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Contributions of EU-Funded Projects towards Greener and Digital Transport

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The “European Green Deal” [1] has set ambitious goals for the transport sector, calling for a 90% reduction in its greenhouse gas emissions by 2050. To achieve this systemic change, the European Commission has adopted the “Sustainable and Smart Mobility Strategy” [2] which aims to ensure that the EU transport sector is fit for a clean, digital and modern economy. Among others, this strategy indicates that all modes of transport should be made more sustainable, and outlines the need for the decarbonisation and energy efficiency improvement of aviation and maritime transport in particular. To this end, digitalisation and automation will become important drivers to deliver on these greening objectives and to maintain and reinforce the EU’s leadership, and competitiveness. It is also essential that key digital enablers for design, manufacturing and automation are in place for all transport modes. This includes electronic components for mobility, network infrastructure, cloud-to-edge resources, data technologies and governance, digital twins, as well as Artificial Intelligence (AI).

Thanks to the continuously increasing capabilities of high-performance computing (HPC) hardware, digitalized design can facilitate the testing, certification and deployment of the innovative solutions required to minimize the environmental impact of airborne and waterborne transport. Further advancement of multi-disciplinary design optimization methodologies and simulation tools, along with integration of AI methods and big data analysis are thus important challenges to address, in order to reduce emissions during the industrial production process and the entire product lifecycle.

The European Commission’s European Climate, Infrastructure and Environment Executive Agency (CINEA) is currently implementing a broad portfolio of collaborative R&I projects, funded under Horizon 2020 and Horizon Europe, which are contributing to the European Green Deal through the aforementioned specific technological challenges. These projects are developing and applying advanced methods for modelling, simulation, optimization and design of technologies contributing to the mitigation of the environmental impact in airborne, road and waterborne transport. The portfolio of EU-funded projects managed by CINEA is expected to be further enhanced by selecting new projects from upcoming calls for proposals within the Horizon Europe Cluster 5 on Climate, Energy and Mobility.

References

- [1] European Commission, Communication from the Commission, The European Green Deal, COM(2019) 640 final, 2019.
- [2] Sustainable and Smart Mobility Strategy – Putting European Transport on Track for the Future, COM/2020/789 final; <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0789>