PoRIS

Towards Transnational River Information Systems to Foster Commercial Logistics and Public Safety

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Expert Group Safety (EG SEC)Meeting, Danube Commission (DC),
Budapest, February 20th 2019

Donaukommission – Commission du Danube – Дунайская Комиссия – Danube Commission

Austria Bulgaria Croatia Germany Hungary Moldova Romania Russia Serbia Slovakia Ukraine

PoRIS – Project Facts

- Security Research
  funded by Austrian KIRAS Grant (FFG)
- Duration: 10/2014 – 03/2016
- Partners
  - Federal Ministry of Interior
  - Graz University of Technology
  - University of Vienna – ALES
  - via.donau, Federal Ministry of Transport, Innovation and Technology

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Agenda

- Problem and Motivation
- Course of Action
- Results
- Conclusion

Situation

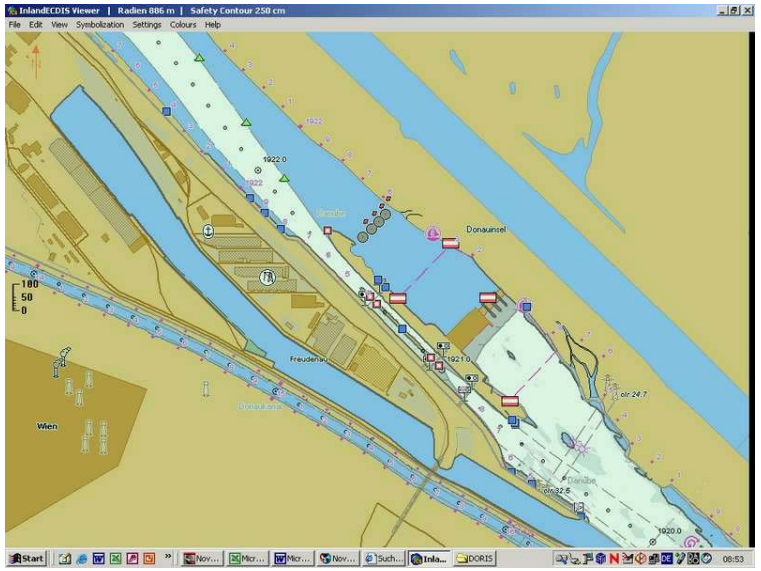
- The waterways between Western and Eastern Europe represent an important transportation connection for the European inland freight transport
- Waterways are important for merchandise and passenger traffic
- Transnational traffic (10 Danube neighboring states)
- Security-relevant traffic (goods & people)

Picture Source: http://www.donauschifffahrt.info/fileadmin/group_upload/7/Daten_und_Fakten/Wasserstrassenkarten/Donaukarte_de_2010.jpg

Current Development of Inland Water Transportation

Inland water transportation gains in importance – Challenges rise

- Safety requirements rise
- Effort of handling the traffic rises
  - Traffic-management
  - Security checks
- For this reason increasing effort for
  - Shippers
  - Operators of the traffic routes
  - Authorities and Public safety organizations



- Exchange of information between organizations seems to become a more and more important factor
- Single riparian states have already established River Information Systems (RIS)
- Consequently, an essential basis for an integrated concept is already existing

Picture source: http://www.doris.bmvit.gv.at/inland_ecdis/screenshots/

Project Goals

As a part of this study the potentials of an information system network will be tested

- Analysis of the Austrian RIS (DoRIS) in the context of public safety
- Exploration of an expanded transnational coupling of DoRIS with systems of the Danube riparian states

Expected improvements:

