



eVTOL - The Future in Urban Air Mobility?

Electric flight



- Low Noise emissions
- Flying in urban areas and city centers
- Climate-friendly mobility
- Battery technology

Lift and Cruise



- Airbus
- Autoflight
- Beta
- Eve
- Reliable flight configuration
- Easy maintenance
- Simple Design
- Reduced speed and range

Tilt Rotor

- Archer
 - Joby
 - Wisk
 - Vertical
-
- Light configuration
 - Increased range
 - Reduced noise
 - Challenging certification





Vectored Fan

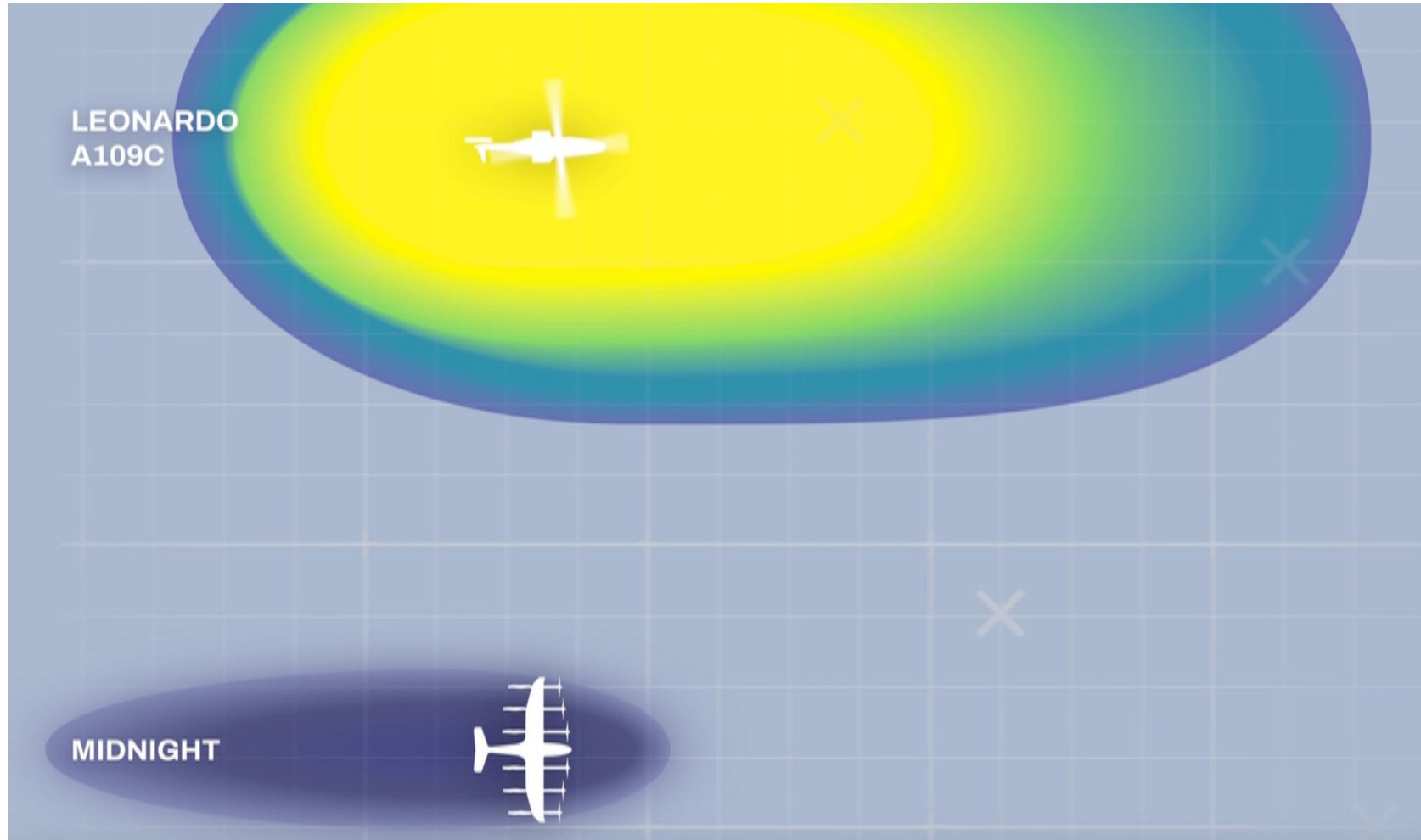
- Lilium
- Efficient at cruise
- Long range
- Power hungry in hover
- Extensive take-off noise
- High battery currents

Multirotor

- Ehang
- Volocopter
- Efficient during takeoff and landing
- Simple to certify
- Not efficient in cruise
- Slow speed
- Very short range
- High battery currents



Noise emissions



(Archer, 2024)

