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PROXIMITY: A platform for PRogramming, Orchestration and eXecution of real-tIme data analytics workflows for smart and clean MobilITY

Description

The radical transformation of transport systems so they provide sustainable, clean, safe and integrated mobility is a major policy goal at nationaland European level. A major part of this effort aims to provide enhanced mobility experience to all users and improve the efficiency and safety of the transport network. Furthermore, the transport sector has a significant environmental footprint, accounting for 23% of CO2 emissions in the EU and more than a fifth of greenhouse gases, ultimately affecting air quality with a direct impact on our health.

This project is driven by recent technological advances across several strongly interconnected domains that have been evolving in parallel. The rise of the Internet of Things (IoT) has created an ecosystem of sensing devices, which generate a huge volume of data, typically processed at the cloud to provide valuable knowledge and actionable insights. As the number of connected and smart devices grows, the edge computing paradigm has emerged, bringing computation closer to the data sources to achieve the ultra-fast response time required by real-time services. The advent of 5G communications is further driving the adoption of edge computing, bringing significant performanceenhancements along with high network programmability.

Despite the clear potential of the aforementioned technologies, it is the design of real-world applications addressing the specific needs of smart and clean mobility that will generate a tangible value for the European economy, and benefit the involved stakeholders, end users and society in general. However, innovation is hindered by the lack of an integrated and unified computing and communication ecosystem that will facilitate the implementation of innovative applications.Towards that end, PROXIMITY will provide a software framework for the development, deployment and execution of innovative data analytics applications over a unified, integrated and multi-tenant computation and 5G-enabled communication ecosystem. This will be achieved by innovative and multi-disciplinary research in the cloud and distributed computing, software development andtelecommunications.

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