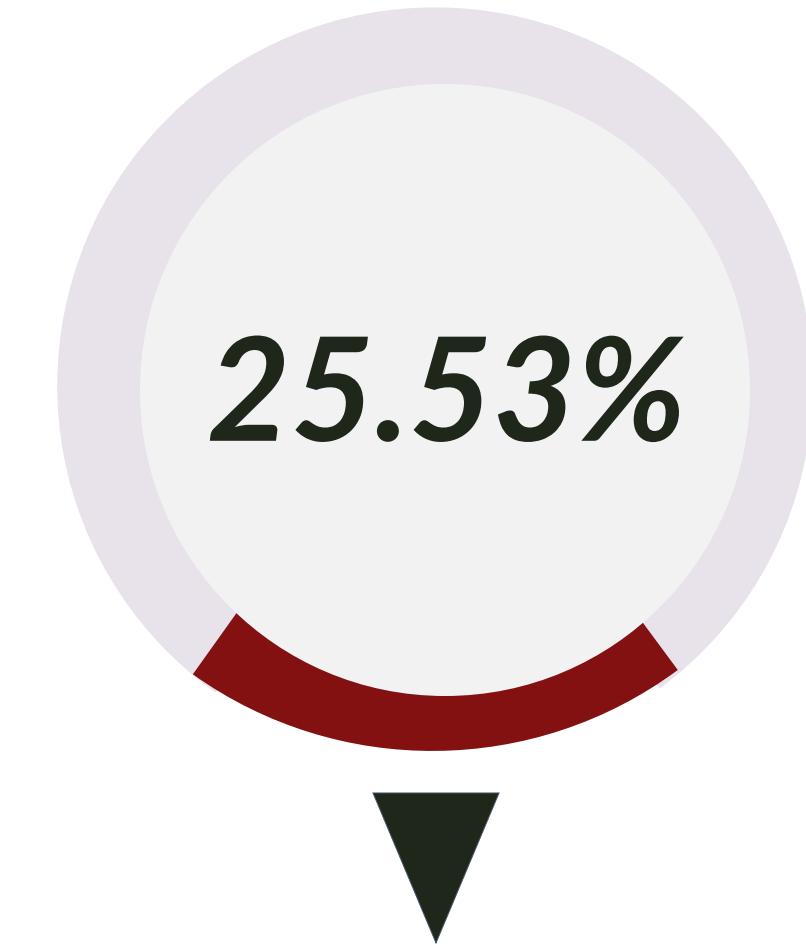
The global drone logistics and transportation market size was expected to reach **USD 29.06 billion** by 2027



Drone Delivery Market in China



Drone Delivery Market Globally



Drone Delivery Market Globally

It is also suggested that the **Asia Pacific region is expected to hold the largest market size** during the forecast period due to the increasing demand for drone delivery services in countries like China and Japan.

Market Analysis

Exhibit 6

Respondents in China and India were most willing to pay extra for immediate delivery with cargo drones.

'If the cargo-drone option were available for a reasonable price, what is the maximum amount you'd be willing to pay to have items delivered within 1–2 hours'
 % of respondents¹

