The Global AAM/UAM Market Map



Sample pages



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

Introduction and copyright terms

The **Global AAM/UAM Market Map** is aimed at urban air mobility/advanced 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 **Global AAM/UAM Market Map** analyses operational plans and confirmed industry participation broken down into geographical areas.

The database gives details on plans to develop passenger AAM/UAM services in 55 countries and 117 cities/regions, 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
- UAM/AAM aircraft operators
- UAM/AAM training
- UAM/AAM aircraft operator maintenance and support
- UAM/AAM 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 on a weekly basis – the sources for all information are outlined in the on-line version of this report.

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Telephone +44 1273 724 238.

Email: philip@unmannedairspace.info.

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Monthly updates in red

Australia

Country introduction

Australia is likely to be a UAM global pioneer, as Government high-level strategic plans and industry bottom-up plans move closer together. 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.

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- 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.

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 a 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. *The Global AAM/UAM Market Map - March 2023* 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 hydrogenpowered 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.

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 <u>electric aviation</u> <u>brochure.</u> "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.

Canberra

Timeline

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

Route(s)

Canberra – Sydney (286 km)

Programme description

The Government of the Australian Capital Territory has published its <u>National Emerging</u> <u>Aviation Technologies Policy</u> 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

The Global AAM/UAM Market Map - March 2023 6 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.

Gold Coast

Timeline

Intended – an outline vision has been agreed

Programme description

In March 2022 Skyportz and Sea World Helicopters announced a partnership to bring eVTOL operations to the Gold Coast. John Orr-Campbell, CEO of Sea World Helicopters said: "We intend to be at the forefront of the industry as it morphs into cleaner and quieter electric propulsion. We have existing helicopter landing infrastructure on the Gold Coast which we can activate with electric eVTOL aircraft as soon as they become available." He added: "We can foresee that many of our tourist operations will be very well suited to electric aviation."

The announcement builds on the previous partnership announcement in Victoria between Skyportz and Microflite helicopters, as well as with Secure Parking which has over 50 sites in the Gold Coast/Brisbane regions that could potentially be activated.

Tom Tate, Gold Coast Mayor, said: "I can see a place for Skyportz' s operations not only in our city, but across the SEQ region. Between the major SEQ cities, more than three million people reside but equally, we attract in excess of 13 million annual visitors, so the market is certainly there for innovative transport solutions like this."

Partners UAM/AAM aircraft operator Sea World Helicopters

Vertiport/airport developer/operator Skyportz

Melbourne, Victoria

Timeline

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

Programme description

In August 2022, at the Australian Association for Uncrewed Systems (AAUS) annual Advanced Air Mobility summit in Melbourne, Skyportz announced it would develop the first vertiport in Australia at Caribbean Park in Melbourne's east, in conjunction with Contreras Earl Architects, to70 aviation, Arup and Microflite.

At the end of August 2022, the Victoria government also published its <u>Advanced Air Mobility</u> <u>Vision report</u>. According to the report:

"Victoria's regional centres, such as Traralgon, Geelong, Ballarat and Bendigo, have growing commuter markets, thriving commercial centres and strong tourism opportunities. AAM has the potential to provide fast, cost-effective methods for connecting city/town pairs, especially where the cost and complication of scaling traditional aviation, or constructing fixed infrastructure, do not justify the likely demand."

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 listed as one of 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.

In March 2020 Skyportz and planning group Arup announced they were jointly developing specifications to support property developers wanting to prepare their buildings for UAM and eVTOL aircraft, in anticipation of the launch of Uber Elevate services. Advancing UAM services has the support of the Victorian Government and Invest Victoria.

Meanwhile, the partnership between Eve Urban Air Mobility and Microflite, an Australiabased helicopter operator, foresees the introduction of eVTOL flights to the city as early as 2026.

Partners eVTOL manufacturer Eve

UAM/AAM aircraft operator Microflite

Others

Arup Contreras Earl Architects to70 aviation, AruMicroflite

Perth

Timeline

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

Route(s):

Initially, tourism routes

Programme description

In March 2022 electric aircraft dealer FlyOnE announced a collaboration with eVTOL maker AIR "to facilitate the delivery of 25 two-seater aircraft", reported a Press release. FlyOnE announced the rollout of "mobile water-landing pads with aircraft recharge capabilities as well as partnerships with key airfields to operate recharge nodes for existing electric fixed-wing aircraft on the Lilypad Elevate electric aviation network with operations beginning this month."

