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3rd Ukrainian Ports Forum

Session 4: Smart Ports in UA: how to ensure a technological breakthrough

"Ports as information hubs in seamless & harmonized information services along the Danube waterway"

Manfred Seitz
Odessa, 27 May 2021

Course of the presentation

1. Danube Commission and Danube Ports

2. Smart and digital Danube river and seaports

    - European Union policy framework

    - From national River Information Services (RIS) to Danube Corridor Management

    - From Port IT to collaborative information management

3. Implementation steps & benefits

4. Bibliography & selected further information

The Best Way To Predict The Future Is To Create It!
Source: President Abraham Lincoln

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Danube Commission - International Intergovernmental Organization

Founding Document: Convention for the Regulation of Navigation on the Danube, Belgrade, 1948

- **11 member states (1948, 1960, 1998):** AT, BG, HR, DE, HU, MD, RS, SK, RO, RF, UA, (7 EU and 4 non-EU)
- **10 observer countries (2001, 2006, 2008, 2012, 2014):** NL, CZ, FR, TR, CY, GR, ME, BE, MK, GE
- International organizations as observers & partners: IMO, ISRBC, BSEC, EC (DG MOVE), Moselle Commission, CCNR, ICPDR, UNECE, EDINNA, IVR, EFIP
- Since 1954 the based in Budapest
- Mission: To ensure and develop free navigation on the Danube in accordance with the interests and sovereign rights of the member states of the Belgrade Convention…
- Tasks acc. art. 8 Danube Convention: Monitoring implementation of Belgrade Agreement, Preparation of General Plan for large scale works of Danube States, Standardization of regulations for river monitoring, Coordination of hydro-meteorological services, Harmonization of inland navigation rules, Creation of uniform system of standards on navigable part of the Danube (signalling and pilotage system), Collection of statistical data for Danube navigation, Elaboration and issue of professional publications.
- Work in expert (hydro-technology, personal, waste, safety, security, statistics, ports) and working groups (technical, legal & financial) and two annual meetings (representatives of Member States)
- Gradual involvement in EU funded projects and initiatives (EUSDR PA1A, CESNI, Corridor Meetings, Platina3)
- No legislation, recommendations to member states, competence center and service provider (information and coordination)

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- There are 75 ports and 198 terminal on the Danube:
  - ✓ central element of Danube waterway system
  - ✓ important logistics hubs
  - ✓ centers for industrial development and employment
- The total cargo throughput of ports of DC Member States 64.9 million tons in 2020 (93.3% of the volume in 2019)

Ports in 1.000 tons	2019	2020	2020 in % to 2019
Germany	3.274	3.511	107,2
Austria	6.452	6.645	103
Slovakia	1.664	1.553	93,3
Hungary	6.742	6.064	111
Croatia	814	948	116,4
Serbia	9.735	8.164	83,9
Bulgaria	5.385	5.431	100,9
Romania	28.474	27.307	95,9
Moldova	1.299	1.185	91,2
Ukraine	5.629	4.055	72

https://www.danubecommission.org/dc/en/danube-navigation/danube-ports-map/
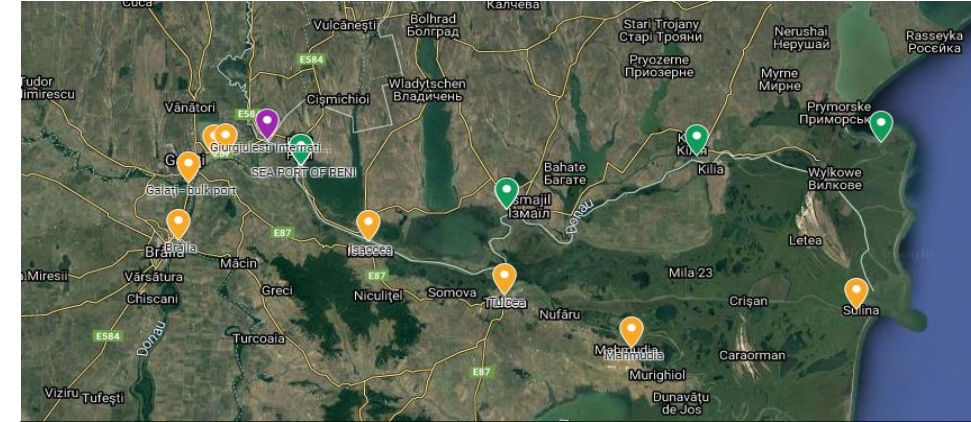
- Creation of dedicated Expert group on development of Danube ports and port operations
  - ✓ First meeting: 30 September 2021 in Budapest
  - ✓ *Facilitating port development (physical, digital, environmental) as part of Danube transport corridor development*
  - ✓ *Geening of ports and port operations*
  - ✓ *Digitalization and integration in logistics chains*
- Building especially on project:
  - ✓ DAPHNE - http://www.interreg-danube.eu/approved-projects/daphne
  - ✓ DIONYSUS - http://www.interreg-danube.eu/approved-projects/dionysus

