ICT System Addressed to Integrated Logistic management and decision support for intermodal port and dry port facilities

Trieste, Italy
24th August 2011

Second Transfer of Knowledge workshop

SEVENTH FRAMEWORK PROGRAMME
THE PEOPLE PROGRAMME

Industry-Academia Partnerships and Pathways

UNIVERSITÀ DEGLI STUDI DI TRIESTE — DIPARTIMENTO DI INGEGNERIA INDUSTRIALE E DELL'INFORMAZIONE — LABORATORIO DI RICERCA OPERATIVA — TEOREMA — TECHNOLOGICAL EDUCATIONAL INSTITUTE T.E.I. OF EPIRUS

Topics and schedule

14:00	Opening /Welcome	Speaker: Walter Ukovich
14:15	SAIL project: Objectives, Roadmap and achievements	Speaker: Fabrizio Simeoni
14:45	Metaheuristics in intermodal transportation systems	Speaker: George Georgoulas
15:15	The case study of Trieste intermodal transport system	Speaker: Valentina Boschian
15:45	Application of ICT tools in the case study: simulation results	Speakers: Giorgio Iacobellis, Maria Pia Fanti
16:15	Soft Computing techniques for developing Decision Support Systems	Speaker: Chrysostomos Stylios
16.45	Experience and lesson learnt by SLIM project	Speaker: Fabrizio Simeoni
17:15	Technical discussion / Next steps	Joint session
17.45	Closing of the workshop	Speaker: Walter Ukovich
18:00	End of Workshop	

Abstracts of the presentations

Title	Metaheuristics in intermodal transportation systems
Author/s	George Georgoulas

In intermodal terminals a decision is usually based on the solution of a complex optimization problem. These "complex" problems in most cases fall under the umbrella of integer programming or mixed-integer programming and are difficult to be solved analytically for real life problems. Therefore a suboptimal though "satisfactory" solution is desired by most decision makers. These solutions are the outcome of some kind of heuristic algorithms. A number of heuristic algorithms have been developed and are in use for the solution of problems that deal with the intermodal transportation systems.

In this presentation we will present the most recent formulations of heuristic algorithms that can be used for the solution of problems that share common properties with the problems that we are facing within the SAIL project

Title	The case study of Trieste intermodal transport system
Author/s	Valentina Boschian, Giorgio Iacobellis, Fabrizio Simeoni

One of the main results of the SAIL project consists in the analysis and the description of the processes and of the operations involved in the SAIL case study. The description is targeted on the flows of goods, on the logistic stakeholders and on the information exchanges among the subjects involved in the logistic chain. The results obtained in these phases of the project have been obtained thanks to the valid contribution of the stakeholders that are operating in the territory of Trieste.

The presentation focuses on the description and on the comparison of the current situation ("as is"), with the foreseen scenario ("to be"). The specific features and current problems of the "as is" case are identified and a solution to test in the future scenario is achieved in order to find an optimal solution to maximise the benefits deriving from the introduction of ICT tools.

Title	Application of ICT tools in the case study: simulation results
Author/s	Maria Pia Fanti, Giorgio Iacobellis, Walter Ukovich

The analysis phase results of the SAIL project are achieved following an iterative process based on exchange of information, like requirements, early results and users feedbacks, between the partners of the SAIL project and the stakeholders that operate in the area of the Port of Trieste and in the area of the intermodal terminal of Fernetti that has also a function, thanks to its position and facilities, of dry port area.

The proposed solution consists in the specification of an Integrated System (IS) devoted to the management of intermodal transportation networks to take both tactical decisions, i.e., in an off-line mode, and operational decisions, i.e., in real time. In either cases, the core of the presented IS is a simulation module that uses information from the real system, obtained by modern Information and Communication Technologies. In the considered case study, the foreseen scenario, "to be", is tested with a simulation tool in order to identify qualitative as well quantitative metrics to support the management of the whole intermodal system.