Measure 37: River Information System

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Policy package:
4B: Sea and inland waterway Investment and technologies

Measure 37:
Installing highly efficient navigational aid and communication systems on the inland waterway network

What is the problem being addressed ?
The River Information Services concept, which represents the most substantial change in the IWT sector in several decades, aims to the implementation of information services in order to support planning and management of traffic and transport operations. RIS supports the inland waterway transport sector in coming into line with modern developments in logistics and supply chain management, and thus facilitates the integration of IWT into the intermodal transport chain which is a prerequisite for a higher modal share for inland waterway transport.
National stand-alone telematic services have been developed since the late 1980s. The challenge facing the inland waterway transport sector lies now in integrating those various services and systems into a single common operational concept. A number of examples of national prototype RIS exist, as for instance IVS90 and BICS in The Netherlands, ARGO, MIB/MOVES, NIF and ELWIS in Germany, and the Danube River Information Services (DoRIS). However highly efficient navigational aid and communication systems on the inland waterway network are far from being fully available and installed in the whole EU. For instance, DoRIS is currently only tested on a stretch of 33 kms within Austria, with planned connections to the rest of the Danube in Austria.
In order to counterbalance the patchwork development of services and applications and to ensure their interoperability, substantial RTD activities have been undertaken in the area of RIS since the late 1990s. The 4th Framework Programme project INDRIS (Inland Navigation Demonstrator for River Information Services) which lasted from 1998 until 2002 can be considered as the starting point for the development of the European RIS concept. Currently, the COMPRIS project (Consortium Operational Management Platform River Information Services – started in 2002) within the 5th Framework Programme aims to finalise the development of a technical, organisational and functional architecture for River Information Services on a pan-European level. This project should mark the final phase of RIS development before large-scale implementation, having close relations to nationals RIS projects and initiatives.
In parallel to the research work, first steps were undertaken towards implementation. Some of the national applications mentioned already meet harmonisation requirements. Further, the European RIS platform (ERISP) has been established. The platform is set up for participation of all European (EU and non-EU) national authorities responsible for and actively involved in the development and implementation of River Information Services.
The latter can be divided into services which are wither primarily traffic-related or primarily transport-related. Traffic-related services are Fairway Information Service (FIS), Traffic Information, Traffic Management, and Traffic Monitoring and Calamity Abatement; transport-related services are voyage planning, port and terminal management, cargo and fleet management, statistics and water infrastructure charges. The compatibility and interoperability of services and applications will be ensured through common standards and protocols for data exchange, communication, equipment and frequencies.

Measure's costs and/or benefits:
Costs for RIS (River Information Services) deal with the installation of ICT systems and monitoring posts along Europe's waterways. Cost estimate for implementation of these systems throughout is not available.

Legislative implementation at the EU level:
This Measure was a part of the IWT-measures proposed as new TEN-project (see also list mentioned in description of Measure 36) and which was approved in April 2004. The amended TEN regulation now states that "the network shall also include the traffic management infrastructure. This shall entail in particular the establishment of an interoperable, intelligent traffic and transport system known as the "River Information Services" intended to optimize the existing capacity and safety of the inland waterway network and to improve the interoperability with the other modes of transport".
The measure is now the object of a Commission proposal for a Directive of the European Parliament and the Council on harmonized River Traffic Information Services on inland waterways in the Community of 25.05.2004 (COM(2004) 392 final). The Directive is addressed to the Member States, but those without

navigable inland waters are not obliged to apply the provisions of the Directive. In addition, for inland waterways within the scope of the Directive but with a demonstrated low traffic density, the period for the implementation may be extended.

What are the objectives ?

The White Paper states (page 45) that the aim is to install highly efficient navigational aid and communication systems on the inland waterways network. The envisaged system should be standardised across countries. Therefore, the purpose of the proposed Directive is now to establish a framework for a harmonised and interoperable development and deployment of the River Information Services and all Community inland waterways of Class IV or higher in order to improve the safety, security, and efficiency of traffic and transport operations. It will also apply to inland ports as defined in the framework of the TEN with at least 500.000 tonnes freight volume per year.

The principal aim of the River Information System (RIS) is to improve IWT-operations and improve waterway management. At present the use of such a system as a control mechanism (e.g. to check-up on compliance of IWT-operators with resting and sailing time) is not explicitly considered. This may however be something that must be taken into account looking at the future. In addition to the Measures already mentioned possibly (in the long term) also the Galileo system (and therefore also the corresponding WP-measure) may be relevant for the RIS, in particular because satellite positioning is used in IWT navigation.

