

WP 5 – Port Development

FINAL PROJECT EVENT / 12.6.2019 – Vienna

„First Steps towards the digitalisation of Danube Ports“



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DAPhNE project - WP 5/ Port Development - OVERVIEW

The goal was to provide a comprehensive package of the issues to be approached jointly in order to help compensate the unbalanced development level between the Upper Danube ports and the other river sections which have been planned:

- 1) Act 5.1: focus will be on the means of stimulating upgrading of port infrastructure & industrial development (= 1st Pillar).
- 2) Act 5.2: will target the issue of financing port investments as expected via public private partnership (= 2nd pillar).
- 3) **Act 5.3/5.4: dealing with innovation, two activities have been planned: a modular port community system (act 5.3) and innovative markets (act 5.4) (= 3rd Pillar).**

- *study visit to port of Antwerp*
- *input collection for technical specification of a PCS (from pilot users)*
- *model architecture for PCS*
- *development of pilot-moduls of a PCS and pilot actions testing in 4 ports (Enns, Bratislava, Smederevo, Novi Sad)*
- *pre-feasibility studies for (sea-)ports in Romania*

„Major Challenges for digitalisation in inland waterways“

EFIP/13.5.2019

The capacity of the data transfer might not be enough if the needs to transfer data increase dramatically > 5 G?

River Information Services are available within the national jurisdictions, but the data is not shared across borders > and even not with the users in the countries > 3rd step of RISCOTEX, open to business users (ports & shippers)

The lack of sophisticated scheduling of vessels in the ports leads to the fact that ships inefficiently rush to port and then stand by offshore waiting for a mooring, which makes the last part of the journey extremely slow > really ?

A technological issue for waterborne transport that is less of an issue for land-based industry is that the availability of connectivity, related infrastructure and authentication is often limited > „Smart inland ports will have intelligent information systems that collect & distribute data for the (CORE) operations of a port.“



Ennshafen – the reasons to become part of the pilot

Ennshafen	CONNECT	We connect the region to Europe.
	SUPPLY	We supply to people and businesses.
	UNITE	We unite expertise.

modern port (founded in 1976) / 3,5 mio squaremeters, port & 2 great industrial businessparks, top container terminal (hinterland terminal), ...

PPP - public private partnership > port company & authority + 10 transshipment companies

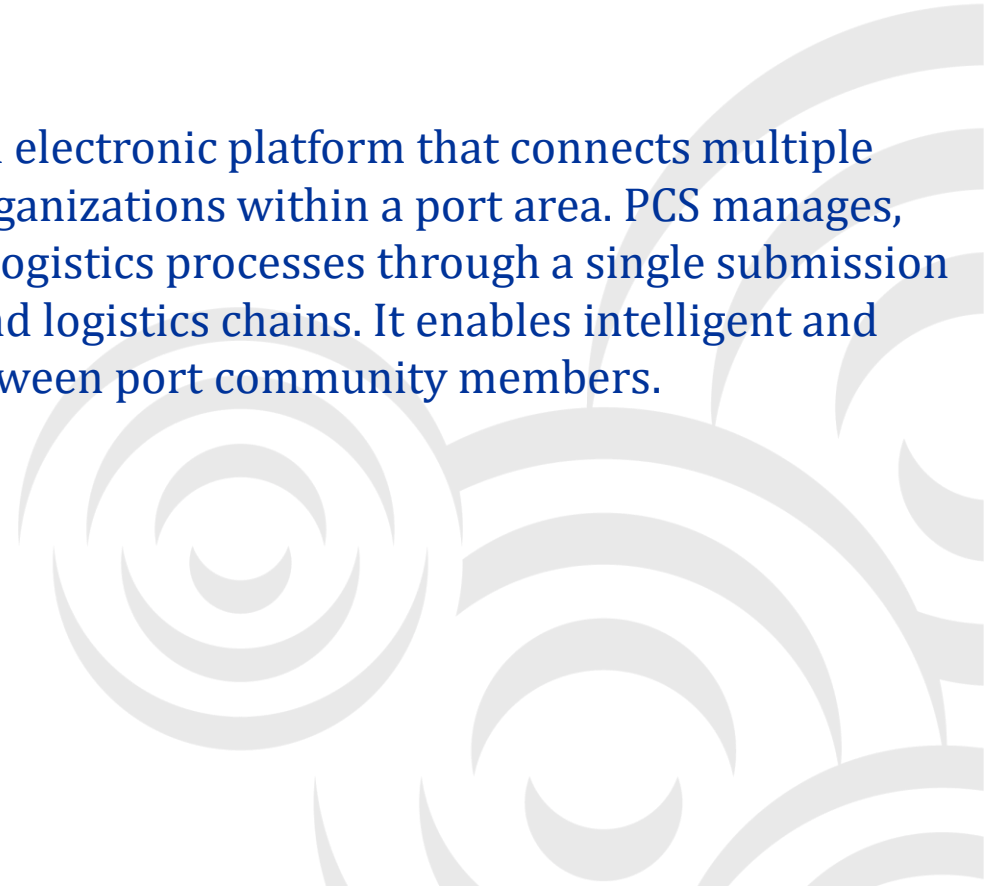
infrastruktur mainly built in last 10-20 years > camera system (analog > now digital) for berth management & control, AIS-transponder (stand alone), transshipment papers from several parties, shore side electricity supply with an automatic system (remote control and setting system), ... great experience in software for container terminal > outsourcing of business