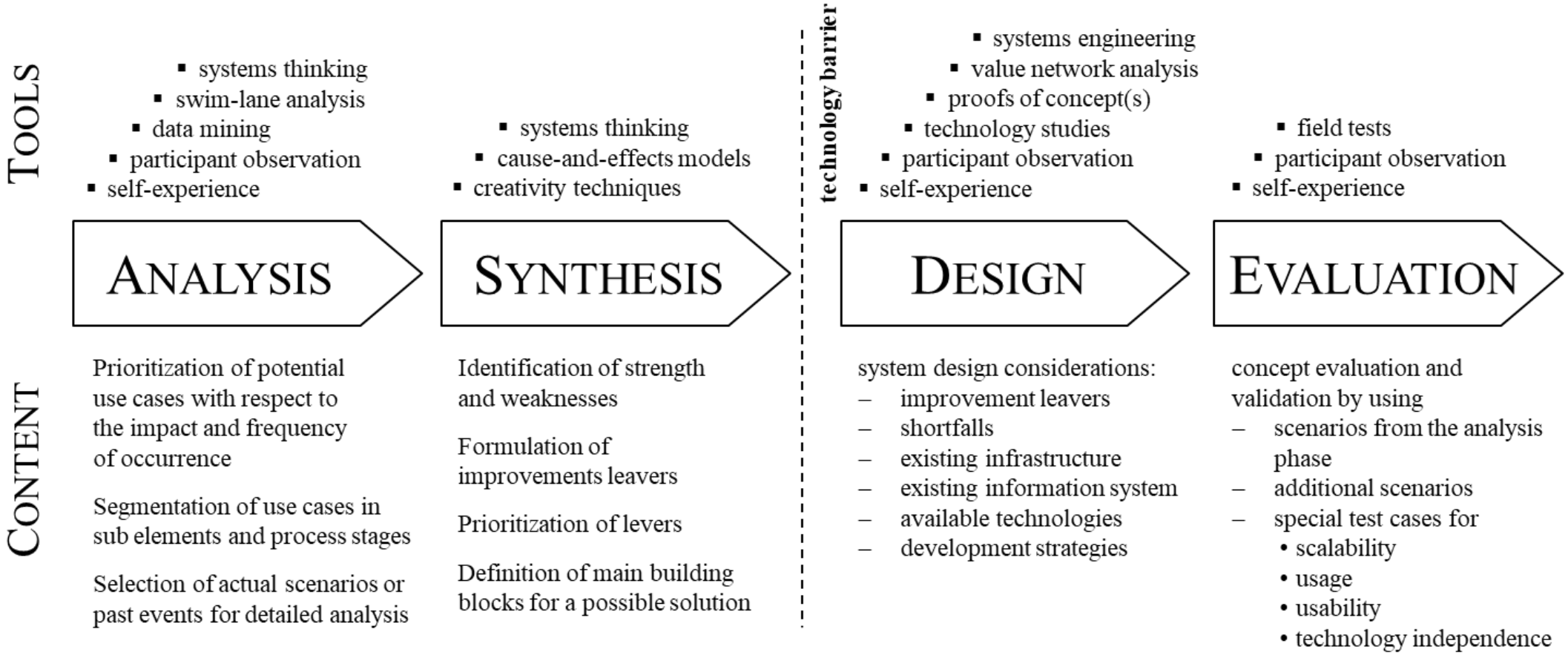
Economy

Reduction of burden of ship inspections for shippers
→ Acceleration of transaction, gain in time
→ Avoidance of unnecessary double-checking

Safety

Increase of the control efficiency for authorities
Optimization of resource use for BM.I
→ Risk-based resource planning

Socio-Technical Research Framework



Source: Vorraber et al. 2015

Workshops

Date	Topic	Place
29.10.2014	Kickoff meeting	BMI Wien
06.11.2014	Training ship logistics	viadonau Wien
17.11.2014	Ship control - inspection	FI Handelskai Wien
19.12.2014	Workshop total process analysis	ALES Wien
13.02.2015	Meeting with the club of captains	Fahrgastschiff Admiral Tegetthoff
02.03.2015	Meeting with the BMVIT	BMVIT Wien
22.05.2015	Improvement lever workhop	viadonau
17.11.2015	Proof of Concept Workshop	viadonau
25.02.2016	Proof of Concept Workshop II	ALES Wien
21.03.2016	Evaluation meeting	FI Handelskai
07.04.2016	Final meeting	BMI Wien

Identified Improvement Levers

EXAMPLE

Improvement Lever	Impact		
	Police	Navigation authority	Shipper
Pre-transmission of passenger data in standardized format	Time saving		Time saving
Availability of historical and current control data from other countries	Self-protection, facilitating of the control planning, prevention of multiple controls	Self-protection, facilitating of the control planning, prevention of multiple controls	Time saving due to omitting multiple controls
Ship control of cruising ships	Time saving	Time saving	Time saving
Purposeful controls	Prevention	Purposeful technical inspection, planning of recurrent inspections	Fair rules and the observance of these
Uniform work permit for several countries along the Danube	improved check procedure		Bureaucracy depleting
More flexible service planning for control authorities			Time saving due to shorter waiting times
Unified training requirements along the Danube		improved check procedure	Bureaucracy depleting, simplification

