River Information Services on the river Danube in Austria
DoRIS

TRB 27th Annual Summer Conference
23-26.06.2002
Reinhard Pfliegl
River Information Services is defined as a concept for harmonized information services to support traffic and transport management in inland navigation including interfaces to other transport modes.
The use of telematics applications for traffic and logistic management on waterways enables this transport mode, to meet the current and future requirements of industrial supply chain management.
„To invite governments concerned to establish a Pan-European River Information Service (RIS) by the year 2005, based on standards to be drawn up in the framework of the European Union, UN/ECE and the two River Commissions, since river information service contribute to safer and more efficient inland waterway transport...“

Declaration on conference of transport ministers
5th/6th September, 2001 - Rotterdam
"...The conditions are now in place to undertake concerted efforts to develop this waterway which is of crucial importance for the whole of Europe, while respecting the environment..."

The Memorandum of Understanding creates a flexible and efficient structure for concerted action and the promotion of various initiatives to develop the Danube corridor and provides a discussion forum for projects of common interest. The Danube, together with the Rhine and the Rhine-Main-Danube canal, is a key link in the strategic connection between the Black Sea and the North Sea. The Danube corridor is therefore particularly important for the whole of Europe.

Ms. de Palacio signed on behalf of the EC the Memorandum of Understanding on Corridor VII - 27th of February 2002 - Brussels
Austrian views

- Political view
- Governmental view
- Commercial view
- Technological view
Political level:

- Secure borders and transport operation on waterways
- Set action in view of the expected transit traffic growth due to extension of the EU
- Initiate shift in cargo transport from road to the Danube
- Attract use of the available transport capacity on the Danube
- Achieve balanced load on all traffic modes in Austria
- Improve safety of traffic (Telematics plan Austria)
Governmental level:

- Establish interoperable traffic management systems along the Austrian Danube
- Generate a national tactical traffic image (TTI) for monitoring ship operations
- Install efficient exchange of information in case of a calamity with the involved rescue forces
- Install enhanced traceability of cross-border waterborne transport operation due to electronic storage & analysis of pre-information & border crossing protocol
- Contribute to reduction of environmental pollution
- Improve safety of traffic
Commercial level:

- Enhance planning & monitoring capabilities of logistics operations along the entire supply chain.
- Optimise use of inland vessels & other means of transport due to reduced waiting times at trans-shipment facilities.
- Fast & more planable transport service to and from other countries because of enhanced cross border services.
- Reduce administrative effort due to electronic integration with commercial operators & authorities.
Goals (4)

Technological level (ITS):
- Initiate traffic monitoring
- Enable traffic management
- Support monitoring of dangerous goods
- Support monitoring of areas of environmental and ecological value
- Enable lock management and coordination for continuous traffic flow
- Encourage industrial equipment suppliers to develop innovative systems and applications
Mandatory use of:

- Results of relevant EU-projects (VTMIS, INDRIS, ALSO etc.)
- Standards and recommendations
  - AIS, ECDIS, GPS, TCP/IP, PSTN (fixed, mobile)
  - UN-ECE, IMO, ZKR, DK
- Agreements on national levels
  - Implementation, cross border harmonization
Key requirements

- Generation of ship information (position, ID)
- Exchange of ship information
  - Ship-to-ship communication
  - Ship-to-shore communication
  - Shore-to-ship communication
- Display of ship information
  - Tactical Traffic Image on board
  - Tactical Traffic Image on shore
Tactical Traffic Image  TTI (1)
Taktisches Verkehrsbild TTI (2)
RIS in Austria (DoRIS)
Austrian Activities

DoRIS – Course of implementation:

- Test Centre
- ECDIS
- Test Section
- International Integration
Ship Equipment Transponder

AIS Data

Tactical Traffic
Inland-ECDIS

GPS
CPU
AIS

TTI
System concept

Tactical Traffic Image
- accurate and current position of the ships
- Identification of ships
- Information regarding dangerous goods
- velocity
- direction

On ship equipment

On shore equipment

National Center

Regional Center

Supreme Shipping Authority

BMF

BRZ

international users

commercial users
### Test centre

- **Implementation**

  - **national centre**
    - **regional centre 1**
    - **regional centre 2**
  - **external user**

- **transponder**
- **ship equipment**
- **lock Greifenstein**
- **lock Freudenau**

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Test centre DoRIS

System concept
System architecture

- User segment
- Official user (BMVIT, BMI, BMF)
- Commercial user (shipowner, supplied companies)
- Control segment
- National control center
- Lock segment
- Lock A
- Lock B
- Shore segment
- Ship segment

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Objectives of RIS – Test centre

- Test of the system components (technological maturity, stability, availability, reliability)
- Consideration of the technological development (low-cost transponder, DGPS-GSM/UMTS, EGNOS, EUROFIX, GALILEO)
- Development of the application environment on governmental level: OSB, BMI & BMF (information & data management, user interface, administrative processing)
- Prepare implementation of RIS on the Austrian part of the Danube
- Reference centre for the cross-border installation of a River Information Service on the Danube
- Test centre
- Test section

Implementation

- Test centre
- Austrian national centre

- Linz
- Melk
- Donaustauf
- Melk
- Greifenstein
- Vienna
- Test centre
- Test section
- International integration
**Time Schedule**

- Development of system specification | Sept. 2000 – March 2001
- Publication of tender | March 30<sup>th</sup>, 2001
- Opening of tender | May 28<sup>th</sup>, 2001
- Selection of supplier | December, 2001
- Installation of test centre | July, 2002
- Installation of test section | 2003
River Information Services

### Phase 3
- **2006**
  - ALSO II
  - International integration

### Phase 2
- **2003-2005**
  - COMPRIS
  - DoRIS test section

### Phase 1
- **2000-2002**
  - ALSO
  - DoRIS test section

### Preparation
- **till 1999**
  - INDRIS
Installation
Transponder
Installation: Praterkai

- Microwave switch
- Microwave
Installation: OSB ship „Wien“
Installation: Hainburg ship „Greif“

- Battery
- Place for the transponder
- PC
Installation: Hainburg ship „Greif“
Thank you for your attention!

