

Integrated project of the 6<sup>th</sup> Framework Programme

# Effective operations in ports – “Efforts”

The European Research Area (ERA) serves as an environment which strongly supports the increase of innovation levels and effectiveness of the European economy.

One of the major fields of activity that ERA is focusing on is marine technology and maritime transport. Among various types of R&D initiatives available for industry as well as for the academic and research institutions, the integrated project serves as the most significant one. Moreover, integrated projects are the biggest available within the 6<sup>th</sup> Framework Programme with financial instruments allowing for large scale innovation in a particular sector. Effective port operation has been recognised as one of the highest priorities of ERA. Therefore, EFFORTS, has been devoted to the challenges that such an operation creates.

The background for EFFORTS is connected to the increase in globalization, i.e., a world-wide distribution of production and consumption which results in a continuous increase of trade and transport. In container transport, e.g., the growth estimation for the next five years is about three times the GDP growth, i.e., about 9% p.a. The port sector handles more than 90% of the EU trade with third countries and approximately 30% of intra-EU traffic as well as over 200 million passengers every year. Even if competition between and within ports is increasing, there are areas common for almost all EU ports where improvements are feasible on a pre-competitive level to benefit from technological opportunities in order to strengthen the port positions within the European intermodal environment.

Improved port efficiency will contribute to the integration of modes and services in a single system on the condition that there is interoperability and interconnection between systems. The market trend coincides with capital concentration, specialisation and vertical integration. The provision of port services is gradually being transferred from the public to the private sector in order to increase efficiency and reduce public expenditure on port labour costs.

The FP-6 DG Research Integrated Project EFFORTS managed by D'Appolonia (Italy) and scientifically driven by ISSUS (Germany) is aiming at improving both competitiveness

of European port operations and the quality of the port labour conditions and market, most prominently in coastal regions. Commencing on the 1st of May, 2006, and lasting for 36 months, EFFORTS research and development will focus on three scopes of application:

## Navigation in Ports:

Addresses the need of a safe and efficient port approach and berthing with the view that vessel sizes are growing faster than port infrastructure can currently follow. Based on high accurate digital chart data (Harbour ECDIS), operations of vessels and tugs will allow improved use of available manoeuvring space, continuous monitoring of operations and increased automation of processes. Additionally, prognostic traffic management of increasing feeder vessel operations will allow for improved planning of port and terminal resources on a regional level.

## Ports and Environment:

Aims at integrating ships into land-based systems to handle wastes and pollutants in order to avoid dumping in European coastal waters. Availability of shore-based reception facilities need to be agreed on a European level and operated within a network including the monitoring of the whole process from ship provisions to waste. Dredging is not only a very costly operation but it also generates problems of how to treat polluted sediments and where to dump them; a problem where EFFORTS will contribute to already on-going activities in order to accelerate European solutions rather than local experiments. EFFORTS will also cater for a harmonized neighbourhood between port industrial areas and residential areas by eliminating or at least minimizing annoyances from all kind of emissions.

## Port Organisation and Infrastructure:

where as a first step a system analysis will provide a comprehensive picture of related port processes and architectures in order to appropriately allocate project activities, elucidate interdependencies, provide a common

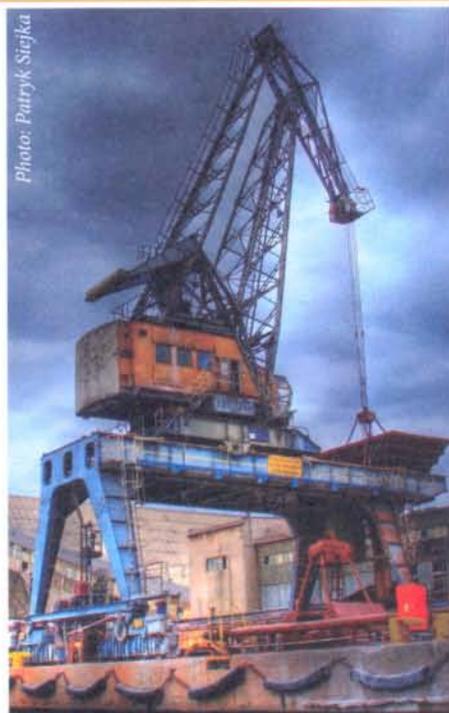


Photo: Patryk Szejka

understanding on a European level and to allow identification of synergies and integration. Development of tools and methodologies for improvement of port operations, infrastructure and systems will then follow, also including a risk assessment framework and investigations into opportunities for artificial offshore port structures to solve the shortage of land for port extensions and new ports.

It is the purpose of this integrated project to achieve a more significant innovation impact than through individual small projects. This idea, however, can easily become spoiled by too wide of an approach resulting in too many single activities not having a sufficient innovation impact. Therefore, during the first eight months, the initial EFFORTS work plan will be put on a touchstone to identify an optimum feasibility for each work package. Resources will then be focused on the most promising activities that will have the most significant impact on competitiveness of port services and its acceptance and support by residents.

*based on the EFFORTS IP official documents and prepared by Leszek Wilczynski*