Korum Ellis, Founder of FlyOnE, commented: "FlyOnE is excited to be working with AIR to bring the world's first metropolitan eVTOL network to Perth as early as 2025." He continued: "With our unique Lilypad landing and charging system, the AIR ONE personal two-seater electric VTOL can access a variety of waterfront destination sites and airport locations up to 100 kilometres away.

"In addition, existing fixed-wing electric aircraft available now can access select runway sites on this same network from March 2022."

Key aspects of the partnership include:

• Some of the world's earliest delivery of recreational eVTOL aircraft being allocated to FlyOnE clients in Australia.

• Enabling the world's first International standard AS6968 eVTOL network of charge nodes, and metro eVTOL self-piloted air travel to be established and operated in Perth.

• Construction of the network and operation and training around the aircraft piloting and maintenance will generate jobs in western Australia, stimulate employment and drive unique tourism opportunities.

• The connection of new and existing tourism destination sites with point-to-point self-piloted electric air travel.

Partners eVTOL manufacturer AIR

Queensland, Brisbane

Timeline

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

Route(s)

Brisbane city centre – Olympic Park (6km) Great Barrier Reef tourism routes

Country introduction

Skyportz is planning to build a series of vertiports to take visitors from the city centre to the Olympic Village for the 2032 Olympic Games, establishing a Moreton Bay air taxi hub. The hub would be part of the planned Australian Advanced Manufacturing Centre of Excellence, to be constructed in the Moreton Bay council area by 2023.

In parallel, UAM facilitator consortium Greenbird is building an industry collaboration platform to bring together UAM players and engaging with government to develop commercial eVTOL operations for the Olympic Games. According to press reports Greenbird is initially focused on establishing UAM/AAM operations in Queensland in time for the Olympics, with a view to expanding throughout the country.

Founding Greenbird partners comprise eVTOL ground infrastructure specialist Skyportz; Australian eVTOL developer AMSL Aero which has designed and developed the Vertiia electric battery and hydrogen-powered aircraft; Queensland-based helicopter operator Nautilus Aviation, which has an order for 10 of Eve's eVTOL aircraft; specialist helicopter operator Aviator Group; Queensland's Archerfield Airport and Griffith University; clean energy company H2 Energy Company (h2ec); engineering consultancy AvLogix Solutions; and uncrewed systems management platform FlyFreely.

In June 2022 Wisk Aero signed a Memorandum of Understanding with the Council of Mayors, which will see the two organisations "working together to introduce a safe, sustainable and scalable, autonomous air taxi service to South East Queensland".

Wisk intends its presence in Queensland to be "long-term, and will be working with local government toward providing the city with green tourism and transport options. The company will also be displaying its 5th-generation aircraft in Brisbane in July." Lord Mayor Cr Adrian Schrinner said: "Council of Mayors kickstarted our Brisbane 2032 Olympic and Paralympic Games journey because we knew it would attract global businesses and innovative industries to our region, bringing with it new jobs and new economic opportunities. On the back of the Brisbane 2032 Games, we're delighted to be working with Wisk to look at how South East Queensland can capitalise on the new jobs and economic opportunities associated with this new and exciting industry. We expect to see the emergence of advanced air technology in places like Paris and Los Angeles, and by 2032 I'd love to see it supporting new and innovative experiences for tourism and travel in South East Queensland."

In December 2021 Eve and Nautilus Aviation, a division of Morris Group and Northern Australia's largest helicopter operator, announced a collaboration to develop the UAM ecosystem in Australia. The partnership will see the introduction of Eve's eVTOL Aircraft serving various Queensland tourism attractions including the Great Barrier Reef. As part of this agreement, Nautilus has ordered up to 10 of Eve's eVTOL aircraft, with flights taking off over the Great Barrier Reef by 2026.

In February 2023 Wisk Aero and the South East Queensland Council of Mayors (COMSEQ), Australia's largest regional local government organization, published a paper outlining the benefits Advanced Air Mobility (AAM) will bring South East Queensland (SEQ). Queensland Government modelling suggests that by 2036, skies across SEQ could host hundreds of daily

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passenger and freight services. Existing aviation infrastructure, such as Brisbane Airport, Sunshine Coast Airport and Wellcamp Airport, and heliports, are likely to be key locations in SEQ's AAM network.