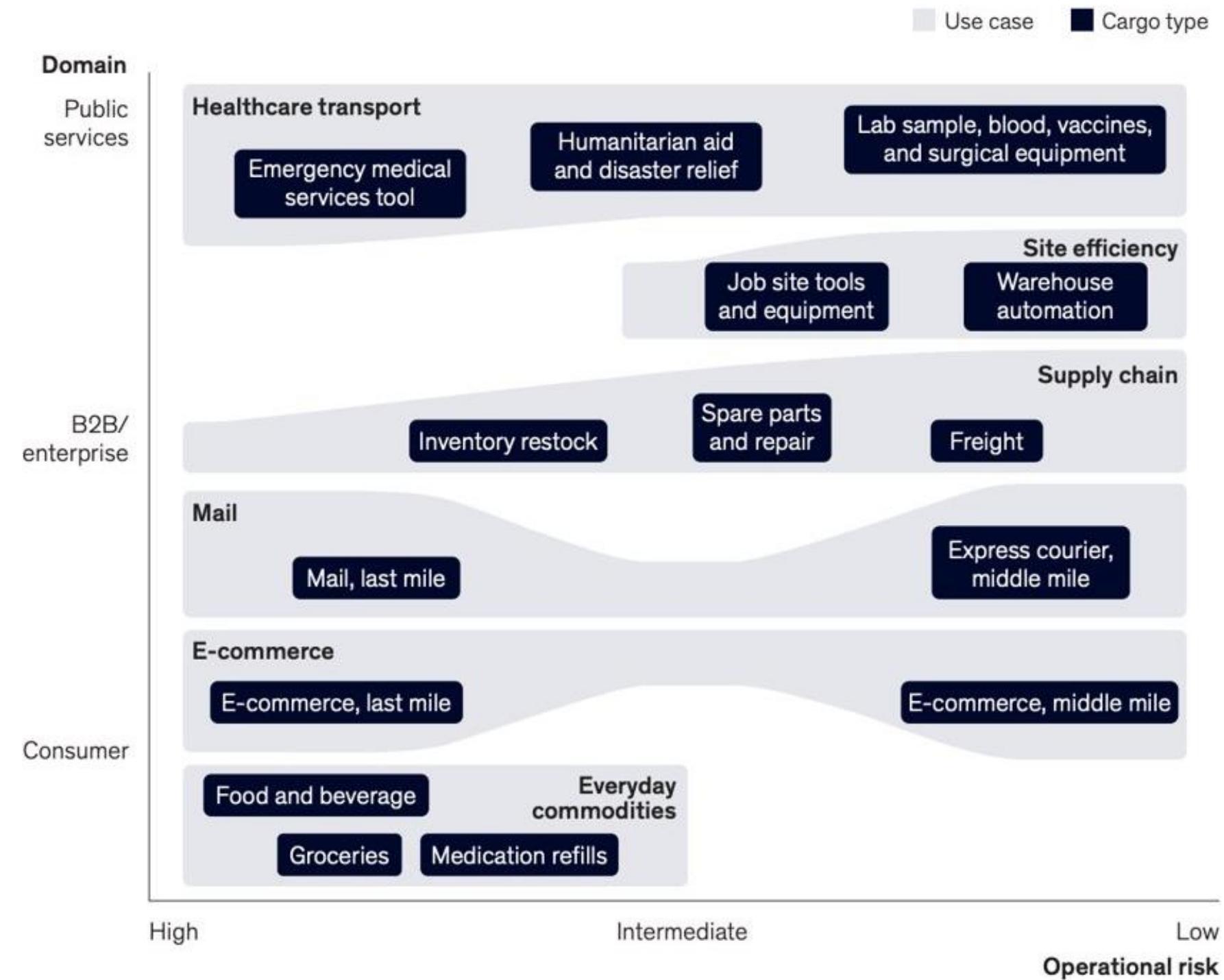


¹n = 4,600, with 600–1,000 per country.
 Source: McKinsey Advanced Air Mobility Consumer Survey, March 2021

