D.2.4.6.
2nd Transport Stakeholder Workshop

Document Control Sheet

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Content

Introduction

Transport Stakeholder Workshop is one of the project activities, within WP 2 –Communication Activities, Act. 2.4. Public events, which concerns public events organization and hosting with overall objective to achieve involvement of the identified stakeholders. The main outputs of the WP2 is the definition of framework, set of measures and actions to promote the project outputs and results, highlighting the link with achievements and outputs of the CARICA project that CHARGE intends to capitalize, the identification of local, regional, national and WU communication channels, the description of focused and customized dissemination strategies for local usage. One of the measures to achieve those outputs, is the organization of Transport stakeholder workshop in Croatia.

Transport stakeholder workshop in Croatia represents a way to disseminate project results in Croatia, and it is one of the key elements to ensure the durability and transferability of project outputs and, at the end, to contribute to the Programme Communication Strategy.

2nd Transport Stakeholder Workshop

The 2nd Transport Stakeholder Workshop was held at the premises of the Croatian Chamber of Economy in Split, Croatia on 14th May 2019.

All invited main stakeholders participated the event, as well as some project partners.

The workshop included brief presentation of activities of a host partner– Split Port Authority, and presentation of the Analysis on potential market flows of the Port Split, held by representatives of Faculty of Maritime Studies.

Josko Berket Bakota, as a hosting PP, welcomed all the attendees and gave a brief introduction about CHARGE project and its objectives and about SPA's main activities within project. Than he gave floor to representatives of Faculty of Maritime Studies, University of Split Mr. Zvonimi Lušić, Luka Vukić and Danijel Pušić, who presented the results of the »Analysis on potential market flows of the Port Split« document.

2nd Transport Stakeholder Workshop continued with Analysis on potential market flows of the Port Split presentation.

Mr. Lušić (Faculty of Maritime Studies) started introducing himself and other two colleagues Mr. Luka Vukić and Danijel Pušić, and gave a brief introduction about the role of the Faculty of Maritime Studies in the CHARGE project, and the activities in which it participates. They are contracted by Split Port Authority as an external expert for 4.1.1. and 4.1.2 activity. Than he continued with brief presentation of the Common methodology for potential traffic flow analysis whish was the base for making of 'Analysis on potential market flows of the Port Split'.

After that, he gave floor to Mr. Vukić (Faculty of Maritime Studies) who also greeted all participant and started with presentation of 'Analysis on potential market flows of the Port Split'. Mr. Vukić started his presentation with the defining the main characteristic of the port

Split and port area. He presented port traffic statistics (freight traffic statistics, vessel traffic statistics and other related data). He continued his presentation with the overview and analysis of the existing traffic flows between Port of Split and Italian ports. Then he presented analysis on potential market flows and projection of future traffic flows between Port of Split and Italian ports. As one of the essential points of the analysis he pointed out potential undesirable effects and points of congestion in port of Split.

For the end, Mr Vukic presented the main conclusions of the conducted analysis, and invited all participants to discussion.

After short discussion, Mr. Lušić and Mr. Berket Bakota thanked all participants for their attendance in 2nd Transport Stakeholder Workshop

Annexes

Interreg Italy - Croatia CHARGE

EUROPEAN UNION

POZIV

na 2. Radionicu dionika u prijevozu projekta CHARGE

(2nd Transport Stakeholder Workshop of CHARGE Project)

Croatian Chamber of Economy, Obala Ante Trumbića 4, 21000 Split (Croatia)

14th May 2019

Poštovani/a,

pozivamo vas na 2. Radionicu dionika u transportu projekta CHARGE (Capitalization and Harmonization of the Adriatic Region Gate of Europe) financiranog iz sredstava Programa prekogranične suradnje Interreg V-A Italija –Hrvatska 2014-2020., koja će se održati u sklopu 3. Sastanka upravnog odbora, dana **14. svibnja 2019.g (utorak) u 10:15 u Velikoj vijećnici Hrvatske gospodarske komore, Obala Ante Trumbića 4, 21000 Split.**

Dnevni red

10:15 – 10:20	**Pozdravni govor i pregled aktivnosti projekta CHARGE** Joško Berket-Bakota, voditelj projekta, Lučka uprava Split
10:20 – 10:40	**Prezentacija Analize potencijalnih tržišnih tokova luke Split** prof. Zvonimir Lušić, Sveučilište u Splitu, Pomorki fakultet
10:40 – 10:45	**Zaključci radionice**
10:45 -11:15	**Stanka za kavu**

Molimo Vas da potvrdite svoj dolazak putem e-maila: ana.matulic@portsplit.hr


Interreg
Italy - Croatia
CHARGE
EUROPEAN UNION
Analysis on potential market flows of the Port of Split
Zvonimir Lušić, Luka Vukić, Danijel Pušić
University of Split, Faculty of Maritime Studies, Croatia
Transport Stakeholder Workshop – Project „CHARGE"
May 14, 2019, Split, Croatia

PROJECT „CHARGE”

WORK PACKAGE NUMBER 4

Enhancing freight traffic flows and connections between the Adriatic ports

ACTIVITY NUMBER 4.1

Joint market analysis to assess traffic potential market between Adriatic Ports

D 4.1.1 Common methodology for potential traffic flow analysis

D 4.1.2 Analysis on potential market flows of involved ports

D 4.1.3 Comprehensive report on the future scenarios of traffic flows between Italian-Croatian ports

METHODOLOGY

1. Introduction
2. Defining the main characteristics of the port and port area (Port of Split)
3. Port traffic statistics

– Freight traffic statistics

– Vessel traffic statistics

– Other related data

4. Overview and analysis of the existing traffic flows between Port of Split and Italian ports
5. Analysis on potential market flows and projection of future traffic flows between Port of Split and Italian ports
6. Potential undesirable effects and points of congestion
7. Conclusion

