RoRIS

RIS in Romania – lessons learnt

RoRIS is the Romanian national RIS system for Danube stretching from km 0 to 1075 (from *Sulina* to *Baziaș*) representing 44% of the Danube's navigable sector, which is a significant section of the European transport corridor VII.

The RoRIS system is managed and maintained by the *Romanian Naval Authority* (RNA), which is the technical body of the Romanian Ministry of Transport, in charge with safety of navigation.

RoRIS is an efficient tool for management of the inland vessel traffic on the Romanian part of the Danube.

It is compliant with the European RIS recommendations and it offers traffic and transport related services for the involved parties.

The RIS global objectives adopted in RoRIS:

Enhancement of inland navigation safety in ports and rivers by providing local and regional traffic information for safety monitoring on tactical as well as strategic level

Enhancement of the efficiency of inland navigation, enabling optimization of resource management of waterborne transport chain by enabling information exchange between vessels, terminals and ports

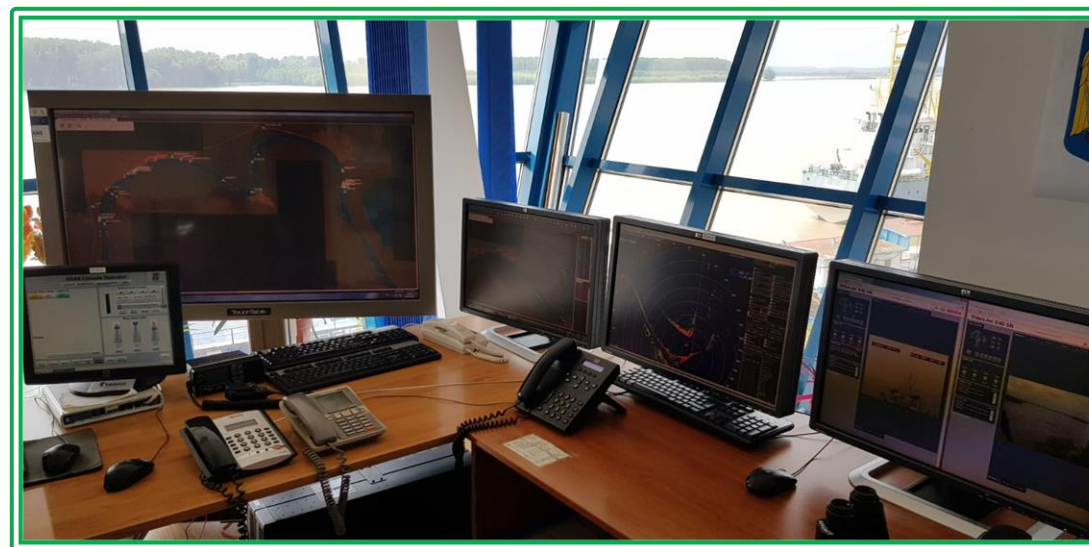***Better use of the inland waterways*** by providing information on the status of the fairways

Environmental protection by providing traffic and transport information for an efficient calamity abatement process

RoRIS services:

The traffic related services

- *Fairway Information Services* (Visual aids to navigation, Radiotelephony service on inland waterway, Electronic navigation chart service);

- *Traffic Information* (Tactical traffic information, Strategic traffic information)

- *Traffic management* (VTS, Navigational support)

