



**ADVANCED AIR
MOBILITY
DISCUSSION PAPER 1**

**Airspace
Integration**

**AIRPORTS COUNCIL
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Challenges on airspace integration

Advanced Air Mobility (AAM) is rapidly developing as an exciting new paradigm in aviation. New aircraft designs and air traffic management technologies offer the prospect of electric vertical take-off and landing (eVTOL) aircraft providing a range of advanced mobility solutions in Europe's cities and regions, as well as contributing to more sustainable aviation.

The first entry into service is foreseen as early as mid-2024. The industry and above all airports are at the ready with infrastructure plans and are in close cooperation with eVTOL manufacturers and potential operators. A **key element and thus success factor** for the entry into service is a **clear regulatory framework on airspace integration**. This is currently not in place.

Clarification of usage of new regulations

Successful integration of eVTOLs and AAM into the airspace starts from the ground up. For ground infrastructure, AAM providers and potential vertiport¹ operators including airports currently use an existing guideline which has been developed under the auspices of EASA and in collaboration with industry and EU Member States, namely the **Prototype Technical Specifications (PTS)** for vertiport design. From a legal point of view, the PTS does not enjoy the status of Acceptable Means of Compliance (AMC) or Guidance Material (GM). This is a hindrance as the competent authorities and ANSPs only rely on Implementing and Delegated Acts and associated AMCs and GMs. Although developed by EASA together with industry and authorities, the PTS does not yet have sufficient legal weight to be taken fully into account by Member States at this stage. Furthermore, no such document currently exists for the next step - the integration of eVTOLs into the airspace.

Today's plannings, e.g. for airspace routings, are based on existing helicopter regulations such as ICAO Annex 14 Vol. II. **Those regulations and guidelines are stricter than required given the expected performance levels of eVTOLs. This applies in particular to vertical take-off and landing (VTOL) and less sophisticated piloting skill requirements.** Being allowed to use vertical take-off and landing is essential for the success of VTOL and vertiport operations. Use of existing helicopter routes may be a possibility in the short-term, but dedicated routes for VTOLs will be required for their general deployment. Should VTOLs have to use conventional airspace routes, **they would hardly fit into current airspace structures at airports or into densely built-up areas, such as cities.** It is paradoxical as those areas are the **key locations for VTOLs.**

The industry, airports and potential vertiport operators **are therefore calling for harmonised regulations and standards for airspace integration and airspace routes** which take the special VTOL performance

¹ I.e., an area of land, water, or structure used or intended to be used for the landing and take-off of VTOL aircraft.



into account. The regulation bodies, such as EASA and CAAs should speed up the coordination at the European, national and local levels in order to keep pace with industrial and international developments. The airport industry and VTOL manufacturers have been developing proposals in this regard, including the **essential game-changer of installing an airspace funnel which will strategically separate AAM traffic from manned traffic at airports and vertiports**. The feasibility of this will strictly depend on the adoption of new, safe and efficient containment criteria for AAM operations, defined through an increasing confidence in their performance capabilities and recovery procedures. Conversely, work is also needed to make clear how piloted aircraft can operate in a U-space airspace, and how some or all of the U-space services offered can be utilised by piloted operations.

Clarification of responsibilities and funding

ACI EUROPE calls for harmonised standards, clear responsibilities and clarification as to the cost coverage of ATM expenditure.

Regulatory bodies should also clarify the responsibilities regarding airspace design and development. ANSPs should be mandated by the Member States to carry out airspace design for eVTOLs as part of their **core business**, as is already the case for commercial aircraft. The initial cost for the development of the airspace integration concepts and route development principles, including the approaches/departures to and from vertiports located at airports, should be regarded as European/national development task facilitating the lift-off of this fledgling industry. Individual stakeholders should then be charged for the services rendered, following the “user pays” principle once the system and procedures are up and running. A European fund and/or public financing initiative could facilitate this start-up process.