DEFINING THE MAIN CHARACTERISTICS OF THE PORT AND PORT AREA

- favorable geostrategic location
- „gateway to the islands"
- first among Adriatic ports by the number of passengers and vehicles
- third among Croatian ports regarding the transport of cargo behind port of Rijeka and port of Ploče
- largest port in central Dalmatian region
- classified as a Trans-European Transport Network (TEN-T) comprehensive port for Croatia

Location of the port of Split

Source: Luka d.d. Split, 2018

DEFINING THE MAIN CHARACTERISTICS OF THE PORT AND PORT AREA

ROAD TRANSPORT - highway A1; state road D8

RAIL TARNSPORT – connected to Mediterranean rail freight corridor RFC6 through international main railway line Zagreb-Karlovac-Oštarije (M202)

AIR TRANSPORT - Split Airport terminal located in Kaštel Štafilić

MARITIME TRANSPORT - passenger

- largest passenger port in Croatia - development is mainly directed to **passenger and cruise transport** (Transport Development Strategy of the Republic of Croatia 2017 – 2030)
- the passenger terminal is located in the City port basin and connected with islands and other coastal destinations by ferry, passenger and high speed boats (catamaran) vessels, while also performing regular international passenger trade with Ancona in Italy
- five state ferry lines operating from and to the port of Split towards islands of Vis, Lastovo, Korčula, Hvar, Brač and Šolta
- five state and seven other high speed craft (HSC) line connections with central and southern Dalmatian islands
- one direct turnaround international passenger line with Italy enabling the efficient transport of passengers, vehicles (busses, trucks etc.) in the international trade

State ferry lines from the Port of Split for 2018 (daily overview)

LINE NUMBER	STATE FERRY LINE	NUMBER OF DEPARTURES FROM THE PORT		
		OFFSEASON (01.01. - 31.05. & 01.10. - 31.12.)	LOW SEASON (01.06. - 28.06. & 03.09. - 30.09.)	HIGH SEASON (29.06 – 02.09)
602	Split – Vis	4	4	6
604	Split – Hvar - Vela Luka (Korčula) – Ubli (Lastovo)	OFFSEASON (01.01. - 31.05. & 01.10. - 31.12.)		SEASON (01.06 – 30.09.)
		2		2
631	Split – Supetar (Brač)	9	12	14
635	Split – Stari Grad (Hvar)	4	6	8
636	Split – Rogač (Šolta)	4	5	6

Source: CLSA, 2018

DEFINING THE MAIN CHARACTERISTICS OF THE PORT AND PORT AREA

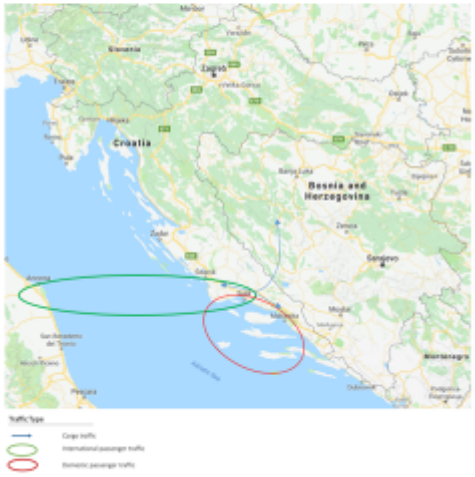
MARITIME TRANSPORT - cargo

- cargo terminals **being able to accommodate all types of vessels**, depending on the typology of freight, typically including dry bulk products such as iron ore, coal, cement and grain as well as liquid products
- General cargo terminals are used to provide trade services to worldwide destinations depending on the demand for commodities, while the container terminal is connected with **Mediterranean hub** ports predominantly in the Adriatic
- The port is directly connected with **Freeport container terminal in Malta** on the **Adriatic X-PRESS 1 (ADX 1)** service route jointly operated by CMA-CGM and Maersk on a weekly basis.
- Transport Development Strategy of the Republic of Croatia (2017 – 2030) - **specialization and proper development of the railway freight infrastructure** as the development measures

DEFINING THE MAIN CHARACTERISTICS OF THE PORT AND PORT AREA

CURRENT MARKETS AND HINTERLAND

- main markets regarding the **transport of passengers** and vehicles (trucks, buses, private cars) are **central and south Dalmatian islands** with few destinations along the **coast**, as well as the **international market** of passenger and vehicle transport with **Italy**.
- the main market for the **import and export of containers** is **China**, having the largest share in both cargo import and export, having also steady container flows directed to the remaining countries of the **Fare East and countries of the Arabian Peninsula and Middle East.**
- cruise market - **cruise company itineraries**
- the **gravitational area** of the port in the segment of cargo transport is situated in **northwest Bosnia and Herzegovina** with accompanying destinations in Croatia, mainly in **Split-Dalmatia County which represents its hinterland**



Port of Split current markets

Source: Maritime & Transport Business Solutions, 2016 - modified; Google Maps, 2018

DEFINING THE MAIN CHARACTERISTICS OF THE PORT AND PORT AREA

PORT INFRASTRUCTURE AND RELATED TERMINALS

- two dislocated areas - **the ferry and cruise terminal** predetermined for transport of passengers and vehicles located in the **southern part of the city of Split** and **cargo terminal** (traditionally nominated as the North port) in the **northern part**
- Seven docking areas as follows: City port basin (passenger, ferry and cruise port), Vranjic - Solin basin (cargo port), Kaštela basin A, Kaštela basin B, Kaštela basin C, Kaštela basin D - Resnik and Komiža basin for fishing needs.

