AIRPORTS COUNCIL INTERNATIONAL

POLICY BRIEF

Advanced Air Mobility:

Integration into the Airport Environment

Airports Council International (ACI) advances the collective interests and acts as the voice of the world's airports and the communities they serve and promotes professional excellence in airport management and operations.

DISCLAIMER

Advanced Air Mobility: Integration into the Airport Environment Policy Brief
(2022)

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1. INTRODUCTION

This policy brief sets forth Airports Council International's (ACI) positions and key policy statements on the integration of advanced air mobility (AAM) into the airport environment. The integration of Remote Piloted Aircraft Systems (RPAS) into the airport environment is equally touched upon, however it is specifically covered by the International Civil Aviation Organization (ICAO) through the work of the RPAS Panel and the Aerodrome Design and Operations Panel (ADOP).

On a global level, the growth in development of electric and hybrid aircraft for urban, suburban, and rural operations is exponential. These various types of operations using a diverse range of aircraft are commonly referred to as AAM.[1] AAM implies the emergence of disruptive new airborne technology that will support an extension of the aviation ecosystem designed to transport people and objects to locations either not traditionally served by existing modes of transportation or to compete with other existing modes of transportation.

These emerging technologies and operational concepts rely on the use of uncongested, low-altitude airspace. Their value proposition leverages a variety of advantages, such as enhanced transportation efficiencies, reduced commuting time, and decreased road congestion in urban areas. This value proposition also builds on the idea of an integrated, affordable, and shared transportation system that operates seamlessly across surface and air transportation.

The concept of AAM takes flying over cities to the next level by using electric-powered Vertical Take-off and Landing (eVTOL) aircraft. These can be piloted, piloted remotely, or can even operate autonomously, though initial operations are primarily focused on including an on-board pilot. The initial operating concepts of AAM focus on the transportation of people – typically between 2 and 4 customers – and also packages and freight in the urban and suburban environments.

As a whole, ACI supports the development of this new sector of the aviation system as there are many advantages that can be gained through the implementation and AAM growth. Airports can harness this exciting new opportunity and integrate this into their operating and business models, bringing added value to local communities, businesses, as well as facilitating the societal transformation towards sustainability.

The construction of ground infrastructures, including new vertiports or the adaptations of existing airport infrastructure, to accommodate AAM has a potential to be complex. This will be exacerbated in the initial phases where global regulation and guidance is not yet formalized. The infrastructure enabling AAM to exist will need to take into account apron areas or stands for the handling of the aircraft, aircraft hangars and maintenance areas, as well as associated recharging and/or refuelling infrastructure.

In the near future, as AAM moves from concept to reality, the aviation industry will need to address challenges around the new or different propulsion types, fuel requirements and

1 In this policy brief, the term "advanced air mobility" (AAM) includes "urban air mobility" (UAM) and other operations using new electric or hybrid aircraft types, which are generally considered to be a subset of AAM.

capacities, aircraft and operational certification, societal acceptance, noise management, infrastructure requirements, and regulatory developments. As with conventional aviation, AAM systems will rely on a broad ecosystem of passenger and good accommodation facilities, skilled personnel, and ground support equipment and services to enable the operation and ensure efficient use of resource.

AAM will also play a role in creating a more dynamic and progressive image of the aviation system as it embraces these innovative means of transportation. AAM can be seen as a unique opportunity to attract new generations of aviation personnel into the sector, potentially alleviating some of the current pressures that the ecosystem is experiencing. Staff shortages are a significant challenge within the aviation ecosystem and if aviation fails to respond and renew itself, candidates will prefer other industry sectors more and more. AAM can potentially showcase a "new aviation" system that can attract a large number of high-quality, technology-focused people to work at airports.

While AAM aircraft concepts offer an opportunity to achieve faster and low (or zero) emission journeys, to provide for smarter use of urban infrastructure, and potential reduction in urban congestion, they equally create a number of new challenges that the aviation industry will have to manage. The growth in this type of traffic will necessitate the implementation of advanced traffic management concepts, known as Unmanned Traffic Management (UTM), that will need to interface seamlessly with conventional Air Traffic Management (ATM).