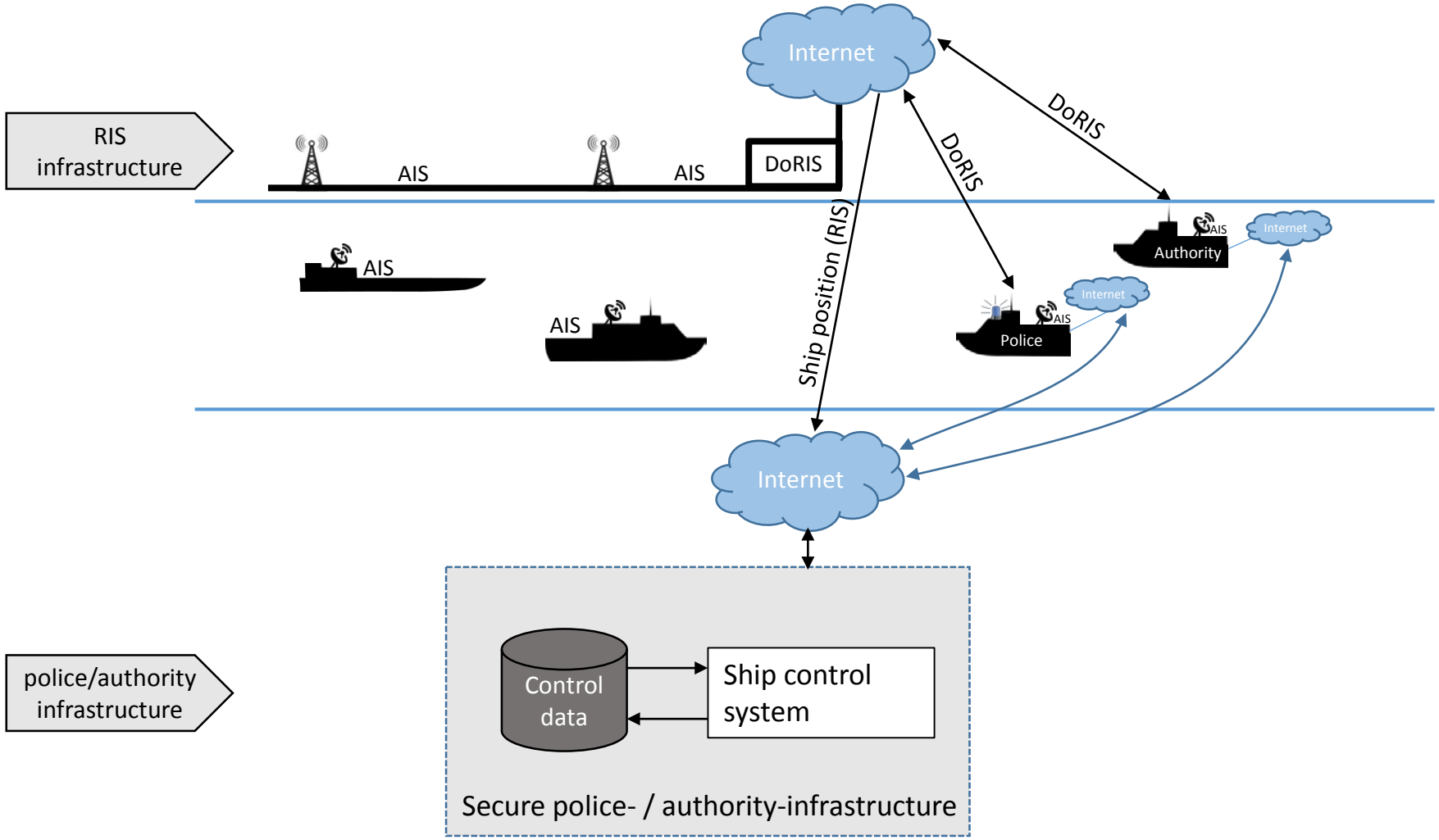
Improvement Lever – Prevention of multiple controls

