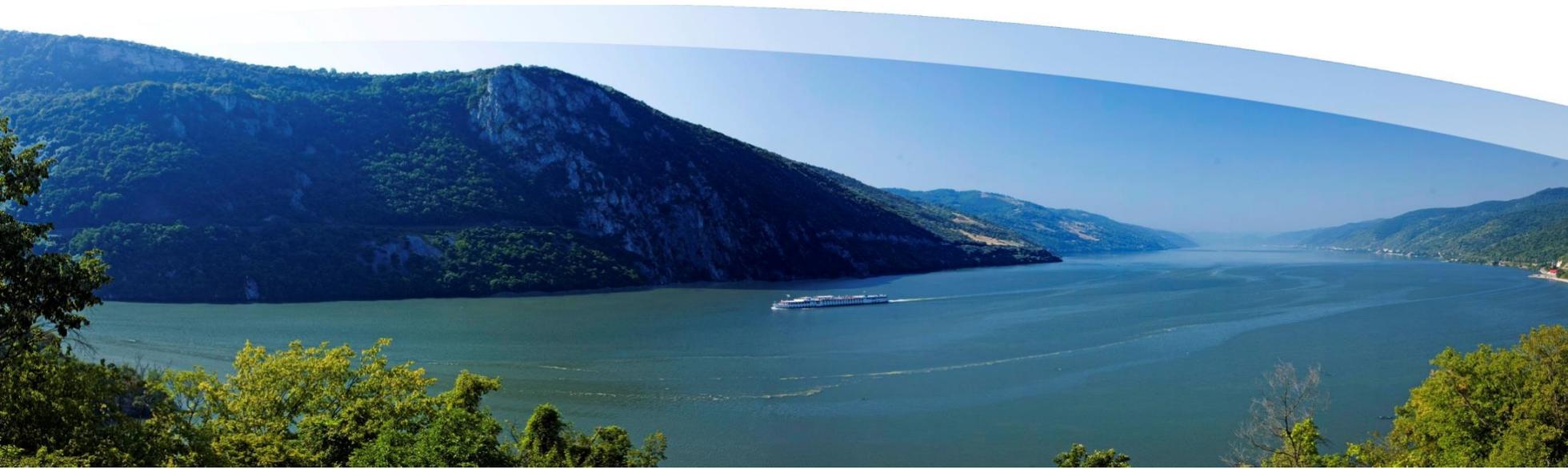


# EUSDR PA1a

# 14<sup>th</sup> Steering Group Meeting

Budapest | 12th June 2018



# Welcome and introduction

Approval of the agenda

# Reports on Working Group 3 – Fleet Modernisation

Report on projects GRENDEL/Green  
Danube/PROMINENT by Pro Danube

# GRENDEL

## Modernization of the Danube Fleet



**GRENDEL – Green and efficient  
Danube fleet**

**Manfred Seitz, General Secretary**

*12 June 2018, Budapest, EUSDR PA1A SCOM*



Project co-funded by European Union Funds (ERDF, IPA)

# Part of policy initiative based on cooperation & commitment



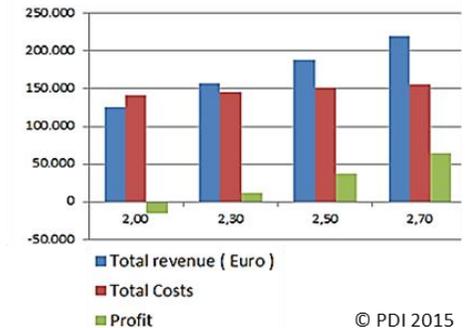
# Challenges for greening of Danube inland fleet



- **Current fleet:** c.450 self-propelled vessels, c.370 pushers, c. 1.700 barges; 20 companies own more than 75% of vessels
- **Highly insufficient waterway maintenance in several Danube countries deprived vessel operators from major fleet investment** → fleet average >> 40 years
- **Need to fulfil NRMM STAGE V REGULATION (EU) 2016/1628**
- *Priority for IWT till 2030 is to improve air pollutants to keep-up with road haulage (Euro VI trucks) and rail. Otherwise, shift to water policies undermined, while CO2 reduction is maintained*
- *Mature technical solutions: after treatment systems for exhaust emissions by means of catalyst and filters (SCR and DPF) or LNG as alternative fuel reduce damaging air pollutant such as NOx and PM*
- **Bio-fuels / LBM** in the mix with or as alternative can **reduce CO2 emissions clearly** (contributing to COP21 objectives); in longer term, more hybrid & battery electric vessels in particular for new-builds
- **Full battery electric vessels, fuel cells, hydrogen are expected after 2030:** not mature (experimental) and too costly yet, not applicable in IWT for majority of fleets
- *However, in certain IWT segments electric vessels be expected also on the short term, e.g. local transport with small vessels*

Profitable navigation requires sufficient draft

Draft	2,00	2,30	2,50	2,70
Total Revenue ( Euro )	125.700	157.125	188.550	219.975
Total Costs (Euro)	140.863	145.891	150.919	155.947
Profit	-15.163	11.234	37.631	64.028
Profit%	-12,06%	7,15%	19,96%	29,11%
Profit per to	-2,53	1,50	4,18	6,10

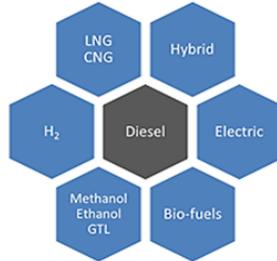


© Prominent 2017

# Fields of action for Danube fleet modernization



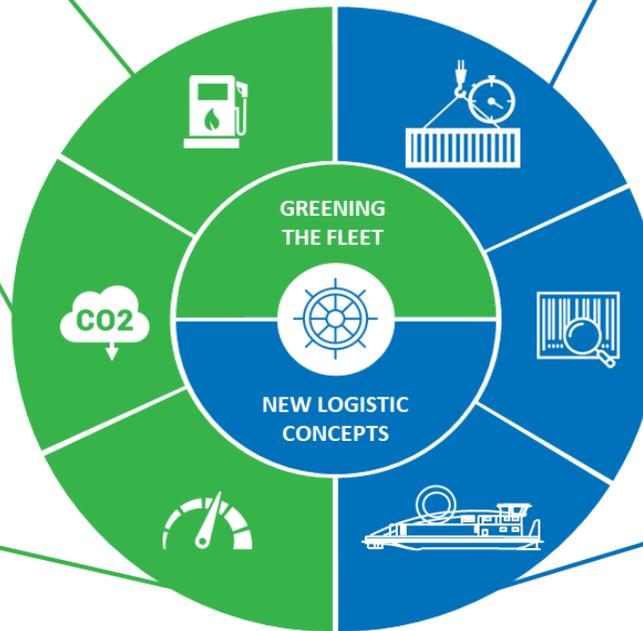
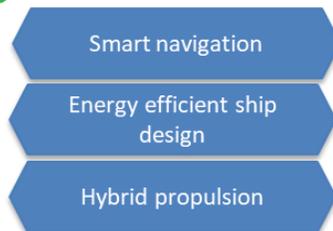
## Use of alternative fuels



## Air pollutant emissions reduction



## Energy consumption reduction



## New logistics concepts



## New cargo flows



## New vessel concepts



# GRENDEL – Project key facts



PARTNERS

## FUNDED PARTNERS

- Fleet owners & operators
- Innovation & technology organisations
- IWT development organisations (industry representatives)
- Education institutes
- Ship design experts
- River commission (Danube Commission)



ASP

## ASSOCIATED STRATEGIC PARTNERS

- Ministries & their implementing bodies
- Other fleet owners & operators



STAKE-HOLDERS

## NON-FUNDED STAKEHOLDERS

- Fleet owners & operators
- Logistics service providers
- Technology providers
- Cargo owners



BUDGET

## 1.8 MEUR

- ERDF contribution: 85%
- IPA contribution: 85%
- State contribution: up to 15%
- Own contribution: up to 15%



TIME

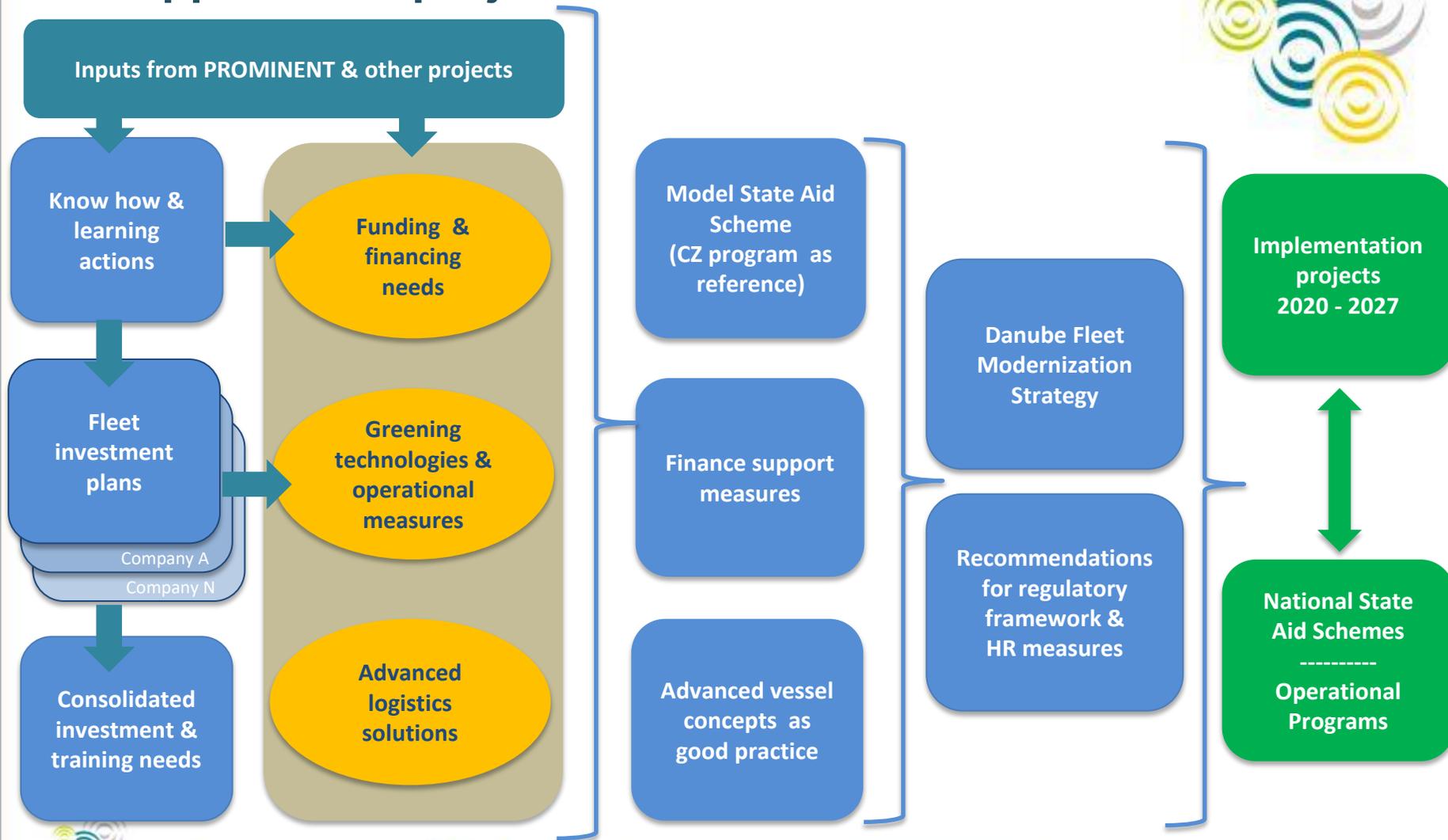
## 06.2018 - 11.2020

- 30 MONTHS



Project co-funded by European Union Funds (ERDF, IPA)

# Work approach in project initiative GRENDEL



# Details on the CZ aid scheme (I)



<b>Duration</b>	Until 31 December 2021
<b>Form of aid</b>	Non-reimbursable direct grant / Cohesion Fund
<b>Beneficiaries</b>	All owners or operators of fleets of <b>inland waterway vessels</b> whose vessels are <b>recorded in the Waterways Register of the Czech Republic</b> , regardless of the nationality of the operator. Only <b>small and medium-sized enterprises (SMEs)</b> are eligible under the scheme. <i>(Estimated number: 11 – 50)</i>
<b>Eligible costs</b>	Reasonable costs of <b>drawing up technical documentation</b> approved by an entity duly authorised to carry out technical inspections of vessels, or by a classification society recognised under EU legislation, constitute eligible costs under all sub-programmes + <i>see previous slide regarding activities/investments</i>
<b>Budget</b>	The overall financial volume: 420 MCZK (= 16,084,700 EUR with exchange rate 25/08/2017) Each sub-programme will be allocated 140 MCZK (= 5,361,580 EUR with exchange rate 25/08/2017)
<b>Co-financing</b>	Sub-programme 1: <u>85% of the eligible costs</u> Sub-programme 2 & 3: <u>85% for small enterprises and 75% for medium-sized enterprises</u>

Limit: all modernisations on a vessel under the aid scheme must not exceed 30% of the price of a new reference vessel (80 MCZK = 3.063.760 EUR). → limit is approx. 1 MEUR

# Objectives & targeted activities



**Reduction of environmental impacts of waterway transport**

Sub-programme 1

Aimed at reducing the environmental impacts of IWT by **reducing emissions of gaseous and particulate pollutants** from internal combustion engines & auxiliary motors, and by implementing other measures with direct environmental benefits.



**Modernisation of vessels to increase multi-modality of freight transport**

Sub-programme 2

Aimed at **increasing the involvement of waterway transport in the multimodal transport chain** by making the vessels more **competitive, operationally flexible and secure** in the context of multimodal transport chain by modernising them



**Modernisation of vessels leading to increased safety of IWT**

Sub-programme 3

## Eligible costs

- **replacing vessels' engines:** the acquisition of low-emission engines and auxiliary motors; directly related subsequent components (e.g. gearbox), & installation
- **converting vessels to a new fuel:** converting vessels to a new fuel (LNG), incl. acquisition of associated technology (both mono- & dual-fuel)
- **remodelling stern of vessels:** acquiring technology for adjusting the shape of a vessel's stern, including its installation & adjustment of the vessel's stern, incl. acquisition of materials;
- **modernising propulsion equipment:** acquiring propulsion equipment components (propeller, nozzle, shaft), incl. installation costs;

## Eligible costs:

- purchasing **lightweight stacking covers** for the hold (cargo compartment), including installation in the vessel
- **raising hatchways**, including the purchase of materials
- horizontally **extending hatchways**, incl. the purchase of materials
- purchasing **transportation frames for passenger cars**
- broadening a vessel (push boats) or prolonging a vessel, incl. materials

## Eligible costs

- fitting vessels with **bow steering equipment**, incl. installation
- purchasing and replacing **outer plating**, incl. replacement of affected vessel parts
- adding **radar** equipment, incl. installation
- replacing the **coating of submerged parts** (outer plating) or providing a new surface finish/protection for these parts
- reconstructing the **electrical wiring** on board, incl. purchase of electrical wiring

# Why public support for Danube fleet modernization?



- Various **studies point to great value for society and to necessity of public interventions** in order to speed-up greening of inland fleet in Europe
- **Limited added value due to NRMM Stage V** as only applicable for new engines from 2019/2020
- **NO legislation for existing vessels** and their engines to bring down pollutant emissions
- **NO incentives & funding programmes** in Danube region yet
- **Hardly any business case for greening solutions** (except for LNG with high oil price scenario)
- Without intervention **ship owners must keep using the old** (polluting and inefficient) **engines**. This results in poor levels of emission reduction over the next decades and persisting high levels of harmful air pollutants (NO<sub>x</sub>, PM) and high CO<sub>2</sub>
- **Danger that old (polluting) vessels pushed out from Rhine** will be transferred to the Danube
- Modernization of Danube fleet must be **coordinated and in line with Western Europe**



LNG-fuelled type C tanker EcoLiner developed by DAMEN within the LNG Masterplan for Rhine-Main-Danube project (2013-2015) © DAMEN



**Thank you for your attention!**

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# GREEN DANUBE

**Integrated transnational policies and practical solutions  
for an environmentally-friendly Inland Water Transport system  
in the Danube region**



**National Workshop on Greening Strategy  
Austria**

**Robert Rafael**

*12 June 2018*

*EUSDR PA1a SG Meeting, Budapest*



**Danube Transnational Programme  
GREEN DANUBE**

Project co-funded by European Union Funds  
(ERDF, IPA)

# GENERAL INFORMATION

- **GREEN DANUBE DTP 1-043-3.1**
- **Priority Axis 3:** Better connected and energy responsible Danube region
- **Specific Objective 3.1:**  
Support environmentally–friendly and safe transport systems and balanced accessibility of urban and rural areas
- **Duration:** 30 months (January 2017 – June 2019)
- **Total Budget:** 1.586.244 EURO
- **ERDF Contribution:** 1.267.897,40 EURO
- **IPA Contribution:** 80.410 EURO



## Danube Transnational Programme



*Priority Area 3: Better connected and energy responsible Danube region*

**Project: GREEN DANUBE**  
Total Budget: 1 586 244 EURO  
ERDF: 1 267 897,40 EURO  
IPA: 80 410 EURO  
ENI: 0 EURO  
Co-finance: 237 936,60 EURO

*Start date*  
01-01-2017  
*End date*  
30-06-2019

A stream of cooperation

 **Interreg**   
Danube Transnational Programme  
**GREEN DANUBE**  
Programme co-funded by the European Union

Integrated Transnational policies and practical solutions for an environmentally-friendly inland Water Transport system in the Danube region

# CONSORTIUM: 10 PPs+6 ASPs of 7 countries



## Partners (PPs)

LP - CER – Romanian Maritime Training Centre, **RO**

1. Pro Danube Management GmbH – **AT**
2. Black Sea - Danube Association of Research and Development – **BG**
3. Inland Navigation Development Centre Ltd – **HR**
4. Development Centre for Ship Technology and Transport Systems – **DE**
5. National Association of Radio Distress-Signalling and Infocommunications – **HU**
6. The Regional Environmental Centre for Central and Eastern Europe – **HU**
7. Danube Delta National Institute – **RO**
8. Association of Cross Border Cooperation „Lower Danube” – **RO**
9. Danube Competence Centre – **RS**

## Associate Strategic Partners (ASPs)

1. Danube Delta Biosphere Reserve Authority – **RO**
2. General Directorate for Water – **HU**
3. Directorate for Inland Waterways – **RS**
4. Danube Commission – **HU**
5. Executive Agency Maritime Administration – **BG**
6. Ministry of Transport – **RO**



# CHALLENGES and APPROACHES



## Challenges:

**Air pollution** in the Danube Region

**Different emissions** due to different *technologies*, *fuels* and environmental **policies**

**Inadequate information** on environment protection

## Approaches:

Contribution to limit impact of IWT on the Danube ecosystem by measurements and impact analysis – **Air Quality measurement**

**Deploying research and inventories** focused on green **technologies**, alternative fuels and sailing behaviour by providing solutions and **Policy Agenda**

**Contribution to raise public awareness** on the impact of IWT on nature **by developing Environmental Information Centres**

# WORK PACKAGE 4 – GREENING STRATEGY



## Greening Strategy for emissions reduction based on possible greening technologies for the Danube Region

- What is it?
- What is the measure suitable for?
- What can be expected?
- What is to be considered?

### Alternative Fuels / Energy Sources

**What is this?**  
In recent years there has been an increase in projects for the use of alternative energy sources such as LNG, Hydrogen (fuel cell), batteries, CNG, LPG and Methanol for ship propulsion.

**What is the measure suitable for?**  
For new built ships and retrofits, as long as the investment in the new technology is reasonable

**What can be expected?**  
The new concepts promise lower emissions and thus an advantage for the environment

**What is to be considered?**  
Most of these concepts require a new infrastructure to be fully established

Source: [4]

The image shows two pages of a questionnaire titled 'Greening Strategy for the Danube Fleet'. The first page asks about the necessity of a greening strategy and the importance of various measures like alternative fuels, energy efficiency, and engine optimization. The second page asks about the most important factors for development and the expected impact of the SCR device.

### Exhaust After Treatment / Catalyst (SCR)

**What is this?**  
The term selective catalytic reduction (SCR) refers to a technique for reducing nitrogen oxides in exhaust gases from internal combustion engines. The chemical reaction at the SCR catalyst is selective, i.e. the nitrogen oxides (NO, NO<sub>2</sub>) are preferentially reduced, while undesired side reactions such as the oxidation of Sulphur dioxide to Sulphur trioxide are largely suppressed. The reaction requires ammonia (NH<sub>3</sub>), which is added to the exhaust gas. The products of the reaction are water (H<sub>2</sub>O) and nitrogen (N<sub>2</sub>).

**What is the measure suitable for?**  
Suitable for most engines.

**What can be expected?**  
The SCR device is able to process the NOx in that the latest EU Emission Regulations can be met, it might even be possible to improve upon this degree of accuracy even more.

**What is to be considered?**

- Collection of operating data prior to design
- Temperature profile
- Thermal load on the engine room
- Often not applicable for very old engines.
- In some countries funding for Exhaust After Treatment devices

Source: [10]

### Exhaust After Treatment / Diesel Particulate Filter

**What is this?**  
The Diesel particulate filter reduces the emissions of carbonaceous particulate matter (PM). This is especially regarding the new NDIRM regulation, a very important aspect for the Greening of the whole European RVT fleet.

**What is the measure suitable for?**  
Suitable for most engines, but those must have a certain exhaust gas pressure. In addition, such systems require a large amount of space, which must be made available in the engine room.

**What can be expected?**  
Diesel particulate filters are able to reduce the amount of particulate matter so that the latest EU Emission Regulations can be met, it might even be possible to improve upon this degree of accuracy even more.

