



SimpleFleet

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Abstract:	<p>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, so has its spatiotemporal cousin, tracking, so far only been considered in costly and complex fleet management applications.</p> <p>The proposed project, SimpleFleet will make it easy for SMEs, both, from a technological and business perspective, to create (Mobile) Web-based fleet management applications. For this purpose, we build a large data pool comprising base data such as maps and traffic data from dedicated providers. A simple interface will provide a means to connect user-contributed data streams to this pool. In addition and to increase the market potential of the data pool, 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.</p> <p>An algorithmic framework dubbed "TrafficIntelligence" that includes map-matching algorithms, vehicle routing services and a statistics package will utilize the collected data and provide value-added service. SMEs will be able to access the data and services by means of a Web-based API, a Software Development Kit (SDK) wrapping API access for specific languages and environments and Application Frameworks for rapid application development for target platforms such as Web (JavaScript), and iPhone and Android mobile platforms.</p>
Keywords:	<p>Fact Sheet, SimpleFleet, Fleet Management, Traffic, Transportation, Optimization, Route Planning, Vehicle Routing, Online Routing, Floating Car Data, FCD, FCD data pooling, Tracking Data, Spatiotemporal Tracking, Probe Vehicles, Speed Profiles, Mobile Phones, Smartphones, GPS Tracking, Geomarketing, Traffic Visualization, Traffic Message Channel, TMC, Data Aggregation, Data Fusion, Business Intelligence, Map Matching, iPhone, iPhone App, App</p>

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VERSIONING AND CONTRIBUTION HISTORY

Version	Date	Introduced Modifications	
		Reason for Modification	Modified by
0.1	10.05.2012	Initial version	DLR
0.2	22.05.2012	Review by all partners	DLR



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DEMOCRATIZING FLEET MANAGEMENT

KEY FACTS

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|-----------------------|---|
| • Project Type: | Theme FP7-ICT,
Subprogramme Area:
ICT-2011.4.1 SME Initiative on Digital Content
and Languages |
| • Project Start Date: | May 01, 2012 |
| • Project Duration: | 24 months |
| • EU contribution: | EUR 1 409 000 |
| • Coordinator: | Deutsches Zentrum fuer Luft und Raumfahrt
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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.



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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



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