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The European Green Deal (12/2019)
https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

Sustainable and Smart Mobility Strategy (12/2020)
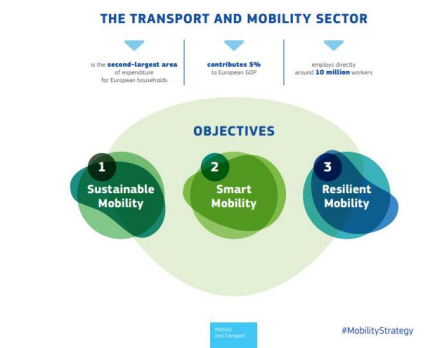*https://ec.europa.eu/transport/sites/transport/files/2021-mobility-strategy-and-action-plan.pdf*

*Transport by inland waterways and short sea shipping will increase by 25% by 2030
and by 50% by 2050 compared to 2015*

- **Flagship 4 - Greening freight transport**
- Action 26 - Launch NAIADES III to exploit the untapped potential of inland waterways transport (2021)
- Action 27 - Enable B2A multimodal data exchange through implementation of the e-FTI Regulation and Maritime Single Window environment (2025)
- **Flagship 6 - Making connected and automated multimodal mobility a reality**
- Action 43 - Revision of the Directive on Harmonised River Information Services (2022)
- Action 44 - Propose measures on electronic documents for inland crew and vessels (2021)
- Action 49 - Develop a common European mobility data space …. (2021)

Expected in autumn 2021: NAIADES III -Inland Navigation Action Plan (2021-2027) to meet objectives of European Green Deal and the Sustainable and Smart Mobility Strategy in the (post) COVID context
- Develop and use digitalization as an instrument to support the developments towards smart and sustainable jobs, fleet and infrastructure connected to other transport modes.

EU 2021–2027 long-term budget (MFF) of EUR 1211 billion and NextGenerationEU top up of EUR 806.9 billion

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River Information Services (RIS) – National implementations in all Danube states starting with 2005

- Directive 2005/44/EC on harmonised river information services on inland waterways in the Union supplemented by five implementing acts
- Services to support traffic and transport management in inland navigation
- Services such as fairway information, traffic information, traffic management, statistics and calamity abatement services, information for transport logistics and for law enforcement, and support to collection of waterway charges and port dues
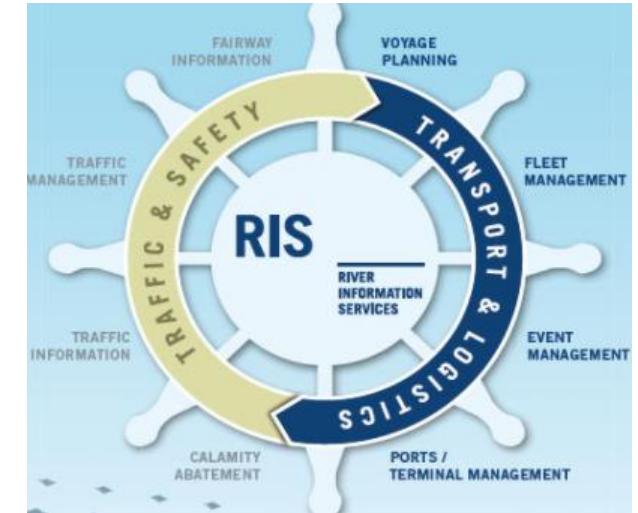
It´s further development: RIS Corridor Management

- **Route Planning** by providing fairway and infrastructure information *(level 1)*
- **Voyage Planning** and **Traffic Management** by providing traffic information *(level 2)*
- Supports **Transport Management** of the logistic partners by transport information and consequently **logistics processes in ports and terminals (**ETAs of specific vessels and deviation notifications, Electronic reporting of voyages and cargo)
- Leads to increased efficiency of inland waterway transport