NOW/FUTURE: focus on core port process of water transshipment –but only this process step, not the behind processes (much better software is available – not typical port processes)



What is a „PCS“?

Port Community System (PCS) is an electronic platform that connects multiple systems operated by a variety of organizations within a port area. PCS manages, optimizes and automates port and logistics processes through a single submission of data and connecting transport and logistics chains. It enables intelligent and secure exchange of information between port community members.





Benefits:

- optimizes port processes by digitalizing them:
 - reduction in administrative workload (instant delivery of information, repetitive data input reduced, data input errors reduced/eliminated)
 - planning of port operations supported
 - storage allocation supported
 - berth allocation supported
- smart and secure data exchange (designated port actors have access to pre-defined data fields, administrator setup)
- status information and control, tracking and tracing of vessels and goods
- integration with other systems
- statistics records.



Steps taken:





PCS core Profile Vessels **Vessel access**

User	Vessel	Access	
User	vessel3	Read	Remove
Admin	vessel3	Write	Remove

Add

PCS core Profile **Vessels** Vessel access

Name	ENI	MMSI		
vesel1	12345	12345	Edit	Remove
vessel3	1234567	1234567	Edit	Remove

Add new

Add existing

Users

Name	Email	subscribed	username	Roles		
System		No	system	superadmin,admin	Edit	Manage Vessels
User		No	user	user	Edit	Manage Vessels
Admin		No	admin	admin,user	Edit	Manage Vessels

Add

Name:

MMSI:

ENI:

Flag:

Type:

Power:

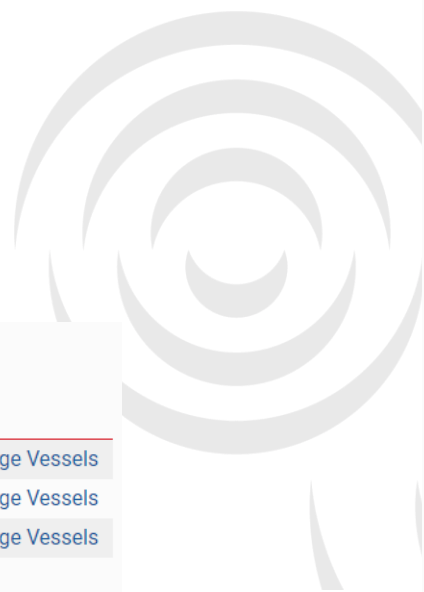
Width:

Length:

Draught:

Speed:

Certificate valid until:



Cargo module – View cargo report

Cargo Report

Print

Export to PDF

Back

Approved by System	Registered on 13.09.2018 15:47	Vessel name (ENI) vessel3 (1234567)	Ship captain dsada	Flag CROATIA	Total duration of (un)loading 42h:5m	Port of departure BRATISLAVA PORT (HTD 16)
Port of destination ENNS(ENNSHAFEN KAI 11 DANUBIA)						

Receiver

Name	Address	City	Postal code	Country	VAT number	Email	Phone number
acme	Striborova 44	Zagreb	10000	CROATIA	HR4352251131	test@test.com	+385918184814

Sender

Name	Address	City	Postal code	Country	VAT number	Email	Phone number
acme	Striborova 44	Zagreb	10000	CROATIA	HR4352251131	test@test.com	+385918184814

