The Global AAM/UAM Market Map

Worldwide
AAM/UAM Routes and Programmes

Sample pages

A guide to advanced and urban air mobility projects around the world

*Thank you for downloading these sample pages of the **Worldwide AAM/UAM Routes and Programmes** report. If you have any queries, please get in touch with us – contact details are below.*

Introduction

The **Worldwide AAM/UAM Routes and Programmes** report is aimed at advanced air mobility/urban air mobility (AAM/UAM) industry OEMs and supply chain partners, transport planners, finance companies, consultants and local authorities who need a detailed understanding of what programmes are underway around the world and the market opportunities that exist within these programmes. It provides a unique guide to competitive industry information, global/regional market size and trend analysis, with a specific focus on routes, route lengths, host cities/regions and eco-system suppliers.

It is based on many months of research by the worldwide editorial team and the sources of each entry are referenced.

While most AAM/UAM market intelligence studies are focused on the value and forecast for eVTOLs and associated industry suppliers, the **Worldwide AAM/UAM Routes and Programmes** report analyses operational plans and confirmed industry participation broken down into geographical areas.

The report and database give details on plans to develop passenger AAM/UAM services in 63 countries and 257 cities, with timelines and descriptions along with details on industry participation, broken down into the following areas:

- Cities and routes (with route lengths)
- eVTOL manufacturer partner
- Electric fixed wing platform manufacturer
- AAM/UAM aircraft operators
- AAM/UAM training
- AAM/UAM aircraft operator maintenance and support
- AAM/UAM aircraft charging and power supplies
- Vertiport/airport developer/operator
- Vertiport/airport safety and security
- Airspace integration
- Local authority partner/client
- Others

Information is validated and updated constantly – the sources for all information are outlined in the on-line version of this report.

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Australia

Country introduction

According to the publication "AAM: Industry vision and roadmap" published by the Australian Association for Uncrewed Systems (AAUS), 2027 is the date the first of type AAM aircraft will be ready for operation in Australia. "With that said," according to the publication, "if the right ecosystem conditions can be established earlier, then this date could be brought forward, limited primarily by certification timelines and AAM manufacturer production rates."

There will be three waves of AAM development, according to AAUS.

Wave one will see initial use cases will be those that can be directly accommodated within the existing air navigation system, requiring minimal regulatory change, and posing no, or minimal, impact on existing airspace use and communities. This is likely to include replacing helicopters on existing air tourism and private charter routes and utilising existing helicopter landing areas. Illustrative use cases of wave one include:

- Theme park air tourism (Often referred to as "A to A" flights)
- Charters from Melbourne city to regional areas (e.g., Yarra Valley wineries)
- Sydney Harbour air tours
- Ad hoc flights from major airports to existing helicopter landing sites Initial civil services

There will also be niche services likely to be focussed on community-good applications, in low complex and low impact environments.

- Mail and medical services to Moreton Bay islands
- Regular medical services to outlying rural towns (from a regional hub) Low-volume scheduled commuter Potentially high value but low volume scheduled services between a small network of fixed locations.

Other feasible early operations will be highly dependent on the geography, vertiport location relative to existing transport hubs (e.g., airports and train stations), and airspace design (e.g., where operations can be accommodated with minimal or no change).

- Airport / transport hub connectors (e.g., Rose Bay seaplane terminal to Sydney Airport or Western Sydney Airport and Sunshine/Gold Coast Helipads to Brisbane Airport)
- Geelong-Docklands cross-bay commuter service
- Melbourne or Brisbane River helipad flights to airports

Defence It is expected that defence will be early adopters and evaluators of AAM aircraft for a wide array of use cases.

Regional Services Low rate Regional Air Mobility (RAM) operations (passenger and freight) will also be available.

- Regional cargo and mail services (distribution hub-to-hub)
- Regional passenger connectors (e.g., outlying towns to a regional-centre airport)

The **second wave** can be characterised as one of adaption and transition. A period defined by a series of small changes to the existing ecosystem that permit an incremental expansion in the scope of viable and supported AAM operations. Urban Public Transport Scheduled urban public transport operations will begin. They are not expected to be cost-competitive with existing transport systems, but rather complement existing networks with new routes or a higher performance service (e.g., faster, service dependability, etc.). These initial "pilot" services are not expected to be commercially viable until scale is reached. Illustrative use cases include:

- Commuter – Brisbane to Caloundra connector, Gold Coast Hinterland or Maleny to CBD or Airport
- Sydney Airport to Bondi Junction shopping centre
- Western Sydney Airport to Northern Beaches or Hawksbury area
- Sorrento to Melbourne Central Business District Complex Civil Services

Urban civil services that require high dependability and customisation (e.g., onboard equipment) will begin.

- Night time police patrols over urban areas where noise is a concern
- Hospital patient transfers

Regional Air Mobility Improvements in the performance of AAM (e.g., through the introduction of hybrid and hydrogen propulsion systems, and improved battery technology) will open up a number of new use cases

- Scheduled Melbourne to Ballarat connector service
- Patient transfer services
- Royal flying doctor services Private operations A much smaller, but in time growing, AAM use case will be private operations particularly in regional areas.

The **third wave** will see significant expansion in the coverage and capacity of scheduled passenger transport services across a growing network of urban and peri-urban vertiports.

- City mass transport networks On-demand Air Taxi

On demand passenger and freight transportation services utilising a combination of public, public-commercial and private vertiports.

- "Yellow Cabs" of aviation servicing cities

On-demand Urban Freight Similar to the Urban On-demand Air Taxi use case, flying equivalent high priority freight for courier companies. These will be focussed on hub-to-hub deliveries rather than last mile.

