

Korea-EU Horizon Europe Researchers Networking Forum on Energy & Advanced Mobility

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**Lecturer in
Autonomous
Systems**

**Cranfield
University**

**Advanced
Air Mobility**



1. Short Introduction of Our Organisation

Cranfield University

- UK's only postgraduate university with a **Research Airport**
- No. 1 in **Aerospace**, Engineering and Technology Postgraduates - half of UK's aerospace MSc
- No. 2 in UK research income from industry per academic
- No. 33 in Engineering - Mechanical, Aeronautical and Manufacturing (QS World University Rankings 2021-25)

Centre for Assured and Connected Autonomy

- Model-based/data-driven assurance for connected autonomous systems
- Flight arena for swarm operations
- Unmanned traffic management lab – **digital twin**
- Human-machine edge co-pilot & C2 lab





2. Expertise

Theory

- Networked control systems
- Risk-aware decision making and control
- Human swarm teaming

Potential Contribution

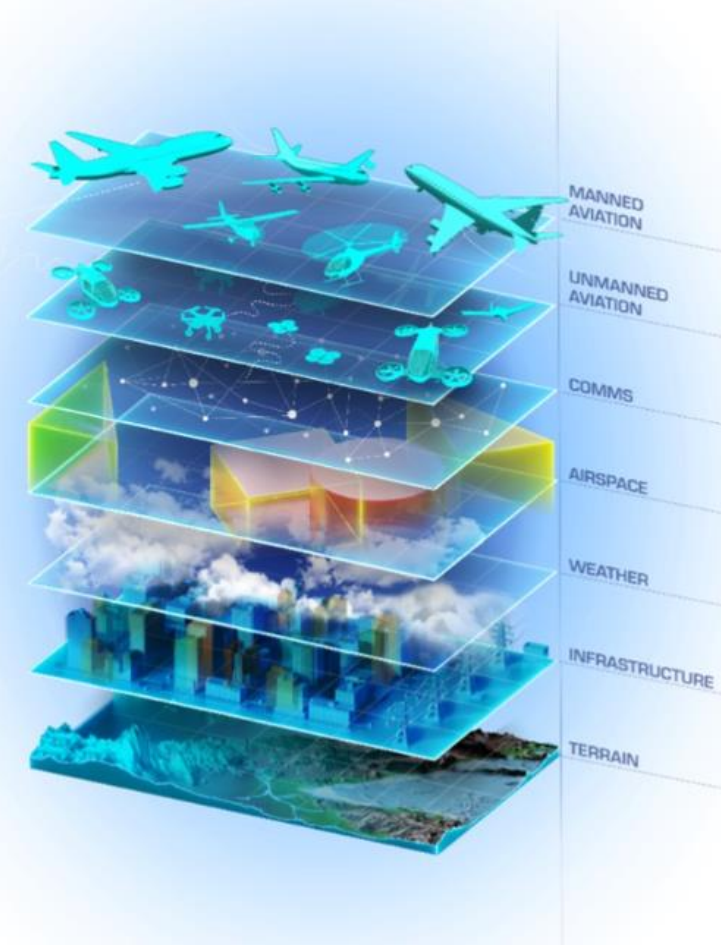
- Strong capability in algorithm design and digital twin validation
- Synergy with multi-model testing and demonstration

Key Relevant Research

- U-AGREE: U-space Air and Ground Risk modElS Enhancement, SESAR, 2025-2027
- UK Airspace Digital Twin, Department for Transport, 2025-2026
- Simulating Enhanced Vertiport Management in a Multimodal Transportation Ecosystem, 2024 IEEE Aerospace Conference
- EuroDRONE: A European UTM testbed for U-space, SESAR, 2018-2020

Practice

- Advanced air mobility systems
- Unmanned air traffic management
- Digital twin development