Shipping company

Name	Address	City	Postal code	Country	VAT number	Email	Phone number
acme	Striborova 44	Zagreb	10000	CROATIA	HR4352251131	test@test.com	+385918184814

Cargo 1

Cargo type	Goods condition	Reported weight	(Un)loading weight	Remark	(Un)loading duration
ABRASSIVE POWDER OR GRAIN	ok	23	23	dsa	29h:5m

Schedule

Start date and time	End date and time	Duration
08.09.2018 10:00	09.09.2018 15:05	29h:5m

Cargo 2

Cargo type	Goods condition	Reported weight	(Un)loading weight	Remark	(Un)loading duration
ACETIC ACID	ok	144	132	dsaf	13h:0m

Schedule

Start date and time	End date and time	Duration
14.09.2018 11:23	14.09.2018 15:23	4h:0m
15.09.2018 13:38	15.09.2018 16:38	3h:0m
16.09.2018 10:38	16.09.2018 16:38	6h:0m

Tracking and tracing module

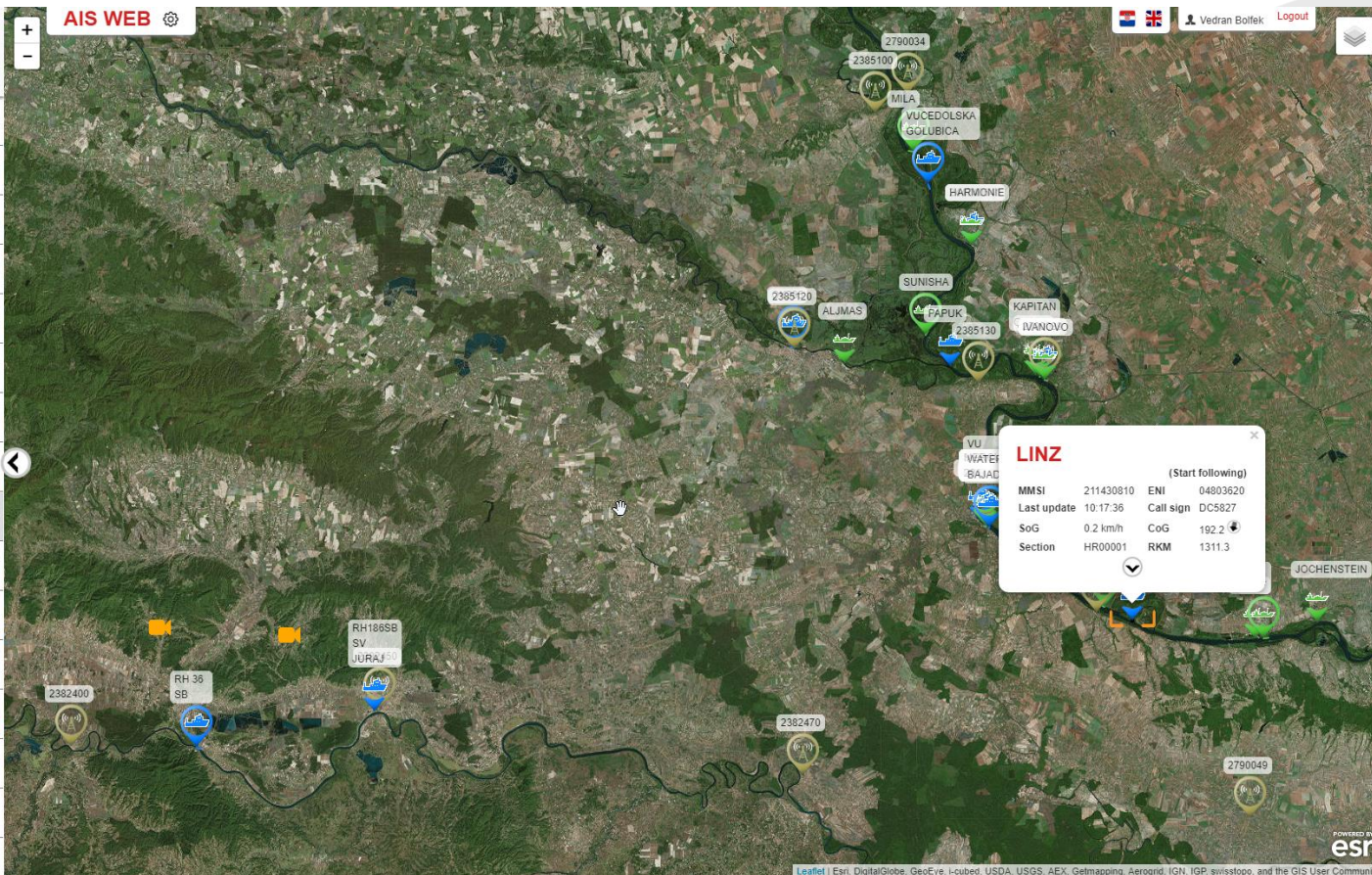
Filter SoG

32 3 20 10 0

Order: Name Ascending

BEN	264163254, ENI 04008530	0.0 km/h
CORONA112BARZE	211560180, ENI 04602530	0.0 km/h
GRIFON	677082600, ENI 93700528	0.0 km/h
HARMONIE	244690236, ENI 04002090	0.0 km/h
IVANOVO	272028600, ENI 42000026	0.2 km/h
JOCHENSTEIN	203999385, ENI 08557028	0.0 km/h
KAPITAN GAYDAY	272040100, ENI 42000031	0.0 km/h
LENA+LINDA	279202538, ENI 02311548	12.8 km/h
LINZ	211430810, ENI 04803620	0.2 km/h
MERCUR 201	264163250, ENI 46000345	0.2 km/h
MILA	207072285, ENI 04004470	13.1 km/h
MON AMI	279202537, ENI 08023097	0.0 km/h
OK285	175393208, ENI 00000000	5.2 km/h
PAPUK	238379640	0.2 km/h
FRILJEVO	238017602, ENI 00000000	
RH 36 SB	238353140	12.2 km/h

AIS WEB
Vedran Boitef Logout



LINZ (Start following)

MMSI: 211430810 ENI: 04803620

Last update: 10:17:36 Call sign: DC5827

SoG: 0.2 km/h CoG: 192.2

Section: HR00001 RKM: 1311.3

Lessons learnt for a system provider

Port digitalisation is a complex process on multiple levels:

- legal (data sharing, privacy restrictions on national and international level, GDPR);
- corporate (private entities are always restrictive of their information, such as pricing, transport volumes, cargo types, routes, income, costs etc.)
- operational (business processes between different port actors are often different)
- technical (the preparation phase should be extensive, development work needs to be supplemented by a long period of tailoring and adjustments once the users start working with the application);