Melbourne was originally chosen as a launch city for Uber's UAM services, but since the takeover by Joby of Uber these plans have been delayed. The city is still on Joby's list of target cities and the company has been reported as working towards launching its first commercial services there as early as 2024, though other operators are targeting the start of 2026 for first commercial operations.

Eve, Joby and Wisk are all developing eVTOL routes in the country, while cities and states are drawing up regional service plans, with Brisbane's target of having air taxi operations in place for the 2032 Olympic Games an important focus for accelerating eVTOL route planning. In parallel, several projects in the country are under way to use eVTOL platforms for medical and emergency services in rural and urban areas.

From a high-level viewpoint, in December 2020 EmbraerX, Embraer's business subsidiary, and Airservices, Australia's Civil Air Navigation service provider, published a new "concept of operations" (CONOPS) for the air taxi market. Using the City of Melbourne, Australia as a model, CONOPS has examined how existing air traffic management solutions can initially enable UAM operations, while simultaneously preparing for the scale of operations through new traffic management technologies.

In July 2022 Australia's Civil Aviation Safety Authority (CASA) published its remotely piloted aircraft system (RPAS) and advanced air mobility (AAM) roadmap. Here are the highlights for the near-term.

Immediate term (2022 to 2023)
Aircraft and aircraft systems

- Publish acceptable industry consensus standards for piloted AAM
- Review applicable maintenance policies for AAM.
- Review international frameworks, standards and methods for certification and assurance of RPAS. This includes consideration of adoption of the FAA durability and reliability process for low-risk RPAS.
- Review applicable maintenance policies for RPAS.
- Publish guidance on the evidence requirements from the OEM versus the operator for RPAS operational approvals.
- Airspace and traffic management.
- Through the AFAF (Australia Future Airspace Framework), develop a transparent, consistent and scalable method to manage Australian airspace that supports RPAS and AAM integration.
- Research how existing separation standards may apply to RPAS and AAM. Identify future changes required including conspicuity and equipage considerations.
- Review existing flight rules against the future needs for RPAS and AAM.
- Work with DITRDC (Australia's Department of Infrastructure, Transport, Regional Development, Communications and the Arts) and Airservices Australia to develop a regulatory oversight framework for UTM.

Operations

- Develop and publish further guidance material for RPAS operations already enabled in existing regulations, including acceptable means of compliance.

- Develop and publish guidance material for approval of research and development operations.
- Review and publish guidance on the carriage of dangerous goods by RPAS.
- Implement regulatory changes from the post-implementation review of CASR Part 101. Conduct a gap analysis of CASR parts to identify regulatory changes required to support RPAS and AAM operations. Publish more standard scenarios and SORA guidance for low-risk RPAS operations and emergency services.
- Talk with model aircraft, drone sport and recreation flyers to find opportunities for improved collaboration and consultation.

Infrastructure

- Develop guidance material, design requirements and regulations for vertiports and other infrastructure required to support AAM operations.
- Develop guidance for the infrastructure required to support research and development activities.
- Work collaboratively across government to understand and establish spectrum requirements for RPAS and AAM.
- Work with DITRDC to set up the National Drone Detection Network and support all safety aspects of the infrastructure planning framework.

From the bottom-up, industry development perspective:

- In January 2022 Skyportz, the Australia-based air taxi infrastructure start-up, announced a partnership with Secure Parking to deliver up to 400 potential new vertiport sites. Skyportz is working with the Australian Federal and State governments to help develop the standards, regulations and zones which will enable "mini airports" in new locations in and around cities and regional centres.
- In September 2021 Eve Urban Air Mobility, an Embraer company, and Microflite, an Australian helicopter operator, announced a partnership to commercialise UAM services in the country by 2026.
- In February 2022 Eve Urban Air Mobility announced a partnership with Aviair and Helispirit leading to "an order of up to 50 Eve eVTOLs", followed by a collaboration with Microflite in the purchase of up to 40 eVTOLs.
- In July 2022 Switzerland-based Dufour Aerospace announced it had partnered with V-Star Powered Lift Aviation to fly the eight-seat piloted Aero3 aircraft, with a targeted cruising speed of 350 km/h (215 mph), a range of up to 1,020 km (630 mi), and a useful load of 750 kg (1,650 lb) on regional routes throughout Australia. Certification is planned for 2025.

In January 2024 Swinburne University of Technology's AIR Hub along with partners Textron Systems Australia, Latrobe City Council and Federation University Australia announced new AAM trials. Funded by Australia's Victoria State Government, Swinburne University of Technology says the "Regional Advanced Air Mobility Surrogate Trials (RAST) are advancing our understanding of flight and community considerations for AAM operations ahead of aircraft arriving in country through surrogate platforms. Learning by doing and a project bringing together a multi-disciplinary team of industry, government, researchers, students and local community."

"Researchers from Swinburne's Aerostructures Innovation Research Hub (AIR Hub) are working with Latrobe City Council, Textron Systems Australia (TSA), Federation University and certification organisations such as CASA, to pioneer new technologies in Advanced Air Mobility (AAM) for the region and develop green aviation solutions to address real-world problems.

"These new technologies include Regional Advanced Air Mobility Surrogate Trials (RAST), which will start in Latrobe City from February 2024. The Trials will feature a series of 30-60-minute simulated flights from the Latrobe Regional Airport at night-time, to assess the practical applications of drone technology in regional communities, including medical supply deliveries, powerline inspections and logistics."