Specifications

	Eve eVTOL	Archer Midnight	Joby S4 2.0
Passengers + Pilots	4 + 1	4 + 1	4 + 1
Range	52 nm 100 km	44 nm 80km	130 nm 240 km
Cruise Speed	108 kts 200 kph	130 kts 240 kph	174 kts 322 kph
Orders (Firm + Pre-Orders)	\$14B (2900+ Aircraft)	\$6B	Not public

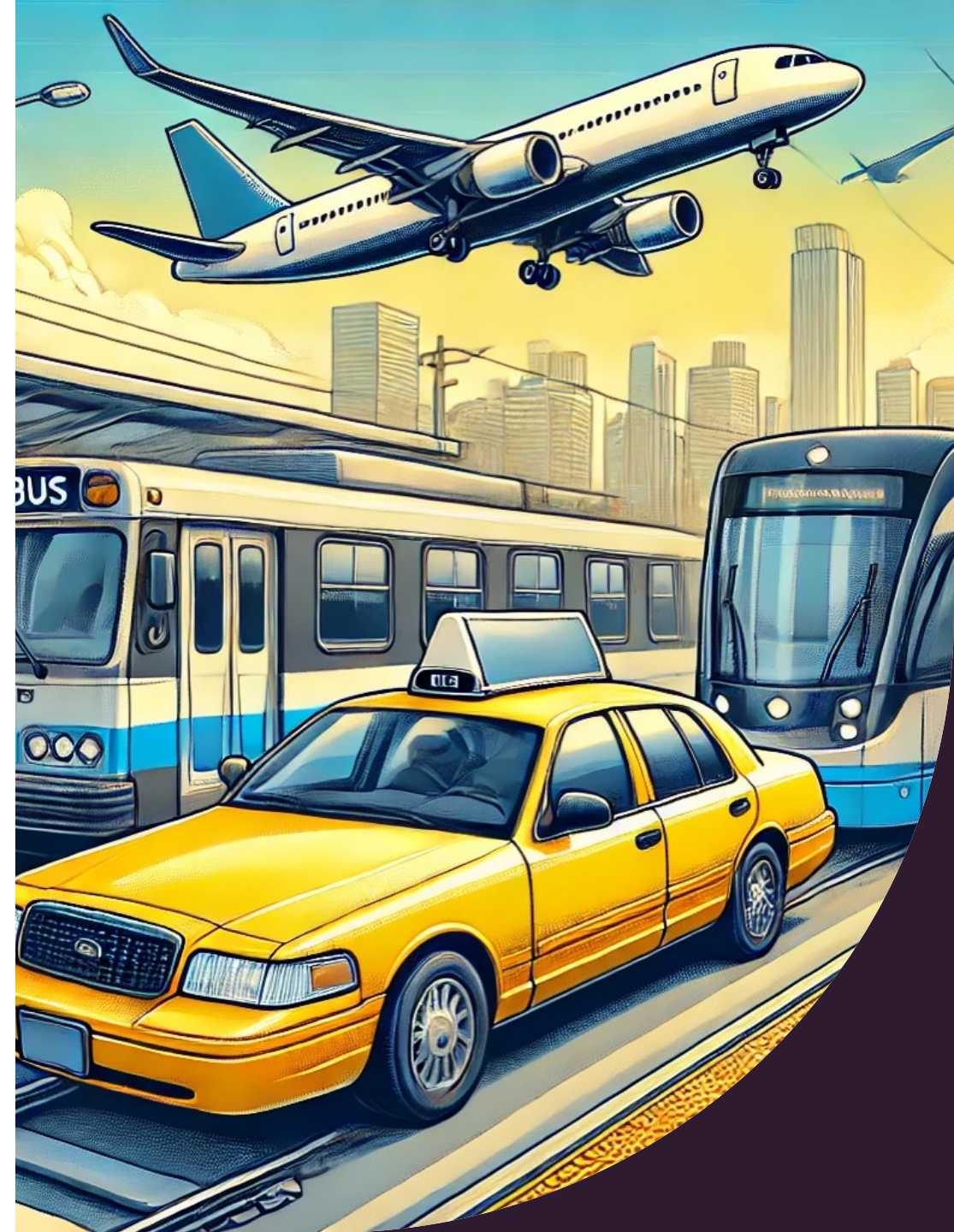
Rapid prototyping

- Develop before certification
- Certification needs to catch up
- Taking existing solutions from non-aviation suppliers
- Trying to certify Novel solutions



Competitiveness

- \$ 300 000 battery
- Around 1000 flight hours between replacements
- \$ 300 / flight hour (battery only)
- Aircraft acquisition cost, Pilot, ground personnel, infrastructure, electricity, maintenance
- Wanting to compete with cabs and public transport
- Lilium switched strategy to exclusive transport for VIPs
- Public acceptance



Contact

Dominik Kersch

Karman Aerospace

d.kersch@karman-aerospace.com