- usage complexity – (proper digitalization of processes requires many functionalities which complicate application in respect to number of actions to be formed and complexity of data input, and finding ways to optimize application interface to be efficient for usage is usually a continuous effort, tailor made)
- strong dedication from the future user in the specification and the testing phase is **essential**

Lessons learnt for a pilot user (= PORT)

„a lot of effort was necessary for debugging / necessary modifications / server problems / data security reasons / AIS-signal providing / private parties are very restrictive / ... - but this is just ordinary for implementation of programs like this“

„good and huge basic work has been done for PCS modules development in general, but making the PCS operational and suitable for real daily business means a lot of further work and improvement and especially taylor-made adoptions for each port or industrial site“

“less is more – concentrate on the real port specific process and don´t get into other processes (not port specific processes), where much better software is already available on the market – let´s focus on our core port business !!”

Next steps & further plans

- *the results of the pilot work are a good basis (= technical software document / technical specification details / tests of masks and interfaces) – we are spending work on this item now and in the future because digitalisation can bring better performance for port processes*
- *in future the product development should be done on a taylor-made port specific basis, but the general shape should have a minimum of common procedures for outside users as e.g. captains of a vessel, ...*
- *actually: we are preparing the next steps regarding server installation, technical solutions for connetion of existing technical equipment with modern coupling devices (camera system , AIS – receiver, WLAN-hotspots versus internet, ...) AND detailed process analysis and ideas of our clients regarding user friendly masks, input lists, ... - USER FRIENDLY PRODUCT IS A MUST !!!*
- *core module & data security / cargo module / tracking & tracing (berth management)*
- *„topic is still hot“ and work on it must be an ongoing agenda > DIONYSUS and CEF-calls are the next concret actions – it is not a question of „why“ – it will be a „must“ due to strongly increasing significant importance of digitalisation in everyday business“*



Tank you for your kind attention !