The exponential growth of AAM and the expected challenges that this rapidly expanding segment of air activity will bring implies that airport operators have to become aware of the topic and start considering the potential impacts these new operations will have on their airport in the coming years. These new aircraft and innovative operating concepts are likely to be significant disruptors of the current airport models. They will drive change not just in the infrastructure and operations, but also across airport business models.

2. EXPECTED MARKET DEVELOPMENT

AAM concepts are envisioned as on-demand air transportation within core urban areas and residential suburban destinations outside city centres using new eVTOL aircraft. In general, aircraft concept designs for vertical take-off and landing can be categorized into three archetypes: Vectored thrust, Lift + Cruise, and Wingless (multicopters). Each having their own benefits in terms of lift, hovering and cruise, speed, and weight.

Transportation of people brings additional challenges across all fronts. Technology is however present, and fares can be competitive with other modes of transportation (e.g., train). Fair amount of space is likely to be occupied by checked baggage and this will impact fares. Factors influencing the uptake are mainly the level of safety risk, economic case, capacity constraints, level of automation and societal acceptance.

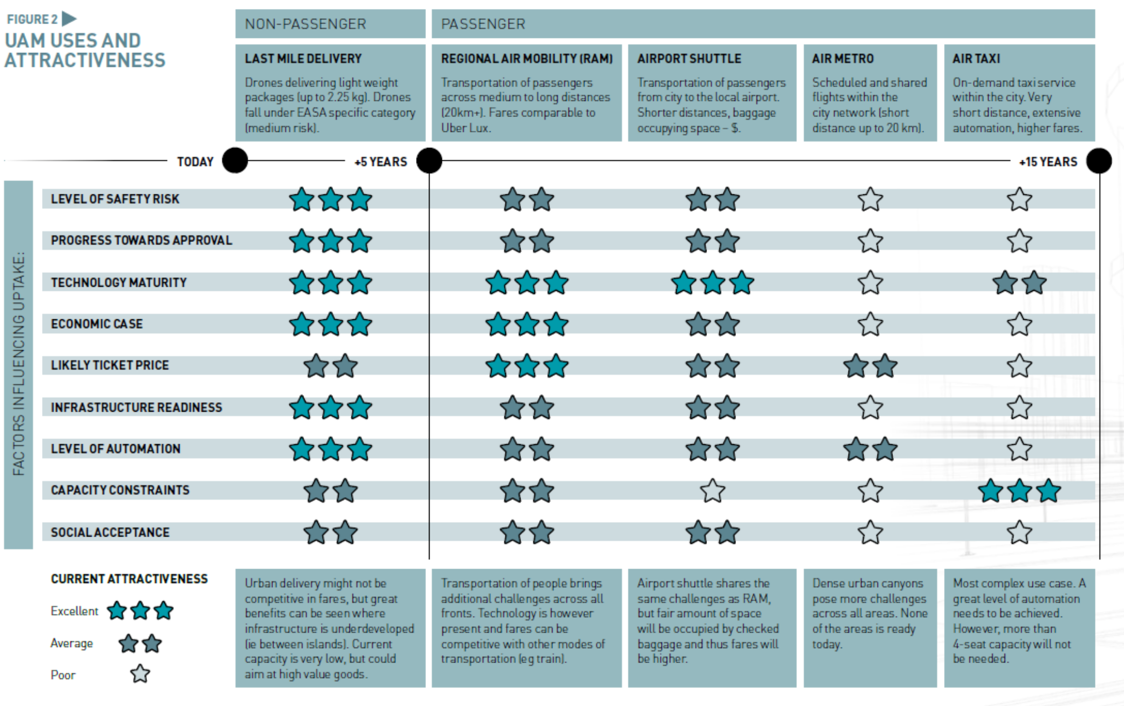

Figure 1: AAM uses and attractiveness[2]

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[2] Extract from Egis, Skycities, skyways, skytaxis a white paper on the infrastructure implications of AAM (2021)

As per the latest estimates by the Vertical Flight Society (2021), there are more than 300 electric and hybrid-electric vertical and landing aircraft concepts that are being developed worldwide. According to a 2021 InterVISTAS white paper[3], more than US$6 billion in capital has been invested in the AAM sector. Cargo and medical transport services may form the first AAM use cases, followed by passenger transport.

