Enhanced Road Safety by integrating Egnos-Galileo data with on-board Control system

Funding: European (7th RTD Framework Programme)
Duration: Jan 2010 - Oct 2011
Status: Complete
Total project cost: €512,412
EU contribution: €390,448

Call for proposal: FP7-GALILEO-2008-GSA-1
CORDIS RCN: 206630

Objectives:

The general objective of the ERSEC project is concerned with the broadening of the scope of application to road transport of the EGNOS/GNSS (and later Galileo) through an appropriate integration and data fusion with measurement data coming from other measuring instruments. More specifically, the S&T objective of the project is to develop a measuring system - to be used on board of vehicles - able to output the position on the road map of the equipped vehicle and of all the obstacles (such as other vehicles, peoples and any kind of fixed or mobile objects) around it with a measurement accuracy of the order of 0.1 metre at a sampling rate of 100 Hz.

Methodology:

The proposed approach is based on an intelligent data fusion of the EGNOS/GNSS sensor positioning measurement, the Road-GIS digital local map data and the measurement data obtained from an instrument set installed on board of the vehicle, including vehicle dynamic sensors and environmental sensors. Beside the hybridization with other sensors, the optimal use of EGNOS (and Galileo in the future) key differentiators (accuracy, integrity) will be a key factor for the success of the project. This challenging target is required to open the possibility to apply the above positioning data to improve the performance of active road safety systems aimed to avoid collision and off road accidents. Furthermore, ERSEC will open new business opportunities for European companies besides collision avoidance applications, resulting in highly accurate and reliable positioning. The scope of the ERSEC project covers the study and development of a prototype of the ERSEC measuring system and two demonstrators. A vehicle will be equipped with the ERSEC prototype measuring system and a set of trials performed. Furthermore, the ERSEC prototype system will be integrated in a vehicle equipped with a Collision Avoidance System and trials will be performed in order to evaluate the positive impacts on road safety of the EGNOS-GNSS data availability.

Parent Programmes:
FP7-TRANSPORT - Transport (Including Aeronautics) - Horizontal activities for implementation of the transport programme (TPT)

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

Lead Organisation:

Eicas Automazione Spa
Address: Via Vincenzo Vela 27
10128 Torino
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Organisation Website:  
http://www.eicas.it  
EU Contribution: €155,098

Partner Organisations:

M3 System

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Organisation Website:  
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EU Contribution: €87,935

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Address:  
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EU Contribution: €57,575

Istituto Superiore Mario Boella Sulle Tecnologie Dell' Informazioni E Delle Telecomunicazioni

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Organisation Website:  
http://www.ismb.it  
EU Contribution: €89,840

Technologies:

Advanced driver assistance systems
EGNOS-GNSS based measuring system for vehicles

Development phase: Research/Invention

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

Transport mode: Road transport

Transport sectors: Passenger transport, Freight transport

Geo-spatial type: Other