Press reports suggest all-electric flights are planned from Sydney to Canberra three times a day and over the Great Barrier Reef by 2026, following the deal between Sydney Seaplanes, Nautilus and Eve Air Mobility to fly 60 eVTOLs in Australian airspace by 2026. Tourism flight operator Nautilus – which has bases in Cairns, Port Douglas, Townsville, Horn Island and Darwin, plans to fly 10 Eve eVTOLs on scenic flights over the Great Barrier Reef and other tourist attractions. Sydney Seaplanes will also take delivery of 50 Eve eVTOLs by 2026 to fly new routes from the company's Rose Bay terminal (subject to community consultation). Sydney Seaplanes currently operates inter-urban flights from its Rose Bay terminal to destinations such as Palm Beach in Sydney's north.

Australia is also embracing the concept of using eVTOLs in medical and healthcare roles. In November 2020 aeromedical charity CareFlight and eVTOL aircraft developer AMSL Aero – manufacturer of the Vertiia airborne ambulance – teamed up in Sydney to launch a new eVTOL air ambulance service to tackle rural and regional healthcare inequality in the country. The programme is part of an AD3 million Cooperative Research Centres Project grant from the federal government, for a two-year collaborative project with the University of Sydney and autonomy and sensing specialists Mission Systems. Test flights were planned to take place at the company's facility in Narromine Airport in regional New South Wales.

In early September 2022 AMSL Aero announced it had received AD23 million in private equity funding to develop its 300kmph Vertiia eVTOL, with a range of 1,000 km in its hydrogen-powered version. According to a report in the *Australian Financial Review*: "If the aircraft are adopted for commuting between regional areas and cities…people at the outset could expect to pay about USD130 for a trip from Melbourne to Geelong on a 15-minute flight. In NSW, a trip from Sydney to Terrigal would be similar."

Skyportz has selected Electra as preferred OEM partner with up to 100 eSTOL aircraft for extensive air mobility infrastructure network in Australia. Electra is currently developing a hybrid eSTOL aircraft that can take off and land in a space the size of a soccer field yet cruise at 175 knots, with in-flight battery recharging. The piloted fixed-wing aircraft will initially carry up to nine passengers or 2500 pounds of cargo up to 400 nautical miles in all weather conditions.

In October 2023 MONTE Aircraft Leasing Limited announced a three-party agreement with Cranfield Aerospace Solutions (CAeS) and Australian air charter company Torres Strait Air to convert up to ten Britten-Norman Islander aircraft to hydrogen-electric power.

The deal, which comes shortly after Torres Strait Air signed a letter of intent for ten new conventional Britten-Norman Islander aircraft, the company says will see MONTE, a "pioneer in financing low emission and zero emission technologies in the sub-regional aviation market", provide financing to Torres Strait Air for the conversion of existing Britten-Norman Islanders, and CAeS integrate its hydrogen-electric propulsion system technology into the aircraft.

"The deal will enable Torres Strait Air, which currently operates a fleet of eleven aircraft from Horn Island, to serve the vital air transport needs of the Torres Strait community in a sustainable way with zero-emission flight."

Eviation Aircraft in November 2022 announced that Northern Territory Air Services (NTAS), an Australian scheduled airline and charter aircraft operator, has signed a Letter of Intent (LOI) for 20 all-electric Alice commuter aircraft. In a press release the company Alice will typically operate flights ranging from 150 miles to 250 miles.

NTAS is based in Alice Springs, the gateway to the Northern Territory of Australia's outback, providing a link to major airlines for passengers arriving and departing from Alice Springs, Uluru and Mt. Isa Airports. It specializes in scheduled and charter air services for business groups, private and tourist travel, and cargo transport. The company has prioritized the adoption of carbon-free and sustainable technologies and is working with a range of stakeholders to support the introduction of all-electric flight," said the press release.

In December 2022 the New South Wales Government published its electric aviation brochure."Our vision is to ensure this new technology is fully integrated into a multi-modal network that benefits passengers….New and emerging electric aviation has the potential to reshape how people and goods travel in regional NSW" reads the statement which continues: "Emergency medical supplies, urgent freight and even passengers could soon be transported by state-of-the-art electric aircraft. Electric planes and drones could make transport cheaper, cleaner and more convenient than ever before. They could open new routes for passengers, connect communities and increase freight efficiency." The statement elaborates further saying "The electric aviation sector must grow in a manner that is safe, secure and considerate of the environment. It should enable economic activity, create new job opportunities and strengthen existing communities."

At the end of February 2023 Skyportz and property developer Pelligra announced a partnership to explore jointly developing vertiport networks to attract air taxi and drone delivery services to Australia. Skyportz says the agreement builds on previous partnerships between the company and other property owners such as Secure Parking which has hundreds of inner city car parking sites.

In April 2024 Skyportz announced it had launched Wilbur Air, a wholly owned subsidiary "that has been established as a priority airline for all our vertiport sites." According to the company.

"We will be establishing operational partnerships across Australia with existing small charter and helicopter companies interested in moving into Advanced Air Mobility. A range of aircraft will soon be announced that will facilitate everything from heavy lifting drone deliveries to short and long range passenger travel.

"Skyportz will be operating the first 100 Electra.Aero eSTOL aircraft in Australia with further partnerships to come."

Akso in April 2024 FlyOnE announced the expansion of its electric aircraft flight routes in Western Australia to include decarbonised air taxi transport to 17 additional locations.

"The new routes, already active now, cover popular destinations such as Wadjemup (Rottnest) Island, Bunbury, Margaret River, and Esperance, providing convenient and eco-friendly transportation options for both locals and tourists" according to a press release. "The fleet of decarbonised air taxis currently flying these routes will be transitioned to electric aircraft, powered by renewable energy sources, as FlyOnE takes delivery of new aircraft in the coming years, eventually making them a zero-emission mode of transportation. The current ICE fleet will have their emissions carbon offset by reforestation contributions on every flight, offsetting up to 2 tonnes of CO2 per flight. However, the current ICE aircraft only emit an average of 92kG of CO2 per charter route. This move aligns with FlyOnE's mission to create a more sustainable future for the aviation industry."

