



# ELEVATING BRAZILIAN MOBILITY

SÃO JOSE DOS CAMPOS, THE AIR CAPITAL OF LATIN AMERICA

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Considered the Silicon Valley of Brazil, São José dos Campos, along with the nearby cities in the region known as Vale do Paraíba, is a center of technological innovation and a hub for aviation in Brazil and Latin America.

With the presence of Embraer, one of the largest and most influential aircraft manufacturers in the world, that plays a crucial role in this development, the city brings together some of the most advanced industries and educational institutions, many of which are actively involved in AAM, including manufacturers like Eve Air Mobility and Moya Aero.

Less than 100 km from São José dos Campos, São Paulo, known for its extensive helicopter operations and integrated network of helipads, is expected to become one of the world's largest hubs for eVTOL operations. Promising forecasts also suggest growth in this sector in other cities across Brazil.



# UAM Overview



# Brazilian eVTOLs



2 versions: Electric | Hybrid  
Range: 160 km (100 mi) | 300 km (186 mi)  
Autonomous  
Cargo  
Payload: 200 kg (441 lb)  
Propellers: 4



Autonomous  
2 PAX  
Range: 130 km (80 mi)  
Payload: 200 kg (441 lb)  
Propellers: 8



VERTICAL CONNECT

Credit: Vertical Connect.



1 pilot  
4 PAX (6 in autonomous config)  
Range: 100 km (62 mi)  
Propellers: 8 lifters + 1 pusher



Credit: Eve Air Mobility.



Regulators

Infrastructure

Operators

Orders

Vehicle



Business Aviation

Airlines

Cargo



100

70

50 | 50

50

40

25

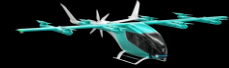
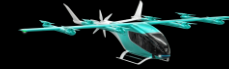
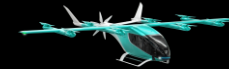
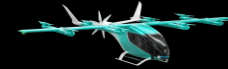
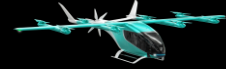
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220

250

50

10





There is a substantial investment in eVTOL companies, including letters of intent, market and technology research, technology development, and infrastructure projects.

The main **use cases** in Brazil include air taxis in congested air traffic areas, cargo transport, tourism, and agriculture, as high flight demand is necessary for operational viability.

**Regulation** has not yet been defined. Despite being in its early stages, regulators are actively collaborating with AAM stakeholders and international authorities to create regulations that support technology development without negatively impacting it and that can be validated by other aviation authorities.

While UAM is **not yet widely known to the public**, it is gaining recognition within the aviation sector.

Main **challenges** include the electrical grid, affordable ticket pricing, and airspace control.

In 2023, Brazil was ranked 11th in KPMG's list of the most prepared countries for eVTOLs.

There is a concern about the **busy airspace** in some big Brazilian cities, such as São Paulo, Rio de Janeiro and Brasília.

Regulation remains in its early stages.

Additional concerns include meteorology, noise pollution, cyber security.



Manufacturers







Moya is an eVTOL manufacturer focused on cargo. The entry market is cargo, but the product is versatile and has applications ranging from agriculture to monitoring.

At Expo eVTOL, Moya and Aeromot signed an MOU to explore developing advanced air mobility solutions for transporting cargo and people.

Moya's eVTOL was showcased during the São Paulo's Expo eVTOL in May 2024. The vehicle is in flight-test phase, and completed over 80 successful flights. The entry in service is planned for 2026.

Expanding its operations internationally, the company has LOIs for a total of 119 aircraft and over \$100 million in revenue, with customers in Brazil and Canada.

Moya has initiated the certification process with ANAC, targeting completion by the end of 2026 and operations commencement in 2027.

During the Expo eVTOL Forum, Alexandre Zaramela introduced their solutions for logistics, spraying, security, and mapping solutions.

The 119 LOIs include Helisul (50), Minetoo (50), Fototerra (10), Fazenda 7 Reis (5) from Brazil, and N2 Infrastructure Technologies (4) from Canada.

In July, Moya launched a hybrid-electric VTOL cargo UAS. In August, Moya made the first transition with subscale prototype.

Founded by Embraer, Eve Air Mobility is a manufacturer with LOIs for 335 eVTOL in Brazil: Voar Aviation (70), Avantto (100), FlyBIS (40), Flapper (25), Helisul (50), Revo (50).

In December 2023, Eve received an ESG Financing Guarantee from Bradesco Bank. During this year, Eve has appointed their first suppliers and new global partnerships.

Submitted a proposal for Airworthiness Criteria to public consultation (ANAC), and a validation request for FAA.

In July, the first full-scale prototype was unveiled and Eve started the flight test campaign.

Released Vector, an Urban Air Traffic Management (UATM) agnostic software solution designed to safely address the air traffic and network management of AAM.

Vector is focused on fleet and vertiport operators, and future service providers for AAM, including Air Navigation Service Providers (ANSPs).