According to the report:

"It is envisaged AAM will complement existing infrastructure development, like the fully electric fleet from Brisbane Metro and Cross River Rail, and connect with existing modes of transport, such as bus and rail networks. In regional communities such as Scenic Rim, Somerset, Toowoomba and Lockyer Valley, AAM can enable shorter travel times from the city fringe and regional areas to major metropolitan centres and transport hubs. AAM can also provide regional, remote and island communities with enhanced mobility options at significantly lower infrastructure cost.

"Importantly, the geographic distribution of urban and regional centres throughout SEQ presents significant opportunities for air taxi services. Advanced aircraft, such as Wisk's Generation 6 air taxi, will unlock new opportunities that have the potential to transform mobility such as:

- Connecting travellers at Brisbane Airport to the Sunshine Coast in only 22 minutes, saving at least an hour sitting in traffic,
- Opening new tourism possibilities with flights from Brisbane CBD to the islands of Moreton Bay, or to the pristine wilderness areas of the Scenic Rim, in under 15 minutes, and
- Improving health outcomes for regional communities by connecting communities in the regional communities to medical services in major centres in less than 25 minutes.

"With Australia poised to capture around 3% of the global AAM market, according to a recent Roland Berger study, it is projected that AAM could contribute over AUD66 billion, or 3.1%9 of national GDP, to the Australian economy by 2040. A recent Nexa Capital study (December 2022) has identified, with the adoption of AAM, the SE Queensland GDP will increase by an estimated USD3.7 billion over the coming 25 years. The revenue forecast for AAM services in the SEQ region over the next 12-15 years is expected to be significant: driving major investment in infrastructure, job creation and advances in technology. Forecasts are for an AAM industry with a combination of passenger, business aviation, urban and regional air mobility to receive revenues of up to USD1.7 billion by 2045."

Partners eVTOL manufacturer AMSL Aero Eve Wisk

UAM/AAM aircraft operator Aviator Group Nautilus

UAM/AAM aircraft charging and power supplies H2 Energy Company

Vertiport/airport developer/operator Skyportz

Airspace integration FlyFreely

Others Archerfield Airport Griffith University AvLogix Solutions

Sydney

Programme description

In December 2021 Eve announced a partnership with Sydney Seaplanes for electric air taxi operations in Greater Sydney.

"With the partnership, Sydney Seaplanes has placed an order for 50 of Eve's electric vertical take-off and landing aircraft (eVTOL), with progressive deliveries expected to commence from 2026," said a company press release. "The new partnership accelerates the progress towards 100% of Greater Sydney's local tourism and commuter flights coming from zero emission electric aviation."

"Subject to community consultation, we expect some flights will operate from our iconic Rose Bay aviation terminal in Sydney Harbour. This service will have a widespread appeal which will allow us to open new routes beyond the Harbour and throughout the Greater Sydney region," said Aaron Shaw, CEO of Sydney Seaplanes.

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.

Estonia

Country introduction

The Estonian government is a major stakeholder in the LifeSafer network which will use Airbus eVTOL aircraft as air ambulances.

According to the organisation:

"LifeSaver, a framework co-developed by Airbus and <u>International SOS</u> (aims) at optimising emergency healthcare systems through innovation and improvements across the rescue chain. The first implementation of the LifeSaver programme is set to take place in Estonia. LifeSaver in Estonia is not limited to technology. It will include operating procedures, accreditation standards, medical guidelines, regulations and more to ensure that individual solutions are operationally viable and deliver clear benefits such as better patient outcomes, greater efficiency and/or lower environmental footprint."

"The goal is to identify and create innovative solutions not only for Estonia, but also for other countries so as to leverage our local capabilities and maximize the export opportunities of Estonian companies involved in the development of solutions," said **Joonas Vänto**, Director of Invest Estonia.

The organisation reports that among the potential tools mobilised in next-generation medical services, Airbus' fully-electric aircraft prototype CityAirbus NextGen, will target an operational range of 80 kilometres and a cruise speed of 120 km/h, capable of carrying three passengers and a pilot. "In Estonia, the program will evaluate the country's current emergency medical system and identify the most important use cases. These may include reducing response time, providing essential medical care to low-population-density areas, or optimizing the overall medical logistics network."

"We aim to use innovation for better patient outcomes and direct social benefits to Estonian people. We also want to showcase what Estonia has to offer in terms of innovation – if the new technology works in such a mission-critical environment as EMS, it can work everywhere", said Joonas Vänto.