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Archerfield Airport, Queensland

Timeline:
Planned – *to be launched within two to five years; funds have been committed and key industry partners identified*

Programme description

In November 2024 Wisk signed a strategic alliance with Archerfield Airport Corporation (AAC) in Queensland, Australia, as part of its goal of bringing autonomous air taxi services to Brisbane by the 2032 Olympics. Multiple media sources and Wisk social media posts say Archerfield's location only 11 kilometres from Brisbane's central business district will position the airport as a central node within a network of vertiports serving the city.

Archerfield Airport is Brisbane's secondary airport and Queensland's major centre for general aviation activities.

Sources:

x.com/WiskAero/status/1859697202517459144

Brisbane

Timeline:
Planned – *to be launched within two to five years; funds have been committed and key industry partners identified*

Programme description

In a September 2024 report, *The Race to Gold – Brisbane's Games Transport Legacy* the City of Brisbane announced a wide-ranging transport development plan to prepare for the transport needs of the city for the Olympic Games and beyond, including the facilitation of electric air taxis.

According to Skyportz's Clem Newton-Brown: "Brisbane is well suited for waterfront vertistops co-located with ferry terminals, as the river wraps around the CBD. But they are also going to need suburban vertistops stretching from the Sunshine Coast to the Gold Coast and into the hinterland. In Australia we have strong support from our air regulator, CASA, Federal and State Governments, but what we need is strong buy in from local Governments and South East Queensland is currently leading the way".

The report states that the Olympic Games present a strong opportunity to showcase the potential of urban air mobility. Council of Mayors (South East Queensland) is playing a key role in facilitating collaboration between government agencies involved in the planning for urban air mobility.

Sources:

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Canberra

Timeline:
Planned – *to be launched within two to five years; funds have been committed and key industry partners identified*

Route(s):
Canberra – Sydney (286km)

Programme description

The Government of the Australian Capital Territory has published its National Emerging Aviation Technologies Policy covering drone and eVTOL industries.

Some key passages from the document include:

The ACT Government is optimistic about the potential benefits of drones and drone delivery services, from empowering local businesses to reach more customers, to cutting greenhouse gas emissions and making life easier for Canberrans living with mobility challenges. We are also interested in further exploring the wide range of situations and possible applications for drone technology, including in the context of Emergency Services.

- *The ACT Government supports the proposed policy approach that the Australian Government should lead the development of a coordinated and informed approach to infrastructure planning, investment, requirements and approvals. The two areas that the Australian Government might focus on are:*
- *site selection for "launch" sites for commercial operators, and*
- *site and operational requirements, particularly in relation to technical and assessments considerations once a site has been identified.*

Guidance for operators and land-use regulators on criteria for site selection will be invaluable in the future consideration of drone sites, as well as for the planning of such sites in future land releases. This might include guidance on considerations including appropriate location of such sites, sizes, connectivity to ground-based transport, proximity considerations (e.g. sensitive receptors, utility services and powerlines, vulnerable environments, privacy, potential flightpaths and approach zones, and proximity to other secure facilities), appropriate configuration of sites and compatible and incompatible land uses.

Site selection also raises a fundamental threshold question of when a site and its associated operations are insignificant enough to be considered as a type of "local aviation depot" (albeit closely integrated within the urban environment), and when it becomes a proposal to consider the site to be of greater land use significance with more significant potential impacts, i.e. 4 Paragraph 3.26 Inquiry into Drone Delivery Systems in the ACT, when does it become a de facto airport or heliport for UAVs or eVTOL operations?

Some clarification or guidance at a Commonwealth level about this would be gratefully received. On site and operational requirements currently there is very little, if any, guidance for regulators from the Commonwealth in their consideration of a potential launch/operational site for eVTOL operations. This could potentially cover a wide range of matters, such as sizes of launch pads, onsite storage facilities and maintenance requirements, securing the site (including fencing, lighting and surveillance requirements), utility services requirements, vegetation clearance requirements, site rehabilitation (in the case of temporary use), likely trip generation rates (and corresponding likely flight generation rates) for different operators, signage, access and parking requirements.

Meanwhile, Press reports suggest all-electric flights are planned from Sydney to Canberra three times a day and over the Great Barrier Reef by 2026, following the deal between Sydney Seaplanes, Nautilus and Eve Air Mobility to fly 60 eVTOLs in Australian airspace by 2026. Tourism flight operator Nautilus – with bases in Cairns, Port Douglas, Townsville, Horn Island and Darwin – plans to fly 10 Eve's eVTOLs on scenic flights over the Great Barrier Reef and other tourist attractions.

Sources:

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Denmark

Country introduction

Germany's Evia Aero airline plans to fly electric aircraft services from Elde in the Netherlands to London, Brussels, Duesseldorf, Hamburg, Frankfurt and Copenhagen, as part of a network of 15 European destinations in place by 2027. The company has also signed a letter of intent with the UK company Cranfield Aerospace Solutions (CAS) for the delivery of ten Britten Norman Islanders powered by hydrogen fuel cells. The aircraft is aimed at coastal routes in Germany, the Netherlands and Denmark.

Copenhagen AirTaxi, Copenhagen Helicopter, VÆRIDION "to deliver 100% electric regional services in Denmark"

In September 2023, the Danish companies Copenhagen AirTaxi and Copenhagen Helicopter – both based at Roskilde Airport – along with German aircraft manufacturer VÆRIDION signed a cooperation agreement aimed at accelerating the green transition of regional aviation in the Nordic region. By 2030 at the latest, the first 100% electric flights are expected to be introduced on domestic routes in Denmark, according to a joint company press release.

