COMPRIS

Consortium Operational Management Platform River Information Services

**Funding:** European (5th RTD Framework Programme)

**Duration:** Sep 2002 - Sep 2005

**Status:** Complete with results

Background & policy context:

COMPRIS (Consortium Operational Management Platform River Information Services) is one of the Fifth Framework research and demonstration projects in the Growth Programme of the European Commission, which is funded under the KA2 'Sustainable Mobility and Intermodality'. It is a follow-up of the successful INDRIS project. The main objective of COMPRIS is to enhance the existing concept of RIS (River Information Services). RIS will support traffic management on inland waterways in Europe. By improving the transport and logistic information that underpins transport and logistical management, the inland navigation transport mode will become a more competitive modality. Awareness and co-operation of all participants (industry, transport sector and authorities) are crucial factors in the scientific, technical and organisational elements of COMPRIS.

COMPRIS is the last stepping stone before the implementation of RIS across Europe. During the pan-European Conference on Inland Waterway Transport in Rotterdam in September 2001, the European Ministers of Transport declared that River Information Services should be up and running on the main European rivers within five years. Being a research and development project, the main objective of COMPRIS is to contribute to this implementation strategy. And thus to make the RIS concept feasible throughout Europe. Therefore, COMPRIS will be linked to existing and future initiatives in the participating European countries. Once the COMPRIS project has ended, the market forces should be in a position to offer solutions and services on the basis of tested concepts and the specified standards.

Objectives:

COMPRIS helps to accomplish the objectives defined in RIS. In addition to the general objective of COMPRIS to contribute to the implementation of RIS in Europe, the following subgoals have been defined in the project:

- Development of the technical, organisational and functional architecture for River Information Services on a pan-European level.
- Design and testing of all ship based, shore based, traffic oriented and transport oriented systems and applications, so that after completion of the project, RIS can be implemented in all the participating countries.
- Development and enhancement of the RIS standards on information exchange, such as inland ECDIS, reporting, VTM data exchange, tracking and tracing. The new standards have to be communicated to all the appropriate international standardisation bodies.
- Improvement of international procedures for seamless border-crossing.
- Design and development of an environment in which RIS applications and systems can be tested.
- Demonstration of the applications and systems developed in COMPRIS at a local, national, regional
and pan-European level.

- Harmonisation of the MMI (Man Machine Interface) for RIS users.
- Formulation of scenarios for the development and implementation of RIS in the Danube countries.

**Methodology:**

The COMPRIS project consists of four phases:

**Phase 1: Architecture Phase**

The project starts with the definition of the architecture of RIS in its environment and the relationship of RIS with regard to information systems. The RIS architecture will be applied to three levels:

- The organisational framework;
- The functional and information architecture;
- The physical, communication and data architecture.

**Phase 2: Conceptual Design Phase**

The RIS architecture forms the basis for the design phase. The design phase is divided into four activity clusters, also known as workpackages:

- Spatial information: In this workpackage, ship-borne applications for voyage planning, fuel optimisers and a new navigation system are developed. This workpackage will also enhance the standards for inland ECDIS and develop an update mechanism for both dynamic as well as static ECDIS data. Furthermore, it will produce prototype ENCs (Electronic Navigational Charts) for the Danube area.
- Vessel traffic management and Tracking and Tracing: AIS (Automatic Identification System) network technology plays an important role in this workpackage. It focuses on the development of transponder technology for transport information. The workpackage will enhance transponders address tracking and tracing, which will improve cargo management. The package will also contain applications for traffic management, lock and terminal planning.
- Value added services from RIS: This workpackage will address the logistic needs to obtain retrieval software. This software is used to access information from RIS oriented databases. There will be a direct link to the FP5 project 'ALSO Danube'.
- Cross-border traffic and transport information: This package will be designed to facilitate cross-border passage by providing essential information to customs and emigration authorities in advance, so that time delays at the border are avoided. The deliverables of the workpackage are a cross-border software module, as well as proposals for procedures for seamless international transits in Europe.

**Phase 3: COMPRIS Operational Test Platform**

In the third phase of the project, an operational test platform will be defined and developed. The platform will create an environment to test and 'certificate' (clusters of) applications and systems.
Related Projects:

CRAFT

Parent Programmes:
FP5-GROWTH KA2 - Sustainable Mobility and Intermodality

Institute type: Public institution
Institute name: European Commission, Directorate-General for Energy and Transport (DG TREN)
Funding type: Public (EU)

Partners:
The project is a co-operation between 44 public and private partners from the following countries: Austria, Belgium, Bulgaria, France, Germany, Hungary, The Netherlands, Romania, Sweden, Slovakia and Ukraine.