Last week, the company announced an US\$88 million loan agreement with Brazil's National Development Bank (BNDES).



VERTICAL  
CONNECT



Vertical Connect is an eVTOL manufacturer. The Vehicle is autonomous, and carries 2 PAX. The company received a 20 million dollars as investment .

Other use cases: cargo, agriculture, firefighter, surveillance, air medical services.

Vertical Connect plans to initially produce 6 models by 2025 and 500 by 2030.

The vehicle is in flight-test phase. This May, the prototype was at the Expo eVTOL, in São Paulo.

Experimental production of the Gênesis X1 has started in São Paulo and the vehicle is in the certification process with ANAC.

In July, the company announced that the vehicle's engines were started for the first time.



Regulators





ANAC (aviation authority in Brazil) is developing the certification process and operational, licensing and infrastructure definitions.

In February, the first phase of Eve's eVTOL certification started, defining the certification basis, presenting the safety requirements and opening a sectoral consultation.

The regulator is also evaluating validation requests for projects from Ehang and Lilium.

Regarding infrastructure, ANAC issued an alert with the first recommendations on vertiports, addressing topics such as dimensions, infrastructure adaptations, charging or changing batteries, storage of components, emergency response requirements and training.

At São Paulo's Expo eVTOL, ANAC presented a positive outlook about partnerships among players to plan infrastructure, the first aircraft certifications, and the collaborative work with the industry to develop the necessary regulations.

In April, ANAC issued a public consultation for a regulatory sandbox creation, which shall be important for AAM's ecosystem and stakeholders, seeking rules to be adapted to new aviation technologies.



DECEA is the Airspace Control Authority in Brazil.

In March, it released a ConOps detailing navigation aspects for public consultation.

As mentioned in the ConOps, the creation of a new airspace classification may be required, and the access will be conditional on compliance with capacity and performance requirements.

Digital Flight Rules (DFR) must be used, in accordance with NASA's new concept of Digital Flight.

Also, the use of Geofences is necessary.

DECEA is working on solving traffic conflicts in the UAM environment with a combination of vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communication.





Infrastructure





ANAC is still developing the guidelines and requirements for infrastructure, and declared, at Expo eVTOL, that airport operators have an easier way to adapt their facilities. In May, ANAC issued a call for projects for interested parties to take part in the definition of the regulation of vertiports, landing and take-off sites for eVTOLs.

At this point, operators are studying use cases, the AAM market and strategic location for vertiports.



For Aeroportos Paulistas, eVTOLs will be in full operation in the second half of the decade and with a high level of service, and they are making plans for that moment.

According to their CEO, "We already have a ConOps experience, we already have defined corridors, and the players are moving forward."

He mentioned some points of concerns for eVTOLs in Brazil: batteries, proper charging infrastructure, reorganization of airspace.



Pax Aeroportos operates Jacarepaguá (Rio de Janeiro) and Campo de Marte (São Paulo) airports. Both are intense on helicopter operation.

There is the intention to adapt Campo de Marte and Jacarepaguá as vertiports, due to the following advantages: geographical location, available space and, with the appropriate investments, it can count on an electric infrastructure.

At the Expo eVTOL, Pax Aeroportos presented a project for vertihubs implementation at Jacarepaguá and Campo de Marte airports.



VertiMob Infrastructure is a Brazilian company focused on the development, implementation and operations of vertiports.

Partnering with major players in the industry, the company plans to execute strategic developments in 3 stages across 5 regions of Brazil.

With solutions in charging stations, accessibility, data processing, safety, and security, in July, VertiMob announced its application to ANAC's sandbox, in partnership with SJK Airport, to advance AAM development.





Operators







Azul is a Brazilian airline with a diverse fleet. The company initiatives are focused in sustainability, such as APU Zero and other projects to reduce emissions and signed a MOU with Lilium in 2021.

At the Expo eVTOL, Azul presented possibilities to RAM considering Brazilian traffic aspects.

It was mentioned that Azul was criticized for not choosing EVE, a Brazilian manufacturer, and explained that the airline is focused on RAM instead of UAM, intending to connect large economic centers, metropolitan regions, tourist cities, residential condominiums and airports.



Gol Linha Aéreas is Brazilian airline that operates Boeing's aircrafts, it has signed a MOU with Vertical Aerospace in 2021. The company has a goal of achieving carbon neutrality by 2050.

Joint Working Group with Grupo Comporte, Vertical Aerospace and Avolon to develop infrastructure in Brazil.

Planning to entry in service in 2026 (after VX4 validation by ANAC), Gol is developing market researches and exploring use cases in Brazil and some challenges including infrastructure, charging stations, airspace.





Avantto is an operator of private jets, air taxi and management of shared aircrafts (business Aviation).

The company is expanding its fleet to reach remote and high-demand places and to serve agribusiness as well.

It will be one of the operators of Eve's Vehicle, with an order of 100 eVTOLs.