"We believe that the Nordic region will become the first in the world to implement this new form of air transport, made possible by the launch of our 100% electric Microliner aircraft. And with Copenhagen Air Taxi and Copenhagen Helicopter, we have found the ideal partners to promote our transportation concept in the Nordic countries, starting in Denmark," says Ivor van Dartel, CEO and Co-founder of VÆRIDION.

Copenhagen AirTaxi and Copenhagen Helicopter will contribute with their networks, extensive market knowledge, and operational experience, while VÆRIDION provides the flight technology.

VÆRDION's Microliner is a 9-seater, 100% electric aircraft. The Microliner will be certified and delivered before 2030, after which it can be deployed on shorter routes of up to 500 km. According to Henrik Bendix, Co-founder and Chairman of Copenhagen Helicopter, the Microliner could have a significant impact on people´s mobility and contribute to increasing cohesion within each country.

"The introduction of the Microliner will encourage a development where people can live, work, and study more freely, while maintaining a good work/life balance. Additionally, it will remove a significant amount of CO2 from the roads and reduce the need to maintain and expand road infrastructure," he said.

Jimmy Arly Larsen, Accountable Manager of Copenhagen AirTaxi, said that approximately 1.6 million passengers are transported annually on domestic routes in Denmark alone. The Microliner could play a key role in realizing the Danish government's ambition for all domestic flights to be fossil-free by 2030. "It would be a logical first step for us to test the Microliner on our Læsø route and subsequently expand our domestic route network with Microliner aircraft," said Jimmy Arly Larsen.

According to Martin Winther Andersen, Co-founder and CEO of Copenhagen Helicopter, the Microliner could play a crucial role in the future of Mobility as a Service-based (MaaS) personal transport. MaaS involves a shift away from personally owned modes of transport towards mobility delivered as a service. Specifically, this means that people will be able to plan, book, and pay for various mobility services in one digital solution.

"The new green aircraft type requires significantly shorter take-off and landing distances than traditional aircraft, which allows the use of smaller airfields that are no longer utilized for commercial routes. These routes were abandoned as aircraft types gradually became larger. The Microliner can change that, allowing us to create a dense network of domestic routes again," said Martin Winther Andersen.

Meanwhile, Odense has become the centre of the country's urban air mobility programme. In May 2022 Odense Municipality announced it was targeting future green mobility solutions at Hans Christian Andersen Airport (HCAA). According to a report from the local authority's economics committee:

"It is the Mayor's Administration's assessment that the airport faces a unique opportunity to become an epicenter in Denmark and (Northern) Europe for the use, testing and development of drones for passenger transport. An assessment that is based, among other things, on:

- A brief initial screening of opportunities and potential carried out by the Mayor's Administration in February 2022, which is attached to the case as an appendix.
- Strong support from Naviair (the state's company for airspace traffic management), which points to Odense as a natural center for this development.

"Based on these assessments, the Mayor's Administration is now uncovering the potential for urban air mobility (UAM) and vertiports (landing facilities for personal drones) in more detail - in order to be able to position Odense Municipality and Hans Christian Andersen Airport as visionary players in drone mobility in the long term. On the basis of the above, the mayor's administration has set up a fast-working working group, which in future will facilitate a focused and short-term cover-up effort, which will uncover the potential and prepare a business case, a project plan, defined milestones and a draft budget.

"The working group works on the basis of the attached memorandum of the case, and consists of Odense Municipality and relevant actors, who must jointly prepare solutions to the above objectives. In this connection, the focus will be particularly on the establishment of a Danish/Finnish solution for personal drone mobility in the context of future infrastructure."

In late April 2023 Nordic research agency Nordregio published a report which identified the most viable regional/commuter electric aircraft routes.

The primary focus of this project was to assess route viability based on a fully electric airplane with a 19-passenger capacity, flying a maximum distance of 200 km for a duration of one hour.

According to the report:

"Specific Nordic routes are recommended for selection as case studies based on the regional power grid capacity. In general, all Nordic countries consider electrification as a key enabler for decarbonising the energy and transport sector. However, increased power production and consumption necessitate improvements and extension of current power grid, to meet future

energy demand and avoid congestion. Additionally, power consumers need to apply smart consumption measures, to assist in stabilising national power grids, where fluctuating renewable energy production will constitute a high share.

"In Denmark, Aalborg airport currently has a strong foundation for establishing electric aviation, based on the power grid in the municipality. However, Karup and Rønne airport can connect rural areas with urban areas, such as Copenhagen. While the power capacity situation in Karup is uncertain in terms of adequacy for supplying electric aviation, the benefits of introducing electric aviation are interesting to investigate, since the airport". *Image below: Nordregio*

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Odense

Timeline
Imminent – *to be launched within the next three years*

Route(s)
Odense – Funen (17km)

Programme description

In November 2023 Copenhagen Helicopter and its partner Copenhagen AirTaxi – both based at Roskilde Airport – signed a letter of intent with Dufour Aerospace for a conditional order to purchase the Aero2 UAV for cargo and aerial work and the Aero3 for passenger transportation.

"The aim is to establish a route between Odense and possibly other parts of the southern Funen archipelago with the Aero2 for cargo purposes by 2026, initially on a trial basis" according to a press release. "This will serve as a learning process for the operation and maintenance of Dufour's tiltwing aircraft. Once the equivalent but larger 8-seater Aero3 is ready in 2030, Copenhagen Helicopter plan to expand the service to include passenger transport in this region and beyond."

