

FLY ME... TO THE DOOM?

WRITTEN BY
MANON COYNE
DZVENYSLAVA
TYSLYUKEVYCH

While urban integration remains a distant dream (at least for the time being), forward-thinking cities and organisations are already taking strides towards leveraging the potential of drones in transport. Are you ready to explore the possibilities and embrace the **drone revolution**?

Though the European aviation sector's rules, standards, and harmonisation measures have existed for 20 years, key legislation and political guidelines to enable air transport in cities are very recent.

While previous regulations addressed air traffic management and the structure of innovation in this field, with the creation of the Single European Sky ATM Research Joint Undertaking (SESAR JU), recent steps from the European Commission and the EU Aviation Safety Agency (EASA) have established requirements for aircraft, infrastructure, and flight operations, which makes the implementation of Urban Air Mobility (UAM) services possible.

In addition to the setup of key legislative bricks, the European Commission defined a vision for the drone market development in Europe in its Drone Strategy 2.0 in November 2022.



This vision elaborates on future uses of drones and the milestones enabling them, such as artificial intelligence, robotics, and mobile telecommunications.

It acknowledges the role of local authorities in defining the need for Innovative Aerial Mobility (IAM) Services and integrating them into regional planning. In this regard, the Strategy announces the creation of an online platform supporting a sustainable IAM implementation by authorities, communities, municipalities, industry, and stakeholders, as explained by a DG MOVE representative at the POLIS Conference 2022.

Illustration of adopted rules structuring UAM operations

USEPE project

Airspace operation control

USEPE project



Competent authority?

Cities and regions definitely have powers and responsibilities entitling them to support and handle air transport services on their territories, but European Union’s member states are the airspace masters: national civil aviation authorities regulate aircraft and infrastructure, air transport operations, and air traffic control. Defence ministries, on their side, advance the technology – a perfect example of this is the Spanish Defense Ministry-owned company ISDEFE, which coordinated the USEPE project, a project that saw the contribution of POLIS and that developed a method for drone trajectories’ separation in urban environments. Lastly, transport ministries and national R&I centres frame market developments with guidelines and funding, and drone unions supporting private stakeholders flourish at the country level.

In this context, the definition of competent authority to rule UAM services, as referred to by several legal texts, requires both task allocation and capacity development. And since the local level is accounted for in the planned cooperation orchestrated by member states^[1], skills are needed in regions and municipalities’ staff. From mobility and traffic management departments to environment and sustainability administrations, energy and grid managers, urban planning bodies, and economic development agencies, a coordinated approach within local authorities will be key to getting grips with this disrupting innovation.

To build adequate knowledge and support cities in this endeavour, the EU-funded project AiRMOUR developed together with EUROCONTROL (European intergovernmental organisation supporting harmonisation of aerial navigation across countries and between civil and military services) an online course revolving around the use of drones for emergency medical services – the last class of the course will be released by POLIS and LuxMobility in autumn 2023.

[1] [U-space Implementation Regulation \(EU\) 2021/664, Article 18\(f\).](#)

Sharing is caring

Beyond training, exchanging experiences is a key enabler for change management. From coordination to infrastructure integration and pilot trials, some cities are already very active in UAM implementation and have insights to share with the transport innovation community.

To adopt a comprehensive approach and gather all the needed skills, the City of Madrid is establishing an 'Urban Air Mobility Commission'. Composed of a diverse array of public and private organisations with a stake in UAM implementation, the Commission will explore use cases and governance questions, as well as societal concerns, infrastructure requirements, and funding options. The Commission will aim at setting the right context to conduct pilot projects and support UAM services implementation.

In addition to coordination and regulation, local authorities are also exploiting the integration of UAM infrastructure and services in their existing mobility hubs and plans. For example, the port of Rotterdam intends to use drones in addition to vessels, trains, and trucks for the transport of freight and passengers. To this end, as they need relevant drone services experimentation, the port authority set up 2022 the innovation programme Drone Port of Rotterdam.

Within this programme, they work on the Port of Rotterdam's U-Space Airspace prototype, which is a 2-years pilot Airspace Centre managing the Very Low-Level (VLL) airspace for drones over the Europoort and Maasvlakte area. Both manned and unmanned flights are monitored, in a fully digital process currently being tested with software partner Airwayz. The prototype is a collaborative partnership between the authorities, the municipality of Rotterdam, stakeholders, knowledge institutes, and industry and will help advance the many drone applications in the port from a neutral position.

A U-space for all

All in all, a high number of parties must be involved to make U-space^[2] and drone operations possible. That means an alignment of air traffic control, geo-awareness & navigation service providers, and drone operators. But next to that, contributions are needed from information and sensors suppliers, data security stakeholders, authorities at local, national and international levels, enforcers, drone manufacturers, shipping and terminals, researchers, and of course the citizens – also known as the final beneficiaries of these services.

[2] U-space is a set of new services and harmonized conditions relying on a high level of digitalization and automation of functions and specific procedures designed to support safe, efficient, and secure access to airspace for large numbers of low-altitude drones. This framework prevents the collision between drones and other aircraft, mitigates the risks of drone traffic on the ground and opens the European market to low-altitude drones.

