



HONEYWELL

UNMANNED AERIAL SYSTEMS AND URBAN AIR MOBILITY BECOMING A REALITY

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MARKET BUZZ

Hong Kong Startup Plans to Launch Passenger Drone and Seaplane Service



VTOL Aircraft Market May Set New Growth Story | Lilium, Joby Aviation, Boeing, Volocopter



Lithium-Ion Battery Market Report 2021-2031

By Visiongain Ltd.

Revolution.Aero and Vertiports: "Landing the multibillion-dollar air taxi market"

- VFS (March 25, 2021)
 - Embraer & eVTOL; Brazilian Amazon and VTOL
 - Numerous articles, threads and panels monthly
- Urban Mobility News (March 25, 2021)
 - More than 100 relevant links to what is going on in the marketplace each month
- sUAS News
 - Revolution.Aero Uplift, landing the multibillion-dollar Air Taxi Market (March 24, 2021)
- Twitter (March 25, 2021)
 - Urban Mobility + The Future of Autonomy panel
 - Mars drone maiden flight news
 - Volocopter spelled out how it plans to exploit the UAM market
- LinkedIn
 - Averages more than 20 daily posts on UAS or UAM news



Ingenuity: Mars drone maiden flight set for "no earlier than April 8th"

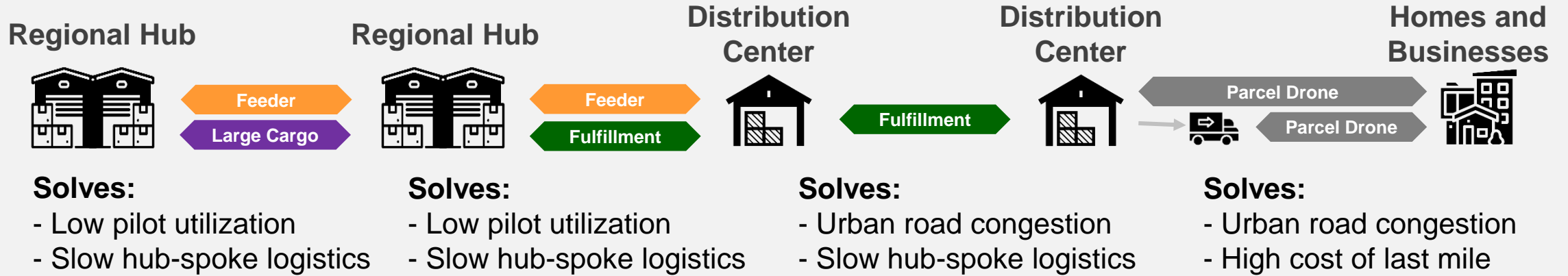
MARKET POTENTIAL



	Segment	Use Case	Aircraft	EIS	Projected 2030s
Urban Air Mobility	Urban Air Taxi	<ul style="list-style-type: none"> Air taxi Airport transfer Aeromedical evacuation Regional mobility 	Hyundai, Beta, Bell, Joby, Lilium, Vertical Aerospace, Archer etc.	2027	\$80 Billion
	Feeder	<ul style="list-style-type: none"> Middle mile cargo Military logistics 	Pipistrel Nuuva	2023	\$20 Billion
Cargo	Fulfillment	<ul style="list-style-type: none"> Point-to-point cargo Military logistics Austere/remote logistics 	Elroy Chaparral, Bell APT 880/XL	2023	\$15 Billion
	Local Light Parcel	<ul style="list-style-type: none"> Last mile delivery Austere/remote logistics 	Bell APT 70, Wing, Amazon etc.	2022	\$3 Billion

Industry is Heavily Investing for the Future in Aviation

AUTONOMOUS AERIAL LOGISTICS (CARGO)



Large Cargo

15,000 lbs. to 3000 miles



Feeder

1,000 lbs. to 800 miles



Fulfillment

150 lbs. to 150 miles



Parcel Drone

5 lbs. to 25 miles

URBAN AIR MOBILITY

Still in discovery phase:

- Regulations
- Legislations
- Public Acceptance

Ecosystem Maturity:

- Sky Lanes/Routing/flight planning
- Secure & Reliable Communications (Veh. to Veh., Veh. to Grnd, Veh. to Cloud)
- Vertiports / Ground Infrastructure
- Vehicle Battery Management
- Traffic Management



TECHNOLOGIES FOR ADVANCED AERIAL MOBILITY



Integrated Vehicle Management System designed for **Simplified Vehicle Operations** and autonomy