Thomas Pfammatter, CEO and co-founder of Dufour Aerospace said "In an area with huge geographical obstacles, these aircraft have the potential to change the transportation setup of a country. This is true for Aero2 in uncrewed critical cargo applications and for Aero3 in crewed aviation. These aircraft will make connectivity and logistics dramatically simpler, more ecological and cheaper than today, and Denmark is an ideal place for this."

Copenhagen Helicopter offers transport such as taxi flights in traditional helicopters, which the company says is a growth area. According to Andersen, Copenhagen Helicopter's own calculations, which are based on international and national reports, indicate that the AAM area has huge potential and could transport 84,000 passengers a day and remove 120,000 tonnes of CO2 from Danish roads by 2035.

A first stage of the partnership between HCA Airport in Odense and Copenhagen Helicopter was announced in February 2023 the "first in Denmark to build an infrastructure for electrically-powered flying taxis to ferry people between the country's largest cities" according to UAS Denmark Test Center.

Partners

eVTOL manufacturer
Dufour

AAM/UAM aircraft operator:
Copenhagen Helicopter

Vertiport/airport developer/operator:
HCA Airport

Sources:

uasdenmark.dk/hca-airport-part-of-partnership-to-establish-landing-and-take-off-site-for-flying-taxis-on-top-of-odense-station

www.uasdenmark.dk

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Pingtan Island

Timeline
Planned – *to be launched within two to five years; funds have been committed and key industry partners identified*

Programme description

In November 2023 EHang Intelligent Equipment (Guangzhou) Co., Ltd., Fujian Xinyun Technology Investment Co., Ltd. and the Experimental Zone Investment Promotion Committee signed a low-altitude flight tourism project covering the resort island of Pingtan, according to China's Baidu news agency.

Pingtan is an island off the east coast of mainland China in Fujian Province.

"It is reported that the Pingtan low-altitude flight tourism project initially plans to invest 120 million yuan (USD16.4 million) and will focus on research and development around the implementation of the "low-altitude flight and tourism" scenario," said the news agency report. "The project plan is based on scenic spot tourism, giving full play to the policy advantages of the experimental zone and the technical and operational capabilities of investors and operators, and extending the application of unmanned aircraft technology to multi-level fields such as transportation, logistics, medical care, emergency and urban management, and gradually achieve full-chain development in the low-altitude flight industry in terms of resource integration, development and operation, and brand building."

"Li Xiaona, Vice President of EHang Intelligent Equipment (Guangzhou) Co., Ltd. and General Manager of East China Region, said that after the project is implemented, the low-altitude tourism industry ecology will be introduced in Pingtan, efforts will be made to explore low-altitude tourism development models, and create a "Pingtan model" of low-altitude tourism. "Fujian Xinyun Technology Investment Co Ltd. is mainly responsible for the investment and operation management of the project. In the next stage, it will focus on the integration and utilization of corresponding resources, and plans to connect with state-owned enterprises in the district to promote the cooperative development of low-altitude flight cultural tourism projects based on sightseeing and tourism.

Partners

eVTOL manufacturer
EHang

Others
Fujian Xinyun Technology Investment Co., Ltd.
Experimental Zone Investment Promotion Committee

Sources:

baijiahao.baidu.com/s?id=1781443712721533196&wfr=spider&for=pc

NEOM

Timeline:
Planned – *to be launched within two to five years; funds have been committed and key industry partners identified*

Programme description

NEOM is a new concept in urbanisation – a series of interlinked cities covering 26,500 sq km on the Red Sea coast of Saudi Arabia. The cluster of urban centres, financed by USD500 billion from the Public Investment Fund of the Kingdom of Saudi Arabia, comprises a floating industrial complex (Oxagon), a global trade centre, tourist resorts (including the Trojena ski and Sindalah luxury yacht resorts) and a linear city called "The Line". The development work of the project's first phase, Neom Bay, has been completed and includes NEOM Bay airport which launched regular flights from the region to Riyadh in 2019. A carbon-free transport network is one of the features of the new city. According to its website: "Shared autonomous and electric shuttles will provide for on demand urban passenger mobility, along with urban air mobility and a high-speed underground transit system. No cars, no traditional roads: NEOM will be the world's first zero-carbon region."

In December 2021 NEOM and Volocopter announced they were collaborating to design, implement and operate the world's first bespoke public vertical mobility system. According to a Press release: "Air taxi and vertical logistics services will be fully integrated with the overall multi-modal and zero-emission public transit system in NEOM." It continues: "The joint venture will be the sole operator of initial public transit routes across NEOM, while enabling an open eVTOL ecosystem for vertical mobility services including logistics, emergency response and tourism."

NEOM City transport authorities plan to use eVTOLs to ferry passengers between the main urban conurbations as well as being used as emergency response vehicles. NEOM's multimodal mobility system will be powered by 100% renewable energy generated by solar and wind energy sources. NEOM has made a EUR 175 million investment in the German eVTOL manufacturer. To link all the region's aviation eco-systems NEOM City has developed an innovate low altitude UAS traffic management system, which it presented to the International Civil Aviation Organization (ICAO) General Assembly in September 2022. The UTM system will integrate drone and eVTOL traffic flying between NEOM Bay Airport, NEOM International Airport, the LINE, TROJENA, Gulf of Aqaba, OXAGON and NEOM islands, integrated within the airport air traffic management system and will be one of the most complex and dynamic UTM ecosystems being developed anywhere in the world.

According to the text of the presentation:

"...initial requirements on operator/pilot training and human factors with details on knowledge, skills, and abilities to be competent for jobs and tasks associated with advanced air mobility (AAM)/uncrewed aircraft (UA) flight management; initial requirements on AAM/UA capabilities, performance, and manoeuvrability covering communication, performance-based navigation, and detect and avoid; requirements on UTM System architecture framework including principal elements, functions, interfaces of the system, communications, and monitoring/surveillance capabilities, including decisions for spectrum, data exchange, and cybersecurity standards."