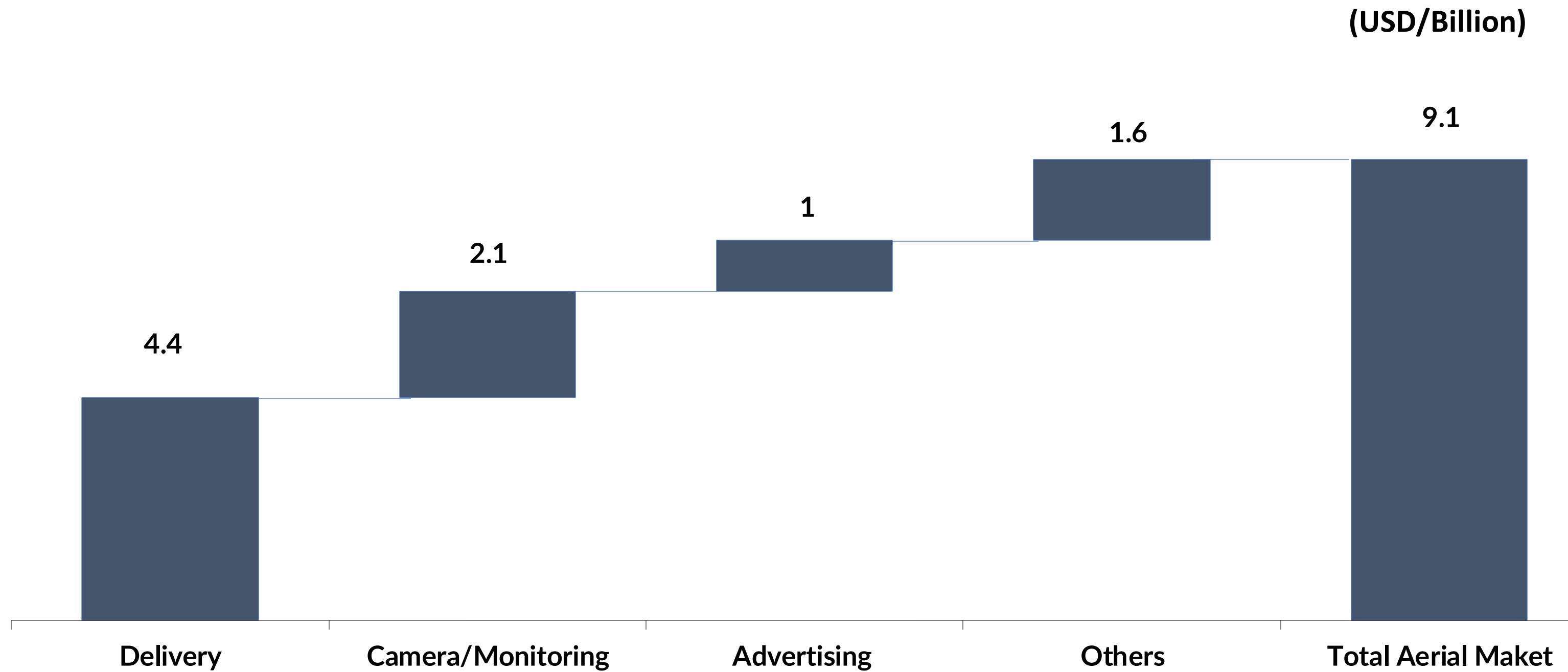
Market Analysis

Use cases for cargo-drone deliveries are clustered based on domain and operational risk.

Non-exhaustive



Market Scale



Competitor Analysis

Among all the competitors, our unique selling point is our payload mechanism and drone collaborative network

				
Payload	2.5kg	9 kg	20 kg	2.5 kg per drone
Drone Collaborative Network	✗	✗	✗	✓
Autonomous system Integration	✗	✓	✓	Will develop
Type of drone	Hexacopter	Hexacopter	Hexacopter	Coaxial

Our plan

5-year Great Leap Plan

2023 Q3 -
2024 Q3

01

R&D Period

Develop software coordination system
Revamp drone design for different use cases

2024 Q3

02

Product Launch

Launch in Graeter Bay Area (Shenzhen and Nansha District)

2025 Q3

03

Local Expansion

Expand to other regions in China

2026 Q3

04

Expand our user base

Scale up with other business lines

Our team



Marco
Embedded System Development

Computer Science and AI,
Robotics and Embedded System
Experience



Norris
Software Development

Computer Science,
Robotics and
Software Development
Experience



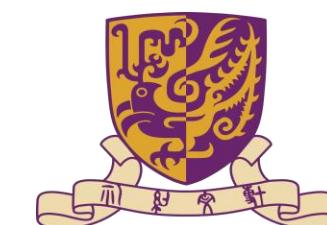
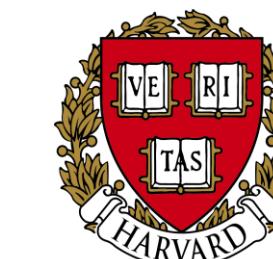
Likey
Business Developemnt, Finance
**Economics and Biotech, Data
Science, VC Experience**



Kelly
Industrial Design, Software
**Integrative Systems and Design,
ML engineer**



Brian
Marketing, User Research
**Economics and Finance,
Management Consulting and
Project Management Experience**



Thank you!

Special thanks to

Prof. Li (Our original name is BFQ)

Prof. Leung Winnie (who always remind us the right way)

Prof. Chan Joseph (who always recall where we start from, Take a step back)