**What is to be considered?**

- Collection of operating data prior to design
- Temperature profile
- Thermal load on the engine room
- Often not applicable for very old engines.
- In some countries funding for Exhaust After Treatment devices

Source: [6]

Interreg Danube Transnational Programme GREEN DANUBE  
Project co-funded by European Union Funds (ERDF, IPA)



## WP 4 - Greening Technologies

- **Output 4.2:** National workshop organised in 7 countries
- **Contribution to project specific objectives:**  
1 national workshop organized in each of the 7 project countries for **presentation of pollutant emissions reduction solutions**, including **joint testing of Toolkit for innovation** and to contribute to **information sharing on existing possibilities for greening**.
- **Austria:** 18 April 2018

# Agenda

## WORKSHOP ON MODERNISATION OF DANUBE VESSELS FLEET

9:00 – 9:30	Registration & Coffee
9:30 – 10:00	<b>Welcome &amp; policy framework</b> <i>Pro Danube Management (Manfred Seitz)</i> <i>EUSDR PA1a – Working Group on fleet modernisation (Juha Schweighofer, via donau)</i>
10:00 – 10:30	<b>Inland vessel modernisation projects &amp; initiatives</b> <i>PROMINENT (Jaap Gebraad, STC)</i> <i>GREEN DANUBE (Markus Eppich, Pro Danube Management)</i> <i>INDanube (Lucia Karpatyova, Pro Danube Management)</i>
10:30 – 11:00	<b>Non-Road Mobile Machinery (NRMM) Directive</b> <i>Introduction to the requirements for the IWT sector &amp; greening strategies and alternative fuels in the Netherlands (Khalid Tachi, EICB)</i>
11:00 – 11:30	<b>Greening technologies and tools supporting decisions of vessel fleet owners</b> <i>Assessment of greening technologies for IWT sector (Juha Schweighofer, via donau)</i> <i>Tools for emission and fuel consumption reduction of inland vessels (Erwin van der Linden, EICB)</i>
11:30 – 12:15	<b>Diesel &amp; diesel after-treatment solutions</b> <i>Projects and experience on the Rhine (Sebastiaan Creten, Multronic)</i> <i>Marinised EURO VI Stage V engines - equivalent to Stage V NRMM (Sander Langenberg, Vink Diesel)</i> Q&A
12:15 – 13:15	Lunch break
13:15 – 13:45	<b>LNG Infrastructure built-up in the Danube region</b> <i>Availability of LNG &amp; LNG fuelling infrastructure in the Danube countries (Manfred Seitz, Pro Danube)</i> <i>fuelCNG: L-CNG infrastructure in Slovakia (Peter Mozolak, SPP)</i> <i>LNG Hub Austria: L-CNG infrastructure in Austria (Thomas Plessnitzer; Rohöl-Aufsuchungs AG)</i>
13:45 – 15:45	<b>LNG solutions for new-build and retrofit</b> <i>Mono-fuel gas engines (Klaus Poepfel, MTU)</i> <i>Dual-fuel gas engines (Krzysztof Czerski, Wärtsilä)</i> <i>First-hand experience with LNG as fuel for inland vessels: "MS Ecoliner" (Simon Provoost, DAMEN)</i> Q&A
15:45 – 16:15	Coffee break
16:15 – 16:45	<b>Funding &amp; financing for inland vessels modernisation and greening</b> <i>National support schemes &amp; EU funding options (Lucia Karpatyova, Pro Danube Management)</i>
16:45 – 17:00	<b>Feedback round and discussions</b> <i>Moderated by Manfred Seitz (Pro Danube)</i>



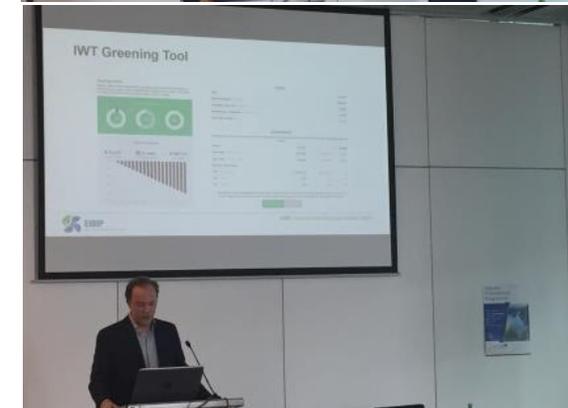
Danube Transnational Programme  
GREEN DANUBE

# National Workshop Austria



## NRMM STAGE V Regulation

# National Workshop Austria



Tools supporting decisions of vessel fleet owners

# National Workshop Austria



Damen Shipyards “Ecoliner”;  
Multronic diesel aftertreatment;  
PROMINENT greening technologies



Project co-funded by European Union Funds (ERDF, IPA)

# National Workshop Austria



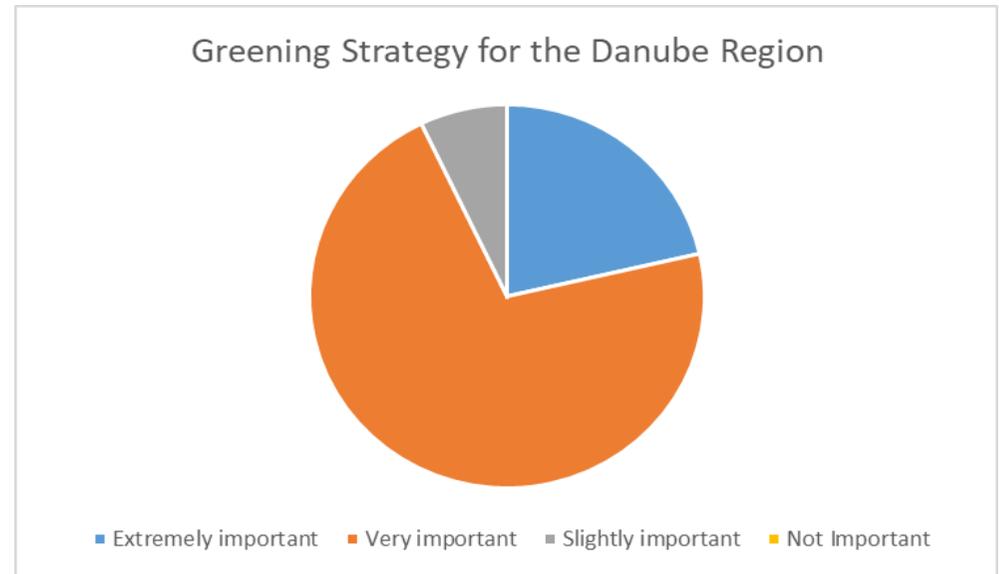
# Green Technologies Survey





# Green Technologies Survey – **First Results** [N:14]

- How necessary would you rate a consolidated Greening Strategy for the Danube Fleet?
  - Extremely important: 3
  - Very important: 10
  - Slightly important: 1
  - Not Important: 0

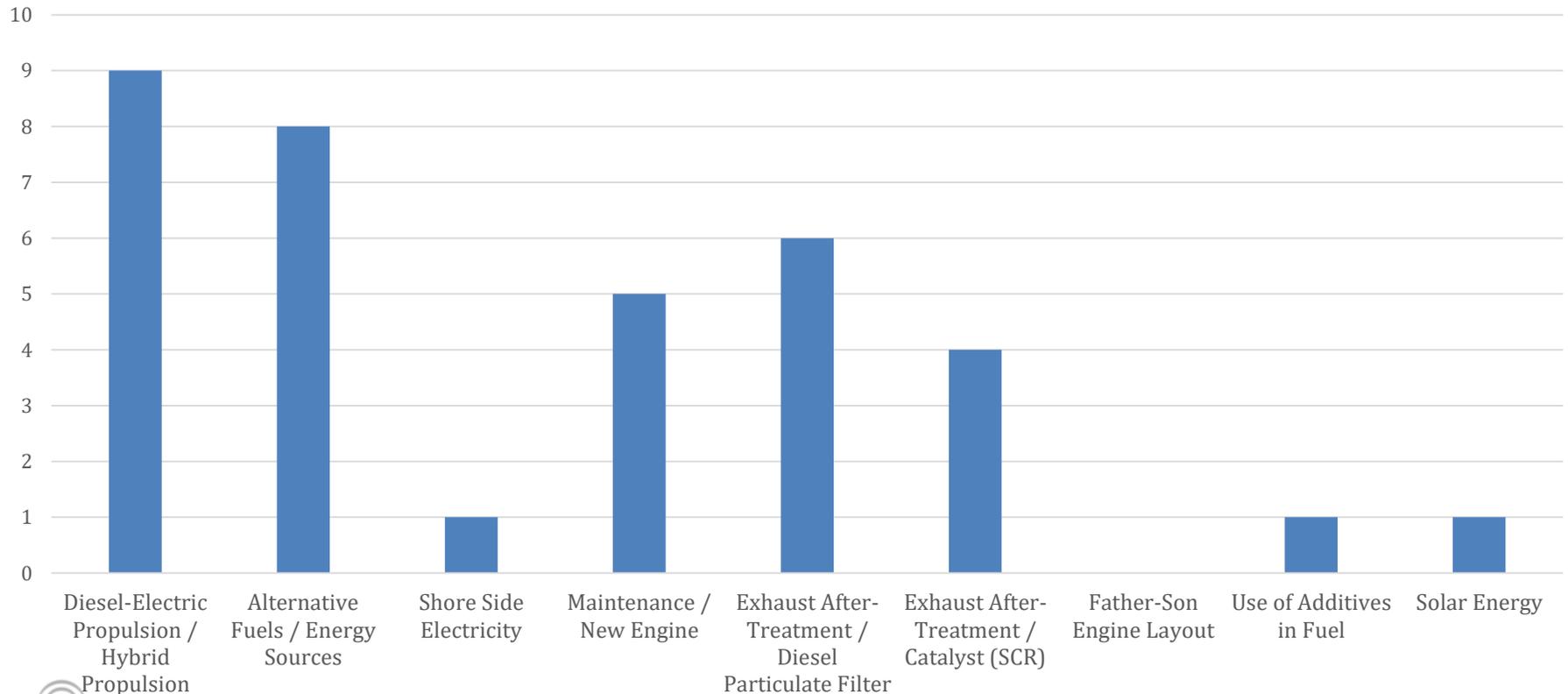




# Which of the proposed technologies do you consider to be useful for application on the Danube?



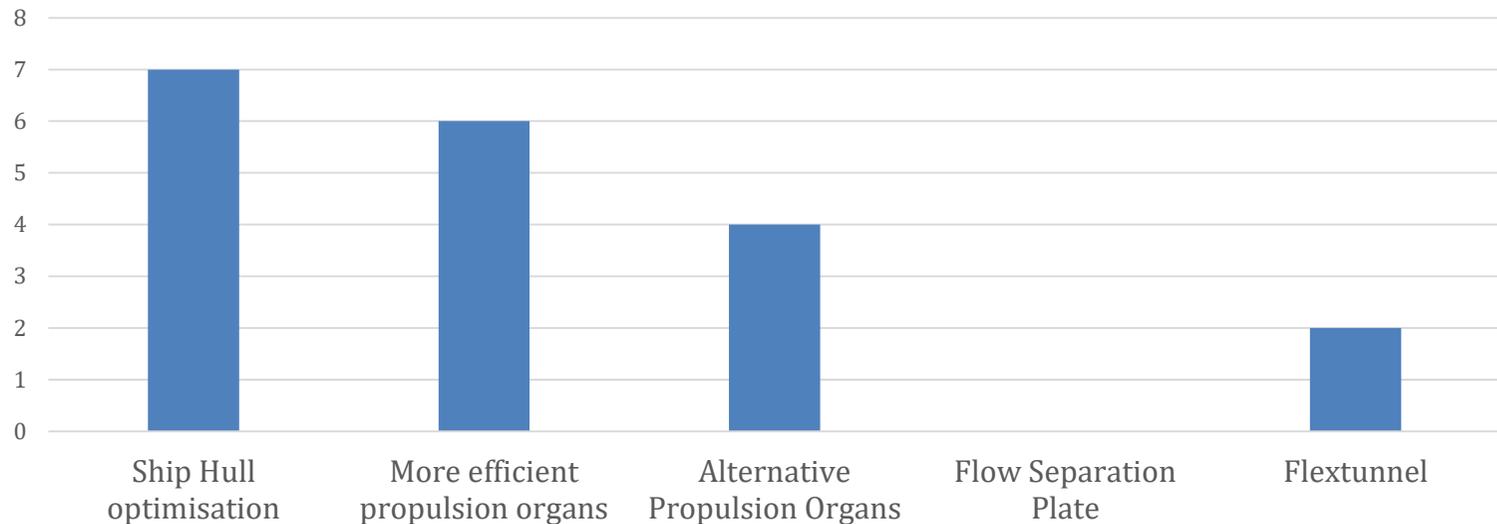
## Engine Technology



# Which of the proposed technologies do you consider to be useful for application on the Danube?



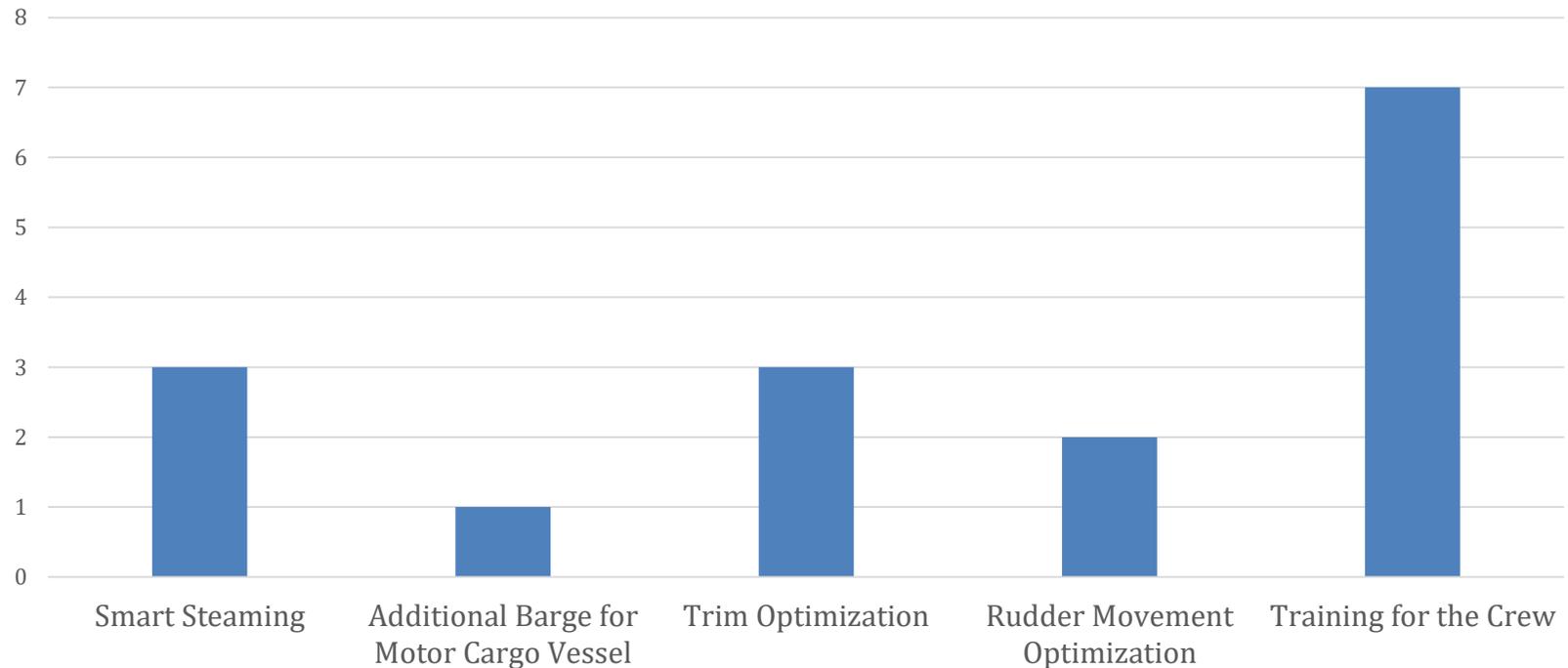
## Hydrodynamics



# Which of the proposed technologies do you consider to be useful for application on the Danube?



## Operational Measures



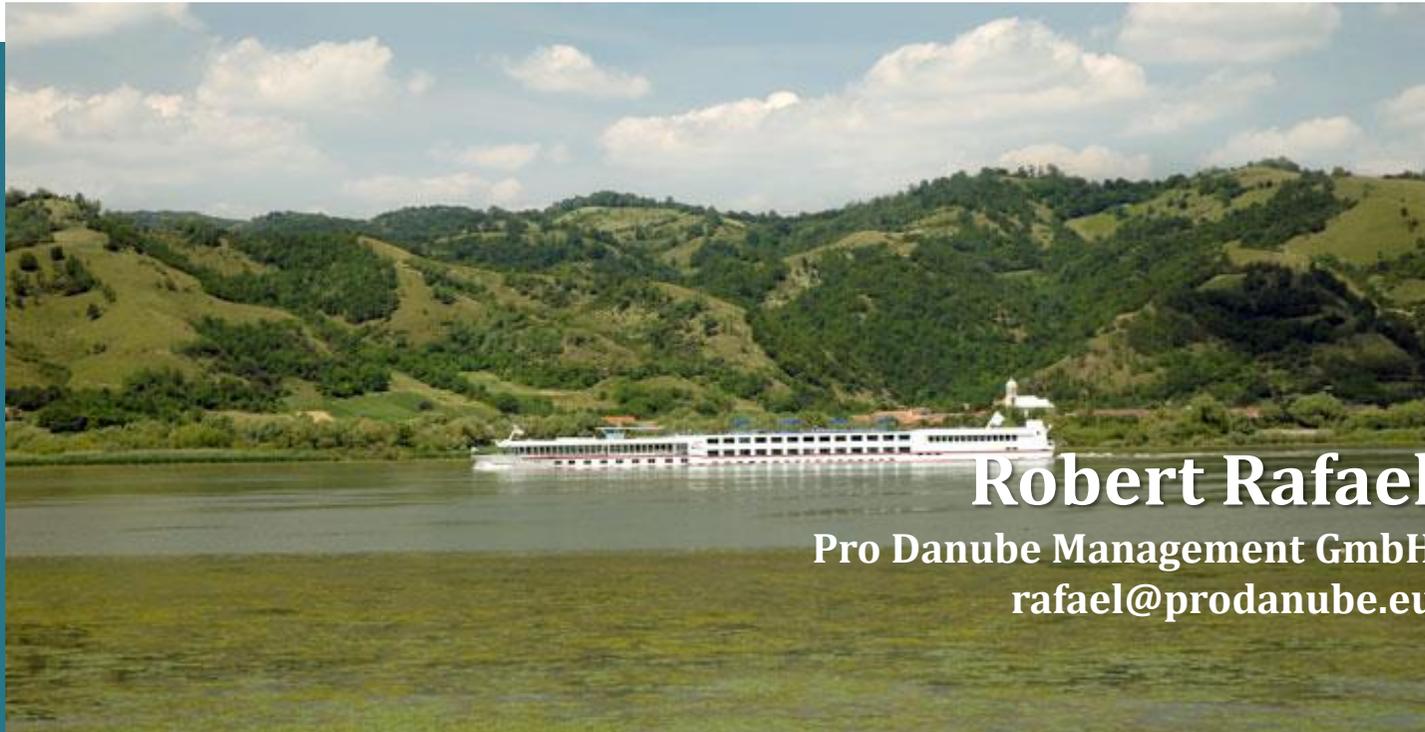


## Green Technologies Survey – **First Results** [N:14]

- Further results of survey:
  - **Greening Tool** was rated very good
  - **Potential of the Danube Fleet** in terms of renewal and env. friendliness:  
rather low / potential in the future
  - **Most important factors** for IWT on the Danube: **Costs / ROI**



Danube Transnational Programme  
**GREEN DANUBE**



**Robert Rafael**

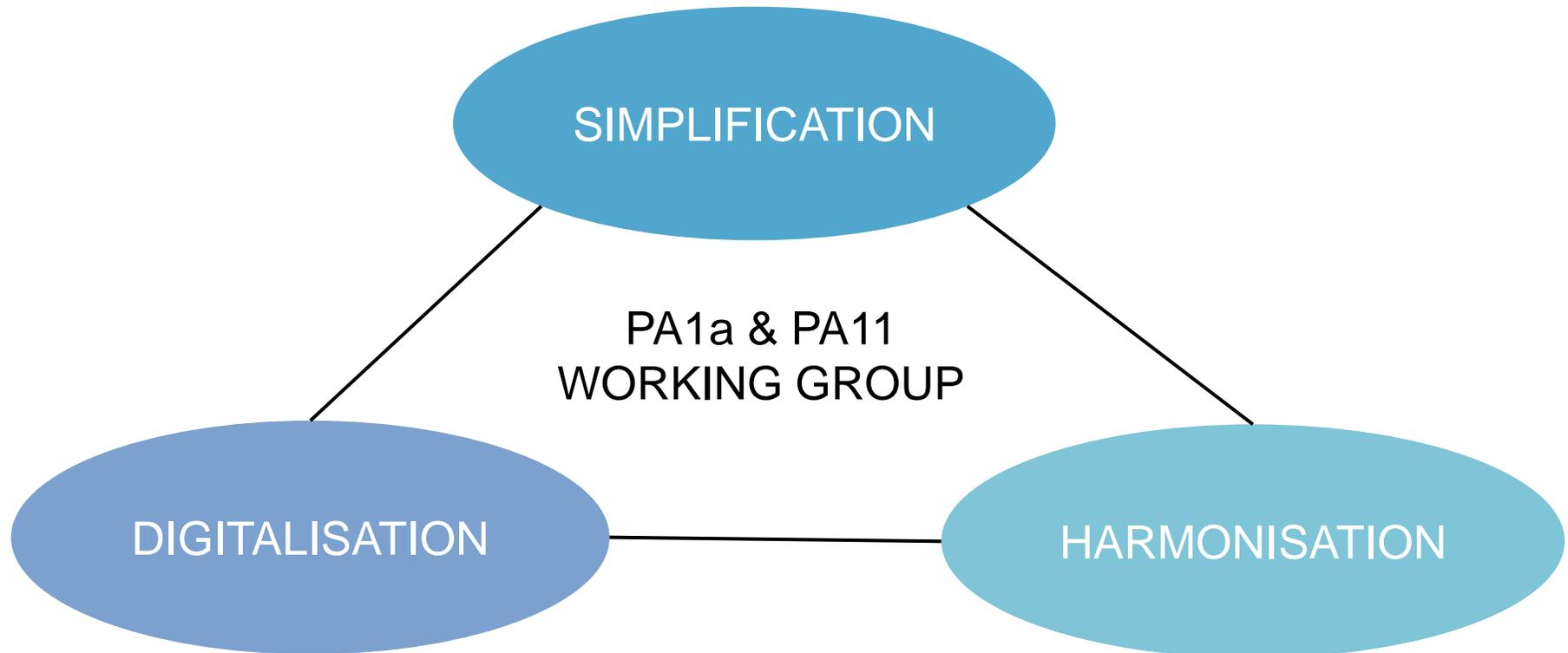
Pro Danube Management GmbH  
rafael@prodanube.eu

Project co-funded by the European Union Funds (ERDF, IPA)

# Reports on Working Group 6 – Administrative Processes

Report on joint PA1a/PA11 Working Group by viadonau

# Rationale for joint working group between PA1a/PA11



# Implementation of targeted measures for improved border controls



## Simplification

“Control procedures should be merged or aligned and the number of procedures reduced to those that are economically justified, with a view to increasing the competitiveness of business.” **Community Customs Code, Regulation (EC) No 450/2008**

- Avoid duplication/multiplication of work for ship crews (multiple requests for data, multiple forms, multiple controls)
- Elimination of requests for data which does not have any specific purpose in the control process
- Clearly structured and self-explaining control procedures
- Adequate guidance for shipping companies and crews (e.g. manuals)

# Implementation of targeted measures for improved border controls



## Harmonisation

- International standardisation of data requests, forms and processes leads to more efficient and effective border controls:
  - faster procedures for vessels complying with laws and requirements
  - easier identification of vessels not complying with law and requirements through cross-border collaboration
- Further European integration and economic development is only possible if same rules apply all along the Danube (same river-same rules)

# Implementation of targeted measures for improved border controls



## Digitalisation

- Impulses for transparent, effective and efficient border control procedures through digitalisation
- Benefits for border control authorities through simplified data exchange
- Benefits for shipping companies/ship crews and control authorities as time for administrative tasks can be substantially reduced (predefined/default data, avoidance of paperwork, efficient procedures through new electronic solutions)

# Working Group PA1a/PA11 is 1 out of 6 TEN-T Corridor Flagship Projects

Transport policy objective	Flagship project's specific objective	Core network corridors
Pilot action on digital transport and logistics	Promoting the collection and sharing of data needed to enable smart and efficient freight logistics (across all transport modes), and ensuring interoperability of such data. This project builds on and interacts with the work of the Digital Transport Forum	Considerations started with the Scandinavian – Mediterranean Corridor but action is encouraged on all corridors
Towards digitalisation of administrative processes on inland waterways	Simplifying and harmonising administrative processes of relevant public authorities; thereby preparing for digitalisation of such processes for inland waterway transport	Danube Corridor

- Launched during TEN-Days in Ljubljana on 26 April 2018





## Priority Area 1a

### CONTROL FORMS

M01,M02,M03,M11,M16

### GUIDANCE FOR SHIPPING COMPANIES

M05,M11

### CONTROL PROCESSES

M07,M08,M18,M19,M20



## Priority Area 11

### CONTROL DATABASE

M17

### DEPLOYED CONTROL PERSONNEL

M04,M09,M10

### TRANSPARENCY & GOOD GOVERNANCE

M06,M12,M13,M15

# Control forms



- Danube Navigation Standard Forms (DAVID) adapted to the feedback received in consultation phase with working group members (until December 2017)
- Final discussion on 24 April 2018 at the occasion of the joint Working Group meeting in Karlsruhe
- Agreement on technical level regarding the three proposed DAVID forms:
  - Arrival and departure report
  - Crew list
  - Passenger list

## Implementation strategy and next steps

1. **April 2018:** Agreement on technical recommendations on working group level (on selected issues such as DAVID forms)
2. **June 2018:** Presentation on Steering Group level (PA1a and PA11) as regards the technical proposals of the joint working group PA1a/PA11
3. **July 2018:** Inclusion of the theme of administrative barriers in ministerial conclusions (Danube Transport Ministers), to be endorsed on 3<sup>rd</sup> December 2018, prepared by PA1a in conjunction with DG MOVE / REGIO and the incoming Austrian EU Presidency
4. **July 2018:** Preparation of path towards anchoring of technical results in EU legislation together with DGs MOVE and HOME / DIGIT, including a possible complementary project in which the implementation steps are being elaborated/piloted

# Reports on Working Group 5 – Education & Jobs

Update on strategy for implementing Directive 2017/2379

*Increased institutional capacity in Danube navigation by boosting joint transnational competences and skills in education and public development services*

# **Update on Strategy for implementing the EU Directive 2017/2397 on the recognition of professional qualifications in inland navigation**

**Doina Munteanu/CERONAV**  
*Senior Expert / Coordinator Danube SKILLS*  
**Ghiuler Manole/CERONAV**  
**Project Manager Danube SKILLS**

**14<sup>th</sup> meeting of the PA1a Steering Group**  
12th June 2018, Budapest

## Adoption of the EU Directive

- **12 December 2017** – adopted by the European Parliament;
- **27 December 2017**- published in the Official Journal of the European Union;
- coming into force on the 20th day following that of its publication in the Official Journal of the European Union – **17 January 2018.**



## European Commission responsibilities

The Commission shall adopt the implementing and delegated acts referred to in the EU Directive by **17 January 2020**.