At Expo eVTOL, Avantto presented its solutions, new markets, challenges, and ticket prices.



The drone distribution company, Gohobby, took the EHang 216-S for display in Brazil, being the only Ehang's operator in the country up to now.

Gohobby received ANAC's authorization for experimental flight, starting the flight tests in September, planning to start exhibition flights without passengers at airports in cities such as Rio de Janeiro, São Paulo and Curitiba.

The main use cases for Gohobby will be air taxi and agriculture.



Helisul is a Brazilian helicopter operator, providing air taxi, charter flights, maintenance, FBO, sightseeing.

The company has deals with Eve Air Mobility and Moya Aero, intending to operate both vehicles.

In 2022, Helisul and Flapper took part in the ConOps Rio, operating helicopters to simulate Eve's operation and detail problems and new solutions to UAM.



Flapper and Voar Aviation are both private operators, offering charter flights in Brazil. Voar also provides maintenance and FBO. Both companies intend to operate EVE's vehicles.

FlyBis is a start-up created to operate EVE's eVTOLs, the company will start the operations in 2026.





Ecosystem





International non-profit research center dedicated to support and enable AAM focused on protecting people, their rights, and trustful systems we rely on.

Guiding principles: Safety, Dignity, and Resilience, working to educate and advocate for the broadest public benefit through the aviation ecosystem globally.

At the Expo eVTOL in São Paulo, Dan Sloat, president & founder, talked about educating society about AAM and the Institute's concerns about the impacts on society. Dan was also speaker in a panel about zero-carbon aviation, exploring sustainable aviation.

In the same opportunity, Dan Sloat announced the Institute's presence in Brazil and its plans to collaborate with AAM in the country.



The Aeronautics Technological Institute (ITA) is a public university institution linked to the Aeronautics Command (COMAER).

In 2023, the Engineering Research Center (CPE) for Future Air Mobility was created. A partnership between ITA, EMBRAER and São Paulo Research Foundation (FAPESP). The Center aims to carry out high-level research, based on three pillars: low-carbon aviation, autonomous systems and advanced manufacturing.

ITA is working with stakeholders to support the ecosystem development and presented challenges and solutions for infrastructure at Expo eVTOL.



AAM in Brazil is also counting on governmental bodies, as presented by Prefeitura de Jacareí at Expo eVTOL, investing in local traffic education; coordination of transport services and promotion of accessibility, quality and protection of life, with integration and intermodal proposals, aligning plans with UN's SDGs.

Other players such as Urucua are working on solutions for intermodal transportation.



Other technologies





Opal-RT Technologies is developing real-time simulation systems for eVTOLs.

The company provides simulator and software's platforms fully integrated with MATLAB/Simulink® and NI platforms. Testing, and validating a motor drive control, battery management system, real power components, or controllers.

At Expo eVTOL, Opal-RT's representative discussed about technological challenges and presented solutions for AAM.

Partned with Embraer, NASA, Airbus, ZeroAvia.



OneSky develops digital airspace management infrastructure for AAM with a UTM software deployed globally, providing UAS & UAM Modeling & Simulation Tools.

Partnered with FAA, CAAS, NASA, Swiss FOCA, Air Services Australia, and PLANA, which is developing a hybrid VTOL.

OneSky's Future of Flight is a cooperative ecosystem with more than 20 companies, including Skyports and Volatus, as well as Echodyne, and Supernal.

At Expo eVTOL, it was emphasized its presence in Brazil, the solutions to AAM and challenges to RAM and UAM airspace integration.



Spotlight for UAV





Speedbird is a drone manufacturer and operator, acting as a drone delivery and biological material transportation. The company developed 5 models of drones with distinct configurations, a software for UTM and it is planning a droneport.

There is a partnership with Thales to develop logistic and technology solutions. It also partnered with Eve Air Mobility in the Chicago ConOps.

With more than 5000 km of flights, Speedbird received authorization from ANAC for BVLOS air delivery.

The vehicles were showcased at Expo eVTOL and Speedbird presented its solutions and challenges in the AAM market.



Manufacturer of UAV with hybrid propulsion based on hydrogen, Akaer has the cargo as main use case.

Recently announced that it will soon start testing the Artificial Intelligence (AI) project to identify anomalies for the autonomous landing of eVTOLs, using advanced Deep Learning and Computer Vision techniques to understand the relief during the approach, recording and classifying alternative landing coordinates.

The company is collaborating with Embraer and Deutsche Aircraft.



Synerjet Corp is expert in executive aviation in Latin America, distributor of Pilatus Aircraft, Cirrus Aircraft and Jetcraft, also selling avionics in Brazil.

The company acts as distributors and local technical support providers for the Wingcopter 198 drone.

The main use cases in Brazil will be cargo and agricultural.







ADVANCED AIR MOBILITY  
— INSTITUTE —

"to educate and advocate for the broadest public benefit  
through the aviation ecosystem globally"