Docking areas within the competence of Split Port Authority

Source: Port Authority Split, 2018

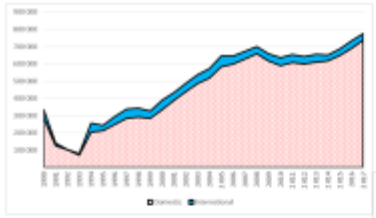
DEFINING THE MAIN CHARACTERISTICS OF THE PORT AND PORT AREA

D.2.4.6. 2nd Transport Stakeholder Workshop

PORT TRAFFIC STATISTICS

1. FREIGHT TRAFFIC STATISTICS

- vehicle traffic (truck, busses, personal vehicles); container traffic; other cargo traffic; passenger traffic



Port of Split – Vehicle traffic (1990-2017)
Source: Port Authority Split, 2018

Port of Split – Passengers traffic 1990-2017
Source: Port Authority Split, 2018

Cargo traffic in period 1990-2017
Source: LOC, 2018

PORT TRAFFIC STATISTICS

2. VESSEL TRAFFIC STATISTICS

- by type, traffic of smaller vessels, other traffic

Total traffic of vessels in the Port of Split

	City Port basin	Other basins	Total
2013.	15,107	1,115	16,222
2014.	15,604	1,100	16,704
2015.	16,856	1,086	17,942
2016.	17,721	1,474	19,195
2017.	16,439	2,107	18,546

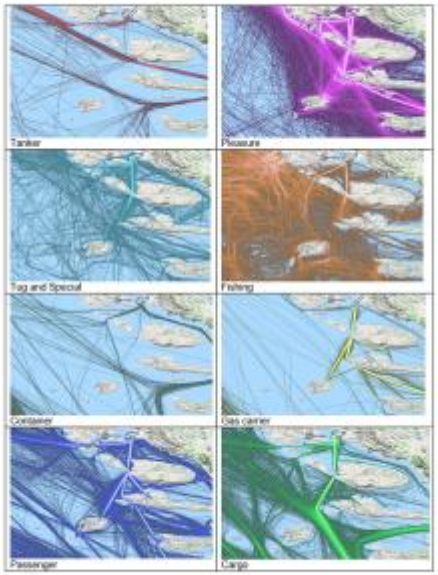
Source: Port Authority Split, 2014-2018

PORT TRAFFIC STATISTICS

3. MAIN ACCESS SEAWAYS

- intensity of traffic flows,
- VTMIS Croatia, port congestion, environmental incentivizes

Main access seaways to the Port of Split
Source: Faculty of Maritime Studies Split, 2017



Density of sea traffic at the entrance to the Port of Split (AIS data, 2017)
Source: Marine Traffic, 2017

OVERVIEW AND ANALYSIS OF THE EXISTING TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

- existing maritime links in the Adriatic, with the focus on the Italian-Croatian traffic flows for the port of Split
- focus on **ferry and container freight traffic**
- Two parts of the analysis:

- **existing traffic flows of the port of Split**
- **current traffic flows between Italian-Croatian ports having the focal point on ferry and container freight statistics, activities and traffic**

EXISTING TRAFFIC FLOWS OF THE PORT OF SPLIT

- divided on **passenger and cargo transport** activities related to ferry and container traffic flows
- passenger ferry transport - decomposed on domestic and international ferry transport (also comprising the vehicle transport statistics)

one international ferry passenger traffic flow, the ferry line towards Italy calling the port of Split and connecting it with Ancona

OVERVIEW AND ANALYSIS OF THE EXISTING TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

Domestic ferry passenger traffic flows

- destinations on central Dalmatian islands
- passenger and vehicle traffic demand indicators analysis for the respective ferry traffic flows calling the port of Split for period from 2013 to 2017 (presenting the overall passenger and vehicle turnover in port)

Passenger traffic flow demand indicators in domestic ferry transport from 2013 to 2017

LINE NUMBER	DOMESTIC PASSENGER TRANSPORT FERRY LINE	2013.	2014.	2015.	2016.	2017.
602	Vis – Split	196,018	197,491	215,090	241,860	261,166
604	Lastovo – Vela Luka (Korčula) – Hvar – Split	174,923	177,648	207,258	215,135	230,715
631	Supetar (Brač) – Split	1,598,371	1,604,778	1,745,919	1,861,052	1,965,375
635	Stari Grad (Hvar) – Split	626,472	618,919	671,146	724,017	801,311
636	Rogač (Šolta) – Split	278,229	284,268	309,266	324,127	347,902

Source: CLSA, 2018

Vehicle traffic flow indicators in domestic ferry transport from 2013 to 2017

LINE NUMBER	DOMESTIC VEHICLE TRANSPORT FERRY LINE	2013.	2014.	2015.	2016.	2017.
602	Vis – Split	40,720	40,318	43,220	48,798	53,912
604	Lastovo – Vela Luka (Korčula) – Hvar – Split	40,857	40,248	44,966	44,393	48,750
631	Supetar (Brač) – Split	321,827	327,477	345,332	380,640	387,074
635	Stari Grad (Hvar) – Split	141,947	144,758	148,731	159,903	166,257
636	Rogač (Šolta) – Split	55,395	56,289	61,109	66,731	72,672

Source: CLSA, 2018

OVERVIEW AND ANALYSIS OF THE EXISTING TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

Domestic ferry passenger traffic flows

- statistics of the distances between ports on the specific ferry traffic routes and characteristic of ferry vessels operating on the individual domestic ferry line

Distance from port of Split towards the ports in domestic ferry transport with characteristics of typical ferry vessel operating on the ferry line

DOMESTIC FERRY LINE	DISTANCE (NM)	TYPICALL FERRY VESSEL	MAXIMUM / AVERAGE SPEED RECORDE ON THE FERRY LINE (KNOTS)	MAXIMUM NUMBER OF PASSENGERS / VEHICLES
Split – Rogač (Šolta)	8.1 NM	"Blickovo"	11.6 / 11.4 kn	1,200 pax. / 158 passenger cars or 12 trailers of 40 t
Split – Supetar (Brač)	8.3 NM	"Hrvat"	11.5 / 10.2 kn	1,200 pax. / 158 passenger cars or 12 trailers of 40 t
Split – Stari Grad	21.8 NM	"Tin Ujević"	12.2 / 11.6 kn	1,000 pax. / 200 passenger cars
Split – Vis	28.7 NM	"Petar Hektorović"	14.2 / 13.4 kn	1,080 pax. / 120 passenger cars
Split – Vela Luka (Korčula)	44.7 NM	"Lastovo"	15.8 / 14.6 kn	500 pax. / 60 passenger cars