EXAMPLE

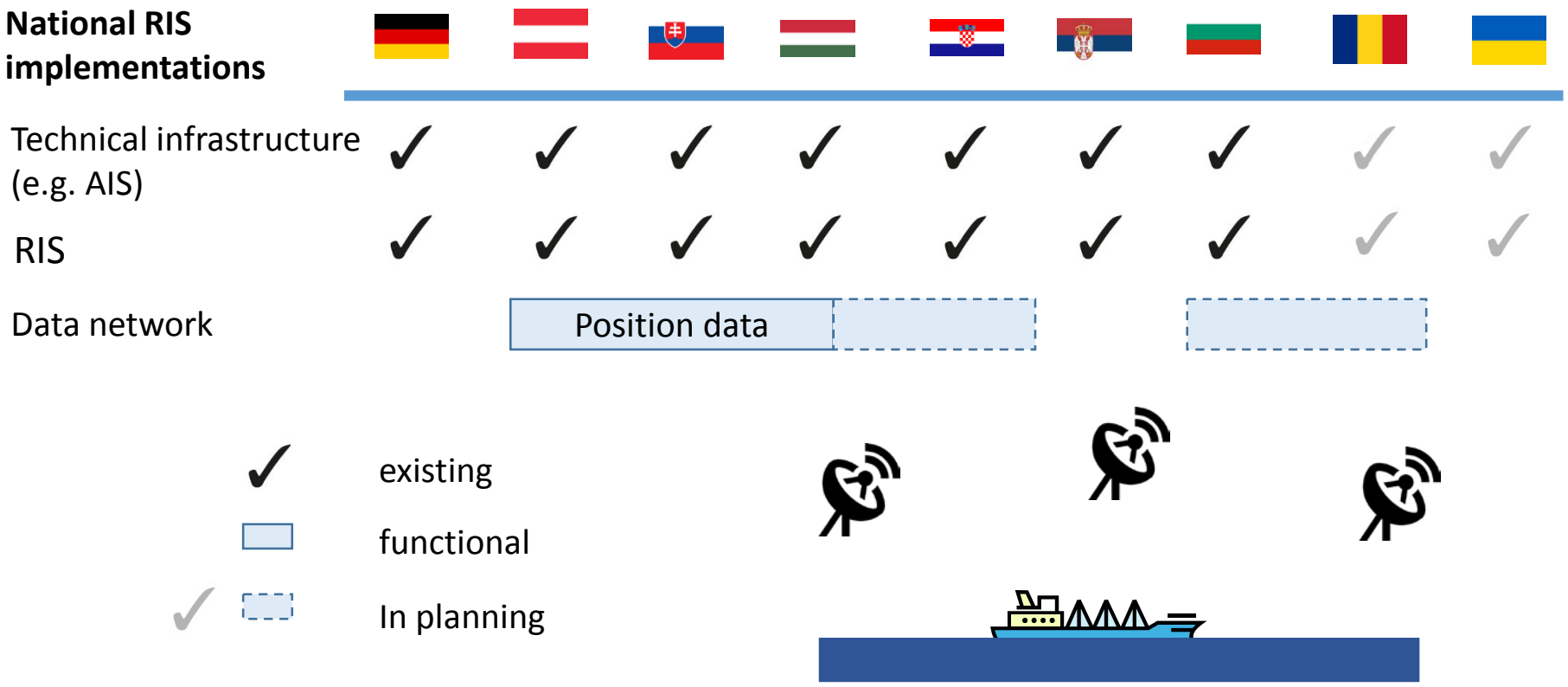
Name	Prevention of multiple controls
Brief description	The opportunity to request the control status shall contribute to avoid multiple controls. Currently it is not possible to “look over” the national borders. It is not evident, if a ship has just been controlled in a neighbouring state. The colour marking of ships in a web portal shall provide information about just-performed inspections respectively shall reproduce the control history.
Protagonists	Ship, RIS, police
Organisational requirements	The query of the ship’s position from the RIS, link to the data of the police-control-database, internet connection to transfer data, access to the web portal
Legal requirements	Legal basis for the data exchange with neighbouring states, Data transmission power in national laws, Need for changes in bilateral and multilateral agreements
Activator	Preparation to upcoming controls, control planning
Process flow	• Consultation of the ships in the immediate vicinity • Creation of a control plan • Conducting controls based on appropriate criteria