GACA is working to develop a regulatory framework for NEOM UTM as a precursor for rolling out a network of UTM eco-systems throughout the country.

In June 2023 Volocopter announced the successful completion of a series of air taxi test flights in Saudi Arabia's NEOM. "This marks the first time an eVTOL (electric vertical takeoff and landing) aircraft has received a special flight authorization and performed test flights in the Kingdom of Saudi Arabia," according to a press release. "The flight test campaign lasted over a week and built on 18 months of collaboration between NEOM, the General Authority of Civil Aviation (GACA), and Volocopter, with the aim of implementing and scaling an electric UAM ecosystem and testbed in NEOM. The parties worked closely to ensure full regulatory compliance and safety ahead of the test campaign."

NEOM has placed a confirmed order of 15 Volocopter aircraft to commence initial flight operations within the next two to three years.

The partnership between NEOM and Volocopter is to lead the design and development of "a three-dimensional public transportation system, advancing the technical, regulatory, and infrastructure solutions for eVTOL operations across NEOM" and offers vertical mobility services as an integral part of the city's "multi-modal and zero-emissions public mobility system, providing seamless connectivity for passengers and goods."

The release continues, "Volocopter and NEOM have agreed an initial order of 10 VoloCity passenger and five VoloDrone logistics aircraft to support early activation of flight operations. The joint venture will scale-up its activities from the beginning of 2022 to incubate urban air mobility (UAM) in the region and seed a vertical mobility ecosystem."

In October 2023 the NEOM Investment Fund (NIF) said it has closed an investment into REGENT, the US-based electric seaglider manufacturer.

"The investment positions NEOM as the largest single contributor in REGENT's Series A round, enabling the company to take its technology to the next stage," said the organisation in a press release. "NEOM's investment is part of a multi-year partnership with REGENT to establish innovative seaglider passenger operations in the region.

NEOM is located in Tabuk at the far north-west of Saudi Arabia. It will cover a total area of 10,200 square miles and extend along the coast of the Red Sea. Saudi Arabia aims to complete the first section of NEOM by 2025. The project has an estimated cost of USD500 billion.

Partners

eVTOL manufacturer:
Volocopter

Sources:

www.urbanairmobilitynews.com/new-city-projects/saudi-arabia-neom-volocopter-to-collaborate-on-worlds-first-bespoke-public-evtol-system-initial-15-aircraft-order

www.volocopter.com/en/newsroom/volocopter-flies-in-neom

www.neom.com/en-us/newsroom/neom-invests-in-regent-series

Alabama

Timeline:
Initial steps – *acknowledgement of the need to take initial step to prepare for AAM*

Programme description

In July 2023, the Alabama legislature enacted Bill SJR3. The bill established a study commission to review the state's existing aviation infrastructure and includes the steps needed to provide for its participation and expansion in new local, regional, and urban transport systems. It also identified Alabama companies that serve the aeronautical industry, to foster their contributions to AAM. The bill included the provision to study the recruitment of innovative companies engaged in some area of AAM technology or logistics to the state. The study commission is required to prepare and submit recommendations on AAM legislation to the Governor during the Legislature's 2025 Regular Session.

Sources:

www.dot.ga.gov/InvestSmart/Aviation/AAM/Blueprint%20and%20Action%20Plan%20-%20GDOT%20AAM%20Study.pdf

Anchorage, Alaska

Timeline:
Initial steps – *acknowledgement of the need to take initial step to prepare for AAM*

Programme description

On acquiring electric aircraft manufacturer Airflow in June 2022 Electra has taken over the company's customer list, which includes Ravn Alaska, a regional passenger transport operator based in Anchorage. The company flies from Anchorage to Kenai, Valdez, Homer, King Salmon, St. Paul Island, Unalakleet, St. Mary's, Aniak, Dutch Harbor, Sand Point, Cold Bay, with some destinations 640km distant from Anchorage. Electra is currently developing a hybrid eSTOL aircraft that can take off and land in a space the size of a soccer field yet cruise at 175 knots, with in-flight battery recharging. The piloted fixed-wing aircraft will initially carry up to nine passengers or 2500 pounds of cargo up to 400 nautical miles in all weather conditions.

Everts Air Cargo based in Anchorage is also an Electra customer.

Partners

Electric fixed-wing platform manufacturer:
Electra

AAM/UAM aircraft operator:
Everts Air Cargo

Sources:

www.electra.aero/news/airflow-and-ravn-alaska-ink-deal-for-50-carbon-neutral-estol-aircraft

www.evertsair.com

Battle Creek, Michigan

Timeline:
Imminent – *to be launched within the next three years*

Programme description

In August 2023 Battle Creek Unlimited (BCU) a private, non-profit corporation which serves as the economic development arm for the City of Battle Creek and manages the Fort Custer Industrial Park announced that it has secured a USD7 million appropriation in the 2024 state budget to support the development of an advanced air mobility park at the Battle Creek Executive Airport (BTL).

BCU says the park, which is to be called MICH-AIR, has been in the works since 2019 when BCU received a grant from the Michigan Defense Center to determine if Battle Creek would be an attractive location for drone companies looking to establish operations. "The Battle Creek Executive Airport (BTL) is one of the busiest airports in the state. Its main runway measures 10,004 feet and is complemented by a parallel runway and a crosswind runway. The airport has approximately 200 acres of land available for development, ideal for drone operations" according to the press release.