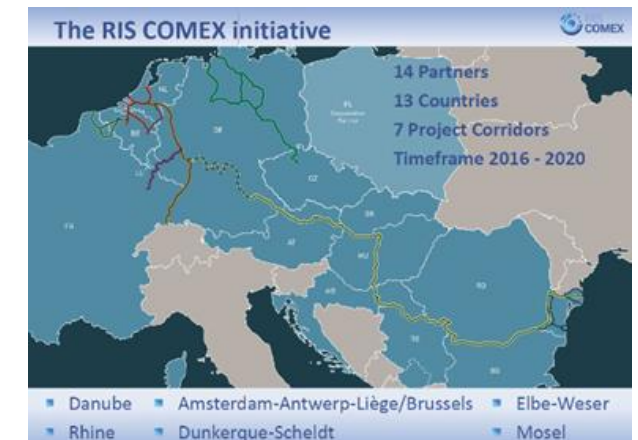## CEE-RIS: Central and Eastern European Reporting Information System
Single entering of data and reporting only once by web portal (GUI) or Application Programming Interface (APIs)

VisuRIS COMEX
Gathers data from national data sources, provides fairway-, infrastructure-and traffic-related services, supports traffic-and transport management on European level, offers single point of access for the users

www.ines-danube.info

The RIS COMEX initiative

14 Partners
13 Countries
7 Project Corridors
Timeframe 2016 - 2020

- Danube
- Rhine
- Amsterdam-Antwerp-Liège/Brussels
- Dunkerque-Scheldt
- Elbe-Weser
- Mosel

EU Project RIS COMEX - https://www.riscomex.eu/

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0	1	2	3	CONNECTED PORTS
Port Authority		Port Community	Hinterland	Global
NO AUTOMATION	INDIVIDUAL AUTOMATION	INTEGRATED SYSTEM IN THE PORT	INTEGRATED SYSTEM FROM PORT TO HINTERLAND	CONNECTED PORTS AND LOGISTICS CHAINS

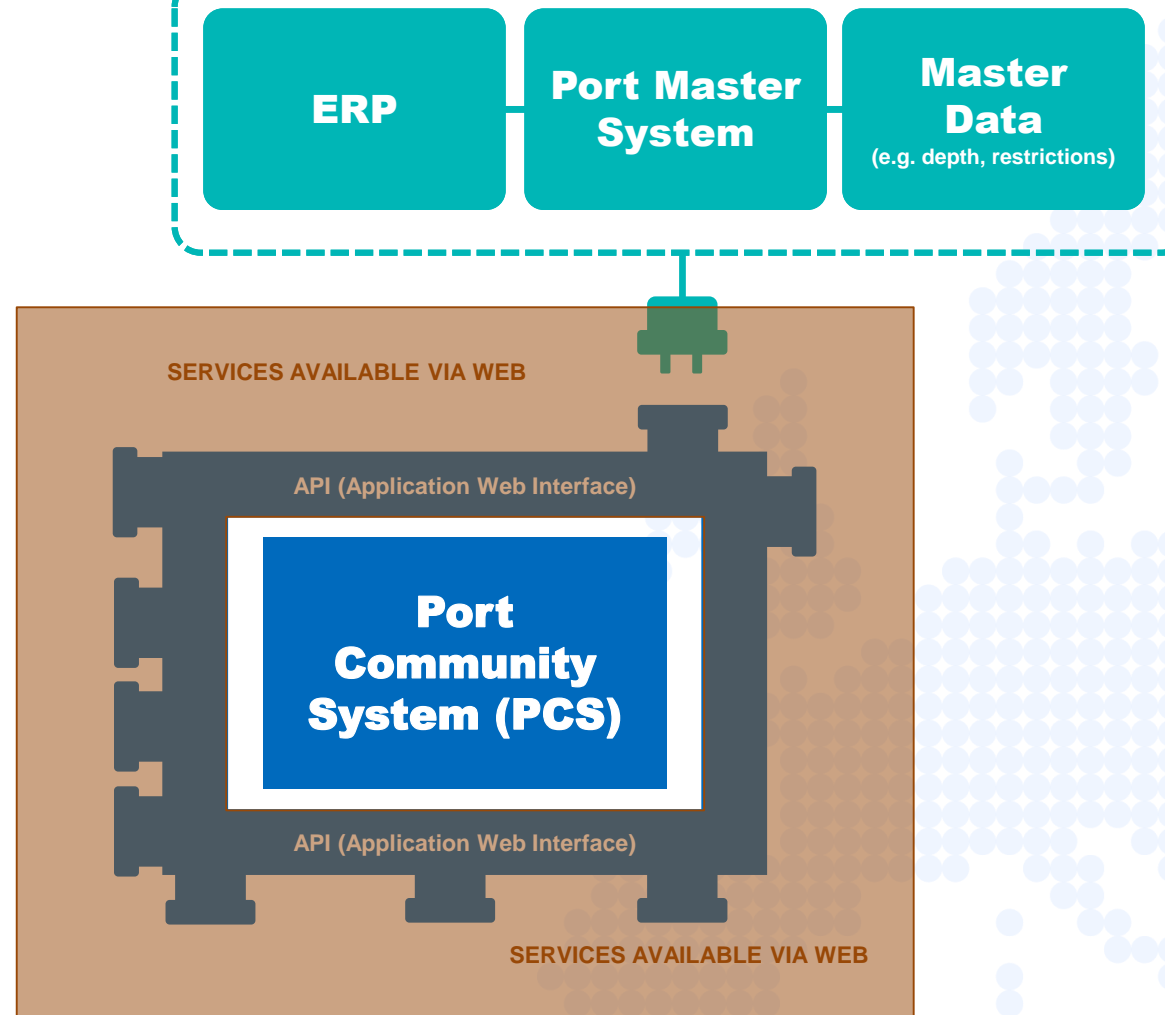Jan Gardeitchik, Port Forward, Port of Rotterdam, 2019

