



**I3E**  
***South East Europe TCP***

## Best Practice Report

### ***Inland AIS System Implementation***

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**Best Practice Report**

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<b>Rev.</b>	<b>Content</b>	<b>Resp. Partner</b>	<b>Date</b>

Everybody please state revision index and short description of what has been done + partners involved and date.

<b>Final approval</b>	<b>Name</b>	<b>Partner</b>
<b>Reviewer</b>		

## 1. Best Practice Title

Inland AIS System Implementation

## 2. Location of Best Practice

*Country, region, town*

Croatia, Danube and Drava rivers basin, Osijek and Vukovar

## 3. Best Practice Executive Summary

*Describe briefly (max 10 lines) the GP context (partnership, funding, objectives, approach followed, results)*

Implementation of AIS (Automatic Identification System) network on the Croatian section of the rivers Danube and Drava, started in March 2006 and ended in March 2008, was done by CRUP Ltd. Implementation was 90% co-funded by the European Union in the frame of INTERREG IIIA Slovenia-Hungary-Croatia Neighbourhood Programme and other 10% was local funding.

Main objectives were improvement of cross-border mobility and accessibility in the border region on the Danube and Drava waterways and the development of accessible ICT technology that will have a future use in social and economic life of the defined area.

Target groups of the project were public authorities dealing with the inland waterway transport, navigation safety and environmental protection, as well as the private sector involved in inland navigation such as ports, freight forwarders, fleet operators etc.

Results were improvement of cross-border traffic and transport management, increase of safety and efficiency of inland navigation as well as making inland navigation more environment friendly type of transport.

CRUP Ltd. also implemented AIS systems in Serbia, Slovakia and France as a result of successful implementation process in Croatia.

## 4. Best Practice Classification

### Best Practice Theme

- Research Transformed to Innovative Product*
- Research Transformed to Innovative Service*
- Research Transformed to Innovative Methodology*
- Research Transformed to Innovative Production Process*
- Financial Mechanism for Transformation of Research to Innovation*
- Support Mechanism for Transformation of Research to Innovation*
- Other (describe)*

### Best Practice Research / Application Areas

- Industrial / Manufacturing Systems*
  - Industrial Informatics and Communications*
  - Intelligent Devices*
  - Distributed Control Systems*
  - Flexible Manufacturing Systems*
- Embedded Systems*
  - Industrial Embedded Systems*

- Nomadic Environments*
- Private Spaces*
- Public Infrastructures*

## 5. Description of Best Practice

### 5.1 Best Practice Context

*Overall background of the Best Practice. Location, socio-economic, technical & policy background of the BP (max 10 lines)*

Implementation of AIS network is done on the Croatian section of the rivers Danube and Drava. Implementation was 90% co-funded by the European Union in the frame of INTERREG IIIA Slovenia-Hungary-Croatia Neighbourhood Programme and other 10% was local funding.

Implementation of AIS network contributes to the sustainable development of IWT in the area and facilitates cross-border cooperation between local authorities. Due to the expected increase of the transport quantities in Europe, new IT solutions for traffic and transport monitoring are necessary in order to avoid huge congestions on the border crossings. Implementation of AIS network also contributes to the modal shift of cargo from road to inland waterways.

Results were improvement of cross-border traffic and transport management, increase of safety and efficiency of inland navigation as well as making inland navigation more environment friendly type of transport.

#### 5.1.1 Policy Elements

*What are the policy initiatives that have influenced the contextual environment of BP: innovation promotion policies, research funding policies, certification ect as well as relevant tools (max 10 lines)*

Project implementation was co-funded by the European Union in the frame of INTERREG IIIA Slovenia-Hungary-Croatia Neighbourhood Programme under the sustainable development measure.

Main objectives of the project were improvement of cross-border mobility and accessibility in the border region on the Danube and Drava waterways and the development of accessible ITC technology which will have a future use in social and economic life of the border area.

Through the implementation and use of the innovative information technologies that contribute to faster, efficient and more reliable information flow between relevant authorities (Customs, Border Police, Water Police and Calamity abatement services) as well as private companies working in inland navigation sector (ports, freight forwarders, fleet operators, etc.), AIS network implementation contributes to the improvement of the cross-border transport networks.

#### 5.1.2 Socio-economic & Other factors

*Other contextual factors such as customer / target market addressed, international validity, customer density, economic conditions, customer values, research area addressed (max 10 lines)*

AIS network implementation contributes to simplifying cross-border procedures, increase of navigation safety, much faster reactions in calamity cases, better integration of inland navigation into modern transport networks, availability of ship, crew and cargo information thus leading to increased use of IT systems, sustainable transport development, modal shift of cargo from road to inland waterways and protection of the environment. AIS enables better and improved access to and use of new information and communication technology thus providing local authorities with the state of the art traffic and transport monitoring system.