Source: Source: Faculty of Maritime Studies Rijeka, 2014; Marine Traffic, 2018; Jadrolinija, 2018 – modified

OVERVIEW AND ANALYSIS OF THE EXISTING TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

EXISTING TRAFFIC FLOWS OF THE PORT OF SPLIT

Container traffic flows in the port of Split

- transport of containers in the port of Split is performed in its northern suburb located in the Vranjic-Solin basin
- Maersk and CMA CGM jointly operate on the weekly container service Adriatic X-PRESS 1 (ADX 1), an X-PRESS Feeder service route directly connecting the port of Split with Freeport container terminal in Malta (2017)

Container traffic indicators from 2014 to 2017

YEAR	2013.	2014.	2015.	2016.	2017.
TEU (loaded and discharged)	9,062	9,478	9,240	9,977	11,207

Source: Luka d.d. Split, 2018

Container traffic (TEU) on feeder service in port Split along with most prominent import/export destinations in 2016 and 2017

YEAR	2016.			2017.		
TYPE OF ACTIVITY	EXPORT TEU	IMPORT TEU	OVERALL TEU	EXPORT TEU	IMPORT TEU	OVERALL TEU
CMA CGM	3,962	1,728	5,690	3,278	1,096	4,374
Destinations (share %)	China 40,8% UAE 40.1 %	China 60.5% Ecuador 26,1%	/	China 58.1% UAE 26.5%	China 62.7% Ecuador 12.1%	/
MAERSK	/	/	/	941	110	1,051
Destinations (share %)	/	/	/	UAE 40.9% USA 26.8% China 26.3%	China 63.6% Taiwan 18.2%	/

Source: Luka d.d. Split, 2018

OVERVIEW AND ANALYSIS OF THE EXISTING TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

CURRENT MARITIME TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

- analyzed individually for **ferry and container transport**, in order to define the current markets and demand for services as well as the business dynamics (indicators) on the specific maritime route regarding the type of transport

Current ferry traffic flows

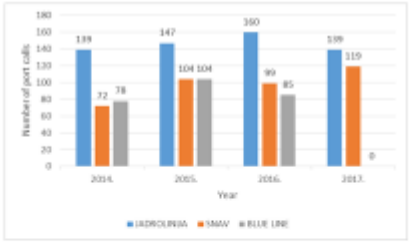
- two international ferry passenger companies operating on the traffic flow Split – Ancona
- Croatian state owned company "Jadrolinija" and Italian ferry transport company "Società Navigazione Alta Velocità – SNAV
- until the end of year 2016 international ferry passenger company "Blue Line" also operated on the specific route.
- distance between Split and Ancona is 134 NM when navigating through "Drvenički channel", 137 NM when navigating through "Šoltanski channel" and 145 NM when navigating through "Splitska vrata"

OVERVIEW AND ANALYSIS OF THE EXISTING TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

Passenger and vehicle traffic flow demand indicators in international ferry transport from 2014 to 2017 in the port of Split on the Split – Ancona maritime route

TYPE OF TRANSPORT	COMPANY NAME			YEAR
	JADROLINIJA	BLUE LINE	SNAV	2017.
Passengers	78.704		88.238	166.942
Passenger vehicle	11.693		13.042	24.735
Bus	411		658	1.069
Trucks < 7m	803		409	1.208
Trucks 7 – 18m	3.882		1.318	5.248
Total trucks	4.735		1.721	6.456
Total vehicles	16.839		15.421	32.260
Motorcycles	1.378		2.293	4.671
	JADROLINIJA	BLUE LINE	SNAV	2016.
Passengers	62.484	58.452	70.930	191.846
Passenger vehicle	9.053	9.888	9.856	28.797
Bus	401	818	509	1.278
Trucks < 7m	828	119	139	1.071
Trucks 7 – 18m	3.681	1.331	1.591	6.584
Total trucks	4.484	1.450	1.721	7.655
Total vehicles	13.938	11.681	12.086	37.689
Motorcycles	1.913	2.188	1.894	5.995
	JADROLINIJA	BLUE LINE	SNAV	2015.
Passengers	55.054	75.721	81.265	211.058
Passenger vehicle	8.873	10.967	11.271	28.810
Bus	484	987	860	1.841
Trucks < 7m	957	186	112	1.255
Trucks 7 – 18m	3.479	1.673	1.544	6.696
Total trucks	4.436	1.859	1.656	7.951
Total vehicles	11.233	13.393	13.387	38.183
Motorcycles	887	2.723	2.319	5.929
	JADROLINIJA	BLUE LINE	SNAV	2014.
Passengers	78.009	88.780	88.818	255.611
Passenger vehicle	8.849	7.880	8.918	25.647
Bus	747	616	645	1.008
Trucks < 7m	698	198	142	1.038
Trucks 7 – 18m	3.877	1.430	1.889	6.196
Total trucks	5.078	1.888	1.681	7.196
Total vehicles	15.171	9.654	8.644	31.449
Motorcycles	1.425	1.571	2.171	5.169

Source: Port Authority Split, 2018

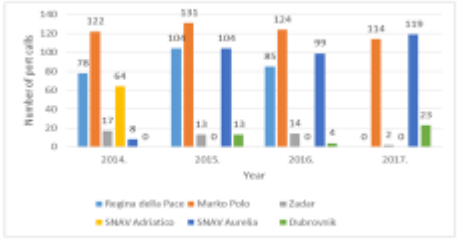


Port of calls in port of Split based on the operator (company) on the ferry international traffic flow on Split – Ancona route

Source: Port Authority Split, 2018

OVERVIEW AND ANALYSIS OF THE EXISTING TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

- In a four year period (2014 – 2017) there were maximum of six (6) vessels in exploitation on the ferry international line Split – Ancona
- Jadrolinija used vessels "Marko Polo", "Dubrovnik" and "Zadar"
- SNAV - two vessels "SNAV Adriatico" and "SNAV Aurelia"
- Blue Line - one vessel "Regina della Pace"
- The usual vessel transit time on this international ferry traffic flow is **10 hours**



