PROJECT

PISTA

Pilot on Interoperable Systems for Tolling Applications

Funding: European (5th RTD Framework Programme)
Duration: Jan 2002 - Oct 2004
Status: Complete with results

Background & policy context:

European transport infrastructure has a great impact on economical growth, labour mobility and Community competitiveness. Therefore European transport infrastructure efficiency and development must be maximised. However, transport infrastructure is seriously affected by three main problems:

- Infrastructure managers are not always able to recover private or public benefits of providing infrastructure, so their investments decrease.
- Market does not reflect the external costs. Therefore sometimes the demand is excessive.
- Differences between taxes and tariffs change market prices signals and distort transport industrial options.

Also another grave handicap to efficient transport in Europe is the lack of a common approach to the question of pricing. For example, considering road transport there are five Member States (France, Italy, Spain, Portugal and Austria) that charge tolls, whilst Sweden, Denmark, Belgium, the Netherlands, Germany and Luxembourg charge users an annual road tax. Austria levies a different way of road use tax and other countries levy none at all. All the Member States levy an annual vehicle licence tax, but the rates differ very much one from the others. Accurate economical and billing tools and European interoperable systems have to be specified in detail in order to solve these problems.

The European Commission is dealing with these problems and has been looking for solutions for several years and producing lot of documents, communications, White and Green Papers and recommendations (Fair Payment for Infrastructure Use, Fair and efficient pricing in transport, Common transport Policy action programmes, etc), rules (GSS-A1+), norms (CEN - DSRC). Policies are the probe of it.

The mission of this project is to demonstrate on the feasibility of implementing interoperable EFC systems along different toll highway facilities in several countries belonging to EU.

The inception and start up of PISTA project was done in an environment of heterogeneous non-interoperable EFC systems.

PISTA project followed the work developed and the results from other previous EC-supported EFC research projects (VITA, A1, CESARE, CARDME), as well as other initiatives (GSS) and has "filled the gap" of these initiatives during three years.

PISTA project was carried out in parallel to the final stages of the approval process of the European DSRC standards developed by the Work Group of the European Committee for Standardisation (CEN TC278).

Objectives:

Project objectives are the following:

- define in detail an EFC system compliant of CEN DSRC standards and with interoperability concepts defined in previous European projects (VITA, MOVE-IT, CESARE I and II);
- perform actual implementations of this interoperable EFC system in several European countries and test under real traffic conditions;
- outline the migration to interoperability from existing EFC systems;
- validate management models for the interoperable EFC system at European level;
- identify the issues that might affect the interoperable EFC system implementation.
Methodology:

The PISTA project is divided into seven Work Packages. Work Packages WP3 and WP4 developed in 2003 provided the definition of the system, tested in 2004 during the demonstration stage (WP5 and WP6). The WP2 assessed and evaluated the results of the Pilot Tests. Other Work Packages dealt with the Project management WP1 and the dissemination of the results WP7.

Phase 1: System definition

From WP3 and WP4, the standards of the system will be agreed by the Consortium. Based on results from previous European R&D projects (Move-IT, Cesare I and Cesare II) all the aspects that conform and surrounds EFC interoperable systems will be adapted and accepted, that is: interoperability objectives and requirements, European legal aspects, service definition, transaction model and service management (infrastructure, organisation,...).

Phase 2: Application to toll motorways

This phase leads to the implementation and testing of the EFC interoperable system in different motorway sites. The WP5 will be focused on motorway implementation of new EFC facilities and on validation of the system in this interurban road transport infrastructure.

Phase 3: Migration path

WP6 will undertake other pilot demonstrations in different motorway sites where already toll systems are operative, however they are not interoperable (Spain, France, Italy, Greece and Denmark). Therefore, this WP will validate the adopted solutions to solve current systems evolution towards European interoperability, in order to be part of the future Trans-European road network.

The Project Management will assure the quality of the work and maintain liaison with the EC and sister projects. WP2 will provide the assessment and validation of the results. WP7 will provide accurate information for the Exploitation and Dissemination of the project achievements.

Parent Programmes:
FP5-IST KA1 - Systems and services for the citizens

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Institute name: European Comission, DG Information Society
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Partners:

France:
ASF; ESCOTA

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Aristotle University of Tessaloniki; TEO

Portugal:
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Key Results:
Main project outcomes are following :
Technical Definitions on PISTA EFC Interoperability: System specifications, Transaction model and Security
PISTA EFC Equipment pre-qualification tests
Procedural and Contractual Interoperability aspects
Pilot Tests Definition and Implementation
Real and Simulated Users Test Transaction
System User Acceptance Surveys
Pilot Tests Transaction Analysis
User Acceptance Assessment

Technical Implications
- PISTA system specifications are an update of CESARE -II specifications and include the current results of CEN TC-278 workgroup
- In addition, two relevant CEN Standards (EN 12253 and EN13372) have been voted and approved in 2003

STRIA Roadmaps: Network and traffic management systems, Infrastructure
Transport mode: Road transport
Transport sectors: Passenger transport, Freight transport
Transport policies: Societal/Economic issues,
Geo-spatial type: Network corridors