Quelle: PoRIS internal progress report

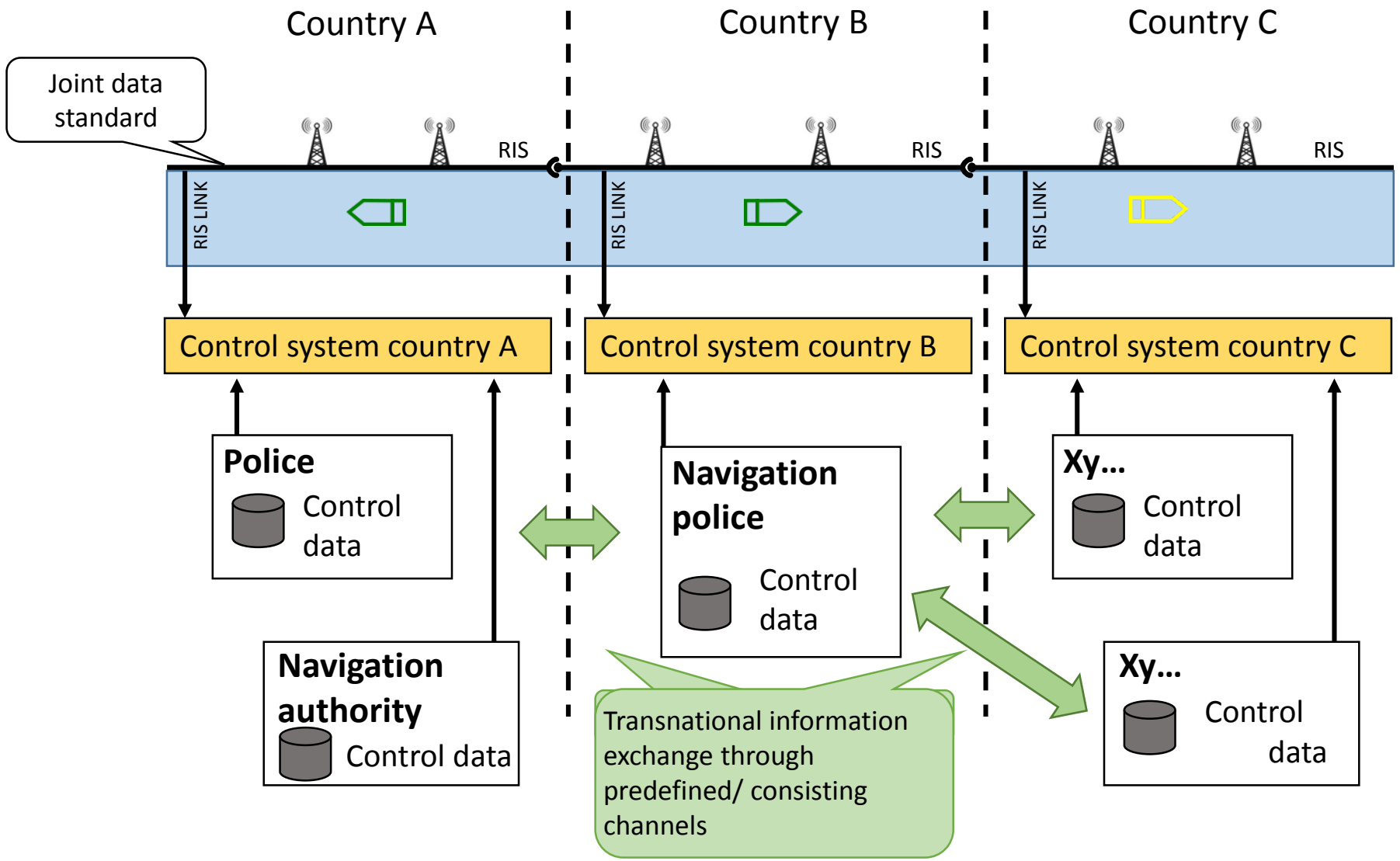
System Design: Separation of Control and RIS-data