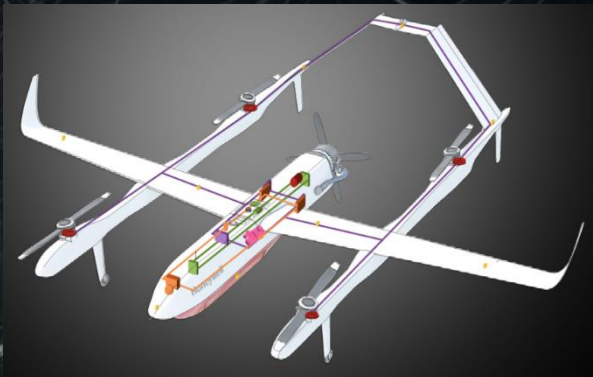
Compact Fly-by-Wire optimized for UAM and UAS

Integrated **Detect-and-Avoid** sensor and avoidance solutions

Compact electric **Actuation** fully integrated with fly-by-wire

Reliable **Electric or Hybrid-Electric Propulsion** with production scalability

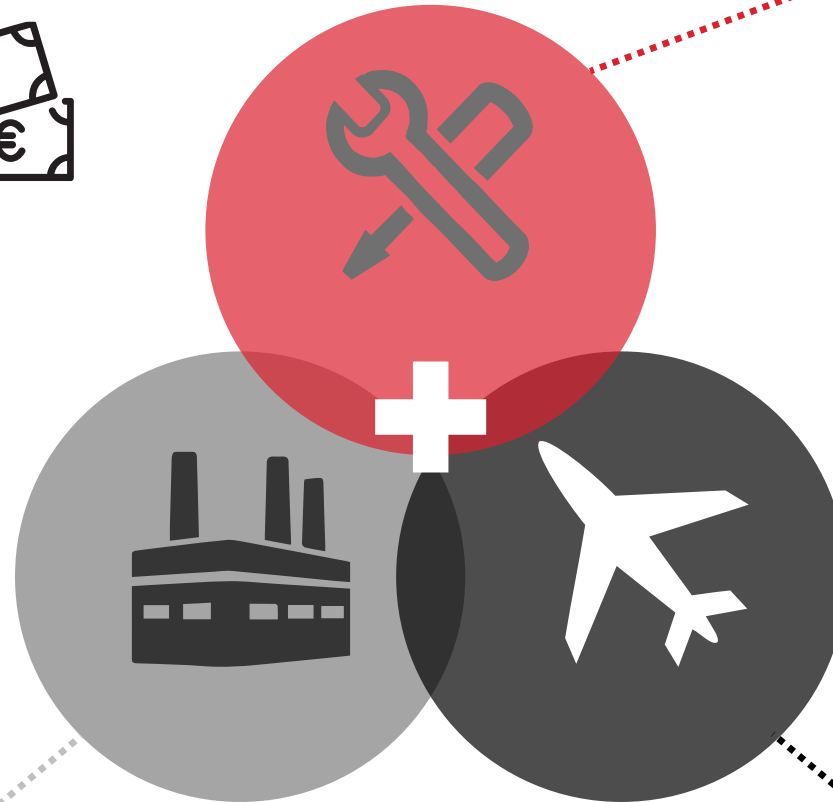
Miniaturized **Thermal Management** for cabin and battery cooling



Technology Readiness is Advancing Faster than Reg's & Laws

BECOMING A REALITY

Driver - Market Demand



Technology

Technology readiness is maturing at a very fast rate with unmanned operations taking the lead to advance entry into service operations

Industry Acceptance

Regulators starting to react favorably to establishing faster rules, Legislation efforts taking shape due to domestic competition, Public acceptance aided by COVID pandemic for UAV deliveries

Vehicle Manufacturers

Industry players starting to stabilize and becoming more viable as the market is gaining investor strengths

HONEYWELL

UAM/UAS

Dedicated business unit

to address the needs of the unmanned aerial systems and urban air mobility, with a specific focus on transportation applications

OUR VISION

AIR CARGO

is autonomous from warehouse to your house – same day delivery anywhere in the populated world

URBAN AND REGIONAL AIR TRAVEL

is ubiquitous with electric urban air taxis that pick up and drop off passengers in every neighborhood

HONEYWELL MAKES THIS FUTURE A REALITY

by providing vehicle systems and integration for OEMs across all vehicle categories

COMPLETE SYSTEM

for integration and value

MAJOR SUB-SYSTEM

to balance modularity with specialization

INDIVIDUAL PRODUCTS

to create a unique system

INTEGRATED PROPULSION AND AVIONICS SYSTEM	
INTEGRATED PROPULSION SYSTEM	INTEGRATED AVIONICS SYSTEM
Battery	Compact fly-by-wire
Battery management system	Vehicle management
Battery cooling	Actuation
Turbo-generated electricity	Detect and Avoid
eMotors	Communications
Motor controllers	Navigation
Propulsors	Sensors



**THANK
YOU**

Honeywell