Number port calls in the port of Split on the Split – Ancona ferry flow based on the individual ferry vessel
Source: Port Authority Split, 2018

Main characteristic of ferry vessels on the Split – Ancona traffic flow

VESSEL NAME	COMPANY	LENGTH OVER ALL / BREADTH EXTREME / DRAUGHT	GROSS TONNAGE	DEADWEIGHT	MAXIMUM / AVERAGE SPEED RECORDE ON THE FERRY LINE (knots)	MAXIMUM NUMBER OF PASSENGERS / VEHICLES
"Marko Polo"	Jadrolinija	128.13 m / 19.6 m / 5.4 m	10,154	1,132 t	14 / 12.8 kn	1,100 pax. / 270 passenger vehicles
"Dubrovnik"	Jadrolinija	122.05 m / 18.5 m / 4.8 m	9,795	1,110 t	17.1 / 10.5 kn	1,500 pax. / 200 passenger vehicles
"Zadar"	Jadrolinija	116 m / 18.9 m / 4.5 m	9,467	2,152 t	17.4 / 16 kn	1,053 pax. / 280 passenger vehicles
"SNAV Adriatico"	SNAV	164.41 m / 27.6 m / 6.1 m	31,910	4,842 t	7.8 / 6.8 kn	1,200 pax. / 524 passenger vehicles
"SNAV Aurelia"	SNAV	147.97 m / 25.4 m / 5.4 m	21,619	2,150 t	8.2 / 7.2 kn	2,280 pax. / 645 passenger vehicles
"Regina della Pace"	Blue Line	156 m / 24.2 m / 6 m	18,405	5,100 t	15.4 / 13.7 kn	1,700 pax. / 554 passenger vehicles

Source: Marine Traffic, 2018; Jadrolinija, 2018; SNAV, 2018; Blue Line, 2018.

OVERVIEW AND ANALYSIS OF THE EXISTING TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

Current container traffic flows

- divided on the **regular weekly feeder services** and transport of containers on **general cargo and multipurpose ships** (hardly followed, predictable and analyzed, with limited available data)
- container traffic flow between Italian – Croatian ports, in 2018, is an **Adriatic X-PRESS 1 (ADX 1) regular service route** operated jointly by CMA CGM and Maersk on X-PRESS Container Feeders
- three vessels in a fleet, 11 port of calls and weekly frequency with overall duration of 21 days
- **Two routes**- northern (comprises the Port of Split) and southern

Adriatic X-PRESS 1 (ADX 1) service route

Source: X-PRESS Container Feeders, 2018

OVERVIEW AND ANALYSIS OF THE EXISTING TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

Current container traffic flows

- three vessels operating on the specific container traffic flow "X-Press Shannon", "Containship Joy" and "Max Venture"
- **86 port of calls to port of Split** on container traffic flows between Italian – Croatian ports in 2017
- **6 port of calls from Split to port destinations in Italy**
- the existence of container trade between Italian and Croatian ports **is not necessarily interconnected with vessels port of calls on the specific feeder container flow** (possibility of container transit)

Vessels main characteristic on the Adriatic X-PRESS 1 (ADX 1) service container traffic flow

VESSEL NAME	OPERATED BY	FLAG	LENGTH OVER ALL / BREADTH EXTREME / DRAUGHT	GROSS TONNAGE	DEADWEIGHT	MAXIMUM / AVERAGE SPEED RECORDS ON THE FERRY LINE (knots)	NOMINAL CAPACITY (TEU) / REEFER PLUGS
"X-Press Shannon"	X-PRESS FEEDERS	Malta	134.44 m / 22.78 m / 7.4 m	9,981	11,424 t	16 / 12.4 kn	888 / 234
"Containship Joy"	CONMAR SHIPPING GMBH & CO KG.	Malta	140.65 m / 23.08 m / 7.5 m	10,965	12,611 t	14.6 / 12.2 kn	926 / 200
"Max Venture"	VROON BV	Malta	146.4 m / 22.6 m / 7.8 m	10,609	12,344 t	15.2 / 12.6 kn	1,022 / 334

Source: Marine Traffic, 2018; Vessel Tracking, 2018; X-PRESS Container Feeders, 2018.

Number of port calls to and from port of Split on container traffic flows between Italian – Croatian ports in the period 2014 – 2017.

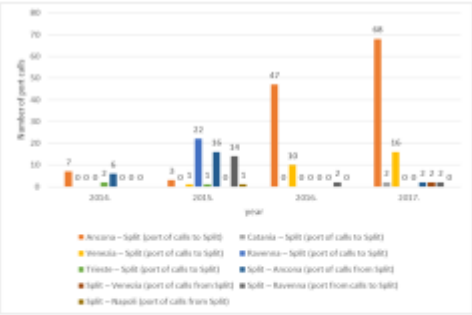
YEAR / ROUTE	2014.	2015.	2016.	2017.
Ancona – Split (port of calls to Split)	7	5	47	66
Catania – Split (port of calls to Split)	/	/	/	1
Venezia – Split (port of calls to Split)	/	1	10	16
Ravenna – Split (port of calls to Split)	/	11	/	/
Trieste – Split (port of calls to Split)	1	1	/	/
Split – Ancona (port of calls from Split)	8	18	/	1
Split – Venezia (port of calls from Split)	/	/	/	1
Split – Ravenna (port from calls to Split)	/	14	1	1
Split – Napoli (port of calls from Split)	/	1	/	/

Source: CIMIS, 2018

OVERVIEW AND ANALYSIS OF THE EXISTING TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

Current container traffic flows

- **largest trade** between Italian – Croatian ports in the container transport segment, calling the port of Split on the container traffic flow, was the container trade between **Split and Ancona**
- **dependence of the regular service and consistence of the itinerary**



Number of port calls in the container transport between Italian – Croatian ports calling the port of Split on its itinerary

