PULSAR abstract

The PULSAR project (Propelling eUropean Leadership through Synergizing Aviation Research) acknowledges the need for a comprehensive European aviation research and innovation framework that takes into account the ever-increasing complexity and interdependencies of regulations and sectors. Our primary objective is to support European policymakers in identifying key aviation research efforts to pursue beyond 2050, mainly focusing on environmental objectives such as climate-related regulations and the expectations of European citizens.

With this in mind, PULSAR aims to develop a European Environmental Research Roadmap, which provides an overview of the research efforts needed to develop solutions and enablers that can be fed into Strategic Agendas on Noise, Emissions, CO2 and non-CO2 emissions, and Sustainable Aviation Fuels. Given the urgency for a climate-neutral and resilient economy, the focus of the roadmap is on technologies that can address aviation noise and emissions, both in terms of their impact on climate change and local air quality. This roadmap will be instrumental in helping policymakers to target available funding with the EU research and policy goals.

In addition to addressing policy needs, we recognize that the aviation industry must also prepare for future challenges by cultivating new skills, education, and qualified human resources. This is particularly important as we strive to regain EU strategic autonomy while remaining attractive in today's global context. In this sense, PULSAR will develop PEFEA (PULSAR Education Framework for Environmental Aviation) - a web-based tool providing postgraduate students, early career researchers, and young scientists or engineers with resources to help them identify their education needs in Sustainable Aviation, and map these needs to available postgraduate and lifelong learning/training courses or events provided by Higher Education Establishments (HEE). PEFEA will also include an education roadmap that will allow HEE to guide and adapt the content of their courses to the needs of industry in terms of skills and to the needs of the EU, considering the necessity for environmentally friendly technologies and solutions.

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Furthermore, it is crucial to address the growing concerns expressed by citizens and stakeholders regarding the environmental impact of aviation. Therefore, the secondary goal of PULSAR is to facilitate information about industry challenges, innovations, and climate initiatives to the EU citizens, with the purpose of improving their quality of life while working towards a more sustainable future.

All PULSAR outcomes will be disseminated through the EPEA (European Platform for Environmental Aviation): a multilingual web-based platform giving account of the aviation societal and environmental issues and of the associated research efforts, enriched with reports of feedback from events organised with citizens. EPEA will be made available on the PULSAR website.

The impact of PULSAR is therefore, twofold: showcasing the effort made by the sector but also engaging citizens in a process aiming to lead to a shared understanding of the environmental challenges posed by aviation and the ways to cope with them. In this way, citizens will have more insights into the efforts done by the European aviation sector, its future challenges, and priorities, and have the chance to give and share their opinions about these challenges and their expectations.

The PULSAR project consortium is formed of 12 partners: ONERA – the French Aerospace Lab (project leader), SAFRAN Aircraft Engines, Airbus, DLR – German Aerospace Centre, NLR – Royal Netherlands Aerospace Centre, Anotec, Airport Regions Council, Erdyn Consultants, Manchester Metropolitan University, Rolls-Royce plc, Rolls-Royce Deutschland, and the University of Southampton.

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