## Member States obligations

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this EU Directive by **17 January 2022**.



## Adoption of the EU Directive

The EU Directive was adopted in order to:

- streamlining the legal framework;
- increase mobility of workforce;
- increase safety of navigation;
- recognition of qualifications on the competence-based approach.



## **Member States obligations**

Transposition of EU Directive into national laws

**Article 288 of the Treaty of EU:** all the Member States must transpose the EU Directive provisions into the national laws,  
that means to put the provisions of the Directive into their national legal system.



## **Obligations of education, training and certification institutions**

Implementation of the legislative provisions into the existing education, training and certification system of inland navigation personnel- next step after the transposition.



# **Implementation of EU Directive provisions Danube riparian countries supported by:**

- I. Danube SKILLS project activities and results**
- II. CESNI activities and results**
- III. EDINNA activities**



# I. Danube SKILLS project activities and results

## Output 3.1- Public consultation and train the trainer sessions

**Public consultation** workshops with relevant stakeholders in 8 Danube Riparian countries were organized in 2017 in order to promote the new EU Directive and take stock of current legal framework in each country. In Romania the public consultation was organized by CER in Galati and where also representatives from Ukraine and Republic of Moldova were invited.

*Useful result for the promotion of the EU Directive provisions and to raise awareness of the most relevant stakeholders and policy decision makers.*



# I. Danube SKILLS project activities and results

**Elaboration of didactical materials and organization of the Train the trainer sessions intended to transfer knowledge of two transnational model courses:**

- 1. Safety practices in emergency situations during ship operation- Operational level- Constanta/RO February 2018;**
- 2. Human resource management and social responsibility on board- Management level- Bratislava/SK-September 2018.**



# I. Danube SKILLS project activities and results

## **Train the trainer session on Safety practices in emergency situations during ship operation- Operational level, in Constanta/RO**

**Organized** based on the internal procedures for deployment safety training courses in CER, and on the course compendium and other teaching aids, developed in Act. 3.2.

**During the practical application** of this training session a short movie was made.



# I. Danube SKILLS project activities and results

## **Train the trainer session on Safety practices in emergency situations during ship operation- Operational level, in Constanta/RO**

The course compendium and the short movie can be downloaded from InfoDanube website at the following addresses:

<http://www.infodanube.ro/proiecte/SAFETY%20OF%20WORK%20COMPENDIUM.pdf>

<https://www.youtube.com/watch?v=8uoXJbIEfts>



# I. Danube SKILLS project activities and results

## Outputs 3.2- Transnational tools and implementation methods

These outputs consist in two transnational model courses including innovative competency-based syllabus built on the CESNI Standards of competence, didactical methods, course compendia, evaluation methods, e-learning components and a transnational implementation method including a detailed roadmap for the approval of training programmes.

*Useful tools for education and training institutions from the Danube region during the Implementation of the legislative provisions into the existing education, training and certification system of inland navigation personnel.*



# I. Danube SKILLS project activities and results

## Output 3.3- Pilot tests of two model courses

The output consists in organization of **pilot actions on the two model courses in 8 Danube riparian countries** to test the capacity of the Danube riparian country to adopt these transnational learning tools and implementation methods

*This output offers them the guidelines needed to align their organizational structures and current practices and procedures to the new EU Directive provisions.*



# I. Danube SKILLS project activities and results

## Output 5.1- Policy support strategy for nautical education

**First step- Transnational gap analysis and impact evaluations of nautical qualifications in the Danube Region** – identification of the existing gaps in the Danube Region with regard to the implementation of the EU Directive in the existing education, training and certification system of inland navigation personnel.

**General conclusion:** implementation of the provisions of the EU Directive in the education, training and certification systems of Danube riparian countries can be done in due time but step by step, depending of the available resources and the number of people interested in pursuing a professional career in the field.



# I. Danube SKILLS project activities and results

## Output 5.1- Policy support strategy for nautical education

### Second step- Policy Support Strategy for Nautical Education

The content of the strategy is focused on:

- Roadmap for the transposition of the EU Directive into the national laws;
- Roadmap for the implementation of the new legislation into the existing education, training and certification system of inland navigation personnel
- Human resource planning
- Risk assessment and management.

Based on this Strategy **Action Plan** will be developed an which shall break the strategic goals and objectives of the new legislative framework implementation, into specific actions.



## II. CESNI activities and results

**Art. 36 of EU Directive-** The Commission shall adopt **delegated acts** referred to in Article 17(1) and (4), Article 21(2), Article 23(6) and Article 25(1) and (2) by **17 January 2020**.

*The Commission shall adopt delegated acts by laying down the standards for competences and corresponding knowledge and skills in compliance with the essential requirements set out in Annex II.*



## II. CESNI activities and results

The Commission shall adopt **implementing acts** referred to Article 11(3), Article 18(3) and article 22(4) by 17 January 2020.

*The Commission shall adopt implementing acts establishing models for Union certificates of qualification, models for practical examination certificates and models for Service Record Books and Log Books.*



## II. CESNI activities and results

**CESNI-** European Committee for drawing up Standards in Inland Navigation – Created at CCNR’s plenary session in **June 2015**.

**CESNI/QP-** working group on professional qualifications- created by CESNI Resolution 2015-I-2.

**CESNI/QP/Comp-** temporary working group on professional qualifications- created by CESNI Resolution CESNI 2016-II-4.



## II. CESNI activities and results

**The purpose** of CESNI is to bring together experts from the Member States of the European Union and the CCNR and other River Commissions and representatives of international organisations with an interest in inland navigation.

**Main mission** - adopting technical standards in various fields, in particular as regards vessels, professional qualification, information technology and crew members certification.



## II. CESNI activities and results

The following categories of Standards will be part of the EU Directive, as **delegated acts, 18 months from the adoption (July 2019):**

- 1. Standards for competences;**
- 2. Standards for simulators;**
- 3. Standards for practical examination;**
- 4. Standards for medical fitness.**

*On 10 April 2018, all these standards have been submitted by CESNI/QP to CESNI for analysis and approval during the meeting in November 2018.*

*CERONAV already informed the project partners on this issue and advised them to use the content of the standards for development of the new education and training programmes.*



## II. CESNI activities and results

### European Commission support

To support implementation of the EU Directive 2017/2397 into the national legislation of Member States, **DG MOVE will provide until November 2018 a coordination procedure** at the level of European Council, to coordinate the Member States on issues that arise during the implementation of the EU Directive.



## II. CESNI activities and results

### River Commission support

To support implementation of the EU Directive 2017/2397 into the national legislation of Member States, **at the request of European Commission**, CCNR- Central Commission for the Navigation on the Rhine, the Danube Commission and the Sava River Basin Commission will provide for their Member States, specific **Crew Regulations** for navigation on the Rhine, on the Danube and on the Sava river and other important waterways which are under the coordination of Sava River basin Commission.



### III. EDINNA activities

**EDINNA** is the educational network of inland waterway navigation schools and training institutes. It was officially **founded in February 2009** as an Association according to Dutch Law and is registered at the Chamber of Commerce in Rotterdam.

Besides organizational matters, a **strong focus is put on the aim of harmonizing European inland navigation education and training.**

The EDINNA General Assembly votes for an **EDINNA Board** consisting of the President, the Vice-President, the Secretary, the Treasurer and two Advisory Officers.

Since the foundation of EDINNA, CERONAV was represented in the Board in the positions of Advisory officer and Vice president.



### III. EDINNA activities

**EDINNA** was actively involved in the **elaboration of Standard for competence** since the implementation of PLATINA 1 project and after.

**EDINNA is CESNI member and strategic partner in Danube SKILLS project.**



## **III. EDINNA activities**

### **EDINNA activities during the General Assembly in May 2018, Harlingen –Netherlands**

#### **First day of the meeting**

1. Presentation of the latest activities intended for the implementation of the EU Directive 2017/2397 in the Danube region - CERONAV
2. EDINNA activities in CESNI Committee – EDINNA chairman
3. Awareness of members on the provisions of EU Directive 2017/2397 for the implementation of which there are still some obstacles- EDINNA chairman
4. Presentation of a representative of the Ministry of Transport from Netherlands on the transposition and implementation of the EU Directive



### III. EDINNA activities

## EDINNA activities during the General Assembly in May 2018, Harlingen –Netherlands

### Conclusions of the first day of the meeting:

- Preparation of the education and training programmes has to start immediately based on the available final draft of Standards of competence – the changes will be minor after the approval by European Parliament;
- In order to be able to issue the Union certificate of qualification for graduates, educational programmes lasting 3 years, have to be approved not later than 2019;
- Elaboration of educational and training programmes shall consider the Standards for competence but also the technological progress in Inland Water Transport- the members were invited to refer to the innovative competences which can be added.

*Each member received a book with EU Directive text and final draft of Standards submitted for approval to CESNI.*



### **III. EDINNA activities**

## **EDINNA activities during the General Assembly in May 2018, Harlingen –Netherlands**

#### **Second day of the meeting**

Starting from the obstacles which can be occur during the implementation of the EU Directive 2017/2397, EDINNA members were invited to refer to these problems in each country.



### **III. EDINNA activities**

## **EDINNA activities during the General Assembly in May 2018, Harlingen –Netherlands**

### **Conclusions of the second day of the meeting**

The most important problems identified by EDINNA members are:

- lack of cooperation between Ministry of Transport and Ministry of Education;
- framing of educational programs into the qualification levels established by law- the responsibility lies with the National Authority of Qualifications;
- education and training institutions are not yet contacted by the designated national authority to send them new responsibilities;
- lack of education and training institutions in some of the countries and lack of interest for inland navigation sector of the designated authorities.



## **CERONAV further involvement**

**Continuing involvement and/or participation in:**

**CESNI** expert groups- standardisation in IWT;

**EDINNA** Association- harmonisation of education and training of inland navigation personnel;

**Expert Group on Social issues** in inland navigation- standard on digital data base on professional certificate of qualifications in IWT;

**EUSDR Priority Areas Coordination**- state of play of skilled workforce in Danube Region.



## CERONAV further involvement

- *to be aware of the direction of action of European Commission in the development of the IWT sector, and*
- *to contribute to EUSDR Priority Areas and its actions and/or targets .*



## **CERONAV further involvement**

**CERONAV will follow CESNI Working Programme for 2018 and 2019-2021 which is focused mainly on:**

- innovative competences for inland navigation personnel;
- development of an eco-efficient navigation;
- development of competences for Basic Safety training;
- quality assurance system to monitor the quality of training and examination;
- standards for recognition of IWT education and training institutions.



## **CERONAV further involvement**

### **INNOVATIVE SKILLS project application** (Project leader –CERONAV)

#### **Main objectives:**

- Aligning knowledge and skills of inland navigation personnel with current and future labour market requirements;
- Promote entrepreneurship for Danube navigation businesses among youth and adults.



## **CERONAV further involvement**

**GRENDEL project- Green and efficient Danube Fleet,**  
will contribute to overcoming major innovation obstacles.

**CERONAV is involved as partner.**



# QUESTIONS ?





Danube Transnational Programme  
**Danube SKILLS**

**Thank you for your attention!**



■ Danube Transnational Programme area

**Doina MUNTEANU**  
**Ghiuler MANOLE**  
**CERONAV/RO**

Email: [doinamunteanu@ceronav.ro](mailto:doinamunteanu@ceronav.ro)  
[ghiulermanole@ceronav.ro](mailto:ghiulermanole@ceronav.ro)

[www.interreg-danube.eu/danube-skills](http://www.interreg-danube.eu/danube-skills)

Project co-funded by the European Union

# Reports on Working Group 4 – River Information Services

Report on project „Enhance the Efficiency of Hungarian  
RIS Operation“ by RSOE



# Enhance the Efficiency of Hungarian RIS Operation

Csaba Kovács  
CEO

12 June 2018

# Project facts

Name: Enhance the **E**fficiency of **H**ungarian **RIS O**peration

Abbrivitaion: **HERO project**

Duration: from 01.03.2015 – 31.05.2018

Net project cost: 4.048.443.922,- HUF

Project funding:                   50% - CEF – Connecting Europe Facility  
  50% - national budget

Beneficiary: Ministry of Innovation and Technology

Implementing body: RSOE

Project identifier: 2014-HU-TM-0619-W



Európai  
Hálózatfinanszírozási  
Eszköz



**BEFECTETÉS A JÖVŐBE**

# Enhancement and modernisation of VHF/AIS services

**11 fully redundant AIS physical shore stations**

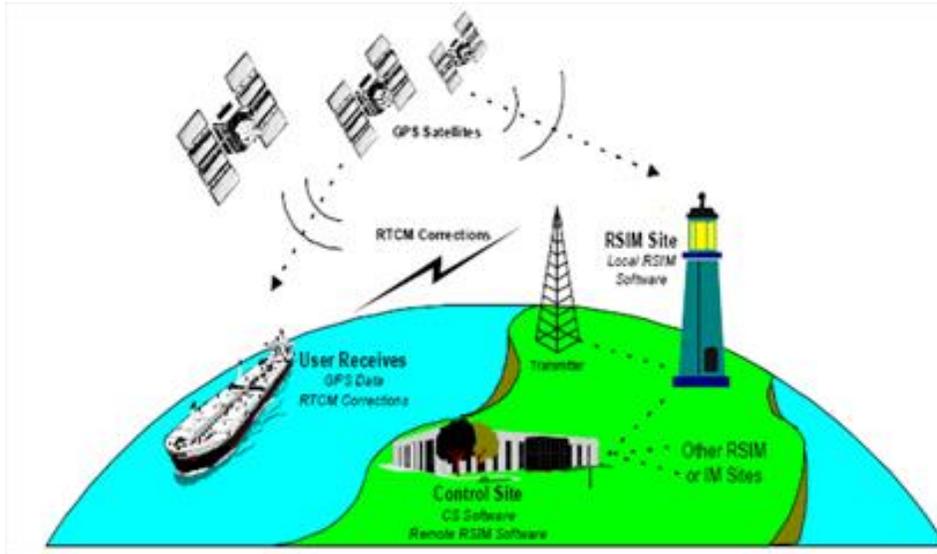
**Full coverage of VHF network on channel 16, channel 22 for communication**

**Refurbished data network**

**AIS central monitor**



## Differential positioning system - DGNSS



**Identification of position values within 1m to assist a more accurate analysis of navigation events along the entire Hungarian section of the River Danube**



## Radar and camera system to monitor inland navigation



**Installation of 7 riverside radar stations at the most relevant positions**

**Installation of 14 cameras at the critical sections, bridges and bottlenecks**

## Deployment of 15 meteorological sensors

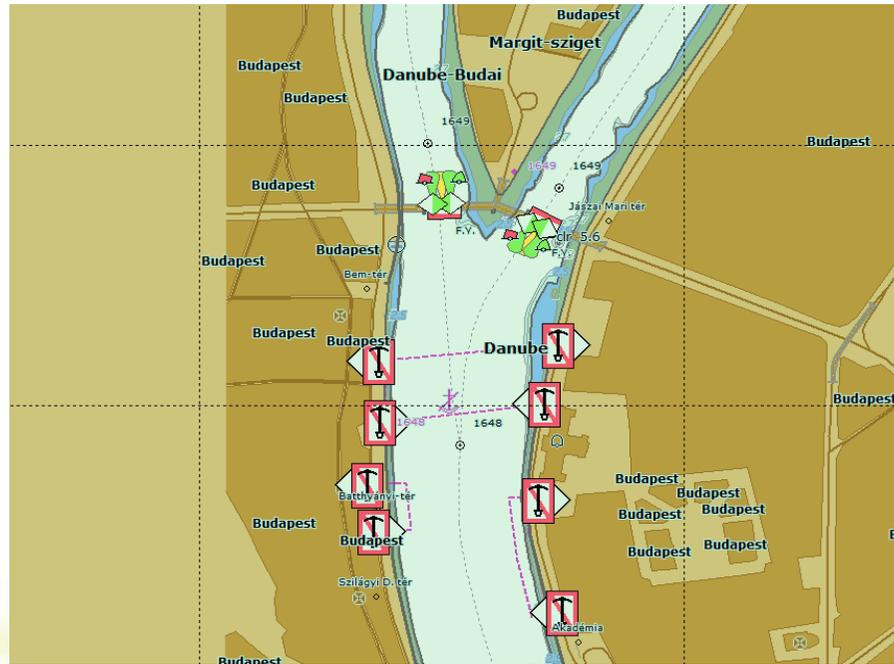
- **wind**
- **humidity**
- **temperature**
- **visibility sensors**

**Provide information real time**



# Riverbed survey and electronic navigation map update

- **Survey of the entire Hungarian section of the River Danube**
- **Completion of electronic navigation map according to the IENC 2.3 standard**
- **Development of updating methodology**



# Modernization and automation of water level gauges at 25 sites

- **Refurbishing water level indicators**
- **Water temperature sensors**
- **Installation of meters suitable for automatic measurement**
- **Implementation of data transmission system to inform skippers in real time**

**Provide real time data**

**Publicated in every hour**



## Remote monitoring system

**VTS – Integrated traffic monitoring software**

- **RIS radio services**
- **AIS system**
- **Radar and camera system**
- **Meteorological sensors**
- **Differential positioning system**
- **Automation water level gauges**

- PannonRIS public interface**
- **Website**
  - **Mobil app**

# VTS functionality



## Vessel Tracking and Tracing (VTT)



Near real-time display of all relevant data over chart areas. Developed to support touch screen functions, is intuitive and user-friendly



## Monitoring and alerting

Electronic ENC chart overview and alarms to support the operator of the overall situational awareness traffic situation. Flexible configurable early warning/alerting system that advices on possible dangerous situations. Generates predefined messages based on templates (NTS, ERI, NW, NM)

# VTS functionality



## Notice to Skippers (NtS)

Ready to provide information to skippers regarding the state of the inland waterway infrastructure (fairway and traffic information) according to NtS 4.0

Automatic translation of the most important content of notices with a standardized structure and using standard vocabulary in combination with code lists.



## AIS messaging

Standard AIS messaging functionalities in addition to sensor fusion (AIS+Radar)

# VTS functionality

Incident Management

Waste Management

Vessel Registry



Statistics

Playback



Térképek  
letöltése



Fel

- Vízállás
- Zárlatok
- Gázlok és szűkületek
- Jégjelentések
- Hirdetmények
- Meteorológia
- Szabad űrszelvények
- Aktuális hírek
- Műtárgyak (hidak)
- Jogszabályok
- Zsílipek
- Kikötők
- Hatóságok
- Tudástár
- RIS általános leírás



Térképek  
letöltése



Feliratkozás

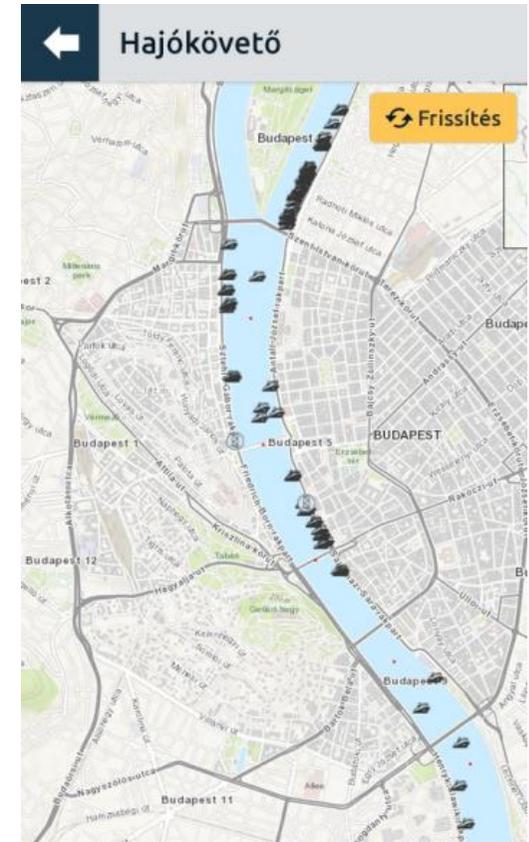


## Mértékadó vízállások

Vízmérce	Aktuális vízállás [cm]	Dátum
RAJKA	61	2018. 05. 29 17:00
DUNAKILITI DUZZASZT...	1322	2018. 05. 29 21:00
DUNAKILITI DUZZASZT...	868	2018. 05. 29 21:00

További információk > << < 1/9 > >>

### Gázlok, szűkületek a Duna magyarországi szakaszán





# National Association of Radio Distress-Signalling and Infocommunications

## Thank you for your attention!

**Csaba Kovács**  
CEO  
[saba.kovacs@rsoe.hu](mailto:saba.kovacs@rsoe.hu)

# Reports on Working Group 1 – Waterway infrastructure and management

Report on National Action Plans – status June 2018

# Fairway Rehabilitation and Maintenance Master Plan

for the Danube and its Navigable Tributaries

## National Action Plan Update May 2018

# National Action Plan Update May 2018

## Participation in the May 2018 Update:

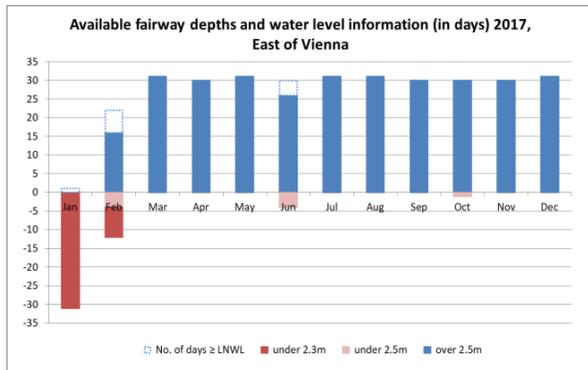
- Germany ❌ (NAP Update will be provided by **August 2018**)
- Austria ✔
- Slovakia ✔
- Hungary ❌ (NAP Update will be provided latest by **29<sup>th</sup> June 2018**)
- Croatia ✔
- Serbia ✔
- Bosnia and Herzegovina ❌ (no reply)
- Romania ✔
- Bulgaria ✔
- Moldova ❌ (no reply)
- Ukraine ❌ (NAP Update will be provided latest by **29<sup>th</sup> June 2018**)

