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# TRAFAIR: Understanding Traffic Flow to Improve Air Quality

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Road traffic is among the main sources of air pollution, and taking into account that air pollution causes 400 000 deaths per year, making it first environmental cause of premature death in Europe, environmental impacts of traffic are of major concern throughout many European metropolitan areas.

In February 2017, the European Commission warned five countries, among which Spain and Italy, of continued air pollution breaches. In this context, public administrations and citizens suffer from the lack of comprehensive and fast tools to estimate the level of pollution on an urban scale resulting from varying traffic flow conditions that would allow optimizing control strategies and increase air quality awareness.

TRAFAIR project surged from this premise, it brings together 9 partners from two European countries (Italy and Spain) to develop innovative and sustainable services combining air quality, weather conditions, and traffic flows data to produce new information for the benefit of citizens and government decision-makers. The project started in November 2018 and will lasts two years.

The TRAFAIR project aims at achieving four main results:
1) Definition of a standard set of metadata (based and extending the ones adopted at European level and defined by FAIRMODE) able to represent urban air quality maps.
2) Provision of real time estimation on air pollution in the city on an urban scale (using a set of low-cost air quality sensors, and combined them with measurements by the regulatory air quality stations in order to build an informative map of the different levels of pollution in the urban areas).
3) Development of a service for prediction of urban air quality based on weather forecast and traffic flows. This service make use of open source and HPC technologies in order to compute the estimation of the diffusion of pollutants in the urban area. .
4) Publication of an open dataset describing the urban air quality maps and the prediction maps in 6 European cities of different size on which the service will run for the duration of the project: Zaragoza (600000 inhabitants), Florence (382000), Modena (185000), Livorno (160000), Santiago de Compostela (95000), Pisa (9.000). These datasets (including metadata) will be published on catalogs harvested by the European Data Portal.

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