MARKET IMPACT EVALUATION

ERRAC was set up in 2001 and is the single European body with the competence and capability to help revitalise the European rail sector :

- **To make it more competitive**
- **To foster increased innovation**
- **To guide research efforts at the European level**

ERRAC Project Evaluation Working Group (EWG)

Objectives:

- **Determine the market impact of previous rail research to improve use of research funding**
- **Ensure a strategic approach to the prioritisation of rail research**

Project Evaluation

- **Individual projects are evaluated after they have been completed to ensure successful dissemination of project results**
- **To ensure that the results of previous rail research can be taken into account for future projects**
- **To avoid weak market uptake of results by learning the lessons of previous research**
- **The EWG will provide intelligence based on the project evaluations for input into future European Framework Programmes**

ERRAC Project Evaluation Group

IN.HO.TRA

EVALUATION FROM JUNE 2006

Project acronym: IN.HO.TRA
FP: 5
Programme acronym: GROWTH – KA2 - Sustainable Mobility & Intermodality
Project Reference: GRD1-1999-10927
Call identifier: FP6-2003-TREN-2 PRIORITY 3.3.1.
Total Cost: € 10,200,000
EU Contribution: € 2,800,000
Timescale: May 2000 – May 2004
Project Coordinator: Roland Frindik (SGKV)

Web references: http://www.transport-research.info/web/projects/project_details.cfm?id=4591&page=contact

- Presented by: F.Michelberger
- Date evaluation: 26.03.09
- Market uptake: Weak
- Follow up projects:
- Other related Projects:

InHoTra: Background

Details

- Acronym: In.HoTra
- Title: Integration of interoperable intermodal horizontal transhipment techniques in intermodal transport
- FP5 - GROWTH - KA2 - Sustainable Mobility and Intermodality
- Proposal Reference: GRD1-1999-10927
- Total Cost: 10.2 Mio EURO
- EU Contribution: 2.8 Mio EURO
- Duration (Proposal): 36 months
- Timescale: 05/2000 - 05/2004
- EC Project officer: Patrick Mercier-Handisyde
- Project Coordinator: Mr. Roland Frindik (SGKV)

InHoTra: Background

Partners:

Project Co-ordinator:

- **SGKV Studiengesellschaft für den kombinierten Verkehr e.V. DE (research association for intermodal transport)**

- **ARRC University of Sheffield - U.K.**
- **Bosch Rexroth Kft - Hungary**
- **Cybernetix S.A. - France**
- **ETH Zürich IVT – Switzerland**
- **Guha AG – Switzerland**
- **KombiConsult GmbH - Germany**
- **Neuweiler AG - Switzerland**
- **ÖBB Rail Cargo - Austria**

InHoTra : Background

Partners interviewed:

Organisation	Name of interviewee	Country
➢ ÖBB Rail Cargo	☑ D. Schratt	AT
➢ ZHAW Zurich Univ. of Aplied Science	☑ R. Hüppi	CH
➢ aws/erp-fonds (Exp.)	☑ G. Urban	AT
➢ Cargotechnologies (Exp.)	☑ H. Unseld	AT

InHoTra - Project description:

- Project objectives:
  - to meet challenges posed by the needs of sustainable technology and intermodality
  - to enhance the competitiveness of inter-modal freight transport against rising volumes of road transport.
- Project focus on issues surrounding the integration of horizontal transhipment techniques in present and future inter-modal transport applications
- InHoTra project is conceived as a
  - parallel and co-ordinated research activity on the one side
  - and as a set of technical developments and related test operations ("demonstrators") on the other side

InHoTra - The research side:

- Creation of an **overview on horizontal transfer system** developed in Europe so far including a systematic evaluation of their specific technical details and their commercial life
- Creation of a **systematic approach** to the evaluation of horizontal transfer systems in intermodal transport (technical aspects, commercial background); on historically realised solutions and for the equipment to be developed in the course of the project;
- Technical and commercial **evaluation of the equipment realised** within the project, together with an analysis of target markets and comparison with competing techniques
- Based on this evaluation, **recommendations** towards standardisation, harmonisation of European legislation and technical rules and other measures were established to create an environment for better use of horizontal transhipment in Europe

InHoTra - The demonstration side:

- It was planned to promote the design, manufacturing and operation in real commercial life of 6 differing approaches to horizontal transhipment
- 3 systems were finalised, built and tested according to the common testing plans
- Main reasons for the systems that failed:
  - Some technologies needed a totally new designed loading unit or a re-design of existing loading units. The commercial actors in intermodal transport refused to follow that idea
  - Some technologies suggest additional pieces of equipment (adapter) such as an intermediate platform between loading unit and transfer system. Commercial actors did not accept such ideas because the operation becomes too complicated

InHoTra - The Swiss demonstrator NETHS:

- developed by Neuweiler AG and Tuchschmid (Switzerland)
- For operation under railway catenary
- ISO-freight container with a weight up to 35 tonnes
- Swap bodies with a weight up to 20 tonnes
- transhipment semi-automatically by truck driver

InHoTra - The Swiss demonstrator NETHS:

InHoTra – Austrian demonstrator IUT:

- multi-level high-rise shelve for ISO-freight containers and swap-bodies
- A mainly vertical operating stacker with a shelf load/unload device is moving the ILU between the shelve and a buffer lane (pre-sorting area)
- A portal crane for unloading and loading of the rail and road vehicles
- Three independent functions:
  - 1) Truck / rail / truck lifting
  - 2) lifting for storage
  - 3) dispo or sort lifting
- Reduction of:
  - required floor space
  - lifting costs
  - dwell time of trains or trucking vehicles in the terminal

InHoTra - IUT:

InHoTra - IUT:

InHoTra - The Hungarian demonstrator RTS:

- three modular parts, which can work independently or together: re-loader RTS 500, the staple lifter, RTS 300, sorting field RTS 100
- **RTS 500** re-loader with side lifting at side-corner-fittings (developed in IDIOMA, FP4)
- running parallel to the loading track and sorting field on a standard gauge track
- can be adjusted to any length of ILU
- can work under catenaries

InHoTra - The Hungarian demonstrator RTS:

- staple lifter RTS 300 to stack ISO-freight containers and stackable swap bodies two level high on the frames of the sorting field

InHoTra - The Hungarian demonstrator RTS:

- sorting field RTS 100
- purpose: independent and possible parallel operation of transhipment, sorting and stacking

InHoTra : Evaluation

1. Were the results implemented in the design of the new products and services? Were these new products/services put into commercial operation

   – **The result of the systematic evaluation of horizontal transhipment systems could be used for the design of new terminals, or as basis for (EU) funding policy. The 3 demonstrators proved their function, but no one is in commercial operation.**

2. Is new legislation and standardization based on findings from this research project

   – **No, only recommendations towards standardisation and harmonisation of European legislation**

3. Are the results of the project implemented across Europe or only in a small number of Member States

   – **No implementation**

InHoTra : Evaluation

4. Are the results of the project implemented outside Europe before being accepted in Europe
   – **No**

5. Did the projects increase competitiveness of the European railway sector abroad with regard to products, services, standards and system design
   – **No**

6. Did the project increase competitiveness of the railway transportation compared to other transport modes
   – **The systems could increase competitiveness (fast transhipment, lower cost handling) but in the end investment cost are high**

7. Are the results of the project taken into consideration when preparing public tenders
   – **The results could be used, but no information about that**

InHoTra : Evaluation

8. Does the implementation of the project results help facilitate cross-border operations by problem-solving in the domain of interoperability
   – **No**

9. Does the implementation of the project results help facilitate inter-modal operations by problem-solving in the domain of inter-modality
   – **Yes, if it would be implemented**

10. Can benefits be assessed in financial terms
    – No information about that

11. Applicability of results to future scenarios
    – **The project demonstrated the function of the 3 systems, but the problem of the investment costs still has to be solved.**

12. Usefulness of research procedures for future projects (incl. modeling)
    - The evaluation of transhipment technologies provides recommendations for future policy options on inter-modal terminal options in terms of site size, layout and methods of operation

Lessons learnt

- The developed systems showed their function but no system is on the market. Main reasons are the costs for the investment. Obviously the business case for such systems was overestimated or the assessment of the market was incorrect
- Another requirement for the installation of such systems is a massive change of the processes within the railway operators. Obviously the railway operators do not want to change the existing processes by now
- From this point of view the development of an low-cost system would have been a more promising approach