Initially, aircraft will include a human pilot on-board; in the second phase, it will be piloted remotely; and in the third phase it will be fully autonomous. It is envisioned that large hub airports near congested cities see the use of eVTOLs first and foremost as a type of shuttle service between the airport and downtown, starting with premium clientele before a wider adoption among the general public. Regional and general aviation airports are also likely to take advantage from the use of eVTOLs to preserve or enhance their connectivity.

Only a few years ago, urban air mobility possibilities were still futuristic concepts that lacked potential for profitable business. Today, significant investments are being made on the back of more realistic business and use cases. Some initial market studies even predict that AAM will be valued at US$20 billion by the end of the decade and will continue to expand to support more than 100,000 vehicles in service by 2050.

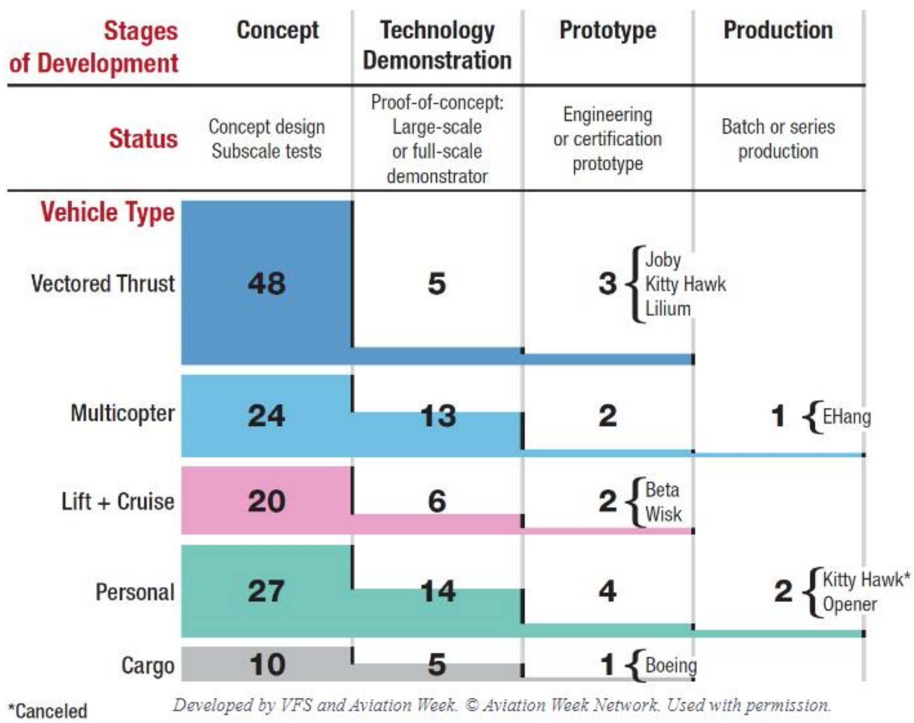

Figure 2: Vertical Flight Society / Aviation Week (2021)

[3] InterVISTAS, The Future of Advances Air Mobility (AAM) and What it Means for Airports (2021)

Figure 2 illustrates the quantities and types of vehicles for each of the four stages of eVTOL development in 2021. Out of the 187 vehicles listed in total:

- 129 vehicles (69%) are in the Concept Design stage
- 43 vehicles (23%) are in the Technology Demonstration / proof-of-concept, large-scale or full-scale demonstrator stage
- 12 vehicles (6%) are in the Engineering or Certification Prototype stage
- 3 vehicles (2%) are in the Batch or Series Production stage

The rate of innovation and change, as well as the significant investments in the development of aircraft in the AAM sector, is growing exponentially. This change will bring important benefits and challenges to the aviation ecosystem and the airport community needs to anticipate and accommodate as the domain progresses.

