PROJECT

EYE IN THE SKY

New Services for (i) Fleet management and Customised Mobility Information plus (ii) Emergency Support for Crises during large-scale events, based on the use of low-altitude platforms and floating car data

Funding: European (5th RTD Framework Programme)
Duration: Aug 2001 - Jan 2004
Status: Complete with results

Background & policy context:

'Eye in the Sky' is a research project funded by DG INFSO that contributes to the development of a European Intelligent Transport Infrastructure.

The project aims to develop a number of services based on the synergy of surveillance, communications and digital mapping technologies.

The project provides commercially viable integrated solutions addressing issues of traffic monitoring, fleet management, customised mobility information and emergency services support for the better organisation of large scale events. The test area of the proposed services is the sky and city of Athens, which hosted the 2004 Olympic Games.

Objectives:

The main objective of 'Eye in the Sky' is to develop and validate commercially sustainable services based on the convergence of diverse and innovative technologies such as low-altitude platforms, communications, floating car data, earth observation and digital mapping.

The project's overall objective is to provide integrated solutions addressing issues of traffic monitoring, fleet management, customised mobility information, and emergency services support.

'Eye in the Sky' proposes to adapt earth observation technology and terrestrial mobile communication networks to traffic monitoring and management requirements using new specialised software and methodologies designed for the urban environment.

Methodology:

The goal is to establish the foundations for the development of healthy commercially-driven services that respond to needs and expectations of society within the European Union.

The cost-effectiveness of the applications proposed derives from the fact that the technologies used are proven, technical know-how is abundant hence minimising research and development and training costs. Successful application of the proposed services in Athens will inevitably initiate the development of modern market activities in other peer cities inside the European Union.

The development of these services and their application on a large scale is expected to create commercial prospects and major opportunities for industry and employment.

The technological advances, technical know-how and expertise as well as economical growth, derived from this project, will increase Europe's competitiveness in the global scale.

Europe will be in a position to acquire a leading role globally, while developing and protecting its major strategic, economic and commercial interests worldwide.
Parent Programmes:
FP5-IST KA1 - Systems and services for the citizens

Institute type: Public institution
Institute name: European Commission, DG Information Society
Funding type: Public (EU)

Partners:

Germany:
Zeppelin Luftschifftechnik GmbH; ND SatCom; Deutsches Zentrum fur Luft- und Raumfahrt E.V.; GDAS Deutschland GmbH; Fraunhofer-Gesellschaft zur Forderung der Angewandten Forschung E.V.; Blaupunkt GmbH

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Key Results:
The 'Eye in the Sky' project was concluded in May 2004. During the development of the project's system numerous goals were achieved. Some results were more important than others, some were direct results according to the initial project objectives and others were secondary. In the following paragraphs an overview of these results can be found, categorised under four main categories.

Scientific / Technological quality and innovation

'Eye in the Sky' main contribution to technology was the development of state-of-the-art services related to transport, mobility and security for supporting large scale events and European citizens' everyday life based on the synergy of various technologies.

The project's main results and achievements with respect to the project's objectives concerning scientific/technological quality and innovation are summarised in the following paragraphs.

- Development and validation of intelligent transport infrastructures based on the synergy of surveillance, communications and geographic information/digital mapping technologies.
- Provision of images from sensor, mounted on low-altitude platforms, offering advantages such as high spatial and temporal resolution, or dedication to pre-identified areas for selected time-period.
- Near real-time downloading and acquisition of sensor data to ground station and near real time processing of the data into traffic information.
- Set up of a complete digital road/traffic database, for the first time for the specific urban area, to serve as a geo-reference for multiple layers of relative information like road types, signs and restrictions, topographic data and the statistic traffic flow model. This geo-reference could also be used to geo-reference the optical sensor's outputs.
- Development of software for unification of data, derived of different sources (optical sensor, FCD), into an integrated information product.
- Development, implementation and validation of a GPS/GSM-based methodology for mobile traffic sensing and traffic data transmission for inner-urban applications (FCD in urban areas).

Community added value and contribution to EU policies

The project results and achievements to contribute to EU policies through the:

- Development, testing and validation of services in the specific conditions of large-scale events that may be ext
Policy implications

‘Eye in the Sky’ addresses a whole series of EU policy issues, including one of the key-issues addressed in the Key Action I of the Fifth Framework Programme of Research, by aiming to provide an innovative system that improves services to the citizen and strengthens the European position in the global ITS market. Furthermore, the project specifically addresses policies related to ‘The deployment of Road Transport in Europe’, ‘The citizen’s network’ and the ‘Urban agenda in the European level’.

Intelligent Transport Systems

Key findings:

- Development and validation of intelligent transport infrastructures based on the synergy of surveillance, communications and geographic information/digital mapping technologies;
- Provision of images from sensor, mounted on low-altitude platforms, offering advantages such as high spatial and temporal resolution, or dedication to pre-identified areas for selected time-period;
- Near real-time downloading and acquisition of sensor data to ground station and near real time processing of the data into traffic information;
- Set up of a complete digital road/traffic database, for the first time for the specific urban area, to serve as a geo-reference for multiple layers of relative information like road types, signs and restrictions, topographic data and the statistic traffic flow model. This geo-reference could also be used to geo-reference the optical sensor’s outputs;
- Development of software for unification of data, derived of different sources (optical sensor, FCD), into an integrated information product;
- Development, implementation and validation of a GPS/GSM-based methodology for mobile traffic sensoring and traffic data transmission for inner-urban applications (FCD in urban areas);
- Development of intelligent infrastructures for transport and security operations and provision of improvements for every-day mobility problems of people in cities;
- Provision of dynamic fleet management services based on the actual traffic situation through vehicle and mobile equipment that is used for delivering traffic information services via FCD;
- Exploitation of state-of-the-art technologies for the production of cost-effective gener

STRIA Roadmaps: Network and traffic management systems, Smart mobility and services
Transport mode: Air transport
Transport sectors: Passenger transport, Freight transport
Transport policies: Digitalisation
Geo-spatial type: Other