The challenge of ports: *To implement **smart digital services** as well as **intelligent processes, methods and technologies** for the optimization of multi-modal logistics-and transshipment processes in ports in addition to **enhanced collaboration** between inland-& sea ports and related transport modes*
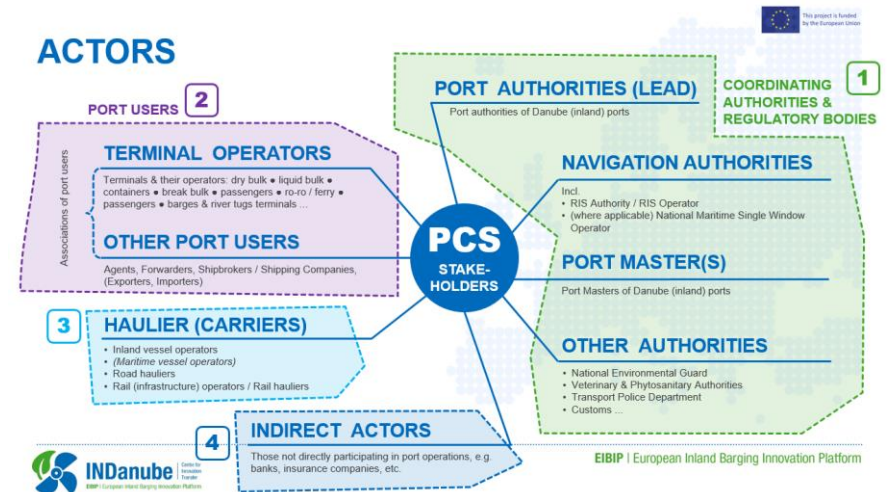
Harbour Master System

PCS is an (neutral & open) **electronic platform which connects the multiple systems** operated by a variety of organisations that make up a port community. It is shared / set up, organised and used by the port community

- ✓ *exchange of information between public and private stakeholders*
- ✓ *optimises, manages and automates seamless port and logistics processes*

Note: the plug indicates the position of the interface, the colour indicates the actor who is responsible for the effort to connect to it.

