What is Urban Air Mobility (UAM)?

UAM uses three-dimensional transportation to better serve the needs of our communities.

A resource prepared by:

The Community Air Mobility Initiative (CAMI)

Supporting the responsible integration of the third dimension at the state and local level.

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Urban Air Mobility (UAM), or the idea of integrating aviation into our cities and towns, is in some ways nothing new. Regional airline travel and helicopter service (both for medical emergencies and transportation) are forms of UAM that are in service today.

In other ways, UAM is revolutionary. New aircraft that use electric motors that are safer and quieter than traditional airplanes and helicopters are in development. These aircraft make UAM safer, greener, quieter, and more economical than ever before. Some of these aircraft look a lot like traditional airplanes. Others use multiple electric motors to take off and land vertically. Known as "eVTOL" (for electric vertical takeoff and landing) aircraft, these new aircraft are being developed by companies around the world and many are nearly ready for commercial operations.

UAM may share airspace with small unmanned aircraft systems (sUAS or "drones"), but it is not the same thing. An on-board or remote pilot and the size of the aircraft differentiate UAM from sUAS operations like cargo drone delivery.

As with other aircraft, authorities like the Federal Aviation Administration (FAA) in the United States and the European Aviation Safety Administration (EASA) in Europe are responsible for making sure the aircraft used in UAM operations are airworthy and can safely carry passengers. Existing air traffic control systems, airports and heliports, and other aspects of how aircraft are certified and operated today are also directly applicable to UAM, especially in the initial "crawl" phase which will be starting small. As UAM "takes off", stakeholders throughout the aviation and transportation ecosystems will need to work together to ensure that the promise of UAM is realized in a way that prioritizes safety and responsible integration of aviation into the rest of our daily transportation and community landscapes.

The following provides a snapshot of how UAM is expected to be used over different zones (or distances) and styles of operation. Zones of operation include: city center, suburbs to city, edge city to (edge) city, rural access, and hub airport access. Styles of operation include: airline, air metro, on-demand (or "air taxi"), airport shuttle, and emergency services. Of course, as UAM grows and matures, operations will likely evolve that are unique to communities and geographies, but these are intended to be a starting point for conceptualizing how the third dimension can better serve our transportation needs.

What is Urban Air Mobility (UAM)?

UAM Zones of Operation

With new types of aircraft come new opportunities for connecting our communities. Operations within city centers are attracting a lot of attention for UAM, but other types of geographic connectivity are actually more likely for initial UAM operations due to existing infrastructure and airspace considerations. Successful implementation of UAM will coordinate with communities' existing transportation options and provide additional options for routine, urgent, and emergency travel across a variety of distances using a variety of aircraft, each appropriate to a given mission and range.

City Center

Flights from vertiport to vertiport within a city center promise an alternative to sitting in dense urban traffic. Existing heliports and new infrastructure will support this type of operation.

Suburbs to City

Flights from suburbs into the city center provide an alternative to automotive commuting and can be used in concert with light rail and other options. Existing community airports can be used effectively here.

Edge City to (Edge) City

Smaller communities that need access to each other and to the main urban core can use electric aircraft in a regional aircraft "micro haul" model to enable rapid and green transportation of goods and people.

Rural Access

Remote areas without efficient ground connectivity due to geography or other constraints can benefit from UAM both for routine and emergency transportation using new and existing infrastructure.

Hub Airport Access

Access to main commercial airport hubs can also be facilitated with UAM with "micro haul" flights from community airports as well as eVTOL operations from other surrounding locations.

What is Urban Air Mobility (UAM)?

UAM Styles of Operation

Currently, on-demand operations are getting a lot of attention, but they are not the only way in which electric airplanes and eVTOL aircraft can be used to bring new transportation capabilities to our communities and daily lives. Different operating styles have different advantages, different regulatory requirements, and will use different types of aircraft. It is important that communities consider which styles of operation work best for their various needs and how each can integrate constructively into the existing transportation landscape through multi-modal connectivity. Whether a community favors public or private infrastructure and operations (or a mix) will likely also influence which styles of operation are appropriate.

Airline

Electric aircraft are being developed that will operate much like scheduled regional aircraft today, but with even more routes and smaller numbers of passengers on "micro haul" routes connecting smaller community airports.

Air Metro

Operating more like existing public transit on a recurring schedule and predictable route throughout the day, air metro operations integrate well into existing public transit systems and neighborhoods.

On Demand

Often called "air taxi", this operation is similar to ride hailing apps in use today and would allow passengers to pool flights on their schedule. This requires a mature vehicle-to-vehicle network, air traffic control integration, and vertiport infrastructure.

Airport Shuttle

Connecting passengers to major commercial airport hubs, either through a micro haul airline connection or through a more distributed model, this type of operation is done by helicopters and buses today.

Emergency Services

The new eVTOL aircraft under development today promise to have faster response times, lower operating costs, and more targeted landing ability than the helicopters in use for medical flights today.