Austria:
EHG Ennshafen Ges. Mbh - Federal Ministry for Transport, Innovation and Technology, Supreme Shipping Authority - Technikum Wien - via-donau - Wiener Hafen Gesellschaft

Belgium:
Ministry of the Flemish Community AWZ - Promotie Binnenvaart Vlaanderen - Tresco Navigation Systems - University of Liege ANAST - Walloon Ministry of Equipment and Transport

Bulgaria:
Bulgarian Maritime Administration, Executive Agency Maritime Administration - Transproekt Design Consulting Engineering - Varna Technical University

France:
Institut Français de Navigation - Voies Navigables de France

Germany:
Federal Ministry of Transport, Building and Housing - Frequentis Nachrichtentechnik - Innovative Navigation GmbH - SevenCs - University of Hanover, Franzius Institute for Hydraulic, Waterways and Coastal Engineering
Hungary:
Györ-Gönyin Kikötő Port of Győr - KTI, Institute for Transport and Sciences - VITUKI

The Netherlands:
Coordinator: Ministry of Transport, Public Works and Water Management (Directorate-General of Public Works and Water Management - AVV)

Transport Research Centre Autena Marine VOF - Holland Institute of Traffic Technology - KSV Schuttevaer - LogicaCMG b.v. - Maritime Simulation Rotterdam B.V. - Noorderzon Cruises B.V. Noorderzon Software - Port of Rotterdam - Technofysica B.V. - TNO-FEL

Romania:
Administratia Canalelor Navigabile S.A. CAN - S.C. IPTANA Design Institute for Road, Water and Air Transport

Slovakia:
KIOS s.r.o. - Slovensky Vodohospodarsky Podnik Banske Stiavnica - Statna Plevebna Sprava Bratislava - Vyskummy Ustav Dopravny

Sweden:
SAAB Transpondertech

Ukraine:
Odessa National Maritime University - PROEKT

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Key Results:
Technical Feasibility
- The project has validated a novel vessel concept that is feasible with respect to its engineering and operational requirements. It can carry 2000 tons of freight at speeds up to 37 km/h (equivalent to around 200 TEU in a LoLo version, or 43 trucks in a RoRo version);

- An environmental impact assessment, including consideration of specific sensitivities on the target routes, has indicated that operation of the vessel is unlikely to cause any significant environmental impact which would call its operation into question. Areas of possible risk (which would need to be reviewed when a demonstrator vessel is available) are the height of wake wash and the level of noise emission.

- Considerable effort has been devoted to understanding the hydrodynamic performance of vessel. A variable geometry research model was initially constructed and tested in a shallow water towing tank. This provided research information and enabled the influence of the main hull parameters of PACSCAT to be identified. These functions were then transcribed into a computer program which can predict the performance of specific designs of PACSCAT vessels, including the generation of wake wash profiles. Predicted performance of the finalised design of a River Freighter was subsequently confirmed by further tank tests on a large (6.8m) long model.

- Safety issues were also considered in detail, to ensure that introduction of a fast PACSCAT vessel on a waterway would not pose significant risks to other users and would comply with navigational requirements. A full simulator configuration for PACSCAT vessels was created on a commercial simulator, to explore the feasibility of specific manoeuvres (stopping, berthing etc) and vulnerability to natural hazards (tight ends, fog etc). The large model was operated with propulsors in a freely manoeuvring mode to generate the key manoeuvrability data needed by the simulator. The resulting simulation was piloted by two experience pilots, who were unable to encounter any situations which caused concern.

Based on required specifications, designs for two types of PACSCAT River Freighters were prepared with accompanying general arrangement drawings. The 135m long design for the Danube was designed to carry 43 trucks in a RoRo configuration. A similar LoLo vessel was designed to carry about 200 TEU for operation on the lower Rhine. Both could transport a deadweight of up to 2000t at up to 37km/hr (20kt), and could operate in shallow water only.

**Policy implications**

Development of a PACSCAT fleet operating on the Danube could make a significant contribution to expansion of high-value trade within Eastern Europe and across its Eastern border. This would be achieved without causing further congestion of road networks, and without the major investment in additional rail capacity.

Successful operation of a Danube fleet would provide a foundation for deployment on other routes. As operational experience develops, niche markets are likely to be identified on the Rhine and possibly Rhine-Sea routes.

Such expanded deployment would help substantially to meet the policy objective of modal shift from road to water.

Documents:
- COMPRIS wp9_summary_final_report.pdf (Final report)

**STRIA Roadmaps:** Network and traffic management systems

**Transport mode:** Water transport (sea & inland)

**Transport sectors:** Passenger transport, Freight transport

**Transport policies:** Decarbonisation, Societal/Economic issues

**Geo-spatial type:** Other