3. REGULATORY DEVELOPMENTS

The regulatory framework for unmanned aircraft and their integration with UTM are currently being developed by the various civil aviation regulatory agencies, on a regional level as well as on a global level by ICAO. Given the rapid rate of growth, innovation and change, there is currently a somewhat fragmented approach to the development of regulation in this domain.

For the most part, regulatory agencies have integrated key industry players active in this field to join the work on AAM and UTM regulation. This is critical to ensuring that the regulatory framework is fit for purpose and applicable across the industry and aviation ecosystem.

ACI would like to see a globally harmonized flexible and adaptable regulatory framework. The pace of regulatory change must be adapted to the rate of innovation and change in the AAM domain. As much as possible, future regulation should be performance-based, nonprescriptive, and fit for purpose.

The regulation should provide for the highest levels of safety and security but should also ensure fair market access and competition allowing the AAM sector to continue to thrive and grow. Sustainability must be at the forefront of the thinking around this domain of activity and a core consideration in the development of regulation. The fundamental economic "user pays" principle should equally be integrated into the economic policy as it is developed.

The development of a robust and globally harmonized regulatory framework will be essential to ensuring the deployments of AAM across the aviation ecosystem can be adequately integrated and bring positive value. Fundamentally, in the airport domain this framework must consider infrastructure requirements for vertiports, as well as the operational integration into the airport system. Interoperability across aircraft systems will also need to be considered, particularly in relation to charging systems, which may prove to be a challenge.

For the most part, regulation for this domain will not be a simple adaptation of existing airport and ATM rules. It will most likely need a full set of regulatory material to provide the appropriate structure for the development of AAM activities both on and off airports. The growth of this sector of activity will in part come from the development of new vertiports in urban and suburban areas. The regulatory framework must harmonize these infrastructure developments and accommodate for the seamless integration of traffic into existing air traffic flows.

4. CONSIDERATIONS FOR AIRPORT OPERATORS

The arrival of AAM will impact the airport environment of the future. Those planning tomorrow's airports must be cognisant that mobility needs in the future are changing at an extremely rapid pace and AAM concepts will have a direct impact on the management of capacity, safety, operations, infrastructure needs and overall passenger experience. In addition, AAM will help airports move along the pathway to decarbonization and creating an overall more sustainable aviation industry.

For each of the sections below, specific ACI Policy Statements (PS) have been identified addressing the individual topics. The statements have been formulated in some cases as recommendations to airport operators, to regulators or to organizations developing AAM aircraft.

4.1 AAM aircraft concepts and specifications

PS1 – AAM aircraft manufacturers should ensure compatibility of their aircraft with current and future airport infrastructure and operating models.

PS2 – Airport operators should be made aware of the performance of the equipment needed to service aircraft that will be taking off and landing at their airport.

AAM aircraft manufacturers should ensure that their aircraft are developed to meet the ICAO Annex 14 requirements for aerodrome design and operations. The integration of these aircraft into the airport environment should be seamless and generate minimal impact for airport operations or changes to infrastructures. Furthermore, the operational performance of the equipment, such as speed, vertical / horizontal take-off, will need to operate according to the current standards to avoid impacts on airport capacity.

Technical requirements such as charging infrastructure or power supply should be harmonized across various aircraft models to ensure interoperability. Manufacturers should provide airport operators with adequate aircraft compatibility and planning details, allowing airports to understand how much space will be required and what technical requirements may be needed for aircraft operations.

Operating requirements for activities such as ground handling should be standardized, harmonized, and meet existing safety standards for ground handling of aircraft. These may include how aircraft manoeuvre on the ground, the number and volume of flights, charging time and procedures, etc.