Source: CIMIS, 2018

- container volumes of the trade between Italian and Croatian ports
- number of TEUs **discharged** in the port of Split from the preceding Italian port is relevant and **their volumes represent the trade between Italian and Croatian port**
- **final destination of containers on the feeder service route is mostly unknown** (possibility of the container transit)
- export of containers from Split on the container route between Italian and Croatian port can only be **assumed**

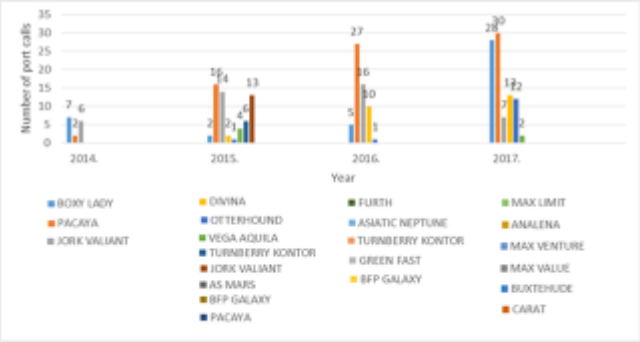
Container volumes (TEUs loaded, unloaded and in transit) on the container traffic flow between Italian – Croatian ports in the period 2014 – 2017.

YEAR / ROUTE	2014.			2015.			2016.			2017.		
	LOA. TEU	UNL. TEU	TRA. TEU	LOA. TEU	UNL. TEU	TRA. TEU	LOA. TEU	UNL. TEU	TRA. TEU	LOA. TEU	UNL. TEU	TRA. TEU
Ancona – Split	72	45	18	109	126	500	400	592	5	1.098	784	3.804
Catania – Split	/	/	/	/	/	/	/	/	/	44	28	17
Venezia – Split	/	/	/	/	/	/	75	41	144	525	505	551
Ravenna – Split	/	/	/	883	843	18	/	/	/	/	/	/
Trieste – Split	41	34	1	6	10	0	/	/	/	/	/	/
Split – Ancona	0	18	11	89	73	383	/	/	/	149	190	808
Split – Venezia	/	/	/	/	/	/	/	/	/	198	215	551
Split – Ravenna	/	/	/	288	333	58	73	58	0	74	108	948

Source: CIMIS, 2018

OVERVIEW AND ANALYSIS OF THE EXISTING TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

Current container traffic flows



Number of port calls based on the individual container vessel, operating on the container traffic flow between Italian – Croatian ports and having the port of call in the port of Split, for the period 2014 – 2017

Source: CIMIS, 2018

Port congestion

- **one year period** from week 49 of the year 2017 to week 48 year 2018
- **median time at port Split** for container vessels was approximately **0.7 days**
- measured based on 38 records
- maximum time at port was 2.2 days and minimum was 0.4 days
- **Median time at anchorage** was approximately **0.8 days** for container vessels
- based on 5 records where the minimum was 0 days and maximum 2.6 days
- predominance of amount of 0 days at anchorage for container vessels signaling the **immediate container manipulation**

ANALYSIS ON POTENTIAL MARKET FLOWS AND PROJECTION OF FUTURE TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

PROJECTION OF FUTURE FERRY TRAFFIC FLOWS

- indicators affirm the **demand for services** component and cost effectiveness on the Split-Ancona traffic flow
- demand for services **increases** – especially in the **summer periods**
- projections of future international passenger and vehicle traffic flows - should be analyzed from the **cost effectiveness standpoint and rational assessment** of the potential demand and traffic flows
- rational assessment - **limited for Adriatic area** (profitability of service and realistic distances between ports for establishment of the potential ferry route)
- in the **past** – several international passenger ferry lines (Split to Pescara and Venezia)
- based on the **expert assessment method** (as for the **data and research unavailability**) – **Pescara, Venezia and Bari** are potential international ferry lines with Split, when performing a projection of future traffic flows
- **close distances between ports** - strategic problem where demand for services could overlap creating unprofitable environment

ANALYSIS ON POTENTIAL MARKET FLOWS AND PROJECTION OF FUTURE TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

PROJECTION OF FUTURE FERRY TRAFFIC FLOWS

Distances between ports in Adriatic (approximate values)

	Split	Ancona	Pescara	Venezia	Bari
Split	/	151 NM	118 NM	215 NM	146 NM
Ancona	151 NM	/	81 NM	124 NM	215 NM
Pescara	118 NM	81 NM	/	201 NM	149 NM
Venezia	215 NM	124 NM	201 NM	/	351 NM
Bari	146 NM	215 NM	149 NM	351 NM	/

Source: Mooring Spot, 2018

close distances between Ancona and Pescara in the projection of the future ferry passenger traffic flows

longer distance and proportionally potential unprofitable market with Venezia

already consolidated ferry passenger traffic flow on the route Dubrovnik-Bari

IMPACTS FROM THE EXTERNAL ENVIRONMENT REPRESENTING A STRATEGIC PROBLEM!

ANALYSIS ON POTENTIAL MARKET FLOWS AND PROJECTION OF FUTURE TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

PROJECTION OF FUTURE CONTAINER TRAFFIC FLOWS

- logically limited to Adriatic area, i.e. **east Adriatic** on the regular feeder services of interested operators
- area of **Italian western part of the coast** should be also considered as the potential future container flows
- strong **dependence on the feeder container service** and selection of hub port in the Mediterranean should be apostrophized as a characteristic of container routes
- **no direct container route** between Split and other Italian ports - creates obstacles and increases the possibility of deviation from actual trade movement between individual ports on the feeder service line
- The regular feeder container service included Italian **NAPA ports (Ravenna, Venezia and Trieste)** on the itineraries in the **period from 2014 to 2017**, while the current itinerary **in 2018** includes **Ancona and Ravenna** on the northern service route and **Venezia on the southern part**
- The container traffic flows with Italian western cost destinations existed in the **past** - calling through **Gioa Tauro hub port, Civitavecchia and Salerno**, with also port **Cagliari in Sardinia** as a part of the service.

