ACTIVITY 2:TECHNICAL STUDY AND DESIGN

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Activity 2

This activity is coordinated by AIPo with the collaboration of all the other project partners. It deals with the main technical studies of the Action and will provide the final RIS system design and prototype

The partners involved in this activity are AIPO, Sistemi Territoriali, Venice Port Authority and the Province of Mantova.

The following sub-activities will be implemented:

- **Sub Act 2.1 Inception report**
- **Sub Act. 2.2 Functional requirements**
- **Sub Act. 2.3 Detailed system design**
- **Sub Act. 2.4 RIS prototype detailed design**
- **Sub Act. 2.5 Development of the software prototype**

Sub Act 2.1 Inception report

Implementation of the action
This activity started in June 2011 and should end in December 2011

The inception phase will answer the question if RIS is the appropriate mean to address and manage river traffic problems.

This study is the input for all the other related studies and for the definition of the functional requirements to be included in the feasibility study.

The main results to be achieved by the inception report are: the assessment of the actual existing components of RIS along the NIWS, the assessment of future infrastructures development and the analysis of possible traffic problems related to internal and external causes (i.e. interaction with maritime traffic, volume and mix of traffic, working conditions etc.)

Sub Act 2.1 Inception report

The report is articulated in the following topics:

- State of the art of river information system on the Po river – existing components
- State of the art of existing and future infrastructure and development (input from the master plan currently under development)
- State of the art of existing directives and legislation on RIS
- State of the art of RIS implementation in EU
- Analysis of the existing processes
- Identification and characterization of possible local traffic problems, related to:
  - interaction of maritime traffic;
  - volume and mix of traffic;
  - local conditions like geography, hydro/meteo, tides and weather;
  - protection of the marine environment;
  - protection of the surrounding area;
  - future trends in traffic volume and other river area activities.
  - Future infrastructure development.

Sub Act 2.1 Inception report

Most of the foregone sub-activities have been studied in particular:

-the state of the art of existing River Information System components along the Po river
-existing and future infrastructure and development
-directives and legislation on RIS
-state of the art of RIS implementation in EU

We are completing the analysis relating to the existing processes, possible local traffic problems and future development on the infrastructure.

State of the art of river information system on the Po river – existing components

1.Tracking & Tracing (T & T) System

This existing system consists of three modules:

- Server Module, part of the central system, installed at headquarters of Boretto
- A Client module, for display information, installed at headquarters of Boretto
- An on board unit installed on board of individual ship.

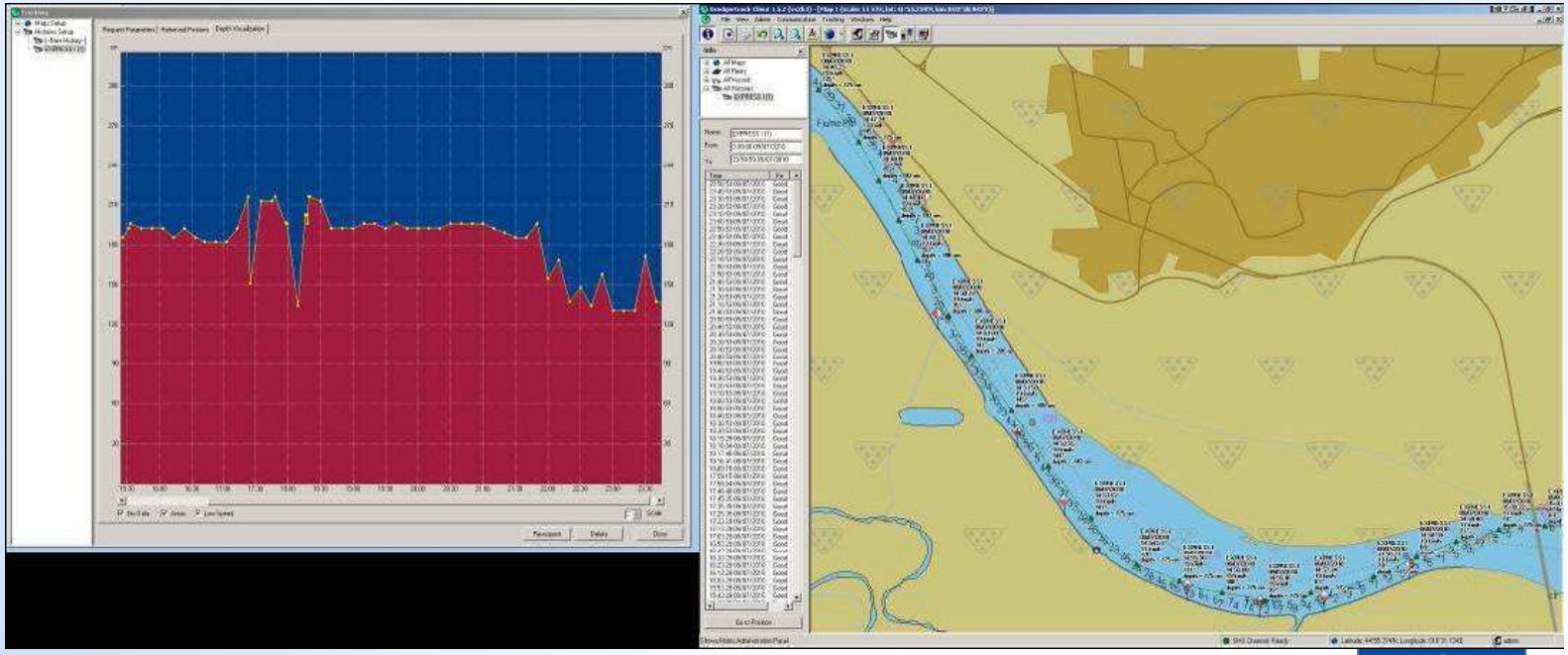
The system is not compliant with EU regulation and need to be replaced