RIS Implementation and Data Exchange Along the Danube



System Design: Transnational Control System



Ship symbols v2

- Cargo ship 
- Dangerous goods ship 
- Passenger ship 

Country-specific meanings and presentation possible

Ship is anchored

Ship is in motion

Ship symbols v2

- Meaning of the ship presentation
  - „New“ - Ship unknown

  - Was controlled in their own country without objection

  - Was controlled in their own country with slight complaint

  - Was controlled in their own country with serious complaint

Ship symbols v2

- Meaning of the ship presentation
  - Ship marked for inspection

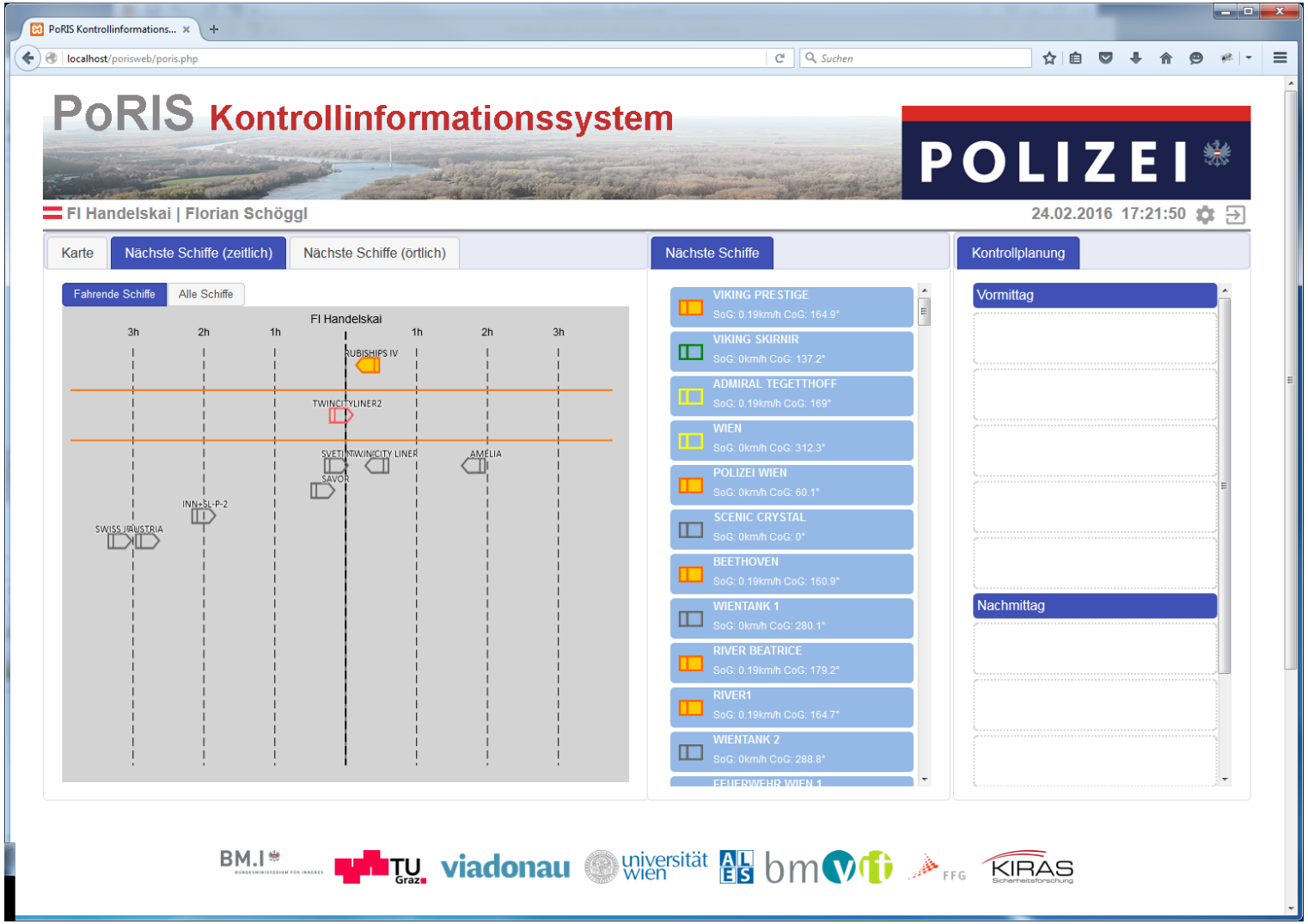
  - Information about the last control in the foreign country (worst result is displayed):
    - Everything OK

    - Slight complaint (e.g. administrative offense)

    - Serious complaint (e.g. criminal delict)

