www.ersecproject.eu

ERSEC

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

Acronym: ERSEC
Start date: 01.01.2010
Duration: 22 months
Call and contract: FP7-GALILEO-2008-GSA-1
Funding scheme: Collaborative Project

This project is supported by funding from the Transport (including aeronautics) Programme under the Seventh Research Framework Programme of the European Union.

Mission

The challenging **ERSEC S&T objective** consists in **achieving a significant improvement in the vehicle positioning accuracy, going from metres** offered by the EGNOS/GNSS **to decimetres** with an updating frequency of **100 Hz**, to be primarily applied for **significant enhancing performance and level of confidence of collision avoidance systems.**

Concept

The ERSEC concept is based on **an intelligent fusion of different state-of-art sensing technologies**.
The data fusion aims at achieving the positions of the equipped vehicle and of all the obstacles around it on the road map with the measurement accuracy of 0.1 metre at the sampling frequency of 100 Hz. The significant improvement in vehicle positioning accuracy is an effect both of the possibility of identifying fixed objects detected by the vehicle scanlasers with those indicated in the road map so to use them as **reference markers** and of the application of sophisticated mathematical fundamentals based on the use of **dynamic filters**.

Nowadays road safety is a major concern and social issue

Vehicle dynamic sensors (VDC and gyro)

Road GIS map data

EGNOS-GNSS Data

Environmental sensors (Scanlaser)

ERSEC intends to contribute a further step towards the goal to make vehicles safer

Consortium

EICAS Automazione S.p.A.
Coordinator (Italy)
Data fusion algorithms, overall system simulation, system integration and in field-test.

m3 SYSTEMS
Partner (France)
Requirements analysis, functional specifications and development of the EGNOS navigator.

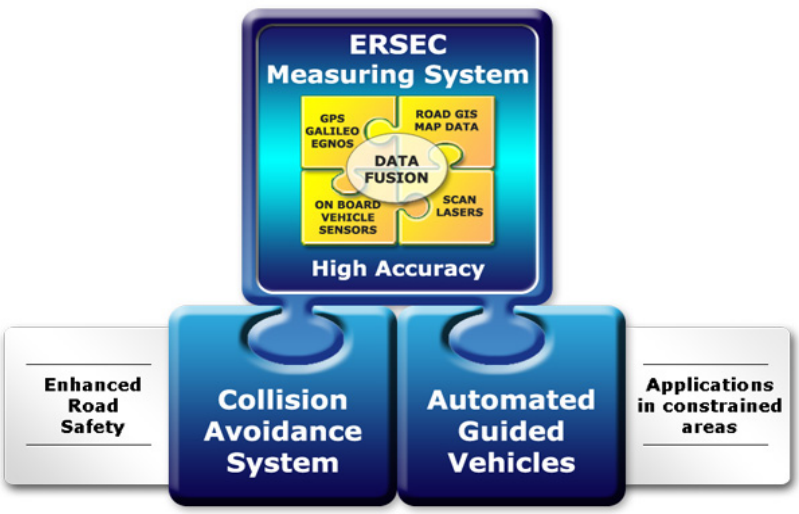
optoelectronica
Partner (Romania)
Open scanner design, adaptation and integration.

ISMB Istituto Superiore Mario Boella
Partner (Italy)
EGNOS/EDAS integration and definition of the Road GIS map data strategies.

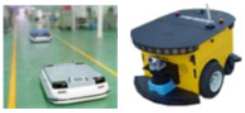
Application in Collision Avoidance Systems

The information computed by the ERSEC measuring system and the related measurement accuracy are established for answering to the need to predict collisions and/or some off-road and so for being able to avoid them.

Intelligent data fusion technique



Application in Automated Guided Vehicles



AGV equipped with the ERSEC measuring system may be applied in constrained areas (industrial sites, airports, or medical centers), where nowadays the required infrastructures to implement the automatic vehicles guidance are limiting the system functionalities and flexibility.