URBAN AIR MOBILITY
FRANCE AND GROUPE ADP PERSPECTIVE

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CHALLENGES

#1 Infrastructure Development

To support UAM operations. Helipads, landing zones, charging stations, and maintenance facilities in urban areas. Adapting existing infrastructure or creating new dedicated spaces can be costly and require significant planning and coordination with local authorities.

#2 Regulatory Framework

Need of new regulations and standards that ensure safe and efficient operations, to address airspace management, traffic control, pilot qualifications, vehicle certifications, and integration with existing aviation systems. Striking a balance between safety, noise reduction, and environmental concerns is essential but can be complex.

#3 Air Traffic Management

Integrating UAM into the existing airspace system. Managing the increased number of low-altitude flights while ensuring safety and efficiency requires advanced air traffic management solutions. Coordination with with manned aircraft, helicopters, and other airspace users demands sophisticated technology and effective communication between stakeholders.

#4 Public Acceptance

Concerns about noise pollution, visual intrusion, privacy, and safety may arise, requiring effective communication and engagement strategies to address public apprehensions. Demonstrating the benefits of UAM, such as reduced congestion and emissions, will be crucial in gaining public support.

#5 Vehicle Technology and Performance

Developing eVTOL aircraft that are safe, reliable, and economically viable. UAM vehicles must meet stringent safety standards, have sufficient range and payload capacity, and offer low noise emissions. Ensuring the availability of robust and efficient battery technology is essential to support electric propulsion systems.

#6 Integration with Existing Transportation Modes

Integration with existing transportation modes, such as ground-based public transport. Developing efficient multimodal transportation networks that enable passengers to transition seamlessly between air and ground transport is a significant challenge.

#7 Economic Viability

To attract private investment and ensure long-term sustainability. Balancing the cost of infrastructure development, vehicle manufacturing, maintenance, and operational expenses with affordable pricing for passengers is a complex task.

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REGULATION

Regulatory Sandbox

Program launched by the French Civil Aviation Authority (DGAC) to facilitate the testing and development of UAM technologies. Testing solutions under controlled conditions, enabling the authorities to gather valuable data and insights to shape future regulations.

U-space (April 2021)

U-space (European initiative) = an airspace management system specifically designed for low-altitude operations, including UAM. Aim = ensure the safe and efficient integration of drones and other unmanned aircraft in urban environments.

EASA Special Condition

Introduction by the European Union Aviation Safety Agency (EASA) of a special condition for the certification of small aircraft designed for UAM operations = SC-VTOL, safety standards for electric vertical takeoff and landing (eVTOL) aircraft, covering aspects such as airworthiness, propulsion systems, handling qualities, and more.

Urban Air Mobility Initiative

Launch of the Urban Air Mobility Initiative to coordinate and accelerate the development of UAM = collaboration between various stakeholders, i.e. government agencies, aviation industry players, research institutions, and local authorities. Aim = foster innovation, address regulatory challenges, and support the deployment of UAM services

Integration with Existing Regulations

UAM operations will need to comply with existing aviation regulations and standards in France. This includes regulations related to airspace management, air traffic control, pilot licensing, vehicle certification, and safety requirements. As UAM evolves, specific regulations tailored to its unique characteristics are likely to be developed.

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INITIATIVES

ELECTRIFICATION OF AVIATION FLEETS
– Pipistrel's Velis Electro –

Alliance with **six leaders in carbon-free regional aviation**

- 100% electric
- Passengers: 2 seats
- Cruise speed: 167km/h
- Range: up to 50mn
- Certification horizon: EASA since 2020

Introduction of electric (and hydrogen) powered 2 to 100-seat aircraft on its airfields and at Paris-Le Bourget, Paris-Orly and Paris-CDG airports before 2030.

These new aircraft set to decarbonize flights around aerodromes, and to serve radial, regional and short-haul routes in Europe.

Toussus-le-Noble aerodrome was the launch site of the Velis Electro, after the aircraft received EASA certification in June 2020. The Groupe ADP and TotalEnergies are also deploying a network of self-service electric terminals at airfields in the Paris region to support fleet conversion (Etampes, Toussus, Pontoise).

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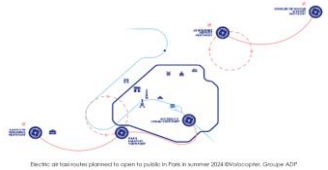
GROUPE ADP INITIATIVES

VOLOCOPTER AND GROUPE ADP ANNOUNCE COMMERCIAL eVTOL ROUTES IN PARIS – A World First in Summer 2024 –

Start with three connection routes, with several aircraft.

1. **Paris-Charles de Gaulle airport <> Paris-Le Bourget airport**
2. **Vertiport of Austerlitz barge <> Paris Heliport**
3. **Paris Heliport <> Airfield of Saint-Cyr-l'École (Versailles)**



Two tourist round trip flights from:

1. **Paris Heliport**
2. **Paris-Le Bourget**

Paris = the 1st European city - and likely the 1st city in the world - to offer electric vertical take-off and landing aircraft (eVTOL) services in time for the 2024 Olympic and Paralympic Games.

2024: first routes and operations defined

5 vertiports and will gradually grow to cover the whole Paris region over the next decade.

VoloCity aircraft (capacity for 1 pilot and 1 passenger), will be flying at heights below 500 meters and will not be audible from ground level in urban environments.

A special vertiport will be located on the Austerlitz barge on the Seine River, with strong support from the Paris Region.

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