"The capability and unique value proposition of a helicopter in medical services missions are irreplaceable. eVTOLs with zero-emission flights, full electrification and a lower noise profile have the potential to enable new missions and complement the helicopters in supporting the ever-evolving medical services. Helicopters and eVTOLs will both be part of medical ecosystems and work hand in hand", said Balkiz Sarihan, Head of UAM Strategy Execution & Partnerships at Airbus.

As one of Europe's most advanced digital economies, Estonia is embracing the concept of UAM as a potential key component in its target for Estonian aviation to become climateneutral by 2030 through faster deployment of electric flight, hydrogen, digital aviation and drone technologies.

In June 2022 a meeting organised by the Ministry of Economic Affairs and Communications, Ministry of Environment, Estonian Aviation Cluster, The Netherlands Embassy in Tallinn and the Estonian Parliament discussed a high-level strategy to meet these goals. Minister of Entrepreneurship and IT, Andres Sutt told the seminar: "I see a major opportunity in building the ecosystem for the entire mobility space – air, sea, rail and road – that takes us to climate neutrality." "Estonia will become a country-wide sandbox and we work together with the industry to create an enabling framework for innovation with the highest safety standards," said Andreas Sutt, according to an Invest in Estonia post. "Time-distance to Hiiumaa is 20 minutes today with a small, 18-seat aircraft. Air taxis using eVTOLs will cut the time-distance throughout Estonia before the end of this decade to far less than an hour. Helsinki and Tallinn airports will be connected by 'air taxi-highway', making Tallinn directly connected to Asia and North America. And it will all be carbon neutral," he predicted.

One of the first applications will be in first responder services.

In July 2022 the Estonian Government, Airbus Helicopters and International SOS reported they had signed a cooperation agreement for developing and implementing the LifeSaver Estonia programme, a national innovation and investment project, to intensify emergency medicine and the healthcare system in Estonia.

"Airbus Helicopters has developed the LifeSaver programme together with the company International SOS to create a comprehensive emergency medicine system," said Wolfgang Schoder, Vice-President of Airbus Helicopters. "Based on long-term experience and extensive knowledge of cooperation with medical service operators, we want to further develop the system in Estonia, using Estonia's outstanding capabilities in aviation, medicine and the digital field," Schoder added.

One of the project initiators, Asso Uibo, Invest in Estonia's Director of Regional Business Development in South Estonia said: "Our common ambition is to take a big step forward from flashy individual flight tests and move to a full-scale integration phase, where, for example, eVTOLs and drones are a natural part of the emergency medical service." According to him, the plan is supported by R&D units related to the universities of Tartu, Tartu University Hospital, and the network of medical institutions in Southern Estonia.

The press release concludes: "In practice, it means that the programme will evaluate Estonia's current first aid and emergency medicine system and identify the most important use-cases for Estonia. These may include reducing response time, providing essential medical care to low-population density areas, or optimising the overall medical logistics network." In 2001 EHang announced its EHang 216 and Falcon logistics model had completed Beyond Visual Line of Sight (BVLOS) trial flights for airport transport and parcel delivery in Estonia under the European Union's GOF 2.0 Integrated Urban Airspace Validation (GOF 2.0) project to demonstrate safe, autonomous and eco-friendly urban air mobility (UAM) and the integration of unmanned aerial vehicles and air taxis into manned operations with air traffic management and U-space services. The Estonian Transport Administration issued a special permit to EHang for trial flights in designated Estonian airspace until the end of 2021. During the trials, the EHang 216 performed a flight mission of passenger VIP transport scenario from Tartu Airport to the Estonian Aviation Museum, with no passenaer onboard, to demonstrate the use-cases and scenarios of eVTOL (electric vertical take-off and landing) intra-urban and peri-urban flights. The EHang Falcon logistics model completed a flight mission of parcel delivery from Tartu Airport to a cargo terminal at the Estonian Aviation Museum, to demonstrate the use-cases and scenarios of automated parcel delivery drones operating at low level.

Tallin

Timeline

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

Route(s)

Tallinn – Hiiumaa (164km) Tallinn – Helsinki (86km)

Programme description

See also <u>Estonia country entry</u>. The Government has identified two early eVTOL service routes – a service to link the capital with the island of Hiiumaa, and connecting to Helsinki Airport to improve intercontinental connections for Estonian citizens.