- *Calamity Abatement Support*

The transport related services

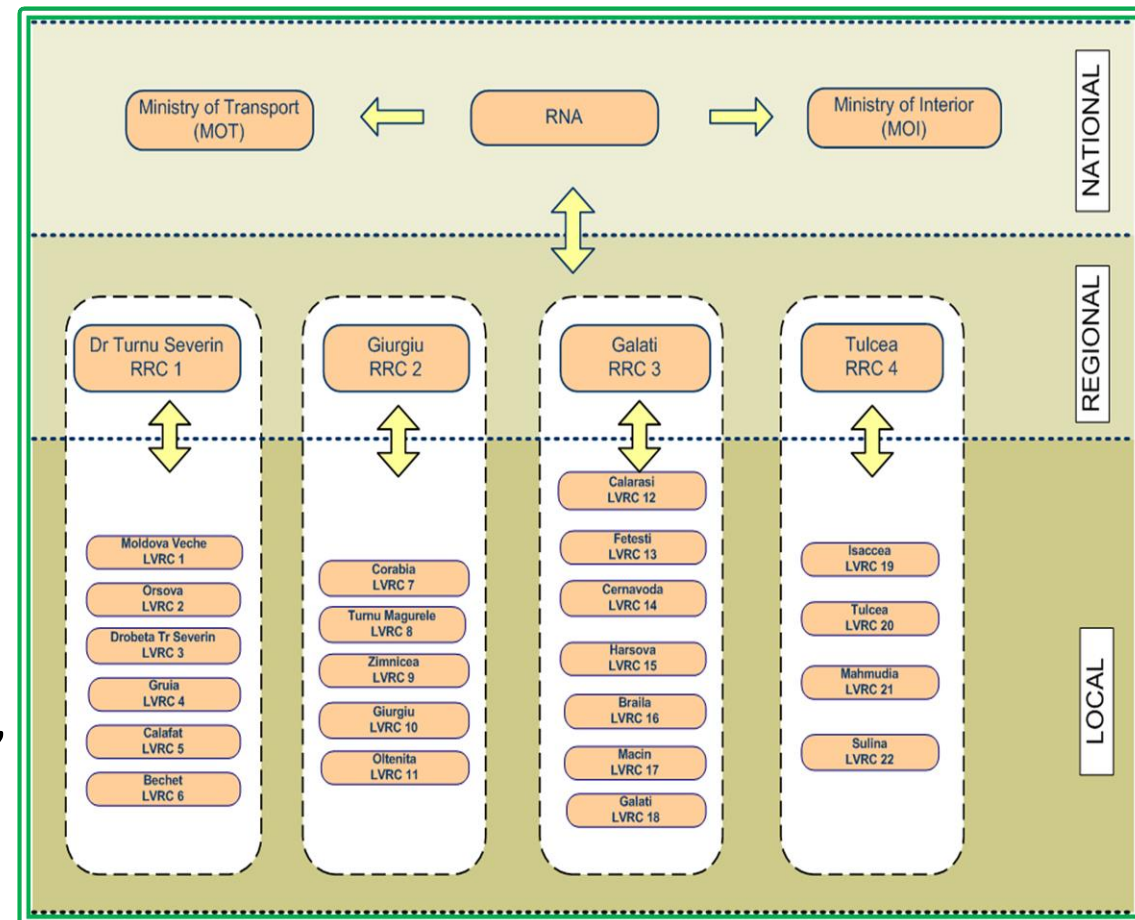- *Information for law enforcement*

- *Statistics*

The first phase of RoRIS implementation started in December 2004 and finalized in May 2006 with the financial support of the European Union, through the PHARE program.

The system is hierarchically organized on three levels:

- *central level* in the RNA headquarters, with terminals at the Ministry of Transport;

- *regional level* in Drobeta Turnu Severin, Giurgiu, Galați and Tulcea;

- *local level* in 22 ports, from Sulina to Moldova Veche.

In each of these locations, water traffic management and river transport information centers were provided. The system makes use of the following technologies: RADAR, AIS, CCTV detection and tracking, multipoint data access network, dGPS stations and software applications in web technology.

This phase formed the core of the future expanded RoRIS system covering the major areas for navigation.

After the completion of this phase, the system was fully operational but covered only certain areas on the Danube.

Second phase of RoRIS development (2010 – 2013)

Based on the experience gained in the first phase, the following objectives were set for the RoRIS second phase implementation:

- Improve and expand the infrastructure for *voice and AIS communication* in order to fully cover the entire Romanian Danube sector.

- Installation of *new radar centers* and integration with the AIS subsystem.

- Extend traffic surveillance with *new infrared cameras* installed in important Danube ports.

- Improvement of the *software* developed in the first phase according to the needs resulting from the previous gained experience and the requirements of the European legislation.

- Connections for *data exchange* between RoRIS and other national systems.

The second implementation phase of RoRIS was funded from EU structural funds and lasted from October 2010 until March 2013.