# Upper and Central Danube

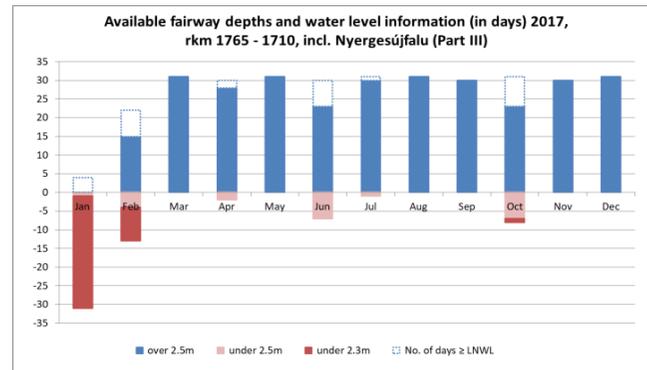
- **Fairway conditions**
- **Major steps for the implementation of the Master Plan**

# Fairway situation at the Upper and Central Danube in 2017

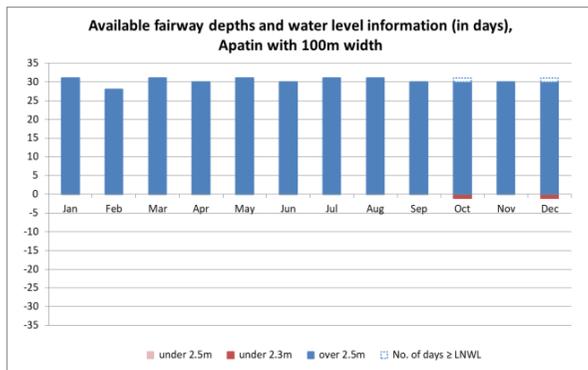
## Austria



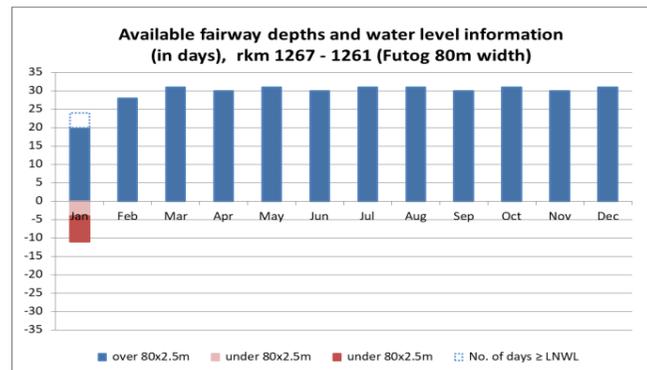
## Slovakia



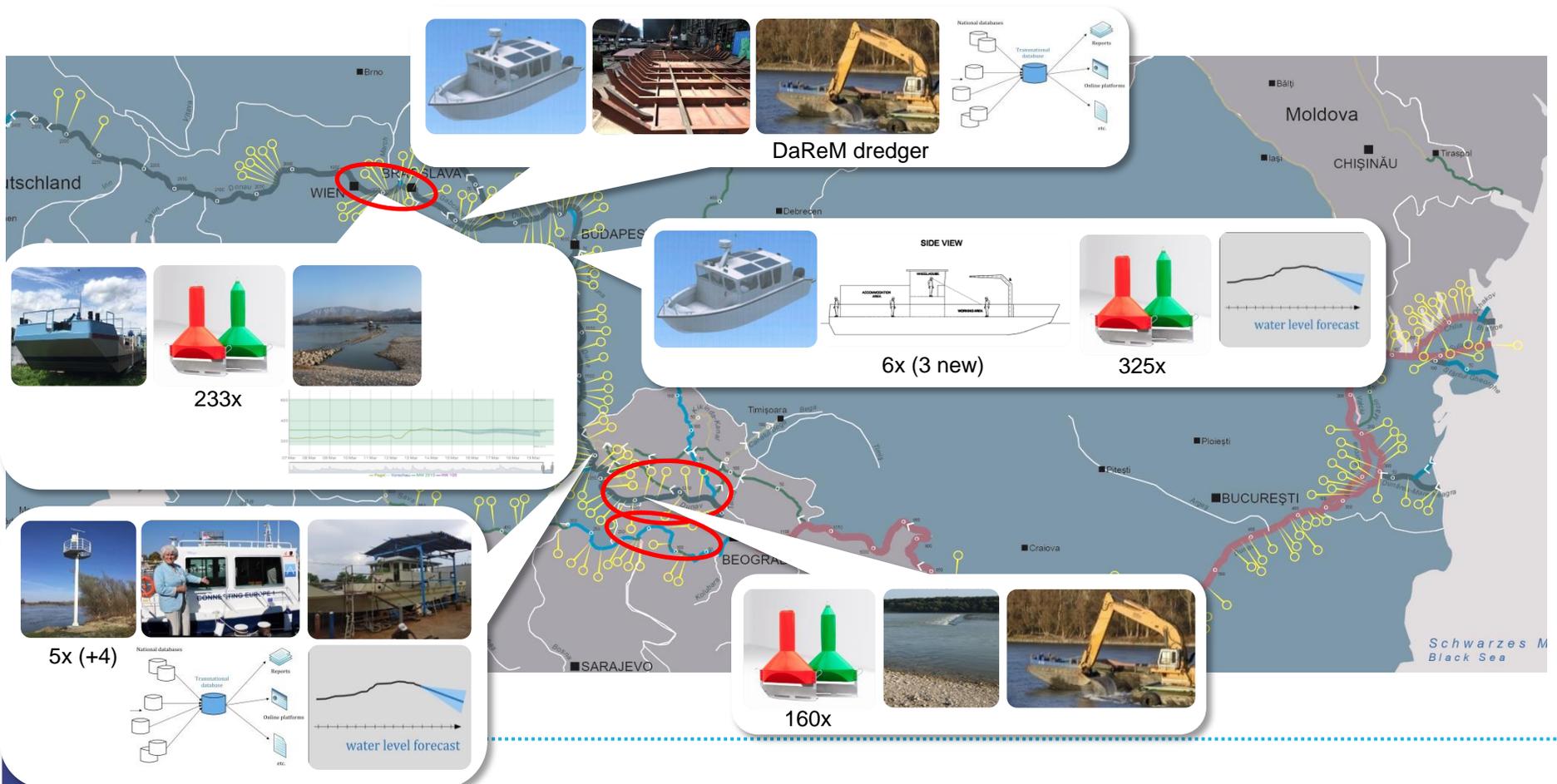
## Croatia



## Serbia



# Major steps for the implementation of the Master Plan - 2017 on the Upper and Central Danube

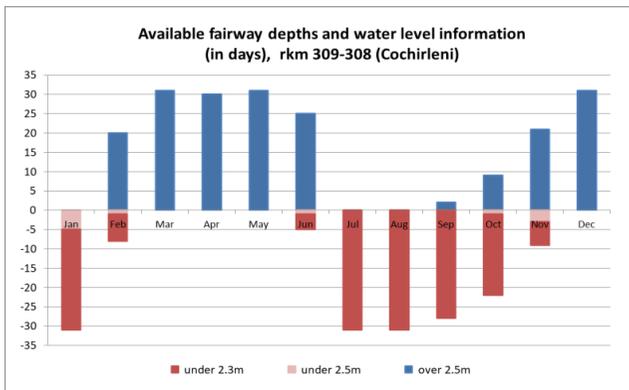


# Lower Danube

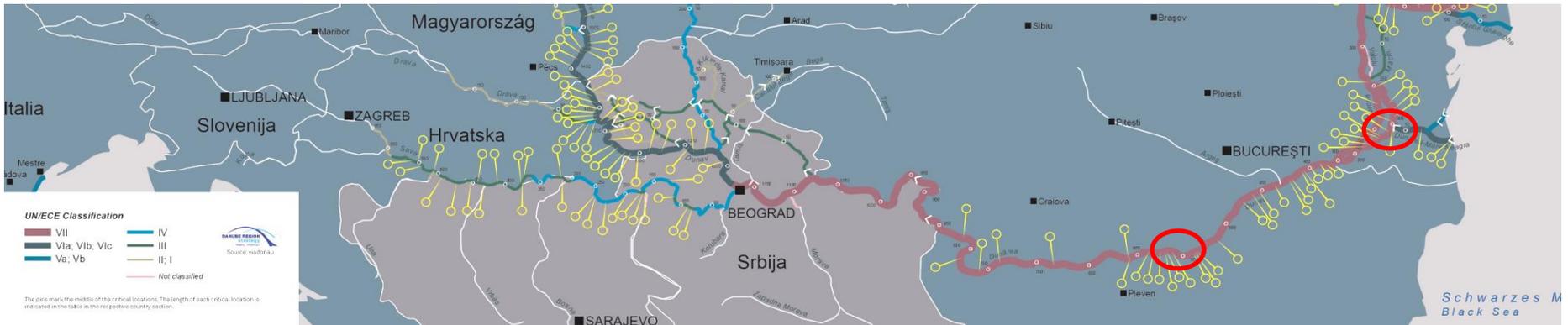
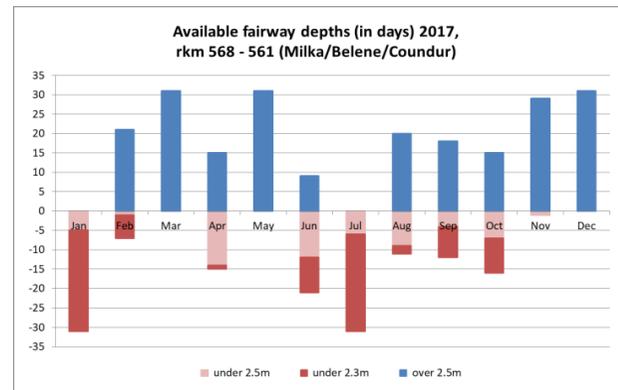
- **Fairway conditions**
- **Major steps for the implementation of the Master Plan**

# Fairway situation at the Lower Danube in 2017

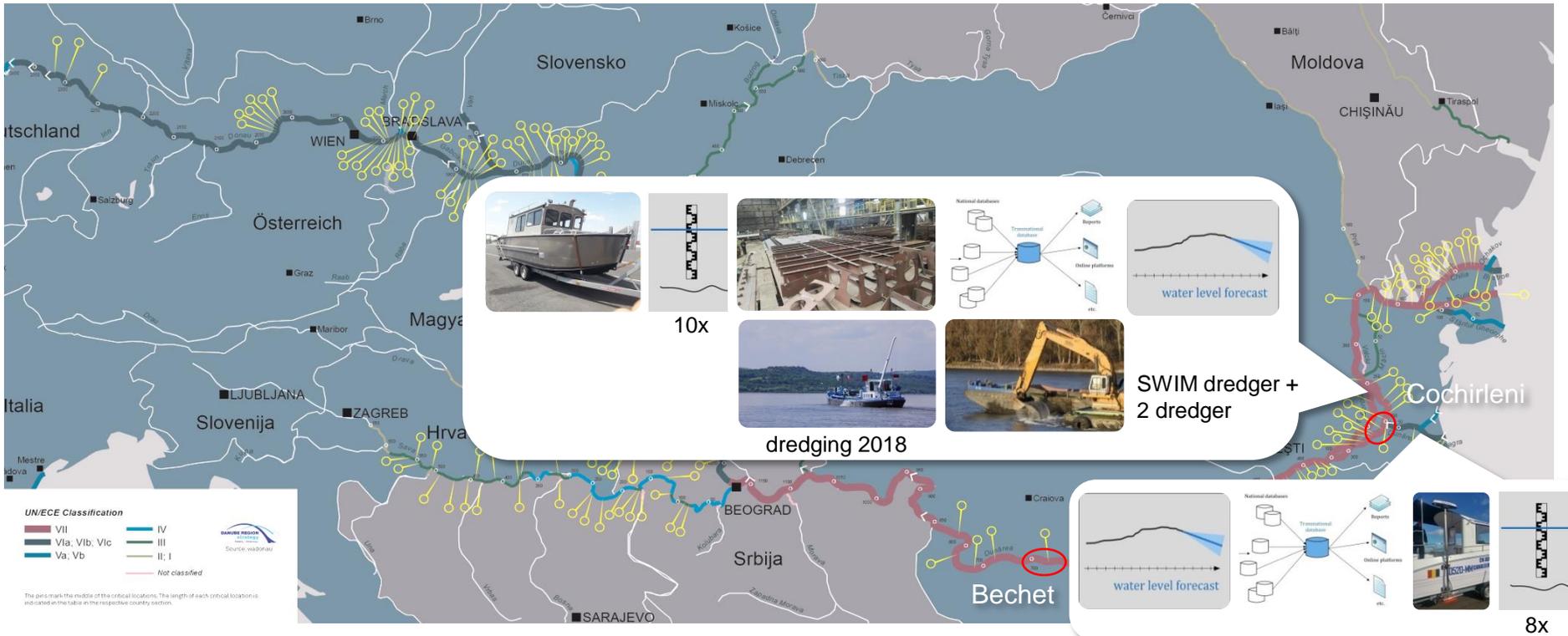
## Romania



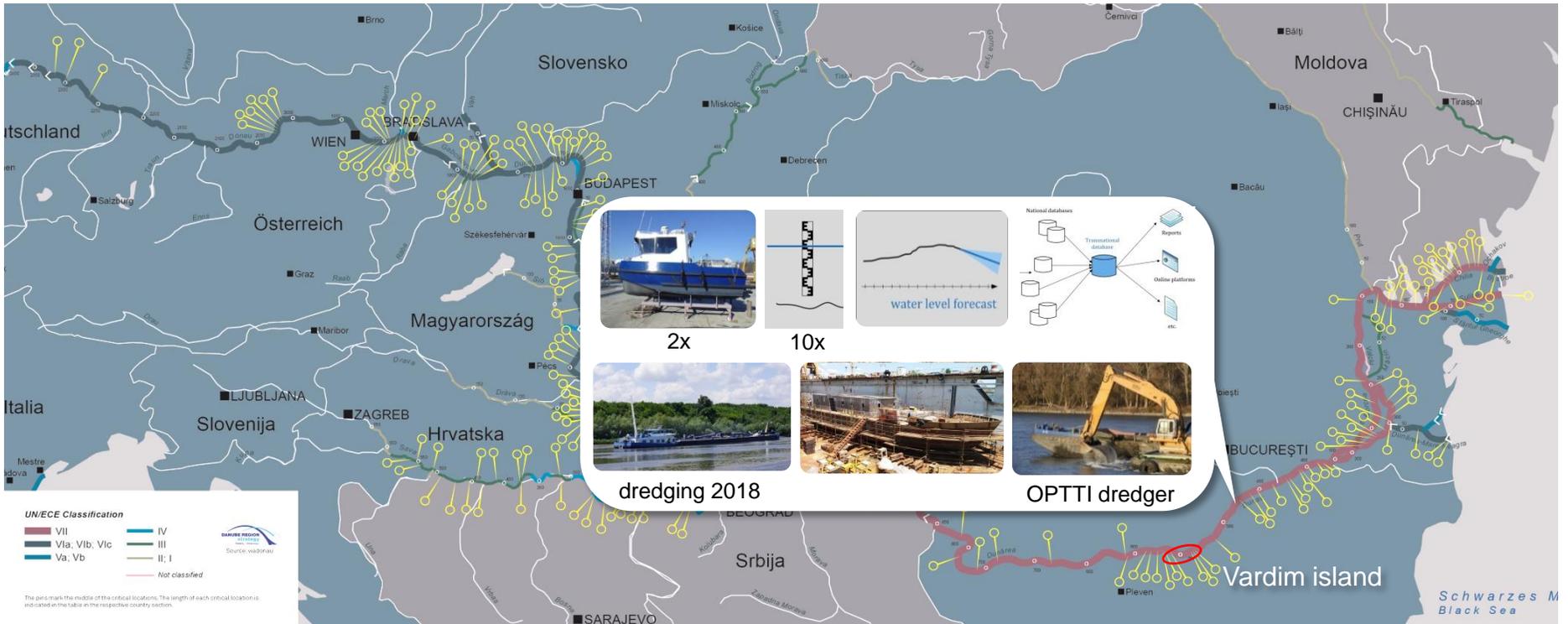
## Bulgaria



# Major steps for the implementation of the Master Plan - 2017 on the Lower Danube



# Major steps for the implementation of the Master Plan - 2017 on the Lower Danube



# National Action Plans – Operational Budgets

## Status May 2018

	required operational budget 2017 (reported in May 2017)	operational expenditures 2017 (reported in May 2018)	required operational budget 2018 (reported in May 2018)	budget available for 2018 (reported in May 2018)
Austria	6 110 221	4 515 515	5 626 579	5 626 579
Slovakia	2 700 000	2 624 134	2 422 100	2 422 100
Hungary	1 156 000	No update was provided as of today.		
Croatia	506 000	495 000	495 000	495 000
Romania (AFDJ)	5 400 000	8 625 991	8 900 000	8 900 000
Romania (ACN)	9 148 726 (8 810 000 for locks)	6 709 293 (6 553 153 for locks)	9 819 481 (6 827 956 for locks)	9 819 481 (6 827 956 for locks)
Bulgaria	4 002 501 (3 067 751 for dredging)	386 378	4 002 501 (3 067 751 for dredging)	386 378 (+ 4 129 586 multiannual dredging budget (3 years))

# Next steps

- **approval of the May 2018 update in July 2018**
- **next update will be conducted in September 2018**

# Reports on Working Group 1 – Waterway infrastructure and management

Report on projects SWIM and FAST DANUBE by AFDJ



## ***FAST DANUBE***

*Technical Assistance for Revising and Complementing the Feasibility Study*

*Regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector of the Danube and Complementary Studies*



Co-financed by the European Union

Connecting Europe Facility



Administrația Fluvială  
a Dunării de Jos R.A. Galați

# FAST DANUBE & SWIM

*14<sup>th</sup> Meeting of the PA1a Steering Group  
12<sup>th</sup> June 2018, Budapest*

# SWIM Project Data



- Partners: AFDJ Galati
- Budget: 12.222.200 euro
- Period: 01.07.2016 – 31.12.2020 – proposed to be postponed until 30.06.2021
- Connection with FAST Danube:
  - environmental permits, for pilot sectors, will be obtained within the **FAST Danube project**

# FAST Project Data



## ***FAST DANUBE***

*Technical Assistance for Revising and Complementing the Feasibility Study  
Regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector of the Danube and  
Complementary Studies*



Co-financed by the European Union  
Connecting Europe Facility

- Partners: **AFDJ Galati and IAPPD Ruse**
- Duration: **11.2014 – 12.2018 – proposed to be postponed until 31.12.2020**
- Financing: **EU (Transport CEF Call 2014) – 85%, Romanian Budget State – 15%**
- The total contract (Fast DANUBE) budget: **5,252,000 EUR**

# Project objective

The **FAST DANUBE** project main objective is to identify the technical solutions to be implemented, in order to ensure navigation conditions on the Romanian-Bulgarian common sector of the Danube and safely conducting the transport activities on Danube throughout the entire year, in accordance with the recommendations of the Danube Commission in Budapest.

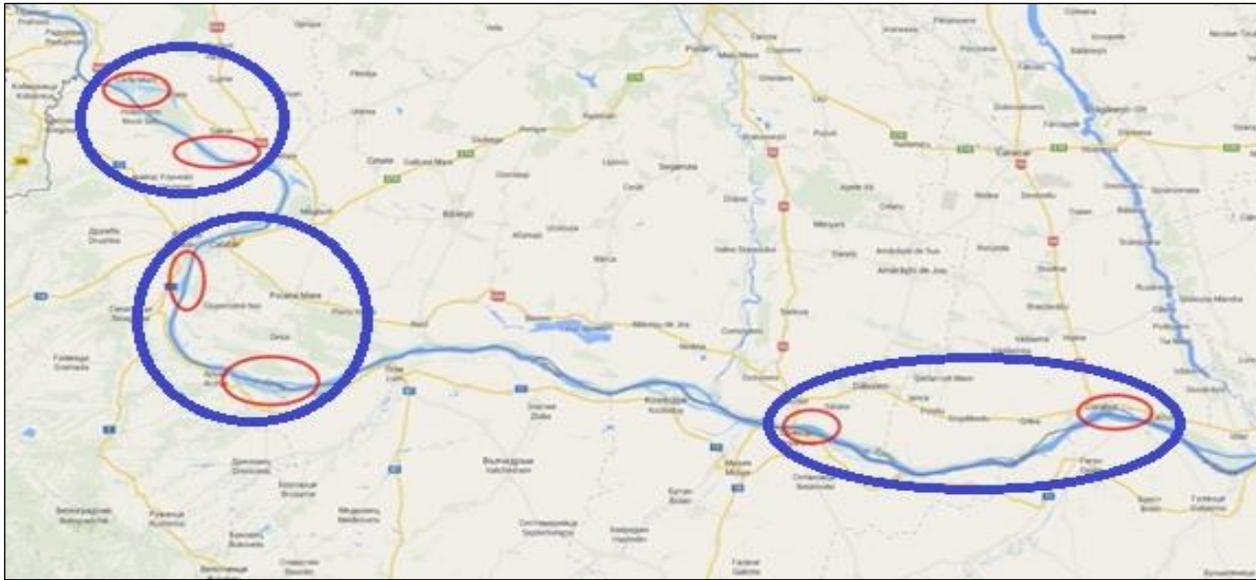
# ***Actions under the project***

- Investigating and developing technical solutions to be included in the feasibility study to ensure stable navigation conditions throughout the year, on the Romanian-Bulgarian common sector of the Danube;
- Identification and preliminary design of the necessary works to eliminate the existing difficult points;
- Carrying out the Environmental Impact Assessment including the AA and WFD for developing the documentation in order to obtain the Environmental Consent;

# ***Actions under the project***

- Completion of technical specifications for carrying out the works on this sector of the Danube
- Manage the project and disseminate its results

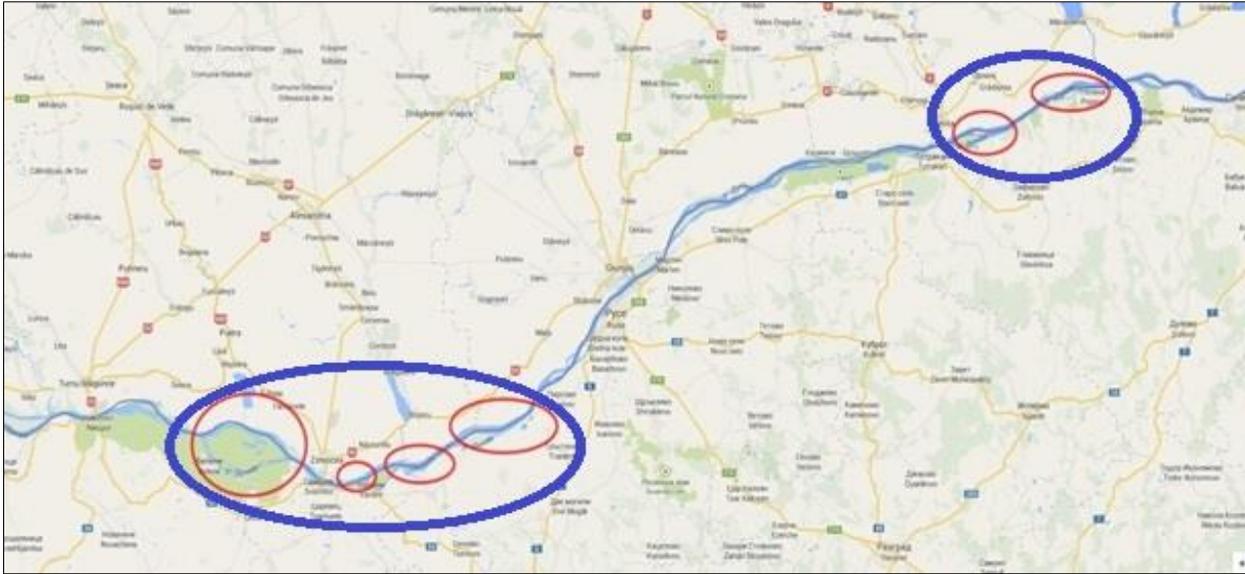
# Project area



***On the Romanian sector, 3 critical zones include 6 critical areas:***

- **Critical zone 1** – from km 850 to km 818 include the critical areas : Gârla Mare and Salcia;
- **Critical zone 2** - from km 786 to km 755 include the critical areas: Bogdan Secian and Dobrina;
- **Critical zone 3** from km 678 to km 625 include the critical areas: Bechet and Corabia.