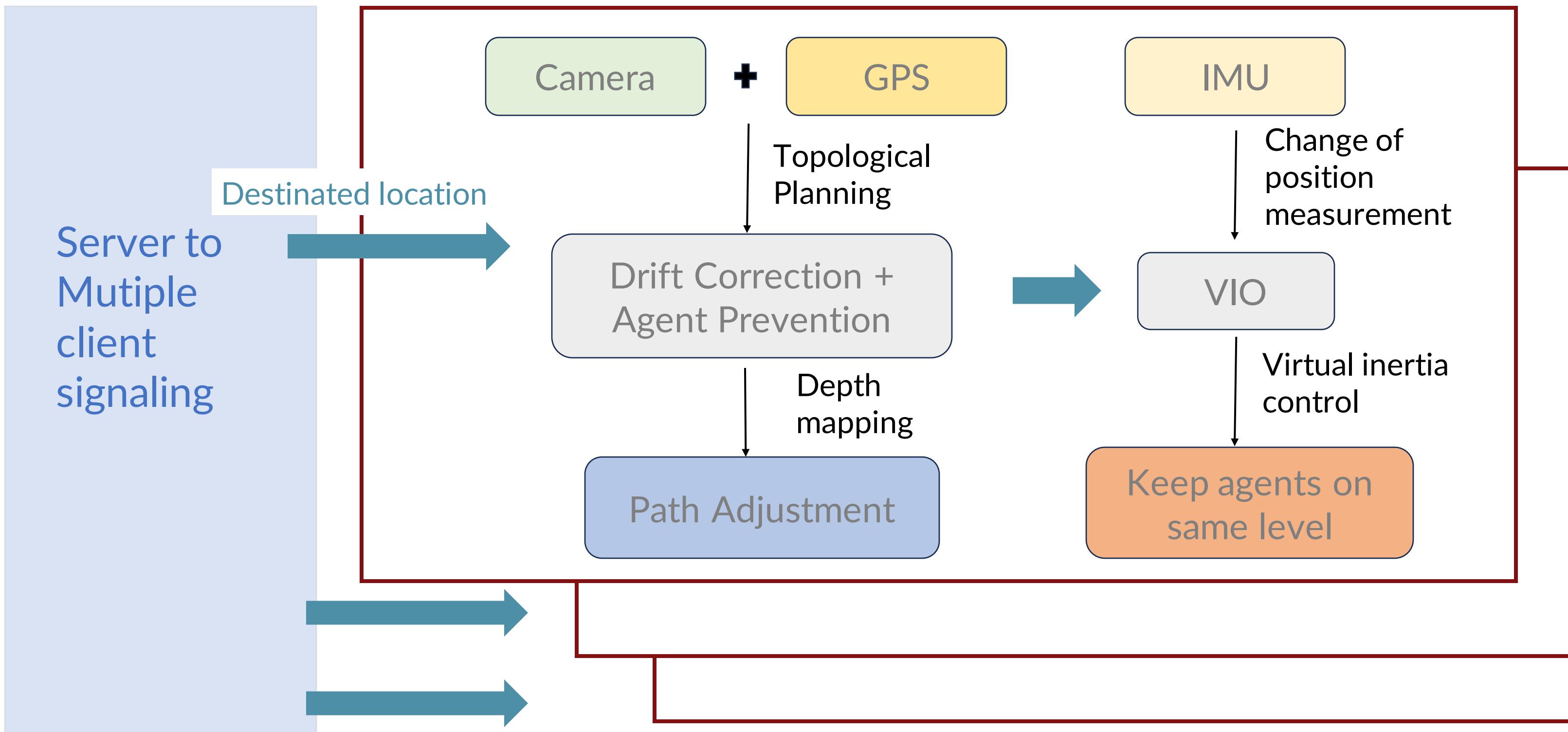
Guo Yang (who always give us the new way, encourage us and give us energy)

Prof. Brain Lee (who is really nice)