There are a multitude of stakeholders involved in the development of AAM concepts, these include:

1. **AAM aircraft manufacturers,** including more than 300 different concepts which are in development worldwide. Their focus is on certifying aircraft, optimizing manufacturing, and securing social acceptance.
2. **Infrastructure design and operation providers**, who will accommodate AAM operations with landing and take-off platforms, storage, and charging stations. These include

dedicated private companies who are engaged in vertiport design and development as well as airport operators interesting in developing vertiports. It should be noted that vertiports present an interesting opportunity for public private partnership (PPP) schemes.

3. **ATM operators**, are providers of digital platforms and services to integrate, manage, and supervise air mobility offerings and services, including UTM airspace and information management systems. This includes traditional ANSPs, airport operators, and dedicated UTM providers. However, there remains debate over the benefits of a centralized command and control AAM planning model.

All these stakeholders will need to consider the existing regulatory frameworks, as well as their ongoing evolutions, when integrating their concepts into the airport environment to ensure compatibility and a seamless operational integration.

4.2 Airport safety and security

PS3 – AAM aircraft should be conceived to operate as per the highest safety standards applicable at airports.

PS4 – AAM operations should not bring new aviation security risks at airports.

PS5 – Airport operators should take into consideration the potential security risks, including cybersecurity considerations of AAM operations at airports.

Aviation has a strong safety record based on continual efforts to improve safety performance across all aspects of the industry. This includes certification processes applied to aircraft manufacturing, operation and maintenance, licencing and training requirements for flight crews, and high-performing safety-critical systems. AAM aircraft and operations should adhere to the same levels of safety applicable to other aircraft and operations taking place at airports.

As AAMs enter the aviation ecosystem, we must continue to maintain high safety standards. To streamline and expedite the integration process, alignment and harmonization of the RPAS regulatory framework is required.

Whether or not vertiports are sited within existing airport infrastructure or if they are new construction, they will need to be subject to local fire codes, which will have a significant impact not only on the facility's design, but also on its fire mitigation equipment and procedures. In addition, airport operators will equally become familiar with the relevant fire protection requirements for high-voltage electrical charging systems, electrical storage systems, or to respond to events on aircraft with substantial quantities of batteries onboard.

Safe and efficient aviation technology requires a high-level human performance. Hence human factor should be considered in all stages of any system life cycle, from ergonomic design, conception, personnel training, airport operations, ground handling, and maintenance. It goes without saying that in aviation, human factors are dedicated to better understanding how humans can most safely and efficiently be integrated with evolving technology. That understanding is then translated into design, training, policies, or procedures to help humans perform better.

Airport operators will need to examine how AAM deployments, and their operations will potentially impact existing aviation security measures. These measures are largely risk-based, and because the AAM value proposition depends on a seamless experience for passengers and cargo, the existing security regime must be looked at in order to optimize processes. Security programs related to AAM operations will need to consider the wide variety of possible geographic areas in which they will operate at the airport as well as the specific use cases planned.

A full security risk analysis must be conducted during the design phases, rather than as an afterthought, with the intention of designing a framework that has a low impact on the processing of passengers and goods, without compromising levels of required aviation security. In any case, the implementation of AAM operations should not bring "new" aviation security risks.

In the case where there is an interface between passengers and goods using AAM services and those of traditional commercial aircraft through some form of connection at the airport, the security regime applied to them should be the same as the one applicable to all passengers and goods at the airport. In some cases it may be possible that security screening is conducted at the point of departure, such as a vertiport, before arriving at the airport.

With the development and introduction into operations of autonomous technology, the entire aviation system will need to be adequately protected against all threats, including cyber threats. Protection against cyber-attacks that could affect potentially large parts of the aviation ecosystem will require an integrated approach to system design, system operation, threat monitoring and attack response to provide adequate mitigation.

4.3 Master planning

PS6 – Airport operators should consider future infrastructure and operational requirements, including impacts on noise and capacity, for accommodating AAM aircraft, support systems, and technologies as part of their master planning process.

