PROJECT

FEEDMAP

FeedMAP : Technical and Commercial Feasibility Assessment of Map Data Feedback Loops Applied to the ActMAP Framework

Funding: European (6th RTD Framework Programme)
Duration: Mar 2006 - Aug 2008
Status: Complete with results
Total project cost: €3,620,979
EU contribution: €1,960,987

CORDIS RCN : 80583

Background & policy context:
During the years leading up to this project, the demand for accurate and up-to-date map information increased dramatically. The use of digital maps has been expanded to many existing new application areas such as in-vehicle Advanced Driver Assistance Systems (ADAS).

More comfort, more performance, more safety. In short these are the demands that ADAS systems need to consistently meet and fulfil at all times – even where the general conditions for mobility are not always perfect. Growing traffic density and the consequences thereof such as traffic congestion and longer travelling times, as well as the greater complexity of many traffic situations, are making driver assistance systems increasingly attractive and useful. These systems give the driver helpful information, make it easier for him to take the necessary decisions, and support him in handling both difficult and complex traffic situations. Fresh and reliable digital maps are seen as a new type of sensors for vehicles providing important source of information for look-ahead capability for ADAS applications enhancing the environment perception.

The EC-funded ActMAP project, which was completed in November 2004, developed a solution for one part of the problem. This successful project contributed to a standardised solution for the distribution of map updates from the map providers and road administrations to the in-vehicle clients. The most significant benefit of the ActMAP framework is the dramatic reduction of the time needed for distribution of map updates (around six months at the time of publication). However, the time between a physical change on the road network and its availability in the map providers’ database still depended on the frequency of surveys of the map providers and/or road administration, which could take up to two years at the time of this project.

The FeedMAP concept used the results, knowledge and standards developed in the ActMAP project to improve the identification and creation of these updates including a quality assessment.

Objectives:
The FeedMAP project aimed to build a cooperative map feedback and updating framework improving the cooperation between data owners and data users. This framework would contribute to improved transport efficiency and increased road safety by creating a sustainable source of map updates at a reduced cost for navigation and Advanced Driver Assistance Systems (ADAS) applications.

The objective of the project was to assess the technical and economic feasibility of map data correction by providing a map data feedback loop applied to a map data updating framework using the ActMAP standardised exchange formats and mechanisms.

A cooperative framework was proposed including the definition of source data concept, the system architecture, the information flow model and the organisational models.

This will build the foundation for the next generation of digital maps: learning cooperative digital maps for ADAS and Navigation applications through the joint use of the ActMAP and FeedMAP concepts in order to create a sustainable source of map updates.
Methodology:

The FeedMAP cooperative environment was based on the collection of map data from in-vehicle sensors compared to the map database. Simple algorithms allowed the detection of map data anomalies and send map deviation data to the FeedMAP service centers (FSC). The statistical analysis of aggregated deviation reports at the FSC would produce map deviation reports with a measurement on reliability and accuracy.

They would then be sent to the relevant map data owners for cross-checking with their own information. Finally, certified map updates could be distributed through the ActMAP framework to in-vehicle database and relevant bodies.

This solution would provide the missing link to merge road user experiences with the map data information held by the map providers and the road administrations. This cooperative environment would enable to reduce the time between the actual changes on the road network and its publication in the road databases of map vendors and public administrations.

It was expected that even with a low penetration rate of equipped vehicles, physical road modifications and other features that are not on the map database can be quickly detected, certified and redistributed.

Parent Programmes:
FP6-IST - Information Society Technologies - Priority Thematic Area 2 (PTA2)

Institute type: Public institution
Institute name: European Commission
Funding type: Public (EU)

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Key Results:
The FeedMAP consortium defined the FeedMAP framework based on the identified requirements. The deliverable on requirements for map data feedback is available. The detailed technical specifications
was published in April 2007. Upon completion, the consortium performed a substantial validation of the concept by means of a prototype implementation. Five test sites were realised, focusing on different aspects of the overall framework. The project completed in August 2008. Parties that wanted to be more actively involved were invited to join the ActMAP/FeedMAP forum.

Conclusions

• Community feedback mechanisms as developed in FeedMAP,

• ... and data sourcing with public authorities will play an important roll in the future,

• ... which will be implemented by Tele Atlas using feedback from TomTom and Google users,

• thus will result in a map meeting desired quality standards (for safety applications) and price requirements (for mass market),

• ... which will be available for ALL current and future Tele Atlas customers.

Documents:
- FeedMap Introduction (Other project deliverable)

STRIA Roadmaps:
Cooperative, connected and automated transport, Network and traffic management systems

Transport mode: Road transport

Transport sectors: Passenger transport, Freight transport

Societal/Economic issues,

Transport policies: Safety/Security

Geo-spatial type: Other