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PRESS RELEASE — FOR IMMEDIATE RELEASE

In RefMap Platform, EU Develops New Tools to Enable the Sustainable Future of Flight

The platform's first public rollout coincides with COP30 as Europe seeks to accelerate aviation's transition beyond CO_2.

As senior officials from around the world meet at COP30 in Brazil to discuss efforts to address the world's growing environmental crises, in Europe the newly launched RefMap Platform is already poised to provide the aviation industry with the tools needed to go beyond the Paris Agreement, a key aim of the EU.

Funded by Horizon Europe and realised by a consortium of leading EU research institutions, the RefMap Platform integrates real-time environmental modelling, AI-driven trajectory optimisation, noise and air-quality analytics, and drone route assessments into a unified, multi-scale digital environment.

With the platform's initial value propositions now mature enough to be explored and validated by experts, between mid-November and mid-December 2025, Future Needs, a partner in the RefMap Project, is running a series of Validation Workshops with key industry stakeholders. These workshops aim to assess the market potential and support the evolution of aviation business models.

Expected users of the finalised platform include airlines and air traffic controllers who will be able to plan climate-optimal routes accounting for both CO_2 and non-CO_2 warming effects and smart sustainable aviation fuel (SAF) allocation while keeping operational cost increases manageable. The platform also provides tools for airports seeking to reduce noise exposure and local air pollution, and for drone operators and route planners designing low-impact flight paths in complex urban settings.

"Aviation's environmental transition cannot be driven by technology alone — it also needs viable business models and real-world adoption," said Anna Palaiologk, founder of Future Needs. "The RefMap Platform gives us the scientific tools to understand climate, noise and air-quality impacts in unprecedented detail, but it is the engagement of airlines, airports, drone operators and regulators that will turn those insights into real change.

"As we open the platform to industry validation, we invite experts across the aviation ecosystem to join our workshops. By co-designing services and market models now, we can ensure that

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the next generation of aviation is not only cleaner and quieter — but also economically resilient and globally scalable."

The new capabilities provided by the RefMap Platform are fully aligned with the EU's efforts to catalyse shifts in aviation that go beyond the Paris Agreement. For the aviation sector, climate goals are to be achieved through the International Civil Aviation Organization and its CO_2-offsetting scheme, CORSIA.

While an important first step, CORSIA does not take into account the broader climate footprint of aviation, particularly the significant warming effects linked to nitrogen oxides, soot emissions, water vapour, contrails and aviation-induced cirrus. CORSIA also does not address noise and air-quality burdens, nor does it provide a framework for managing drones and new forms of electric aircraft.

In response the European Union has developed a more comprehensive policy framework. As of January 2025, airlines covered by the EU Emissions Trading System (ETS) must monitor and report non-CO_2 climate effects – the first such initiative globally. The European Commission will then use the data collected from 2025-2027 to assess these non-CO_2 effects and determine if they should be included in the ETS.

Additionally, the ReFuelEU Aviation Regulation mandates the increasing use of Sustainable Aviation Fuels at EU airports beginning in 2025. Updated European noise and air-quality rules further require airports to take measures to protect local communities, while the EU's U-Space Regulation sets the conditions for integrating drones into European airspace.

"RefMap integrates climate science, trajectory optimisation, noise modelling, air-quality analytics and U-space research, supported by High-Performance Computing (HPC) and advanced Artificial Intelligence (AI) capabilities, into a single operational platform," said Dr. Sotiris Xydis of the Institute of Communication and Computer Systems of the National Technical University of Athens.

"Aviation's climate impact is complex, extending far beyond CO_2 emissions, and operators need tools that can handle that complexity without slowing down operations. Our goal has been to build a scalable platform able to fuse and visualize scientific insights from these domains and ready to complement real-world air traffic management and airport systems."

This integrated approach is essential to ensuring that aviation can continue to support economic prosperity. According to Airbus's latest Global Market Forecast, global air-traffic demand is expected to grow by around 3.6% per year over the next two decades, driven by population growth, rising incomes and expansion in emerging markets. Without innovation and regulation this growth risks being undermined by escalating environmental impacts.

The RefMap Platform provides practical tools to help realise the EU's more ambitious environmental targets and set the benchmark for global efforts.

Experts interested in participating in the RefMap Platform Validation Workshops are invited to contact workshop lead Sofia Iosifidou at iosifidou@futureneeds.eu.

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