PS7 – Airport operators should consider the needs for electrical and charging capabilities within their master plans to ensure that enough electrical capacity is foreseen to cater to increasing demands from AAM.

Airport master plans are developed for new and existing airports to guide their longer-term development and business strategy. Amongst many elements, an airport master plan is the airport's vision of how the capacity enhancement may proceed over the short- (0–10 year), medium- (10–20 year), and long-term (20+ year).

An airport master plan will consider multiple factors, including future air traffic type demand and available capacity, economic and environmental factors—including the impact on noise contours, land-use planning and obstacle management—investment requirements, and financial implications and strategies. Airports need master plans to guide their future infrastructure development in a logical, cost efficient, and affordable manner allowing them to cater to the future needs of the local aviation ecosystem and communities.

AAM will create an added demand for electrical and charging infrastructure at airports, in addition to the already fragile electrical power grids in some areas of the world. Availability and lead time for components required to build the charging stations and supply the electricity necessary to support the landing and take-off sites, will be a concern in the future.

The integration of large-scale energy storage facilities to compensate for high demand peak draw times is one possible solution to the challenges around providing additional electricity capabilities. However, the integration of energy storage facility solutions, and the Rescue and Firefighting Services for the entire facility may come with its own set of challenges, especially in terms of fire safety codes to be appropriately addressed, for those structures located near densely populated areas.

4.4 Sustainability and public acceptance

PS8 – Airport operators should consider AAM needs of the communities and government authorities surrounding and within the airport’s catchment area.

PS9 – AAM operations need to be considered in the medium-and long-term vision and planning of the airport operator’s sustainability strategy.

Airport operators should consult and coordinate with local communities, cities, and authorities to identify the needs and/or plans that they have in the AAM domain. This will be critical to ensuring adequate planning and anticipating the requirements that will facilitate and enable economic growth and mobility in the communities surrounding the airport. Airport operators should equally coordinate with local business communities or associations, including freight and cargo operators, to identify their plans and deployment concepts and possible needs.

The identification of the needs established by local communities will allow the airport operator to better facilitate the integration of these not only in its master planning activities, but also in its sustainability strategy. It will also provide a basis on which the airport operator will be able to develop its community engagement strategies to bolster the social acceptance of AAM.

In a recent European Union Aviation Safety Agency (EASA) study[4] on the societal acceptance of urban air mobility in Europe, the top-ranked concerns were safety, security, and environmental issues. Under the environmental impact category, the potential risk of a negative impact on wildlife, noise pollution and the climate impact of the manufacturing and production of aircraft – particularly the batteries – ranked highest.

Public acceptance is a critical success factor of AAM deployments and early and extensive community engagement will be key. This acceptance must address the management of noise or perceived noise, ensuring that the level, frequency and duration of the related sounds is kept at acceptable levels. It will also need to address various non-acoustic factors, such as the possible creation of a divide between the beneficiaries of AAM – those passengers who gain time – and the people "stuck" on the ground, who will potentially be impacted by noise and visual pollution.

For the AAM business to take off, regulators will have to develop noise standards for AAM aircraft. It will also be required to accommodate and manage visual pollution concerns. This will not be a fixed process, but rather a dynamic one as air corridors used by AAM will most likely regularly evolve. Additionally, the compatibility of air corridors and their integration into local transportation networks will be fundamental for communities to accept greater AAM deployments in the future.

A significant focus is being placed on the decarbonization of aviation, including efforts to improve local air quality in and around airports. At the same time, plans are being made to gradually phase out fossil fuels in many countries, along with wider development of electrification or the use of hydrogen. This focus on electrification and hydrogen power sources also comes with new infrastructure implications and requirements that need to be anticipated by airport operators and planned for as part of their sustainability strategy.

[4] EASA Study on the societal acceptance of Urban Air Mobility in Europe (May 2021)

4.5 Revenue generation

PS10 – The AAM users should pay for the usage of the airport infrastructure (as per the user-pay principle), to cover the relevant costs (e.g., infrastructure, operations, maintenance, etc.).