# Project area



***On the Bulgarian sector, 2 critical zones include all 6 critical areas:***

- **Critical zone 4** – from km 577 to km 520 include the critical areas: Belene, Vardim, Iantra and Batin;
- **Critical zone 5** – from km 428 to km 401 include the critical areas: Kosui and Popina.

# Project status



Project reports

# Field surveying by aerial LiDAR scanning



*Cessna T206H*

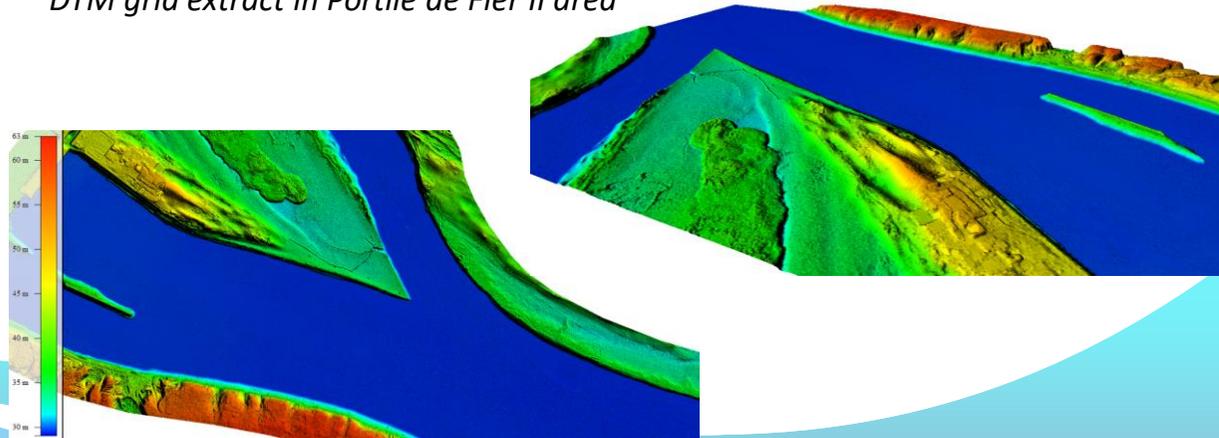


*Piper Navajo PA-31*



*LiteMapper 6800i  
LiDAR system  
installed inside the  
plane*

*DTM grid extract in Portile de Fier II area*



# Sediment measurements



# Hydrographical survey



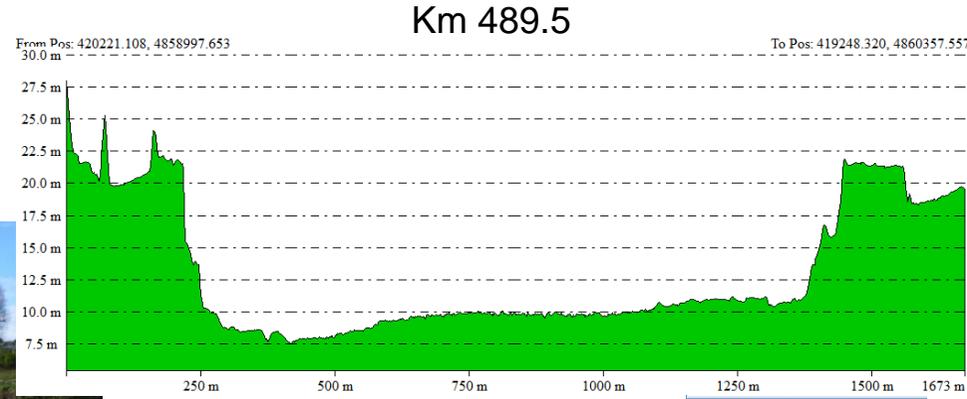
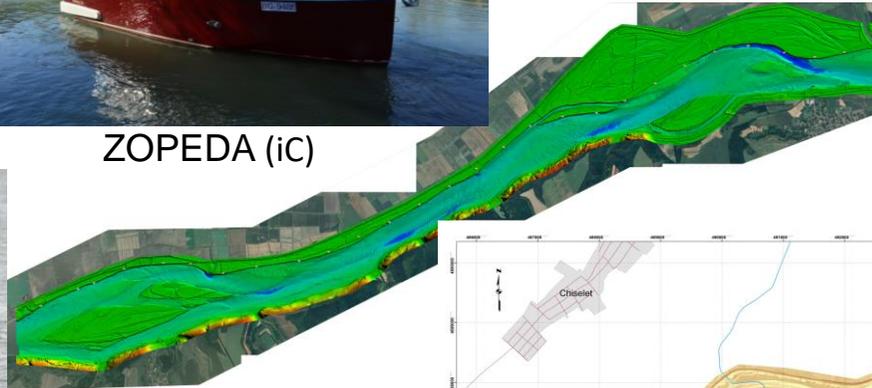
SHADOW 1 (MR)



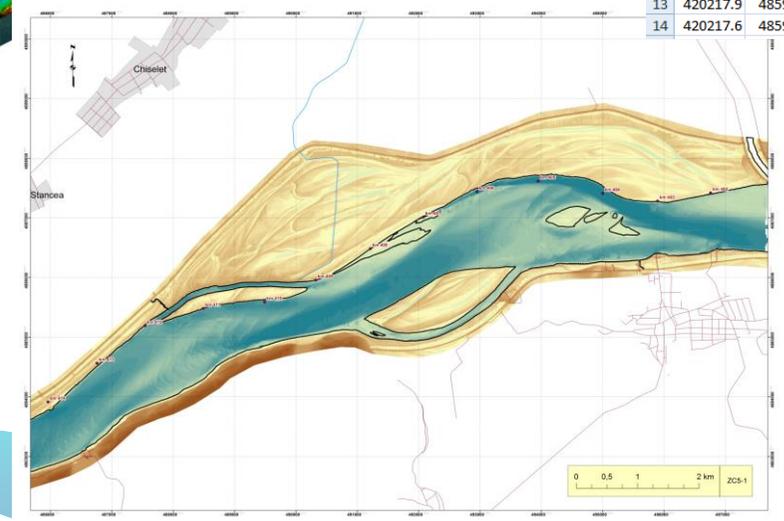
ZOPEDA (ic)



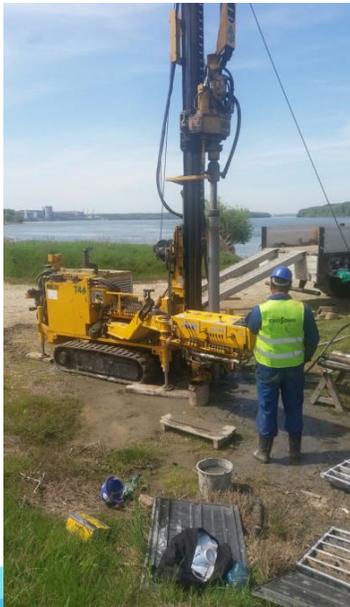
Buster XL (MR)



	A	B	C
1	X	Y	ELEV
2	420221.1	4858998	27.993
3	420220.8	4858998	27.728
4	420220.5	4858998	27.457
5	420220.2	4858999	27.192
6	420219.9	4858999	26.909
7	420219.7	4859000	26.658
8	420219.4	4859000	26.355
9	420219.1	4859000	26.039
10	420218.8	4859001	25.769
11	420218.5	4859001	25.461
12	420218.2	4859002	25.149
13	420217.9	4859002	24.864
14	420217.6	4859003	24.601



# Geotechnical Survey



2017 05 01 E1

**GEOSOND**  
Soluții pentru proiecte

**TUV**  
AUSTRIA

**RAPORT ZILNIC DE ACTIVITATE**      Data: 01.05.2017

Lucrări de investigație geotehnică

- proiect: «Asistență tehnică pentru revizuirea și completarea studiului de fezabilitate privind îmbunătățirea condițiilor de navigație pe sectorul comun româno-buigar al Dunării și studii complementare»

**PERSONAL**      Echipa 1      **CONDITII METEO:**  
 Ser tehnica:      Echipa din:      Data:      vreme: vreme

Execuțiv:      Panu George, Nedelcu Gabriel

**LUCRARI**  
 Condiții de acces: ok      Condiții de muncă: ok

**Lucrări de foraj:**

codul forajului: 4132-F29	codul forajului: 4132-F31	codul forajului: -
lon foraj / mai: 1m 336/80	lon foraj / mai: 1m 377/80	lon foraj / mai: -
coorona GPS (N): 49° 22' 22.0"	coorona GPS (N): 49° 20' 20.0"	coorona GPS (N): -
coorona GPS (E): 24° 54' 04.2"	coorona GPS (E): 27° 06' 04.0"	coorona GPS (E): -
interval orar de lucru: 08:00 - 20:30	interval orar de lucru: 12:30 - 18:30	interval orar de lucru: -
adâncimea proiectată: 15 m	adâncimea proiectată: 15 m	adâncimea proiectată: -
adâncimea atinsă: 15 m	adâncimea atinsă: 15 m	adâncimea atinsă: -
apa atinsă la ad: 1.0 m	apa atinsă la ad: 0.6 m	apa atinsă la ad: -
nivel hidrostatic: 2.0 m	nivel hidrostatic: 0.3 m	nivel hidrostatic: -
metoda de forare: percuție continuă	metoda de forare: percuție continuă	metoda de forare: -
utilaj foraj: Daurwin T24	utilaj foraj: Daurwin T24	utilaj foraj: -
probe recoltate*: 17, 2h	probe recoltate*: 27	probe recoltate*: -

**Teste in situ**

tip test:	tip test:	tip test:
codul testului:	codul testului:	codul testului:
coorona GPS (N):	coorona GPS (N):	coorona GPS (N):
coorona GPS (E):	coorona GPS (E):	coorona GPS (E):
adâncimea proiectată:	adâncimea proiectată:	adâncimea proiectată:
adâncimea atinsă:	adâncimea atinsă:	adâncimea atinsă:
utilaj foraj:	utilaj foraj:	utilaj foraj:

**Planificarea:**  
 Lucrări pe care echipa urmează să le execute:

data	lucrări de foraj	teste in situ	altale
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

**OBSERVAȚII:**

Intocmit:      Ing. geol. Valentin BOGDAN

2017 05 01 E1

**GEOSOND**  
Soluții pentru proiecte

**TUV**  
AUSTRIA

**RAPORT ZILNIC DE ACTIVITATE**      Data: 01.05.2017

Lucrări de investigație geotehnică

- proiect: «Asistență tehnică pentru revizuirea și completarea studiului de fezabilitate privind îmbunătățirea condițiilor de navigație pe sectorul comun româno-buigar al Dunării și studii complementare»

**PERSONAL**      Echipa 1      **CONDITII METEO:**  
 Ser tehnica:      Echipa din:      Data:      vreme: vreme

Execuțiv:      Panu George, Nedelcu Gabriel

**LUCRARI**  
 Condiții de acces: ok      Condiții de muncă: ok

**Lucrări de foraj:**

codul forajului: 4132-F29	codul forajului: 4132-F31	codul forajului: -
lon foraj / mai: 1m 336/80	lon foraj / mai: 1m 377/80	lon foraj / mai: -
coorona GPS (N): 49° 22' 22.0"	coorona GPS (N): 49° 20' 20.0"	coorona GPS (N): -
coorona GPS (E): 24° 54' 04.2"	coorona GPS (E): 27° 06' 04.0"	coorona GPS (E): -
interval orar de lucru: 08:00 - 20:30	interval orar de lucru: 12:30 - 18:30	interval orar de lucru: -
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adâncimea atinsă: 15 m	adâncimea atinsă: 15 m	adâncimea atinsă: -
apa atinsă la ad: 1.0 m	apa atinsă la ad: 0.6 m	apa atinsă la ad: -
nivel hidrostatic: 2.0 m	nivel hidrostatic: 0.3 m	nivel hidrostatic: -
metoda de forare: percuție continuă	metoda de forare: percuție continuă	metoda de forare: -
utilaj foraj: Daurwin T24	utilaj foraj: Daurwin T24	utilaj foraj: -
probe recoltate*: 17, 2h	probe recoltate*: 27	probe recoltate*: -

**Teste in situ**

tip test:	tip test:	tip test:
codul testului:	codul testului:	codul testului:
coorona GPS (N):	coorona GPS (N):	coorona GPS (N):
coorona GPS (E):	coorona GPS (E):	coorona GPS (E):
adâncimea proiectată:	adâncimea proiectată:	adâncimea proiectată:
adâncimea atinsă:	adâncimea atinsă:	adâncimea atinsă:
utilaj foraj:	utilaj foraj:	utilaj foraj:

**Planificarea:**  
 Lucrări pe care echipa urmează să le execute:

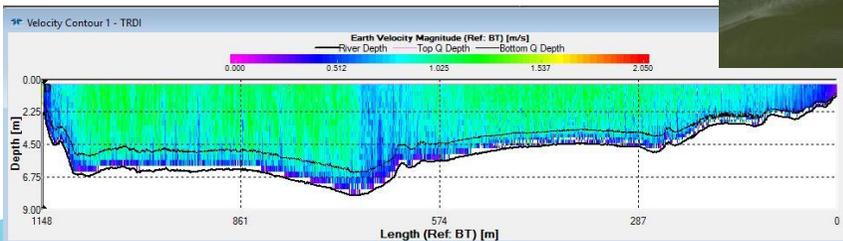
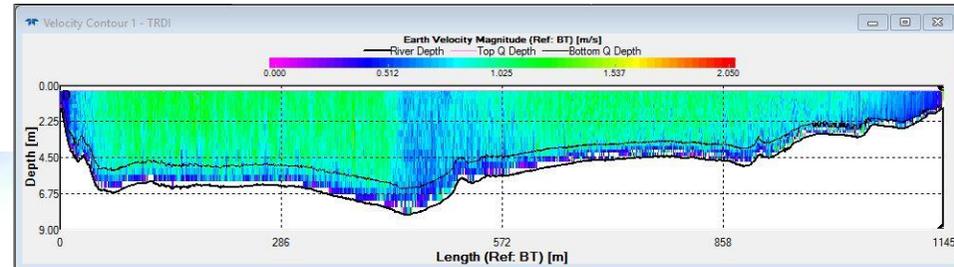
data	lucrări de foraj	teste in situ	altale
-	-	-	-
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-	-	-	-

**OBSERVAȚII:**

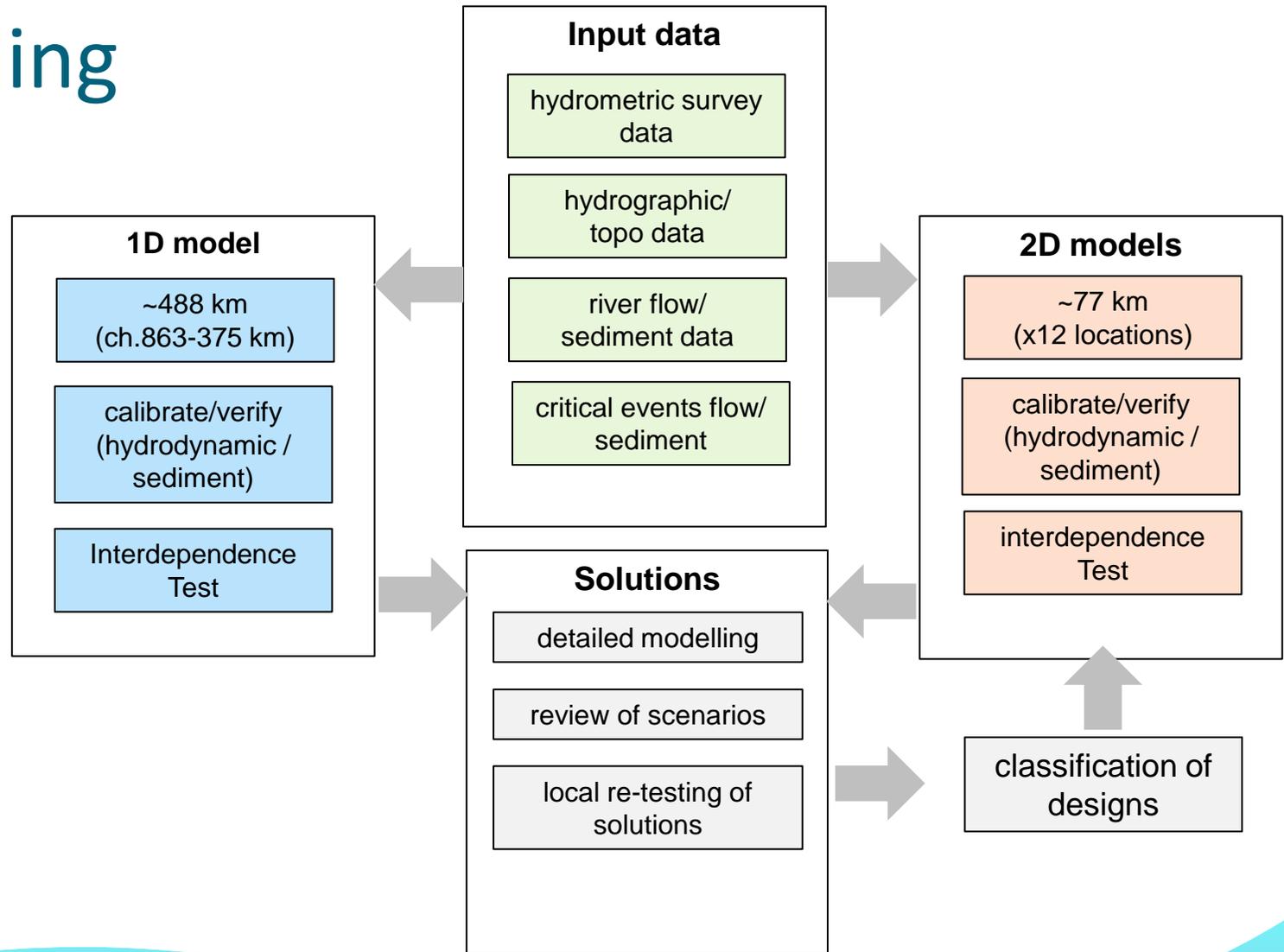
Intocmit:      Ing. geol. Valentin BOGDAN