Technically objective achievement does not seem to be a problem, and since IWT is a highly consolidated transport mode, investments will be relatively limited, so that also from an economical point of view this measure can be realised. In principle, the Directive does not oblige private users, boat masters and ship operators to install the equipment necessary for participating in RIS. However, Member States must take appropriate measures to encourage users and vessels to comply with the reporting procedures and equipment requirements implied by the Directive.

Interactions with other WP measures:

There are positive interactions with Measure 36 (eliminating bottlenecks, establishing links to rivers and installing transhipment equipment), Measure 42 (Marco Polo programme) and Measure 72 (TEN – infrastructure in candidate countries). In addition, RIS can assist in levying waterway charges – the travel data of the ship can be used to automatically calculate the charge and initiate the invoicing procedure – and in this respect may support any future implementation of infrastructure charging across all modes (Measure 57).

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Output indicators:
Key output indicators will include:

- Actual investments by member states
- Number of kilometres of the IWT Waterway-TEN covered by the new, standardised, interoperable system.

Outcome indicators: intermediate impacts on transport markets
RIS is expected to provide the following main impacts on IWT operations:

- Increased competitiveness, due to increases of IWT efficiency. *Firstly*, RIS provides up-to-date information that can be used to plan voyages and calculate more reliable time schedules. Based on the current and expected positioning data of the various vessels that are under way in the network, lock/bridge/terminal operators can calculate and communicate the Required Times of Arrival (RTA) to the individual skippers. While approaching the lock/terminal, the skipper can decide to adjust his cruising speed (more homogeneous travel speeds), which in the end results in a reduction of waiting times at locks and terminals. *Secondly*, RIS allows real-time monitoring of the inland navigation fleet and of changing fairway conditions en route. This allows improved fleet management, optimised deployment of personnel and fleet based on up-to-date information as well as more detailed trip planning and draught management based on up-to-date information on fairway conditions. Real-time information is provided that can be used to load ships according to the current navigational conditions. Thirdly, RIS provides information interfaces with all supply chain members as well as with other transport modes. These interfaces, which eliminate fractures in the information chain, permit the integration of inland waterway transport into the intermodal supply chain.
- Optimised use of infrastructure. Terminal and lock operators are capable of producing better planning of terminal resources through receipt of Estimated Times of Arrival (ETA) and additional information (e.g. stowage plans, vessels dimensions) of approaching vessels. This can be translated into an efficiency gain, allowing a pro-active approach towards terminal or lock activities scheduling. For infrastructure managers this brings *better utilisation rates*, while for skippers this means *shorter waiting times* and an *optimised chain of processes for the entire voyage*.
- Additionally, RIS permits the automated collection of statistical and customs data. Traditionally, this is connected with paper work, which is time-consuming and prone to data errors. RIS makes the automatic collection of required data possible in an efficient way, ultimately resulting in lower public expenditure for administrative and statistical reporting tasks. This will benefit in particular the waterway authorities in charge of strategic planning and monitoring duties. Statistics can be made available in different formats such as general traffic data, cargo statistics, vessel statistics, lock statistics, accident statistics, and port/transhipment statistics.

Due to improved navigation aid and communication systems, inland navigation shall become a more attractive mode of transport to use (safer, more efficient, faster, more transparency due to tracking and tracing, etc.). Therefore, a modal shift is expected on corridors where the navigation aid and or communication systems are significantly improved. Data to assess this shift are currently available in the usual national statistical sources, but possibly some estimation will be necessary to isolate effect on specific waterways (however, the availability of statistical data will be greatly improved when pan-European RIS will be fully in operation, as explained above).

Outcome indicators: final impacts on transport users and non users
With the introduction of RIS, skippers are offered up-to-date and complete overviews of traffic situations. This allow them to take well-informed navigational decisions, which will consequently lead to a reduction of incidents and injuries/fatalities. Moreover, RIS allows detailed monitoring of dangerous goods transports, thus helping prevent shipping accidents or allowing more timely responses in the event of accidents and potential environmental calamities.
As concerns environmental protection, RIS leads to a reduction of fuel consumption as a consequence of better voyage planning and more reliable time scheduling. In addition, RIS contributes to a modal shift of cargo from road to waterway, leading to a reduction of exhaust gases such as CO_2 and NO_x, but also of noise nuisance. RIS therefore supports the reduction of emissions caused by transport activities both directly and indirectly.