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Identify your digital positioning → Adapt the port structure → Identify actions and draw a plan → Implement projects → Revise
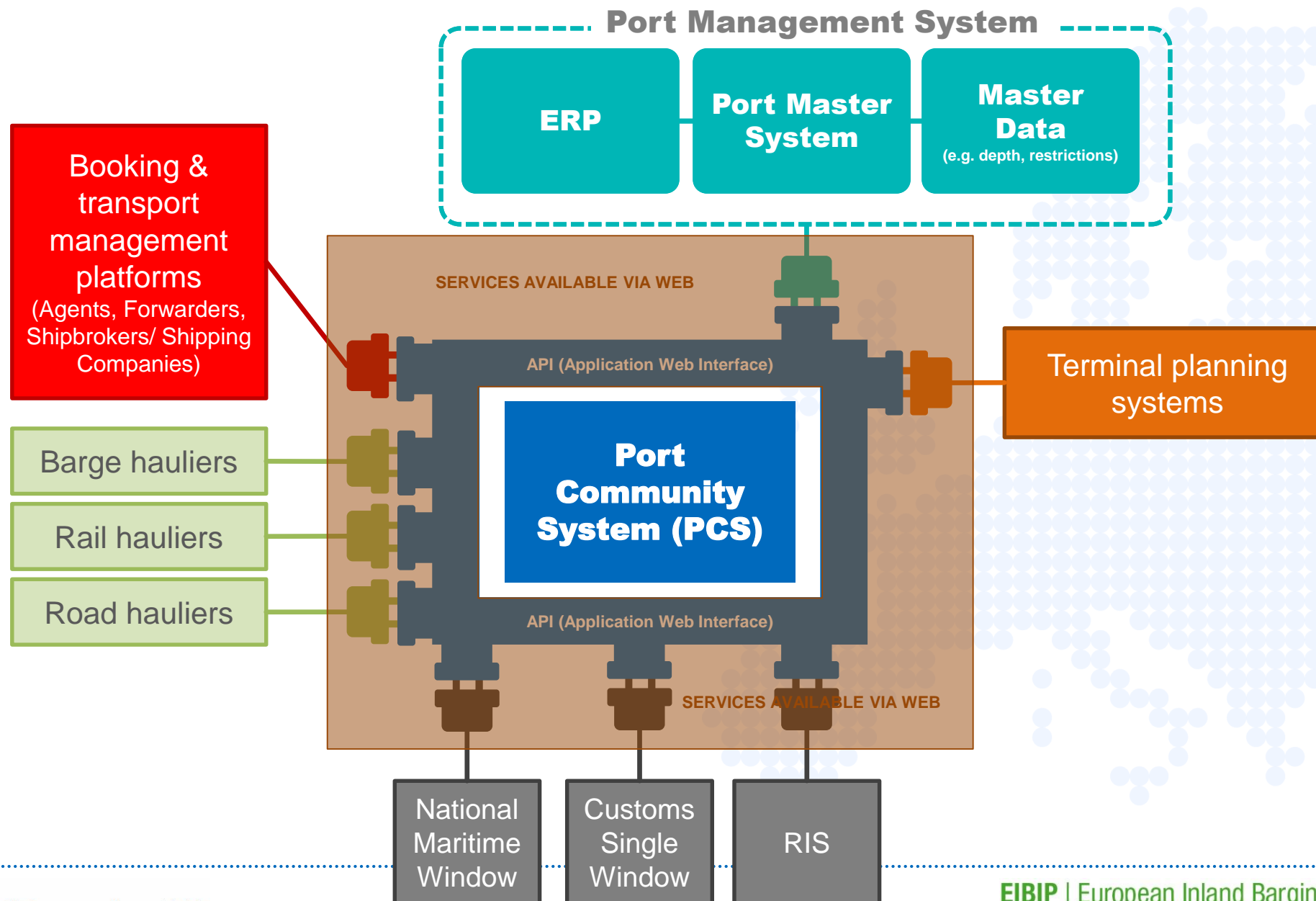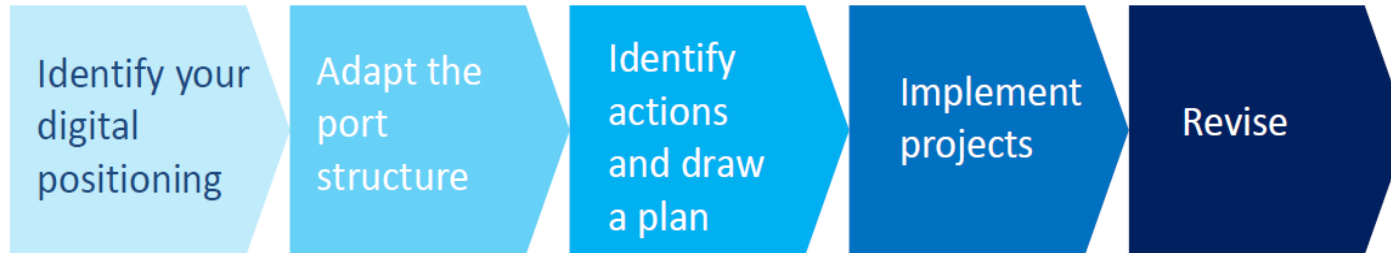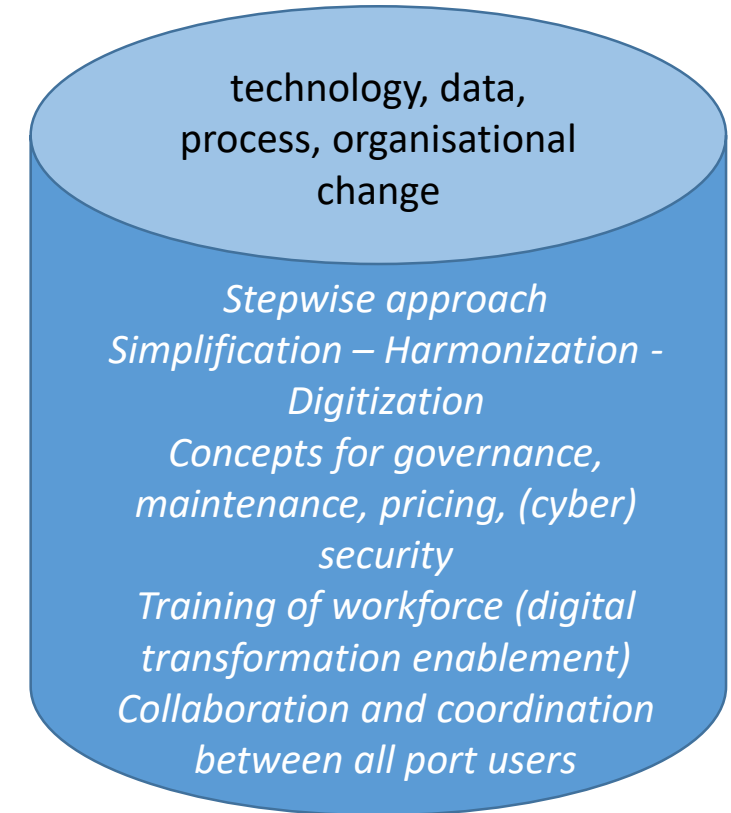
Jan Gardeitchik, Port Forward, Port of Rotterdam, 2019