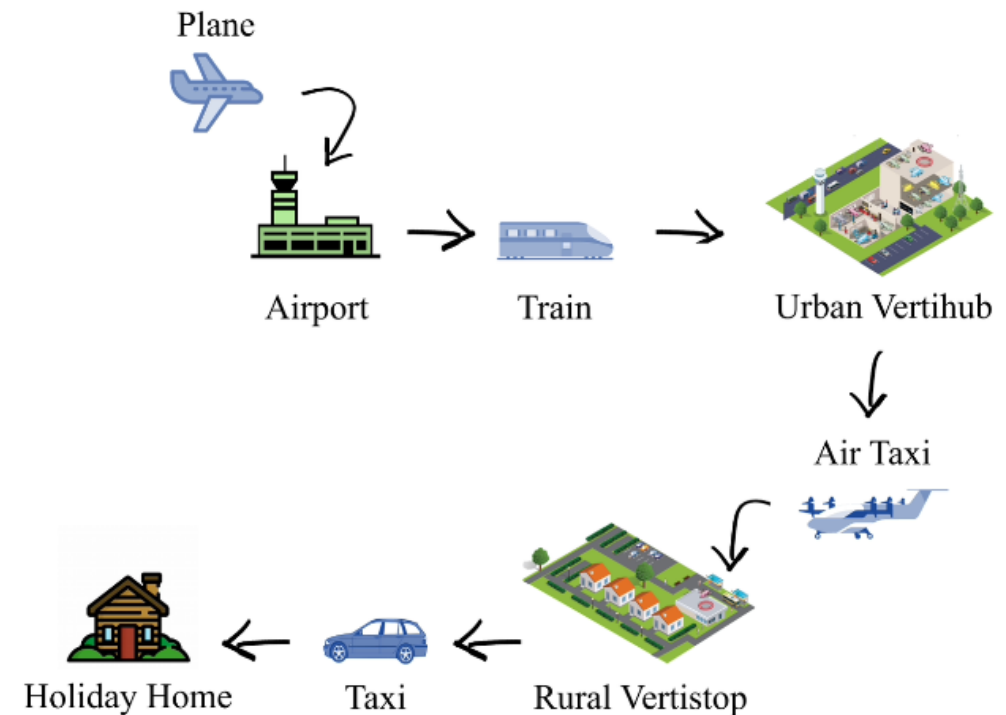




3. Project Idea

HORIZON-CL5-2026-10-D6-10

- **Call:** Enhanced resilience in multimodal passenger transport through digital technologies and generative and discriminative AI
- **Aim:** To develop and validate a next-generation resilience framework for multimodal passenger transport
 - Develop AI risk-aware decision-making algorithm to anticipate disruptions, optimise responses in real time, and reduce delays.
 - Develop digital twin enabling mixed-reality simulation
 - Demonstrate in real-life use cases within urban, sub-urban, and long-distance passenger transport
- **Ideas:**
 - Graph theory + learning-based + risk allocation
 - Building upon Cranfield's digital twin development experience
 - Mixed-reality traffic simulations to gradually enhance



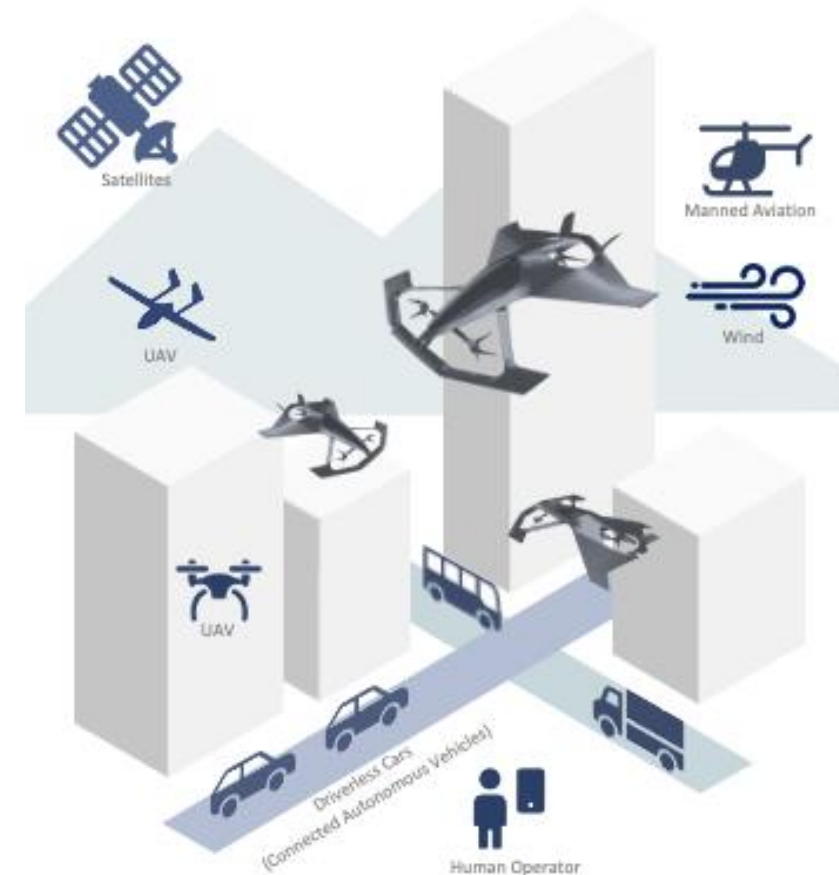
4. Profile We are Seeking and Why

Partners for HORIZON-CL5-2026-10-D6-10

- Diverse transport modes
- Who has close relationship with transport operators, infrastructure managements, and city authorities
- **Why:** Requires demonstration in three pilot sites in different Member States, with minimum three transport modes

Partners for other calls of interest

- HORIZON-CL5-2027-06-D6-08: Enhancing Mobility for All: affordable, reliable, and accessible multimodal transport for inclusive rural and urban connectivity – Societal Readiness pilot
- HORIZON-CL5-2027-06-D6-11: Enhancing Resilience and Accuracy in Positioning, Navigation, and Timing (PNT) Systems and e-conspicuity solutions





5. Contact Details

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