Target groups of the project were public authorities dealing with the inland waterway transport,

navigation safety and environmental protection, as well as the private sector involved in inland navigation such as ports, freight forwarders, fleet operators etc.

## 5.2 Objectives

*Aim of the project, specific objectives & strategies to achieve these objectives (max 10 lines)*

Main objectives of the implementation of inland AIS network were improvement of cross-border mobility and accessibility in the border region on the Danube and Drava rivers waterways and the development of accessible information and communication technology that will have a future use in the social and economic life of the defined area.

## 6. Process

*Describe the project including key concepts and the overall approach followed. Indicate project end users, target market, main project phases, problems encountered and solutions, problem resolution (max 10 lines)*

Implementation of AIS network enables better and improved access to and use of new information and communication technology thus providing local authorities in the border regions with the state of the art traffic and transport monitoring system. The system will also have huge impact on the safety and efficiency of IWT and will contribute to the business of all players in inland navigation. Project considers the needs of the terminals with the respect to improved communication flows and planning of activities, as well as the needs of administrations regarding calamity abatement by providing a platform for monitoring and locating vessels and exchanging data between relevant parties in both countries. Target groups of the project are public authorities dealing with the inland waterway transport, navigation safety and environmental protection, as well as the private sector involved in inland navigation such as ports, freight forwarders, fleet operators etc.

Within the framework of project two regional centers are installed, one in Osijek and the other in Mohacs, and are connected in one joint traffic and transport monitoring system.

The work flow was divided into seven work packages enabling easy project coordination, monitoring and control.

### 6.1 Project Design

*Project design based on targeted market complete understanding, project structure, policies and procedures, management and implementation actions (max 10 lines)*

The project facilitates the better usage of information and communication technologies through the implementation of state of the art communication technologies in inland waterway sector and will contribute to extended usage of information technologies by all potential users. This will be achieved by building a sustainable cross-border ICT network with users both in public and private sector. The implemented services will provide better economic competitiveness of all commercial actors in the field, by providing faster, more reliable and secure information flow. The services will include tracking and tracing of the vessels, logistic services for private sector as well as calamity abatement services.

Project is managed by CRUP Ltd. as a lead partner. Successful implementation of the project is assured with the help of other project partners. The management board of the project is formed and consisted of one representative of each project partner. Progress meetings are held each 3rd month, where project work flow, financial issues as well as major milestones are discussed. Every project partner is responsible for activities assigned to him according to the work packages. CRUP Ltd. supervised work flow, timely start of every work package as well as the quality of every output.

### 6.2 Project Management

*Activities relevant to project coordination and management, project documentation and reporting, quality control,*

*validation and verification (max 10 lines)*

CRUP Ltd. coordinated the project and provided project coordination in terms of resources and schedule. The management/coordination structure was minimized in order to speed up communication, provide rapid response and keep costs low. Progress meetings were held each 3rd month. CRUP Ltd. managed the progress meetings, and was supported by the other contractors as required.

Project Monitoring and Control ensured a continuous progress of work. The permanent follow-up to the project activities was performed by monthly reports concerning work progress, efforts, costs, targets and milestones, achieved results, time schedules, events etc. An international Steering Committee was established to monitor the project. The process of this Committee was defined by the partners before the project launch.

**6.3 Project Implementation**

*Main elements associated with the project implementation. Realization of new idea, or new technological realization or improvement / novelty to known technology and means to achieve this. Innovation associated with the project realization in terms of new products, services, methodologies. Marketing, advertising and customer service. (max 10 lines)*

Implementation of AIS network facilitated the better usage of information and communication technologies (ICT) through the implementation of state of the art communication technologies in inland waterway sector and will contribute to extended usage of information technologies by all potential users. This is achieved by building a sustainable cross-border ICT network with users both in public and private sector. The implemented services provides better economic competitiveness of all commercial actors in the inland waterway transport field, by providing faster, more reliable and secure information flow. The services include tracking and tracing of the vessels, logistic services for private sector as well as calamity abatement services.

**6.4 Project Evaluation**

*Project feedback mechanisms and evaluation mechanisms. (max 10 lines)*

Through the implementation and use of the innovative information technologies which will contribute to faster, efficient and more reliable information flow between Croatian and Hungarian authorities (Customs, Border police and Calamity abatement services) as well as private companies working in inland navigation sector (ports, freight forwarders, fleet operators, etc.), the project contributes to the improvement of the cross-border transport networks. Implementation of AIS network in cross-border area and connection of regional centres into international network will lead to the significant increase of accessibility of the region which will finally lead to further increase of inland navigation transport in the target area. Results of this will affect all relevant business subjects, not only inland navigation companies, but all those taking part in intermodal transport supply chains, thus leading to the economic growth of the whole region.