# Hydrodynamics (ADCP) survey



# Modelling



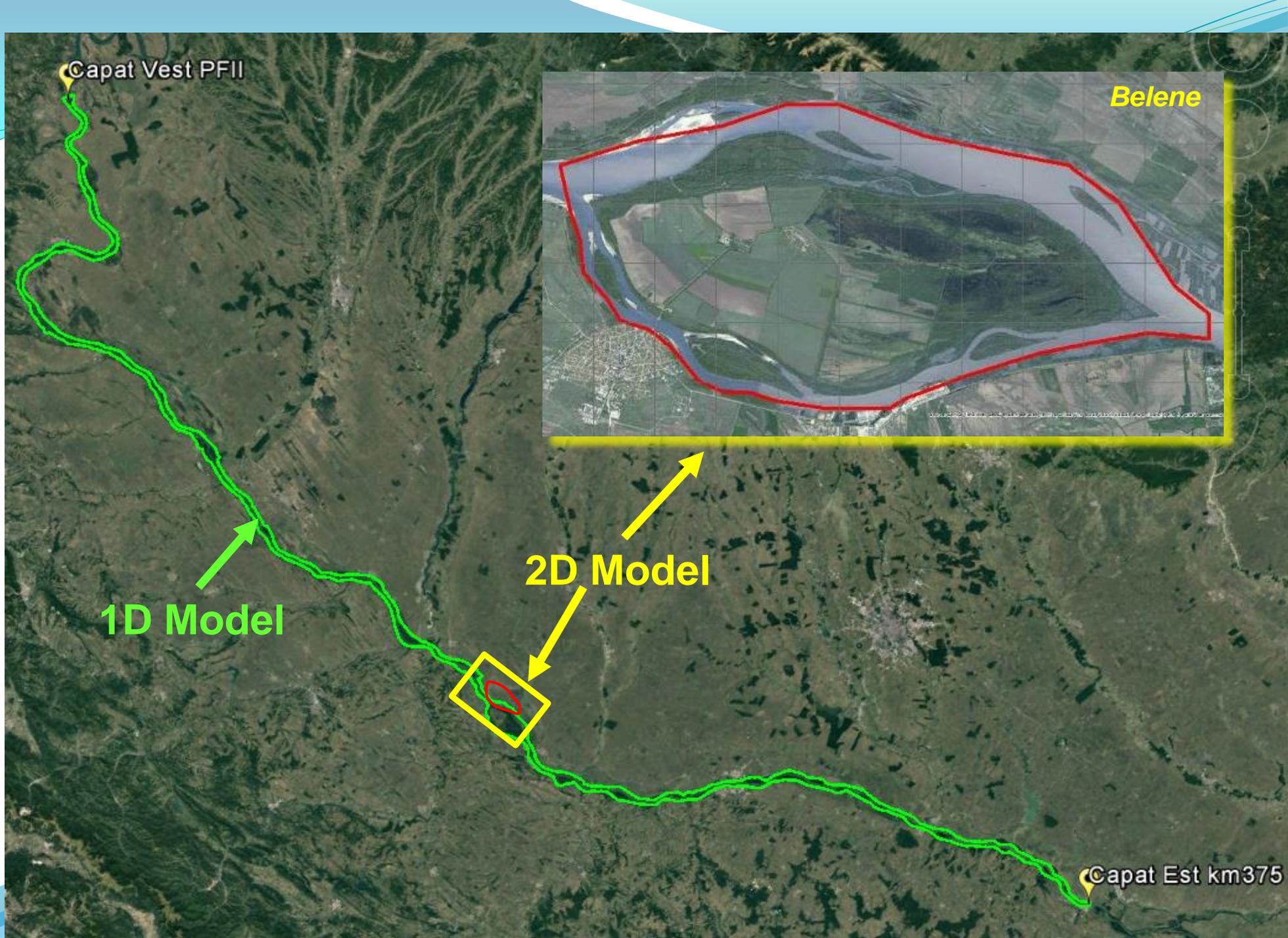
Capat Vest PFI

Belene

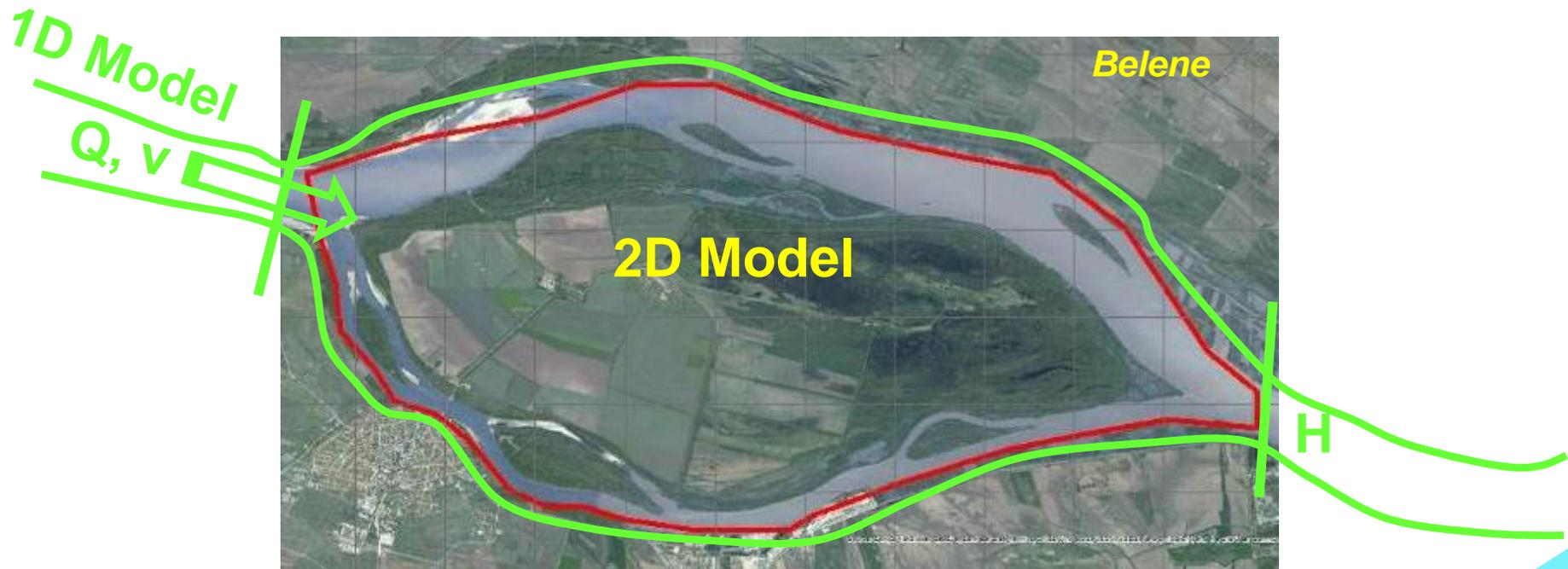
1D Model

2D Model

Capat Est km375

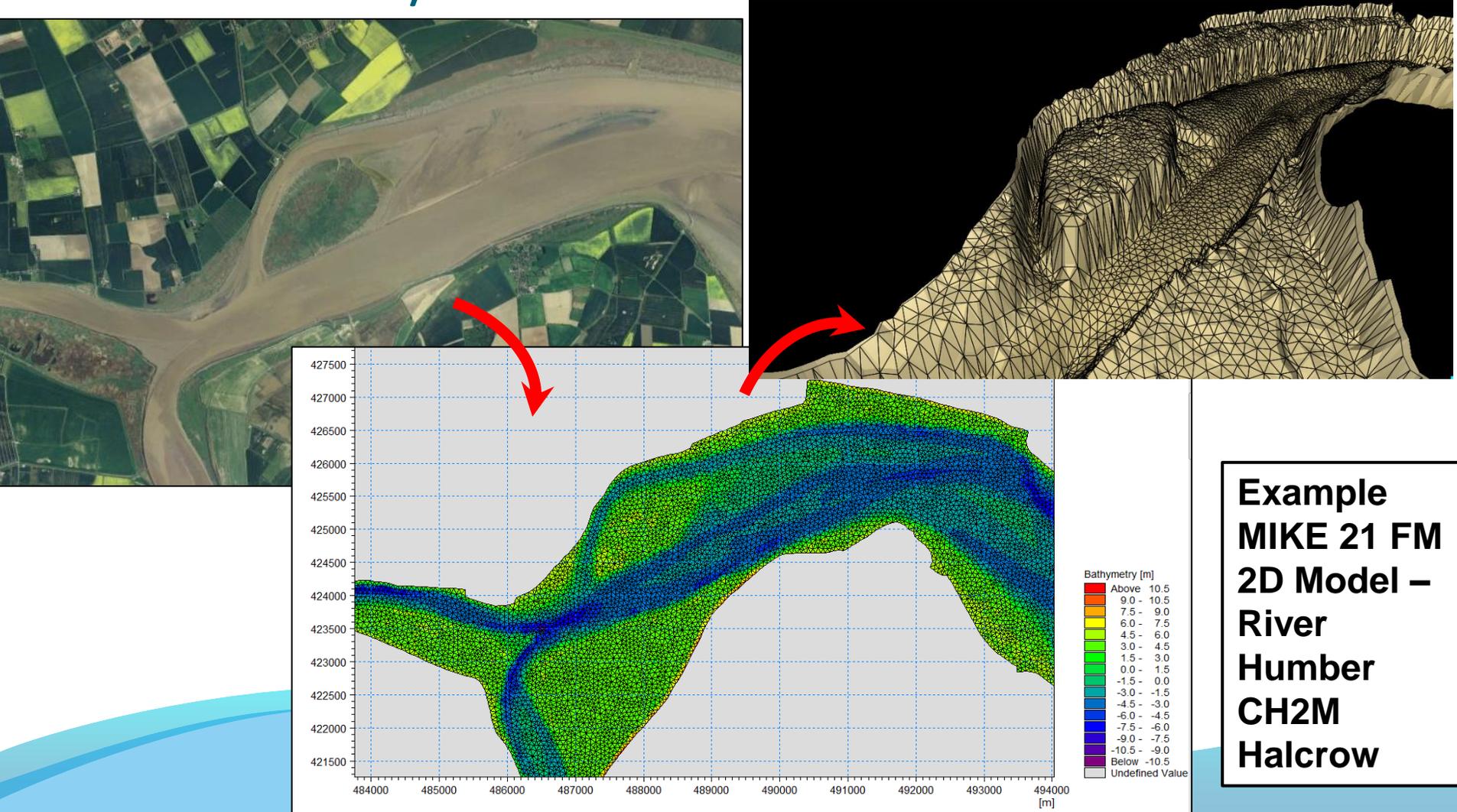


# Hydrodynamic Mathematical Modelling



# Hydrodynamic Mathematical Modelling

## Model Build / Calibration



**Example  
MIKE 21 FM  
2D Model –  
River  
Humber  
CH2M  
Halcrow**

# Options tested

- Treatment : “Dredge and Place Sediment”
- Prevention : “Keep Sediment Moving”

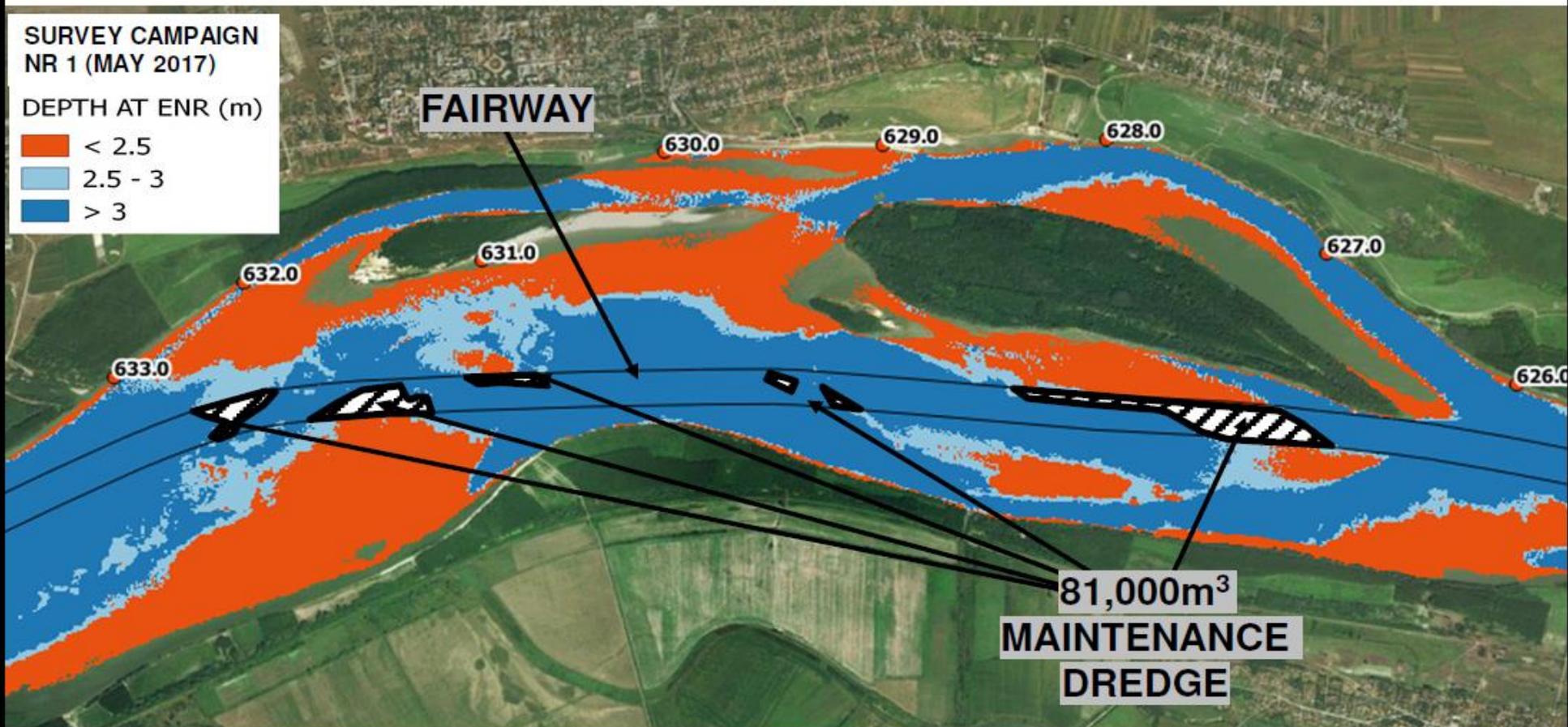
- **Treatment :**

- “Dredge and Place Sediment”

- Dredge existing fairway to achieve 3.0m depth at ENR (0.5m buffer)
- (Place sediment in river – avoid depletion, potential environmental enhancements, flow improvement)

# Options tested

- Example - Treatment : “Dredge and Place Sediment”
  - Corabia



# Options tested

- Treatment : “Dredge and Place Sediment”
- Prevention : “Keep Sediment Moving”

- **Prevention :**

- “Keep Sediment Moving”

- Increase sediment transport capacity in the fairway by building structures to increase velocity
- “Linear structures” and/or “islands”
- Includes dredging
- Can include new fairway alignment

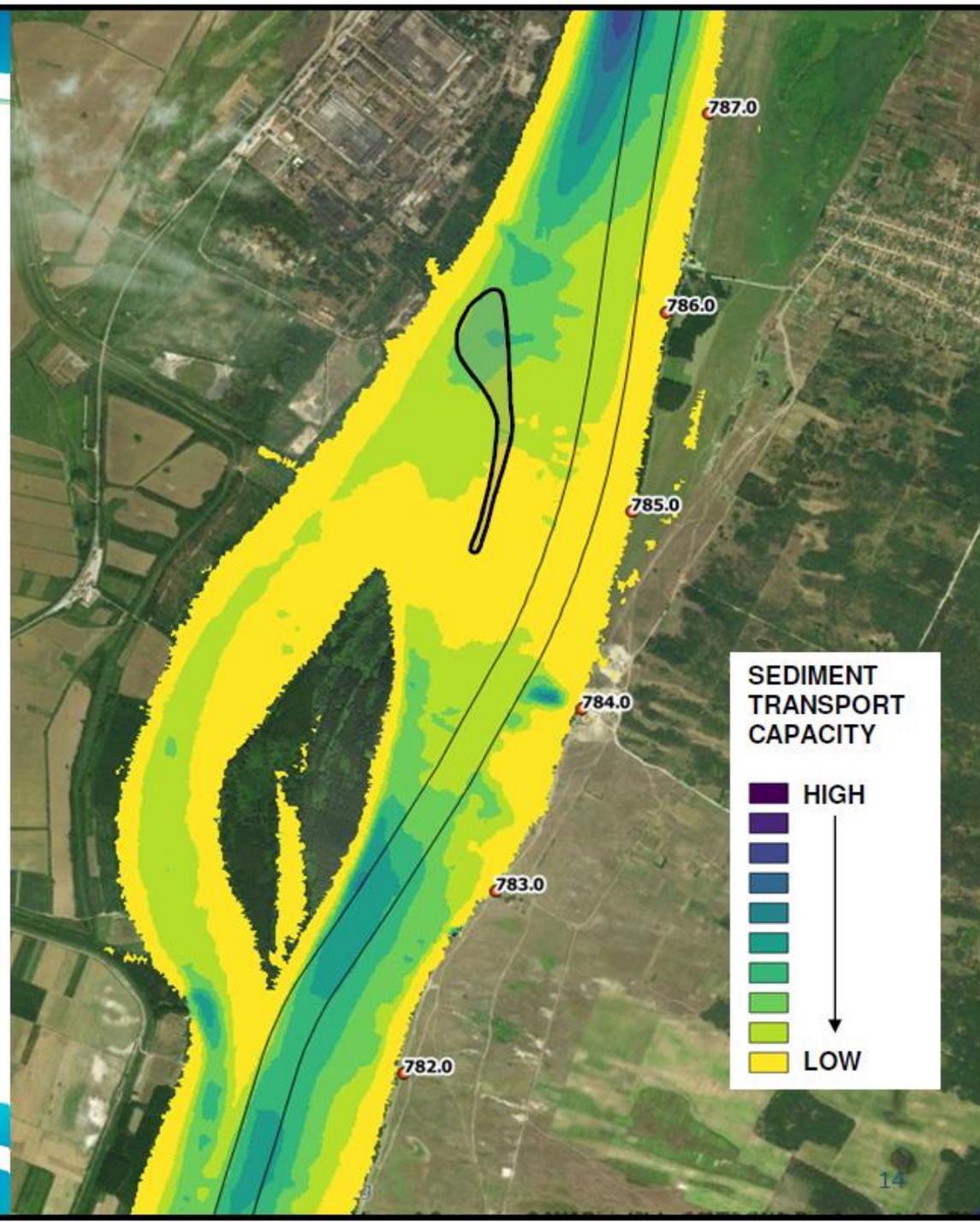
Options tested

Prevention : “Keep Sediment Moving”



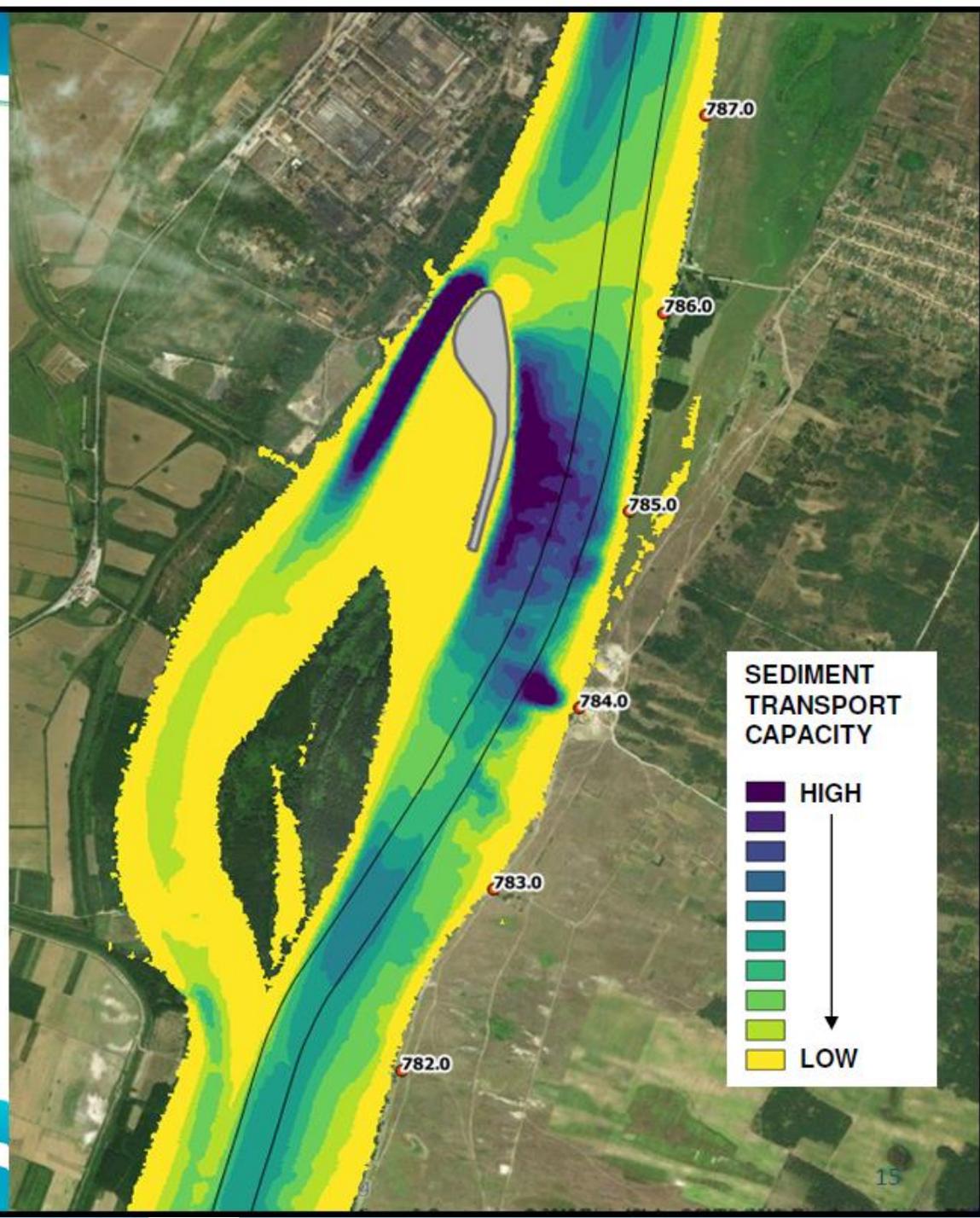
# Options tested

- Example -  
Prevention :  
“Keep Sediment Moving”
  - Bogdan-Secian -  
“Island”

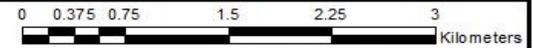


# Options tested

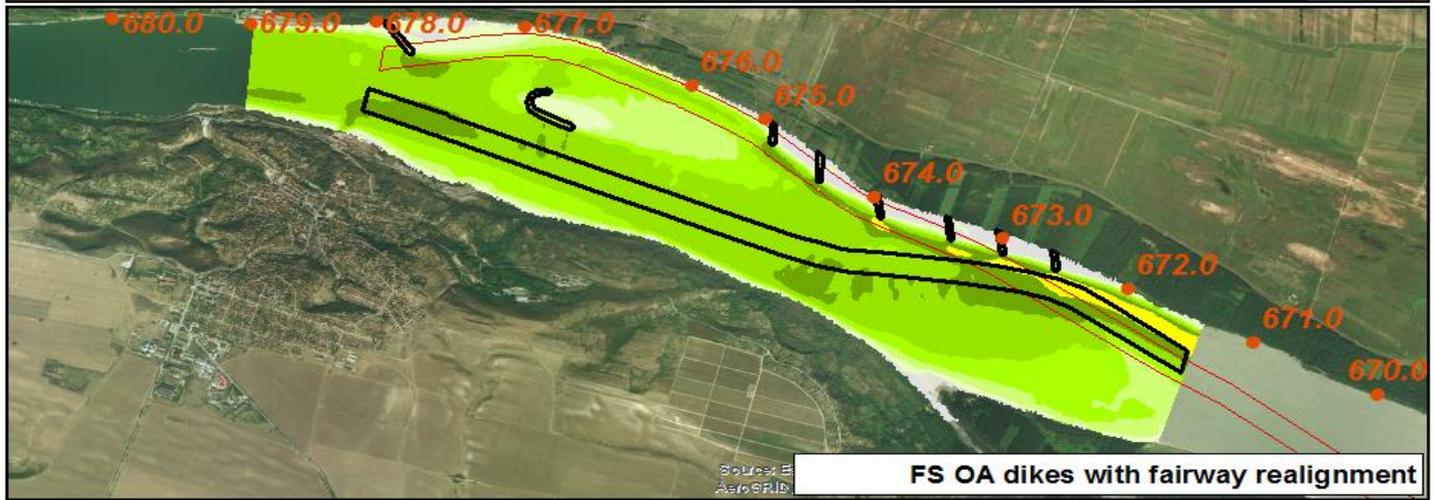
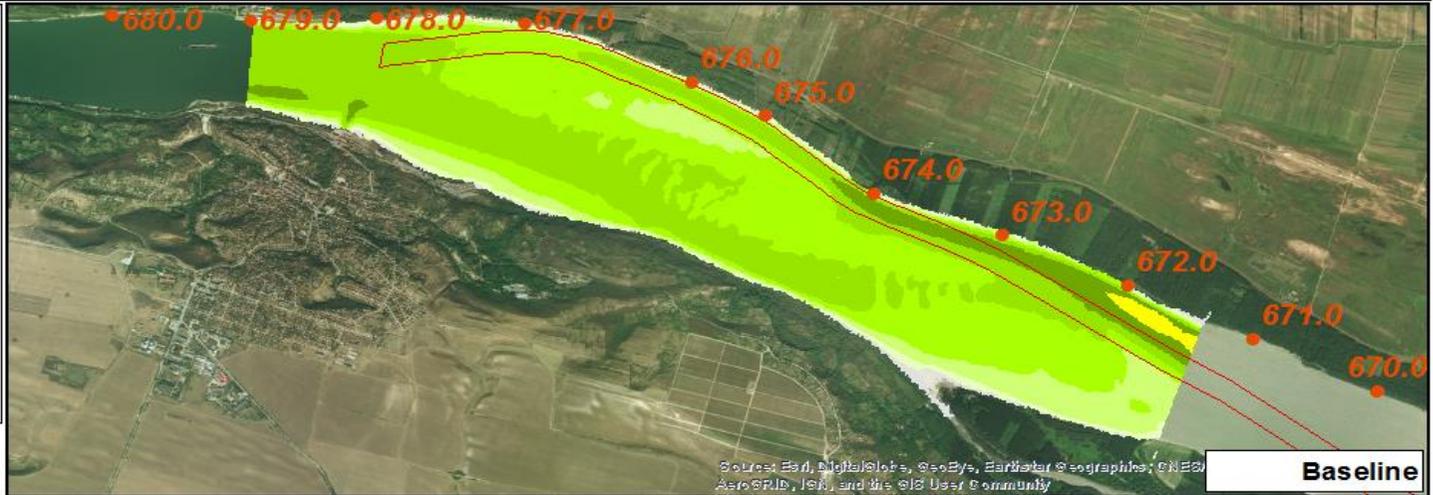
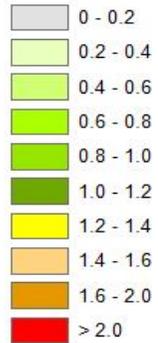
- Example -  
Prevention :  
“Keep Sediment Moving”
  - Bogdan-Secian -  
“Island”



# Bechet (ZC3) Q5000 - Velocity

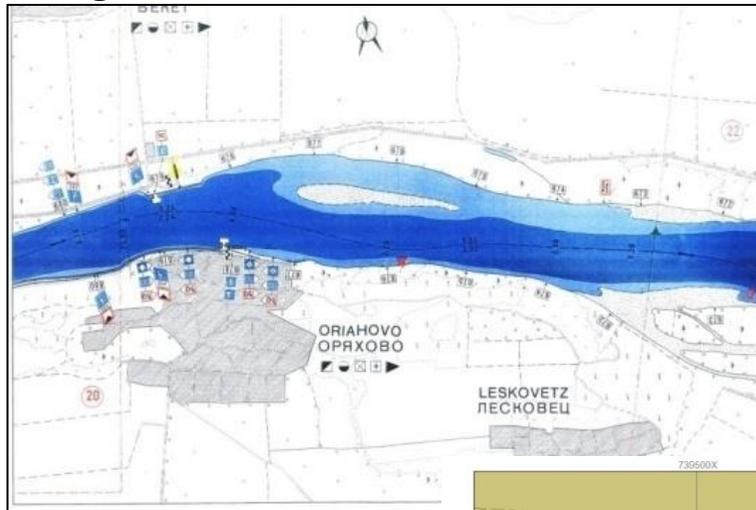


## Velocity [m/s]

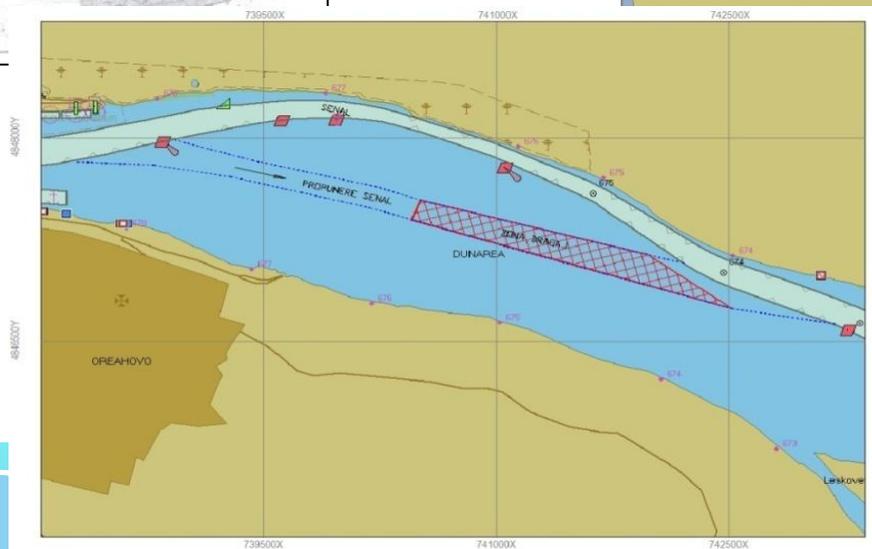
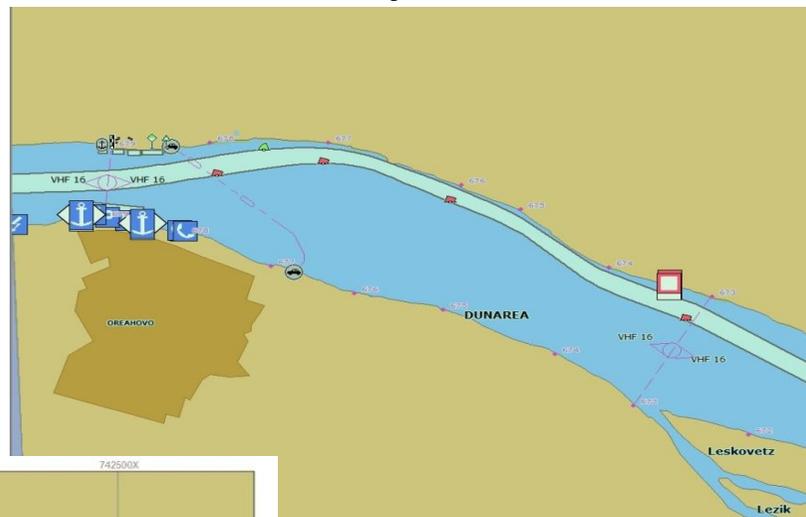