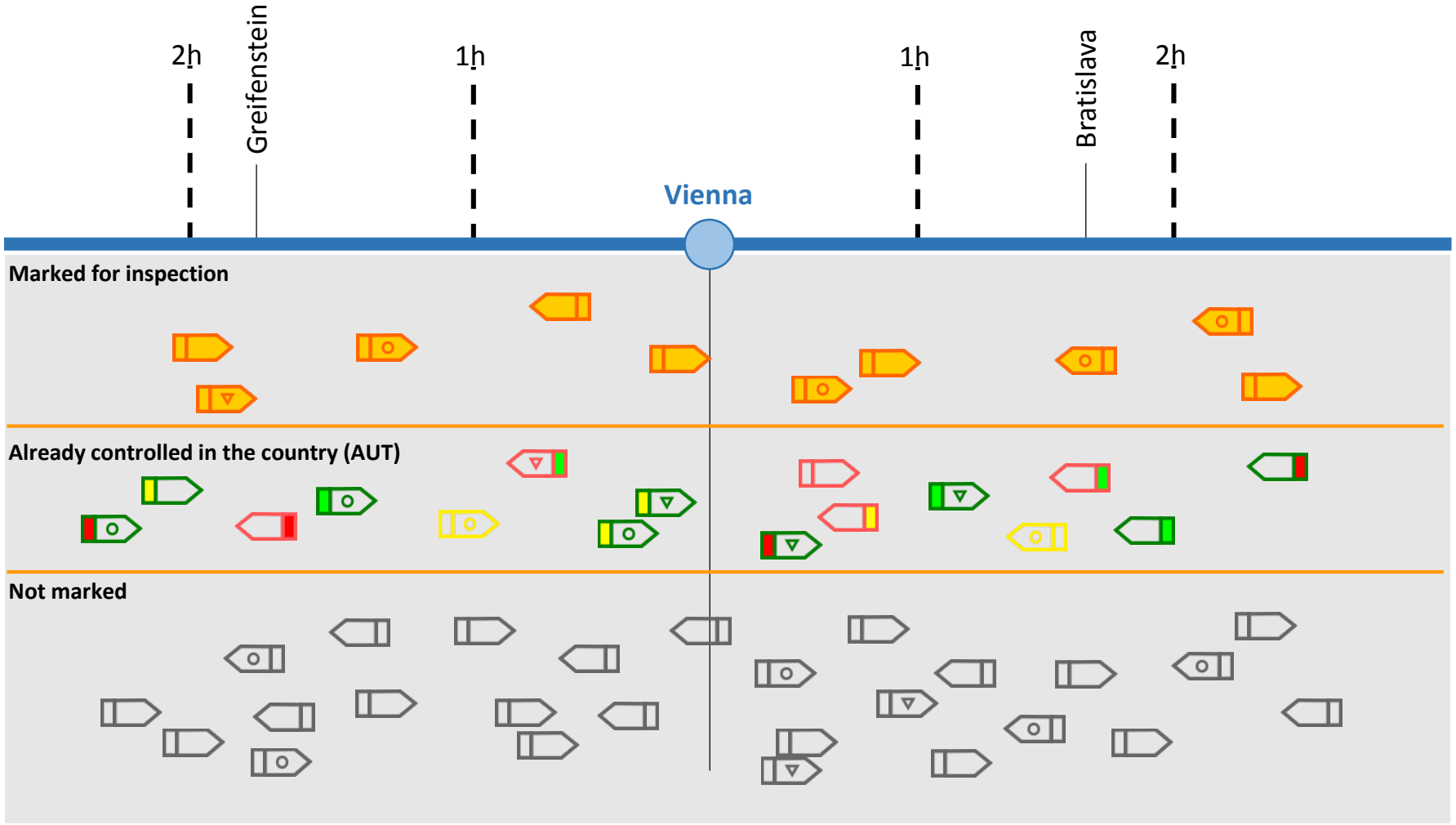
Proof of Concept - Map

Proof of Concept – „Subway Schedule“



Proof of Concept: Control overview

Ships in the surrounding area



Proof of Concept: Control logic

Proof of Concept: Evaluation

Evaluation workshop FI Handelskai
21.03.2016

Summary

- ✓ Workshops with stakeholders realised
- ✓ Improvement levers identified and prioritised
- ✓ Proof of Concept implemented
- ✓ Evaluation of Proof of Concept (User-acceptance) completed

Future Prospects

- International follow-up project

TU Graz
Graz University of Technology

FFG

KIRAS
Sicherheitsforschung

Köszönöm a figyelmet!

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Backup

Outtakes