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Additional Information
ALSO Danube

ADVANCED LOGISTIC SOLUTION
for Danube Waterway

Project number: 2000-CM.11185 / FP 5
Objectives:

- Development and implementation of intermodal transport chains with navigation as core transport mode
- Integration of advanced traffic and transport management systems
- Improvement of efficiency in inland navigation by creating a well-integrated logistic network
- Demonstration by means of 4 scenarios (CCS, DCS, DDSG, ILL)
- Public relations for inland navigation
Logistic Channel "CCS"

Germany

Pre-/end haulage

ARA Ports

Logistic Channel "DCS Hungary"

Germany

Pre-/end haulage

Logistic Channel "ILL Steel Logistic"

Austria

Pre-/end haulage

Demonstrations
ALSO DANUBE Project details

- **ALSO DANUBE total**
  - Project volume: 6,850,810 € (94.3 Mio. ATS)
  - EU-support: 3,237,020 € (44.6 Mio. ATS)
  - Partners: 23 / 8 countries / 9 from AT
  - Project start: 1st of May, 2000
  - Project duration: 30 months

- **Austrian partners**
  - Project volume: 4,201,095 € (57.8 Mio. ATS)
  - EU-support: 1,926,266 € (26.5 Mio. ATS)

- **via donau**
  - Project volume: 1,365,178 € (18.8 Mio. ATS)
  - 20% Subcontracting: 273,036 € (3.76 Mio. ATS)
  - EU-support: 628,544 € (8.7 Mio. ATS)
  - Men months: 83.1 RTD / 34.0 coordination
Common Source Logistics Database

Operational Data for Logistic & Supply Operations

Planning Data for Logistic & Transport Operations

Operational Data for Transshipment & Transport

for Logistic & Transport Operations
CSL.DB – General Architecture

Common Source Logistic Database

Application Layer to CSL.DB

Web based Application & DB Access

External Application

External DB

Interconnectivity Management

Data Clearing

On-Board TM Application

Traffic Management

Cross-border

Slot Management

RIS

Web based Application and DB Access

CSL.DB Administration

CSL.DB

Application

& DB Access
Network concept

Tactical Traffic Image
- accurate and current position of the ships
- identification of ships
- information regarding dangerous goods
  - velocity
  - direction

On shore equipment
On ship equipment

National Center
Regional Center

International users
Commercial users

BMF
BMI
BRZ

Supreme Shipping Authority

Kommerzielle Nutzer
Internationale Nutzer
International users
Commercial users
- **Positioning:**
  - GPS, DGPS, EGNOS, GALILEO

- **Mobile Communication:**
  - AIS, GSM, GPRS, LEO

- **Application:**
  - Tactical Traffic Representation, Lock management, Fairway management, Past Tracks, Accident analysis

- **GIS:**
  - ECDIS, Tactical Traffic Image, Strategic Traffic Image
Liner Services

Intelligent Services
Operational concept
DCS Osterweiterung - II
Planmäßiger Containerliniendienst zwischen den Häfen Deggendorf-Enns-Budapest seit 1/2001

DCS Osterweiterung - III
Planmäßiger Containerliniendienst zwischen den Häfen Wien - Bratislava - Budapest - Novi Sad - Beograd geplant für I/2003

DCS Osterweiterung - IV
Diese Entwicklungsstufe beinhaltet die Verdopplung, der im Rahmen der Erweiterung 3 genutzten Schiffskapazitäten geplant für IV/2003

DCS Intermodal Transportnetwork - West (Ara Ports & Port of Hamburg and Bremen)
Kooperation mit strategischen Partnern, zur Verbindung der DCS Transportnetzwerkes mit Wirtschaftsräumen in West Europa

DCS Basislinie I
Planmäßiger Containerliniendienst zwischen den Häfen Deggendorf-Enns-Budapest seit 1/2001

DCS Intermodal Transportnetwork - Ost (Schwarz Meer Häfen)
Kooperation mit strategischen Partnern, zur Verbindung der DCS Transportnetzwerkes mit Wirtschaftsräumen im Einzugsgebiet des Schwarzen Meeren.

Development strategy
Vision
RIS Implementation in the EU

Phase 3
2006
- ALSO II
- International Integration

Phase 2
2003-2005
- COMPRIS
- DoRIS Test section
- ECDIS Danube

Phase 1
2000-2002
- ALSO
- DoRIS Test center

Preparation until 1999
- INDRIS

GIS Forum
Europäische RIS Plattform
Logistic Pool
Corridor Management

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Danube Transport Development Agency

Founded in 1999
100 % subsidiary of the Austrian Ministry for Traffic, Innovation and Technology
45 employees
Turnover in 2001 approx. 2,7 Mio EUR