PROJECT

EURIDICE

European Inter-disciplinary Research on Intelligent Cargo for Efficient, Safe and Environment-friendly Logistics

Funding: European (7th RTD Framework Programme)

Duration: Feb 2008 - Feb 2012

Status: Complete with results

Total project cost: €13,950,505

EU contribution: €8,248,853

Call for proposal: FP7-ICT-2007-1

CORDIS RCN : 85573

Background & policy context:

EURIDICE was an Integrating project that set out to create the necessary concepts, technological solutions and business models to establish an information services platform centred on the context of individual cargo items and their interaction with the surrounding environment and the types of users.

The project is built upon the Intelligent Cargo (IC) concept, in which services can be instantly combined in relation to the capabilities of self awareness, context awareness and connection through a global telecommunication network to support a wide range of information services. This leads to a paradigm change, and will have a large impact on organisational structures within the supply chain. The implementation of an innovative technology and new organisational structures generates new requirements in the competencies of involved staff. Thus, EURIDICE provides a learning framework aiming at providing all necessary training material for a successfully introduction of the Intelligent Cargo Concept.

Objectives:

The EURIDICE project has the following main objectives:

- Supporting the interaction of individual cargo items with the surrounding environment and users in the field
- Improving logistic performances through application of the intelligent cargo concept and technologies in the working practices of operators and industrial users
- Developing collaborative business models to sustain, promote and develop an intelligent cargo infrastructure
- Realising more secure and environment friendly transport chains through the adoption of intelligent cargo to support modal shift and door-to-door inter-modal services.

The EURIDICE platform simultaneously improved the logistics, business processes and public policy aspects of freight transportation, by dynamically combining services at different levels: Immediate proximity of a RFID tagged cargo item, mobile users and vehicle services; Producer Shipper and Carrier Supply chain including qualification, handling and routing; Freight corridor, represented by authority and infrastructure services including authorisation, security and safety control. The EURIDICE platform supported 'on the fly' combination of services between user, context and cargo improving and integrating a number of advanced technologies, including: Service-oriented architectures incorporating mobile technologies, interoperability between heterogeneous environments and advanced security features: semantic web and domain ontologies, for automated discovery of services associated to any specific cargo item, context and user request; advanced context technologies, for combination of item, vehicle and user IDs with automatically detected conditions like, e.g., position and status of cargo; distributed intelligent agents, for optimisation, anomaly and threat detection (alerting) and decisions support.

The beneficiaries of the EURIDICE platform are a variety of private and public sector including: industrial

companies, for proactive, real-time 'bottom-up' monitoring of goods, logistic services providers, for synchronisation of schedules across multi-modal routes, public authorities, for automated security and public safety control, infrastructures, for emergency management and congestion prevention.

Methodology:

Sub-projects of EURIDICE

1. Sub-project P1 'Intelligent Cargo Integration Frame work', pursuing the required innovations into the four main areas of cargo connectivity and communication, service oriented architectures, cargo information man agement and decisions support.
2. Sub-project P2 'Pilot Applications', including several pilot applications to provide requirements and trial scenarios for test and assessment of the S/T results.
3. Sub-project P3 'Impact Creation', including knowledge sharing, dissemination and training activities directed to target scientific and business communities to ensure proper diffusion of the project concepts and results.

Related Projects:

See among others: FREIGHTWISE, INTEGRITY, KOMODA, SMARTFREIGHT and SMART-CM.

Parent Programmes:

FP7-ICT - Information and Communication Technologies

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Lead Organisation:

Insiel - Informatica Per Il Sistema Degli Enti Locali S.p.a.

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EU Contribution: €997,501

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EU Contribution: €270,757

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Technologies:

Freight transport technologies
Collaborative logistics ecosystem

Development phase: Research/Invention

Key Results:

The project built a platform enabling cargo items to interact with systems and users along the logistic chain. It has shown, through various industrial demonstrators, how this enables faster, more efficient and environment-friendly freight transport.

Innovation aspects

EURODICE was innovative. Not only in its technical dimensions but equally for its structural support for Business Innovation. The EURIDICE concept was to build an information services platform centred on the individual cargo item and on its interaction with the surrounding environment and the user.

Technical Implications

The need for multi-modal logistics schemes is constantly increasing as industry is seeking energy efficient and cost efficient logistics solutions. A major barrier to the uptake of multimodal logistics solutions, is the lack of integration of IT-based logistics planning and control systems at the stakeholders

involved in transport.

Despite the many studies that have been undertaken in this area, fully electronic information exchange in supply and distribution network is currently more vision than fact. The idea therefore needs to advance from the conceptual level of research to practical demonstrators in order to convince shippers, logistics providers and authorities that interoperability offers tangible benefits. System interoperability generates quantifiable savings in terms of cost, lead-time and/or energy efficiency compared to non-interoperable solutions.

To demonstrate this, case studies have been designed relating to for example: door-to-door cargo tracking, reporting to customs and other authorities, intelligent cargo in emergency situations, and reconciling long term transport planning with short-term execution.

Other results

Eight pilot scenarios have been selected to test the EURIDICE infrastructure and technologies on real cases, with the aim of demonstrating the Intelligent Cargo concept and its advantages.

- Active cold-chain monitoring;
- Cargo controlling transportation in 3PL services to final customer;
- Cooperative warehousing through cargo-centric information services;
- Self-returning empty pallets and boxes;
- Cargo-assisted intermodal transport;
- Intelligent routing through cargo-infrastructure cooperation;
- Automated clearance and billing of transiting goods.

Policy objectives

An efficient and integrated mobility system:
• A Single European Transport Area

Innovating for the future (technology and behaviour):
• A European Transport Research and Innovation Policy
• Promoting more sustainable development

Documents:
factsheet: Inteligent Cargo for Logistics Operators (Other project deliverable)

STRIA Roadmaps: Network and traffic management systems, Smart mobility and services

Transport mode: Multimodal transport

Transport sectors: Freight transport

Transport policies: Decarbonisation

Geo-spatial type: Other