# SWIM Pilot description – the critical point Bechet

navigation chart Danube Commission

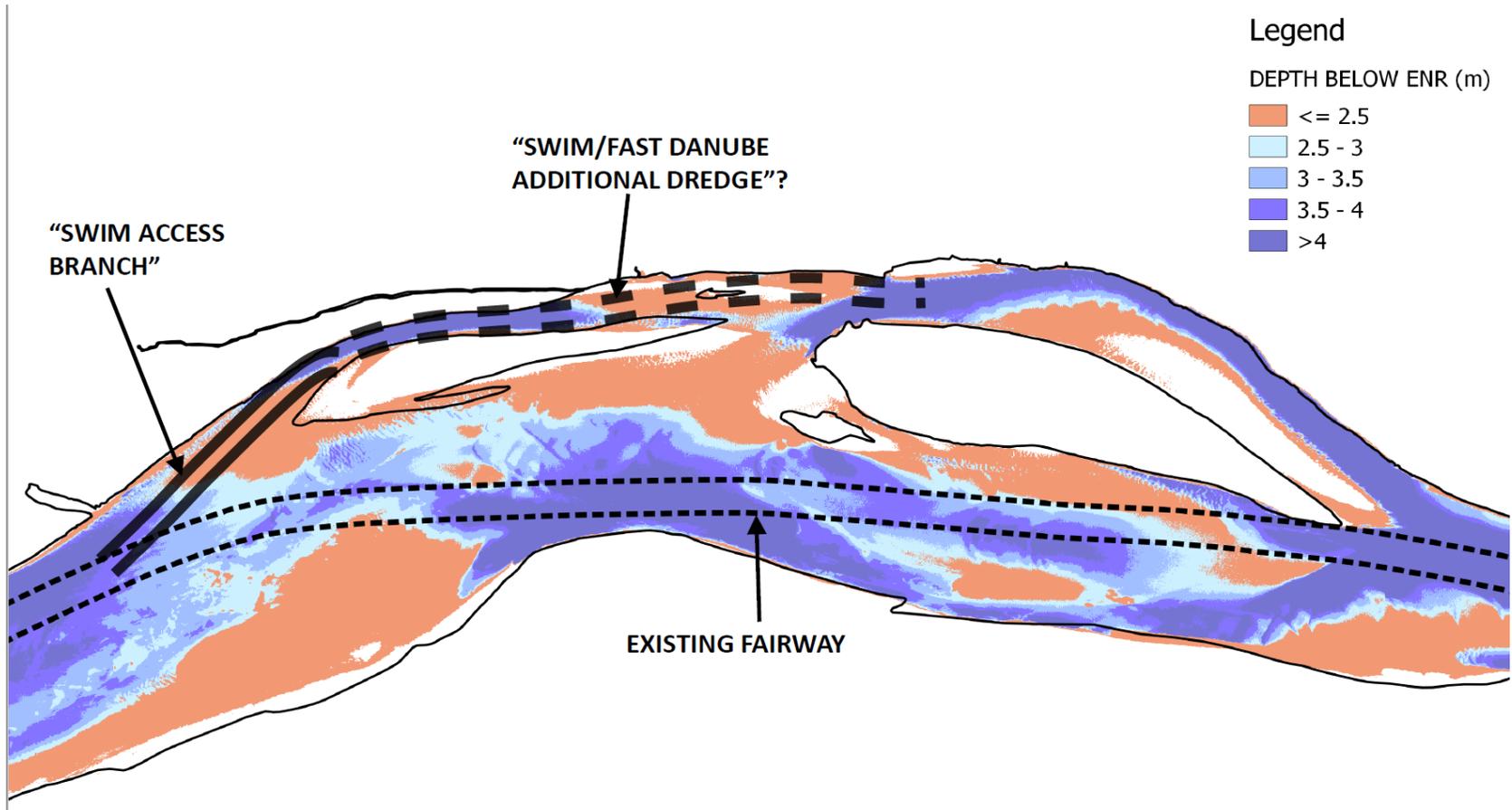


actual fairway

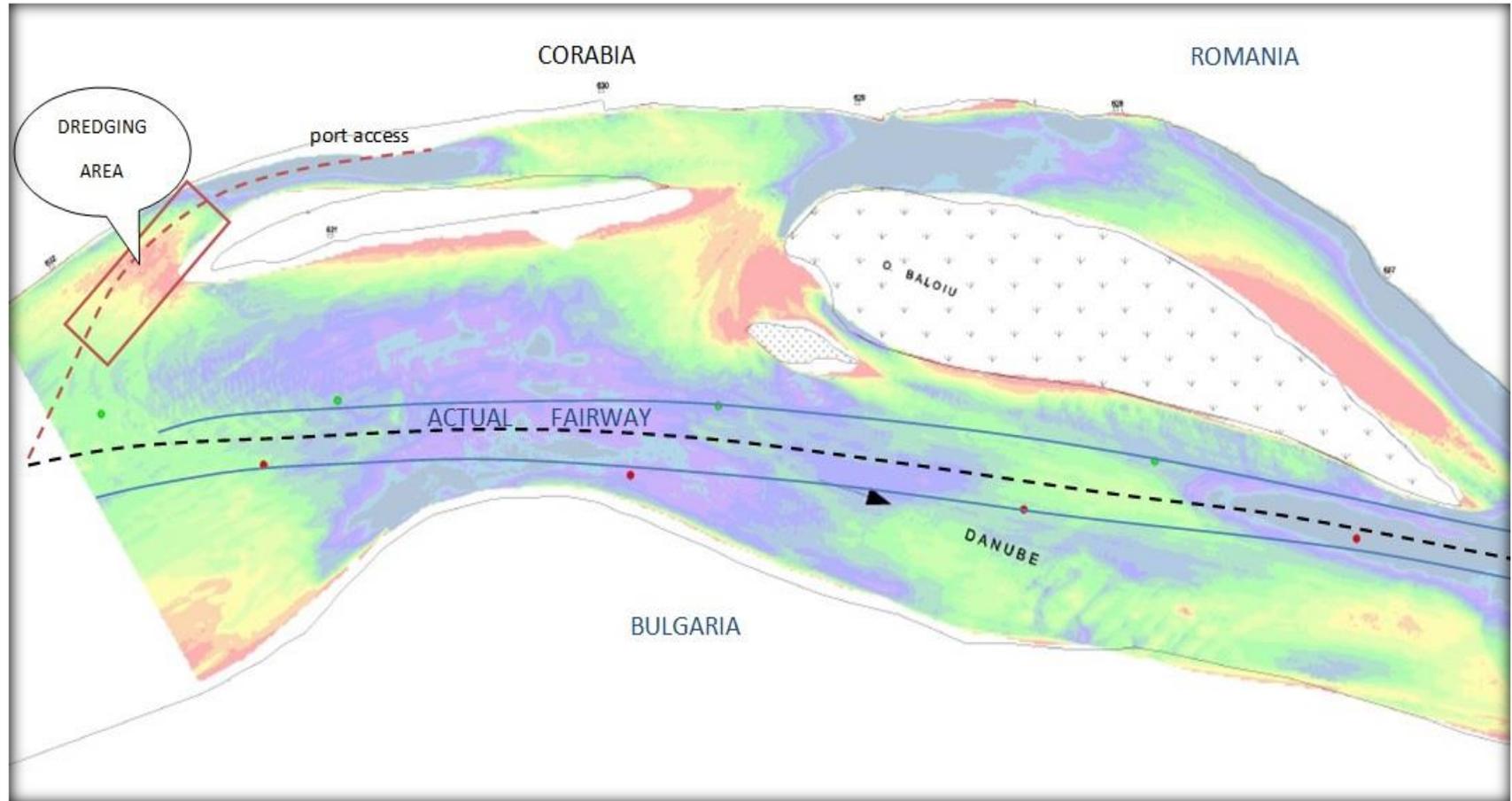


SWIM action

# Options tested



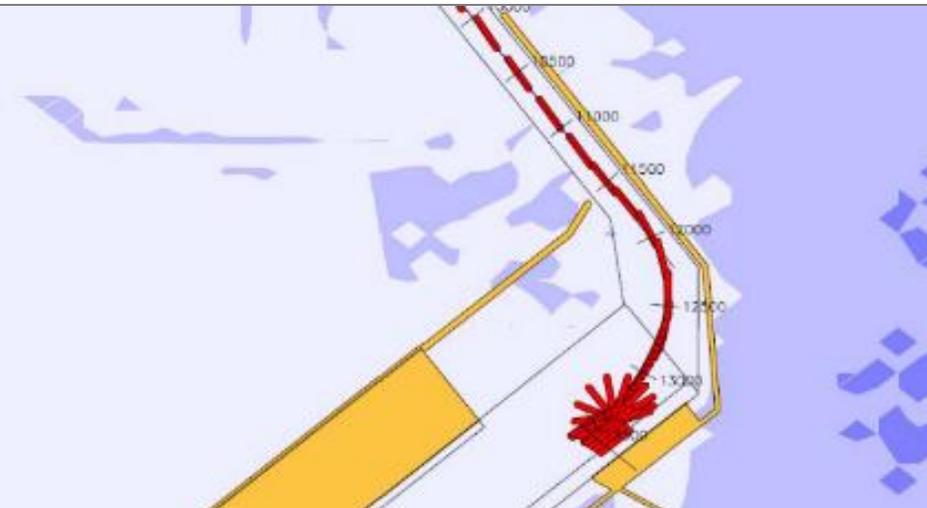
# SWIM Pilot description – Corabia - the port access



# Sample output of SHIPMA software simulation



SHIPMA software specification brochure, MARIN/Deltares



SHIPMA simulation of arrival of 150,000 DWT bulk carrier under moderate conditions at Khalifa Port, Abu Dhabi UAE (CH2M Halcrow)

# Technical Options

## Deciding Optimal Solution: MCA approach

### PLANNING & TECHNICAL

#### INDICATORS

Improves navigational conditions for relevant classes of vessels

Technical effectiveness or compliance

#### ASSESSMENT PARAMETERS

- Types of ship and convoys
- Sizes and tonnage
- Based on proven technology/other successful projects
- Low maintenance requirements for fixed engineering options
- Minimises dredging/bed re-profiling commitments

**PLANNING &  
TECHNICAL**

**ENVIRONMENTAL &  
INSTITUTIONAL**

**FINANCIAL &  
ECONOMIC**

**IMPLEMENTATION  
& RISKS**

# Technical Options

## Deciding Optimal Solution

### ENVIRONMENTAL & INSTITUTIONAL

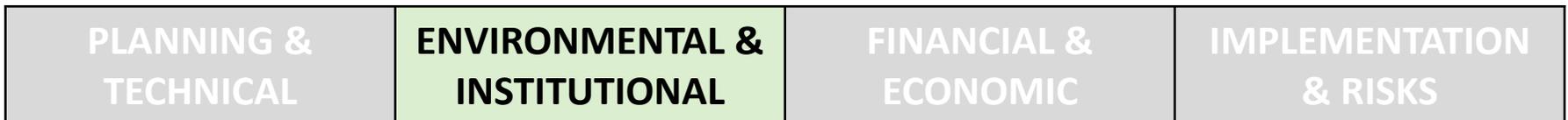
#### INDICATORS

Limited and acceptable environmental impacts

Complies with legal and regulatory framework

#### ASSESSMENT PARAMETERS

- Protects designated sites eg NATURA 2000
- Measures to mitigate/compensate impacts
- European Policy for transportation in 2010
- Danube Commission under Belgrade Convention
- Bulgarian-Romanian Convention Navigation Regime
- EIA Directive
- Birds and Habitats Directives
- Water Framework Directive
- Ramsar Convention ETC



# Technical Options

## Deciding Optimal Solution

### FINANCIAL & ECONOMIC

#### INDICATORS

**Investment/annual recurrent costs are affordable and in budget**

**Economically attractive (BCA)**

#### ASSESSMENT PARAMETERS

- Total investment costs in civil works, capital dredging, equipment, services etc
- Recurrent and annual operation and maintenance costs
- Estimated benefits to shipping and transport
- Benefit: cost ratios (BCR); and incremental benefit cost ratio (IBCR) compared with zero option



# Technical Options

## Deciding Optimal Solution

### IMPLEMENTATION & RISKS

#### INDICATORS

**Interdependence: limited upstream impact and manageable downstream impact of sediment transport**

#### Risks

#### ASSESSMENT PARAMETERS

- No/minimal implications for upstream flows / water levels
- Limited or mitigatable effects downstream

- Low risk of bias that technical effectiveness over-estimated
- Low risk of bias that whole life costs under-estimated



# Activity 2 - Environmental Impact Assessment (EIA)

- ***SubAct 2.1 EIA assessment - June 2018 – September 2019***

Initial Assessment: Jun – Jul 2018

- Screening Stage: Jul – Nov 2018;
- Scoping stage: Nov 2018 – February 2019;

Analysis stage of EIA Report (Feb– Dec 2019)

- Elaboration and submission of initial EIA Report (including conclusions of AA reports) –Sep 2019;

# Activity 2 - Environmental Impact Assessment (EIA)

- ***SubAct 2.2 EIA approval process***

- Analysis stage of EIA Report (Nov 2018– Dec 2019):
  - Elaboration and submission of initial EIA Report (including conclusions of AA reports) –Sep 2019;
  - Organization of 13 public debates – 6 public debates in Romania and 7 in Bulgaria – Sep - Nov 2019;
  - Elaboration and submission of final EIA Report (including the monitoring program and response to public comments):Nov – Dec 2019;
- **EIA Approval – Dec 2019**

# Environmental Impact Assessment Stakeholder Involvement

- **Workshops** – *to present/discuss project milestones*
- **Natura 2000 Forums** - *to receive advice and note concerns regarding environmental impact of design*
- **Subject-specific Working Groups** - *to bring together subject matter experts from various stakeholders in reaching conclusions and contribute to the conceptual design of potential solutions*
  - *morphology / modelling*
  - *sturgeon / fish*
  - *environmental / social*
  - *engineering / technical solutions*
- **Procedural (EIA and AA) Public Debates in Romania and Bulgaria**
- **Project Publicity** – *to gain public support*
- **Advisory Council Meetings** - *to receive advice on the development of the Project*



# Publicity

## Working Groups and Workshops

- **SUBJECT – SPECIFIC WORKING GROUPS** - *to bring together subject matter experts from various stakeholders in reaching conclusions and contribute to the conceptual design of potential solutions, first organised in Dec 2017*

- *morphology / modelling*
- *sturgeon / fish*
- *environmental / social*
- *engineering / technical solutions*



- **WORKSHOPS** - *to present/discuss project milestones*

- *Inception Report*
- *Risk Workshop*
- *Measurements Report, including associated data files*
- *Hydrodynamic mathematical modeling reports*
- *Feasibility Study Reports Modelling Report*
- *Morphology Report*
- *Alternative Solutions Report*
- *EIA and AA*
- *Final Project Report for Feasibility Study and associated studies*





Administrația Fluvială  
a Dunării de Jos R.A. Galați

*Romeo SOARE – romeo.soare@afdj.ro*  
*Mihaela IRIMIA – mihaela.irimia@afdj.ro*  
*www.afdj.ro*

**Thank you!**

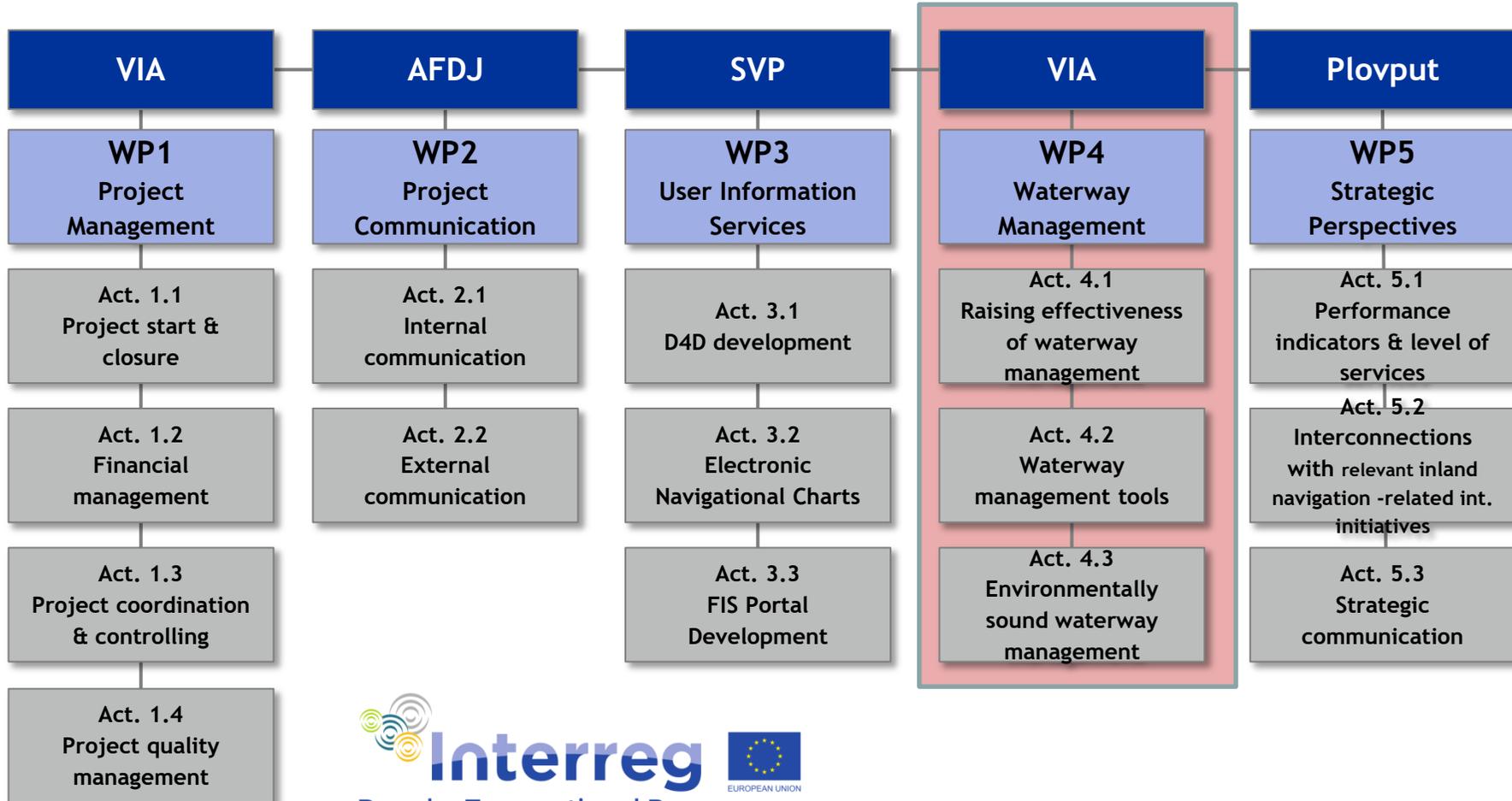


Co-financed by the European Union  
Connecting Europe Facility



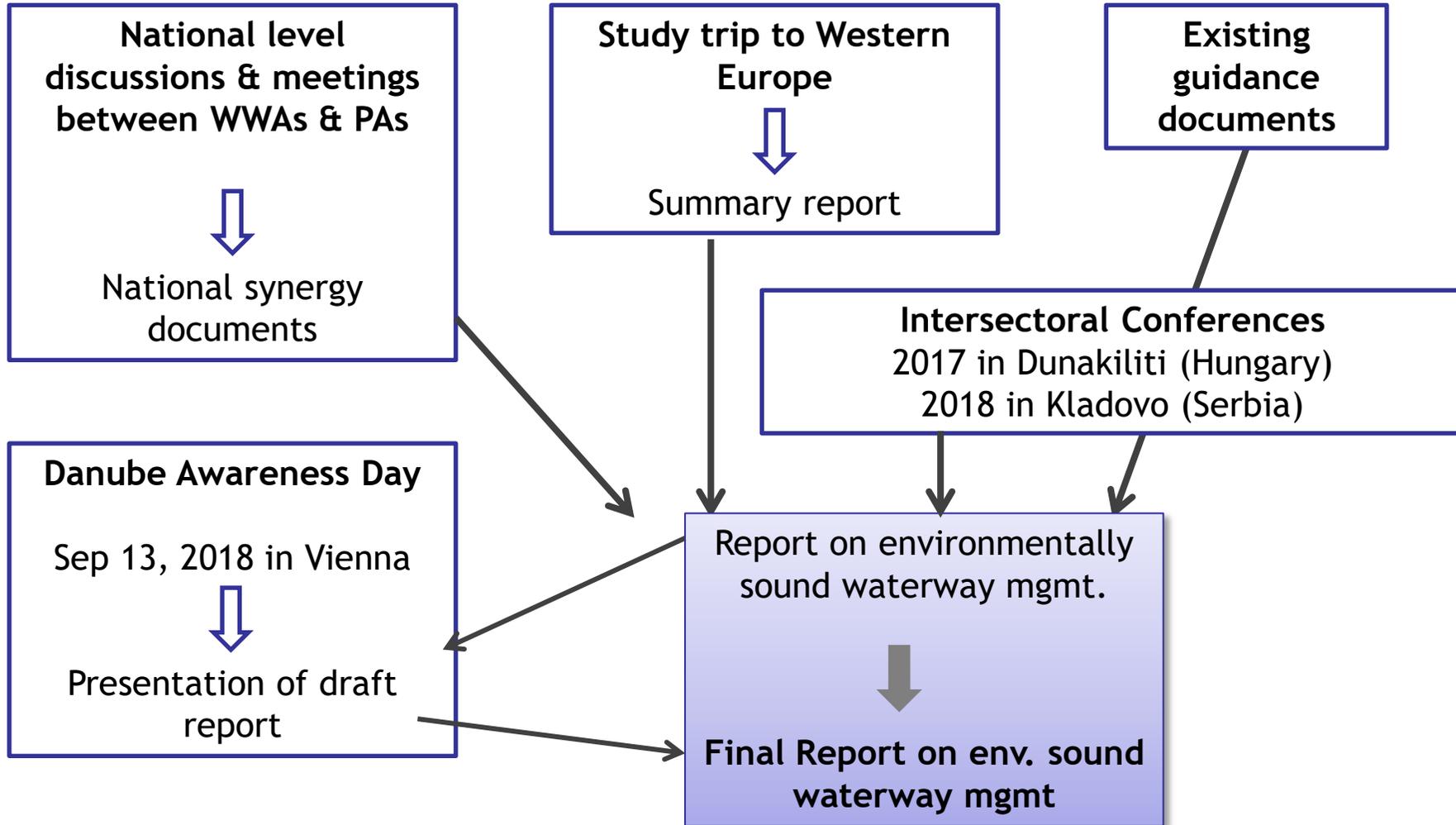
# Reports on Working Group 1 – Waterway infrastructure and management