PS11 – Where possible, airport operators should consider alternative aeronautical charging schemes for AAM operators.

The development of vertiport infrastructure, as with most airport infrastructure projects, is capital intensive. In some cases, they could be developed through PPP schemes. Typically, vertiports could be located on the roof of airport car parks or of new and existing terminal buildings, offering an innovative way to value parts of buildings that may be often disregarded.

Airports could benefit from a new stream of aeronautical and non-aeronautical revenues through vertiport operations. Vertiport users such as air taxis or cargo companies, will require communications services and electricity to operate, these services may be supplied and charged for by the infrastructure provider.

In any case, when AAM operations take place at an airport, the fundamental user-pays principle should be respected with aeronautical charging mechanisms adapted to the nature and type of operations.

To generate new revenues, airport operators could choose any one of multiple business models for the provision of ground-based services catering to the emerging AAM market. Below are some of the most promising models:

- The airport could itself be the facility owner, provide for exclusive use of the vertiport and potential competitive advantages by limiting traffic only to some AAM operators and their customers.
- The airport may own the facility, but lease it to a firm that specializes in passenger facilitation and ground handling, such as a Fixed-Base Operator (FBO). Such an arrangement would allow the FBO to control the brand experience and operations of the facility on behalf of the airport operator.
- The airport leases space within its existing perimeter to the AAM operator that will set up its own operation, including the possible development of full vertiport and passenger handling infrastructures.

4.6 Cargo operations

PS12 – AAM cargo operations should seamlessly integrate into the airport infrastructures and operations.

The cargo and logistics industry are currently pioneering a multitude of use cases for unmanned aerial vehicles. These range from the small cargo drones that can now drop online shopping deliveries or supply vital medicines to otherwise inaccessible locations, through to larger delivery vehicles that will seek to bring larger loads of packages to warehouses prior to the last mile delivery.

It is anticipated that drones will replace or complement package delivery vans in the not-too-distant future, meaning that players from different industries will battle for the use of valuable airspace. As individual drone-based cargo delivery services are slowly being rolled out, they will need to be part of an overarching system to become a commercial reality. This will involve developing a comprehensive framework for the system that will establish the conditions in which it will exist.

The air cargo market will most likely include a multitude of aircraft operating in concert to meet different operational needs. These will range from small parcel delivery aircraft that will mostly be found in urban areas; a series of mid-sized specialized aircraft operations transporting very specific goods in small volumes, such as healthcare logistics, humanitarian assistance, or emergency operations; and large delivery aircraft transporting consolidated bulk goods, such as a remotely piloted ICAO Code C aircraft. Airports will need to anticipate these different types of operations and cater to them in different ways as the infrastructure and operating requirements are likely to be somewhat different for each.

Many of these cargo operations will leverage the existing airport infrastructure, taking off and landing at and around cargo warehouses. These types of operations, as with all other AAM use cases, should seamlessly integrate into the existing airport operations and infrastructure. The volume of aircraft movements that are likely for cargo operations can be significant. These will have to be fully integrated into existing airport capacity and not have detrimental effects on the safety of other flight operations.

4.7 Unmanned traffic management

PS13 – Future oriented UTM operations should be fully compatible with and integrated into the current ATM network. In an initial phase, segregation between traffic types may be necessary.

PS14 – Airport capacity management concepts should be established with clear priorities and operating requirements between traditional and advanced aviation at airports.

The current interest in urban air mobility looks to leverage untapped capacity offered by very low level (VLL) airspace, where responsibilities are not yet fully defined. It also fills gaps in the civil aviation network to connect the travelling public to the airport for longer haul and international travel. However, all these aircraft may at some point converge on or near the airport environment with a potential for direct impacts on capacity management.