**7. Description of Research team/Institution**

*Short description of R&D team and institution (max. 10 lines)*

Inland waterway development centre Ltd. (CRUP) is a young, dynamic and fast-growing company specialised in:

- project management
- research and development
- software and hardware development
- technical solutions and customer support

- consulting
- public relations
- lobbying

in the field of inland waterway transport and co-modal development solutions.

With its partners CRUP Ltd. participated in diverse projects on the European level including projects co-financed from the European Union funds.

CRUP Ltd. is one of the leading European companies in the field of development and integration of River information services (RIS) in compliance with the European directives and standards. We are proud of our own RIS management software development and system implementation in Croatia, Slovakia, Serbia and AIS network implementation, as a RIS backbone, in France on the rivers Seine and Rhone.

In order to support its goals CRUP Ltd. applies quality management system in compliance with the international standard ISO 9001:2008.

## 8. Applied Financial Mechanism

*Describe financial mechanisms applied in transformation of research into innovation within BP, as well as means of connecting scientific research team and financiers (max. 1000 char.)*

Inland AIS system implementation was 90% co-funded by the European Union in the frame of INTERREG IIIA Slovenia-Hungary-Croatia Neighbourhood Programme and other 10% was local funding.

## 9. Impact and benefits

*Describe achieved benefits of R&D team and/or enterprise implemented innovation, as well as impacts on institutional and policy levels. (max. 1000 char.)*

CRUP Ltd. has developed state of the art AIS system that is recognized on the EU level and also implemented in Serbia, Slovakia and France.

AIS implementation in Croatia made inland waterway transport became more prominent and was fully compliant with the EU transport policy. Development and implementation of AIS network in Croatia was conducted hand-in-hand with other EU countries.

Inland Waterway Agency was established that became responsible body for AIS operation, maintenance and development in Croatia.

At the end of 2007 new law on navigation and ports on inland waterways has entered into force. This law is in full compliance with the EU regulations and regulates River Information Services (RIS) in Croatia for the first time. In 2008, a Regulation on RIS (AIS network being part of it) has entered into force and two important documents have been made, Strategy of Inland Waterways Transport Development in Croatia and Mid-term Croatian Inland Waterway and Ports Development Plan (2009-2016).

## 10. Sustainability

*Provide information on sustainability of innovation after financial aid within implemented financial mechanisms, and some multiplier effects as replication and extension of the action performed in BP. Expected use of Best Practice and lifecycle considerations. (max. 1000 char.)*

Croatian Inland Waterway Agency, responsible for maintenance and IT solutions on inland waterways, is the owner of implemented AIS network system and therefore responsible for operation and maintenance costs of the implemented system.

Implementation of AIS network, in cross-border area of the Croatian parts of the Danube and Drava rivers, leads to the significant increase of accessibility of the region which will finally lead to further

increase of inland navigation transport in the defined area. Results of this will affect all relevant business subjects, not only inland navigation companies, but all those taking part in intermodal transport supply chains, thus leading to the economic growth of the whole region.

The AIS network implementation will also lead to the modal shift of cargo from road to inland waterways. This will contribute to enhanced use of environment friendly means of transport.

### 11. Repeatability and transferability

*Lessons learned from the project implementation team. Repeatability and transferability of the project. (max. 1000 char.)*

Experience from previous research projects showed, that projects, especially in the field of telematics and transport research, are only successful, if the results are disseminated and exploited properly. Other than in other industries, most transport operators and other actors in the logistics chain do not have a dedicated research department, which keeps track of the latest innovation. In order to disseminate successfully in such an environment, the dissemination and exploitation measures must be planned carefully. Target groups are addressed through direct (presentations given to stakeholders at the level of commercial operators and authorities, set up a project website, participation at conferences, training and education of all relevant subjects) and indirect (creation and distribution of information brochures, publishing articles and reports in dedicated magazines in the area of logistics and traffic management, cooperate with universities in order to spread the know how, execution of activities via „key players“ interested in a strategic partnership including the assessment of the results of these activities) dissemination measures.

### 12. Evaluation

*Describe reasons and evaluation criteria why the described example is a best practice. (max. 1000 char.)*

AIS System implementation in Croatia represents implementation of state of the art communication technologies in inland waterway sector and contributes to extended usage of information technologies by all potential users. This is achieved by building a sustainable cross-border ICT network with users both in public and private sector.

The implemented services provide better economic competitiveness of all commercial actors in the field, by providing faster, more reliable and secure information flow. The services include tracking and tracing of the vessels, logistic services for private sector as well as calamity abatement services.

Inland AIS System implementation enables better and improved access to and use of new information and communication technology thus providing local authorities with the state of the art traffic and transport monitoring system. The system also has huge impact on the safety and efficiency of inland waterway transport and contributes to the business of all players in inland navigation.

### 13. Contact of research team/institution

*Name, address, tel., fax, e-mail, URL*

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### 14. Contact of financial mechanism facilitator

*Name, address, tel., fax, e-mail, URL*