Report on project Danube STREAM by viadonau, Plovput  
and AFDJ



# Report on environmentally sound waterway management - structure

- Summary of most important legal provisions
- Summary of previous guidance documents
- Guiding principles for environmentally sound waterway management
- Good practice examples from the Danube region



# I. Summary of most important international provisions

## Nature conservation/protection

- Water Framework Directive
- Natura 2000 (Birds + FFH Directive)
- EU Biodiversity Strategy to 2020
- Joint Statement on Guiding Principles for the Development of Inland Navigation and Environmental Protection in the Danube River Basin

## Waterway development

- Regulation (EU) No 1315/2013 on Union guidelines for the development of the trans-European transport network
- European Agreement on Main Inland Waterways of International Importance (AGN)
- Recommendations of Danube Commission
- Fairway Rehabilitation and Maintenance Master Plan (EUSDR)

## II. Summary of most important guidance documents reviewed

- Position paper Working with Nature (PIANC, 2008)
- Common Implementation Strategy for the WFD (2009, EC)
- Inland waterway transport and Natura 2000 (2012, EC)
- Interpretation Manual of European Union Habitats (2013)
- PLATINA Manual on good practices in sustainable waterway planning (2010)
- Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (2013, EC)
- PLATINA II Manual on Waterway Management (2016)
- Guide de concertation territoriale et de facilitation (Lisode, 2017)
- Leitfaden Umweltbelange bei der Unterhaltung (bmvdi, 2017)
- Common Implementation Strategy for the WFD and Floods Directive - Exemptions to the Environmental Objectives according to Article 4(7) (2017)

# Save the date: Danube Awareness Day in Vienna on 13/9/2018

- Public event organised back-to-back with the annual Joint Statement meeting on 13-14 September 2018 (in coordination with ICPDR)
- Public presentation of and discussion on draft report on environmentally sustainable waterway management
- An event in the framework of the Austrian Presidency of the European Council

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# Preparation of Danube Ministerial Conclusions

Analysis of progress since publication of Fairway Masterplan

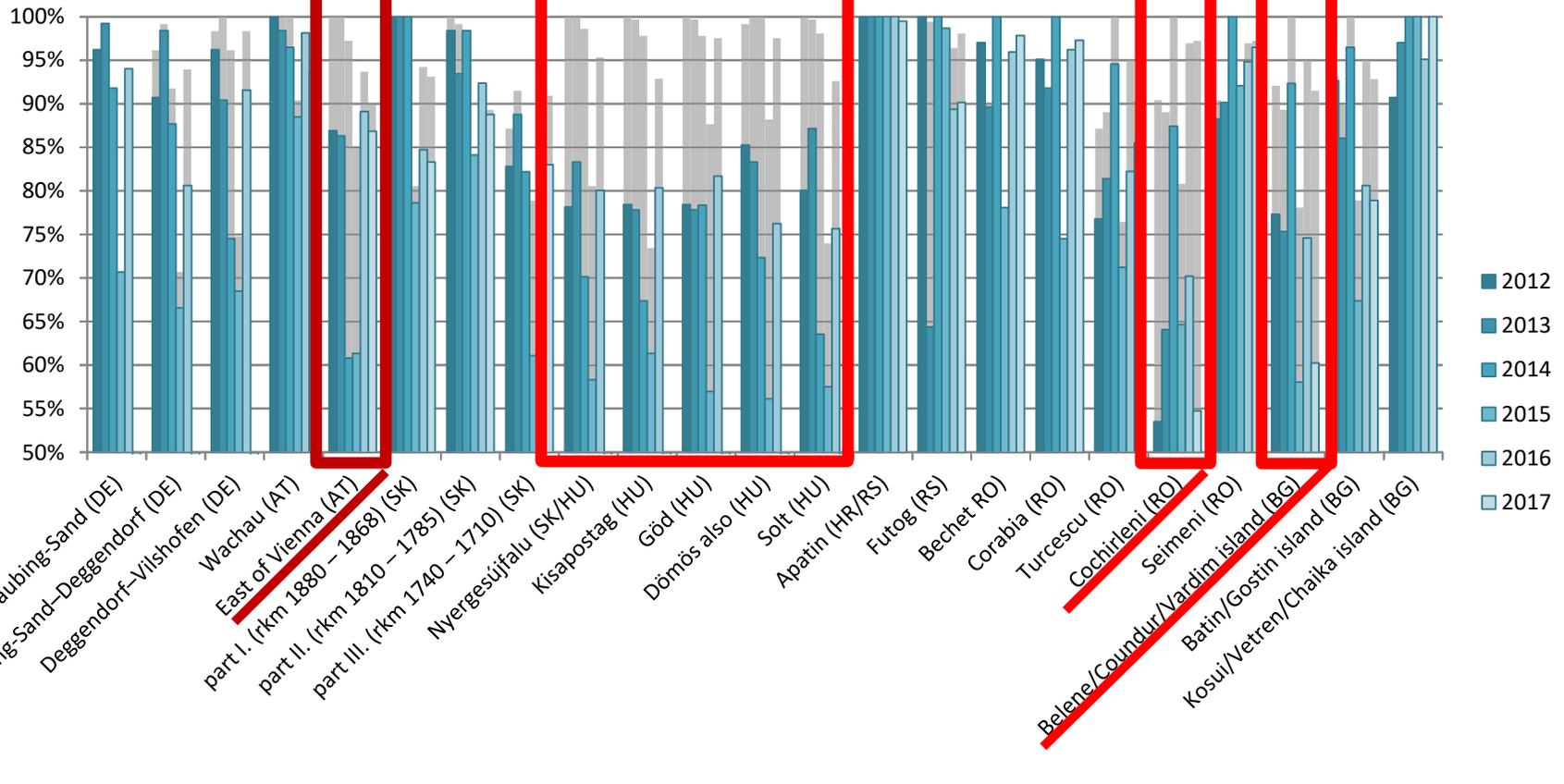
Path towards conclusions

Appeal towards Ministers of Transport

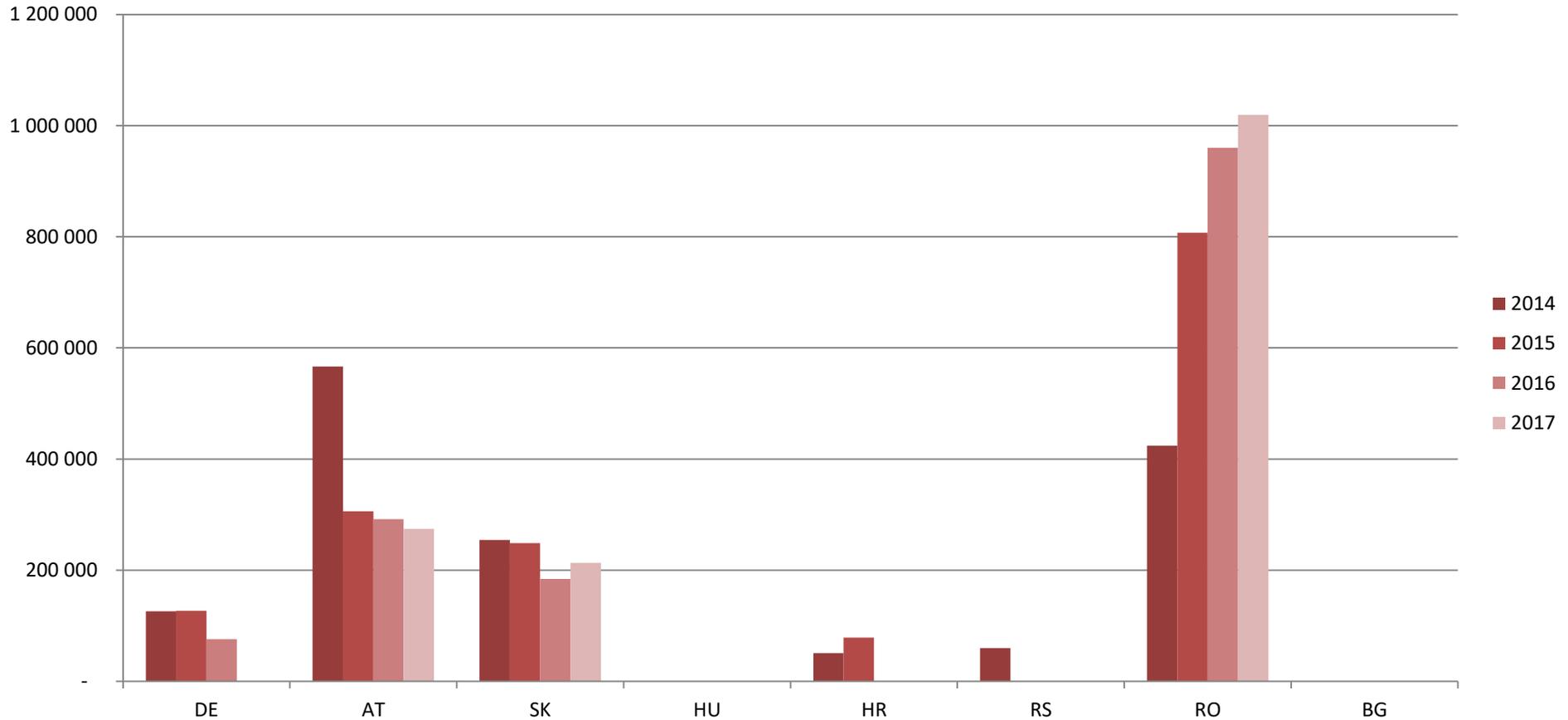
## Path towards Danube Ministerial conclusions

- a) Analysis of technical contents of previous National Action Plans
  - *What has changed after publication of FRMMP?*
- b) Appeal of Steering Group towards ministers
  - *Urging them to meet and draw conclusions*
  - *Offering technical assistance in preparations*
- c) Preparation of conclusions by DG REGIO/DG MOVE – based on technical analyses and previous conclusions
- d) Start of negotiations with Danube ministries of Transport
- e) Final conclusions

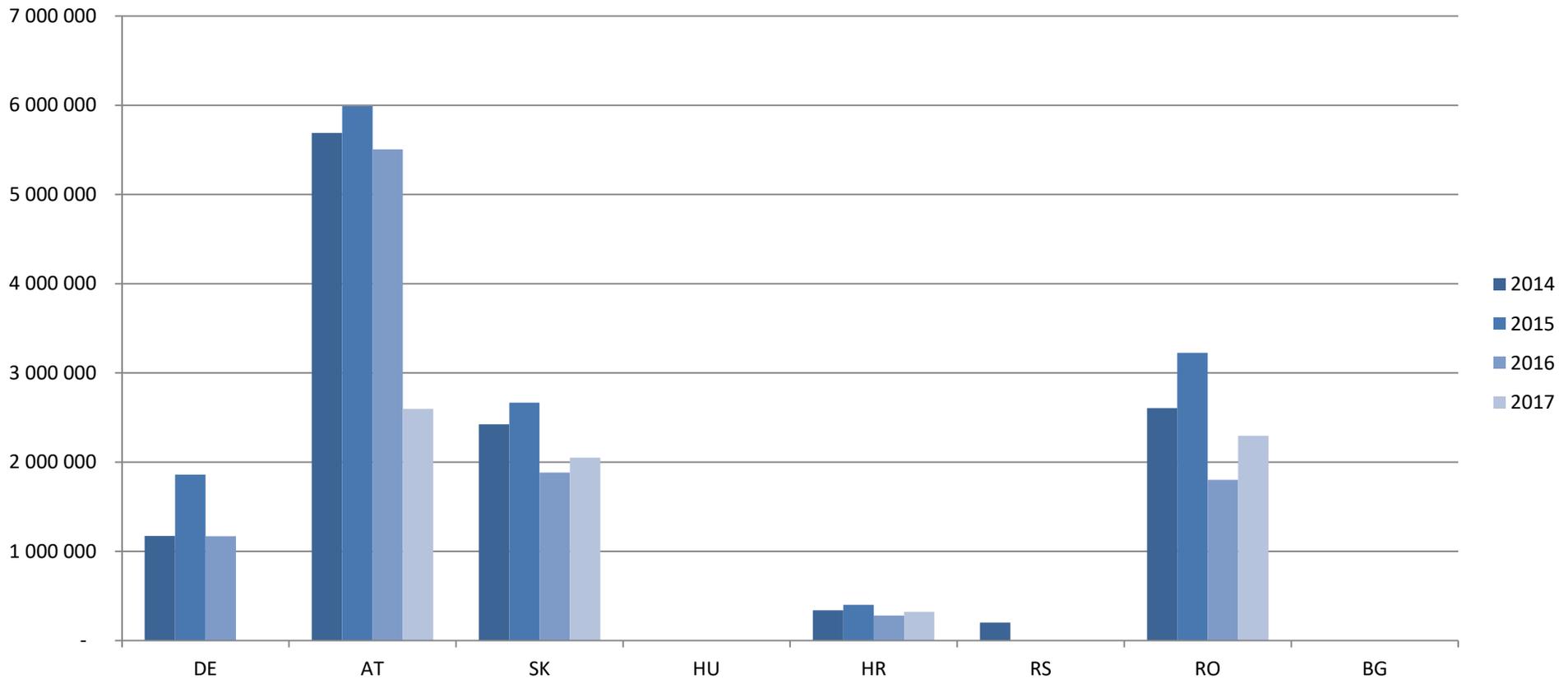
# Fairway availability 2012-2017



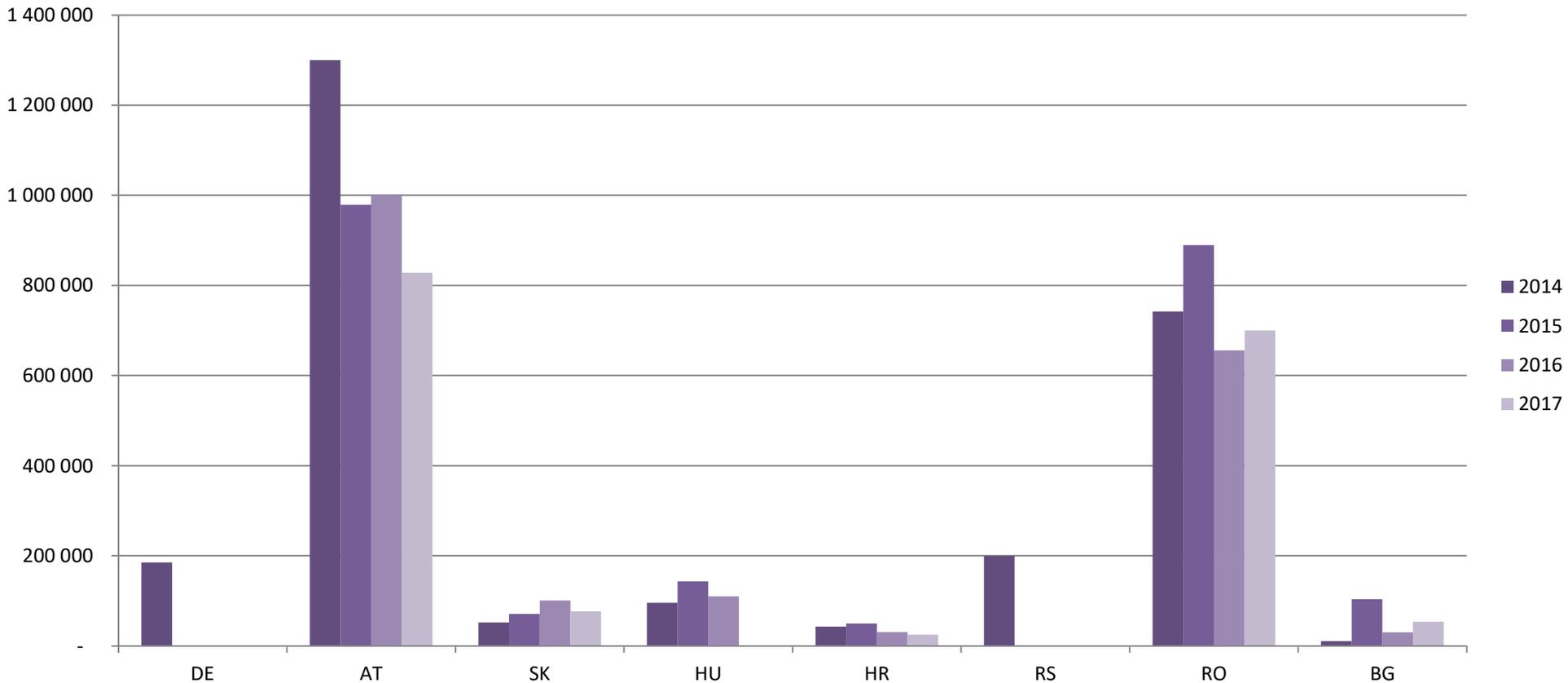
# Cubic metres dredged 2012-2017



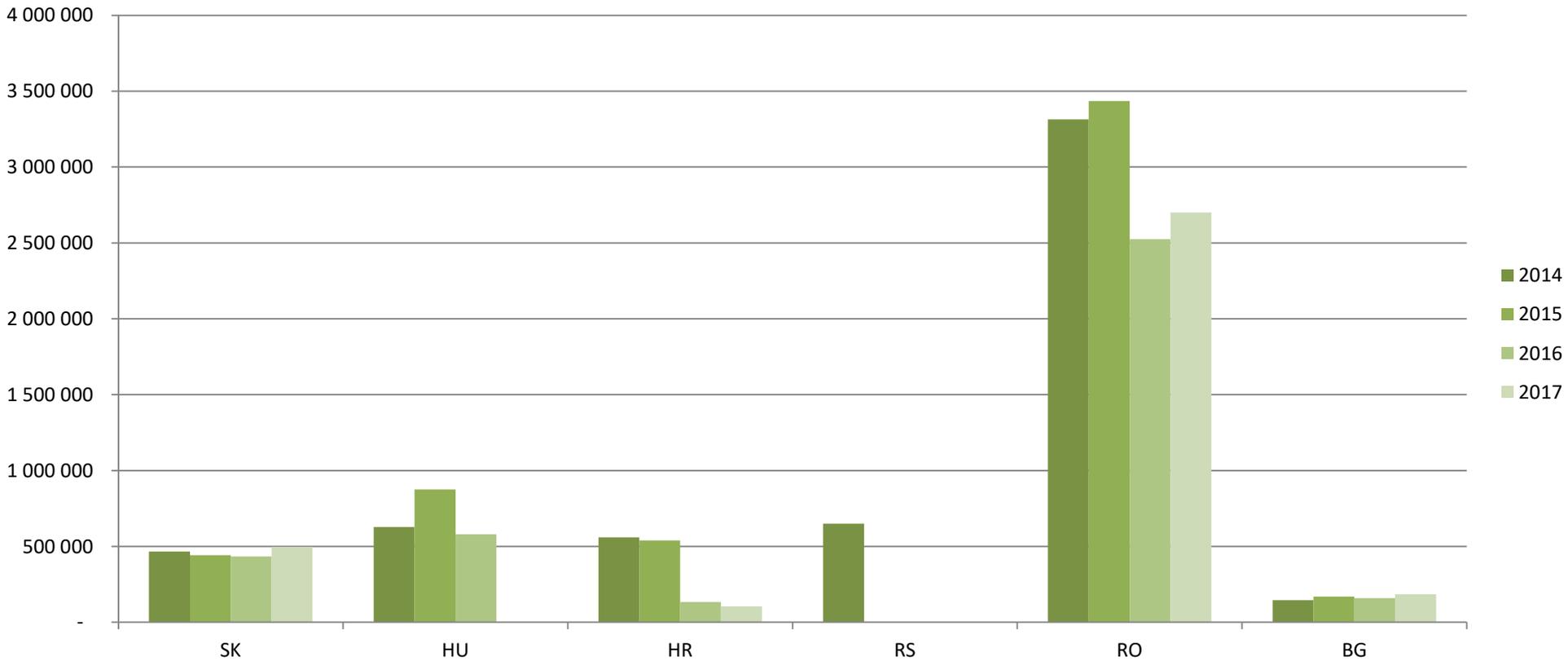
# Operational expenditures on dredging 2012-2017



# Operational expenditures on surveying 2012-2017



# Operational expenditures on marking 2012-2017



# Preparation of Danube Ministerial Conclusions

Decision on appeal towards Ministers of Transport

# Input for Transport Council Conclusions

Initiatives of the Austrian Presidency of the Council of the EU  
Discussion on specific policy needs in the Danube region with  
a view to a possible NAIADES-3 programme post-2020

## Integrated European action programmes for the Promotion of Inland Waterway Transport

### **NAIADES Action Programme 2006 – 2013**

Five strategic areas:

- market
- fleet modernisation
- jobs and skills
- image and awareness
- infrastructure

→ **PLATINA project (Platform for the implementation of NAIADES)**

**2008-2012**

to support the programme's implementation

### **NAIADES II Action Programme 2014 – 2020**

Six strategic areas:

- infrastructure
- innovation
- market
- fleet modernisation (low emissions)
- jobs and skills
- IWT in multimodal logistics chain

→ **PLATINA II project (Platform for the implementation of NAIADES)**

**2013-2016**

to support the programme's implementation

## Integrated European action programmes for the Promotion of Inland Waterway Transport (2)

- EC Communications concerning the entire European Union's inland waterway network
- Implementation of the NAIADES Programmes through **coordinated actions by the sector and public authorities** at Member State, European and international levels:
  - EU Member States
  - European Commission
  - River Commissions, UNECE, CESNI,...
  - key stakeholders (e.g. research bodies,...)
  - waterway users / private sector
  - ...

## Possible European NAIADES III programme post-2020

- NAIADES II Mid-Term Progress Report 2014-2017 currently under elaboration
- Preparation of **Council Conclusions** to invite the Commission to develop a comprehensive follow-up programme "NAIADES III" under the Austrian EU Presidency  
(to be concluded on 3<sup>rd</sup> December 2018)
- **PA1a Steering Group** can prepare input and suggestions for these Council Conclusions, focussing on specific policy needs in the Danube Region

## Discussion

- What are the key problems related to inland navigation in the Danube region and which of these issues would particularly need to be addressed in a possible NAIADES III programme?
- Are there any issues connected to the implementation of the current NAIADES programme that should be avoided in a future programme?

## Proposed topics

- Infrastructure maintenance, rehabilitation and upgrade;
- Fleet modernisation
- Jobs and skills
- Digitalisation / next generation of River Information Services
- Market development and observation
- Multimodal integration

# Conclusions and next steps

## Draft decisions

- After a written procedure (10 working days) the PA1a Steering Group:
  - Acknowledges and agrees on the contents of the proposed DAVID forms to simplify and harmonise border crossing procedures
  - Agrees on the contents of the appeal aimed at the Ministers of Transport
  - Agrees on the general path towards Danube ministerial conclusions until 3<sup>rd</sup> December 2018

## Next meetings

- **13<sup>th</sup> September 2018** Danube Awareness Day in Vienna (a.m.) directly followed by Joint Statement meeting
- **9<sup>th</sup> October 2018** 15<sup>th</sup> PA1a Steering Group (a.m.) and FAIRway Advisory Committee (p.m.) in Vienna
- **10-11<sup>th</sup> October 2018** Danube Business Talks in Vienna

# PA1a coordinators



## Austria

 Bundesministerium  
Verkehr, Innovation und Technologie = **Coordinator**

**viadonau** = Technical  
Secretariat

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