Sub Act 2.1 Inception report

State of the art of river information system on the Po river – existing components

Tracking & Tracing (T & T) System - Central System

The central system is located in Boretto (RE) where all data are collected in real time in a special dedicated server and all the data on the boats are displayed on a cartographic map of the Po river developed by A.I.P.o Navigation in Inland ECDIS Standard whose coverage ranges from Pavia to the Adriatic sea.



Sub Act 2.1 Inception report

State of the art of river information system on the Po river – existing components

CCTV system

Currently there has been installed 4 cameras on bridges as in the picture below, the supervision is done by the Province of Mantova and one of them is installed at headquarters of Boretto.

These cameras are installed on the following bridges: Viadana, Borgoforte, Revere and Castelmassa.

Sub Act 2.1 Inception report

State of the art of river information system on the Po river – existing components

Notices to Skippers (NTS) System

An existing system is able to provide Notice to Skippers information in terms of navigational warnings and values of waters level in every section; such information is made available through the "Daily Bulletin of the Depths" sent by fax or email to shipping companies or directly to skippers (the service is available in the Po River). The information about the waterway state can also be downloaded and viewed on Google Earth.

The system is not compliant with EU regulation and need to be updated or replaced.

Sub Act 2.1 Inception report

State of the art of river information system on the Po river – existing components

Lock Management System

The Northern Italy Waterway System provides a total of 26 navigation locks. About lock management system no RIS system is available, while a remote control of locks for opening/closing has been implemented.

Existing central management system of the locks in the Northern Italy Waterway System – Cavanelle d'Adige

Sub Act 2.1 Inception report

State of the art of river information system on the Po river – existing components

ENC Production System

AIPO received by Inland ECDIS permission to produce Inland ECDIS with authorization code No. 10794-2A (www.openecdis.org in the section "producer code")

Under the legislation, the Inland ECDIS electronic chart format should have the following minimum contents:

- **Waterway limits**
- **Construction along the waterways (piers, docks, defences, etc.).**
- **Limits of locks**
- **The waterway, or recommended routes for convoys of large dimension**
- **Underwater Hazards**
- **Hazards isolated above the water such as bridges, overhead cables crossing etc.**
- **Buoys, beacons, navigation lights, River signals**
- **Progressive waterway distances**

Sub Act. 2.2 Functional requirements

Implementation of the action
This activity has not yet started. The activity is going to start in November 2011 and should end in May 2012

This sub activity aims at setting up the main requirements of the system, reengineering of current procedures and information flows before implementation based on previous analysis and main user needs.

Sub Act. 2.3 Detailed system design

Implementation of the action
This activity has not yet started. This activity is going to start in April 2012 and should end in January 2013

This sub activity is related to the preparation of the high level system design, with the functional definition of the best RIS system for the Po river

Sub Act. 2.4 RIS prototype detailed design

Implementation of the action
This activity has not yet started. This activity is going to start in August 2012 and should end in January 2013

In this activity high level requirements will be established for the pilot system.

Sub Act. 2.5 Development of the software prototype

Implementation of the action
This activity has not yet started. This activity is going to start in October 2012 and should end in May 2013

The key software applications employed in the prototype system are the following:

- **tracking and tracing software providing real time traffic data by means of the Automatic Identification System (AIS), and ETAb (ETA on berth) information,**
- **lock management system software supporting lock personnel in planning, optimization, and documenting of locking procedures,**
- **Electronic Reporting (ERI) System software for collecting, distributing cargo and passenger lists, voyage reports, and getting clearance from the relevant authorities,**
- **ENC production system software, for the updating of cartographic maps of the Fissero-Tartaro-Canalbianco waterway;**
- **a prototype of the Data Gateway System for the integration with other external systems, providing information to authorities and logistics operators**

THANK YOU

FOR YOUR ATTENTION

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