RoRIS Infrastructure in figures

The RoRIS infrastructure includes:

35 RIS locations

27 pylons

9 equipment shelters

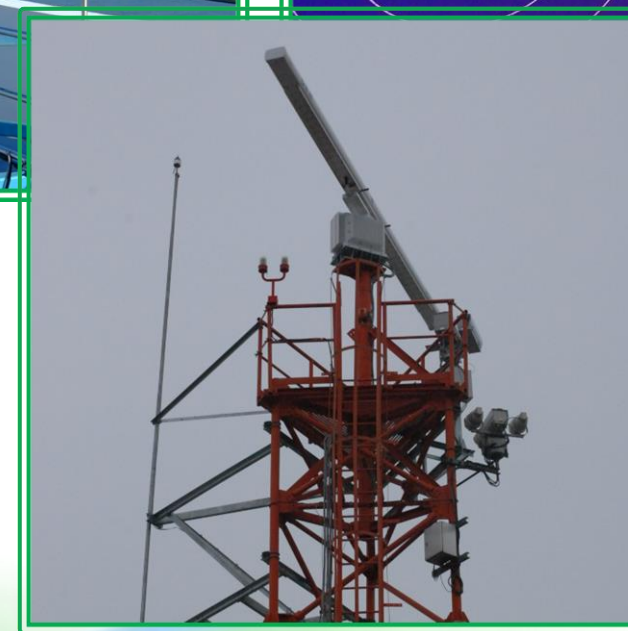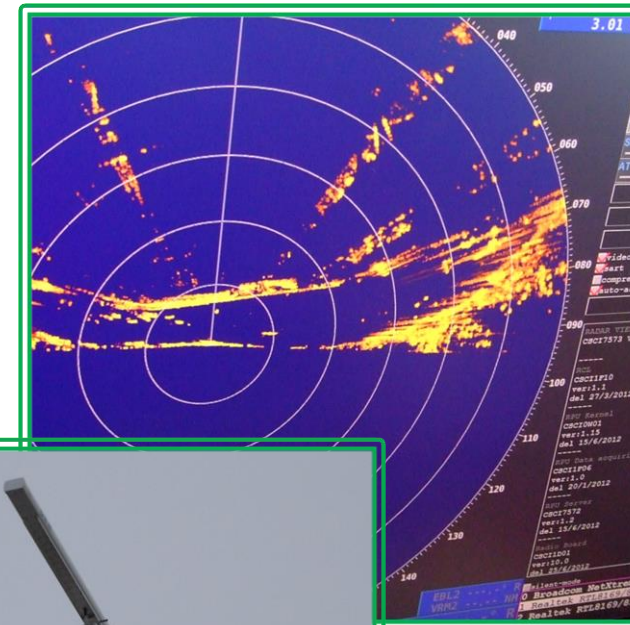# RoRIS Infrastructure in figures

And equipment:

28 VHF base stations

13 RADAR systems

22 AIS redundant base stations

13 CCTV systems

24 meteorological stations

9 radio link systems supporting the data exchange

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RoRIS system has undertaken a modernization phase in 2018 where the *servers were upgraded* to current technology and performance standards, with improved energy consumption.

The system has moved to a *virtualized architecture* which led to higher flexibility, easier maintenance and minimized downtime.

A *system health monitoring* system was implemented which promptly signals any malfunction.

RoRIS benefits

After RoRIS deployment till this day, clear benefits were identified:

The overall number of serious navigation incidents has diminished thanks to traffic monitoring and management in perilous areas and thanks to the NtS service

Paper workflow was minimized by the usage of electronic forms and thus waiting times for entering and exiting the ports shrank significantly

Faster data access for other RoRIS users: Border police, Customs, Waterways and shipping authorities, etc. The users have direct access into the system and are able to retrieve data electronically thus avoiding waiting times. It facilitates collaboration between state institutions

Incident response time was reduced due to faster access to information

Due to the particulars of the waterway in the *Fetești bridge* area, the ongoing ships were executing difficult maneuvers that in certain conditions could lead to ties braking and barges being lost or ships crashing into the cliff or the bridge pillars.

RoRIS was used as a tool for traffic monitoring and incident investigations in the area, that led to changes in the local navigation rule and as a result the chain of navigation incidents has been stopped.