Drones Cooperative Network

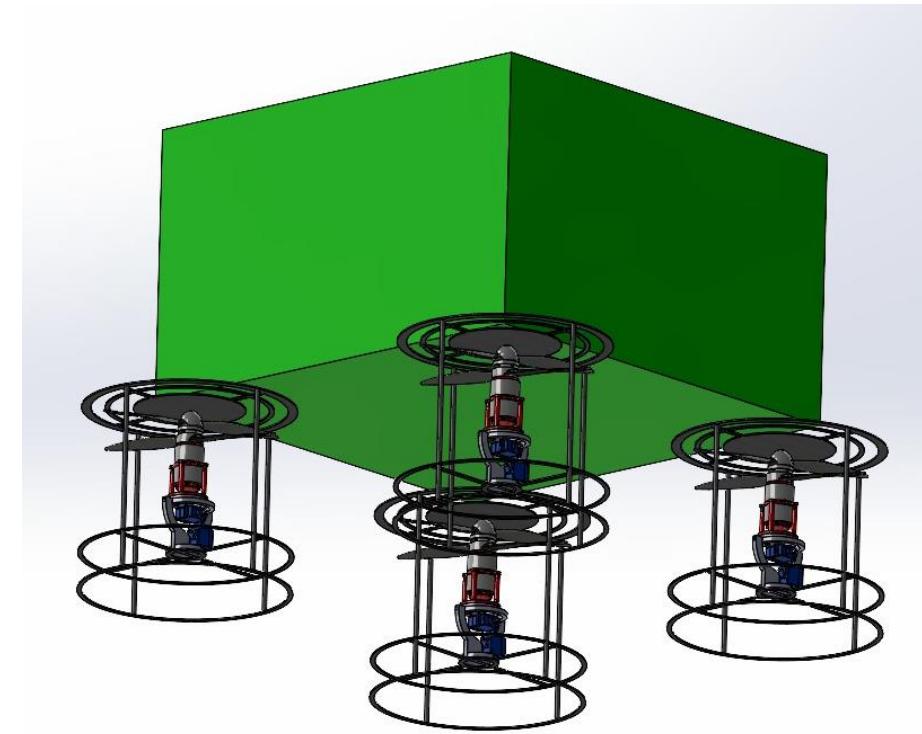
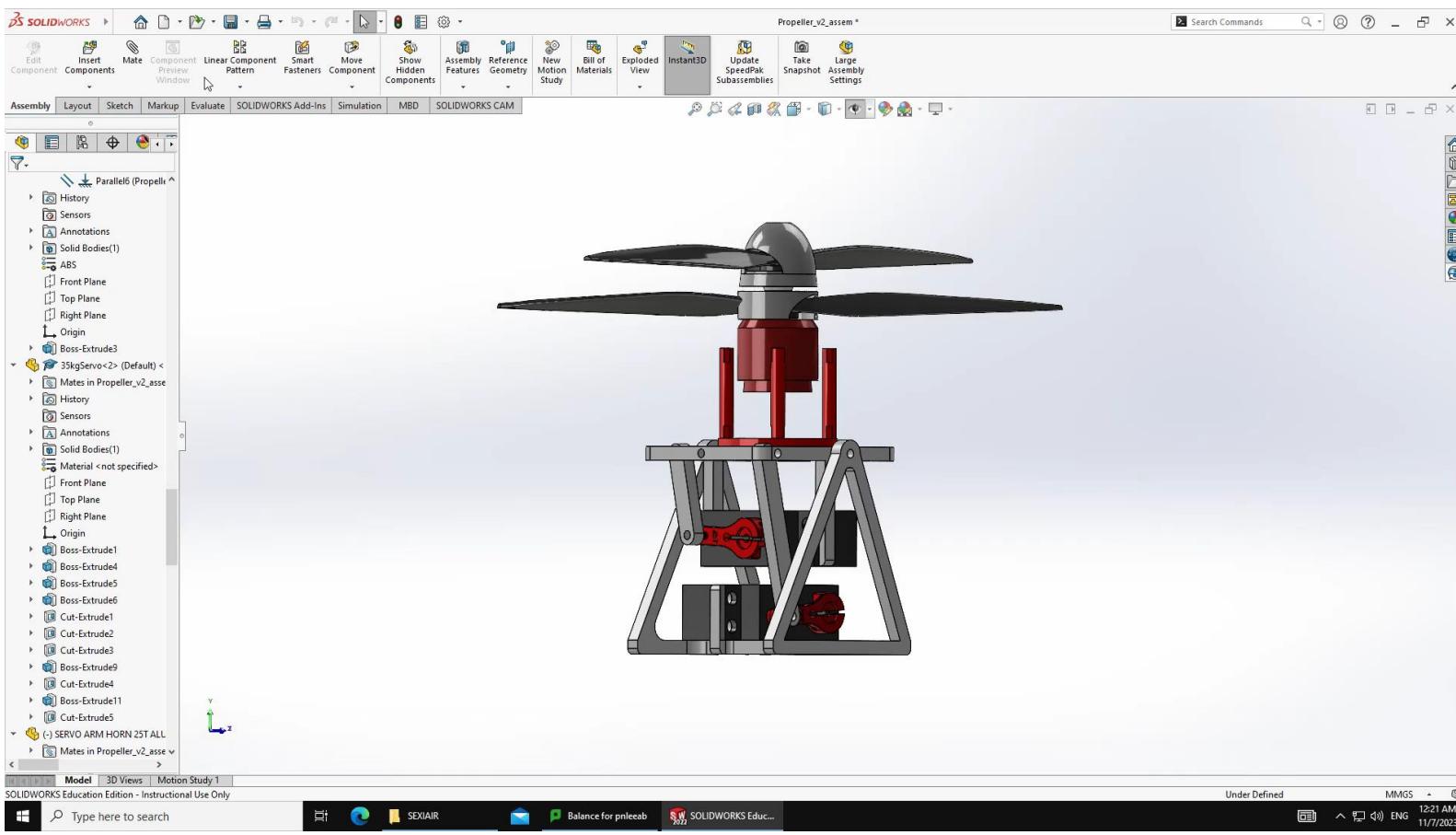