Itineraries calling the port of Split in the past

Source: Luka d.d. Split

ANALYSIS ON POTENTIAL MARKET FLOWS AND PROJECTION OF FUTURE TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

PROJECTION OF FUTURE CONTAINER TRAFFIC FLOWS

- limited demand and trade between port Split and all the destinations in Italy – **negligible traffic**
- cargo terminal - **modernize the road and rail transport infrastructure** to increase competitiveness
- essential segment in the increase of throughput of the port Split is revitalization of the **"Unska" railroad**
- **based on the expert assessment method** – would expand the market in northern **Croatian regions, Posavina and Slavonia, rest of Bosnia and Herzegovina** as well as the new market in **Serbia**, more accurately in the **autonomous province of Vojvodina**.
- Unska railroad the port would **strengthen the quality of intermodal services** by investment in the road, rail and port cargo terminal capacities.

D.2.4.6. 2nd Transport Stakeholder Workshop

ANALYSIS ON POTENTIAL MARKET FLOWS AND PROJECTION OF FUTURE TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

GENERAL DATA ON TRADE FLOWS BETWEEN ITALY AND CROATIA

Cross border traffic of the Republic of Croatia

- Total arrivals of passengers in the cross-border traffic in the Republic of Croatia in 2017 amounted to 83.5 million and departures around 83 million
- Number of Italian tourists in 2017 - **1.1 million arrivals** (with overnights 4,9 mill.)

Transports of goods and passengers between Croatia and Italy

- overall foreign trade in goods with Italy, related to the import and export, increased in 2017 and amounted to around **4,7 billion €**

Export and import between Croatia and Italy for period 2013 - 2017

	2013.		2014.		2015.		2016.		2017.	
	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.
Italy (in thousand €)	1,595,213	2,167,859	1,429,175	2,486,023	1,542,993	2,430,403	1,685,276	2,486,988	1,914,751	2,811,064
Italy (in tons)	1,663,882	1,870,824	1,796,264	1,867,198	1,490,867	1,772,294	1,717,721	1,830,347	1,841,837	2,161,257

Source: CBS, 2018

ANALYSIS ON POTENTIAL MARKET FLOWS AND PROJECTION OF FUTURE TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

Transports of goods and passengers between Croatia and Italy

- Important to determine the current maritime, road and rail trade flows including the transport of freight and passengers between Croatia and Italy
- Railway transport of goods – negligible
- Road transport

International road transport of goods between Croatia and Italy (loading and unloading) for period 2013-2017

	2013.		2014.		2015.		2016.		2017.	
Country	Loaded	Unloaded	Loaded	Unloaded	Loaded	Unloaded	Loaded	Unloaded	Loaded	Unloaded
Italy (in thousand tons)	815	915	997	1,155	1,043	1,410	1,157	1,820	975	1,754
Italy (in million of tonne/km)	412	451	519	575	528	682	605	901	559	874

Source: CBS, 2018

- Maritime transport

Number of passengers embarked and disembarked in international traffic of passengers in seaports between Croatia and Italy in the period 2013-2017

Country of embarkation / disembarkation	2013.	2014.	2015.	2016.	2017.
Italy					
– Departed from Croatian ports	238,505	267,455	234,187	240,594	246,707
– Arrived in Croatian ports	1,223,694	1,177,471	1,153,907	1,240,713	1,079,200
OVERALL	1,462,199	1,444,926	1,387,694	1,481,307	1,325,907

Source: CBS, 2018

ANALYSIS ON POTENTIAL MARKET FLOWS AND PROJECTION OF FUTURE TRAFFIC FLOWS BETWEEN PORT OF SPLIT AND ITALIAN PORTS

Transports of goods and passengers between Croatia and Italy

- Maritime transport
- overall trade of freight between Croatian and Italian seaports noted an increase of 2% and in 2017 amounted to slightly above **3 million tons**

Total international traffic of freight between seaports of Croatia and Italy

	2013.	2014.	2015.	2016.	2017.
Trade of Croatia with Italy (total traffic ie tons)	3,108,034	3,620,152	2,635,437	2,992,114	3,053,173

Source: CBS, 2018

- level of utilization of Croatian traffic route

Total loaded goods in transit with transhipment in Croatian seaports with Italy as the country of unloading by the country of departure in 2016 and 2017

Country of unloading	Year	Overall (tons)	Country of departure									
			BIH	COL	HUN	POL	MNE	ROY	CHI	KOR	FYROM	SRB
ITALY	2017.	76,143	9,499	62,544	3,325	775	/	/	/	/	/	/
	2016.	126,388	85,731	/	30,400	/	21	153	29	57	2,585	7,652

Source: CBS, 2018

Total unloaded goods in transit with transhipment in Croatian seaports with Italy as the country of loading by the country of destination in 2016 and 2017

Country of loading	Year	Overall (tons)	Country of destination					
			BIH	OMAN	CHI	MNE	FYROM	SRB
ITALY	2017.	33,215	25,809	26	7,380	/	/	/
	2016.	12,162	11,594	/	/	449	7	112

Source: CBS, 2018

POTENTIAL UNDESIRABLE EFFECTS AND POINTS OF CONGESTION

- three modes of transport are encountered, road, rail and maritime
- passenger terminal in city center - the port is **limited with available space** for expansion and potential investments
- two-way traffic passing through the port area
- rising **passenger and vehicle turnover** in the city port basin, **tourist flow from cruise vessels** and **smaller crafts** for tourism purposes, like **sailing ships and small cruise vessels,** there is a rising need for unburdening the port area
- Split Port Authority - possibility of transferring the **domestic and international vehicle (truck)** transport from the city port basin to the cargo port in the dislocated northern area of **Stinice** (construction of berths for Ro-Ro vessels)
- potential project implementation - **change in the structure and density of maritime traffic** for the northern basins of the port of Split, Kaštela and Vranjic-Solin basins (**8 times more number of port calls** in the Vranjic-Solin basin)
- expansion of **Sv. Petar pier and quay of Knez Domagoj** are needed to increase capacity of the city port basin
- displacement of **bus and rail terminal** from the city center to area of **Kopilica** in the northern part of the city
- intention of establishing **suburban railway connection** from Split airport terminal trough the potential future railway terminal to the port - improve the intermodal connection by offering value added services to users