What will be the benefits?

- Achieving an integrated digital transport information corridor on the Danube with inland waterway transport as core transport mode and Danube river and seaports as logistics and information hubs
- Faster transit times and smoother throughput cargo, paperless
- Less CO_2 and emissions,
- Increased predictability, reliability, safety
- Just in time operations, high maturity level planning processes
- Using the full potential of existing infrastructure and equipment
- Optimal transparency financial benefits for the whole logistic chain

technology, data, process, organisational change

Stepwise approach
Simplification – Harmonization - Digitization
Concepts for governance, maintenance, pricing, (cyber) security
Training of workforce (digital transformation enablement)
Collaboration and coordination between all port users

If you want to go fast, go alone, if you want to go far, go together!
Unknown

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EU Legislation in Inland Navigation and Waterway Transport -
https://ec.europa.eu/transport/sites/transport/files/legislation/summary_of_eu_legislation_in_the_field_of_inland_waterways.pdf

EU Project RIS COMEX - https://www.riscomex.eu/
DINA Study Digital Inland Waterway Area (2017) - https://ec.europa.eu/transport/sites/transport/files/legislation/swd20180427
digital inland navigation.pdf
RPIS – RheinPorts Information System - http://www.upper-rhine-ports.eu/de/unsere-projekte/das-interreg-vorhaben-rpis40-3.html
Intelligente Informationssysteme für Prozessoptimierung und -automatisierung im Binnenhafen (BINNTELLIGENT) -
https://www.isl.org/de/projekte/binntelligent
Port Forward, Digital Solutions by Port of Rotterdam, Jan Gardeitchick - https://www.portofrotterdam.com/en/port-forward

Electronic Freight Transport Information (eFTI) REGULATION (EU) 2020/1056 - https://eur-lex.europa.eu/legal-
content/EN/TXT/PDF/?uri=CELEX:32020R1056&from=EN
European Maritime Single Window (EMSWe)- https://ec.europa.eu/transport/modes/maritime/digital-services/e-maritime_en

Alliance for Logistics Innovation through Collaboration in Europe (ALICE), www.etp-alice.eu
Digital Transport & Logistic Forum (DTLF) - https://www.dtlf.eu/

Information from EIBIP/INDanube - https://indanube.eu/?lang=de; Lucia Karpatyova

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Thank you for your attention!

Secretariat of the Danube Commission

manfred.seitz@danubecommission.org

H-1068 Budapest
Benczúr utca 25

www. danubecommission.org