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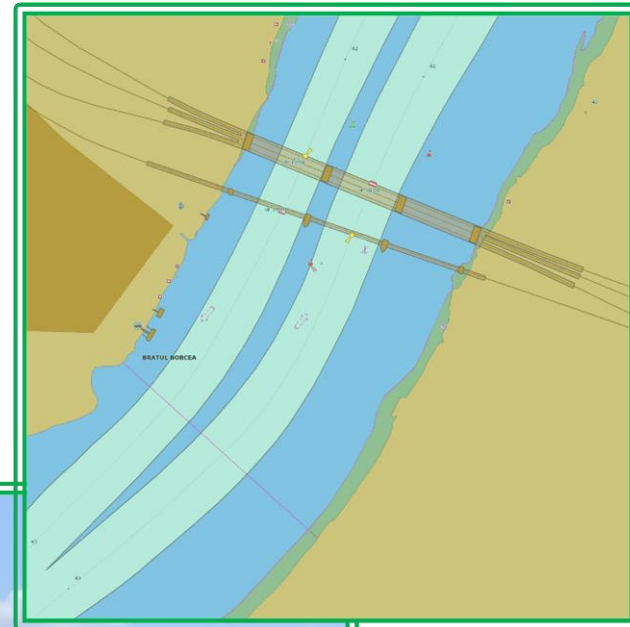
Future developments:

RoRIS will become a *data source for other projects* that are currently in planning or implementation phase:

RISCOMEX - RIS Corridor Management Execution

DANRiSS - Development of a Common and Legal Database for Ship Inspections

DSN - Danube Safety Net

International data exchange is currently in testing phase with Austria and Slovakia in the frame of AEOLIX project, expected to be finalized this summer.

RISCOMEX

The RISCOMEX project aims for implementation and operation of cross-border River Information Services based on operational exchange of RIS data (mainly as centralized European services, yet foreseeing a degree of local breakdown of functionalities).

RISCOMEX aims to provide uniform and harmonized corridor services, processes and technologies at European level.

There will be 13 Beneficiaries: Austria, Belgium, Bulgaria, Croatia, Czech Republic, France, Germany, Hungary, Luxemburg, The Netherlands, Romania, Serbia, Slovakia.

The project is funded under the CEF Transport framework.

Based on its strategic vision within the RIS area, Romania has an important role in the RIS COMEX project. The Romanian involvement in the project activities expresses its interest and importance:

- Direct and active participation in all activities of the project

- Relevant contribution to the service definition documents for all corridor services

- Relevant contribution to the technical vision and specifications of the services

- Coordinator and main contributor to the quality related tasks (Sub Activity 4.4)

DanRISS

Currently, the Romanian Naval Authority implements the DANRiSS Project "*Development of a Common and Legal Database for Ship Inspections for the Common Bulgarian-Romanian Stream of the Danube River with the Interface to the National River Information Service (RIS)*" project under the auspices of the INTERREG V-A Romania-Bulgaria Program, Priority Axis 5.

Beneficiaries of the DANRiSS project are the Romanian Naval Authority (RNA) for Romania and the Bulgarian Maritime Administration (EAMA) for Bulgaria.

The aim of this project is to enable automated assigning of safety surveys onboard ships, based on risk profiles, avoiding survey overlapping in the common Bulgaria-Romania sector on the Danube.

RoRIS is one of the data sources for DanRISS, providing ship hull information and live voyage data.

Danube Safety Net

DSN (Danube Safety Net) Project – "Improvement of the transport safety in the common Bulgarian-Romanian stretch of the Danube river through development of the Emergency Response by cross-border cooperation " – which is financed by INTERREG V-A Romania - Bulgaria, PA1 – A well connected Region.

The project partners are Executive Agency "Maritime Administration" (EAMA) for Bulgaria and Romanian Naval Authority (RNA) for Romania.

Main objective is to improve safety of river Danube navigability through development of a common Geographical Information System for Emergency Response, supply of crafts and common Emergency Response procedures and action plans.

Project results would provide better coordinated actions for both institution by the development of an IT supporting tool that should improve the capacity of the rescue teams and the response time.

RORIS will provide information about vessels in the area, cargo and people on board through aggregation of AIS, voyage information, etc.

Final words

RoRIS usage proven its utility as an invaluable tool for its users.

Constant maintenance, development and upgrades sustained by the Romanian Naval Authority ensures that the system will continue to rise to future challenges.

Thank you!

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