POTENTIAL UNDESIRABLE EFFECTS AND POINTS OF CONGESTION

PASSENGER TERMINAL

The access roads to the port, Kralja Zvonimira Street which continues through quay of Knez Domagoj and Zagrebačka Street are two-way narrow roads where the congestion occurs. The same problem is on the exit roads from port, a one-way narrow road Katalinićev Prilaz which continues to Jadranska Street or the return voyage through quay of Knez Domagoj towards Kralja Zvonimira Street and Zagrebačka Street

These access roads have limited throughput

City port basin access roads

Source: Google Maps, 2018 - modified

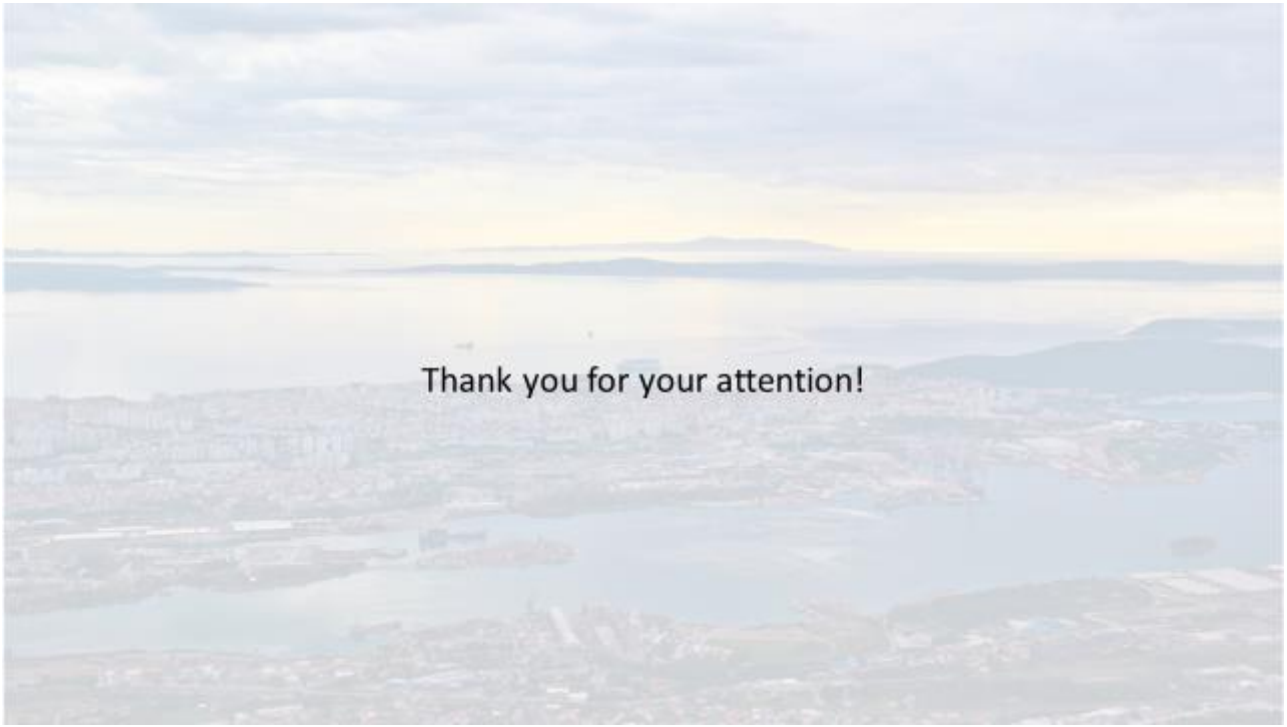
POTENTIAL UNDESIRABLE EFFECTS AND POINTS OF CONGESTION

CARGO TERMINAL

- congestion mainly occur as for **poor condition and throughput of road and rail infrastructure**
- the exit road from the cargo terminal has **no direct connection to the A1 highway** what creates difficulties in efficient transfer of cargo from the terminal creating traffic stoppages
- there are also **restrictions in tunnel heights on the Split-Dugopolje road**, a connection to A1 highway, which complicates the transport of high value cargo, a special cargo type, making the port **uncompetitive** in comparison with other nearby ports
- also, **the capacity on the state road** section is considerably below the traffic needs, in particular on the section of the state road D8 Trogir – Split – Omiš
- **railway** - burdened with continuous problems of **maintenance and delays** (manifested trough **uncertainty** in on time delivery of goods and cargo which proportionally leads to **increase in the total cost of transport**)
- **technical limitations** in acceptance and manipulation of cargo
- potential reconstruction of "Unska" railroad and its **electrification**, considering the estimated traffic on the mentioned railroad of yearly **4 million tons of cargo and 1,5 million passengers** in the past periods - part of that cargo would be redirected to port of Split

CONCLUSION

- Favorable geostrategic location - **passenger transport development**
- Passenger transport along with transport of vehicles – mainly intended for markets situated on **central Dalmatian islands** and **other coastal regions**
- Also performing regular **international ferry passenger service with Italy, in Ancona**
- Cruise traffic indicators
- Freight transport indicators are unstable - markets are mainly situated in the **port hinterland of Split-Dalmatia county** and **northwest Bosnia and Herzegovina**
- state of access roads and rail infrastructure - unsatisfactorily, having limited capacity and throughput, where the points of congestion mainly occur
- **Focal point of the research:** analysis of the existing traffic flows between Italian and Croatian ports
- important international ferry passenger traffic trade flow between Split and Ancona showing steady increase of passenger and vehicle volumes in several years
- negligible container traffic volumes between port of Split and other Italian ports
- projections of future traffic flows between Italian and Croatian ports - **depend on the demand for services and actual transport needs; limited to Adriatic area (passenger trasnport), including the western coast of Italy (cargo transport)**
- **hostorical traffic flows**
- **Investments in infrastructure – increase in competitiveness**



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