



## SmartMaps – Smart city mapping for safer and eco driver behaviour through smartphone sensor big data

Scientific Responsible  
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New technologies are constantly evolving and revealing new possibilities for data collection, interconnection, analysis and visualization in road safety, features which are capable of reducing road crash numbers and the corresponding casualties. In light of these developments, the objective of the SmartMaps project is to exploit large-scale spatio-temporal data from smartphone sensors to develop dynamic maps with readily accessible online information on road safety and eco-driving (routes with reduced fuel consumption). The ultimate goal is to create a complete and comprehensive tool to promote safer and more environmentally friendly driving behavior, while simultaneously rendering overall traffic more efficient and manageable, with applications in Greece and worldwide. The implementation of the SmartMaps project includes the use of numerous complementary high-resolution data. An integral part of the project will be the monitoring of drivers via smartphone sensors for the collection of daily naturalistic driving data under real conditions using the existing OSeven application.

Subsequently, processing and analyses of the collected trip data will follow through the development of innovative machine learning and statistical models which will also include (i) traffic data, (ii) road geometry data and (iii) road accident data. A critical project stage is the validation of previous measurements and road conditions by conducting wide field research and population surveying. This will allow the extension of the analysis to areas with reduced trip/traffic data coverage and the final projection across Greece. Data on road accident sites provided by ELSTAT for the assessment of road safety will also be exploited. The main outcome of the project is the production of user-friendly on-line maps for easy and easy use by users. Through the use of SmartMaps users will be able to obtain information on the safety levels of each section of the road network and the average fuel consumption for each route. The use of Smart Maps promotes safer and more efficient user behavior and performance. Assuming that 50% of drivers use tools like

as SmartMaps by 2025, it is estimated that the number of road fatalities in Greece can be reduced by 8-16% (55-100 fewer deaths per year).

SmartMaps will be fully exploitable by various end-user groups for several purposes, such as alternative insurance pricing from insurance companies, provision of quantitative spatial hotspot information to road network operators, training and self-improvement of drivers in groups or individually and overall reduction in fuel consumption from driving activities. The results of the project will be easily accessible through a range of dissemination activities and media such as social media, scientific (and non-scientific) publications in journals and conferences, newsletter, the project website and the final workshop. In addition, significant innovative findings will emerge through the project for software and map development and for the science of road safety.

