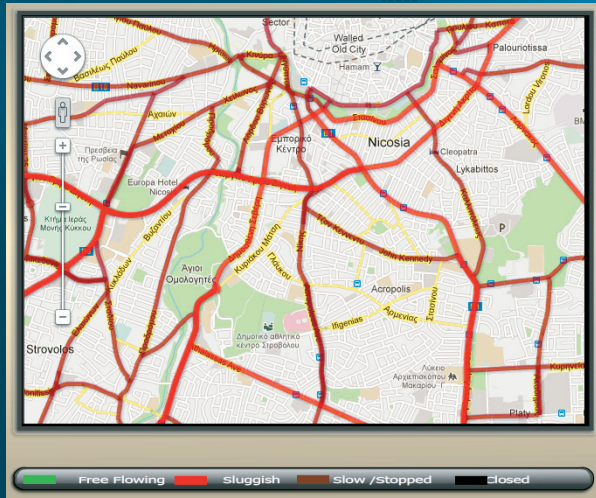


GPS positioning devices are becoming a commodity sensor platform with the emergence and popularity of smartphones and ubiquitous networking. While the positioning capability has been exploited in location-based services, full spatiotemporal tracking has so far only been considered in costly and complex fleet management applications.

The project SimpleFleet will make it easy for SMEs, both from a technological and business perspective, to create (mobile) web-based fleet management applications. In addition we also want to address the related geomarketing domain, which uses travel information in various geo-statistical analysis methods as well as visualizations of the data to be used in online and print publications.



SimpleFleet in brief:

Project coordinator:

German Aerospace Center (DLR)

Duration: 24 months, from Mai 2012 until

April 2014

Total budget: 1.9 millions

EC contribution: 1.4 millions

More information:

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SimpleFleet

**Democratizing
Fleet Management**



CHALLENGES

Fleet management solutions become important even for small SMEs operating only few vehicles, since they allow them to

- optimize their transportation tasks
- minimize operating cost and maximize profit.

Existing solutions however are

- too complex
- too expensive.

An **accurate** picture of the traffic condition in time and space is of vital importance for route planning (vehicle routing) and for route supervision services (online routing).

While speed profiles, i.e., travel time trends in road networks, can be used for planning purposes, online routing requires live traffic data.

SOLUTION

The key elements to effective transportation management are

- good data,
- good algorithms, and a simple setup.

This is achieved by

- aggregating large amounts of traffic data streams in relation to map data
- providing fundamental data management and routing algorithms
- by delivering all this through a simple Web-based API and application framework for mobile and Web applications.

For this purpose, large amounts of Floating Car Data (FCD), essentially using tracking data generated by individual probe vehicles as samples to assess the overall traffic conditions ("cork swimming in the river"), will be used.

OBJECTIVES

Dynamic services,

- extending static location-based services (e.g., POIs) to services for the management of moving objects data, i.e., non-static objects that change their location over time
- providing high-quality and (very) low-cost fleet management solutions

A data pool,

- collecting and aggregating relevant tracking data
- deriving historic speed profiles
- assessing current (live) traffic conditions
- resulting in time-parameterized road networks

TrafficFleet fleet management solutions for

- mobile phones (demonstrator) utilizing smartphones as sensors (GPS tracking)

Geomarketing

- Data analysis software that is based on the traffic data pool, for e.g. the computation of catchment areas

TrafficVis

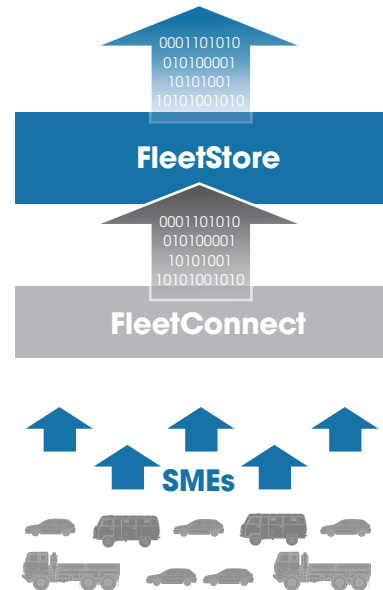
- Data-driven visualizations suitable for online print publications, e.g. traffic heat maps

The project will collect large amounts of traffic information from Floating Car Data (FCD) live data feeds in Athens, Berlin, and Vienna (from a total of 13.000 probe vehicles). They are complemented by historical datasets and speed profiles, whenever they are incomplete. Other used sources are data streams such as Traffic Message Channel (TMC) messages, or Open Street Map (OSM) tracking data. The project concept is illustrated below:



Pooled Data

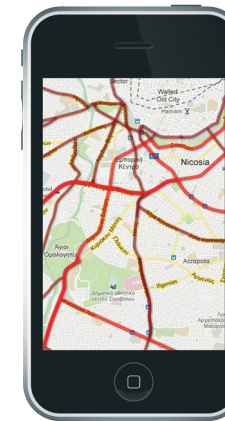
Maps, FCD, Traffic, Data Streams



EXPECTED RESULTS

The major deliverables of the project are:

- A traffic store comprising of several software modules for processing large amounts of incoming live traffic data streams in Athens, Berlin, and Vienna. These software modules include methods for data aggregation and data fusion.
- A business intelligence suite for fleet management and tracking that allows our clients to derive value-added information from their data and in specific business context.
- TrafficIntelligence, an algorithmic framework including algorithms to map live Floating Car Data (FCD) streams to the road network, for vehicle routing, and a statistics package.
- TrafficAPI, TrafficSDK, and TrafficApps, which constitute a programmatic framework enabling SMEs to add SimpleFleet features to their applications with minimal work and maximal ease.



iFleet, a simple fleet management app that uses the iPhone, both as a sensor platform and as a user interface. It will be a mobile demonstrator to showcase the SimpleFleet framework as well as to evaluate the system.