BCU says it will market the facility as a site for drone manufacture, operations, maintenance & repair, and drone training, as well as for urban air mobility. The USD7 million the company says will be used to upgrade the airspace surveillance system at BTL, in preparation for increased traffic from autonomous and remotely piloted aircraft. BCU has already invested approximately USD3 million in the MICH-AIR project, which according to the company includes site preparation, land acquisition for a new entrance, engineering plans, and environmental analysis.

While MICH-AIR is informally referred to as a drone park, BCU President & CEO Joe Sobieralski noted that it is important to make the distinction between the small drones flown for personal recreation use and the large autonomous and remotely piloted aircraft that are currently being developed. "At MICH-AIR, we will be targeting large aviation and defence manufacturers, which are developing next generation aircraft. These could be used for transportation, cargo delivery, border surveillance, spraying crops, or firefighting. There are all kinds of applications, for both civilian and military use. Our goal is for MICH-AIR to be a leader in the emerging sector" he said.

Partners

Vertiport/airport developer/operator:
Volatus
Bellefonte Airport

Sources:

bcunlimited.org

Chicago, Illinois

Timeline:
Imminent – *to be launched within the next three years*

Route(s):
Downtown Chicago – O'Hare (32km) (Archer and United)
Chicago – Schaumburg (51km) (EVE and Blade)
Chicago – Tinley Park (33km) (EVE and Blade)

Programme description

eVertiSKY and Volatus Infrastructure & Energy Solutions (VI&E Solutions) in June 2024 reported they are progressing their efforts as part of the Chicago UAM Living Labs initiative, which began January 2024, establishing Chicago's first UAM vertiport. In the third quarter of 2024, the project will transition into the next stage with Federal, State, and Local engagement. "This strategic partnership also incorporates VI&E Solutions' multimodal EV charging solutions into eVertiSKY's CityAPI Dashboard which provides a transparent, real-time view of Vertiport ground assets, including the specifications of Volatus EV units, and accessible to operators via the NASA UTM, ensuring seamless coordination and management of both air and ground operations," said the companies in a press release.

"The UAM Living Labs plays a critical role by providing a real-world testing ground for UAM technologies, collaboration, and operational strategies. Through extensive data collection and stakeholder engagement, each UAM Living Labs identifies optimal vertiport locations, efficient operational protocols, and the economic and environmental impacts of UAM integration.

In March 2023, Archer Aviation and United Airlines announced plans to launch the first air taxi route in Chicago, between O'Hare International Airport (ORD) and Vertiport Chicago.

According to a press release "Vertiport Chicago, North America's largest vertical aircraft take off and landing facility, is located in the Illinois Medical District near the Chicago Loop. This site was selected as the takeoff and landing site for this airport to city centre route because of its convenience, access and service. From there, passengers will be able to travel to and from ORD via Archer's Midnight aircraft in approximately 10 minutes. A similar trip by car can take upwards of an hour or more during rush hour traffic.

"United and Archer's goal for its UAM network is to provide residents and visitors in the Chicago Metropolitan Area with a safe, sustainable, low noise, and cost-competitive alternative to ground transportation beginning in 2025. Chicago is the third most populous city in the United States, and home to United's headquarters. This makes it a unique city for Archer and United to build out. The early launch routes will focus in on airport to city centre transportation service, which are referred to as "trunk" routes. Once the trunk routes have been established, the next step will be to build out "branch" routes to connect to surrounding communities.

"ComEd, the Midwest's largest utility company, will work with United and Archer to establish the power infrastructure necessary to support eVTOL aircraft operations in and around the Chicago Metropolitan Area."

In another early trial of UAM procedures and technical requirements for the Chicago area, EVE and Blade Air Mobility announced in August 2022 they would organise a series of ground procedures and airborne flights using Blade helicopters.

EVE "aims to study operations, ground services, passenger journeys and eVTOL operator needs, creating more accessible and faster connections to Downtown Chicago. EVE will conduct its Chicago, Ill., UAM simulation over three weeks, starting with ground tests on September 12 and passenger flights on the 14th. Following the simulation, the city of Chicago will gain knowledge about the infrastructure and ecosystem needed to enable the launch and expected long-term growth of UAM in the area," according to an EVE Press release.

"Simulating the eVTOL operation in Chicago allows us to study how people will experience this service and understand the entire ecosystem requirements for our product and services, while showcasing the benefit of urban air mobility in one of North America's most prominent and populated cities," said André Stein, co-CEO of EVE.

EVE will perform the ground tests at Vertiport Chicago, an existing downtown heliport facility, simulating services, infrastructure and equipment requirements for the eVTOL. In the UAM infrastructure, a vertiport is an area of land or a structure used for the landing, take-off, charging and operation of eVTOL vehicles.

For this simulation, EVE has formed a consortium of partners, including Blade, Republic Airways, Halo Aviation, Vertiport Chicago, Village of Tinley Park, Village of Schaumburg, ACCIONA, SkyWest, Inc. and Speedbird Aero. A helicopter replicating EVE's future eVTOL will transport passengers from the Vertiport Chicago facility to two helistops located north-west and south-west of Chicago. The first route will connect Vertiport Chicago to Schaumburg Municipal Helistop, and the second route will connect Vertiport Chicago to Tinley Park Helistop in Illinois.

In August 2022 United Airlines (based at Chicago O'Hare) announced an order for 200 eVTOL air taxis from Eve Air Mobility by 2026, with another 200 on option. In July 2022 United paid a USD10 million pre-delivery deposit for 100 eVTOL air taxis being developed by Archer Aviation. One of the initial key eVTOL routes for the airline will be to transfer passengers from downtown Chicago to O'Hare.

Sources:

www.blade.com

eveairmobility.com

www.urbanairmobilitynews.com/aam-uam-route-and-programme-news/united-airlines-and-archer-announce-first-commercial-electric-air-taxi-route-in-chicago

vie.solutions