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Mobility by Technology

Success Story

Université Gustave Eiffel

GPS NAVIGATION ON SMARTPHONE: NEW GENERATION APP INTEGRATING TRAFFIC MANAGEMENT MEASURES

LICIT

erc European Research Council

CHALLENGE

Realtime and centralized road traffic management strategies are designed to have an impact at the city or district scale to improve the global traffic flows and/or reduce the greenhouse gas emissions and other pollutants by going beyond classic local control strategies such as local signal actuations at junctions or small series of junctions.

However, today's guidance and navigation systems do not take into account this kind of measures in the route calculation engine. How can we bring back together the best and fastest individual itinerary at a particular T time with the collective optimum defined by the local public authority?

Within the scope of the collaborative project ERC PoC MAGnUM+, supported by the European Commission, Université Gustave Eiffel with its LICIT lab calls on Neovya's expertise and know-how to design and develop a new generation mobile app for road guidance and navigation to be tested in the city of Lyon (France).

Navigation and guidance systems have made substantial progresses for the past decade. Yet, none of them is able to integrate strategies and measures deployed by local public authorities. The challenge here is to guide drivers by including traffic management and control measures activated by the authorities. It is about reaching the goals of reducing road traffic pollution and greenhouse gas emissions.

Thanks to Neovya's technological expertise and software know-how, we were able to break down this technological barrier to deploy a new generation guidance app in record time and evaluate its relevance with a target sample of the population.

Ludovic LECLERCQ
LICIT's Director

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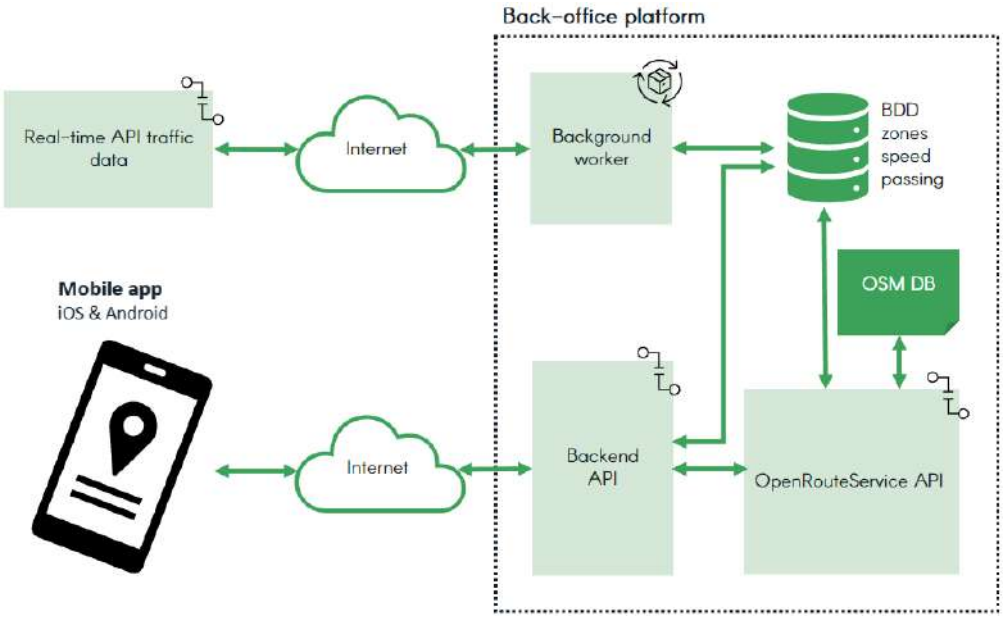

ABOUT LICIT

The LICIT LAB is a research lab whose activities are focused on multimodal transport systems modelling and planning. Its main research topics are covering strategic mobility challenges (environment, ITS, multi and intermodality), innovative tools for smart mobility, new services (carpooling, on-demand transportation), systems' resilience and finally, the studies of mobility's and behaviors' patterns through AI technologies.

SOLUTION

- Process running in the background ("Background worker") that regularly updates (based on real time data) the average speeds and avoidance rates associated to certain network's areas. Their locations are generated in real time by algorithms built at the LICIT.
- Backend API providing all the necessary requests for the mobile application (routing requests and requests collecting the app's users' data).
- Self-hosted OpenRouteService API dedicated to routes calculation based on real time traffic conditions.
- Database integrating the definition of the network's zones, the historical average speeds and avoidance rates for each area, and the mobile app usage data.
- End-user GPS navigation app available for iOS and Android platforms.

BENEFITS

- Solution available in less than 3 months and in line with the schedule required by the LICIT lab.
- Ultra-responsive real-time architecture managing hundreds of user sessions in parallel.
- An unprecedented app for a route guidance system that integrates constraints for geographical zones and real-time traffic conditions to calculate the best itineraries.

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