Proof of Concept

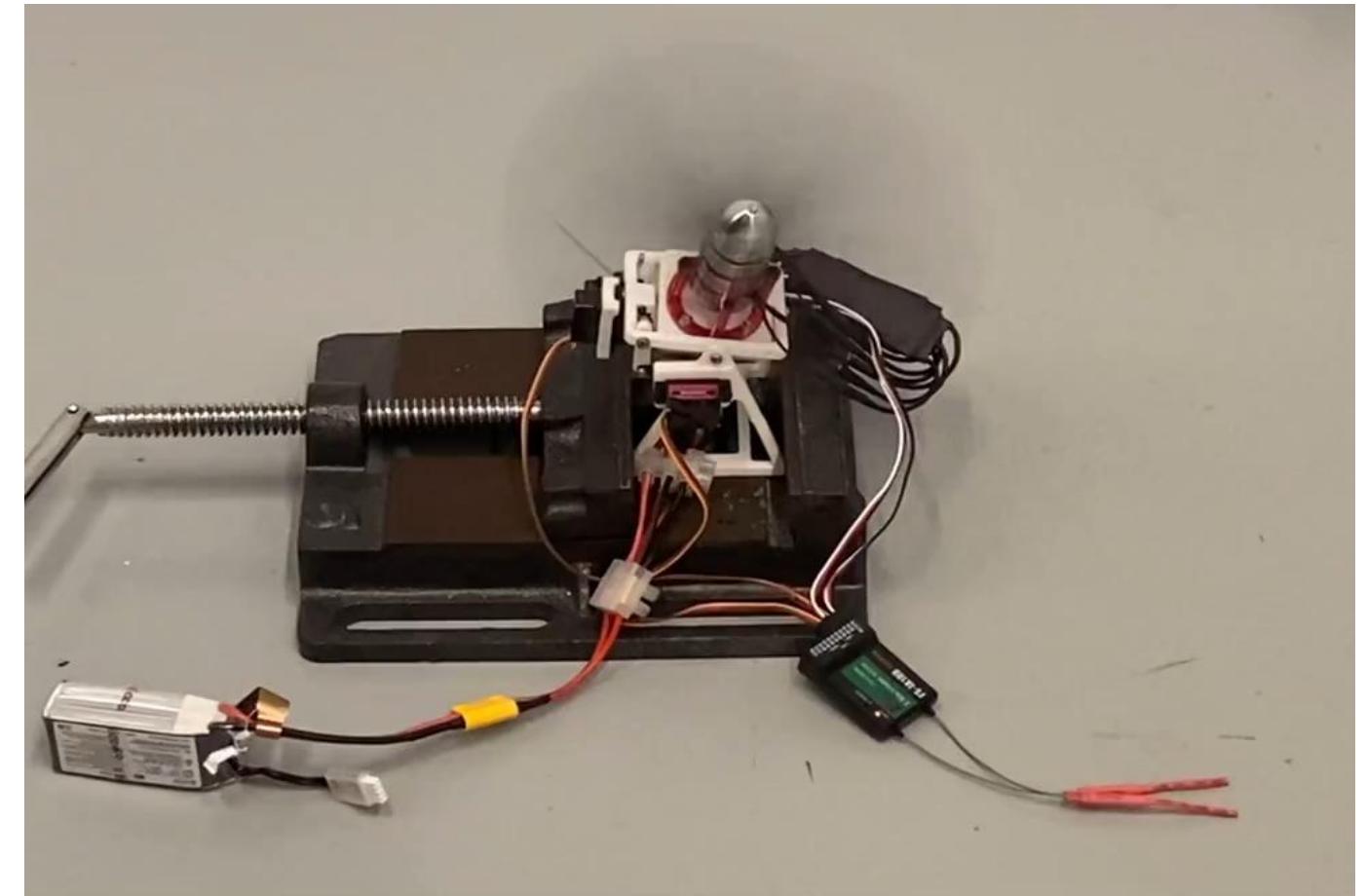
Mechanical design



Dyson air flow design



Initial mechanical structure



Product Iteration