In the future, AAM operations will leverage the capabilities of a UTM network to authorize and control flight operations. In the short- and medium-term, AAM will operate according to existing ATM frameworks and apply the same principles of airspace and traffic management that conventional aviation currently uses to safely handle dense air traffic at airports. However, if these capabilities are to be provided by highly automated or autonomous systems, then assurance and proof of high reliability across all feasible operating scenarios are to be guaranteed. To accommodate these future capabilities, the current air traffic management concepts will need to be further developed to ensure the integration for AAM operations.

UTM service providers will need to ensure seamless processes and mechanisms are in place to plan AAM operations, control them, integrate them into conventional air traffic flows, and when necessary deconflict multiple aircraft trajectories. In an ideal autonomous scenario, UTM will be fully automated and require little human interaction for nominal operations. This interaction would be limited to non-nominal situations.

With the growth in traffic, the existing communication, navigation, and surveillance infrastructure used by today's conventional aviation will need to undergo changes to provide the same level of performance and integration as it currently does. Furthermore, system improvements will be necessary to manage the expected future volumes of traffic.

Additionally, the challenge extends to meteorological information which must be supplied locally to give precise and accurate weather predictions, and protection against micro-scale variations in weather that can affect the AAM aircraft flight performances.

The increase in traffic of different types at airports will generate new traffic priority challenges. Clear priorities between conventional and AAM traffic will need to be established. These priorities may be established using different metrics, such as the number of passengers on board (e.g., B777 vs. 4 seat AAM), urgency of the mission (e.g., organ delivery to a hospital), or possibly the size of the aircraft. In any case, the full integration of the ATM and UTM traffic management systems will need to manage the overall airport capacity seamlessly. The use and integration into existing Airport Collaborative Decision Making (A-CDM) concepts at airports can facilitate this process.

4.8 Customer experience

PS15 – Airport operators and AAM operators should seek to create seamless multimodal interfaces between ground and air transportation systems.

Airport vertiports may consist of multiple landing and parking sites. When coupled with the expected demand for travel in the future, the volume of expected passengers using some form of AAM will most likely involve a dedicated and well-trained ground personnel to maintain safety, security, and efficiency of the operation.

Specific consideration will be needed for optimization of the end-to-end passenger experience. Ideally, vertiports should provide a seamless interface between ground and air transportation systems. Also, airport terminals will provide arrival and departure points for the communities they serve, thus creating a first and last impression on that specific location, just as important as the "sense of place" in the branding strategies currently applied by airport operators. These terminals must provide an attractive, safe, efficient, comfortable, and familiar (vs. "conventional" aviation) transfer of passengers to and from the AAM aircraft and other means of ground transportation.

The implementation of dedicated marking and lighting concepts to facilitate the movement of all users, including passengers and staff, within the airport facilities and vertiport surfaces will be needed. These should allow users to intuitively determine areas that are safe vs. unsafe, the status of a landing or departing aircraft, as well as directional guidance.

5. CONCLUSION

In summary, the intent of this paper is to set forth ACI's positions and key policy statements on the integration of AAM into the airport environment.

These emerging technologies and operational concepts rely on the use of uncongested, low-altitude airspace, and their value proposition leverages enhanced transportation efficiencies, reduced commuting time, and decreased road congestion in urban areas. This value proposition also builds on the idea of an integrated and shared multimodal transportation system that operates seamlessly across surface and air transportation.

It is of high importance that airport operators engage now with a variety of stakeholders, such as national regulators, local authorities, air carriers, ground handlers, new equipment manufacturers, and training facilities to better understand where the future of air traffic management in their local environment is heading, as well as the development of integrated advanced air mobility concepts and use cases.

With the magnitude of AAM manufacturers and aircraft concepts being developed worldwide, it is also key for airport operators to be mindful of the development and certification process of the major AAM players to prepare their airport infrastructure accordingly.

AAM developments offer airport leaders the chance to reimagine the airport vicinity – reshaping land use, repurposing existing assets, and improving the quality of the overall customer experience. For those responsible for planning the airport environment, the operational implications of these new entrants modify existing operating frameworks and require new sets of systems, tools, and expertise that must be anticipated.

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